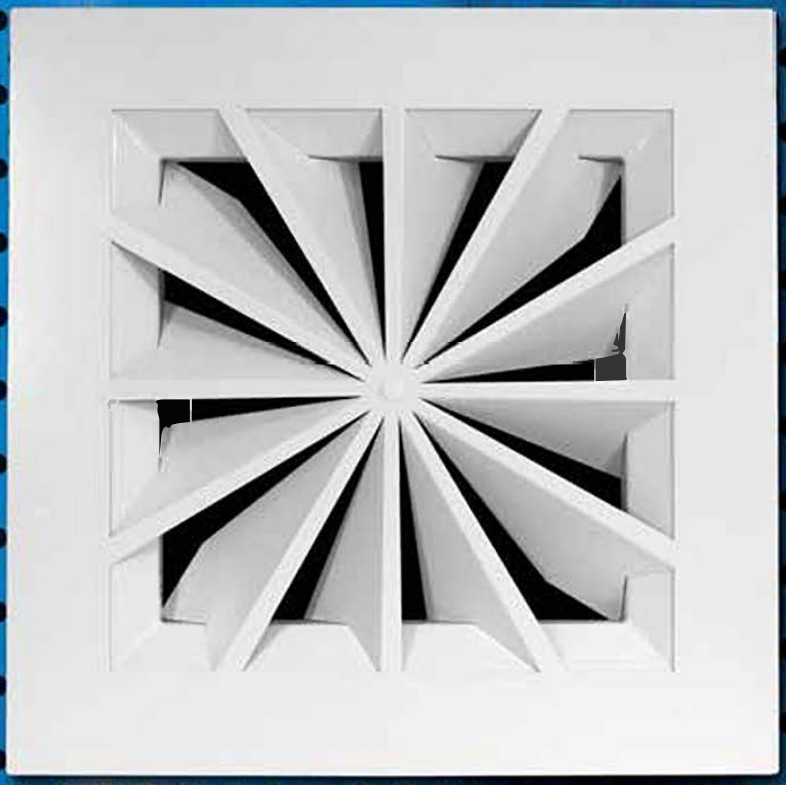
Nailor®
Industries Inc.



AIR DISTRIBUTION PRODUCTS

For the most up to date catalog information go to
www.**nailor**.com

Nailor® Industries Inc.

Standard and Optional Finishes For Grilles and Diffusers

Nailor offers a selection of standard colors and finishes available on our grilles, registers and diffusers. For painted finishes, our state-of-the-art paint systems provide environmentally friendly finishing solutions with uniform coverage and coating thickness. The result is an exceptionally durable finish that resists scratching, corrosion and general wear. Additional facilities for special requirements, as well as a selection of anodized or brushed finishes, complete our ability to provide unmatched beauty and durability for any application.

NAILOR POWDER COAT PROPERTIES

FILM THICKNESS	2.0 to 3.0 mils
HARDNESS	2 H
IMPACT RESISTANCE	Direct: 160 inch - lbs. Reverse 160 inch - lbs.
SALT SPRAY	1000 hours

ELECTROCOATING PROPERTIES

FILM THICKNESS	.8 to 1.2 mils
HARDNESS	HB TO H
IMPACT RESISTANCE	80 inch - lbs
SALT SPRAY	100 hours

POWDER COAT

Nailor's powder coat is a high-tech thermosetting polyester powder coating with superior physical properties that provide excellent color and gloss retention. The finish offers extreme durability and hardness that resists scratching, chipping and general wear. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse before a final powder coat finish is applied and baked. The environmentally friendly Nailor powder coat system assures uniform coverage and color consistency resulting in a long lasting superior finish. Colors, including simulated anodizing, which is far more economical than color anodizing, can be selected from Nailor's standard color chart or non-standard colors and can be matched from sample chips provided to Nailor.

ELECTROCOATING

E-Coat is an environmentally friendly coating that provides complete coverage and a wide range of performance properties, formulated to meet corrosion, durability and other performance specifications. Electrocoating is a highly automated process in which paint is electrically deposited onto a metal foundation. Film build thickness is uniform and overall application efficiencies are in excess of 90%. Paint is consistent on all part-to-part surfaces, preventing sags, runs or drips. E-Coat offers flexibility, better first yield pass and quicker production times compared to other forms of paint applications. Electrocoating is an excellent solution that offers superior properties and uniform finish.

CLEAR ANODIZING (Aluminum products only)

Clear anodizing is a clear oxide coating that exemplifies an aluminum surface's natural oxide coating producing a hard, scratch resistant surface that is resistant to general wear and mild chemicals. The process provides a natural looking, virtually maintenance free finish that will endure for many years.

COLOR ANODIZING (Aluminum products only)

Color anodizing is an electrolytic process where, after standard anodizing procedures, colored metallic pigments penetrate the oxide surface pores producing a corrosion resistant, colorfast finish. The process results in a natural metallic appearance that requires little maintenance.

BRUSHED AND CLEAR COAT

Available on specific aluminum products (consult applicable product page for availability). Surface is brushed to achieve a scratch finish texture before being degreased and chemically cleaned. A clear lacquer coating is then applied to provide a durable protective finish.

#4 BRUSHED SATIN POLISHED (Stainless Steel products only)

Surface is polished to ASTM A480 #4 standard to achieve a bright durable finish that is resistant to mild chemicals and corrosion. A final coating is not required due to the inherent anti-corrosion properties of the stainless steel.

PRIME COAT

Prime coat provides a stable base for painting in the field. Surface pretreatment includes degreasing and a chemical cleaning before an alkyd prime coat is applied. After a thorough cleaning for dust, etc. that can contaminate the final finish and cause premature flaking or peeling, finish coat should be field applied as soon as possible.

PAINT PREPARED ALUMINUM (Aluminum products only)

Allows for field applied paint. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse. Finish coat should be field applied as soon as possible.

MILL FINISH

Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.

TABLE OF CONTENTS

A FLOWLINE™ LINEAR DIFFUSERS

B LINEAR DIFFUSERS AND BAR GRILLES

C PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

D CEILING DIFFUSERS

E FIRE RATED PRODUCTS

F GRILLES AND REGISTERS

G SECURITY PRODUCTS

H ENGINEERING GUIDE

I INDEX

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Nailor Industries Inc. pursues a policy of continuous product development and we therefore reserve the right to change any of the information in this publication without notice. Contact your Nailor representative to verify current product details.

Nailor International Inc.

Today, we are proud that the Nailor International Group of manufacturing companies are recognized worldwide in the HVAC industry for our comprehensive product offering. However, many may not know that the group had humble beginnings.

The company commenced operations in 1971 at a small facility in Toronto, Canada manufacturing a single air control device (the curtain fire damper). Michael T. Nailor (President and CEO) started with the founding principle that the company would be customer focused and service orientated, dedicated to fulfilling the need for high quality, competitively priced products, delivered to our customers on schedule. That attitude and the values instilled by Mike in all Nailor employees, still applies today and as a result the company has been rewarded with a continually increasing demand for our products.

Our track record is one of technical leadership and innovation, pioneering the development of new products that exceed industry standard design and performance specifications. Just one example is the commercial introduction in 1995 of the EC motor (ECM) in fan powered terminal units, providing substantial energy savings and which has now become the industry standard. This was followed in 2005 with the introduction of a new line of innovative commercial fan coil units, the first available with variable air volume EPIC Fan Technology® and ECM to provide increased occupant comfort as well as energy savings. We felt the significance of this new development at the time, should also herald a new brand name – Engineered Comfort.

In order to benefit the industry, continue to innovate and stay ahead, Nailor is committed to actively participating on technical committees and in the standards writing process at ASHRAE, AHRI and AMCA for our product lines.

Today, Nailor International Inc. is still a privately held company with Group Headquarters in Houston, Texas. The company now has manufacturing plants totaling over one million square feet strategically located in three countries with an international distribution network of representatives working together to not only meet, but exceed the expectations of clients, engineers and customers around the world.

"Complete Air Control and Distribution Solutions."

Nailor® Industries Inc.

www.nailor.com

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(USA, Canada and Worldwide)

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FLOWLINE LINEAR DIFFUSERS

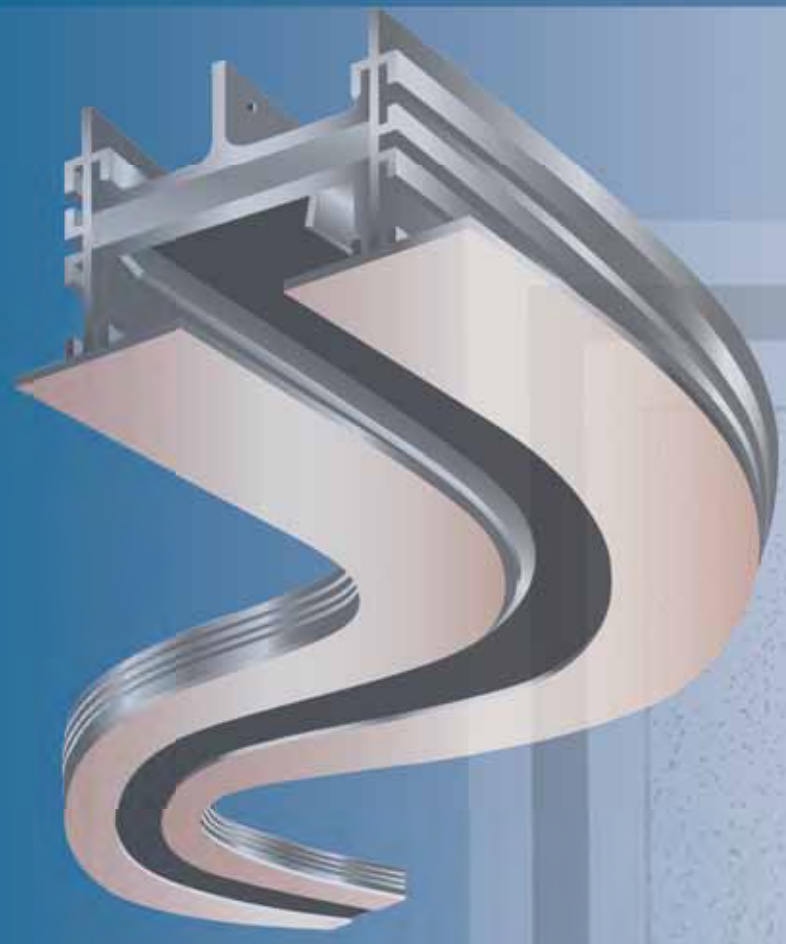


TABLE OF CONTENTS

Page No.

Overview of FlowLine™ System **A4**

Continuous FlowLine™ Linear
- FLH Series • Horizontal High Throw Pattern Controllers **A7**
- FLV Series • Vertical Jet Throw Pattern Controllers **A8**
- Standard Frame/Border Styles, Dimensional Data **A9**
- Special Frame/Border Styles, Dimensional Data **A12**
- End Border Configurations **A15**
- Options and Accessories **A16**
- FLH(TZ) Series • TechZone™ • Horizontal High Throw Pattern Controllers **A18**
- FLV(TZ) Series • TechZone™ • Vertical Jet Throw Pattern Controllers **A18**
- Standard Frame/Border Styles, Dimensional Data **A19**
- FLP Series • Engineered Plenums **A20**
- FLP Series with IDCO Option • Engineered Plenums with Cable Operated Inlet Damper **A21**
- Curved FlowLine™ Linear Diffusers **A22**
- Applications and Installation Methods, Mounting Hardware **A23**

Lay-in FlowLine™ Linear with Plenum
(For T-Bar Suspension Ceiling System Applications)
FT Series
- FTH and FTBH Series • Horizontal High Throw Pattern Controllers **A29**
- FTV and FTBV Series • Vertical Jet Throw Pattern Controllers **A29**
- Dimensional Data **A30**
- Applications **A32**

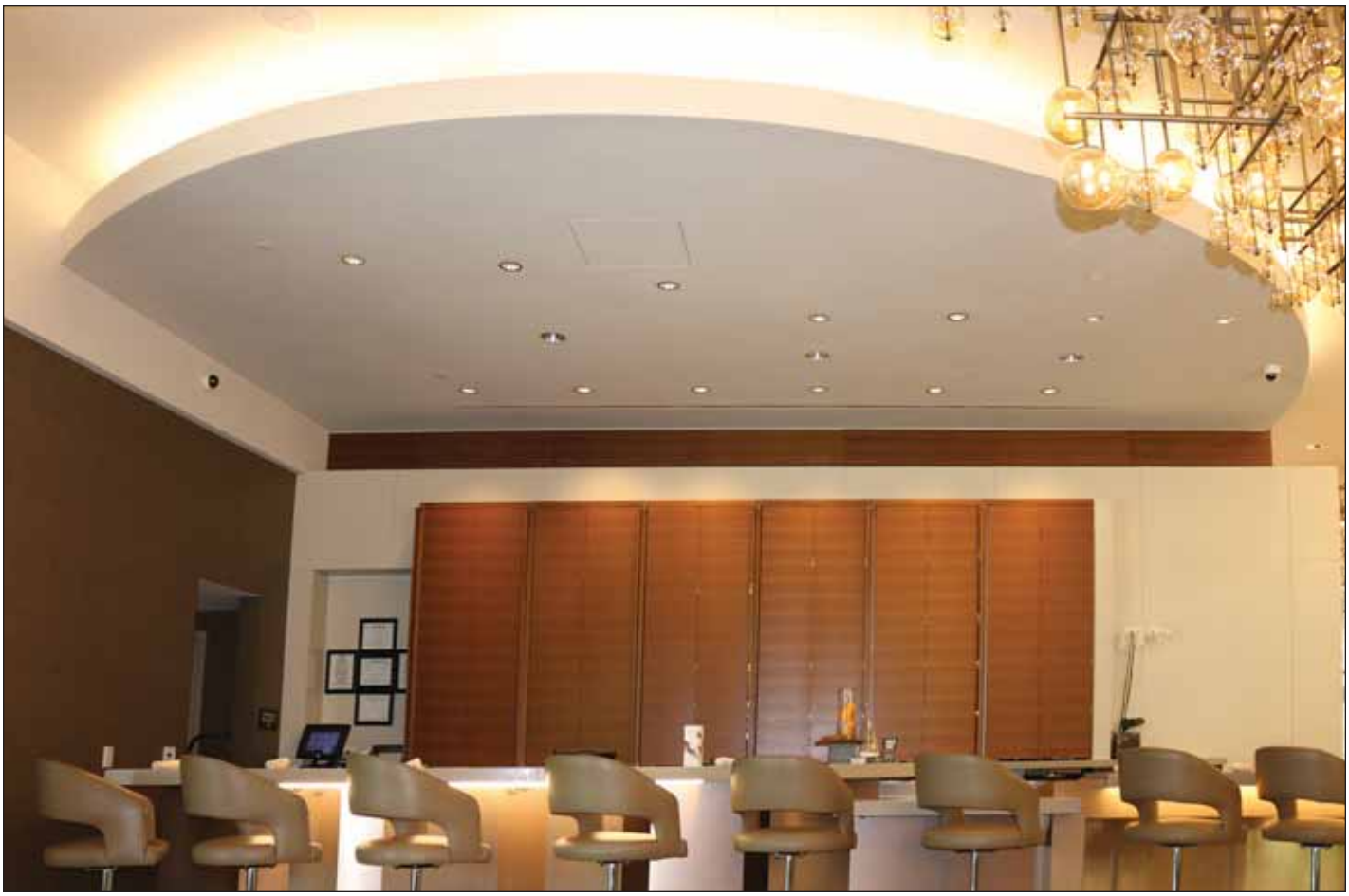
Performance Data • FLH and FTH Series Horizontal High Throw
- Continuous Slot Pressurized Plenum • Supply Air **A33**
- Return Air Applications **A34**
- Engineered Plenum **A35**

Performance Data • FLV and FTV Series Vertical Jet Throw
- Continuous Slot Pressurized Plenum • Supply Air **A41**
- Engineered Plenum **A42**

Modular FlowLine™ Square Ceiling Diffuser
- FM and FMB Series • Supply **A48**
- FMR and FMBR Series • Return **A48**
- Dimensional Data **A49**
- Performance Data **A51**

How to Order by Model Number
- FM Series Square Ceiling Diffuser **A51**
- FLH and FLV Series Straight FlowLine™ Linear Diffusers **A52**
- FLH and FLV Series Curved FlowLine™ Linear Diffusers **A53**
- FLH(TZ) and FLV(TZ) • TechZone™ • Series FlowLine™ Linear Diffusers **A54**
- FLMC FlowLine™ Accessories – Mitered Corner Sections **A55**
- FLEF FlowLine™ Accessories – Flanged End Caps **A55**
- FLC and FLT FlowLine™ Accessories – Transitions **A56**
- FLR FlowLine™ Accessories – Return Hood/Sight Shield **A56**
- FLP FlowLine™ Linear Diffuser Plenums **A57**
- FLP Series Curved FlowLine™ Linear Diffuser Plenums **A58**
- FT Series Lay-in FlowLine™ Linear **A59**

Suggested Specifications **A60**



THE FLOWLINE™ SYSTEM...

AN ARCHITECTURAL SOLUTION FOR SUPERIOR AIR DISTRIBUTION.

FlowLine™ is a custom architectural linear diffuser system designed to integrate and blend supply and return air openings harmoniously into interior commercial building designs. The flexibility of FlowLine™ provides design and application possibilities that are limited only by your imagination. FlowLine™ can blend or contrast as you integrate it into either ceiling or sidewall applications. FlowLine™ linear may be used to either inconspicuously hide the air distribution system or conversely it may be used as a contrasting, architectural design element, using straight lines and/or curves to enhance the interior of a building.

Whether you require straight lines, mitered angles or smooth curves, Nailor can custom fabricate FlowLine™ to meet your most demanding architectural and engineering performance requirements. FlowLine™ can be custom curved in any plane to suit architectural requirements. Flat face radiuses for ceilings and concave or convex curving for sidewall applications are available to special order. FlowLine™ is fabricated using sturdy heavy wall aluminum extrusions. A variety of frame/border styles and associated mounting hardware allows FlowLine™ to be installed either during or after ceiling installation. In acoustical suspension ceiling systems using continuous runs, the FlowLine™ system is installed at the same time as the ceiling grid and becomes an integral part of the ceiling assembly.

FlowLine™ linear is available in five slot widths providing a much higher air volume capability than conventional multiple slot linear designs, which are more visible. A two slot option is also available for even higher capacities. Engineered for outstanding performance and tested in accordance with the latest ASHRAE Standard 70, FlowLine™ can provide higher airflows at lower noise levels than traditional linear slot designs, making it an ideal solution for high profile architectural projects.

FlowLine™ is available in two air pattern controller designs. The FLH Series features adjustable horizontal high throw pattern controllers for ceiling applications. The FLV Series features adjustable vertical jet pattern controllers for high ceiling and sidewall applications.

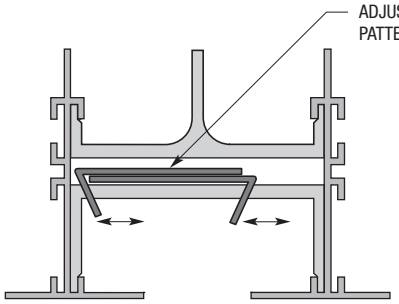
...Invisible Air

KEY FEATURES:

- High capacity single slot linear diffuser available in five slot widths, offers an attractive alternative to traditional multi-slot designs. Available slot widths are 1" (25), 1 1/2" (38), 2" (51), 2 1/2" (64) and 3" (76). A two slot option is also available.
- Comprehensive selection of frame/border styles and mounting hardware to suit any installation.
- Choice of FLH Series Horizontal or FLV Series Vertical Pattern Controllers. May be combined within a single system.
- Custom curving availability to meet specific design requirements, provides architectural appeal.
- Heavy wall extruded aluminum construction permits support and full integration with ceiling system.
- Mitered end borders are available which maximize aesthetic appeal.
- Available in single sections up to 12 ft. (3658) in length. Longer lengths are supplied in multiple sections with alignment strips for field assembly.
- High performance design is ideally suited to VAV systems, both heating and cooling.
- Custom colors and anodized finishes are available.

FLH SERIES:

Designed primarily for continuous linear slot ceiling applications requiring horizontal air patterns. Tight, high induction air pattern maximizes coanda effect under a wide range of airflow volumes for maximum occupant comfort. Typical applications would include open office perimeter zones, entrance foyers and lobbies, mall and office entrance atriums and conference meeting rooms.

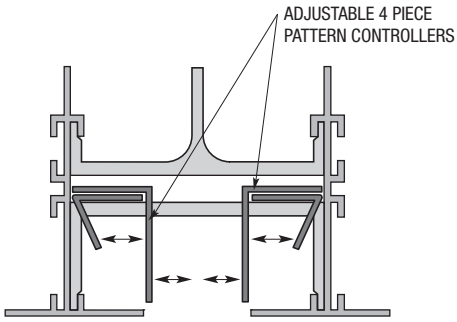


Horizontal High Throw Series:
Pattern controllers provide 180° directional control; left or right horizontal throw, angular discharge, volume control and shut-off capability.

FLV SERIES:

Designed primarily for continuous linear slot ceiling applications requiring an adjustable extended throw vertical air pattern. Typical applications would include perimeter glass curtain walls and high bays for heated and/or cooled air, which may be directed downwards, terminating at the floor at a comfortable velocity. Also suitable for interior zones with high ceilings, such as entrance foyers and lobbies, mall and office entrance atriums, convention center and theaters.

This model may also be used in high sidewall applications with long throw requirements.



Vertical Jet Throw Series:
Versatile pattern controllers provide for an adjustable perpendicular discharge.

FLP(I) SERIES:

Nailor offers factory built supply air plenum boots in various lengths to suit the application in both uninsulated and insulated versions. Nailor engineered plenums save on costly field labor and ensure a sure-fit trouble free installation.

FT SERIES:

The FlowLine™ Series is available in modular lengths for lay-in T-Bar applications, utilizing either the horizontal high throw or vertical jet throw pattern controllers. Units are supplied with factory installed engineered plenums in uninsulated or insulated versions.

FM SERIES:

The FM Series is an architecturally pleasing modular square ceiling diffuser primarily for lay-in T-Bar applications. Designed to complement the FlowLine™ Linear Diffuser System, the FM Series features a single slot at the perimeter of a 2 ft. x 2 ft. (600 x 600) ceiling module and accommodates a center acoustic ceiling tile.

FLH SERIES

- HORIZONTAL HIGH THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER

Models:

FLH10	1" (25) Slot
FLH15	1 1/2" (38) Slot
FLH20	2" (51) Slot
FLH25	2 1/2" (64) Slot
FLH30	3" (76) Slot

The FlowLine™ FLH Series continuous slot diffuser is designed primarily for ceiling applications. The adjustable pattern controllers, which are easily adjusted from the face, allow the discharge air to be directed to the left or right as well as downward. When positioned for horizontal discharge, a tight horizontal air pattern is produced that makes full use of the ceiling (coanda) effect, even at reduced air volumes. High induction characteristics maximize room air movement and mixing, making FlowLine™ FLH Series eminently suitable for variable air volume systems.

STANDARD FEATURES:

- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Sliding pattern controller design provides easy adjustment for horizontal or vertical directional control as well as a volume control or shut-off capability.
- Dual blade pattern controllers are constructed on 24" (610) centers as standard for maximum flexibility.
- Five slot widths in a one or two slot configuration provide a high air volume capability.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are divided into equal length single sections and are provided with alignment strips.
- Mitered end borders on standard frame Type AA provide a superior architectural finish.
- FlowLine™ can be custom curved in any plane - concave, convex or flat radius.

FRAME/BORDER STYLES:

- FlowLine™ FLH Series is designed for continuous length installation in both hard drywall or acoustical suspension (T-Bar) ceiling systems. Optional mounting hardware is available to suit the installation method.
- Available in two standard and various special frame/border designs to suit any installation requirement.
- Various end border options are available to suit installation.
- Mitered corner and transition sections are available.

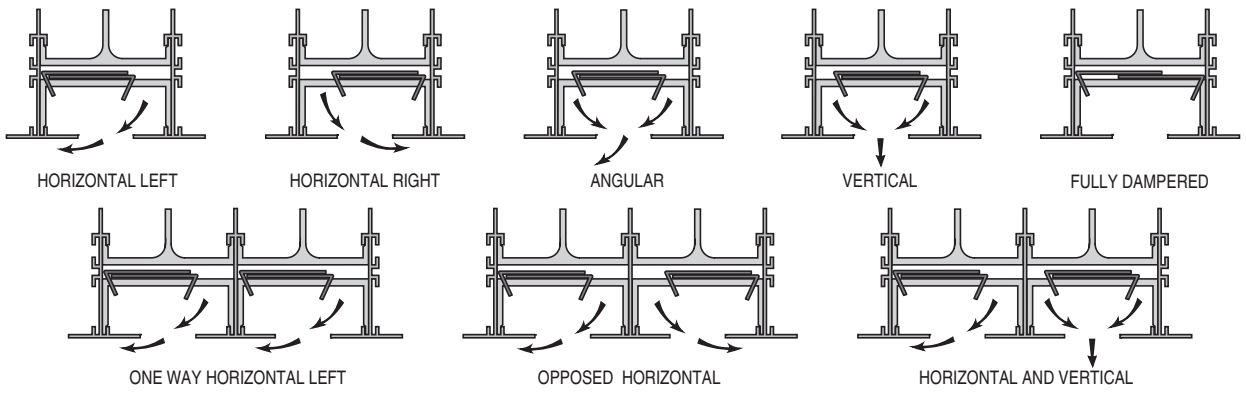
SUPPLY AIR PLENUMS:

- Model Series FLP(I) factory engineered plenum boots are available, which ensure both a trouble free installation and that catalog performance is met.

FINISH:

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available to suit architectural requirements.

FLH Series Pattern Controller Adjustment



FLV SERIES

- VERTICAL JET THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER

Models:

FLV10	1" (25) Slot
FLV15	1 1/2" (38) Slot
FLV20	2" (51) Slot
FLV25	2 1/2" (64) Slot
FLV30	3" (76) Slot

The FlowLine™ FLV Series continuous slot diffuser is designed for both ceiling and high sidewall applications and provides total air pattern control flexibility. Similar in appearance to the FLH Series, the FLV Series features adjustable pattern controllers that direct the airstream perpendicular to the face, providing a strong vertical projection when installed in a ceiling and horizontally when installed in a sidewall application. The pattern controllers permit angular discharge, allowing the airstream to be directed left or right in a ceiling application and up or down in a sidewall application. The pattern controllers also provide a variable aperture capability to adjust performance to specific applications.

STANDARD FEATURES:

- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Sliding pattern controller design provides easy adjustment for vertical directional control as well as a volume control capability.
- Dual blade pattern controllers are constructed on 24" (610) centers as standard for maximum flexibility.
- Five slot widths in a one or two slot configuration provide a high air volume capability.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are divided into equal length single sections and are provided with alignment strips.
- Mitered end borders on standard frame Type AA provide a superior architectural finish.
- FlowLine™ can be custom curved in any plane - concave, convex or flat radius.

FRAME/BORDER STYLES:

- FlowLine™ FLV Series is designed for continuous length installation in both hard drywall or acoustical suspension (T-Bar) ceiling systems. Optional mounting hardware is available to suit the installation method.
- Available in two standard and various special frame/border designs to suit any installation requirement.
- Various end border options are available to suit installation.
- Mitered corner and transition sections are available.

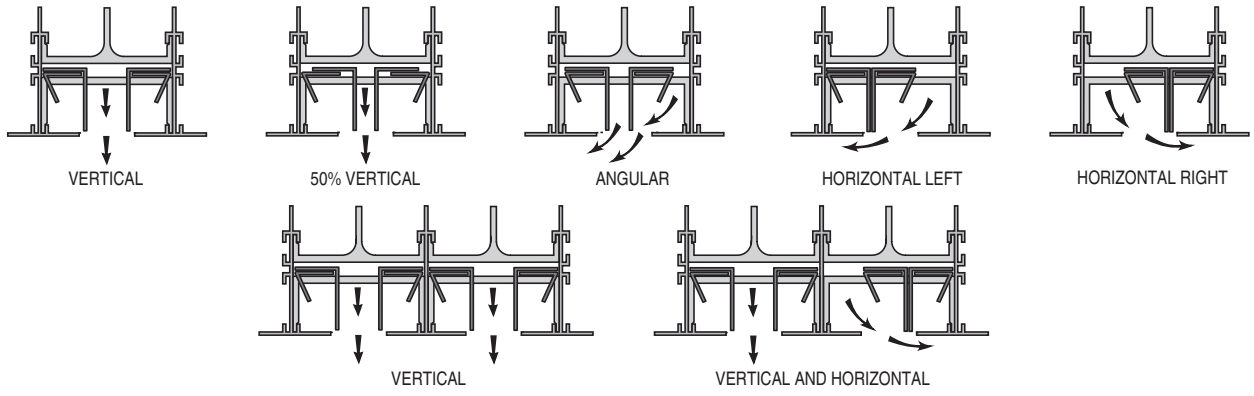
SUPPLY AIR PLENUMS:

- Model Series FLP(I) factory engineered plenum boots are available, which ensure both a trouble free installation and that catalog performance is met.

FINISH:

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available to suit architectural requirements.

FLV Series Pattern Controller Adjustment



STANDARD FRAME/BORDER STYLES

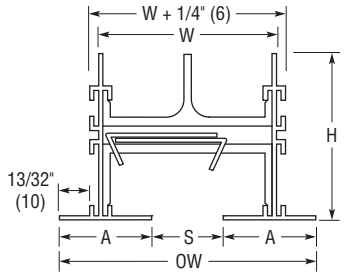
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

One Slot

Type AA Exposed Flange Frame

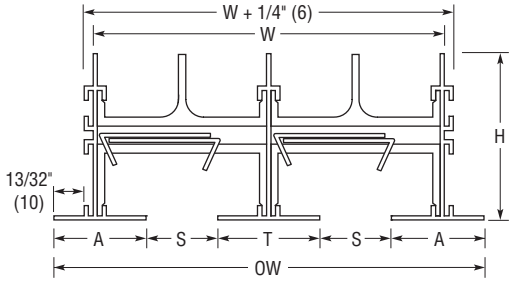
- Drywall (ceiling, wall), T-Bar



Two Slot

Type AA Exposed Flange Frame

- Drywall (ceiling, wall), T-Bar



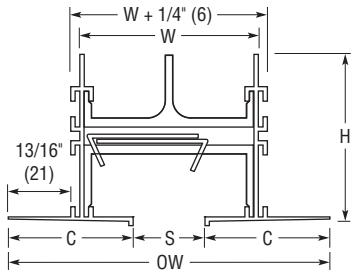
Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		A Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FL(H or V)10	1 (25)	2 1/2 (64)	3 9/16 (90)	4 15/16 (125)	6 (152)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FL(H or V)15	1 1/2 (38)	3 1/2 (89)	4 9/16 (116)	6 15/16 (176)	8 (203)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FL(H or V)20	2 (51)	4 1/2 (114)	5 9/16 (141)	8 15/16 (227)	10 (254)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FL(H or V)25	2 1/2 (64)	5 1/2 (140)	6 9/16 (167)	10 15/16 (278)	12 (305)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FL(H or V)30	3 (76)	6 1/2 (165)	7 9/16 (192)	12 15/16 (329)	14 (356)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

One Slot

Type CC Concealed Tapered Frame

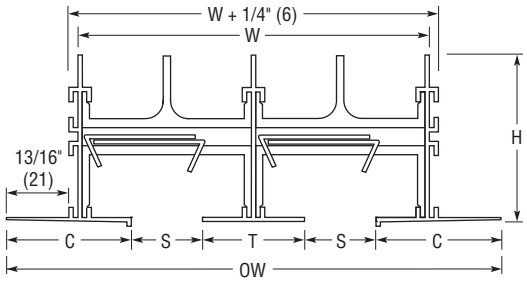
- Drywall (ceiling, wall)
- Tape and Spackle



Two Slot

Type CC Concealed Tapered Side Frame

- Drywall (ceiling, wall)
- Tape and Spackle



Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		C Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FLH10	1 (25)	2 1/2 (64)	4 3/8 (111)	4 15/16 (125)	6 13/16 (173)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	3 1/2 (89)	5 3/8 (137)	6 15/16 (176)	8 13/16 (224)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	4 1/2 (114)	6 3/8 (162)	8 15/16 (227)	10 13/16 (275)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	5 1/2 (140)	7 3/8 (187)	10 15/16 (278)	12 13/16 (325)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	6 1/2 (165)	8 3/8 (213)	12 15/16 (329)	14 13/16 (376)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)

STANDARD FRAME/BORDER STYLES WITH CONCEALED MOUNTING BRACKET

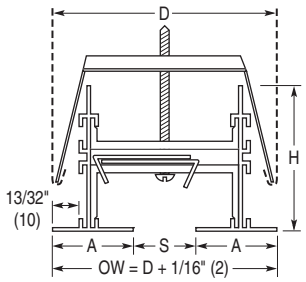
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

The concealed mounting bracket option permits surface mounting of the FlowLine™ diffuser after the ceiling installation. Diffuser simply pushes up into the ceiling opening until the legs of the factory supplied mounting brackets locate into a hemmed duct plenum or onto the topside of the drywall. Factory supplied levelling screws then draw the diffuser up until it is tight and snug with the ceiling.

One Slot

Type AAC Exposed Flange Frame

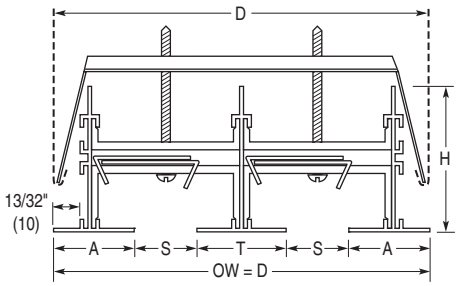
• Drywall (ceiling)



Two Slot

Type AAC Exposed Flange Frame

• Drywall (ceiling)

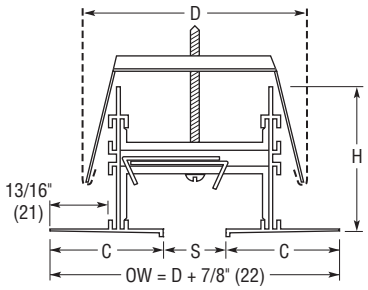


Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		Ceiling Opening Width		A Border Width	H Height	T 2 Slot
		1 Slot	2 Slot	1 Slot	2 Slot			
FLH10	1 (25)	3 1/2 (89)	6 (152)	3 (76)	5 1/2 (140)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	4 (102)	7 1/2 (191)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	5 1/2 (140)	10 (254)	5 (127)	9 1/2 (241)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	6 (152)	11 1/2 (292)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	7 1/2 (191)	14 (356)	7 (178)	13 1/2 (343)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

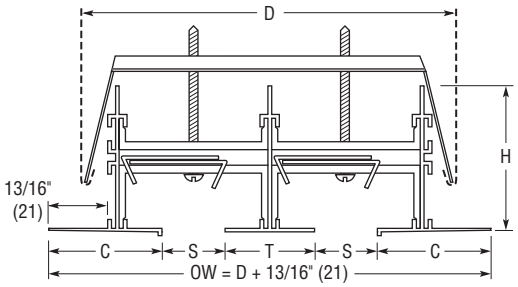
One Slot

Type CCC Concealed Tapered Frame with Concealed Mounting Brackets



Two Slot

Type CCC Concealed Tapered Side Frame with Concealed Mounting Brackets



Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		C Border Width	H Height	T 2 Slot	Ceiling Opening Width	
		1 Slot	2 Slot				1 Slot	2 Slot
FLH10	1 (25)	3 1/2 (89)	6 (152)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)	3 (76)	5 1/2 (140)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)	4 (102)	7 1/2 (191)
FLH20	2 (51)	5 1/2 (140)	10 (254)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)	5 (127)	9 1/2 (241)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)	6 (152)	11 1/2 (292)
FLH30	3 (76)	7 1/2 (191)	14 (356)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)	7 (178)	13 1/2 (343)

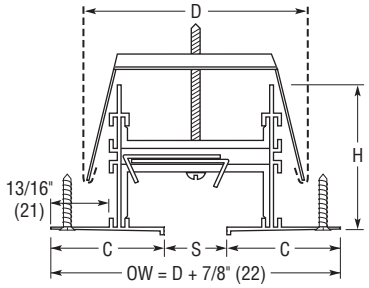
STANDARD FRAME/BORDER STYLES

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

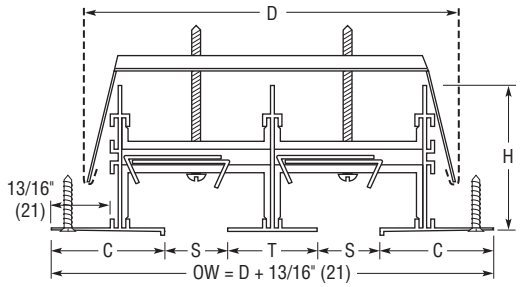
One Slot

Type CCCA Concealed Tapered Frame with Concealed Mounting Brackets & Countersunk Screw Holes



Two Slot

Type CCCA Concealed Tapered Side Frame with Concealed Mounting Brackets & Countersunk Screw Holes

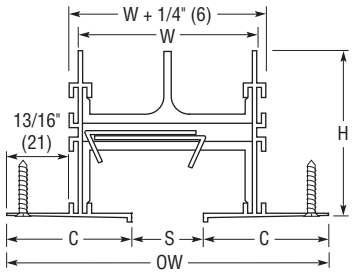


Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		C Border Width	H Height	T 2 Slot	Ceiling Opening Width	
		1 Slot	2 Slot				1 Slot	2 Slot
FLH10	1 (25)	3 1/2 (89)	6 (152)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)	3 (76)	5 1/2 (140)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)	4 (102)	7 1/2 (191)
FLH20	2 (51)	5 1/2 (140)	10 (254)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)	5 (127)	9 1/2 (241)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)	6 (152)	11 1/2 (292)
FLH30	3 (76)	7 1/2 (191)	14 (356)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)	7 (178)	13 1/2 (343)

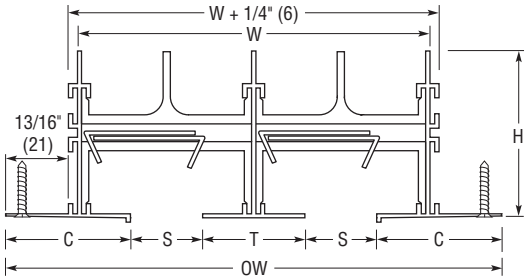
One Slot

Type CCA Concealed Tapered Frame with Countersunk Screw Holes



Two Slot

Type CCA Concealed Tapered Side Frame with Countersunk Screw Holes



Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		C Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FLH10	1 (25)	2 1/2 (64)	4 3/8 (111)	4 15/16 (125)	6 13/16 (173)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	3 1/2 (89)	5 3/8 (137)	6 15/16 (176)	8 13/16 (224)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	4 1/2 (114)	6 3/8 (162)	8 15/16 (227)	10 13/16 (275)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	5 1/2 (140)	7 3/8 (187)	10 15/16 (278)	12 13/16 (325)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	6 1/2 (165)	8 3/8 (213)	12 15/16 (329)	14 13/16 (376)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)

SPECIAL FRAME/BORDER STYLES

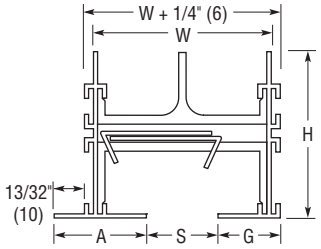
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

One Slot

Type AG Flangeless Frame

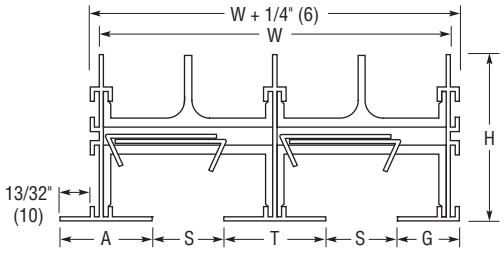
• Drywall (ceiling, wall)



Two Slot

Type AG Flange/Flangeless Frame

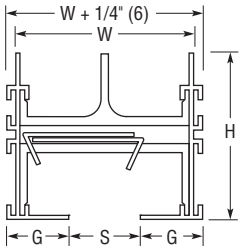
• Drywall (ceiling, wall)



One Slot

Type GG Flangeless Frame

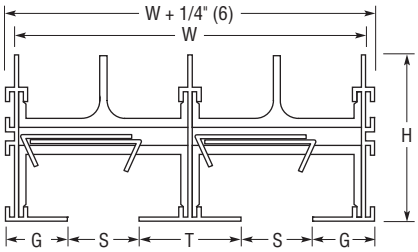
• Drywall (ceiling, wall)



Two Slot

Type GG Flange/Flangeless Frame

• Drywall (ceiling, wall)



Dimensional Data - Imperial (Metric) Units

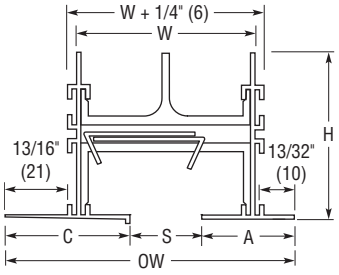
Model	S Slot Width	1 Slot W	2 Slot W	A Border Width	G Border Width	H Height	T 2 Slot
FL(H or V)10	1 (25)	2 1/2 (64)	4 15/16 (125)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FL(H or V)15	1 1/2 (38)	3 1/2 (89)	6 15/16 (176)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FL(H or V)20	2 (51)	4 1/2 (114)	8 15/16 (227)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FL(H or V)25	2 1/2 (64)	5 1/2 (140)	10 15/16 (278)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FL(H or V)30	3 (76)	6 1/2 (165)	12 15/16 (329)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

SPECIAL FRAME/BORDER STYLES

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

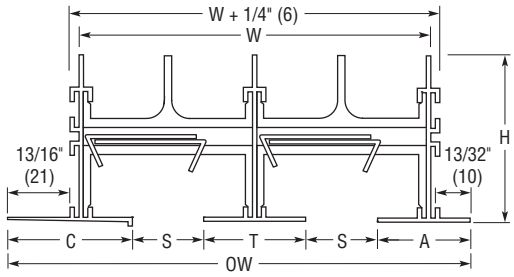
One Slot

Type CA Concealed Tapered/Exposed Flange Frame
- Tape and Spackle (one side)
- Drywall (ceiling)



Two Slot

Type CA Concealed Tapered/Exposed Flange Frame
- Tape and Spackle (one side)
- Drywall (ceiling)

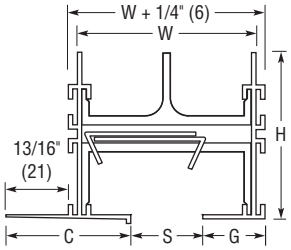


Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot W	1 Slot OW	2 Slot W	2 Slot OW	C Border Width	A Border Width	H Height	T 2 Slot
FLH10, FLV10	1 (25)	2 1/2 (64)	3 31/32 (101)	4 15/16 (125)	6 13/32 (163)	1 11/16 (43)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	4 31/32 (126)	6 15/16 (176)	8 13/32 (214)	1 15/16 (49)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FLH20, FLV20	2 (51)	4 1/2 (114)	5 31/32 (152)	8 15/16 (227)	10 13/32 (264)	2 3/16 (56)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FLH25, FLV25	2 1/2 (64)	5 1/2 (140)	6 31/32 (177)	10 15/16 (278)	12 13/32 (315)	2 7/16 (62)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FLH30, FLV30	3 (76)	6 1/2 (165)	7 31/32 (202)	12 15/16 (329)	14 13/32 (366)	2 11/16 (68)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

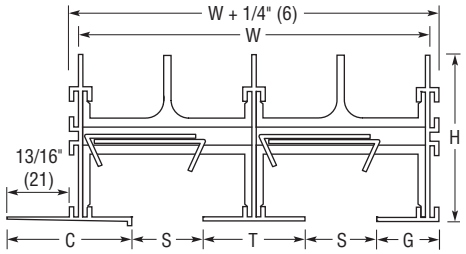
One Slot

Type CG Concealed Tapered/Flangeless Frame
- Tape and Spackle (one side)
- Drywall (ceiling)



Two Slot

Type CG Concealed Tapered/Flangeless Frame
- Tape and Spackle (one side)
- Drywall (ceiling)



Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot W	2 Slot W	C Border Width	G Border Width	H Height	T 2 Slot
FLH10, FLV10	1 (25)	2 1/2 (64)	4 15/16 (125)	1 11/16 (43)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	6 15/16 (176)	1 15/16 (49)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FLH20, FLV20	2 (51)	4 1/2 (114)	8 15/16 (227)	2 3/16 (56)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FLH25, FLV25	2 1/2 (64)	5 1/2 (140)	10 15/16 (278)	2 7/16 (62)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FLH30, FLV30	3 (76)	6 1/2 (165)	12 15/16 (329)	2 11/16 (68)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

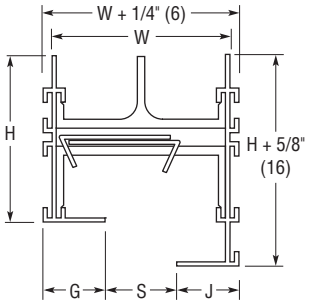
SPECIAL FRAME/BORDER STYLES

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

One Slot

Type GJ Concealed Offset Frame

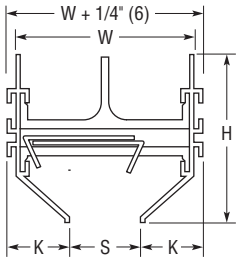
• Drywall (ceiling, wall)



One Slot

Type KK Concealed Angular Frame

• Drywall (ceiling, wall)



Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot	G Border Width	J Border Width	H Height
FLH10	1 (25)	2 1/2 (64)	7/8 (22)	7/8 (22)	2 3/8 (60)
FLH15	1 1/2 (38)	3 1/2 (89)	1 1/8 (29)	1 1/8 (29)	2 5/8 (67)
FLH20	2 (51)	4 1/2 (114)	1 3/8 (35)	1 3/8 (35)	2 7/8 (73)
FLH25	2 1/2 (64)	5 1/2 (140)	1 5/8 (41)	1 5/8 (41)	3 1/8 (79)
FLH30	3 (76)	6 1/2 (165)	1 7/8 (48)	1 7/8 (48)	3 3/8 (86)

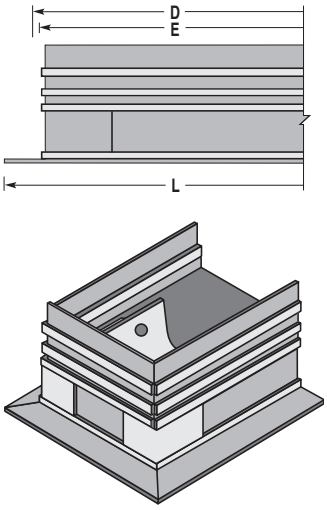
Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	W	K Border Width	H Height
FLH10, FLV10	1 (25)	2 1/2 (64)	7/8 (22)	2 3/8 (60)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	1 1/8 (29)	2 5/8 (67)
FLH20, FLV20	2 (51)	4 1/2 (114)	1 3/8 (35)	2 7/8 (73)

END BORDER CONFIGURATIONS FOR VARIOUS MOUNTINGS

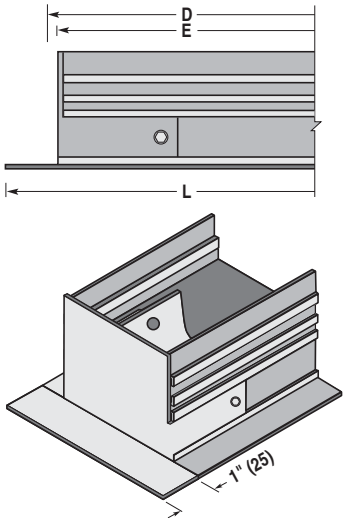
M Mitered End Border

- Architecturally superior look for Type A Frame/ Border with Exposed Flange.
- Factory mounted.

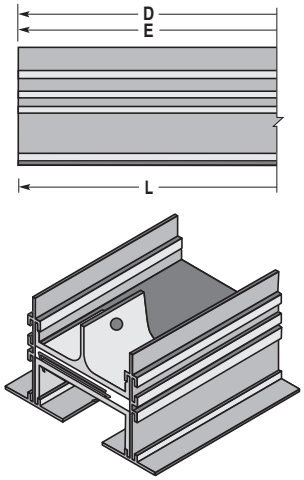


F Flanged End Cap

- Removable for field end trim or stocking.

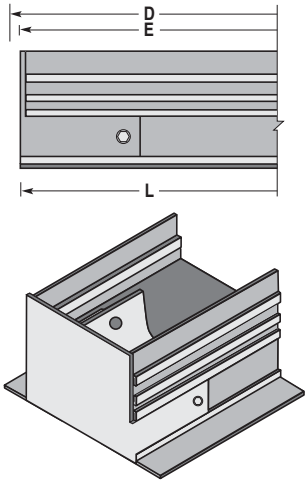


O Open End



C Flat End Cap

- Removable for field end trim or stocking.



Overall Length Dimensions and End Cap Position

D = Duct Length **E = End Cap Position** **L = Overall Length**

Frame Type	M	M	M	O	M	C	O	O	O	C
	E	L	E	L	E	L	E	L	E	L
AA, AAC	D - 1/4 (6)	D + 9/16 (14)	D - 1/8 (3)	D + 9/32 (7)	D - 1/16 (2)	D + 11/32 (9)	D	D	D - 1/16 (2)	D - 1/16 (2)
CC, CCA, CCC, CCCA	D - 1/4 (6)	D + 1 3/8 (35)	D - 1/8 (3)	D + 11/16 (17)	D - 1/16 (2)	D + 3/4 (19)	D	D	D - 1/16 (2)	D - 1/16 (2)
GG, AG	N/A	N/A	N/A	N/A	N/A	N/A	D	D	D - 1/16 (2)	D - 1/16 (2)
CA, CG, GJ, KK	N/A	N/A	N/A	N/A	N/A	N/A	D	D	D - 1/16 (2)	D - 1/16 (2)

Frame Type	C	C	F	F	F	O	F	C
	E	L	E	L	E	L	E	L
AA, AAC	D - 1/8 (3)	D - 1/8 (3)	D - 1/4 (6)	D +1 5/8 (41)	D - 1/8 (3)	D + 13/16 (21)	D - 1/16 (2)	D + 7/8 (22)
CC, CCA, CCC, CCCA	D - 1/8 (3)	D - 1/8 (3)	N/A	N/A	N/A	N/A	N/A	N/A
GG, AG	D - 1/8 (3)	D - 1/8 (3)	D - 1/4 (6)	D +1 5/8 (41)	D - 1/8 (3)	D + 13/16 (21)	D - 1/16 (2)	D + 7/8 (22)
CA, CG, GJ, KK	D - 1/8 (3)	D - 1/8 (3)	N/A	N/A	N/A	N/A	N/A	N/A

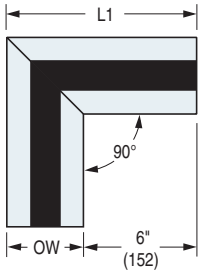
OPTIONS AND ACCESSORIES

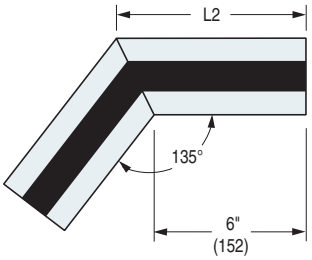
Mitered Corners

FLMC10 • 1" (25) Slot
FLMC15 • 1 1/2" (38) Slot
FLMC20 • 2" (51) Slot
FLMC25 • 2 1/2" (64) Slot
FLMC30 • 3" (76) Slot

The standard mitered corners are 90° and 135°. Units are factory welded with precision to match and align with the associated straight leg.

Units are supplied with factory installed blank-offs in the slot (painted black) and are inactive. Other angles are available.





No. of Slots	Slot Width	Border AA, CC		Border GG	
		L1	L2	L1	L2
1	1 (25)	9 9/16 (243)	7 15/32 (190)	8 11/16 (221)	7 1/8 (181)
	1 1/2 (38)	10 9/16 (268)	7 7/8 (200)	9 11/16 (246)	7 17/32 (191)
	2 (51)	11 9/16 (294)	8 5/16 (211)	10 11/16 (271)	7 15/16 (202)
	2 1/2 (64)	12 9/16 (319)	8 23/32 (221)	11 11/16 (297)	8 11/32 (212)
	3 (76)	13 9/16 (344)	9 1/8 (232)	12 11/16 (322)	8 3/4 (222)
2	1 (25)	11 31/32 (304)	8 15/32 (215)	11 3/32 (282)	8 3/32 (206)
	1 1/2 (38)	13 31/32 (355)	9 5/16 (237)	13 3/32 (333)	8 29/32 (226)
	2 (51)	15 31/32 (406)	10 1/8 (257)	15 3/32 (383)	9 3/4 (248)
	2 1/2 (64)	17 31/32 (456)	10 31/32 (279)	17 3/32 (434)	10 9/16 (268)
	3 (76)	19 31/32 (507)	11 25/32 (299)	19 3/32 (485)	11 13/32 (290)

Special Mitered Corners

*Available from 45 – 179° as SPL. (A detailed sketch is required for co-ordination with installing contractors).

Transitions

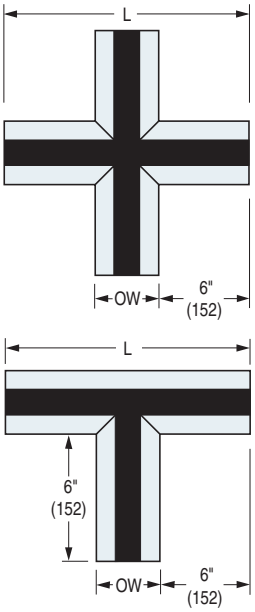
Type C Cross

FLC10 • 1" (25) Slot
FLC15 • 1 1/2" (38) Slot
FLC20 • 2" (51) Slot
FLC25 • 2 1/2" (64) Slot
FLC30 • 3" (76) Slot

Type T Tee

FLT10 • 1" (25) Slot
FLT15 • 1 1/2" (38) Slot
FLT20 • 2" (51) Slot
FLT25 • 2 1/2" (64) Slot
FLT30 • 3" (76) Slot

Transitions are inactive. Blank-offs installed at factory. Not available in 2 slot version.

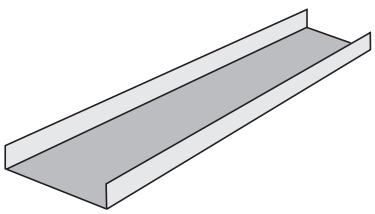


No. of Slots	Slot Width	Border AA, CC		Border GG	
		OW	L	OW	L
1	1 (25)	3 9/16 (90)	15 9/16 (395)	2 3/4 (70)	14 11/16 (373)
	1 1/2 (38)	4 9/16 (116)	16 9/16 (421)	3 3/4 (95)	15 11/16 (398)
	2 (51)	5 9/16 (141)	17 9/16 (446)	4 3/4 (121)	16 11/16 (424)
	2 1/2 (64)	6 9/16 (167)	18 9/16 (471)	5 3/4 (146)	17 11/16 (449)
	3 (76)	7 9/16 (192)	19 9/16 (497)	6 3/4 (171)	18 11/16 (475)

Blank-Offs

FLBO10 • 1" (25) Slot
FLBO15 • 1 1/2" (38) Slot
FLBO20 • 2" (51) Slot
FLBO25 • 2 1/2" (64) Slot
FLBO30 • 3" (76) Slot

Corrosion resistant steel, painted flat black. Fit in neck of diffuser. Provided in 48" (1219) lengths. Field cut to length.



OPTIONS AND ACCESSORIES

Return Hood/Sight Shield

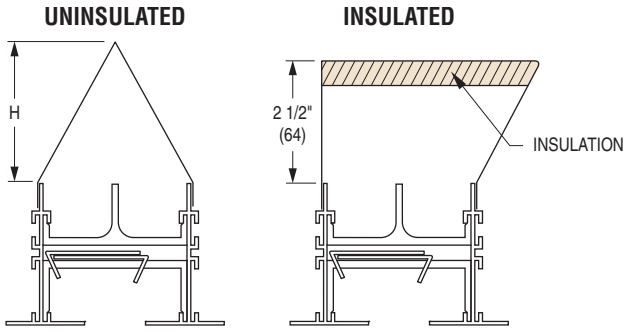
Uninsulated:

FLR10 • 1" (25) Slot
FLR15 • 1 1/2" (38) Slot
FLR20 • 2" (51) Slot
FLR25 • 2 1/2" (64) Slot
FLR30 • 3" (76) Slot

51% free area perforated corrosion resistant steel, painted flat black. Provided in 4 ft. (1219) lengths. Field cut to length.

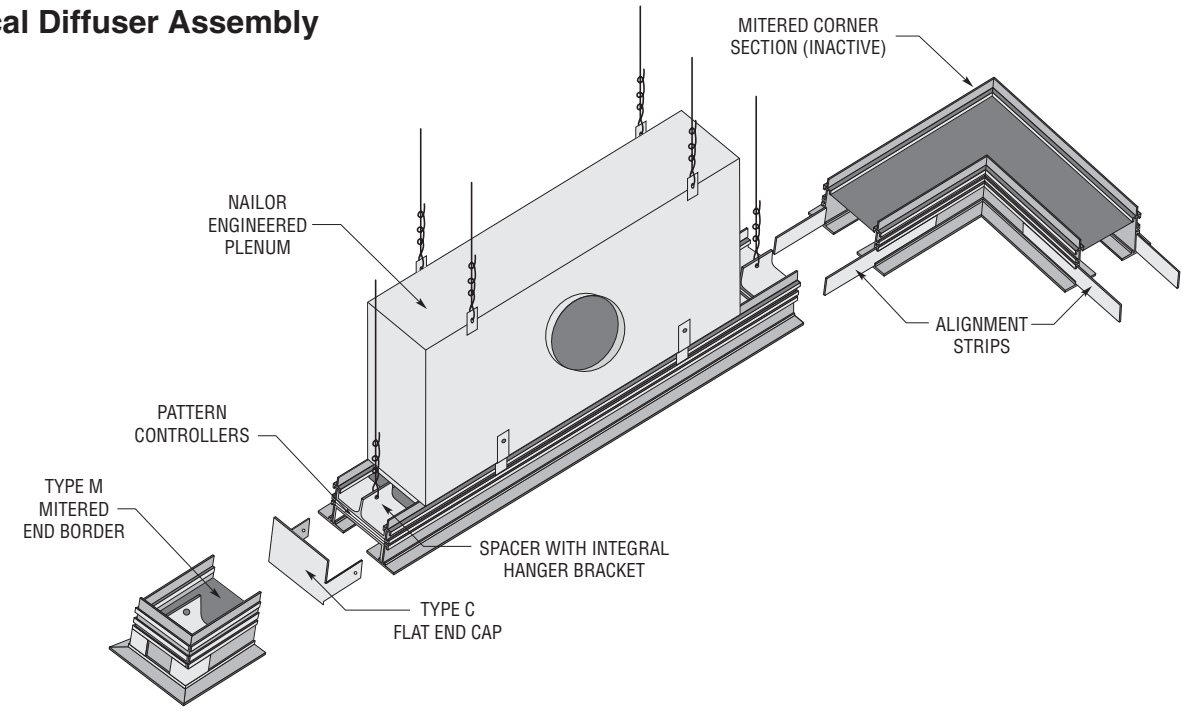
Insulated:

FLRI10 • 1" (25) Slot
FLRI15 • 1 1/2" (38) Slot
FLRI20 • 2" (51) Slot
FLRI25 • 2 1/2" (64) Slot
FLRI30 • 3" (76) Slot



No. of Slots	Slot Width	H Height
1	1 (25)	3 3/8 (86)
	1 1/2 (38)	3 3/8 (86)
	2 (51)	3 3/8 (86)
	2 1/2 (64)	3 3/8 (86)
	3 (76)	3 3/8 (86)
2	1 (25)	2 1/8 (54)
	1 1/2 (38)	3 1/8 (79)
	2 (51)	4 1/8 (105)
	2 1/2 (64)	5 1/8 (130)
	3 (76)	6 1/8 (156)

Typical Diffuser Assembly



- Diffuser sections can be joined end to end for long continuous runs.
- Type M Mitered End Borders provide a superior architectural finish. Type C End Caps close off the ends of the diffuser when terminating at a wall or other stop. Type C may be field installed.
- Alignment strips are factory supplied as standard on all multiple section assemblies to ensure close and positive alignment between sections.
- Nailor's optional engineered plenums ensure catalog performance and a trouble free sure fit installation.
- Unique integral hanger brackets provide independent hanging points and eliminate the need for field add-on hanger clips.

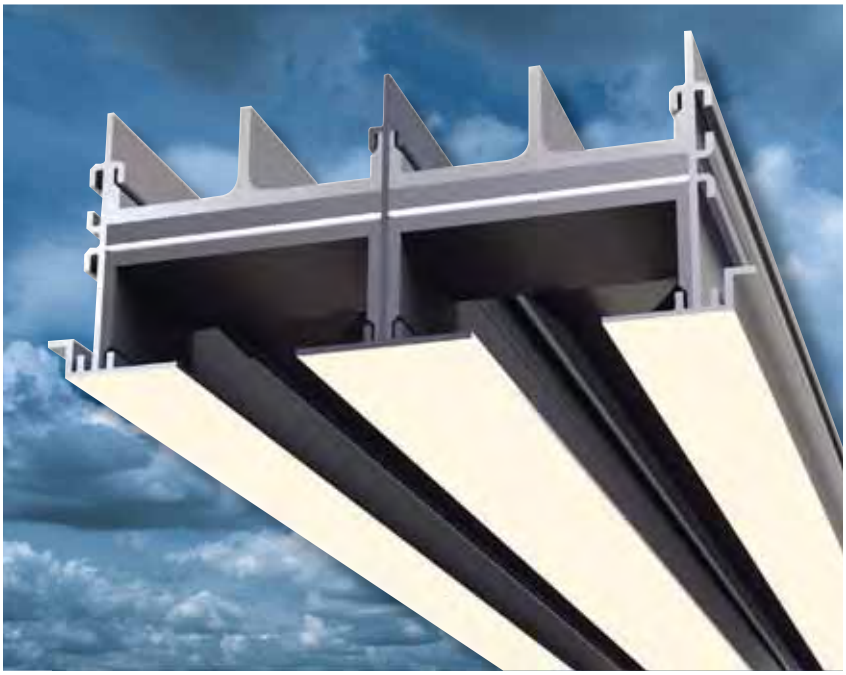
FLH OR FLV SERIES FOR TECHZONE™ TYPE CEILINGS

- HORIZONTAL HIGH THROW AND VERTICAL JET THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER
- STANDARD T-BAR & NARROW T-BAR FRAMES
- ALUMINUM

Models:

FLH10TZ 1" (25) Slot

FLV10TZ 1" (25) Slot



The FlowLine™ FL (H or V) 10TZ Series Continuous Slot Diffusers provide outstanding performance flexibility. Compatible with the Armstrong® TechZone™ and USG Logix™ Ceiling Systems, the crisp, clean lines of this linear slot diffuser are not only architecturally appealing but they integrate smoothly into the ceiling system, delivering a high performance VAV solution with 180° air pattern for true design flexibility. The adjustable pattern controllers, which are easily adjusted from the face, allow the discharge air to be directed to the left or right as well as downward. Ideally suited for applications such as open plan offices, computer rooms, corridors (walls-to-desk), auditoriums.

STANDARD FEATURES:

- Heavy duty extruded aluminum frame and spacers.
- Adjustable pattern controllers are corrosion resistant steel, constructed on 24" (610) centers as standard for maximum flexibility.
- Standard module lengths range from 24" (610) to 72" (1829).
- Available in 1" (25) slot width, choice of 1 slot with 4" (102) TechZone™ module or 2 slot with 6" (152) TechZone™ module.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are provided with alignment strips for continuous run applications.
- Linear over 144" (3658) long are supplied in equal section lengths.
- Ends are finished with Type CC Flat End Caps.
- Integral hanger brackets on 24" (610) centers are standard.

FRAME/BORDER STYLES:

- The FlowLine™ TechZone™ models are compatible with standard 15/16" (24) flat T-Bars (Flowline™ diffuser lays flush on the T-Bars) as well as 9/16" (14) flat tees that provide a tegular appearance and 9/16" (14) Bolt-Slot Fineline® Type regressed tees for a flush appearance with a tegular ceiling tile.

FINISH:

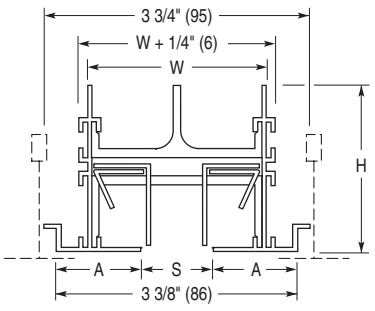
- Standard finish is AW Appliance White on exterior frame surfaces (optional finishes are available). Pattern controllers and interior surfaces are black on all models.
- Custom color and anodized finishes are available to suit architectural requirements.

STANDARD FRAME/BORDER STYLES

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL). TYPE LT 15/16" (24) STANDARD T-BAR.

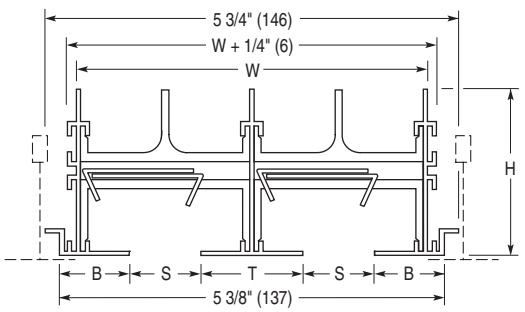
One Slot

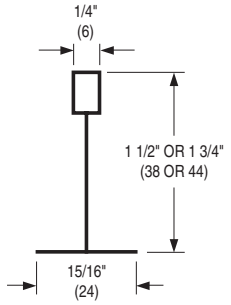
4" (102) Ceiling Module



Two Slot

6" (152) Ceiling Module



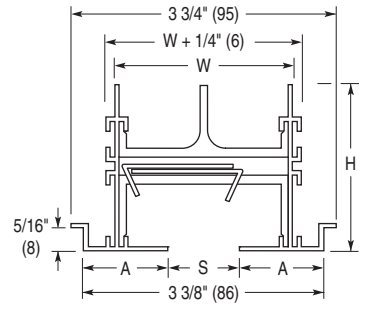


15/16" (24) Flat T-Bar Detail

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL). TYPE NT 9/16" (14) NARROW T-BAR.

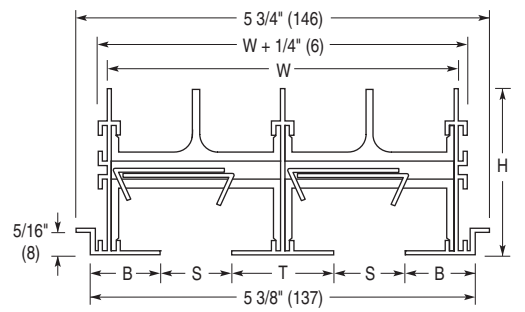
One Slot

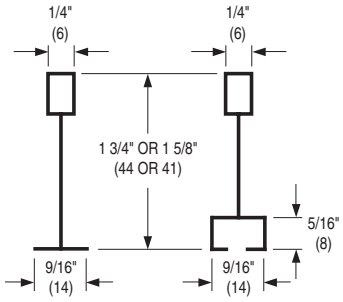
4" (102) Ceiling Module



Two Slot

6" (152) Ceiling Module





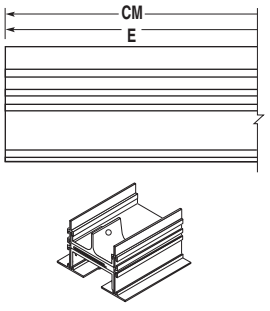
Flat Tee Detail Bolt-Slot Detail

Dimensional Data - Imperial (Metric) Units

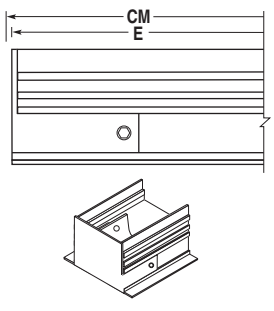
Model	S Slot Width	1 Slot W	2 Slot OW	Border Width A	Border Width B	H Height	T 2 Slot
FL(H or V)10TZ	1 (25)	2 1/2 (64)	4 15/16 (125)	1 3/16 (30)	31/32 (25)	2 3/8 (60)	1 7/16 (37)

End Condition

O Open End



C Flat End Cap



Type LT End Condition	Face Length E
CC	Ceiling Module – 1/4" (6)
OC	Ceiling Module – 1/8" (3)
OO	Ceiling Module

Type NT End Condition	Face Length E
CC	Ceiling Module – 5/8" (16)
OC	Ceiling Module – 5/16" (8)
OO	Ceiling Module

CM = Ceiling Module E = Overall Length

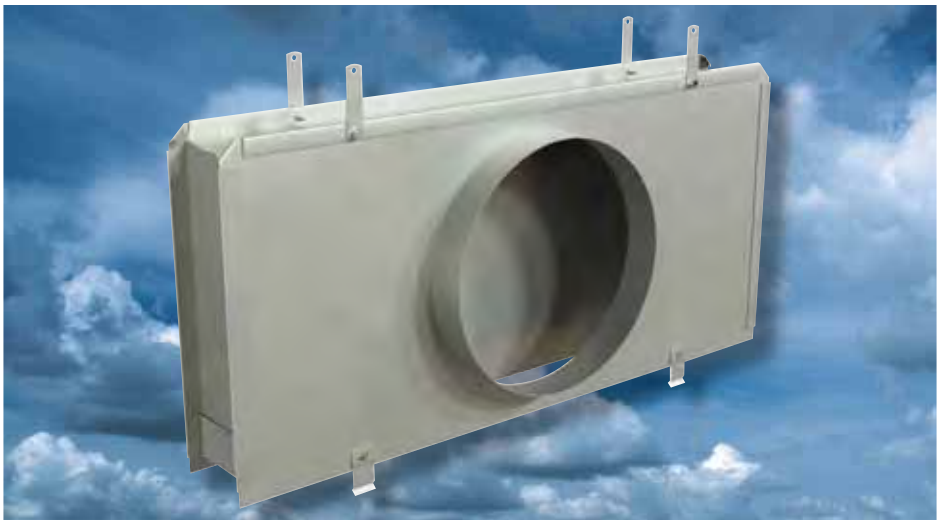
FLP SERIES

- SUPPLY AIR ENGINEERED PLENUMS FOR FLOWLINE™ LINEAR DIFFUSERS

Models:

FLP(I)10	**1" (25) Slot**
FLP(I)15	**1 1/2" (38) Slot**
FLP(I)20	**2" (51) Slot**
FLP(I)25	**2 1/2" (64) Slot**
FLP(I)30	**3" (76) Slot**

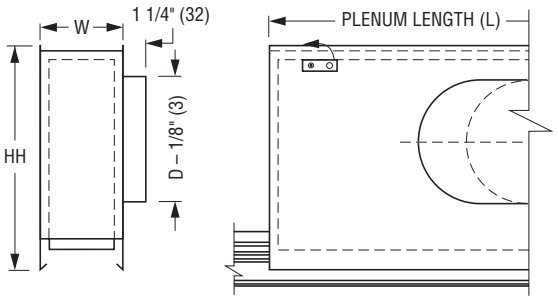
(I) Adds internal insulation.



The Nailor FLP Series engineered plenum boots are designed specifically for the FLH and FLV Series FlowLine™ Linear diffuser. These plenums are factory fabricated and tested to provide the engineer with proven catalog performance and the installing contractor with a labor saving, cost effective unit that provides for a fast, correct fit and easy field installation. FLP Series plenums are shipped loose from the factory. Uninsulated and insulated versions are available.

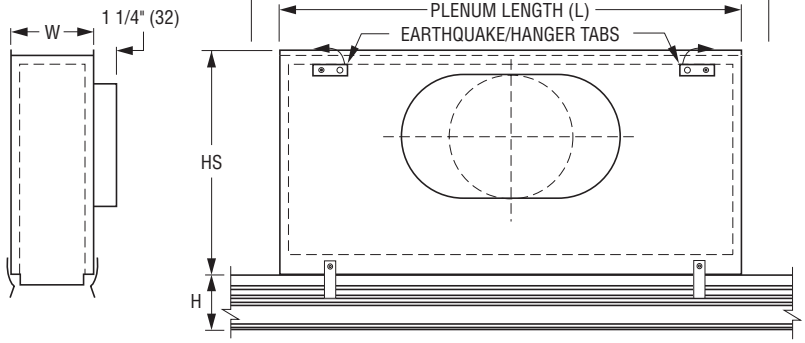
FLP Series plenums are available in two basic styles to suit the installation method. A straight leg version with spring clips is provided for direct attachment to the FlowLine™ diffuser neck. The diffuser and plenum are installed and attached directly to the ceiling structure prior to installation of the drywall or acoustic suspension ceiling and tiles. Plenums are provided as standard with hanger tabs. A hemmed leg version is available when it is desired to install the FlowLine™ diffuser after the hard gypsum board/drywall ceiling. The diffuser requires a frame/border style which includes a factory supplied concealed mounting bracket. The diffuser simply slides up through the ceiling opening until the mounting straps locate in the hem and is then secured through the slot face using the fastening screws provided.

HEMMED LEG (FOR CONCEALED MOUNTING BRACKET):



FOR USE WITH FRAME/BORDER TYPES AAC, CCC, CCCA
PLENUM HEIGHT (HH): ONE SLOT 12" (305), TWO SLOTS 18" (457)

STRAIGHT LEG (DIRECT ATTACHMENT):



FOR USE WITH FRAME/BORDER TYPES AA, CA, CC, CCA, CG, GG, KK, LT, NT
TECHZONE™ FRAME/BORDER TYPES LT & NT ARE AVAILABLE IN FLP10 & FLPI10 1" (25) SLOT ONLY
PLENUM HEIGHT (HS): ONE SLOT 10" (254), TWO SLOTS 16" (406)

Dimensional Data

Nominal Length	Actual Plenum Length (L) for Frame/Border Type		Available Inlet Sizes	
	AA, CA, CC, CCA, CG, GG, KK, LT, NT	AAC, CCC, CCCA	1 Slot	2 Slot
24 (610)	20 3/4 (527)	24 (610)	6 (152), 8 (203) Round 10 (254), 12 (305), 14 (356) Flat Oval*	6 (152), 8 (203), 10 (254), 12 (305), 14 (356) Round
30 (762)	26 3/4 (679)	30 (762)		
36 (914)	32 3/4 (832)	36 (914)		
48 (1219)	44 3/4 (1137)	48 (1219)		
60 (1524)	56 3/4 (1441)	60 (1524)		
72 (1829)	68 3/4 (1746)	72 (1829)		

Plenum Model	Width (W) for Frame/Border Type Noted			
	AA, CA, CC, CCA, CG, GG, KK, LT, NT		AAC, CCC, CCCA	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP(I)10	2 3/4 (70)	5 3/16 (132)	3 1/2 (89)	5 15/16 (151)
FLP(I)15	3 3/4 (95)	7 3/16 (183)	4 1/2 (114)	7 15/16 (202)
FLP(I)20	4 3/4 (121)	9 3/16 (233)	5 1/2 (140)	9 15/16 (252)
FLP(I)25	5 3/4 (146)	11 3/16 (284)	6 1/2 (165)	11 15/16 (303)
FLP(I)30	6 3/4 (171)	13 3/16 (335)	7 1/2 (191)	13 15/16 (354)

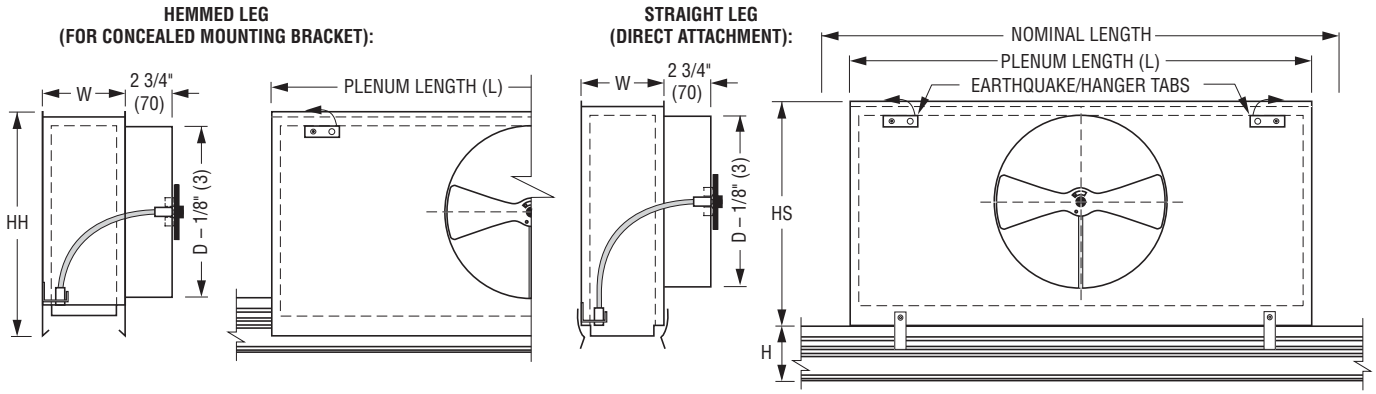
*** Equivalent Oval:** 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

FLP PLENUMS WITH IDCO OPTION (CABLE OPERATED INLET DAMPER)

The Nailor FLP Series engineered plenum boots with IDCO option (Cable Operated inlet damper) are designed specifically for the FLH and FLV Series FlowLine™ Linear diffuser. These plenums are factory fabricated and tested to provide the engineer with proven catalog performance and the installing contractor with a labor saving, cost effective unit that provides for a fast, correct fit and easy field installation. FLP Series plenums are shipped loose from the factory. Uninsulated and insulated versions are available.

The round inlet damper is Nailor's 4250 radial sliding blade design factory mounted on the inlet. A flexible rotary cable connects the damper to a Phillips head screw operator mounted inside the plenum that permits air balancing at the diffuser face.

FLP Series plenums are available in two basic styles to suit the installation method. A straight leg version with spring clips is provided for direct attachment to the FlowLine™ diffuser neck. The diffuser and plenum are installed and attached directly to the ceiling structure prior to installation of the drywall or acoustic suspension ceiling and tiles. Plenums are provided as standard with hanger tabs. A hemmed leg version is available when it is desired to install the FlowLine™ diffuser after the hard gypsum board/drywall ceiling. The diffuser requires a frame/border style which includes a factory supplied concealed mounting bracket. The diffuser simply slides up through the ceiling opening until the mounting straps locate in the hem and is then secured through the slot face using the fastening screws provided.



FOR USE WITH FRAME/BORDER TYPES AAC, CCC, CCCA

FOR USE WITH FRAME/BORDER TYPES AA, CA, CC, CCA, CG, GG, KK, LT, NT
TECHZONE™ FRAME/BORDER TYPES LT & NT ARE AVAILABLE IN FLP10 & FLPI10 1" (25) SLOT ONLY

Hemmed Leg (For concealed mounting bracket)
For use w/Frame/Border Types AAC, CCC, CCCA

Inlet Size D (Round)	Plenum Height HH	
	1 Slot	2 Slot
6 (152), 8 (203)	12 (305)	18 (457)
10 (254)	13 (330)	18 (457)
12 (305)	15 (381)	18 (457)
14 (356)	17 (432)	18 (457)

Straight Leg (Direct Attachment)
For use w/Frame/Border Types AA, CA, CC, CCA, CG, GG, KK, LT, NT

Inlet Size D (Round)	Plenum Height HS	
	1 Slot	2 Slot
6 (152), 8 (203)	10 (254)	16 (406)
10 (254)	13 (330)	16 (406)
12 (305)	15 (381)	16 (406)
14 (356)	17 (432)	17 (432)

Dimensional Data

Nominal Length	Actual Plenum Length (L) for Frame/Border Type	
	AA, CA, CC, CCA, CG, GG, KK, LT, NT	AAC, CCC, CCCA
24 (610)	20 3/4 (527)	24 (610)
30 (762)	26 3/4 (679)	30 (762)
36 (914)	32 3/4 (832)	36 (914)
48 (1219)	44 3/4 (1137)	48 (1219)
60 (1524)	56 3/4 (1441)	60 (1524)
72 (1829)	68 3/4 (1746)	72 (1829)

Plenum Model	Width (W) for Frame/Border Type Noted			
	AA, CA, CC, CCA, CG, GG, KK, LT, NT		AAC, CCC, CCCA	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP(I)10	2 3/4 (70)	5 3/16 (132)	3 1/2 (89)	5 15/16 (151)
FLP(I)15	3 3/4 (95)	7 3/16 (183)	4 1/2 (114)	7 15/16 (202)
FLP(I)20	4 3/4 (121)	9 3/16 (233)	5 1/2 (140)	9 15/16 (252)
FLP(I)25	5 3/4 (146)	11 3/16 (284)	6 1/2 (165)	11 15/16 (303)
FLP(I)30	6 3/4 (171)	13 3/16 (335)	7 1/2 (191)	13 15/16 (354)

CURVED FLOWLINE™

- FLH OR FLV SERIES
- CUSTOM CURVING FOR WALL / CEILING APPLICATIONS
- CONCAVE, CONVEX AND FLAT FACE CURVING OPTIONS
- 1 AND 2 SLOTS
- 1" (25) TO 3" (76) SLOT WIDTHS

Our expansive selection of FlowLine™ custom curving options will fufill the architect's most intricate designs. Curving is available for both the FLH Horizontal High Throw Pattern and FLV Jet Throw Pattern Model Series. Applications include Concave and Convex for both wall/ceiling and Flat Curve for ceiling applications. Nailor's most discreet and exposed frames options are available for curving. With our curving techniques and custom ordering support tools, the simplest of arches to the most complex design styles are achievable. Custom Curved Plenum Model Series FLP are also available. For further details and sizing information for custom curving; contact your local Nailor representative or go to www.nailor.com for a detailed submittal drawing.

STANDARD FEATURES:

- Heavy duty extruded aluminum rame and spacers.
- Pattern controllers are corrosion-resistant steel.*
- Standard Frame Styles A, C and G are available.
- End border include Flanged, Flat and Open styles.

SUPPLY AIR PLENUMS:

- Model Series FLP(I) custom curved plenum boots are available.

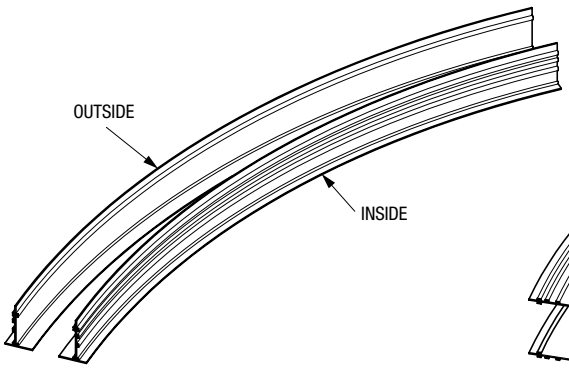
FINISH:

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available.

CURVE TYPE:

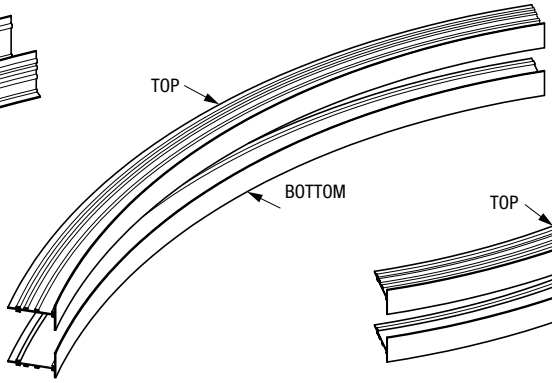
FLT – Flat Face Curve

- Ceiling Applications



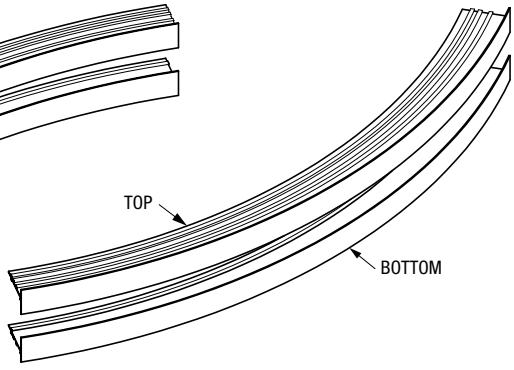
CAV – Concave Face Curve

- Wall / Ceiling Applications



VEX – Convex Face Curve

- Wall / Ceiling Applications

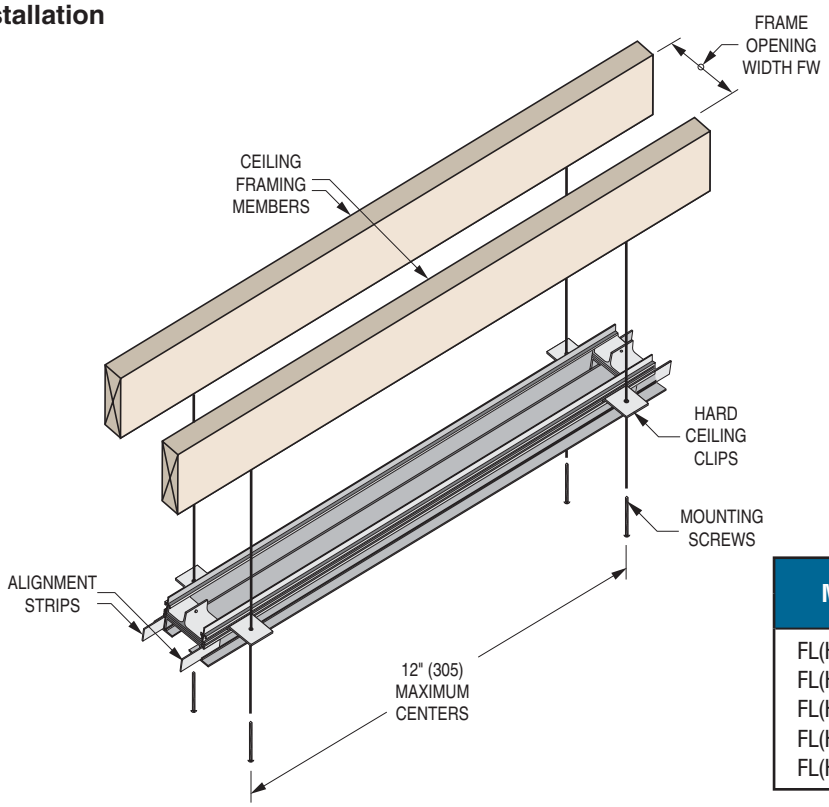


Minimum Radius:

Models	Slot Width	Flat Face				Concave & Convex	
		Frame Types AA & GG		Frame Type CC		Frame Types AA, CC & GG	
		1 Slot	2 Slot	1 Slot	2 Slot	1 Slot	2 Slot
FLH10, FLV10	1 (25)	30 (762)	30 (762)	40 (1016)	40 (1016)	60 (1524)	60 (1524)
FLH15, FLV15	1 1/2 (38)	30 (762)	30 (762)	40 (1016)	40 (1016)	60 (1524)	60 (1524)
FLH20, FLV20	2 (51)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
FLH25, FLV25	2 1/2 (64)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
FLH30, FLV30	3 (76)	60 (1524)	60 (1524)	60 (1524))	60 (1524)	60 (1524))	60 (1524)

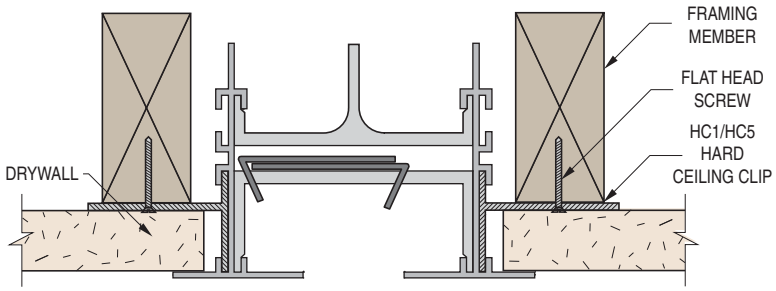
HARD CEILING APPLICATION AND INSTALLATION METHODS

Typical Installation

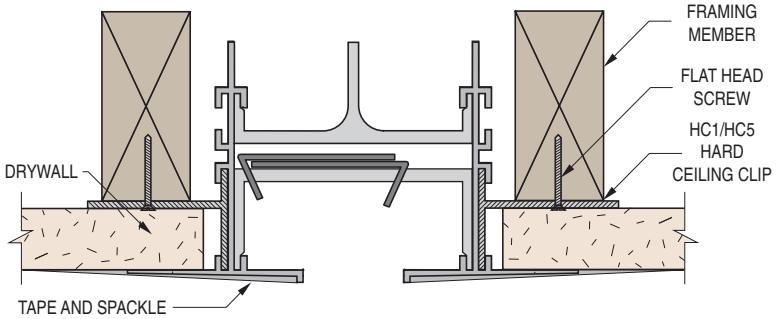


Model	Frame Opening Width FW	
	1 Slot	2 Slot
FL(H or V)10	3 1/4 (83)	5 3/4 (146)
FL(H or V)15	4 1/4 (108)	7 3/4 (197)
FL(H or V)20	5 1/4 (133)	9 3/4 (248)
FL(H or V)25	6 1/4 (159)	11 3/4 (298)
FL(H or V)30	7 1/4 (184)	13 3/4 (349)

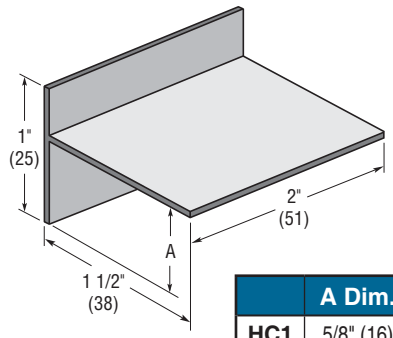
Exposed Flange Frame Type AA



Concealed Tapered Frame Type CC



HC1 Hard Ceiling Clip 5/8" (16) HC5 Hard Ceiling Clip 1/2" (13)

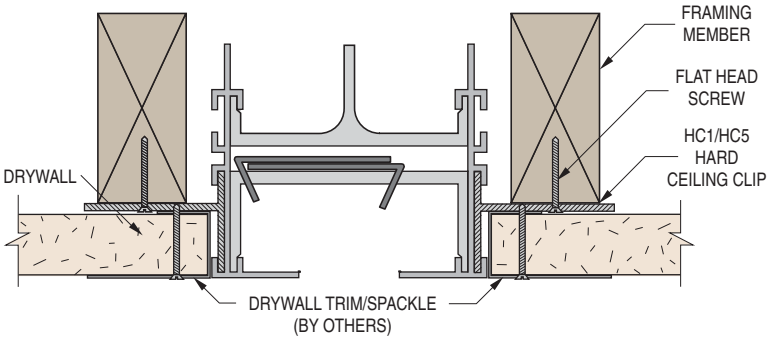


	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

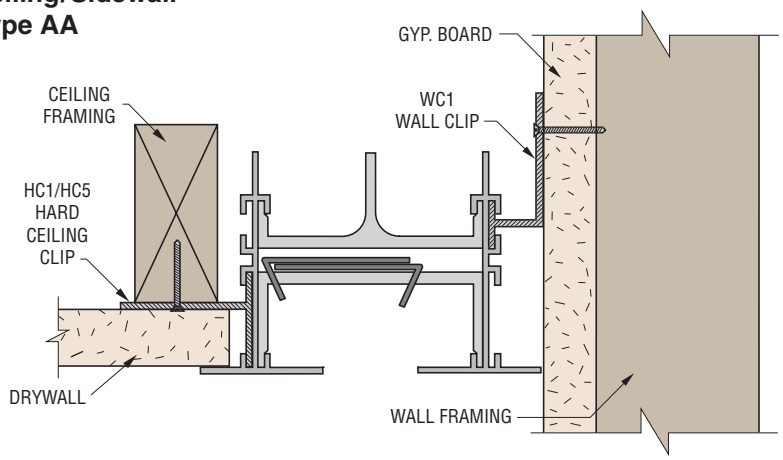
The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Types AA, CC or GG, where 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

HARD CEILING APPLICATION AND INSTALLATION METHODS

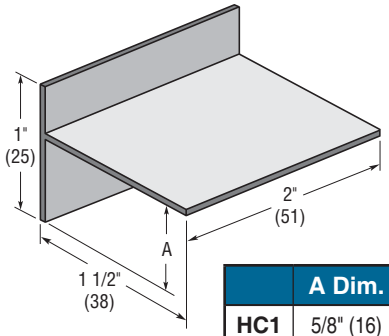
Flangeless Flush Frame Type GG



Ceiling/Sidewall Type AA



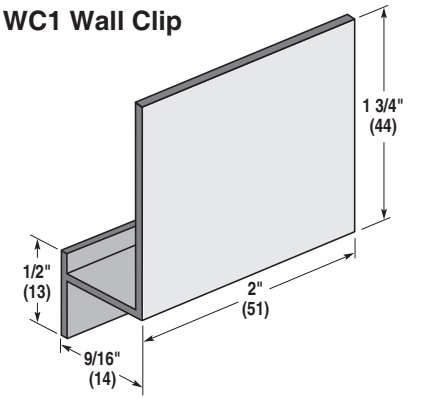
HC1 Hard Ceiling Clip 5/8" (16)
HC5 Hard Ceiling Clip 1/2" (13)



	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Type GG, where standard 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

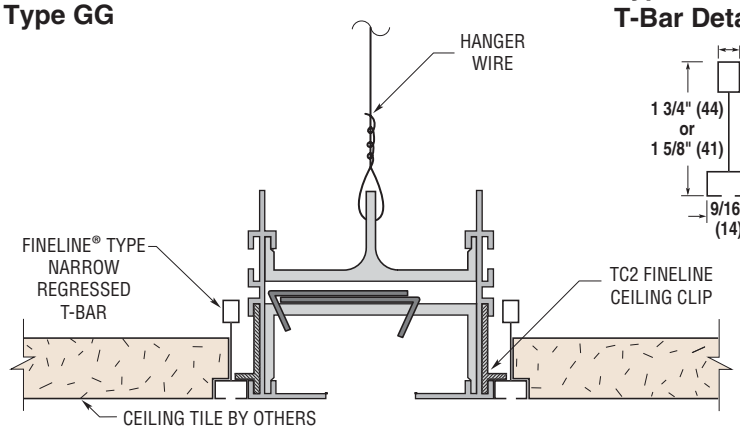
WC1 Wall Clip



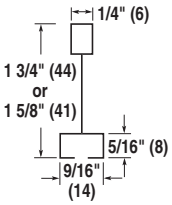
The WC1 Wall Clip is used to mount the FlowLine™ assembly with Frame/Border Type AA flush to a wall.

NARROW REGRESSED T-BAR CEILING SUSPENSION SYSTEM
(COMMONLY REFERRED TO AS BOLT-SLOT OR FINELINE® T-BAR)

Flangeless Frame Type GG

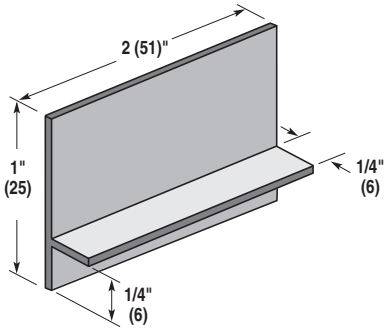


Typical Regressed T-Bar Detail



USG 'Donn® Fineline®', Rockfon® 'Ultraline™' and Armstrong 'Silhouette' are three common examples of compatibility.

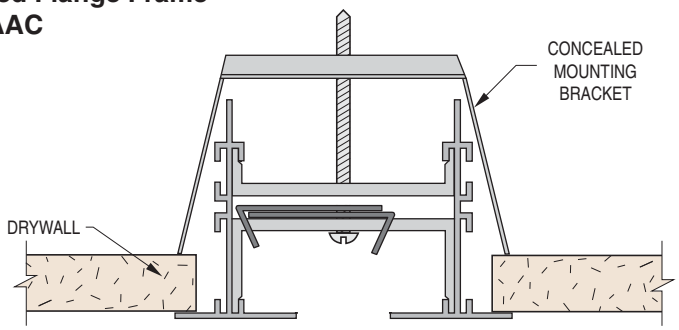
TC2 Fineline® T-Bar Clip



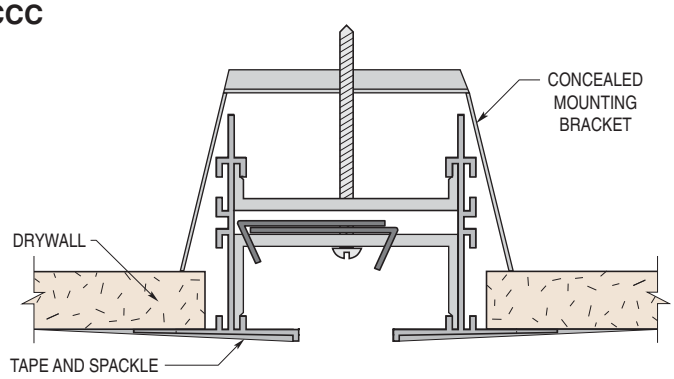
The TC2 Fineline® T-Bar Clips are used to support and level the FlowLine™ assembly in Bolt-Slot (Fineline® Type) suspension systems.

HARD CEILING APPLICATION AND INSTALLATION METHODS

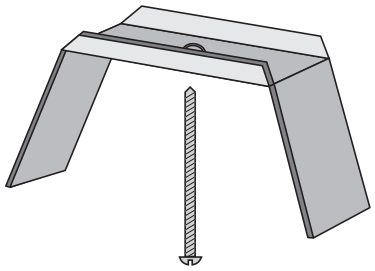
Exposed Flange Frame Type AAC



Concealed Tapered Frame with Concealed Mounting Brackets Type CCC



FLCMB Concealed Mounting Bracket

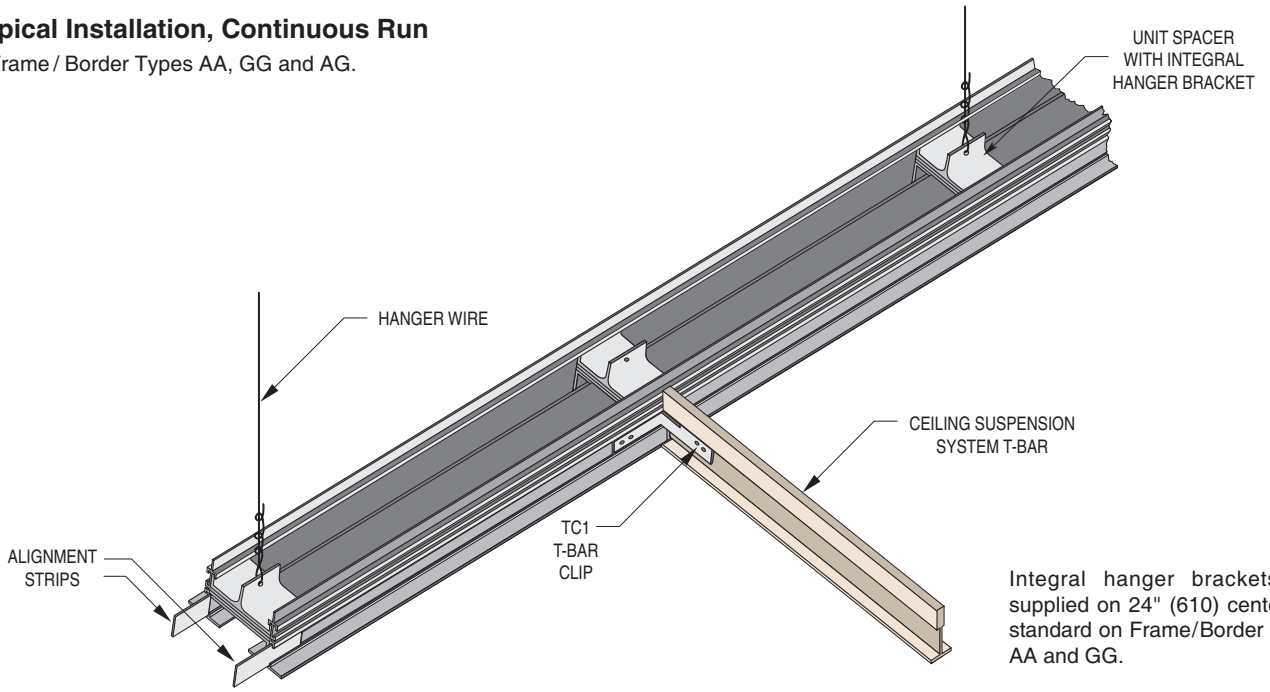


Supplied as standard with Frame/Border Types AAC, CCC and CCCA.

T-BAR CEILING SUSPENSION SYSTEM APPLICATION AND INSTALLATION METHODS

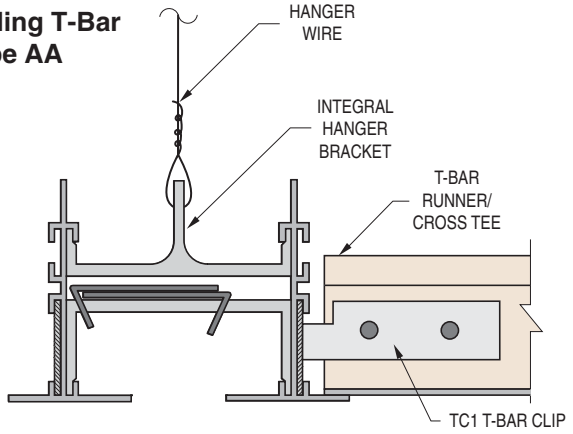
Typical Installation, Continuous Run

- Frame / Border Types AA, GG and AG.

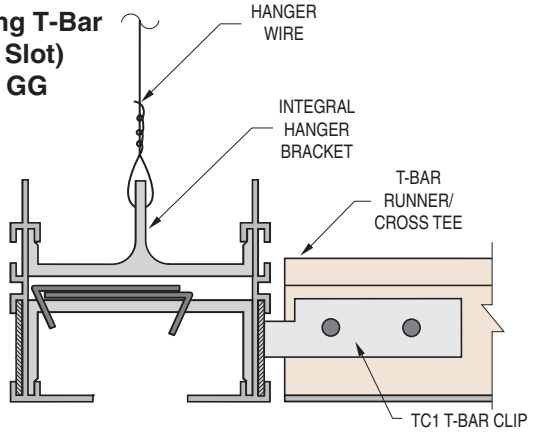


Integral hanger brackets are supplied on 24" (610) centers as standard on Frame/Border Types AA and GG.

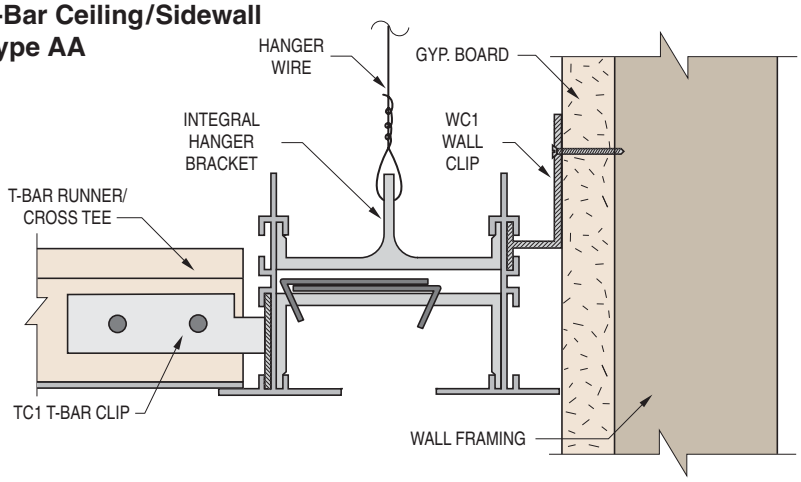
Ceiling T-Bar Type AA



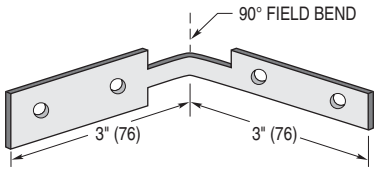
Ceiling T-Bar (Bolt Slot) Type GG



T-Bar Ceiling/Sidewall Type AA



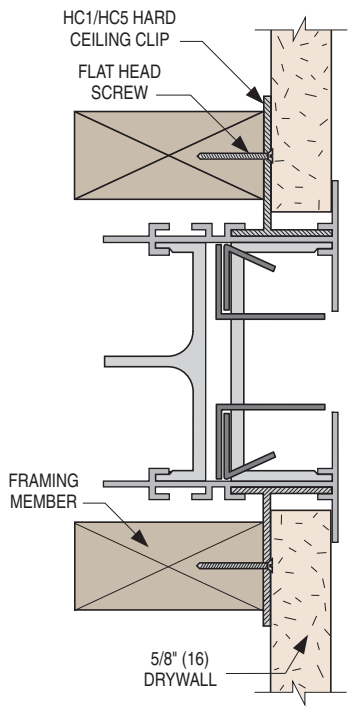
TC1 T-Bar Clip (field formed)



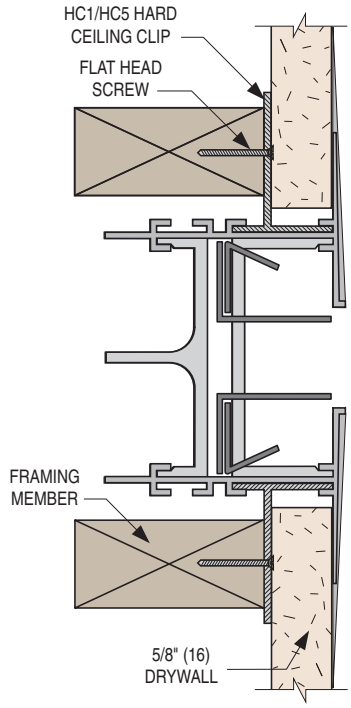
The TC1 T-Bar Clip is used to attach drop tees to the FlowLine™ assembly.

SIDEWALL APPLICATION AND INSTALLATION METHODS

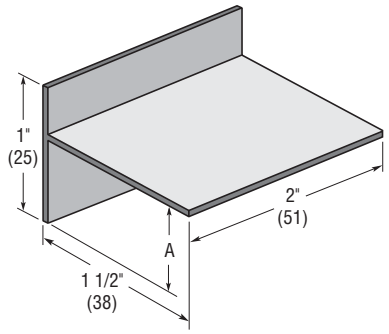
Exposed Flange Frame Type AA



Concealed Tapered Frame Type CC



HC1 Hard Ceiling Clip 5/8" (16) HC5 Hard Ceiling Clip 1/2" (13)

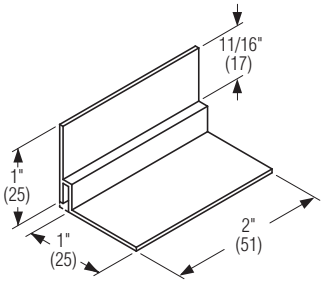


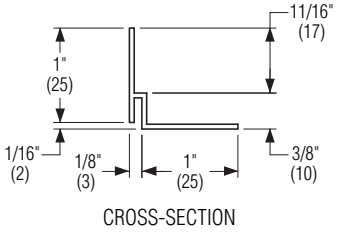
	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Types AA or CC, where 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

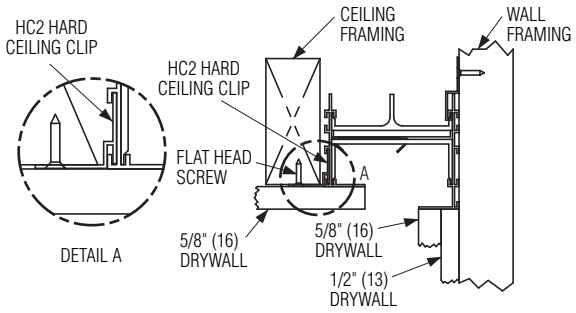
SIDEWALL APPLICATION AND INSTALLATION METHODS

Mounting Clips
HC2 Hard Ceiling Clip



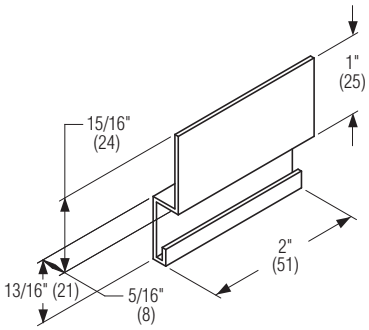


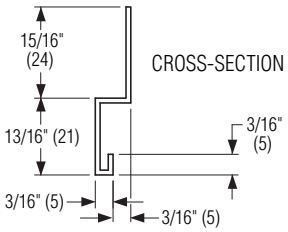
The HC2 Hard Ceiling Clip can be used to mount the FlowLine™ assembly with frame/border type **G**, where standard 5/8" (16) gypsum wallboard (drywall) is installed below the frame face.



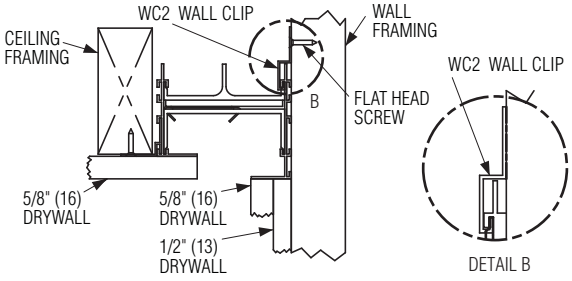
Flangeless Concealed Frame Type GJ

Mounting Clips
WC2 Wall Clip



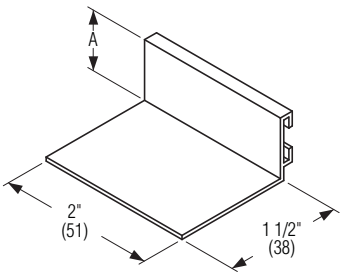


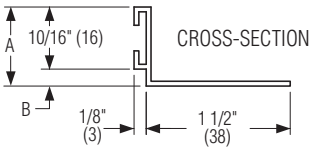
The WC2 Wall Clip can be used to mount the FlowLine™ assembly with frame/border types **G** or **J**, flush to a wall.



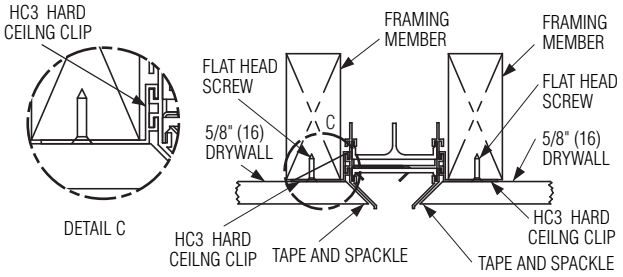
Flangeless Concealed Frame Type GJ

Mounting Clips
HC3 Hard Ceiling Clip for Type K Border





The HC3 Hard Ceiling Clip can be used to mount the FlowLine™ assembly with frame/border type **K**, where standard 5/8" (16) gypsum wallboard (drywall) is used.



Flangeless Concealed Frame Type KK

Flowline	Part No.	A Dim.	B Dim.
FLH10	HC3-10	13/16 (21)	3/16 (5)
FLH15	HC3-15	1 1/16 (27)	7/16 (11)
FLH20	HC3-20	1 5/16 (33)	11/16 (17)

FT SERIES

- LAY-IN UNITS FOR T-BAR SUSPENSION CEILING SYSTEMS
- COMPLETE WITH ENGINEERED PLENUM
- CHOICE OF HORIZONTAL OR VERTICAL PATTERN CONTROLLERS

Horizontal High Throw Models:

Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FTH(I)10	**1" (25) Slot**
FTH(I)15	**1 1/2" (38) Slot**
FTH(I)20	**2" (51) Slot**
FTH(I)25	**2 1/2" (64) Slot**
FTH(I)30	**3" (76) Slot**

Bolt-Slot (Fineline® Type) T-Bar

FTBH(I)10	**1" (25) Slot**
FTBH(I)15	**1 1/2" (38) Slot**
FTBH(I)20	**2" (51) Slot**
FTBH(I)25	**2 1/2" (64) Slot**
FTBH(I)30	**3" (76) Slot**

Vertical Jet Throw Models:

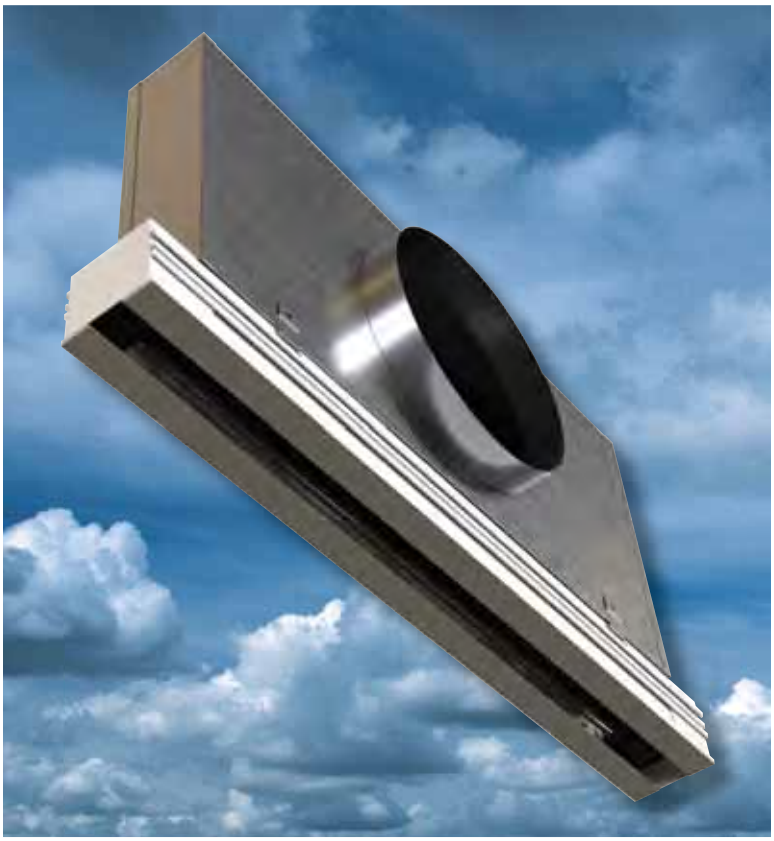
Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FTV(I)10	**1" (25) Slot**
FTV(I)15	**1 1/2" (38) Slot**
FTV(I)20	**2" (51) Slot**
FTV(I)25	**2 1/2" (64) Slot**
FTV(I)30	**3" (76) Slot**

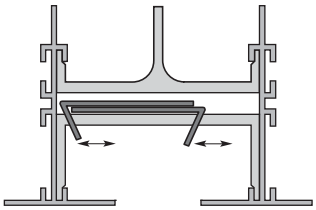
Bolt-Slot (Fineline® Type) T-Bar

FTBV(I)10	**1" (25) Slot**
FTBV(I)15	**1 1/2" (38) Slot**
FTBV(I)20	**2" (51) Slot**
FTBV(I)25	**2 1/2" (64) Slot**
FTBV(I)30	**3" (76) Slot**

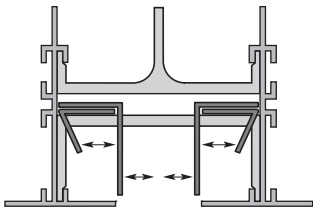
(I) Adds internal insulation.



Pattern Controller Options



FTH Series
Horizontal High Throw Design



FTV Series
Vertical Jet Throw Design

The FT Series is a modular version of Nailor's FlowLine™ Linear Diffuser System. The FT Series is available in various discrete lengths for installation in lay-in type suspended ceiling grid systems. They are available for both Imperial and Metric ceiling grids. These diffusers are manufactured to fit standard ceiling grid modules and provide quick and easy installation. The units are provided with factory mounted engineered plenums and are normally individually suspended by either integral hanger brackets at each end of the diffuser and/or hanger straps on the plenum. Relocation is easy for office layout and tenant improvement changes.

The high induction characteristics of the FTH Series Horizontal High Throw pattern controller option make it an excellent choice for variable air volume systems. The FTV Series Vertical Jet Throw option is ideally suited to perimeter glass curtain wall applications.

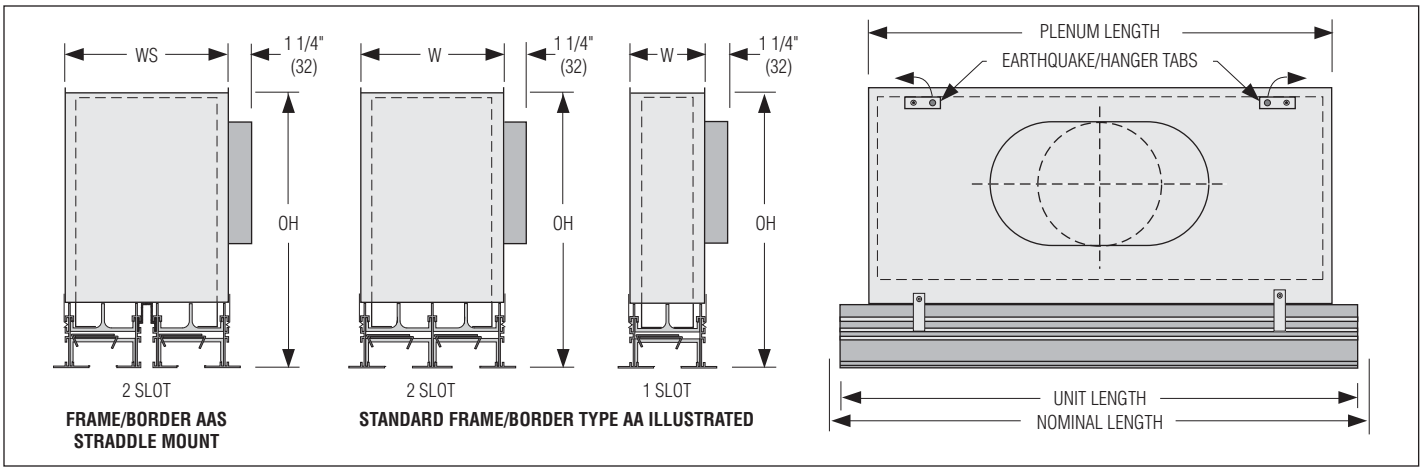
These units are also suitable for return air applications. Return models are available and supplied without plenum (Models FTHR and FTBHR). Supplied with horizontal type dual pattern controllers for system balancing.

STANDARD FEATURES:

- Available in 24" (610), 48" (1219) and 60" (1524) nominal lengths (FTH and FTV series models).
- Available in 600 mm, 1200 mm and 1500 mm nominal lengths for Metric Suspension Ceiling Systems (FTH and FTV series models).
- Standard slot widths are 1" (25), 1 1/2" (38) and 2" (51).
- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Horizontal or vertical throw pattern controller options.
- Supply models are complete with an integral engineered plenum. Optional internal insulation is available.
- Various Frame/Border styles are available to integrate with most ceiling systems.
- Units are supplied with flat end caps.
- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.

FT SERIES • 9/16" (14) OR 15/16" (24) FLAT T-BAR

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).



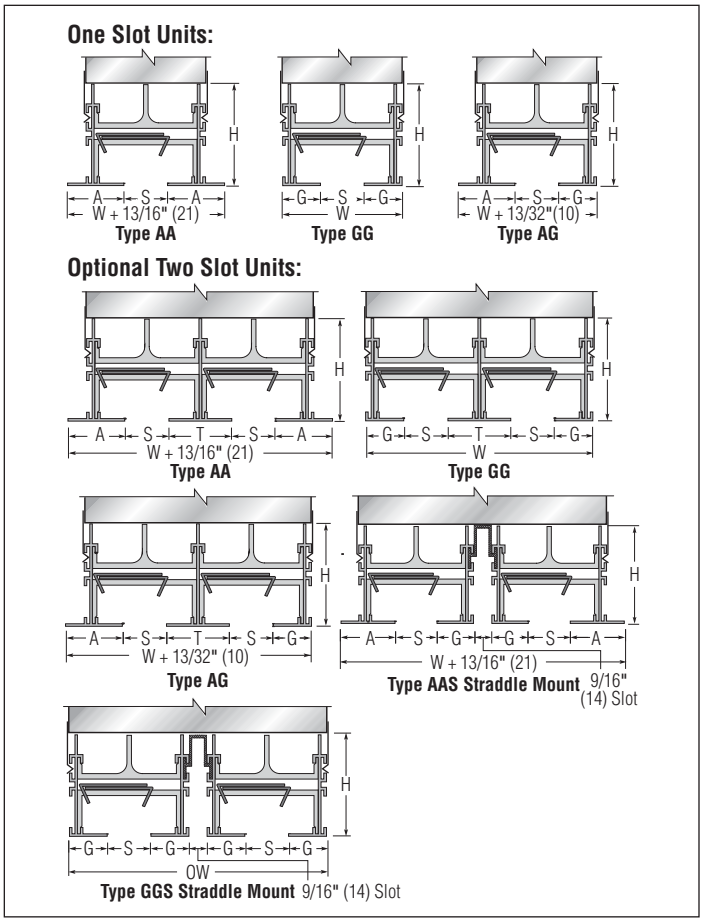
Dimensional Data (Imperial Grids)

Nominal Length	Unit Length	Plenum Length	Available Inlet Sizes	
			1 Slot	2 Slot
24 (610) 48 (1219) 60 (1524)	23 3/4 (603) 47 3/4 (1213) 59 3/4 (1518)	20 3/4 (527) 44 3/4 (1137) 56 3/4 (1441)	6 (152), 8 (203) Round 10 (254), 12(305), 14 (356) Flat Oval*	6 (152), 8 (203), 10 (254), 12 (305), 14 (356) Round

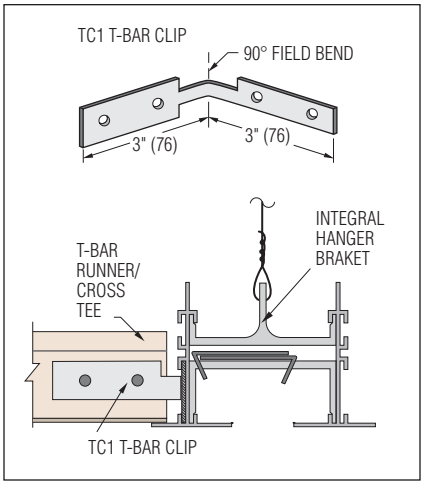
FT Series Model	1 Slot		2 Slot		
	W	OH	W	WS	OH
FT(H or V)(I)10	2 3/4 (70)	12 3/8 (314)	5 3/16 (132)	6 1/16 (154)	18 3/8 (467)
FT(H or V)(I)15	3 3/4 (95)	12 5/8 (321)	7 3/16 (183)	8 1/16 (205)	18 5/8 (473)
FT(H or V)(I)20	4 3/4 (121)	12 7/8 (327)	9 3/16 (233)	10 1/16 (256)	18 7/8 (479)
FT(H or V)(I)25	5 3/4 (146)	13 1/8 (333)	11 3/16 (284)	12 1/16 (306)	19 1/8 (486)
FT(H or V)(I)30	6 3/4 (171)	13 3/8 (340)	13 3/16 (335)	14 1/16 (357)	19 3/8 (492)

*** Equivalent Oval:** 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

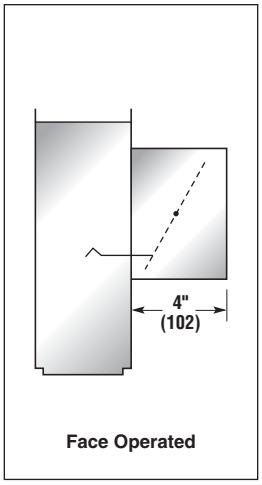
AVAILABLE FT SERIES BORDER TYPES



OPTIONAL MOUNTING HARDWARE



OPTIONAL ID INLET DAMPER

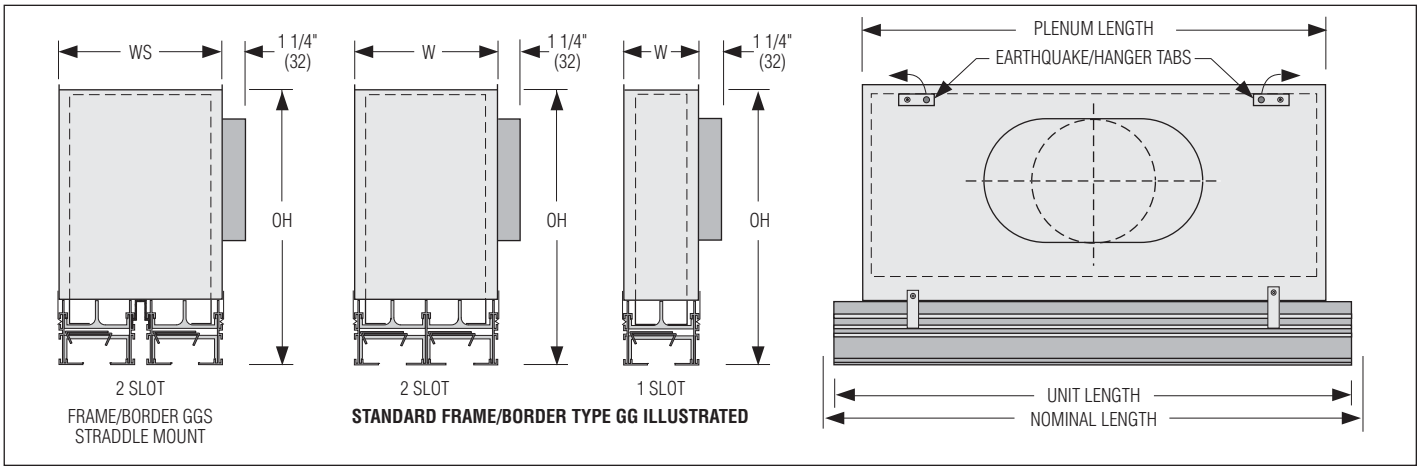


Dimensional Data - Imperial (Metric) Units

FT Series Model	S Slot Width	A Border Width	G Border Width	H Height	T 2 Slot
FT(H or V)(I)10	1 (25)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FT(H or V)(I)15	1 1/2 (38)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FT(H or V)(I)20	2 (51)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FT(H or V)(I)25	2 1/2 (64)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FT(H or V)(I)30	3 (76)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

FTB SERIES • BOLT-SLOT (FINELINE® TYPE) T-BAR

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).



Dimensional Data (Imperial Grids)

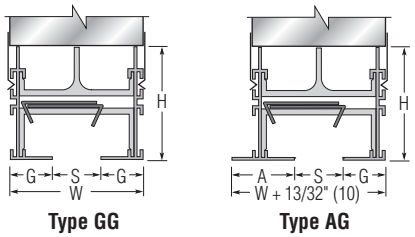
Nominal Length	Unit Length	Plenum Length	Available Inlet Sizes	
			1 Slot	2 Slot
24 (610) 48 (1219)	23 3/8 (594) 47 3/8 (1203)	20 3/8 (518) 44 3/8 (1127)	6 (152), 8 (203) Round 10 (254), 12(305), 14 (356) Flat Oval*	6 (152), 8 (203), 10 (254), 12 (305), 14 (356) Round

FTB Series Model	1 Slot		2 Slot		
	W	OH	W	WS	OH
FTB(H or V)(I)10	2 3/4 (70)	12 3/8 (314)	5 3/16 (132)	6 1/16 (154)	18 3/8 (467)
FTB(H or V)(I)15	3 3/4 (95)	12 5/8 (321)	7 3/16 (183)	8 1/16 (205)	18 5/8 (473)
FTB(H or V)(I)20	4 3/4 (121)	12 7/8 (327)	9 3/16 (233)	10 1/16 (256)	18 7/8 (479)
FTB(H or V)(I)25	5 3/4 (146)	13 1/8 (333)	11 3/16 (284)	12 1/16 (306)	19 1/8 (486)
FTB(H or V)(I)30	6 3/4 (171)	13 3/8 (340)	13 3/16 (335)	14 1/16 (357)	19 3/8 (492)

*** Equivalent Oval:** 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

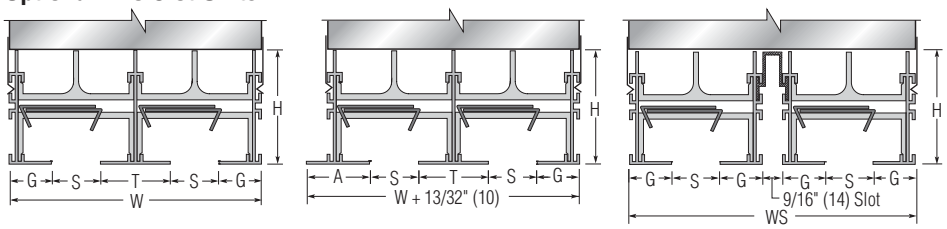
AVAILABLE FTB SERIES BORDER TYPES

One Slot Units:



Type GG Type AG

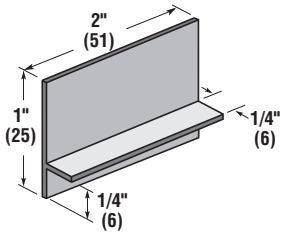
Optional Two Slot Units:



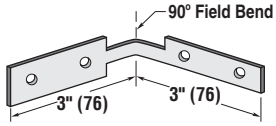
Type GG Type AG Type GGS Straddle Mount

MOUNTING HARDWARE

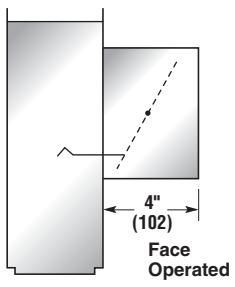
TC2 Fineline® T-Bar Clip (Standard)



TC1 T-Bar Clip (Optional)



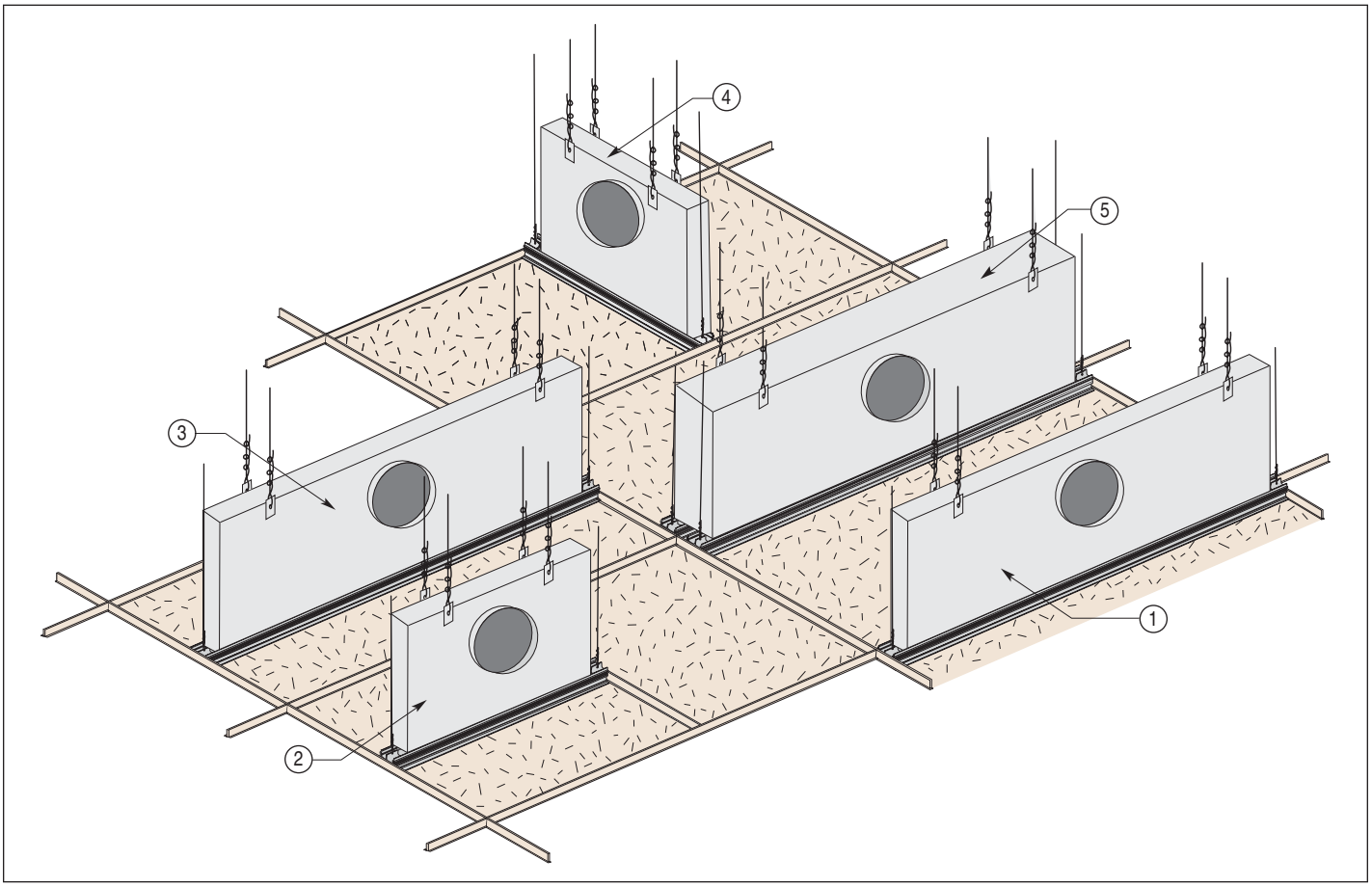
OPTIONAL ID INLET DAMPER



Dimensional Data - Imperial (Metric) Units

FTB Series Model	S Slot Width	A Border Width	G Border Width	H Height	T 2 Slot
FTB(H or V)(I)10	1 (25)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FTB(H or V)(I)15	1 1/2 (38)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FTB(H or V)(I)20	2 (51)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FTB(H or V)(I)25	2 1/2 (64)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FTB(H or V)(I)30	3 (76)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

TYPICAL FT SERIES APPLICATION • T-BAR CEILING SUSPENSION SYSTEMS



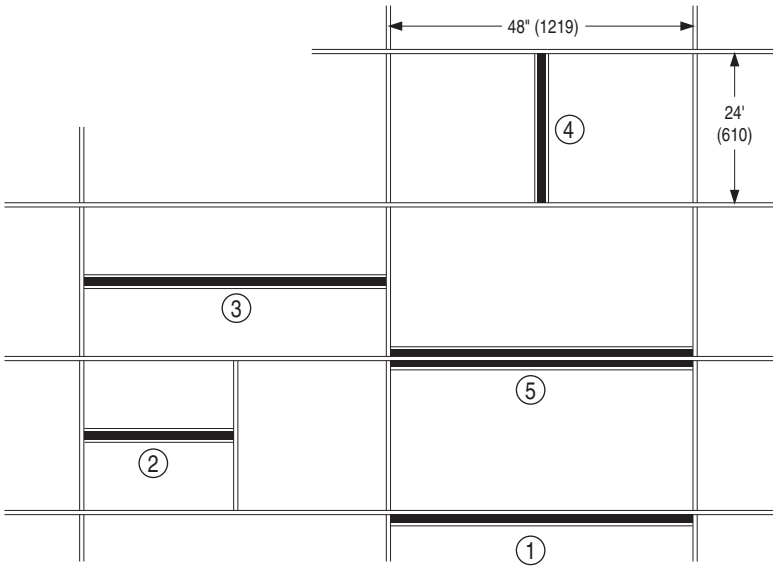
DESCRIPTION:

1. Nominal 4 ft. (1219) unit installed alongside a main runner.
2. 2 ft. (610) unit installed parallel to and mid-way between main runners.
3. Nominal 4 ft. (1219) unit installed mid-way between main runners.
4. 2 ft. (610) unit installed perpendicular to main runners.
5. Nominal 4 ft. (1219) two slot unit straddling a main runner.

Notes:

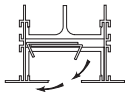
Frame/Border style should be carefully selected to ensure compatibility with specific ceiling grid suspension system and desired visual appearance. Type A Flange Border can lie on flat T-Bar or support cut ceiling tile. Type G Flangeless Border requires a supplementary cross tee for support in 15/16" (24) or 9/16" (14) flat T-Bar applications. In Bolt Slot (Fineline® Type) applications, utilizing Type G Flangeless Border, optional TC2 Fineline® T-Bar Clips are recommended to support and level the unit. Bolt slot ceiling system grids are usually 2 ft. x 2 ft. (610 x 610) modules. Cross notches on 4 ft. (1219) units are not available. Modification of ceiling grid and field cutting of ceiling tiles will be required.

Reflected Ceiling Plan 2 ft. x 4 ft. (610 x 1219) T-Bar Grid



PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH (10, 15, 20, 25 & 30) • CONTINUOUS PRESSURIZED PLENUM



1" Slot Width	1 Slot	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.013	.039	.080	.135	.205	.289	.387
		Noise Criteria	<15	<15	23	30	36	42	45
		Throw	4-6-12	7-11-16	10-14-20	13-16-22	15-18-25	16-20-27	17-21-30
	2 Slot	Airflow, CFM/FT.	40	70	100	130	160	190	220
		Static Pressure	.013	.039	.080	.135	.205	.289	.387
		Noise Criteria	<15	<15	25	33	39	45	48
		Throw	5-8-17	10-15-24	15-20-29	17-22-32	19-25-35	20-28-38	22-30-40
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	25	40	55	70	85	100	115
		Static Pressure	.011	.029	.054	.089	.130	.180	.237
		Noise Criteria	<15	<15	17	25	31	36	40
		Throw	5-8-12	9-12-17	12-15-20	14-17-22	15-18-25	16-20-28	17-21-30
	2 Slot	Airflow, CFM/FT.	55	80	105	130	155	180	205
		Static Pressure	.014	.029	.049	.076	.108	.145	.189
		Noise Criteria	<15	<15	16	26	31	35	39
		Throw	8-12-19	12-17-25	15-20-29	17-22-31	20-26-35	21-27-39	23-30-40
2" Slot Width	1 Slot	Airflow, CFM/FT.	25	45	65	85	105	125	145
		Static Pressure	.007	.021	.044	.075	.115	.163	.219
		Noise Criteria	<15	<15	19	24	32	38	43
		Throw	4-8-13	8-12-18	11-16-22	14-19-26	16-21-30	17-22-31	20-24-34
	2 Slot	Airflow, CFM/FT.	45	85	125	165	205	245	285
		Static Pressure	.005	.019	.042	.073	.113	.161	.218
		Noise Criteria	<15	<15	19	26	34	40	45
		Throw	4-9-15	11-16-25	16-21-29	21-26-37	23-28-40	26-31-42	27-32-44
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	55	80	105	130	155	180
		Static Pressure	.009	.031	.065	.113	.173	.245	.331
		Noise Criteria	<15	<15	18	25	30	34	39
		Throw	3-7-16	9-14-21	13-18-26	15-20-29	18-22-33	20-25-36	21-27-39
	2 Slot	Airflow, CFM/FT.	60	105	150	195	240	285	330
		Static Pressure	.009	.028	.057	.097	.147	.207	.278
		Noise Criteria	<15	<15	21	27	32	37	41
		Throw	7-12-22	13-19-28	19-24-35	22-27-39	25-31-44	27-33-48	29-36-51
3" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.008	.033	.074	.131	.205	.296	.403
		Noise Criteria	<15	<15	15	24	30	35	40
		Throw	3-6-15	10-14-22	14-19-27	17-23-32	19-25-35	22-27-39	24-29-42
	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.008	.033	.074	.131	.205	.296	.403
		Noise Criteria	<15	<15	18	27	33	38	43
		Throw	4-9-20	12-20-31	19-26-38	24-31-44	27-34-48	30-37-53	32-40-57

NC Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 5	+ 6	+ 7	+ 8	+ 11

Throw Correction Factors for Various Lengths

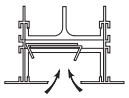
Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.00	1.25	1.40	1.55	1.70

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Throw data is based on active sections 4 ft. (1219) long. For other lengths, use the correction factor table above.
5. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above.
6. Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • RETURN AIR APPLICATIONS

MODELS: FLH (10, 15, 20, 25 & 30)



1" Slot Width	1 Slot	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.014	.043	.088	.149	.226	.318	.426
		Noise Criteria	<15	<18	26	33	39	45	48
	2 Slot	Airflow, CFM/FT.	40	70	100	130	160	190	220
		Static Pressure	.014	.043	.088	.149	.226	.318	.426
		Noise Criteria	<15	<19	28	36	42	48	51
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	25	40	55	70	85	100	115
		Static Pressure	.012	.032	.059	.098	.143	.198	.261
		Noise Criteria	<15	<15	20	28	34	39	43
	2 Slot	Airflow, CFM/FT.	55	80	105	130	155	180	205
		Static Pressure	.015	.032	.054	.084	.119	.160	.208
		Noise Criteria	<15	<15	19	29	34	38	42
2" Slot Width	1 Slot	Airflow, CFM/FT.	25	45	65	85	105	125	145
		Static Pressure	.008	.023	.048	.083	.127	.179	.241
		Noise Criteria	<15	<15	22	27	35	41	46
	2 Slot	Airflow, CFM/FT.	45	85	125	165	205	245	285
		Static Pressure	.006	.021	.046	.080	.124	.177	.240
		Noise Criteria	<15	<15	22	29	37	43	48
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	55	80	105	130	155	180
		Static Pressure	.010	.034	.074	.124	.190	.270	.364
		Noise Criteria	<15	<15	21	28	33	37	42
	2 Slot	Airflow, CFM/FT.	60	105	150	195	240	285	330
		Static Pressure	.010	.031	.063	.107	.162	.228	.306
		Noise Criteria	<15	<15	24	30	35	40	44
3" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.009	.036	.081	.144	.226	.326	.443
		Noise Criteria	<15	<15	18	27	33	38	43
	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.009	.036	.081	.144	.226	.326	.443
		Noise Criteria	<15	<15	22	30	36	41	46

NC Correction Factors for Various Lengths

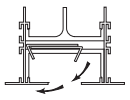
Length (ft.)	2	4	6	8	9	10	15
Return	- 3	0	+ 1	+ 2	+ 3	+ 5	+ 7

Performance Notes:

1. Data is based upon a ductless return application.
2. All pressures are in inches w.g..
3. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. (1219) section. For other lengths, use the correction factor table above.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH / FTH (10 &15) • 1 SLOT WITH NAILOR PLENUM

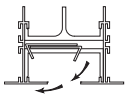


1" Slot Width	1 Slot 6" Dia. Inlet	2 Ft.	Airflow, CFM	25	50	75	100	125	150	175
			Total Pressure	.008	.034	.075	.132	.206	.297	.040
			Static Pressure	.007	.030	.065	.115	.180	.260	.350
			Noise Criteria	<15	<15	<15	20	29	36	40
			Throw	1-2-5	3-6-9	5-9-12	7-10-13	8-10-14	9-11-16	10-12-18
		4 Ft.	Airflow, CFM	40	80	120	160	200	240	280
			Total Pressure	.009	.031	.066	.117	.180	.264	.352
			Static Pressure	.006	.020	.042	.075	.115	.170	.225
			Noise Criteria	<15	<15	<15	17	25	32	38
			Throw	1-2-5	3-6-12	5-9-15	8-12-17	10-12-18	12-15-20	13-16-22
		5 Ft.	Airflow, CFM	50	100	150	200	250	300	350
			Total Pressure	.009	.036	.079	.140	.217	.316	.424
			Static Pressure	.005	.020	.042	.075	.115	.170	.225
			Noise Criteria	<15	<15	<15	18	26	33	38
			Throw	1-2-7	3-7-13	8-10-17	10-13-19	12-15-20	14-16-22	15-17-24
1" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	50	75	100	125	150	175	200
			Total Pressure	.029	.068	.119	.188	.272	.358	.471
			Static Pressure	.028	.065	.114	.180	.260	.342	.450
			Noise Criteria	<15	<15	20	28	35	41	44
			Throw	2-5-9	5-9-11	7-10-14	8-11-15	9-12-18	10-12-19	11-13-20
		4 Ft.	Airflow, CFM	70	110	150	190	230	270	310
			Total Pressure	.016	.040	.075	.120	.176	.242	.319
			Static Pressure	.014	.034	.063	.101	.149	.205	.270
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	2-4-10	6-8-14	7-11-17	9-13-19	10-15-22	13-16-24	15-18-26
		5 Ft.	Airflow, CFM	80	130	180	230	280	330	380
			Total Pressure	.007	.025	.056	.093	.142	.206	.283
			Static Pressure	.006	.020	.044	.072	.110	.160	.220
			Noise Criteria	<15	<15	<15	23	29	35	40
			Throw	2-5-11	6-9-15	8-12-18	9-14-20	11-15-22	13-17-24	14-18-26
1.5" Slot Width	1 Slot 6" Dia. Inlet	2 Ft.	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.038	.088	.148	.246	.367	.471
			Static Pressure	.001	.032	.075	.125	.210	.315	.400
			Noise Criteria	<15	<15	<15	22	31	39	44
			Throw	1-4-7	4-7-11	6-9-13	8-10-15	10-13-17	11-14-19	12-15-20
		4 Ft.	Airflow, CFM	70	110	150	190	230	270	310
			Total Pressure	.021	.045	.089	.148	.206	.288	.376
			Static Pressure	.013	.025	.052	.089	.120	.170	.220
			Noise Criteria	<15	<15	<15	20	24	30	36
			Throw	2-5-11	5-8-15	8-12-17	10-13-19	12-15-20	13-16-21	14-17-23
		5 Ft.	Airflow, CFM	85	135	185	235	285	335	385
			Total Pressure	.013	.055	.101	.165	.247	.342	.440
			Static Pressure	.001	.025	.045	.075	.115	.160	.200
			Noise Criteria	<15	<15	<15	20	26	31	37
			Throw	2-5-11	5-19-15	8-13-18	11-15-21	12-17-23	14-18-25	15-20-27
1.5" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.032	.076	.128	.222	.317	.428
			Static Pressure	.001	.030	.072	.120	.210	.300	.405
			Noise Criteria	<15	<15	<15	23	31	40	44
			Throw	1-4-7	4-7-11	7-9-13	8-12-15	10-13-17	11-14-18	12-15-19
		4 Ft.	Airflow, CFM	70	120	170	220	270	320	370
			Total Pressure	.015	.035	.075	.125	.207	.272	.380
			Static Pressure	.012	.027	.060	.100	.170	.220	.310
			Noise Criteria	<15	<15	<15	22	30	36	44
			Throw	2-5-11	6-9-15	9-13-18	12-15-21	14-17-23	15-19-25	16-20-26
		5 Ft.	Airflow, CFM	85	145	205	265	325	385	445
			Total Pressure	.016	.041	.084	.131	.204	.276	.401
			Static Pressure	.012	.03	.062	.095	.150	.200	.300
			Noise Criteria	<15	<15	<15	23	30	36	43
			Throw	2-5-11	6-10-16	9-13-20	12-17-23	15-19-25	16-20-27	17-21-29
1.5" Slot Width	1 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.027	.065	.109	.189	.269	.364
			Static Pressure	.002	.026	.063	.106	.184	.263	.355
			Noise Criteria	<15	<15	<15	20	28	37	41
			Throw	1-4-7	4-7-11	7-9-13	8-12-15	10-13-17	11-14-18	12-15-19
		4 Ft.	Airflow, CFM	70	120	170	220	270	320	370
			Total Pressure	.013	.030	.064	.106	.176	.231	.323
			Static Pressure	.012	.027	.058	.096	.161	.210	.294
			Noise Criteria	<15	<15	<15	19	27	33	41
			Throw	2-5-11	6-9-15	9-13-18	12-15-21	14-17-23	15-19-25	16-20-26
		5 Ft.	Airflow, CFM	85	145	205	265	325	385	445
			Total Pressure	.014	.035	.071	.111	.173	.235	.341
			Static Pressure	.012	.030	.063	.097	.151	.204	.299
			Noise Criteria	<15	<15	<15	20	27	33	40
			Throw	2-5-11	6-10-16	9-13-20	12-17-23	15-19-25	16-20-27	17-21-29

For performance table notes, see page A37.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH / FTH (20 & 25) • 1 SLOT WITH NAILOR PLENUM

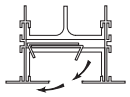


2" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	40	80	120	160	200	240	280
			Total Pressure	.007	.028	.065	.115	.180	.259	.352
			Static Pressure	.006	.025	.057	.102	.159	.229	.312
			Noise Criteria	<15	<15	<15	17	26	31	38
			Throw	1-3-8	5-8-13	7-10-15	10-13-17	11-14-19	12-15-22	13-16-23
		4 Ft.	Airflow, CFM	100	150	200	250	300	350	400
			Total Pressure	.015	.034	.040	.094	.136	.185	.241
			Static Pressure	.010	.022	.040	.062	.089	.122	.159
			Noise Criteria	<15	<15	<15	15	22	30	37
			Throw	3-4-11	6-9-14	8-12-17	9-13-19	12-14-23	14-25-27	15-17-28
		5 Ft.	Airflow, CFM	125	180	235	290	345	400	455
			Total Pressure	.180	.037	.064	.097	.137	.184	.238
			Static Pressure	.010	.021	.035	.535	.076	.102	.132
			Noise Criteria	<15	<15	<15	22	29	34	39
			Throw	3-6-12	8-12-17	9-13-19	12-14-23	14-13-26	16-18-28	17-21-30
2" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	50	100	150	200	250	300	350
			Total Pressure	.007	.028	.064	.113	.177	.254	.346
			Static Pressure	.007	.027	.060	.108	.168	.242	.329
			Noise Criteria	<15	<15	<15	17	24	29	37
			Throw	2-5-10	5-8-12	6-10-14	8-12-17	9-13-19	10-14-22	13-16-25
		4 Ft.	Airflow, CFM	100	170	240	310	380	450	520
			Total Pressure	.008	.023	.045	.076	.114	.169	.213
			Static Pressure	.065	.019	.038	.063	.094	.132	.176
			Noise Criteria	<15	<15	<15	20	27	33	39
			Throw	3-6-12	7-11-15	9-13-19	11-15-23	14-17-27	15-19-30	16-21-34
		5 Ft.	Airflow, CFM	125	205	285	365	445	525	605
			Total Pressure	.009	.023	.045	.074	.109	.152	.202
			Static Pressure	.007	.018	.034	.056	.083	.115	.153
			Noise Criteria	<15	<15	<15	23	31	36	41
			Throw	3-7-15	7-11-19	10-14-24	13-16-25	15-19-30	16-21-32	21-25-34
2.5" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	100	145	190	235	280	325	370
			Total Pressure	.024	.05	.085	.131	.186	.25	.324
			Static Pressure	.045	.045	.077	.117	.167	.224	.291
			Noise Criteria	<15	<15	<15	22	29	35	40
			Throw	4-9-11	6-19-13	8-12-17	10-14-18	12-16-22	13-17-24	14-18-26
		4 Ft.	Airflow, CFM	140	220	300	380	460	540	620
			Total Pressure	.015	.037	.069	.111	.163	.225	.296
			Static Pressure	.010	.026	.048	.077	.112	.155	.204
			Noise Criteria	<15	<15	<15	25	33	40	45
			Throw	5-8-17	10-14-22	12-16-25	14-17-28	16-19-31	19-22-33	21-24-35
		5 Ft.	Airflow, CFM	150	240	330	420	510	600	690
			Total Pressure	.013	.034	.063	.103	.151	.209	.277
			Static Pressure	.002	.020	.037	.060	.088	.122	.162
			Noise Criteria	<15	<15	<15	23	31	38	43
			Throw	3-8-16	8-12-21	12-15-25	15-18-29	17-21-32	19-23-35	21-27-38
2.5" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	100	145	190	235	280	325	370
			Total Pressure	.021	.043	.074	.114	.161	.217	.282
			Static Pressure	.019	.041	.070	.106	.151	.204	.264
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	4-9-11	6-19-13	8-12-17	10-14-18	12-16-22	13-17-24	14-18-26
		4 Ft.	Airflow, CFM	140	225	310	395	480	565	650
			Total Pressure	.012	.031	.059	.096	.142	.197	.261
			Static Pressure	.009	.024	.046	.075	.111	.154	.204
			Noise Criteria	<15	<15	15	23	31	38	43
			Throw	5-8-17	10-14-22	12-16-25	14-17-29	17-20-32	20-23-34	22-26-37
		5 Ft.	Airflow, CFM	150	250	350	450	550	650	750
			Total Pressure	.010	.028	.054	.090	.134	.188	.250
			Static Pressure	.007	.019	.038	.063	.094	.131	.174
			Noise Criteria	<15	<15	16	26	34	40	46
			Throw	3-8-16	8-12-21	13-16-26	16-19-31	18-22-33	20-25-37	22-28-39

For performance table notes, see page A37.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH30 AND FTH30 • 1 SLOT WITH NAILOR PLENUM



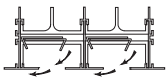
3" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	**Airflow, CFM**	**125**	**170**	**215**	**260**	**305**	**350**	**395**
			Total Pressure	.030	.056	.894	.131	.180	.237	.302
			Static Pressure	.027	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	24	29	35	40
			Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31
		4 Ft.	**Airflow, CFM**	**200**	**275**	**350**	**425**	**500**	**575**	**650**
			Total Pressure	.027	.050	.081	.120	.166	.220	.281
			Static Pressure	.017	.032	.052	.076	.106	.140	.179
			Noise Criteria	<15	<15	18	22	28	34	40
			Throw	8-13-20	10-15-24	15-19-27	17-21-30	18-23-32	20-24-35	21-26-37
		5 Ft.	**Airflow, CFM**	**220**	**310**	**400**	**490**	**580**	**670**	**760**
			Total Pressure	.025	.040	.082	.123	.172	.230	.296
			Static Pressure	.013	.026	.043	.065	.091	.122	.157
			Noise Criteria	<15	<15	16	24	32	39	45
			Throw	8-12-21	12-17-25	15-20-29	18-23-32	20-24-35	21-26-37	23-28-40
3" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	**Airflow, CFM**	**125**	**170**	**215**	**260**	**305**	**350**	**395**
			Total Pressure	.029	.053	.085	.124	.170	.224	.286
			Static Pressure	.026	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	18	25	31	36
			Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31
		4 Ft.	**Airflow, CFM**	**200**	**290**	**380**	**470**	**560**	**650**	**740**
			Total Pressure	.022	.047	.081	.123	.175	.236	.306
			Static Pressure	.017	.036	.061	.094	.133	.179	.232
			Noise Criteria	<15	<15	<15	22	29	36	41
			Throw	8-13-20	11-16-24	15-20-28	17-22-31	20-24-34	21-26-37	23-28-40
		5 Ft.	**Airflow, CFM**	**220**	**330**	**440**	**550**	**660**	**770**	**880**
			Total Pressure	.020	.044	.079	.123	.177	.241	.315
			Static Pressure	.013	.030	.053	.082	.118	.161	.210
			Noise Criteria	<15	<15	19	26	32	39	43
			Throw	8-12-21	11-14-26	14-16-30	17-20-34	20-25-37	22-27-39	24-29-42

Performance Notes:

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts.
5. Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH / FTH (10 & 15) • 2 SLOT WITH NAILOR PLENUM

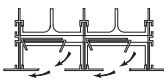


1" Slot Width	2 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	80	120	160	200	240	280	320
			Total Pressure	.016	.036	.064	.101	.145	.198	.258
			Static Pressure	.018	.041	.072	.080	.115	.157	.205
			Noise Criteria	<15	<15	<15	23	29	35	40
			Throw	3-6-12	6-10-16	9-13-18	11-14-20	13-16-22	14-17-23	15-18-25
		4 Ft.	Airflow, CFM	160	230	300	370	440	510	580
			Total Pressure	.025	.053	.091	.138	.196	.263	.340
			Static Pressure	.013	.026	.045	.068	.097	.130	.168
			Noise Criteria	<15	<15	17	24	31	36	41
			Throw	5-8-17	8-12-21	10-16-24	13-18-26	16-20-30	17-22-32	18-24-34
		5 Ft.	Airflow, CFM	200	280	360	440	520	600	680
			Total Pressure	.033	.065	.108	.161	.225	.300	.385
			Static Pressure	.013	.025	.041	.062	.087	.115	.148
			Noise Criteria	<15	<15	19	26	32	37	42
			Throw	5-10-20	9-14-24	12-17-26	15-20-30	17-22-33	19-24-35	22-26-38
1" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	80	130	180	230	280	330	380
			Total Pressure	.014	.038	.073	.119	.176	.244	.324
			Static Pressure	.013	.034	.065	.106	.157	.218	.289
			Noise Criteria	<15	<15	19	28	35	41	47
			Throw	3-6-13	7-11-16	10-14-19	12-15-22	13-17-24	14-18-26	15-19-28
		4 Ft.	Airflow, CFM	160	240	320	400	480	560	640
			Total Pressure	.019	.043	.076	.118	.170	.232	.303
			Static Pressure	.013	.029	.051	.080	.115	.157	.205
			Noise Criteria	<15	<15	18	26	33	39	44
			Throw	4-9-18	9-14-22	12-28-26	15-20-29	17-22-32	20-24-34	19-25-35
		5 Ft.	Airflow, CFM	200	295	390	485	580	675	770
			Total Pressure	.022	.048	.085	.132	.189	.256	.333
			Static Pressure	.013	.028	.049	.075	.108	.146	.190
			Noise Criteria	<15	<15	20	28	34	40	45
			Throw	5-19-19	10-14-24	13-19-27	17-22-32	20-24-35	21-25-38	22-27-39
1.5" Slot Width	2 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	120	160	200	240	280	320	360
			Total Pressure	.036	.064	.101	.145	.198	.258	.327
			Static Pressure	.029	.051	.080	.115	.157	.205	.259
			Noise Criteria	<15	<15	19	26	32	37	41
			Throw	5-19-16	8-12-18	11-12-18	13-16-21	14-17-24	15-18-26	15-19-27
		4 Ft.	Airflow, CFM	240	310	380	450	520	590	660
			Total Pressure	.058	.097	.146	.205	.274	.352	.441
			Static Pressure	.029	.048	.072	.101	.135	.174	.218
			Noise Criteria	<15	<15	21	27	33	37	42
			Throw	9-14-22	12-17-25	14-20-28	16-22-31	17-23-33	19-25-35	21-26-37
		5 Ft.	Airflow, CFM	300	370	440	510	580	650	720
			Total Pressure	.075	.114	.161	.217	.281	.352	.432
			Static Pressure	.029	.044	.062	.083	.108	.135	.166
			Noise Criteria	<15	<15	22	27	32	36	40
			Throw	10-15-25	13-19-28	15-21-30	16-22-32	18-23-33	19-24-34	21-27-38
1.5" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	120	170	220	270	320	370	420
			Total Pressure	.031	.062	.103	.156	.219	.293	.377
			Static Pressure	.029	.058	.097	.146	.205	.274	.353
			Noise Criteria	<15	<15	21	29	35	40	45
			Throw	5-9-16	9-13-19	12-14-21	14-16-24	15-18-26	15-19-28	17-21-29
		4 Ft.	Airflow, CFM	240	320	400	480	560	640	720
			Total Pressure	.037	.065	.102	.146	.199	.260	.329
			Static Pressure	.029	.051	.080	.115	.157	.205	.259
			Noise Criteria	<15	<15	22	26	32	37	41
			Throw	9-14-22	12-18-26	15-20-29	17-22-32	18-24-33	20-26-36	22-27-39
		5 Ft.	Airflow, CFM	300	400	500	600	700	800	900
			Total Pressure	.041	.073	.114	.163	.222	.291	.368
			Static Pressure	.029	.051	.080	.115	.157	.205	.259
			Noise Criteria	<15	<15	23	30	35	40	45
			Throw	10-15-25	14-20-29	16-22-32	19-24-35	22-27-38	23-28-41	24-30-43

For performance table notes, see page A40.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH / FTH (20 & 25) • 2 SLOT WITH NAILOR PLENUM

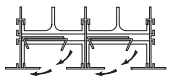


2" Slot Width	2 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	120	165	210	255	300	345	390
			Total Pressure	.023	.043	.069	.101	.141	.186	.238
			Static Pressure	.015	.029	.047	.068	.095	.125	.160
			Noise Criteria	<15	<15	16	24	29	34	38
			Throw	5-8-14	7-11-16	9-14-19	11-14-21	13-16-23	14-17-24	14-18-25
		4 Ft.	Airflow, CFM	240	300	360	420	480	540	600
			Total Pressure	.051	.079	.114	.156	.204	.258	.318
			Static Pressure	.021	.034	.048	.066	.086	.108	.134
			Noise Criteria	<15	17	23	29	34	39	43
			Throw	6-11-20	9-14-23	11-16-24	13-19-26	14-20-29	16-22-30	18-23-32
		5 Ft.	Airflow, CFM	260	325	390	455	520	585	650
			Total Pressure	.053	.082	.118	.161	.211	.267	.329
			Static Pressure	.018	.028	.040	.055	.072	.092	.113
			Noise Criteria	<15	16	22	29	34	38	42
			Throw	5-11-21	8-14-23	11-16-25	13-18-28	14-21-30	16-23-32	17-23-33
2" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	120	195	270	345	420	495	570
			Total Pressure	.009	.024	.046	.075	.111	.155	.205
			Static Pressure	.007	.020	.039	.063	.094	.130	.172
			Noise Criteria	<15	<15	<15	22	28	35	41
			Throw	5-8-14	8-13-18	12-15-22	14-17-24	15-19-26	16-21-29	18-20-31
		4 Ft.	Airflow, CFM	240	330	420	510	600	690	780
			Total Pressure	.019	.037	.060	.088	.122	.161	.206
			Static Pressure	.013	.026	.042	.062	.086	.113	.145
			Noise Criteria	<15	<15	17	24	30	35	41
			Throw	6-11-20	10-15-23	13-19-26	15-21-29	18-23-32	20-24-34	21-25-36
		5 Ft.	Airflow, CFM	280	380	480	580	680	780	880
			Total Pressure	.022	.040	.065	.094	.130	.172	.218
			Static Pressure	.014	.026	.041	.060	.083	.110	.140
			Noise Criteria	<15	<15	18	25	31	36	41
			Throw	5-12-22	10-15-25	13-20-29	15-22-32	18-24-34	21-25-36	23-27-39
2.5" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	80	160	240	320	400	480	560
			Total Pressure	.005	.019	.043	.078	.122	.175	.238
			Static Pressure	.003	.014	.032	.057	.088	.127	.173
			Noise Criteria	<15	<15	<15	18	27	35	41
			Throw	2-4-10	6-10-16	10-14-20	13-16-23	15-18-26	16-20-29	18-22-31
		4 Ft.	Airflow, CFM	160	280	400	520	640	760	880
			Total Pressure	.011	.034	.070	.118	.178	.251	.336
			Static Pressure	.005	.018	.036	.061	.092	.130	.174
			Noise Criteria	<15	<15	<15	22	31	38	44
			Throw	3-15-14	7-12-22	12-17-26	15-21-30	18-23-32	21-25-36	23-27-39
		5 Ft.	Airflow, CFM	200	335	470	605	740	875	1010
			Total Pressure	.014	.040	.079	.130	.194	.271	.361
			Static Pressure	.005	.016	.032	.054	.079	.110	.147
			Noise Criteria	<15	<15	<15	23	31	38	44
			Throw	3-5-15	7-13-23	12-18-28	15-23-32	19-25-35	23-27-29	23-29-41
2.5" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	80	170	260	350	440	530	620
			Total Pressure	.003	.015	.034	.061	.097	.140	.192
			Static Pressure	.002	.012	.027	.049	.077	.112	.153
			Noise Criteria	<15	<15	<15	17	27	34	41
			Throw	2-4-10	7-10-17	11-14-21	14-17-24	15-19-27	17-21-31	19-23-32
		4 Ft.	Airflow, CFM	160	295	430	595	700	835	970
			Total Pressure	.007	.024	.051	.088	.136	.193	.260
			Static Pressure	.004	.016	.033	.056	.086	.122	.165
			Noise Criteria	<15	<15	<15	21	29	37	43
			Throw	3-5-14	8-13-23	13-19-27	16-22-31	20-24-34	22-26-38	23-29-41
		5 Ft.	Airflow, CFM	200	350	500	650	800	950	1100
			Total Pressure	.010	.029	.059	.100	.151	.212	.284
			Static Pressure	.005	.017	.033	.057	.086	.121	.162
			Noise Criteria	<15	<15	<15	21	29	37	43
			Throw	3-5-15	8-14-24	13-19-29	17-23-33	21-26-37	23-28-40	25-31-43

For performance table notes, see page A40.

PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES

MODELS: FLH30 AND FTH30 • 2 SLOT WITH NAILOR PLENUM



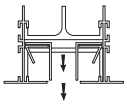
3" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	**Airflow, CFM**	**80**	**180**	**280**	**380**	**480**	**580**	**680**
			Total Pressure	.004	.022	.053	.097	.155	.226	.311
			Static Pressure	.003	.015	.036	.067	.106	.156	.214
			Noise Criteria	<15	<15	<15	17	28	36	43
			Throw	1-3-9	6-10-17	11-15-22	14-18-25	16-20-29	18-22-32	20-24-34
		4 Ft.	**Airflow, CFM**	**150**	**300**	**450**	**600**	**750**	**900**	**1050**
			Total Pressure	.009	.035	.080	.143	.222	.321	.436
			Static Pressure	.004	.016	.038	.067	.104	.151	.205
			Noise Criteria	<15	<15	<15	19	29	38	45
			Throw	2-4-12	6-12-23	12-18-28	16-23-32	20-25-35	23-28-39	24-30-42
		5 Ft.	**Airflow, CFM**	**180**	**350**	**520**	**690**	**860**	**1030**	**1200**
			Total Pressure	.011	.042	.092	.162	.251	.360	.489
			Static Pressure	.004	.016	.035	.062	.096	.138	.186
			Noise Criteria	<15	<15	<15	19	29	38	45
			Throw	2-4-13	6-13-24	13-19-30	16-24-34	21-27-38	24-30-41	26-32-45
3" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	**Airflow, CFM**	**80**	**180**	**280**	**380**	**480**	**580**	**680**
			Total Pressure	.004	.017	.042	.077	.124	.180	.248
			Static Pressure	.003	.014	.034	.063	.100	.146	.201
			Noise Criteria	<15	<15	<15	<15	23	32	39
			Throw	1-3-9	6-10-17	11-15-22	14-18-25	16-20-29	18-22-32	20-24-34
		4 Ft.	**Airflow, CFM**	**150**	**310**	**470**	**630**	**790**	**950**	**1110**
			Total Pressure	.006	.024	.056	.100	.156	.226	.309
			Static Pressure	.003	.014	.033	.059	.093	.135	.184
			Noise Criteria	<15	<15	<15	23	29	35	42
			Throw	2-4-12	7-13-23	13-19-28	17-23-32	21-26-36	23-28-40	25-31-43
		5 Ft.	**Airflow, CFM**	**180**	**360**	**540**	**720**	**900**	**1080**	**1260**
			Total Pressure	.007	.027	.060	.108	.169	.244	.331
			Static Pressure	.003	.014	.031	.056	.087	.126	.170
			Noise Criteria	<15	<15	16	24	30	35	42
			Throw	2-4-13	6-13-24	13-19-30	17-24-35	22-28-39	24-30-42	26-32-46

Performance Notes:

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts.
5. Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV (10, 15, 20, 25 & 30) • CONTINUOUS PRESSURIZED PLENUM



1" Slot Width	1 Slot	Airflow, CFM/FT.	20	40	60	80	100	120	140
		Static Pressure	.005	.018	.041	.074	.114	.164	.223
		Noise Criteria	—	—	<15	20	24	30	35
		Throw	1-3-10	4-10-21	10-15-29	14-21-33	18-26-37	21-19-41	24-31-44
	2 Slot	Airflow, CFM/FT.	40	85	130	175	220	265	310
		Static Pressure	.005	.024	.056	.102	.161	.234	.320
		Noise Criteria	—	<15	20	27	32	37	42
		Throw	2-4-17	9-18-32	19-28-40	25-32-45	30-36-51	32-40-56	35-43-61
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.005	.020	.045	.080	.125	.180	.245
		Noise Criteria	—	—	<15	20	26	32	37
		Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52
	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.006	.023	.052	.093	.145	.209	.285
		Noise Criteria	—	<15	16	24	31	37	43
		Throw	2-6-20	9-20-36	20-31-44	28-36-51	33-41-57	36-44-63	39-47-67
2" Slot Width	1 Slot	Airflow, CFM/FT.	35	75	115	155	195	235	275
		Static Pressure	.004	.019	.044	.080	.126	.183	.251
		Noise Criteria	<15	15	21	25	29	34	39
		Throw	1-2-8	4-9-20	9-15-29	14-21-33	18-26-37	21-29-41	25-31-44
	2 Slot	Airflow, CFM/FT.	70	150	230	310	390	470	550
		Static Pressure	.005	.022	.051	.092	.146	.212	.291
		Noise Criteria	<15	19	25	29	34	39	44
		Throw	2-3-13	.7-14-30	15-26-37	23-31-43	28-34-18	31-37-54	33-41-58
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	40	95	150	205	260	315	370
		Static Pressure	.004	.020	.050	.094	.151	.222	.306
		Noise Criteria	<15	<15	16	24	29	35	48
		Throw	1-2-7	4-10-22	11-18-31	16-25-37	20-30-42	25-32-42	29-36-50
	2 Slot	Airflow, CFM/FT.	80	190	300	410	520	630	740
		Static Pressure	.004	.023	.058	.108	.174	.256	.353
		Noise Criteria	<15	<15	20	26	35	41	46
		Throw	1-3-11	7-16-33	18-29-42	26-34-48	31-38-54	35-43-60	37-46-65
3" Slot Width	1 Slot	Airflow, CFM/FT.	50	115	180	245	310	375	440
		Static Pressure	.004	.021	.052	.097	.155	.226	.312
		Noise Criteria	<15	<15	16	26	32	37	42
		Throw	1-2-8	5-11-25	12-20-34	17-26-40	22-31-45	26-35-49	31-37-54
	2 Slot	Airflow, CFM/FT.	100	230	360	490	620	750	880
		Static Pressure	.005	.025	.060	.112	.179	.261	.360
		Noise Criteria	<15	<15	21	29	36	41	45
		Throw	2-3-13	8-17-36	19-31-44	29-37-52	33-41-58	37-45-64	40-49-70

NC Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 5	+ 6	+ 7	+ 8	+ 11

Throw Correction Factors for Various Lengths

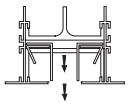
Length (ft.)	2	4	6	8	10	12
Multiplier	0.80	1.00	1.20	1.30	1.40	1.50

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Throw data is based on active sections 4 ft. (1219) long. For other lengths, use the correction factor table above.
5. Throw values are based on pattern controller set 100% open.
6. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (10 & 15) • 1 SLOT WITH NAILOR PLENUM

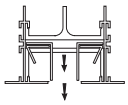


1" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.010	.033	.073	.127	.197	.281	.381
			Static Pressure	.007	.029	.062	.109	.168	.241	.325
			Noise Criteria	<15	<15	17	26	33	39	44
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	175	250	325	400	475	550
			Total Pressure	.018	.056	.113	.190	.289	.408	.547
			Static Pressure	.013	.039	.079	.133	.201	.285	.381
			Noise Criteria	<15	<15	20	29	35	41	46
			Throw	2-4-13	6-11-23	11-17-30	14-21-34	18-26-37	21-29-41	24-31-44
		5 Ft.	Airflow, CFM	110	195	280	365	450	535	620
			Total Pressure	.019	.060	.124	.212	.322	.455	.611
			Static Pressure	.013	.040	.081	.139	.211	.297	.400
			Noise Criteria	<15	<15	21	30	36	42	47
			Throw	1-3-12	6-11-22	10-17-31	14-21-35	18-25-39	21-30-42	23-32-45
1" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.006	.022	.049	.087	.134	.192	.259
			Static Pressure	.005	.020	.045	.079	.122	.174	.236
			Noise Criteria	<15	<15	15	23	30	35	40
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	180	260	340	420	500	580
			Total Pressure	.011	.036	.075	.128	.196	.278	.373
			Static Pressure	.009	.029	.060	.103	.156	.221	.299
			Noise Criteria	<15	<15	17	24	31	37	42
			Throw	2-4-13	7-12-23	11-17-30	14-22-34	18-28-39	22-30-42	25-32-45
		5 Ft.	Airflow, CFM	110	210	310	410	510	610	710
			Total Pressure	.011	.040	.087	.152	.235	.337	.456
			Static Pressure	.009	.030	.065	.114	.177	.256	.342
			Noise Criteria	<15	<15	17	26	33	39	44
			Throw	1-3-12	6-12-24	12-18-32	15-23-37	20-29-41	23-32-45	28-34-48
1" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.004	.017	.037	.064	.100	.142	.194
			Static Pressure	.004	.016	.035	.061	.094	.135	.182
			Noise Criteria	<15	<15	<15	20	27	32	37
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	190	280	370	460	550	640
			Total Pressure	.009	.032	.068	.120	.185	.264	.358
			Static Pressure	.007	.028	.060	.105	.163	.232	.315
			Noise Criteria	<15	<15	18	26	33	38	43
			Throw	2-4-13	7-12-24	12-18-31	17-24-36	20-29-41	24-31-44	28-33-47
		5 Ft.	Airflow, CFM	110	220	330	440	550	660	770
			Total Pressure	.007	.016	.035	.061	.094	.135	.182
			Static Pressure	.006	.026	.057	.101	.157	.227	.308
			Noise Criteria	<15	<15	17	24	31	37	42
			Throw	1-3-12	7-12-25	12-19-33	17-25-39	21-31-43	25-33-47	30-36-51
1.5" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	60	110	160	210	260	310	360
			Total Pressure	.009	.029	.060	.104	.159	.226	.305
			Static Pressure	.006	.021	.046	.079	.122	.173	.234
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	1-2-9	4-9-18	9-12-24	11-17-29	13-20-32	17-24-34	19-26-37
		4 Ft.	Airflow, CFM	120	200	280	360	440	520	600
			Total Pressure	.020	.057	.111	.184	.276	.385	.513
			Static Pressure	.013	.035	.068	.113	.170	.236	.316
			Noise Criteria	<15	<15	19	27	33	39	43
			Throw	1-3-12	3-9-21	8-14-29	12-19-34	15-23-37	18-26-41	21-31-44
		5 Ft.	Airflow, CFM	140	220	300	380	460	540	620
			Total Pressure	.026	.062	.116	.186	.272	.376	.494
			Static Pressure	.015	.035	.066	.107	.156	.215	.285
			Noise Criteria	<15	<15	19	26	32	38	42
			Throw	1-3-12	3-8-20	6-13-28	10-18-34	14-21-37	17-24-11	19-29-43

For performance table notes, see page A44.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (15 & 20) • 1 SLOT WITH NAILOR PLENUM

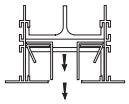


1.5" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	60	125	190	255	320	385	450
			Total Pressure	.005	.025	.057	.103	.163	.235	.321
			Static Pressure	.005	.021	.049	.089	.139	.201	.275
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	1-2-9	6-10-20	10-14-26	13-20-31	17-24-35	20-28-39	23-30-39
		4 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.012	.045	.102	.181	.281	.406	.552
			Static Pressure	.009	.032	.073	.128	.201	.290	.394
			Noise Criteria	<15	<15	19	28	35	41	46
			Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52
		5 Ft.	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.014	.054	.121	.215	.336	.484	.659
			Static Pressure	.009	.036	.081	.144	.226	.325	.443
			Noise Criteria	<15	<15	21	30	37	43	48
			Throw	1-3-12	6-12-25	12-19-35	17-25-41	21-32-46	25-35-51	30-39-54
1.5" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	60	125	190	255	320	385	450
			Total Pressure	.004	.019	.044	.078	.123	.179	.244
			Static Pressure	.004	.017	.040	.072	.112	.163	.221
			Noise Criteria	<15	<15	<15	20	28	34	39
			Throw	1-2-9	6-10-20	10-14-26	13-20-31	17-24-35	20-28-39	23-30-42
		4 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.007	.031	.070	.123	.192	.276	.376
			Static Pressure	.006	.025	.055	.097	.153	.220	.300
			Noise Criteria	<15	<15	16	24	31	37	42
			Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52
		5 Ft.	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.009	.035	.079	.141	.220	.318	.432
			Static Pressure	.006	.027	.060	.107	.168	.242	.328
			Noise Criteria	<15	<15	16	25	32	38	43
			Throw	1-3-12	6-12-15	12-19-35	17-25-41	21-32-46	25-35-51	30-39-54
2" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	70	140	210	280	350	420	490
			Total Pressure	.010	.036	.082	.146	.228	.328	.447
			Static Pressure	.006	.026	.058	.103	.161	.232	.316
			Noise Criteria	<15	<15	16	24	32	38	42
			Throw	1-2-7	3-7-14	7-11-21	9-14-25	12-18-27	14-21-30	17-23-32
		4 Ft.	Airflow, CFM	140	220	300	380	460	540	620
			Total Pressure	.025	.060	.111	.178	.261	.36	.474
			Static Pressure	.014	.033	.062	.098	.144	.200	.263
			Noise Criteria	<15	<15	18	25	31	37	41
			Throw	1-2-8	3-5-14	4-9-20	7-13-26	9-15-29	12-18-31	14-21-33
		5 Ft.	Airflow, CFM	150	250	350	450	550	650	750
			Total Pressure	.026	.071	.138	.227	.339	.474	.631
			Static Pressure	.013	.036	.071	.117	.174	.243	.323
			Noise Criteria	<15	<15	21	29	35	41	45
			Throw	1-2-6	2-4-14	3-9-20	6-14-26	9-16-31	13-20-33	14-22-36
2" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	70	150	230	310	390	470	550
			Total Pressure	.005	.027	.062	.112	.179	.259	.354
			Static Pressure	.004	.021	.050	.091	.144	.210	.287
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	1-2-7	3-8-15	8-12-22	10-16-26	14-20-29	16-22-31	19-24-34
		4 Ft.	Airflow, CFM	140	265	390	515	640	765	890
			Total Pressure	.013	.047	.103	.179	.276	.394	.534
			Static Pressure	.009	.031	.068	.119	.184	.263	.356
			Noise Criteria	<15	<15	18	27	34	40	45
			Throw	1-2-8	3-7-18	7-13-26	12-17-31	14-21-34	17-26-37	20-28-40
		5 Ft.	Airflow, CFM	150	300	450	600	750	900	1050
			Total Pressure	.013	.054	.122	.212	.331	.477	.649
			Static Pressure	.009	.033	.074	.132	.205	.295	.401
			Noise Criteria	<15	<15	20	29	36	42	47
			Throw	1-2-6	3-6-18	6-14-26	11-18-31	14-22-36	18-26-39	20-30-42

For performance table notes, see page A44.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (20, 25 & 30) • 1 SLOT WITH NAILOR PLENUM



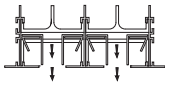
2" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	70	160	250	340	430	520	610
			Total Pressure	.004	.022	.055	.102	.162	.236	.325
			Static Pressure	.004	.019	.048	.089	.141	.208	.286
			Noise Criteria	<15	<15	<15	23	30	37	42
			Throw	1-2-7	4-9-16	9-13-23	12-17-27	14-21-30	18-24-33	20-26-36
		4 Ft.	Airflow, CFM	140	290	440	590	740	890	1040
			Total Pressure	.009	.035	.082	.148	.232	.335	.458
			Static Pressure	.006	.027	.061	.109	.172	.249	.340
			Noise Criteria	<15	<15	16	26	33	39	44
			Throw	1-2-8	3-9-20	9-14-28	14-20-32	16-25-37	20-28-40	23-31-43
		5 Ft.	Airflow, CFM	150	330	510	690	870	1050	1230
			Total Pressure	.009	.040	.096	.175	.279	.406	.557
			Static Pressure	.005	.028	.067	.124	.197	.289	.394
			Noise Criteria	<15	<15	18	28	35	41	46
			Throw	1-2-6	3-8-20	8-15-29	14-20-34	17-26-38	20-30-42	25-32-46
2.5" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	80	190	300	410	520	630	740
			Total Pressure	.004	.025	.061	.114	.185	.271	.375
			Static Pressure	.003	.020	.051	.096	.155	.228	.315
			Noise Criteria	<15	<15	<15	24	31	38	43
			Throw	1-2-6	4-9-17	9-14-25	12-19-29	15-23-32	19-26-36	22-27-38
		4 Ft.	Airflow, CFM	150	335	520	705	890	1075	1260
			Total Pressure	.009	.042	.100	.183	.292	.426	.584
			Static Pressure	.005	.029	.071	.129	.207	.301	.413
			Noise Criteria	<15	<15	19	28	36	42	47
			Throw	1-2-6	3-8-20	9-15-30	14-21-35	18-26-39	21-30-43	25-32-46
		5 Ft.	Airflow, CFM	160	370	580	790	1000	1210	1420
			Total Pressure	.009	.044	.108	.200	.320	.469	.646
			Static Pressure	.005	.029	.072	.133	.212	.310	.428
			Noise Criteria	<15	<15	19	29	37	43	48
			Throw	1-1-5	3-7-20	7-15-31	14-20-36	17-26-40	21-31-44	25-34-48
3" Slot Width	1 Slot 14" Oval Inlet	2 Ft.	Airflow, CFM	100	225	350	475	600	725	850
			Total Pressure	.004	.022	.055	.102	.162	.236	.325
			Static Pressure	.004	.020	.048	.088	.141	.205	.282
			Noise Criteria	<15	<15	<15	22	30	36	41
			Throw	1-2-7	4-9-18	9-14-26	13-20-31	16-24-34	20-26-37	23-29-40
		4 Ft.	Airflow, CFM	200	400	600	800	1000	1200	1400
			Total Pressure	.010	.036	.082	.146	.228	.328	.446
			Static Pressure	.006	.027	.061	.108	.169	.244	.333
			Noise Criteria	<15	<15	<15	26	33	39	44
			Throw	1-2-8	3-8-21	8-16-31	14-21-36	18-26-40	21-31-44	25-33-48
		5 Ft.	Airflow, CFM	240	460	680	900	1120	1340	1560
			Total Pressure	.012	.042	.091	.159	.247	.354	.480
			Static Pressure	.007	.030	.064	.112	.174	.249	.338
			Noise Criteria	<15	<15	18	27	34	49	44
			Throw	1-2-8	3-8-21	7-16-32	13-21-37	18-26-42	21-31-45	25-35-48

Performance Notes:

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts.
5. Throw values are based on pattern controller set 100% open.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (10 & 15) • 2 SLOT WITH NAILOR PLENUM

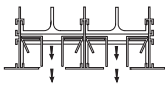


1" Slot Width	2 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	80	155	230	305	380	455	530
			Total Pressure	.012	.045	.098	.173	.269	.385	.523
			Static Pressure	.009	.032	.070	.122	.189	.272	.369
			Noise Criteria	<15	<15	18	27	34	40	45
			Throw	2-4-13	7-12-23	12-19-29	12-23-33	21-26-36	23-29-40	25-31-43
		4 Ft.	Airflow, CFM	160	260	360	460	560	660	760
			Total Pressure	.031	.083	.159	.261	.386	.537	.712
			Static Pressure	.017	.046	.089	.144	.215	.299	.396
			Noise Criteria	<15	<15	24	31	38	43	48
			Throw	2-4-17	6-12-28	10-29-33	17-24-37	20-29-41	23-31-44	26-34-47
		5 Ft.	Airflow, CFM	200	300	400	500	600	700	800
			Total Pressure	.045	.101	.180	.280	.404	.550	.718
			Static Pressure	.022	.051	.092	.143	.207	.281	.368
			Noise Criteria	<15	<15	25	32	38	43	47
			Throw	2-4-19	4-11-19	9-19-34	13-23-37	19-29-41	22-32-44	25-34-47
1" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	80	165	250	335	420	505	590
			Total Pressure	.006	.029	.067	.121	.190	.275	.376
			Static Pressure	.005	.024	.054	.096	.151	.217	.297
			Noise Criteria	<15	<15	<15	23	31	37	42
			Throw	2-4-13	8-13-24	13-20-30	18-24-34	22-28-39	24-30-42	26-32-46
		4 Ft.	Airflow, CFM	160	300	440	580	720	860	1000
			Total Pressure	.016	.057	.122	.212	.326	.464	.628
			Static Pressure	.011	.036	.078	.136	.210	.299	.404
			Noise Criteria	<15	<15	20	29	36	42	47
			Throw	2-4-17	7-15-30	15-23-36	21-30-42	25-33-46	30-35-51	32-39-55
		5 Ft.	Airflow, CFM	200	350	500	650	800	950	1100
			Total Pressure	.022	.068	.140	.238	.360	.506	.679
			Static Pressure	.014	.042	.085	.142	.215	.304	.408
			Noise Criteria	<15	<15	22	31	37	43	47
			Throw	2-4-19	7-14-32	13-23-37	20-31-43	25-43-47	30-36-52	32-40-56
1" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	80	170	260	350	440	530	620
			Total Pressure	.004	.021	.049	.090	.142	.207	.282
			Static Pressure	.004	.018	.043	.077	.122	.177	.242
			Noise Criteria	<15	<15	<15	21	28	34	39
			Throw	2-4-13	8-13-24	14-21-31	19-25-35	23-28-40	25-31-43	28-33-47
		4 Ft.	Airflow, CFM	160	320	480	640	800	960	1120
			Total Pressure	.010	.036	.082	.147	.229	.330	.448
			Static Pressure	.006	.026	.058	.102	.159	.229	.312
			Noise Criteria	<15	<15	<15	24	32	37	42
			Throw	2-4-17	8-17-31	17-25-37	23-31-44	29-34-48	31-37-54	33-41-57
		5 Ft.	Airflow, CFM	200	375	550	725	900	1075	1250
			Total Pressure	.013	.044	.095	.165	.255	.363	.490
			Static Pressure	.009	.029	.062	.108	.167	.238	.321
			Noise Criteria	<15	<15	17	26	33	38	43
			Throw	2-4-19	8-17-33	17-25-40	23-32-45	29-35-51	32-39-55	34-42-59
1.5" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	120	210	300	390	480	570	660
			Total Pressure	.011	.033	.068	.116	.175	.248	.333
			Static Pressure	.007	.024	.048	.082	.124	.175	.234
			Noise Criteria	<15	<15	<15	21	27	33	38
			Throw	2-4-15	6-13-26	12-19-31	17-25-35	21-28-40	24-31-43	26-33-46
		4 Ft.	Airflow, CFM	240	340	440	540	640	740	840
			Total Pressure	.029	.059	.097	.148	.207	.276	.356
			Static Pressure	.016	.032	.055	.082	.114	.154	.198
			Noise Criteria	<15	<15	<15	22	28	32	37
			Throw	2-6-20	4-10-29	8-17-34	11-23-39	15-26-42	21-31-45	23-34-47
		5 Ft.	Airflow, CFM	260	365	470	575	680	785	890
			Total Pressure	.031	.061	.102	.152	.213	.284	.365
			Static Pressure	.016	.031	.052	.078	.109	.146	.187
			Noise Criteria	<15	<15	<15	22	28	32	36
			Throw	2-4-17	3-8-28	6-13-35	9-20-39	12-25-42	17-30-45	21-33-47

For performance table notes, see page A47.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (15 & 20) • 2 SLOT WITH NAILOR PLENUM

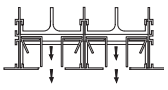


1.5" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	120	230	340	450	560	670	780
			Total Pressure	.006	.025	.054	.094	.146	.209	.284
			Static Pressure	.005	.019	.042	.073	.112	.161	.217
			Noise Criteria	<15	<15	<15	19	26	32	36
			Throw	2-4-15	8-14-28	14-22-33	19-26-39	24-30-43	26-33-46	29-35-40
		4 Ft.	Airflow, CFM	240	390	540	690	840	990	1140
			Total Pressure	.016	.043	.082	.134	.199	.276	.366
			Static Pressure	.010	.027	.050	.082	.122	.170	.225
			Noise Criteria	<15	<15	<15	22	28	33	38
			Throw	2-6-20	6-13-32	17-25-37	23-31-44	29-34-48	31-37-54	33-41-57
		5 Ft.	Airflow, CFM	260	425	590	755	920	1085	1250
			Total Pressure	.017	.046	.089	.144	.215	.300	.397
			Static Pressure	.010	.027	.051	.083	.124	.172	.228
			Noise Criteria	<15	<15	<15	22	29	34	39
			Throw	2-4-17	4-11-32	9-21-39	15-29-44	22-34-48	26-37-53	31-40-56
1.5" Slot Width	2 Slot 14" Dia. Inlet	2 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.005	.018	.042	.074	.116	.167	.227
			Static Pressure	.004	.015	.034	.061	.094	.136	.185
			Noise Criteria	<15	<15	<15	<15	23	29	34
			Throw	2-4-15	8-15-28	15-23-34	21-28-40	25-31-44	28-34-48	30-36-52
		4 Ft.	Airflow, CFM	240	415	590	765	940	1115	1290
			Total Pressure	.010	.030	.060	.101	.152	.214	.287
			Static Pressure	.006	.019	.040	.066	.101	.141	.189
			Noise Criteria	<15	<15	<15	18	24	30	35
			Throw	2-6-20	7-15-33	13-25-40	22-32-45	26-35-51	31-39-55	34-42-55
		5 Ft.	Airflow, CFM	260	440	620	800	980	1160	1340
			Total Pressure	.011	.032	.063	.105	.157	.220	.293
			Static Pressure	.007	.020	.041	.067	.101	.141	.188
			Noise Criteria	<15	<15	<15	18	25	30	35
			Throw	2-4-17	6-12-33	10-23-40	17-30-45	24-35-51	29-39-55	33-42-58
2" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	70	140	210	280	350	420	490
			Total Pressure	.003	.013	.028	.050	.078	.112	.154
			Static Pressure	.002	.009	.018	.032	.051	.073	.100
			Noise Criteria	<15	<15	<15	<15	<15	19	24
			Throw	0-1-3	1-3-11	3-6-18	5-11-22	8-14-25	11-18-27	14-20-30
		4 Ft.	Airflow, CFM	250	355	460	565	670	775	880
			Total Pressure	.028	.057	.095	.143	.201	.270	.348
			Static Pressure	.014	.028	.047	.072	.101	.135	.174
			Noise Criteria	<15	<15	<15	21	27	31	35
			Throw	1-3-10	3-5-20	4-9-26	6-13-29	9-19-31	11-21-34	14-25-37
		5 Ft.	Airflow, CFM	280	390	500	610	720	830	940
			Total Pressure	.032	.061	.101	.150	.210	.278	.357
			Static Pressure	.014	.027	.045	.067	.093	.128	.158
			Noise Criteria	<15	<15	<15	21	27	31	35
			Throw	1-3-9	2-4-17	3-7-25	4-10-30	7-14-32	9-20-34	11-23-37
2" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	140	275	410	545	680	815	950
			Total Pressure	.007	.028	.062	.109	.170	.244	.332
			Static Pressure	.005	.019	.044	.077	.120	.172	.234
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	1-3-11	5-11-22	11-17-27	15-22-31	19-25-35	22-27-38	24-27-38
		4 Ft.	Airflow, CFM	250	425	600	775	950	1125	1300
			Total Pressure	.015	.044	.088	.147	.219	.308	.412
			Static Pressure	.008	.024	.049	.081	.122	.171	.229
			Noise Criteria	<15	<15	<15	22	29	34	39
			Throw	1-3-10	3-8-24	7-14-30	11-21-34	16-26-37	20-29-41	24-31-44
		5 Ft.	Airflow, CFM	280	460	640	820	1000	1180	1360
			Total Pressure	.017	.047	.091	.149	.221	.309	.410
			Static Pressure	.008	.024	.047	.076	.113	.158	.210
			Noise Criteria	<15	<15	<15	22	28	34	38
			Throw	1-3-9	3-6-22	5-12-31	9-19-34	13-25-37	18-29-41	22-31-44

For performance table notes, see page A47.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (20, 25 & 30) • 2 SLOT WITH NAILOR PLENUM



2" Slot Width	2 Slot 14" Dia. Inlet	2 Ft.	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.004	.018	.041	.073	.114	.165	.225
			Static Pressure	.003	.014	.031	.055	.086	.123	.168
			Noise Criteria	<15	<15	<15	<15	21	27	32
			Throw	1-3-11	5-11-22	11-18-27	15-22-31	20-25-36	22-27-39	24-30-42
		4 Ft.	Airflow, CFM	250	450	650	850	1050	1250	1450
			Total Pressure	.010	.030	.062	.106	.161	.228	.307
			Static Pressure	.005	.018	.037	.063	.096	.137	.184
			Noise Criteria	<15	<15	<15	18	24	30	35
			Throw	1-3-10	3-9-25	8-17-31	13-24-36	20-28-40	23-31-43	26-33-47
		5 Ft.	Airflow, CFM	280	480	680	880	1080	1280	1480
			Total Pressure	.011	.030	.061	.102	.153	.215	.288
			Static Pressure	.005	.017	.034	.057	.086	.120	.159
			Noise Criteria	<15	<15	<15	16	23	28	33
			Throw	1-3-10	3-8-28	7-15-37	11-25-42	17-31-46	24-26-50	28-38-54
2.5" Slot Width	2 Slot 14" Dia. Inlet	2 Ft.	Airflow, CFM	150	335	520	705	890	1075	1260
			Total Pressure	.004	.022	.054	.098	.157	.229	.315
			Static Pressure	.003	.016	.037	.070	.111	.162	.223
			Noise Criteria	<15	<15	<15	18	26	32	37
			Throw	1-3-9	5-11-24	12-20-30	17-25-35	22-27-39	25-31-43	26-32-46
		4 Ft.	Airflow, CFM	300	540	780	1020	1260	1500	1740
			Total Pressure	.012	.039	.080	.137	.209	.295	.398
			Static Pressure	.006	.021	.044	.076	.116	.164	.220
			Noise Criteria	<15	<15	<15	21	28	33	38
			Throw	1-3-10	3-9-26	8-17-33	13-25-38	20-30-43	25-32-46	28-35-50
		5 Ft.	Airflow, CFM	350	600	850	1100	1350	1600	1850
			Total Pressure	.015	.043	.087	.144	.218	.306	.410
			Static Pressure	.007	.022	.044	.074	.111	.157	.210
			Noise Criteria	<15	<15	<15	22	28	34	38
			Throw	1-3-9	3-7-26	6-14-34	10-23-38	15-29-43	22-33-47	26-36-50
3" Slot Width	2 Slot 14" Dia. Inlet	2 Ft.	Airflow, CFM	175	385	595	805	1015	1225	1435
			Total Pressure	.005	.026	.062	.113	.181	.263	.361
			Static Pressure	.003	.017	.042	.076	.120	.175	.241
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	1-3-9	5-10-25	11-20-31	18-26-37	22-29-41	26-31-44	28-34-18
		4 Ft.	Airflow, CFM	320	580	840	1100	1360	1620	1880
			Total Pressure	.013	.042	.087	.149	.227	.322	.433
			Static Pressure	.006	.021	.045	.078	.119	.168	.227
			Noise Criteria	<15	<15	<15	22	27	34	39
			Throw	1-2-9	3-7-26	7-14-34	11-24-39	17-30-43	24-33-47	27-36-51
		5 Ft.	Airflow, CFM	380	645	910	1175	1440	1705	1970
			Total Pressure	.016	.045	.090	.149	.224	.314	.419
			Static Pressure	.007	.020	.041	.068	.103	.144	.193
			Noise Criteria	<15	<15	<15	21	28	33	38
			Throw	1-2-9	3-6-23	5-12-34	9-20-39	13-28-43	18-33-47	24-36-50

Performance Notes:

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts.
5. Throw values are based on pattern controller set 100% open.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

FM SERIES

- MODULAR SQUARE CEILING DIFFUSER
- COMPLIMENTS FLOWLINE™ LINEAR DIFFUSER SYSTEM
- ROUND NECK (SUPPLY)

Models:

Supply 1" (25) Slot

FM(I)10 Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FMB(I)10 Bolt-Slot (Fineline® Type) T-Bar

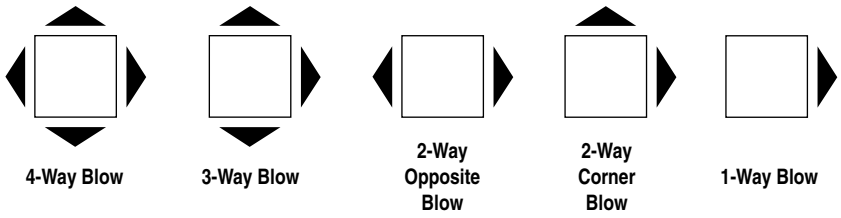
(I) Adds Internal Insulation.

Return 1" (25) Slot

FMR10 Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FMBR10 Bolt-Slot (Fineline® Type T-Bar

Field Adjustable Discharge Pattern Options



The FM Series modular square ceiling diffusers are ideal for interior spaces and compliment the Nailor FlowLine™ Linear Diffuser system. Designed with the architect in mind, these single slot diffusers provide a high capacity capability with high performance. To fully integrate into the ceiling system, the FM Series diffusers incorporate a field cut center ceiling tile (by others) that matches and blends in with the surrounding ceiling system.

This product is available in a nominal ceiling module size of 24" x 24" (600 x 600) with a 1" (25) slot to suit either imperial or metric exposed grid ceiling systems. The 4-way blow linear slot design utilizes the FlowLine™ Horizontal High Throw adjustable pattern controller, providing a tight air pattern along the ceiling and making it an excellent choice for VAV systems.

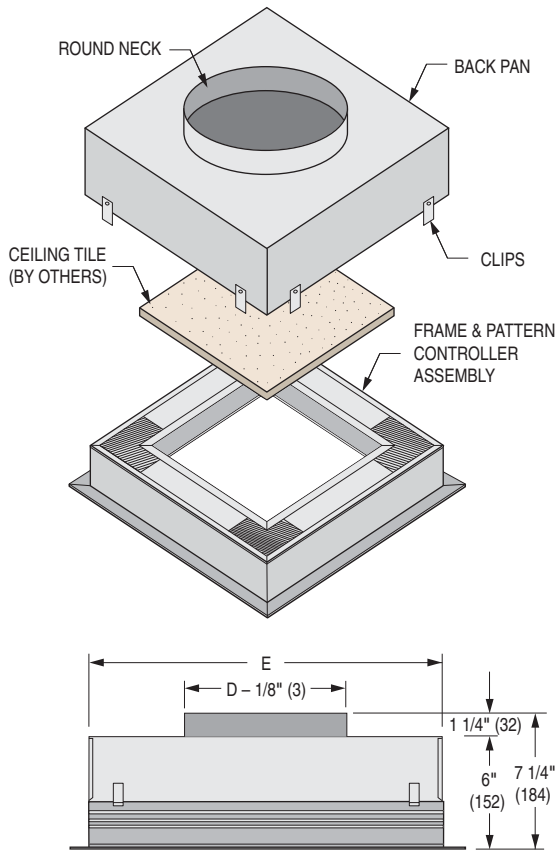
STANDARD FEATURES:

- Extruded aluminum construction with corrosion-resistant steel pattern controllers.
- Factory precision welding on all mitered corners.
- Pattern controllers are individually adjustable for horizontal or vertical discharge air patterns.
- Can be field adjusted for one, two, three or four-way blow directional air patterns.
- Adjustable dual pattern controller design permits both dampering and full shut-off without adding blank-offs.
- Supply diffusers have a round neck for flexible or hard duct connection.
- Matching return air units for ductless plenum return applications incorporate a light shield to block out light and prevent see-through.
- Plenum is secured with steel S-clips and is easily removed for installation of a field cut ceiling tile (by others) into the face of the diffuser.
- Standard finish is AW Appliance White face with black pattern controllers. Other finishes are available.

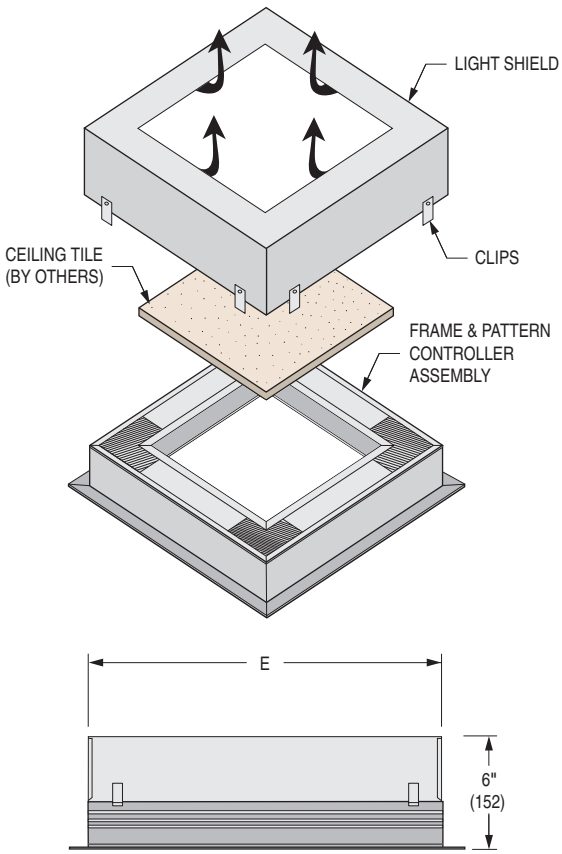
FM SERIES SQUARE CEILING DIFFUSERS

Standard Ceiling Module (CM) Sizes: Imperial 24" x 24" (610 x 610) • Metric 600 x 600mm
(Frame/Border Type AA Illustrated)

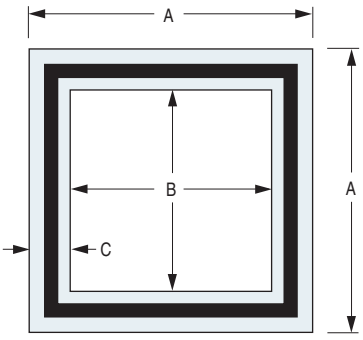
Supply Model



Return Model



Face View



Ceiling Tile Cutting Dimensions

Models	Border	Imperial Module 24" x 24" (610 x 610)	Metric Module 600 x 600 mm
FM(I)10, FMR10	AA	17 3/16 x 17 3/16 (437 x 437)	427 x 427
FMB(I)10, FMBR10	AG	17 5/8 x 17 5/8 (448 x 448)	438 x 438

Standard Round Inlet Sizes (Supply Units):

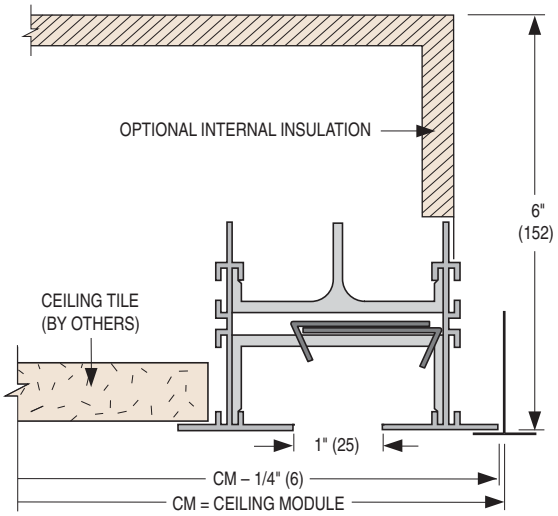
(Nominal D Diameter)
6" (152), 8" (203), 10" (254).

Dimensional Data:

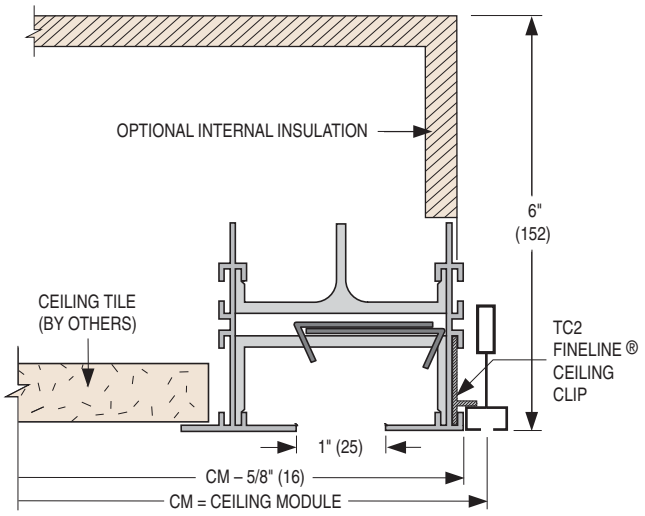
Models	Imperial Module 24 x 24 (610 x 610)				Metric Module 600 x 600 mm			
	A	B	C	E	A	B	C	E
FM(I)10, FMR10	23 3/4 (603)	16 5/8 (422)	3 9/16 (90)	22 15/16 (583)	594	413	90	573
FMB(I)10, FMBR10	23 3/8 (594)	17 1/16 (433)	3 5/32 (80)	22 9/16 (573)	584	423	80	584

FM SERIES SQUARE CEILING DIFFUSERS • FRAME/BORDER TYPES

Type AA Lay-in T-Bar Ceiling
(Models FM and FMR)
For Installation with 15/16" (24) or 9/16" (14) Flat T-Bar only.

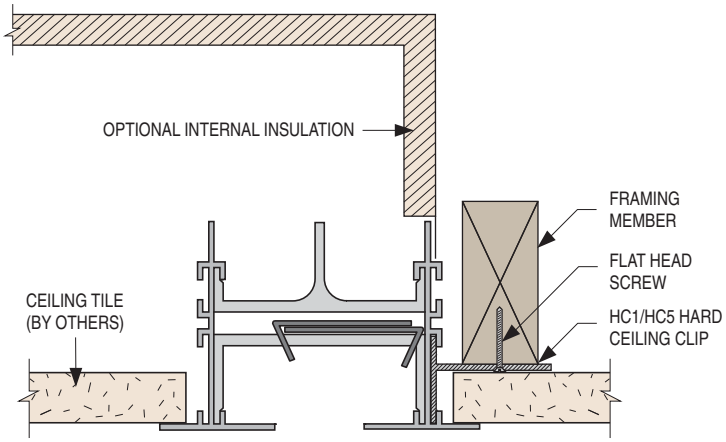


Type AG Bolt-Slot (Fineline® Type) Ceiling
(Models FMB and FMBR)

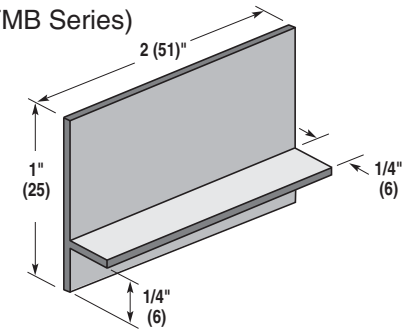


OPTIONAL HANGER & MOUNTING CLIPS

Type AA Surface Mount Application in Hard Ceiling

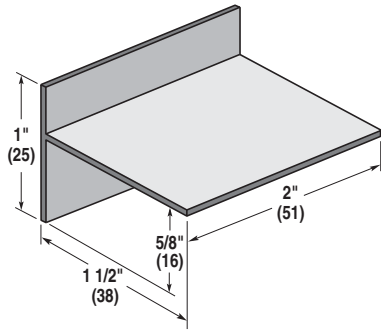


TC2 Fineline® T-Bar Clip
(Standard on
FMB Series)



The TC2 FlowLine™ T-Bar clips are used to support and level the FlowLine™ assembly in Bolt-Slot (Fineline® type) suspension systems.

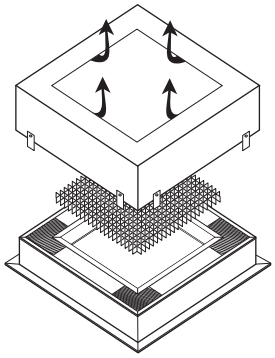
HC1 Hard Ceiling Clip 5/8" (16)
HC5 Hard Ceiling Clip 1/2" (13)
(Optional)



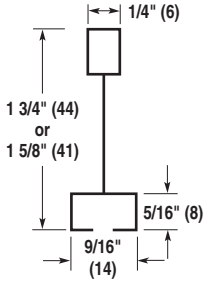
	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

The HC1 and HC5 Hard Ceiling Clip can be used to mount the FlowLine™ Square Ceiling Diffuser with frame/border type AA, where standard 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

High Capacity Return
1/2" x 1/2" x 1/2" (13 x 13 x 13)
Aluminum Grid Face



Typical Bolt-Slot
(Fineline® Type)
T-Bar Detail



PERFORMANCE DATA • MODULAR SQUARE CEILING DIFFUSERS

MODELS: FM10 AND FMB10

	Inlet Size	Neck Velocity, FPM	300	400	500	600	700	800	900
		Velocity Pressure, (in. w.g.)	.006	.010	.016	.022	.031	.040	.050
1" Slot Width	6" Dia. Inlet	Airflow, CFM	59	79	98	118	137	157	177
		Static Pressure	.015	.026	.041	.059	.080	.104	.132
		Noise Criteria	<15	<15	<15	16	20	24	28
		Throw	0-1-5	1-2-07	2-4-10	2-5-11	3-6-12	4-7-13	5-8-14
	8" Dia. Inlet	Airflow, CFM	105	140	175	209	244	279	314
		Static Pressure	.029	.052	.081	.117	.160	.209	.264
		Noise Criteria	<15	18	25	30	35	39	43
		Throw	1-4-10	2-6-13	5-8-14	6-10-16	7-12-17	8-13-18	10-13-19
	10" Dia. Inlet	Airflow, CFM	164	218	273	327	382	436	491
		Static Pressure	.050	.089	.139	.201	.273	.357	.452
		Noise Criteria	22	30	37	43	47	51	55
		Throw	4-7-13	7-11-16	8-12-18	11-13-19	12-14-20	13-16-23	13-17-24

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise criteria values are based on 10 dB room absorption, re 10^{-12} watts.
4. Pressure, throw and NC values are based on 4-way air pattern.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: FM

FLOWLINE™ MODULAR SQUARE CEILING DIFFUSERS

EXAMPLE: FM10 - 24 x 24 - 08 - AA - AW - —

1. **Models**

   Supply – 1" (25)

   FM(I)10 Standard T-Bar

   FMB(I)10 Bolt-Slot T-Bar

   (I) Adds Internal Insulation

   Return – 1" (25)

   FMR10 Standard T-Bar

   FMBR10 Bolt-Slot T-Bar

2. **Ceiling Module Size**

   Imperial Sizes

   inches

   24 x 24

   Metric Sizes

   mm

   600 x 600

3. **Inlet Size**

   (Supply Models only)

   06 6" (152) Round

   08 8" (203) Round

   10 10" (254) Round

4. **Frame/Border Type**

   AA Flange Frame (Models FM & FMR only) (default)

   AG Flange/Flangeless Frame (Models FMB & FMBR only) (default)

5. **Finish**

   AW Appliance White (default)

   BW British White

   SP Special custom color

Options and Accessories

6. **Optional**

   (Return Models only)

   HCR High Capacity Return

7. **Outside Mounting Hardware**

   – None (default)

   HC1* Hard Ceiling Clip – 5/8" (16) drywall

   HC5* Hard Ceiling Clip – 1/2" (13) drywall

   TC2** Fineline® T-Bar Mounting Clip

Note:

1. Mounting clips are not removable once mounted at factory.

2. *HC1 and HC5 Hard Ceiling Clips are optional on FM models, where installation is required in a hard ceiling. Standard FM models are for lay-in flat T-Bar ceilings.

3.**TC2 Fineline T-Bar Clips are supplied as standard on FMB Bolt-Slot models and allow unit to sit flush and level in ceiling grid.

4. HCR High Capacity return option available for models FMR10 and FMBR10 includes a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid face.

HOW TO ORDER

MODEL SERIES: FLH & FLV
STRAIGHT FLOWLINE™ LINEAR DIFFUSERS

EXAMPLE: FLH20 - 144" x 1 SLOT - STR - AA - AW - MM - HC1 - HC1 - —

1. **Models**

Horizontal High Throw

FLH10	1" (25) Slot
FLH15	1 1/2" (38) Slot
FLH20	2" (51) Slot
FLH25	2 1/2" (64) Slot
FLH30	3" (76) Slot

Vertical Jet Throw

FLV10	1" (25) Slot
FLV15	1 1/2" (38) Slot
FLV20	2" (51) Slot
FLV25	2 1/2" (64) Slot
FLV30	3" (76) Slot

2. **Nominal Length**

inches (mm's)

3. **Number of Slots**

1	One
2	Two

4. **Type**

STR	Straight Section (default)

5. **Frame/Border Type**

AA	Exposed Flange Frame
AAC	Exposed Flange Frame with Concealed Mounting Brackets
AG	Flange / Flangeless Frame
CA	Concealed Tapered/Exposed Flange Frame
CC	Concealed Tapered Frame
CCA	Concealed Tapered Frame with Countersunk Screw Holes
CCC	Concealed Tapered Frame with Concealed Mounting Brackets
CCCA	Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
CG	Concealed Tapered/Exposed Flangeless Frame
GG	Flangeless Frame
GJ	Exposed/Concealed Offset Frame (one slot FLH only)
KK	Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)

6. **Finish**

AW	Appliance White (default) (on Frames AA, AG, GG and GJ)
AL	Aluminum
BK	Black
BW	British White
MI	Mill (default on frames CC and KK)
MIAW	Mill/Appliance White (default on frames CA and CG)
PC	Prime Coat Paint
SA	Satin (clear) anodized (Frame/Border AA and AAC only)
SP	Special custom color
LBP	Light Bronze Paint
MBP	Medium Bronze Paint
DBP	Dark Bronze Paint

7. **End Cap Configuration**

Frame/Border Types AA, AAC, CC, CCA, CCC and CCCA only

MM	Mitered Mitered (default)
MO	Mitered Open
MC	Mitered Flat Cap

Frame/Border Types AA, AAC, GG and AG only

FF	Flanged Flanged
FO	Flanged Open
FC	Flanged Flat Cap

All Frame/Border Types including CA, CG, GJ and KK

OO	Open Open
OC	Open Flat Cap
CC	Flat Cap Flat Cap

Mounting Clip Availability

Accessory	Compatibility Frame/Border Type	Accessory	Compatibility Frame/Border Type
HC1	A, C, G	WC1	A
HC2	G	WC2	G, J
HC3-10	K (FLH10 or FLV10)		
HC3-15	K (FLH15 or FLV15)	TC1	A, G
HC3-20	K (FLH20 or FLV20)	TC2	G
HC5	A, C, G		

Options and Accessories

8. **Left Hand Mounting Hardware**

–	None (default)
HC1	Hard Ceiling Clip – 5/8" (16) drywall
HC2	Hard Ceiling Clip – 5/8" (16) drywall
HC3	Hard Ceiling Clip – 5/8" (16) drywall
HC5	Hard Ceiling Clip – 1/2" (13) drywall
WC1	Wall Clip
WC2	Wall Clip
TC1	T-Bar Clip
TC2	Fineline® T-Bar Clip

9. **Right Hand Mounting Hardware**

–	None (default)
HC1	Hard Ceiling Clip – 5/8" (16) drywall
HC2	Hard Ceiling Clip – 5/8" (16) drywall
HC3	Hard Ceiling Clip – 5/8" (16) drywall
HC5	Hard Ceiling Clip – 1/2" (13) drywall
WC1	Wall Clip
WC2	Wall Clip
TC1	T-Bar Clip
TC2	Fineline® T-Bar Clip

10. **Angle Cut ***

–	None (default)
AC1	One End
AC2	Both Ends

Note:

1. Maximum single section length is 144" (3658).

2. Border Types CC, CCA, CCC, CCCA and KK (concealed frame) are supplied as standard with mill finish (MI). No options. Two slot model Frame/Border CC (A, C and CA), CA and CG have AW Appliance White center tee.

3. All models except Frame/Border Type AAC, CCC and CCCA (supplied with concealed mounting brackets) include integral hanger brackets on 24" (610) centers as standard.

4. Hard ceiling clips and wall clips are shipped in quantities based on 12" (305) spacing and T-Bar clips on 24" (610) spacing. Left and right hand clips are identical.

5. *Specify AC Angle cut(s) and attach drawing. Angle cuts require an open end border.

HOW TO ORDER

MODEL SERIES: FLH AND FLV
CURVED FLOWLINE™ LINEAR DIFFUSERS

EXAMPLE: FLH20 - 120" x 1 SLOT - FLT - ARC - LRIO - 240" - AA - AW - FF - HC1 - HC1

1. **Models**

Horizontal High Throw

FLH10 1" (25) Slot
FLH15 1 1/2" (38) Slot
FLH20 2" (51) Slot
FLH25 2 1/2" (64) Slot
FLH30 3" (76) Slot

Vertical Jet Throw

FLV10 1" (25) Slot
FLV15 1 1/2" (38) Slot
FLV20 2" (51) Slot
FLV25 2 1/2" (64) Slot
FLV30 3" (76) Slot

2. **Nominal Length**

inches (mm's)

3. **Number of Slots**

1 One
2 Two

4. **Type**

STR Straight Section (default)
FLT Flat Face Curve
CAV Concave Face Curve <)
VEX Convex Face Curve) >

5. **Curve Length**

ARC Arc (default)
CHRD Chord
CIRC Circle

6. **Location of Radius**

Type FLT:

LRIO Inside Edge of Opening
LRCL Centerline of Opening

Type CAV / VEX:

LRFO Face of Opening

7. **Radius Dim.**

Specify in inches (mm's)
(See table for restrictions)

8. **Frame/Border Type**

AA Exposed Flange Frame
AAC Exposed Flange Frame with Concealed Mounting Brackets
CC Concealed Tapered Frame
CCA Concealed Tapered Frame with Countersunk Screw Holes
CCC Concealed Tapered Frame with Concealed Mounting Brackets
CCCA Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
GG Flangeless Frame

9. **Finish**

AW Appliance White (default) (on Frame AA)
AL Aluminum
BK Black
BW British White
MI Mill (default on frames CC)
PC Prime Coat Paint
SP Special custom color
LBP Light Bronze Paint
MBP Medium Bronze Paint
DBP Dark Bronze Paint

10. **End Cap Configuration**

Frame/Border Types AA, AAC and GG only

FF Flanged Flanged
FO Flanged Open
FC Flanged Flat Cap

All Frame/Border Types

OO Open Open
OC Open Flat Cap
CC Flat Cap Flat Cap

(None for circle length)

Options and Accessories

11. **Left Hand Mounting Hardware**

– None (default)
HC1 Hard Ceiling Clip – 5/8" (16) drywall
HC5 Hard Ceiling Clip – 1/2" (13) drywall

12. **Right Hand Mounting Hardware**

– None (default)
HC1 Hard Ceiling Clip – 5/8" (16) drywall
HC5 Hard Ceiling Clip – 1/2" (13) drywall

Notes:

1. Maximum single section curved length is 120" (3048). Longer lengths are supplied in multiple sections.

2. Curve Length: Must be ordered by ARC or CIRCLE.

Chord: There is no standard pricing for the configuration selected. Contact Application Engineering, Houston or calculate ARC length. Circle: Length - 2 r. Radius = Length/2 Arc Length = Angle (degrees) 2 r/360

3. Radius: Refer to submittal FLCC. For multiple radius, contact Application Engineering, Houston and provide a sketch.

4. Border Types CC, CCA, CCC and CCCA are supplied as standard with mill finish (MI). No options. Two slot model has AW Appliance White center tee.

5. All models except Frame/Border Type AAC, CCC and CCCA (supplied with concealed mounting brackets) include integral hanger brackets on 24" (610) centers as standard.

6. Hard ceiling clips and wall clips are shipped in quantities based on 12" (305) spacing. Left and right hand clips are identical.

Minimum Radius:

Models	Slot Width	Flat Face				Concave & Convex	
		Frame Types AA & GG		Frame Type CC		Frame Types AA, CC & GG	
		1 Slot	2 Slot	1 Slot	2 Slot	1 Slot	2 Slot
FLH10, FLV10	1" (25)	30" (762)	30" (762)	40" (1016)	40" (1016)	60" (1524)	60" (1524)
FLH15, FLV15	1 1/2" (38)	30" (762)	30" (762)	40" (1016)	40" (1016)	60" (1524)	60" (1524)
FLH20, FLV20	2" (51)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLH25, FLV25	2 1/2" (64)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLH30, FLV30	3" (76)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)

HOW TO ORDER

MODEL SERIES: FLH-TZ & FLV-TZ
TECHZONE™ FLOWLINE™ LINEAR DIFFUSERS

EXAMPLE: FLH10TZ - 48" x 2 SLOT - 06 - NT - AW - CC - —

1. **Models**

   Horizontal High Throw

   FLH10TZ 1" (25) Slot

   Vertical Jet Throw

   FLV10TZ 1" (25) Slot

2. **Nominal Length**

   inches (mm's)

3. **Number of Slots**

   1 One

   2 Two

4. **Ceiling Module Width**

   04 4" (102) Wide

   06 6" (152) Wide

5. **Frame/Border Type**

   LT Lay-in T-Bar

   NT Narrow T-Bar

6. **Finish**

   AW Appliance White (default)

   AL Aluminum

   BK Black

   BW British White

   MI Mill

   PC Prime Coat Paint

   SP Special custom color

7. **End Cap Configuration**

   OO Open Open

   OC Open Flat Cap

   CC Flat Cap Flat Cap

Options and Accessories

8. **Angle Cut ***

   – None (default)

   AC1 One End

   AC2 Both Ends

Note:

1. Maximum single section length is 144" (3658).

2. All models include integral hanger brackets on 24" (610) centers as standard.

3. *Specify AC Angle cut(s) and attach drawing. Angle cut AC1 is available with OO and OC end cap. Angle cut AC2 is available with OO end cap.

HOW TO ORDER

MODEL SERIES: FLMC

FLOWLINE™ ACCESSORIES — MITERED CORNER SECTIONS

EXAMPLE: FLMC20 - 1 - AA - AW - 90 - HC1 - HC1

1. **Models**
   - FLMC10 1" (25) Slot
   - FLMC15 1 1/2" (38) Slot
   - FLMC20 2" (51) Slot
   - FLMC25 2 1/2" (64) Slot
   - FLMC30 3" (76) Slot
2. **Number of Slots**
   - 1 One
   - 2 Two
3. **Frame/Border Type**
   - AA Exposed Flange Frame
   - AC* Exposed Flange/Concealed Tapered Frame
   - AG* Flange/Flangeless Frame
   - CA* Concealed Tapered/Exposed Flange Frame
   - CC Concealed Tapered Frame
   - CG* Concealed Tapered/Exposed Flangeless Frame
   - GG Flangeless Frame
   - GA* Flangeless/Flange Frame
   - GC* Exposed Flangeless/Concealed Tapered Frame
   - GJ* Exposed/Concealed Offset Frame (One Slot FLH only)
   - KK Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)
4. **Finish**
   - AW Appliance White (default) (on Frames AA, GG, AG, GA & GJ)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill (default on frames CC and KK)
   - MIAW Mill/Appliance White (default on frames AC, CA, CG and GC)
   - PC Prime Coat Paint
   - SA Satin (clear) anodized (Frame/border AA only)
   - SP Special custom color
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
5. **Mitered Angle**
   - 90 90 degree (default)
   - 135 135 degree
   - AN Degree of angle (Specify angle = ____)

Options and Accessories

6. **Inside Mounting Hardware**
   - – None (default)
   - HC1 Hard Ceiling Clip – 5/8" (16) drywall
   - HC5 Hard Ceiling Clip – 1/2" (13) drywall
   - TC2 Fineline® T-Bar Mounting Clip
7. **Outside Mounting Hardware**
   - – None (default)
   - HC1 Hard Ceiling Clip – 5/8" (16) drywall
   - HC5 Hard Ceiling Clip – 1/2" (13) drywall
   - TC2 Fineline® T-Bar Mounting Clip

Notes:

1. Border Types CC and KK are supplied with Mill finish (MI). No options (2 slot model CC has AW Appliance White center tee). Border Types AC, CA, CG and GC are supplied with MIAW Mill/Appliance White finish. No options except SP.

2. Mitered corner section is supplied inactive with integral blank-offs. Unit is supported by adjacent Flowline™.

3. *First specified Frame/Border is inside edge of miter, second is outside.

MODEL SERIES: FLEF

FLOWLINE™ ACCESSORIES — FLANGED END CAPS (TYPE F)

EXAMPLE: FLEF20 - 1 - AA - AW

1. **Models**
   - FLEF10 1" (25) Slot
   - FLEF15 1 1/2" (38) Slot
   - FLEF20 2" (51) Slot
   - FLEF25 2 1/2" (64) Slot
   - FLEF30 3" (76) Slot
2. **Number of Slots**
   - 1 One
   - 2 Two
3. **Frame/Border Type**
   - AA Exposed Flange Frame
   - AG Flange / Flangeless Frame
   - GG Flangeless Frame
4. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint

HOW TO ORDER

MODEL SERIES: FLC & FLT

FLOWLINE™ ACCESSORIES — TRANSITIONS

EXAMPLE: FLC20 - 1 - AA - AW - HC1

1. **Models**

Type C Cross

FLC10	1" (25) Slot
FLC15	1 1/2" (38) Slot
FLC20	2" (51) Slot
FLC25	2 1/2" (64) Slot
FLC30	3" (76) Slot

Type T Tee

FLT10	1" (25) Slot
FLT15	1 1/2" (38) Slot
FLT20	2" (51) Slot
FLT25	2 1/2" (64) Slot
FLT30	3" (76) Slot

2. **Number of Slots**

1	One

3. **Frame/Border Type**

AA	Exposed Flange Frame
CC	Concealed Tapered Frame
GG	Flangeless Frame

4. **Finish**

AW	Appliance White (default) (on Frames AA and GG)
AL	Aluminum
BK	Black
BW	British White
MI	Mill (default on frame CC)
PC	Prime Coat Paint
SP	Special custom color
LBP	Light Bronze Paint
MBP	Medium Bronze Paint
DBP	Dark Bronze Paint

Options and Accessories

5. **Mounting Hardware**

–	None (default)
HC1	Hard Ceiling Clip – 5/8" (16) drywall
HC5	Hard Ceiling Clip – 1/2" (13) drywall
TC2	Fineline® T-Bar Mounting Clip

Note:

1. Border Type CC is supplied with Mill finish (MI) only.

2. Units are supplied inactive with integral blank-offs. Unit is supported by adjacent flowline.

MODEL SERIES: FLR

FLOWLINE™ ACCESSORIES — RETURN HOOD/SIGHT SHIELD

EXAMPLE: FLR20 - 48 - 1

1. **Models**

FLR(I)10	1" (25) Slot
FLR(I)15	1 1/2" (38) Slot
FLR(I)20	2" (51) Slot
FLR(I)25	2 1/2" (64) Slot
FLR(I)30	3" (76) Slot

(I) Adds Internal Insulation

2. **Length**

Imperial Sizes

inches (mm's)

48	(1219) (default)

3. **Number of Slots**

1	One
2	Two

HOW TO ORDER

MODEL SERIES: FLP

FLOWLINE™ LINEAR DIFFUSER PLENUMS

EXAMPLE: FLP10 - 48" x 1 SLOT - STR - HSTD - 08 - AA - —

1. **Models**

Uninsulated Plenum

FLP10	1" (25) Slot
FLP15	1 1/2" (38) Slot
FLP20	2" (51) Slot
FLP25	2 1/2" (64) Slot
FLP30	3" (76) Slot

Insulated Plenum (internal)

FLPI10	1" (25) Slot
FLPI15	1 1/2" (38) Slot
FLPI20	2" (51) Slot
FLPI25	2 1/2" (64) Slot
FLPI30	3" (76) Slot

2. **Nominal Length**

Imperial Sizes

inches (mm's)

24, 30, 36, 48, 60, 72

(610, 762, 914, 1219, 1524, 1829)

Metric Sizes

(mm's)

(600, 750, 900, 1200, 1500, 1800)

3. **Number of Slots**

1	One
2	Two

4. **Type**

STR Straight Section (default)

5. **Plenum Height**

HSTD Standard (default)

One Slot Option (for round inlets)

H13	13" (330)
H15	15" (381)
H17	17" (432)

6. **Inlet Size**

One Slot

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Flat Oval
10R	10" (254)	Round
12	12" (305)	Flat Oval
12R	12" (305)	Round
14	14" (356)	Flat Oval
14R	14" (356)	Round

Two Slot

06	6" (152)	Round
08	8" (203)	Round
10R	10" (254)	Round
12R	12" (305)	Round
14R	14" (356)	Round

7. **Frame/Border Type**

(Diffuser)

AA	Exposed Flange Frame
AAC	Exposed Flange Frame with Concealed Mounting Brackets
AG	Flange/Flangeless Frame
CA	Concealed Tapered/Exposed Flange Frame
CC	Concealed Tapered Frame
CCA	Concealed Tapered Frame with Countersunk Screw Holes
CCC	Concealed Tapered Frame with Concealed Mounting Brackets
CCCA	Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
CG	Concealed Tapered/Exposed Flangeless Frame
GG	Flangeless Frame
GJ	Exposed/Concealed Offset Frame (One Slot FLH only)
KK	Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)
LT	Lay-in T-Bar (TechZone™)
NT	Narrow T-Bar (TechZone™)

Options and Accessories:

8. **Inlet Damper**

–	None (default)
ID	Inlet Damper with HLQ
IDCO	Cable Operated Damper

9a. **External Insulation**

(FLP models only)

–	None (default)
EX	Foil Back (installed)

9b. **Internal Insulation**

(FLPI models only)

FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

Notes:

1. Plenums are shipped loose as standard for field installation.

2. Plenums for Frame/Border Types AA, CC, CA, CG, CCA, GG, AG, GJ, KK, LT and NT are for direct attachment to diffuser neck. TechZone™ Frame Border Type LT and NT are available in FLP10 and FLPI10 1" (25) slot only.

3. Plenums for Frame Types AAC, CCC and CCCA are hemmed for field attachment by use of concealed mounting brackets.

4. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

Available Inlet Sizes – One Slot Plenum

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
HSTD	Standard *	06, 08	10 – 14
H13	13" (330)	06, 08, 10R	12 – 14
H15	15" (381)	06, 08, 10R, 12R	14
H17	17" (432)	06, 08, 10R – 14R	—

* 10" (254) for Type AA, CC, CA, CG, CCA, GG, AG, GJ, KK, LT and NT (straight leg).
12" (305) for Type AAC, CCC and CCCA (hemmed leg).

HOW TO ORDER

MODEL SERIES: FLP

CURVED FLOWLINE™ LINEAR DIFFUSER PLENUMS

EXAMPLE: FLP10 - 48" x 1 SLOT - FLT - LRIO - HSTD - 08 - IC - AA - —

1. **Models**

Uninsulated Plenum

FLP10	1" (25) Slot
FLP15	1 1/2" (38) Slot
FLP20	2" (51) Slot
FLP25	2 1/2" (64) Slot
FLP30	3" (76) Slot

Insulated Plenum (internal)

FLPI10	1" (25) Slot
FLPI15	1 1/2" (38) Slot
FLPI20	2" (51) Slot
FLPI25	2 1/2" (64) Slot
FLPI30	3" (76) Slot

2. **Nominal Length**

Imperial Sizes

inches (mm's)

24, 30, 36, 48, 60, 72

(610, 762, 914, 1219, 1524, 1829)

Metric Sizes

(mm's)

(600, 750, 900, 1200, 1500, 1800)

3. **Number of Slots**

1	One
2	Two

4. **Type**

STR	Straight Section (default)
FLT	Flat Face Curve
CAV	Concave Face Curve <)
VEX	Convex Face Curve) >

5. **Location of Radius**

Type FLT:

LRIO	Inside Edge of Opening
LRCL	Centerline of Opening

Type CAV / VEX:

LRFO	Face of Opening

6. **Radius Dim.**

Specify in inches (mm's)

(See table for restrictions)

7. **Plenum Height**

HSTD Standard (default)

One Slot Option (for round inlets)

H13	13" (330)
H15	15" (381)
H17	17" (432)

8. **Inlet Size**

One Slot

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Flat Oval
10R	10" (254)	Round
12	12" (305)	Flat Oval
12R	12" (305)	Round
14	14" (356)	Flat Oval
14R	14" (356)	Round

Two Slot

06	6" (152)	Round
08	8" (203)	Round
10R	10" (254)	Round
12R	12" (305)	Round
14R	14" (356)	Round

9. **Inlet Location**

(FLT only)

IC	Inside Curve
OC	Outside Curve

10. **Frame/Border Type**

(Diffuser)

AA	Exposed Flange Frame
AAC	Exposed Flange Frame with Concealed Mounting Brackets
CC	Concealed Tapered Frame
CCA	Concealed Tapered Frame with Countersunk Screw Holes
CCC	Concealed Tapered Frame with Concealed Mounting Brackets
CCCA	Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
GG	Flangeless Frame

Options and Accessories

11. **Inlet Damper**

–	None (default)
ID	Inlet Damper with HLQ
IDCO	Cable Operated Damper

12a. **External Insulation**

(FLP models only)

–	None (default)
EX	Foil Back (installed)

12b. **Internal Insulation**

(FLPI models only)

FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

Notes:

1. Plenums are shipped loose as standard for field installation.

2. Plenums for Frame/Border Types AA, CC, CA, CCA and GG are for direct attachment to diffuser neck.

3. Plenums for Frame Types AAC, CCC and CCCA are hemmed for field attachment by use of concealed mounting brackets.

4. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

Available Inlet Sizes – One Slot Plenum

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
HSTD	Standard *	06, 08	10 – 14
H13	13" (330)	06, 08, 10R	12 – 14
H15	15" (381)	06, 08, 10R, 12R	14
H17	17" (432)	06, 08, 10R – 14R	—

* 10" (254) for Type AA, CC, CA, CCA and GG (straight leg).
12" (305) for Type AAC, CCC and CCCA (hemmed leg).

Curved Plenum Minimum Radius:

Models	Flat Face		Concave & Convex	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP10, FLPI10	30" (762)	30" (762)	60" (1524)	60" (1524)
FLP15, FLPI15	30" (762)	30" (762)	60" (1524)	60" (1524)
FLP20, FLPI20	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLP25, FLPI25	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLP30, FLPI30	60" (1524)	60" (1524)	60" (1524)	60" (1524)

HOW TO ORDER

MODEL SERIES: FT

LAY-IN FLOWLINE™ LINEAR DIFFUSERS

EXAMPLE: FTH10 - 48" x 1 SLOT - 08 - AA - AW - – - - - – - —

1. **Models**

Horizontal High Throw

Standard Flat T-Bar (15/16" or 9/16")

FTH(I)10	1" (25) Slot
FTH(I)15	1 1/2" (38) Slot
FTH(I)20	2" (51) Slot
FTH(I)25	2 1/2" (64) Slot
FTH(I)30	3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBH(I)10	1" (25) Slot
FTBH(I)15	1 1/2" (38) Slot
FTBH(I)20	2" (51) Slot
FTBH(I)25	2 1/2" (64) Slot
FTBH(I)30	3" (76) Slot

Vertical Jet Throw

Standard Flat T-Bar (15/16" or 9/16")

FTV(I)10	1" (25) Slot
FTV(I)15	1 1/2" (38) Slot
FTV(I)20	2" (51) Slot
FTV(I)25	2 1/2" (64) Slot
FTV(I)30	3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBV(I)10	1" (25) Slot
FTBV(I)15	1 1/2" (38) Slot
FTBV(I)20	2" (51) Slot
FTBV(I)25	2 1/2" (64) Slot
FTBV(I)30	3" (76) Slot

(I) Adds Internal Insulation

Return (no plenum)

Standard Flat T-Bar (15/16" or 9/16")

FTHR10	1" (25) Slot
FTHR15	1 1/2" (38) Slot
FTHR20	2" (51) Slot
FTHR25	2 1/2" (64) Slot
FTHR30	3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBHR10	1" (25) Slot
FTBHR15	1 1/2" (38) Slot
FTBHR20	2" (51) Slot
FTBHR25	2 1/2" (64) Slot
FTBHR30	3" (76) Slot

2. **Nominal Length***

Imperial Sizes

inches (mm's)

24, 48, 60

(610, 1219, 1524)

Metric Sizes

(mm's)

(600, 1200, 1500)

3. **Number of Slots**

1	One
2	Two

4. **Inlet Size**

One Slot

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Flat Oval
12	12" (305)	Flat Oval
14	14" (356)	Flat Oval

Two Slot

06	6" (152)	Round
08	8" (203)	Round
10R	10" (254)	Round
12R	12" (305)	Round
14R	14" (356)	Round

5. **Frame/Border Type***

One or Two Slot

AA	Flange Frame
AG	Flange/Flangeless Frame
GG	Flangeless Frame

Two Slot

AAS	Flange Frame (Straddle Mount)
GGS	Flangeless Frame (Straddle Mount)

6. **Finish**

AW	Appliance White (default)
BW	British White
SP	Special custom color

Options and Accessories

7. **Left Hand Mounting Hardware**

–	None (default)
TC1	T-Bar Mounting Clips
TC2	Fineline® T-Bar Mounting Clips

8. **Right Hand Mounting Hardware**

–	None (default)
TC1	T-Bar Mounting Clips
TC2	Fineline® T-Bar Mounting Clips

9. **Inlet Damper**

–	None (default)
ID	Inlet Damper with HLQ

10a. **External Insulation**

(non "I" models only)

–	None (default)
EX	External Foil Back (installed)

10b. **Internal Insulation**

("I" models only)

FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

Notes:

1. All models include an integral hanger bracket at each end of unit as standard.

2. Bolt-slot Models (FTB) are available in 24" and 48" imperial (600 and 1200 metric) modules only and only with Frame/Border Types GG, AG and GGS. TC2 Fineline® T-Bar Clips are recommended for support and levelling.

3. FT Series models are supplied with Type CC Flat End Caps.

4. Return models are supplied with horizontal type dual pattern controllers for dampering (system balancing) and without plenum. If plenums are required on return air units, use supply model.

5. Standard internal insulation ("I" suffix models) is 1/4 (6.35) coated fiberglass.

SUGGESTED SPECIFICATIONS

FLH and FLV Series

Furnish and install Nailor FlowLine™ linear slot diffusers and accessories of the size and type shown on the architectural and mechanical plans and/or air distribution schedules. Mechanical contractor shall coordinate installation with General Contractor and other sub-contractors as required.

The linear slot diffuser shall utilize heavy wall extruded aluminum frames and be capable of supporting the ceiling system. Material shall be minimum wall thickness 0.06" (1.52). Diffuser frames shall be supplied with integral spacer bars and hanger brackets, spaced approximately on 24" (610) centers. The integral hanger brackets shall allow the linear slot diffusers to be supported from the ceiling structure with hanger wire in lay-in suspension ceiling installations. In hard ceiling installations, provide support clips by the manufacturer that allow the diffusers to be secured to the ceiling diffuser opening framing channels.

The linear slot diffuser shall be complete with factory end border configurations as shown or indicated. Where exposed end caps are required, they shall be factory installed architectural mitered picture frame type. Flanges/butt type end caps are not acceptable.

Provide alignment strips and spline clips by the manufacturer to secure joints and ceiling tees to the linear diffuser as required. Mitered corner sections shall be supplied by the manufacturer in one-piece construction.

The air pattern controller shall be dual type on 24" (610) centers and fully adjustable to permit various air pattern configurations, as well as allow throttling, as required for air volume reduction or complete shut-off without adding any blank-off devices. Pattern controllers shall be minimum 20 ga. (1.01) corrosion-resistant steel. One-piece pattern controllers are not acceptable.

Linear slot diffusers shall incorporate either horizontal high throw or vertical jet throw pattern controllers as shown on mechanical plans and drawings.

All diffusers shall have a single slot, unless shown otherwise, and shall be capable of being used for supply, return or exhaust air. Horizontal high throw diffusers shall maintain a tight ceiling pattern from maximum to minimum cataloged airflows and be suitable for VAV systems.

Where curved linear slot diffusers are indicated, they shall be one slot design and stretch formed by the manufacturer to the exact radii required. Segmented linear slot diffusers are not acceptable. Pattern controller shall be factory installed and fixed in the airflow direction specified on the drawings.

Supply air engineered plenum boots shall be minimum 22 ga. (0.85) coated steel and of the same manufacturer as the linear slot diffuser. Lengths and inlet sizes shall be as indicated on the plans and schedules. Where required, plenums shall be insulated with either internal matt faced fiberglass insulation or external foil back insulation, as specified on drawings or schedules. Return hood/sight baffles shall be provided as shown.

Exposed flange/border frames shall be factory painted standard white or custom painted to match specified architectural requirements. Provide paint samples if required. Pattern controllers and integral spacers shall be painted flat black.

Performance of the linear slot diffuser shall be based upon cataloged data obtained from tests conducted in accordance with ASHRAE Standard 70-2023. Pattern controllers shall be field adjusted after diffuser installation and set in their normal operating condition. Air test and balancing of linear slot diffusers shall be in accordance with the testing and balancing portion section of the specifications.

Provide manufacturers submittal drawings and published performance data.

FM Series

Furnish and install Nailor FlowLine™ modular square ceiling diffusers of the size and type shown on the architectural and mechanical plans and/or air distribution schedules. Diffusers shall be designed as a nominal 24" x 24" (600 x 600mm) module size. Mechanical contractor shall coordinate installation with General Contractor and other sub-contractors as required.

These diffusers shall utilize heavy wall extruded aluminum frames with inside and outside mitered corners. The diffusers shall feature a 1" (25) continuous slot around all four sides with dual pattern controllers that are fully adjustable to permit throttling, as required for air volume reduction or complete shut-off without adding any blank-off devices. Diffusers shall be capable of being adjustable for a 4, 3, 2 or 1-way blow pattern as required after installation. Pattern controllers shall be minimum 20 ga. (1.01) corrosion- resistant steel. One-piece pattern controllers are not acceptable. The pattern controllers shall be horizontal high throw type and shall maintain a tight ceiling air pattern from maximum to minimum cataloged airflows and be suitable for VAV systems.

Supply units shall be complete with a compatible steel back pan that is removable and secured by steel 's' clips. The back pan shall incorporate an integral drawn round neck to permit hard or flexible duct connection. Return units shall be similar in appearance but feature a light shield back pan for ductless return installations. The center acoustical ceiling tile shall be supplied, cut and field installed by the acoustical tile sub-contractor.

Exposed flange/border frames shall be factory painted standard white or custom painted to match specified architectural requirements. Provide paint samples if required. Pattern controllers and integral spacers shall be painted flat black.

Performance of the ceiling diffuser shall be based upon cataloged data obtained from tests conducted in accordance with ASHRAE Standard 70-2023. Pattern controllers shall be field adjusted after diffuser installation and set in their normal operating condition. Air test and balancing of ceiling diffusers shall be in accordance with the testing and balancing portion section of the specifications.

Provide manufacturers submittal drawings and published performance data.

Nailor® Industries Inc.

LINEAR DIFFUSERS AND BAR GRILLES

TABLE OF CONTENTS

	Page No.
General Product Overview	**B3**
Linear Slot Diffusers	
Model Series 5000 • 'Ice Tong' Pattern Controllers • Extruded Aluminum	
5050 • Supply • 1/2" (13) Slot	**B5**
5075 • Supply • 3/4" (19) Slot	**B5**
5010 • Supply • 1" (25) Slot	**B5**
5015 • Supply • 1 1/2" (38) Slot	**B5**
5050R • Return • 1/2" (13) Slot	**B5**
5075R • Return • 3/4" (19) Slot	**B5**
5010R • Return • 1" (25) Slot	**B5**
5015R • Return • 1 1/2" (38) Slot	**B5**
Model Series 5000TZ • 'Ice Tong' Pattern Controllers	
For Armstrong® TechZone™ and USG Logix™ Ceiling Systems	
5075TZ • Supply • 3/4" (19) Slot	**B12**
5075TZR • Return • 3/4" (19) Slot	**B12**
Options and Accessories	**B15**
Linear Slot Diffuser Plenums	
Model Series 5300 • Steel	
5350/75/10/15 • Standard Performance	**B27**
5350/75/10/15MP • Modified Performance	**B27**
Model Series 5300 with IDCO Option • Steel	
5375/10/15 • Standard Performance	**B29**
5375/10/15MP • Modified Performance	**B29**
Model Series 5300TZ • Steel	
For Armstrong® TechZone™ and USG Logix™ Ceiling Systems	
5375(I)TZ • Standard Performance	**B30**
5375(I)TZMP • Modified Performance	**B30**
Linear Bar Grilles	
Model Series 4900 • Fixed Bars • Extruded Aluminum	
49-240 • 1/2" (13) Spacing • 1/4" (6) Bars • 0° Deflection	**B47**
49-241 • 1/2" (13) Spacing • 1/4" (6) Bars • 15° Deflection	**B47**
49-243 • 1/2" (13) Spacing • 1/4" (6) Bars • 30° Deflection	**B47**
49-280 • 1/2" (13) Spacing • 1/8" (3) Bars • 0° Deflection	**B47**
49-281 • 1/2" (13) Spacing • 1/8" (3) Bars • 15° Deflection	**B47**
49-480 • 1/4" (6) Spacing • 1/8" (3) Bars • 0° Deflection	**B47**
49-481 • 1/4" (6) Spacing • 1/8" (3) Bars • 15° Deflection	**B47**
Accessories	**B54**
Heavy Duty Maximum Floor Loading	**B55**
Linear Louver Diffusers	
Model Series 48LL • Architectural • Extruded Aluminum	
48LL1 • One-way Pattern	**B66**
48LL2 • Two-way Pattern	**B66**
Linear Vane Diffusers	
Model Series 48LV • Architectural • Extruded Aluminum • Fixed Blades	
48LV1 • One-way Pattern	**B70**
48LV2 • Two-way Pattern	**B70**

GENERAL PRODUCT OVERVIEW

Linear Diffusers and Bar Grilles

Linear type diffusers and grilles have been developed to satisfy architectural and engineering applications that require a continuous length appearance, aesthetically pleasing design and high engineering performance with premium quality aluminum products. Installations can be equally effective where lengths are literally continuous around the periphery of a wall, floor or ceiling space and certain sections of the unit are active with regard to airflow, satisfying mechanical and architectural requirements. Individual discreet lengths may be separately installed at reduced cost and offer the same engineering performance. The proposed application and installed location will usually dictate whether a slot, bar or louvered type product is the most suitable choice. When the ideal product type has been chosen, the airflow and performance requirements will dictate the style and sizing selections from a comprehensive range of available sizes and capacities.

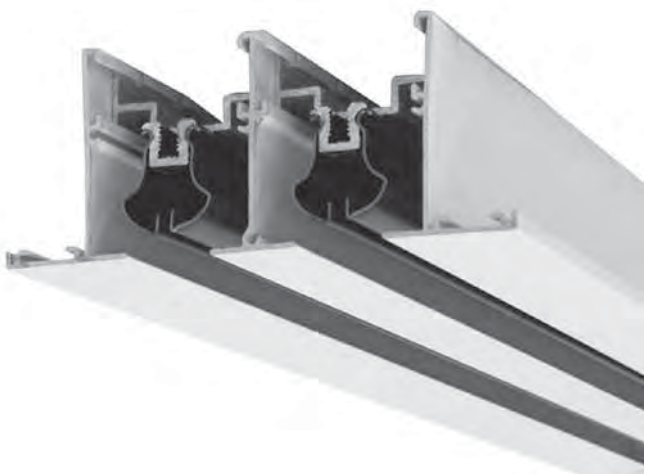
LINEAR SLOT DIFFUSERS

Model Series 5000 provides architectural excellence and outstanding performance flexibility. Available in four different slot opening widths, a range of 1 to 10 slots and a wide choice of border/frame styles that co-ordinate with ceiling and installation details. They feature 'ice tong' style individual pattern controllers in each slot that not only offer a 180° air pattern adjustment, but can also be used to dampen airflow.

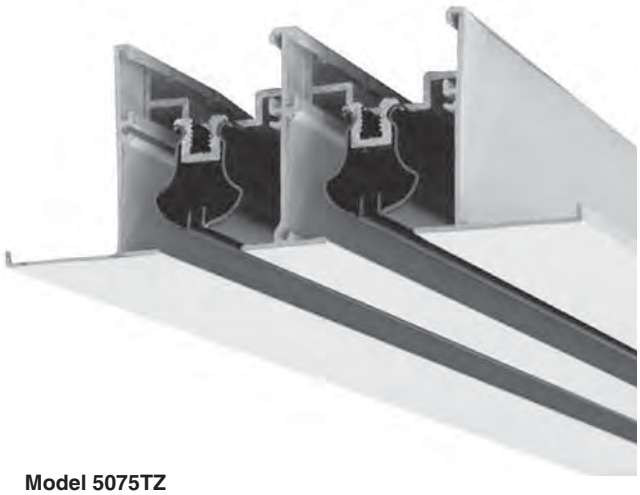
Designed primarily for ceiling and high sidewall installation, they are eminently suited to, and recommended for, VAV applications. They maintain a tight and stable horizontal air pattern over a wide range of air volumes by utilizing the maximum ceiling coanda effect.

Also commonly used in overhead heating applications, the versatile pattern controllers allow vertical projection of heated air to meet almost any perimeter condition.

Supply Air – Models 5050, 5075, 5010, 5015 **Page B5**
Return Air – Models 5050R, 5075R, 5010R, 5015R **Page B5**



Model 5075



Model 5075TZ

LINEAR SLOT DIFFUSERS FOR TECHZONE™ TYPE CEILINGS

Model Series 5000TZ provides architectural excellence and outstanding performance flexibility. Available to suit two ceiling modules. 4" (102) wide with 1 to 2 slots and 6" (152) wide with 1 to 4 slots to suit capacity requirements with three frame styles for Armstrong® TechZone™ and USG Logix™ ceiling systems. They feature 'ice tong' style individual pattern controllers in each slot that not only offer a 180° air pattern adjustment, but can also be used to dampen airflow.

Designed primarily for ceiling and high sidewall installation, they are eminently suited to, and recommended for, VAV applications. They maintain a tight and stable horizontal air pattern over a wide range of air volumes by utilizing the maximum ceiling coanda effect.

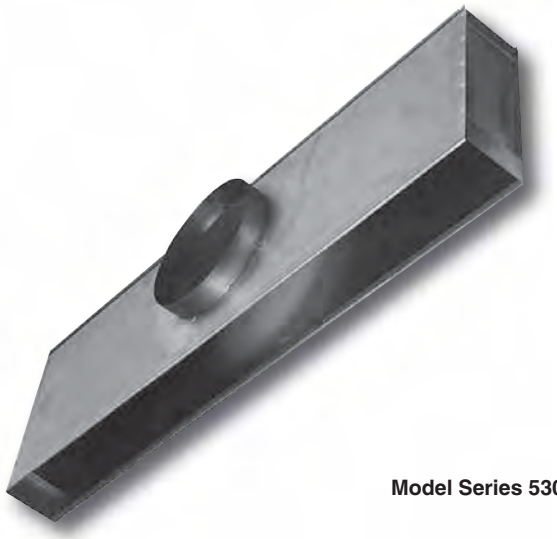
Also commonly used in overhead heating applications, the versatile pattern controllers allow vertical projection of heated air to meet almost any perimeter condition.

Supply Air – Model 5075TZ **Page B12**
Return Air – Model 5075TZR **Page B12**

PLENUMS FOR LINEAR SLOT DIFFUSERS

Model Series 5300 Plenums are designed to fit the 5000 Series Slot Diffusers. The plenums are constructed from corrosion-resistant steel and are available in two different styles for an extensive performance range. The standard constructed plenum is suited for applications that require longer throws and shorter spreads, whereas the modified plenum increases the spread and reduces the throw. Specially designed end caps can be turned up for continuous runs. All styles are offered with internal or external insulation.

Standard Performance (non-insulated) –
Models 5350, 5375, 5310, 5315 **Page B27**
Standard Performance (internally insulated) –
Models 5350I, 5375I, 5310I, 5315I **Page B27**
Modified Performance (non-insulated) –
Models 5350MP, 5375MP, 5310MP, 5315MP **Page B27**
Modified Performance (internally insulated) –
Models 5350IMP, 5375IMP, 5310IMP, 5315IMP **Page B27**



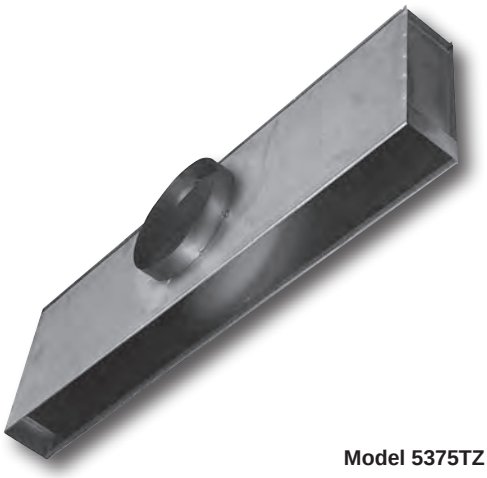
Model Series 5300

LINEAR SLOT DIFFUSER PLENUMS FOR TECHZONE™ TYPE CEILINGS

Model Series 5300TZ Plenums are designed to fit the 5000TZ Series Slot Diffusers. The plenums are constructed from corrosion-resistant steel and are available in two different styles for an extensive performance range.

Available choice of 1 to 4 slots are available to suit capacity requirements and three frame styles for Armstrong® TechZone™ and USG Logix™ ceiling systems. The standard constructed plenum is suited for applications that require longer throws and shorter spreads, whereas the modified plenum increases the spread and reduces the throw. Specially designed end caps can be turned up for continuous runs. All styles are offered with internal or external insulation.

Standard Performance (non-insulated) – Model 5375TZ **Page B30**
Standard Performance (internally insulated) – Model 5375TZI **Page B30**
Modified Performance (non-insulated) – Models 5375TZMP **Page B30**
Modified Performance (internally insulated) –
Models 5375TZIMP, 5310TZIMP, 5315TZIMP **Page B30**



Model 5375TZ

Models 49-240, 49-280 and 49-480

LINEAR BAR GRILLES

4900 Series provides an extruded aluminum bar grille that offers beautiful styling and efficient performance.

Linear bar grilles offer a choice of fixed air patterns with 0°, 15° or 30° air deflection, a choice of bar widths and spacing and a wide choice of border/frame style combinations to suit most types of installation. They are available with an optional opposed blade damper for volume control. Linear bar grilles are recommended for supply air applications in floors, window sills, and high sidewall locations. They are not generally suited to ceiling mounted supply applications (other than for directional spot heating or cooling as an air curtain) as they are not designed for horizontal projection from the face.

Models 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481 **Page B47**
Suffix '-O' adds a steel OBD.

LINEAR LOUVER DIFFUSERS

48LL Series Linear Louver (Vane) Diffusers are designed to provide a high capacity, architecturally pleasing linear diffuser that can supply large volumes of air at relatively low sound levels and pressure drops.

High quality, extruded aluminum angular discharge louvers are designed to create a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum flow rates and ensure optimal comfort conditions.

Models 48LL, 48LL2 **Page B66**
Suffix '-O' adds a steel OBD.
Suffix '-OA' adds an aluminum OBD.

Models 48LL2 and 48LL1

Models 48LV1 and 48LV2

LINEAR VANE DIFFUSERS

48LV Series Linear Vane Diffusers are designed to provide an effective, architecturally pleasing linear vane diffuser that are suited for supply and return applications.

Available in one-way or two-way pattern with fixed vanes that provide a tight coanda air pattern for optimal VAV performance. The core assembly is removable for ease of installation and access to the optional opposed blade damper.

Models 48LV1, 48LV2 **Page B70**
'-OBD' adds a steel OBD.
'-OBDA' adds an aluminum OBD.

LINEAR SLOT DIFFUSERS

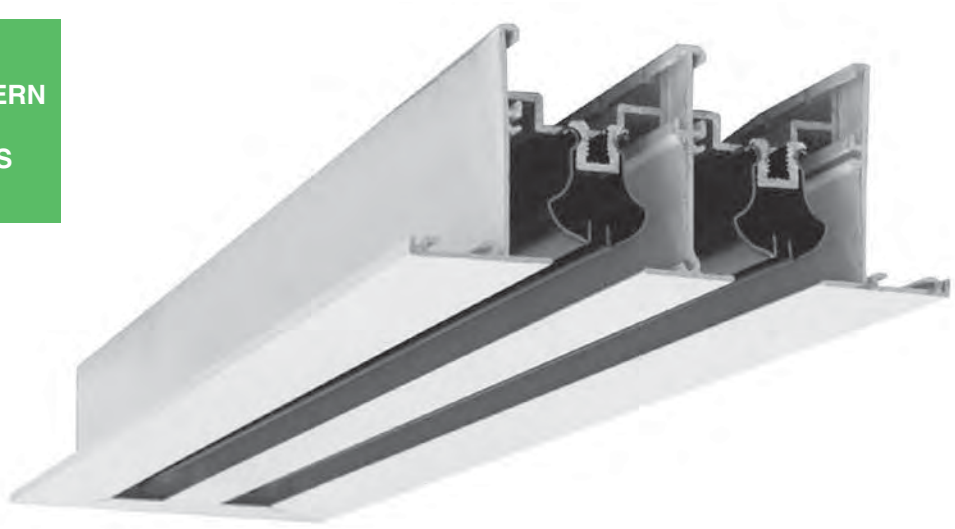
- ADJUSTABLE 'ICE TONG' PATTERN CONTROLLERS
- AVAILABLE WITH 1 TO 10 SLOTS
- CHOICE OF 4 SLOT WIDTHS

Supply Models:

5050 1/2" (13) Slot
5075 3/4" (19) Slot
5010 1" (25) Slot
5015 1 1/2" (38) Slot

Return Models:

5050R 1/2" (13) Slot
5075R 3/4" (19) Slot
5010R 1" (25) Slot
5015R 1 1/2" (38) Slot



Model 5075

Model Series 5000 Linear Slot Ceiling Diffuser have been specially designed to provide both the unobtrusive appearance required for architectural excellence, and the full 180° pattern controller adjustment at minimum NC levels required for high engineering performance. Model Series 5000 Diffusers provide stable diffusion under large amounts of air with both constant and changing load conditions. This is particularly suitable for variable air volume systems. With several choices of mounting frames, the diffusers are suited to accommodate multiple applications. The diffusers are available with mitered corner end caps and feature die-formed components to provide consistent quality and performance.

STANDARD FEATURES:

- The volume and direction of the discharge air can be adjusted by moving the pattern controllers.
- Available with 1 to 10 slots.
- Choice of four slot widths to suit capacity requirements.
- Selection of frames & mounting sub-frames for various types of installations.
- The maximum length of the pattern controller is 36" (914). Diffusers longer than 36" (914) are provided with multiple pattern controller sections.
- Diffusers are supplied in lengths of up to 6 feet (1829) in a single section.
- Ideal for continuous length applications.
- Multiple sections are provided with alignment strips on the frames and sub-frames to provide superior, positive field alignment.
- Model Series 5000R returns and Series 5000 supply diffusers are identical except for the omission of pattern controllers.
- Mounting sub-frames are cut to length and assembled in the field.

CONSTRUCTION MATERIAL:

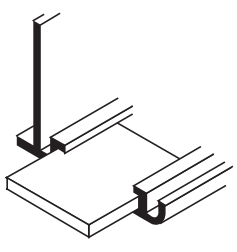
Extruded aluminum frame with corrosion-resistant steel pattern controllers.

FINISH OPTIONS:

- All visible frames are AW Appliance White and the pattern controllers have a black finish as standard. Optional finishes are available.

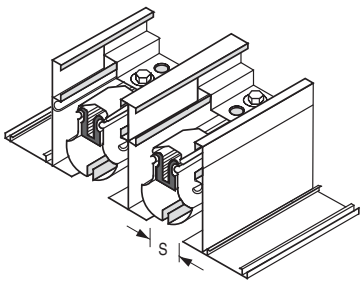
Alignment Strips

Alignment strips on the frames and sub-frames provide superior, positive alignment on multi-section assemblies.

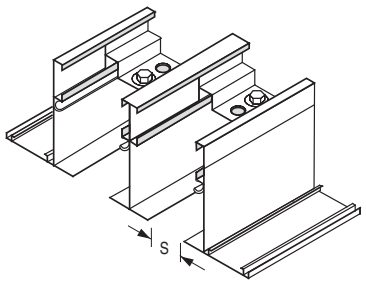


Frame Sub-frame

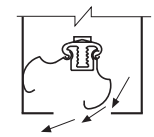
Supply Model
5050 S = 1/2" (13) slot
5075 S = 3/4" (19) slot
5010 S = 1" (25) slot
5015 S = 1 1/2" (38) slot



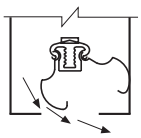
Return Model
5050R S = 1/2" (13) slot
5075R S = 3/4" (19) slot
5010R S = 1" (25) slot
5015R S = 1 1/2" (38) slot



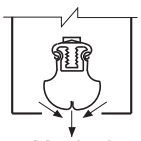
Single Slot Air Patterns



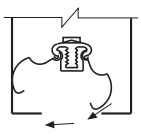
Horizontal Left



Horizontal Right

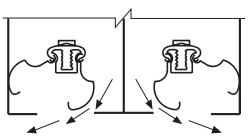


Vertical

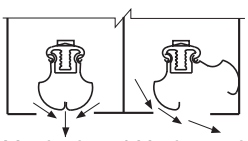


Dampered

Multi-Slot Air Patterns



Two-Way Opposite



Vertical and Horizontal

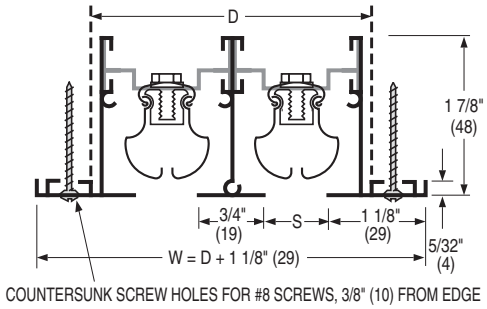
FRAME AND MOUNTING SUB-FRAME COMBINATIONS FOR HARD CEILINGS:

D = Duct Size
S = Slot Width
W = Overall Face Width

Standard Frames are the most commonly recommended, specified and easiest to install.

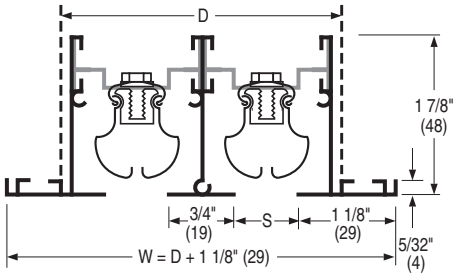
TYPE A STANDARD FRAME

Flange Frame/Screw Mounting



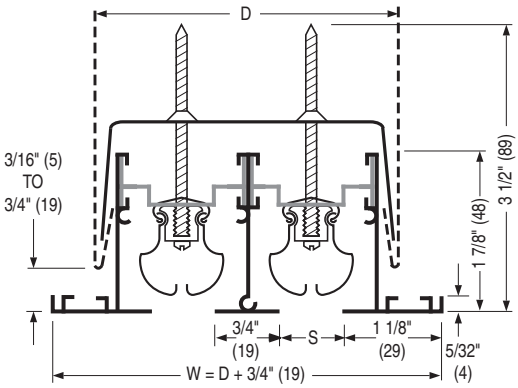
TYPE B STANDARD FRAME

Flange Frame/Duct Mounting, less screw holes



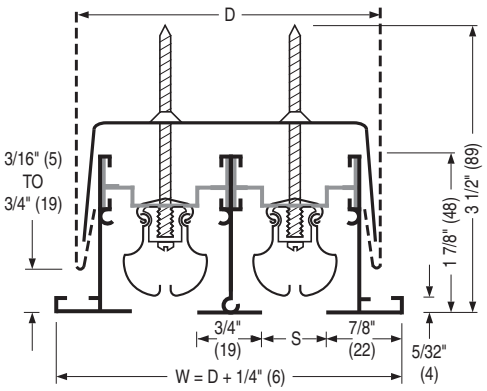
TYPE C STANDARD FRAME

Flange Frame/Concealed Mounting



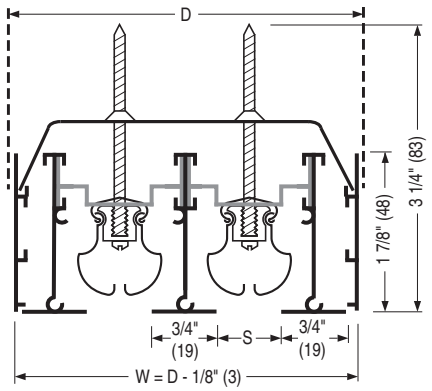
TYPE D STANDARD FRAME

Flange Frame, Narrow Margin/Concealed Mounting



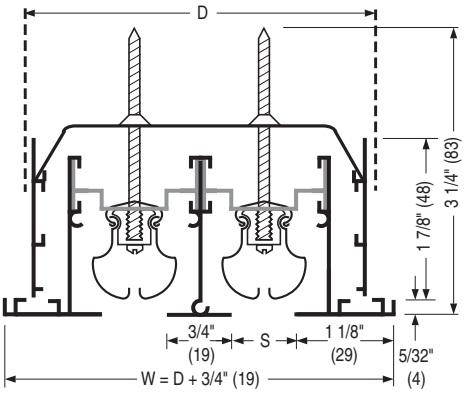
TYPE E

Flush Frame & Sub-Frame/Concealed Mounting



TYPE F

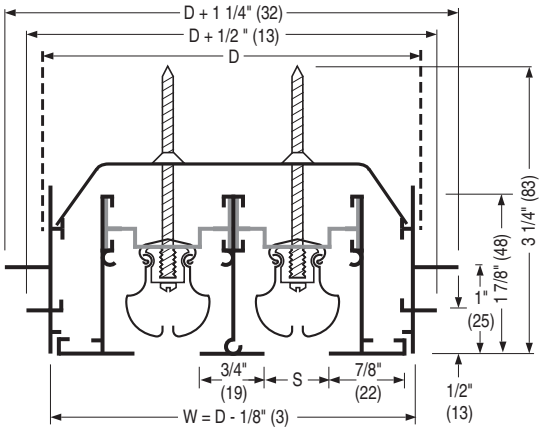
Flange Frame & Sub-Frame/Concealed Mounting



FRAME AND MOUNTING SUB-FRAME COMBINATIONS FOR HARD CEILINGS:

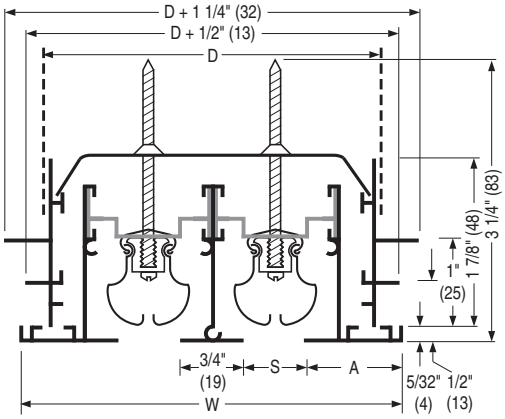
TYPE G

Flush Frame w/Plaster & Tile Sub-Frame/Concealed Mounting



TYPE H, H2

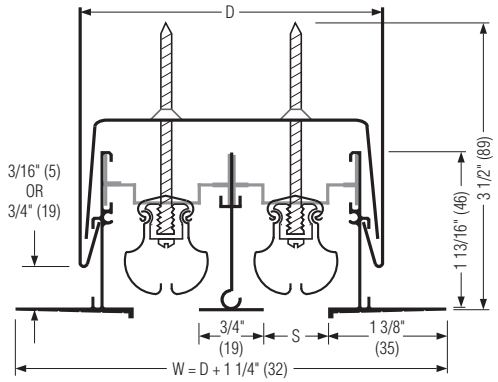
Flange Frame w/Plaster & Tile Sub-Frame/Concealed Mounting



Type	A	W
H	1 1/8" (29)	D + 3/4" (19)
H2	7/8" (22)	D + 1/4" (6)

TYPE J

Tape & Spackle Frame/Concealed Mounting

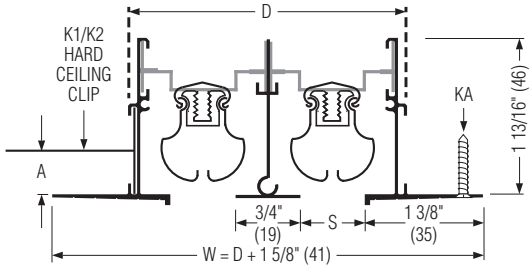


TYPE KA

Tape & Spackle Frame/Countersunk Screw Holes (both sides)

TYPES K1, K2

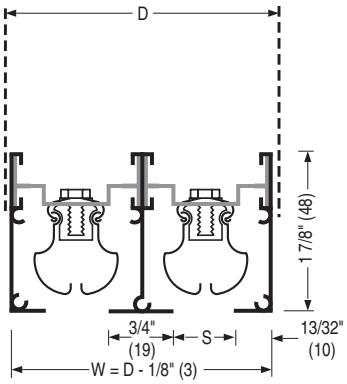
Tape & Spackle Frame/Hard Ceiling Clip for 1/2" (13) or 5/8" (16) drywall (both sides)



Type	A	Hard Clip
K1	1/2" (13)	HC5
K2	5/8" (16)	HC1

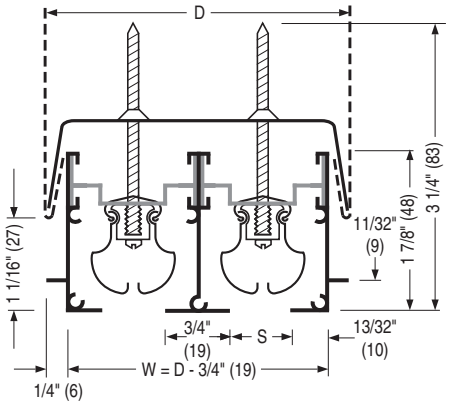
TYPE M

Flush Frame / Duct Mounting / Flangeless Frame



TYPE N

Spline Frame Ceiling / Concealed Mounting



DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (IMPERIAL UNITS – INCHES)

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
A B	1	1 5/8"	1 7/8"	2 1/8"	2 5/8"
	2	2 7/8"	3 3/8"	3 7/8"	4 7/8"
	3	4 1/8"	4 7/8"	5 5/8"	7 1/8"
	4	5 3/8"	6 3/8"	7 3/8"	9 3/8"
	5	6 5/8"	7 7/8"	9 1/8"	11 5/8"
	6	7 7/8"	9 3/8"	10 7/8"	13 7/8"
	7	9 1/8"	10 7/8"	12 5/8"	16 1/8"
	8	10 3/8"	12 3/8"	14 3/8"	18 3/8"
	9	11 5/8"	13 7/8"	16 1/8"	20 5/8"
	10	12 7/8"	15 3/8"	17 7/8"	22 7/8"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
C D	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
E	1	2 1/4"	2 1/2"	2 3/4"	3 1/4"
	2	3 1/2"	4"	4 1/2"	5 1/2"
	3	4 3/4"	5 1/2"	6 1/4"	7 3/4"
	4	6"	7"	8"	10"
	5	7 1/4"	8 1/2"	9 3/4"	12 1/4"
	6	8 1/2"	10"	11 1/2"	14 1/2"
	7	9 3/4"	11 1/2"	13 1/4"	16 3/4"
	8	11"	13"	15"	19"
	9	12 1/4"	14 1/2"	16 3/4"	21 1/4"
	10	13 1/2"	16"	18 1/2"	23 1/2"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
F, H, H2	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
G	1	2 1/2"	2 3/4"	3"	3 1/2"
	2	3 3/4"	4 1/4"	4 3/4"	5 3/4"
	3	5"	5 3/4"	6 1/2"	8"
	4	6 1/4"	7 1/4"	8 1/4"	10 1/4"
	5	7 1/2"	8 3/4"	10"	12 1/2"
	6	8 3/4"	10 1/4"	11 3/4"	14 3/4"
	7	10"	11 3/4"	13 1/2"	17"
	8	11 1/4"	13 1/4"	15 1/4"	19 1/4"
	9	12 1/2"	14 3/4"	17"	21 1/2"
	10	13 3/4"	16 1/4"	18 3/4"	23 3/4"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
J, N	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
KA, K1, K2	1	1 5/8"	1 7/8"	2 1/8"	2 5/8"
	2	2 7/8"	3 3/8"	3 7/8"	4 7/8"
	3	4 1/8"	4 7/8"	5 5/8"	7 1/8"
	4	5 3/8"	6 3/8"	7 3/8"	9 3/8"
	5	6 5/8"	7 7/8"	9 1/8"	11 5/8"
	6	7 7/8"	9 3/8"	10 7/8"	13 7/8"
	7	9 1/8"	10 7/8"	12 5/8"	16 1/8"
	8	10 3/8"	12 3/8"	14 3/8"	18 3/8"
	9	11 5/8"	13 7/8"	16 1/8"	20 5/8"
	10	12 7/8"	15 3/8"	17 7/8"	22 7/8"

Frame Type	No. of Slots	5050 5050R S = 1/2"	5075 5075R S = 3/4"	5010 5010R S = 1"	5015 5015R S = 1 1/2"
M	1	1 3/8"	1 5/8"	1 7/8"	2 3/8"
	2	2 5/8"	3 1/8"	3 5/8"	4 5/8"
	3	3 7/8"	4 5/8"	5 3/8"	6 7/8"
	4	5 1/8"	6 1/8"	7 1/8"	9 1/8"
	5	6 3/8"	7 5/8"	8 7/8"	11 3/8"
	6	7 5/8"	9 1/8"	10 5/8"	13 5/8"
	7	8 7/8"	10 5/8"	12 3/8"	15 7/8"
	8	10 1/8"	12 1/8"	14 1/8"	18 1/8"
	9	11 3/8"	13 5/8"	15 7/8"	20 3/8"
	10	12 5/8"	15 1/8"	17 5/8"	22 5/8"

DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (METRIC UNITS – MILLIMETERS)

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
A B	1	41	48	54	67
	2	73	86	98	124
	3	105	124	143	181
	4	137	162	187	238
	5	168	200	232	295
	6	200	238	276	352
	7	232	276	321	410
	8	264	314	365	467
	9	295	352	410	524
	10	327	391	454	581

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
C D	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
E	1	57	64	70	83
	2	89	102	114	140
	3	121	140	159	197
	4	152	178	203	254
	5	184	216	248	311
	6	216	254	292	368
	7	248	292	337	425
	8	279	330	381	483
	9	311	368	425	540
	10	343	406	470	597

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
F, H, H2	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
G	1	64	70	76	89
	2	95	108	121	146
	3	127	146	165	203
	4	159	184	210	260
	5	191	222	254	318
	6	222	260	298	375
	7	254	298	343	432
	8	286	337	387	489
	9	318	375	432	546
	10	349	413	476	603

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
J, N	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

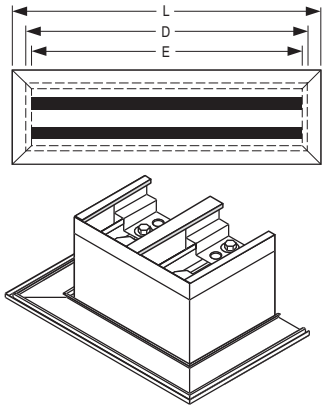
Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
KA, K1, K2	1	41	48	54	67
	2	73	86	98	124
	3	105	124	143	181
	4	137	162	187	238
	5	168	200	232	295
	6	200	238	276	352
	7	232	276	321	410
	8	264	314	365	467
	9	295	352	410	524
	10	327	391	454	581

Frame Type	No. of Slots	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 13	S = 19	S = 25	S = 38
M	1	35	41	48	60
	2	67	79	92	117
	3	98	117	137	175
	4	130	156	181	232
	5	162	194	225	289
	6	194	232	270	346
	7	225	270	314	403
	8	257	308	359	460
	9	289	346	403	518
	10	321	384	448	575

END CAP CONFIGURATIONS FOR VARIOUS MOUNTINGS:

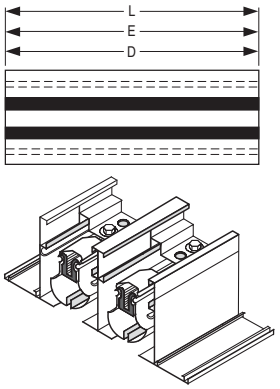
SPECIFY MM, FF, MO, FO, MC, FC, OO, OC OR CC

M - MITERED END CAP

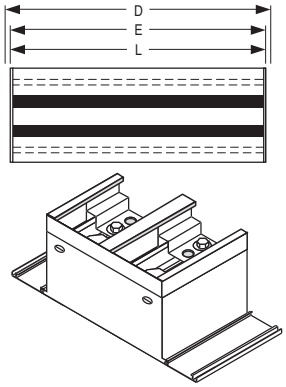


(Standard)

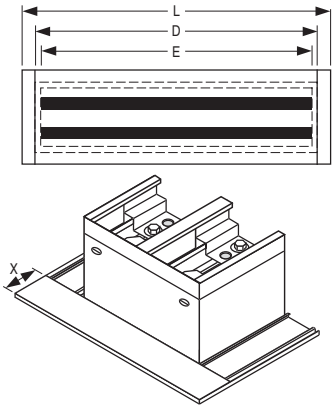
O - OPEN END



C - FLAT END CAP



F - FLANGED END CAP



Frame Type	X Dim.
A, B, C, F, H	1" (25)
D, G, H2	3/4" (19)

Field attachable. Suitable for stocking reps.

D = Duct length E = End cap position L = Overall length

OVERALL LENGTH DIMENSIONS AND END CAP POSITION:

Frame Type	M M		F F		M O / F O		M C / F C		O O		O C		C C	
	E	L	E	L	E	L†	E	L†	E	L	E	L	E	L
A, B	D - 1/2" (13)	D+1" (25)	D - 1/2" (13)	D+1 1/2" (38)	D - 1/4" (6)	D+1/2" (13)	D - 3/16" (5)	D+9/16" (14)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
C	D - 1/2" (13)	D+1" (25)	D - 1/2" (13)	D+1 1/2" (38)	D - 1/4" (6)	D+1/2" (13)	D - 3/16" (5)	D+9/16" (14)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
D	D - 1/2" (13)	D+1/2" (13)	D - 1/2" (13)	D+1" (25)	D - 1/4" (6)	D+1/4" (6)	D - 3/16" (5)	D+7/16" (11)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
E	D - 7/8" (22)	D	N/A	N/A	D - 7/16" (11)	D	D - 3/8" (10)	D+1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
F, H	D - 3/4" (19)	D+3/4" (19)	D - 3/4" (19)	D+1 1/4" (32)	D - 3/8" (10)	D+3/8" (10)	D - 5/16" (8)	D+7/16" (11)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
H2	D - 3/4" (19)	D+1/4" (6)	D - 3/4" (19)	D+7/8" (22)	D - 3/8" (10)	D+1/8" (3)	D - 5/16" (8)	D+5/16" (8)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
G	D - 1 1/8" (29)	D	D - 1 3/8" (35)	D	D - 9/16" (14)	D	D - 1/2" (13)	D+1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)

† Configurations FO and FC: Add 1/4" (6) for frame types A, B, C, D, F, G, H and H2.

Frame Type	M M		M O		M C		O O		O C		C C	
	E	L	E	L	E	L	E	L	E	L	E	L
J	D - 3/4" (19)	D+3/4" (19)	D - 3/8" (10)	D+3/8" (10)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
KA, K1, K2	D - 1/2" (13)	D+1" (25)	D - 1/4" (6)	D+1/2" (13)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
M*, N*	D - 1/16" (2)	D - 1/16" (2)	D - 1/32" (1)	D - 1/32" (1)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)

* These types have a flangeless mitered end cap which is the same extrusion profile as the frame.

STANDARD LAY-IN T-BAR APPLICATION:

Designed and fabricated specifically to integrate with standard exposed grid T-Bar Ceiling Systems.

Available in nominal lengths to suit both imperial and metric ceiling grid modules.
Imperial module lengths: 20", 24", 48" and 60".
Metric module lengths: 500, 600, 1200 and 1500 mm.
Also available in custom lengths for special applications and in multiple section assemblies for continuous paired T-Bar ceilings.

* Type CC Flat Endcaps are not recommended for use with 9/16" (14) flat face T-bar.

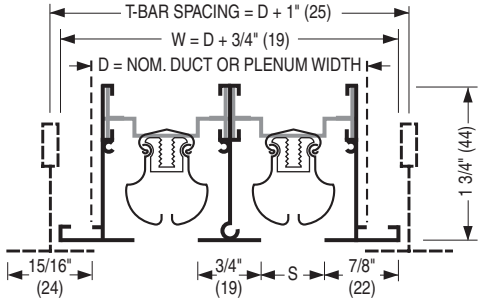
DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (IMPERIAL UNITS – INCHES)

Frame Type	No. of Slots	Imperial Units (inches)				Metric Units (mm)			
		5050 5050R	5075 5075R	5010 5010R	5015 5015R	5050 5050R	5075 5075R	5010 5010R	5015 5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"	S = 13	S = 19	S = 25	S = 38
T, FL	1	1 1/2"	1 3/4"	2"	2 1/2"	38	44	51	64
	2	2 3/4"	3 1/4"	3 3/4"	4 3/4"	70	83	95	121
	3	4"	4 3/4"	5 1/2"	7"	102	121	140	178
	4	5 1/4"	6 1/4"	7 1/4"	9 1/4"	133	159	184	235
	5	6 1/2"	7 3/4"	9"	11 1/2"	165	197	229	292
	6	7 3/4"	9 1/4"	10 3/4"	13 3/4"	197	235	273	349
	7	9"	10 3/4"	12 1/2"	16"	229	273	318	406
	8	10 1/4"	12 1/4"	14 1/4"	18 1/4"	260	311	362	464
	9	11 1/2"	13 3/4"	16"	20 1/2"	292	349	406	521
	10	12 3/4"	15 1/4"	17 3/4"	22 3/4"	324	387	451	578

TYPE T FRAME

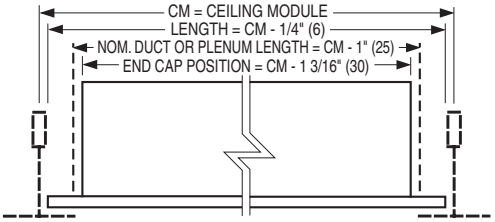
• For standard 15/16" (24) or *9/16" (14) face lay-in T-Bar



END CAP CONFIGURATIONS • TYPE T FRAME

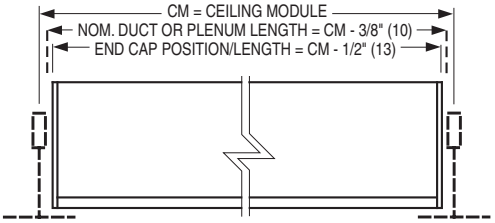
TYPE MM

• Mitered End Caps (standard)



***TYPE CC**

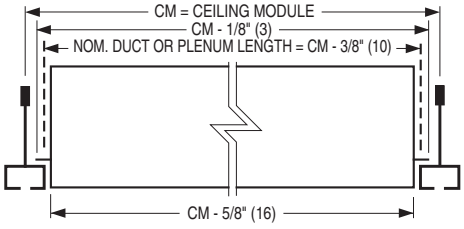
• Flat End Caps



END CAP CONFIGURATION • TYPE FL FRAME

TYPE MM

• Mitered End Caps (standard)



FINELINE® TYPE CEILING SYSTEMS:

Nailor can fabricate the **5000 Series** to integrate with most available Fineline® or Regressed T-Bar type ceiling systems.

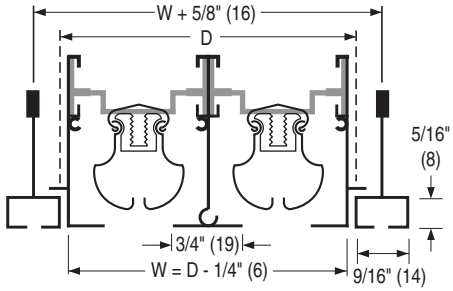
Available in nominal lengths to suit both imperial and metric ceiling grid modules.
Imperial module lengths: 24" and 48".
Metric module lengths: 600 and 1200 mm.
Note: Nominal 48" (1200) does not include a cross notch.

The Type FL frame is compatible with both the USG Interiors Inc. 'Donn® Fineline®' and Rockfon® 'Ultraline™' 3500/3600 systems. For other ceiling systems, contact your Nailor representative.

'Fineline®' is a registered trademark of USG Interiors Inc.
'Ultraline™' is a registered trademark of Rockfon®.

TYPE FL FRAME

• For Fineline® type ceilings



LINEAR SLOT DIFFUSERS FOR TECHZONE™ TYPE CEILINGS

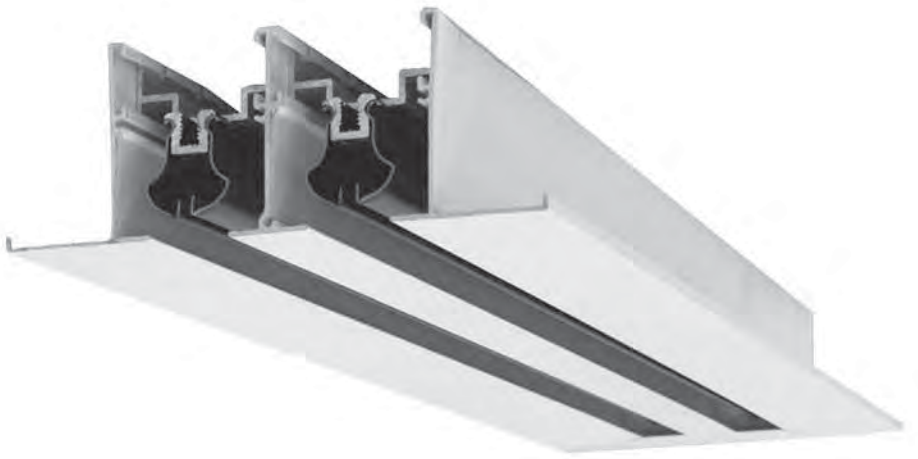
- COMPATIBLE WITH ARMSTRONG® AND USG LOGIX™ CEILING SYSTEMS

Supply Models:

5075TZ 3/4" (19) Slot

Return Models:

5075TZR 3/4" (19) Slot



Model 5075TZ

Model Series 5075TZ Linear Slot Ceiling Diffusers have been specially designed to provide both the unobtrusive appearance required for architectural excellence, and the full 180° pattern controller adjustment at minimum NC levels required for high engineering performance. Particularly suitable for variable air volume systems, they provide stable diffusion under large amounts of air with both constant and changing load conditions. The 5075TZ diffusers are compatible with Armstrong® TechZone™ and USG Logix™ ceiling systems. The diffusers are available with open or flat end caps and feature die-formed components to provide consistent quality and performance. Ideal for continuous length applications.

STANDARD FEATURES:

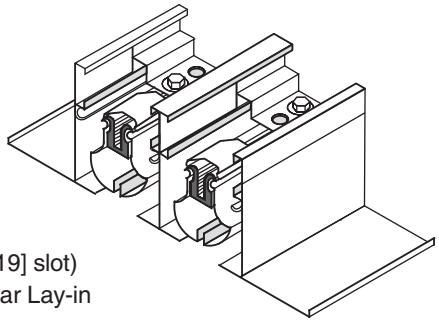
- Compatible with Armstrong TechZone™ and USG Logix™ ceiling systems. Available for Standard, Tegular, and Narrow T-Bar Lay-in ceilings.
- The volume and direction of the discharge air can be adjusted by moving the pattern controllers.
- The diffuser slot width is 3/4" (19).
- Available in either a 4" (102) module size up to 2 slots or a 6" (152) module size up to 4 slots.
- Available for Standard Ceiling Module lengths from sizes 24" (610) to 72" (1829).
- Sizes larger than 72" (1829) will be supplied in equal multiple sections. Alignment strips will be provided for superior field alignment.
- Model 5075TZR returns and Model 5075TZ supply diffusers are identical except for the omission of pattern controllers.

CONSTRUCTION MATERIAL:

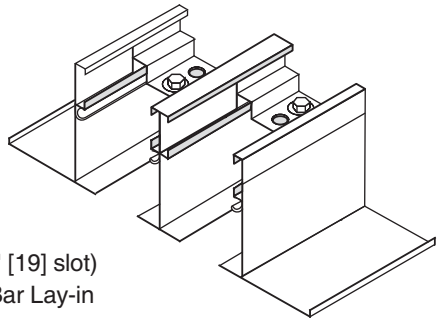
Extruded aluminum frame with corrosion-resistant steel pattern controllers.

FINISH OPTIONS:

- AW Appliance White frame with black pattern controllers is standard. Other finishes are available.



Supply Model
5075TZ (S = 3/4" [19] slot)
Frame Type L T-Bar Lay-in

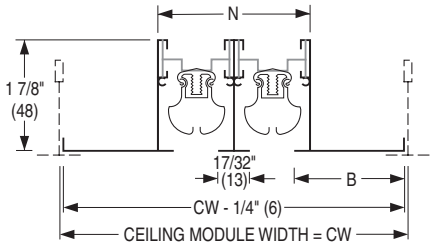


Return Model
5075TZR (S = 3/4" [19] slot)
Frame Type L T-Bar Lay-in

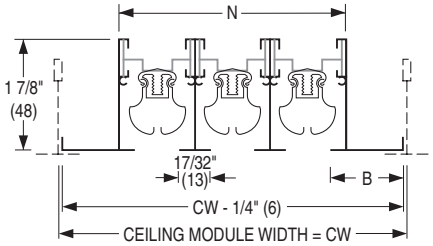
FRAME TYPES FOR TECHZONE™ TYPE CEILINGS 4" (102) AND 6" (152) WIDE:

TYPE L 15/16" (24) & 9/16" (14) T-BAR LAY-IN

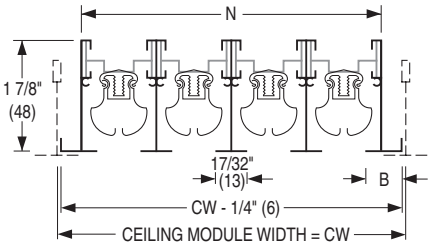
2 Slot:



3 Slot:

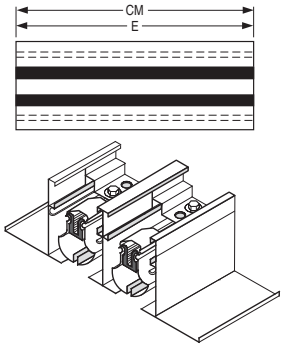


4 Slot:

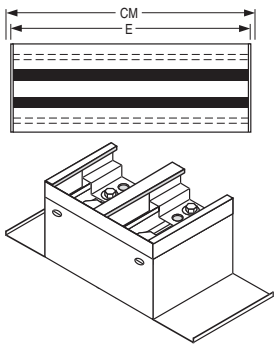


END CAP CONFIGURATION

O – Open End



C – Flat End Cap



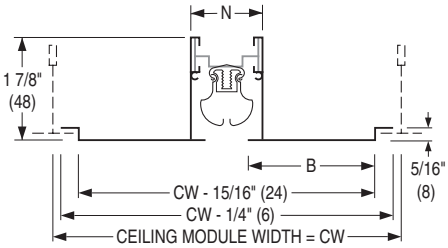
CM = Ceiling Module E = Overall Length

Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 1/2" (38)	1 3/8" (35)
	2	7/8" (22)	2 5/8" (67)
6"	1	2 1/2" (64)	1 3/8" (35)
	2	1 7/8" (48)	2 5/8" (67)
	3	1 1/4" (32)	3 7/8" (98)
	4	5/8" (16)	5 1/8" (130)

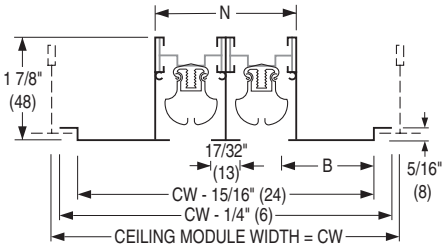
End Condition	Face Length E
CC	Ceiling Module – 1/4" (6)
OC	Ceiling Module – 1/8" (3)
OO	Ceiling Module

TYPE TL 15/16" (24) T-BAR TEGULAR LAY-IN

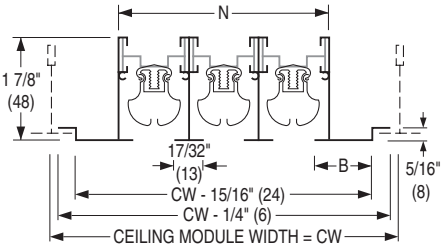
1 Slot:



2 Slot:

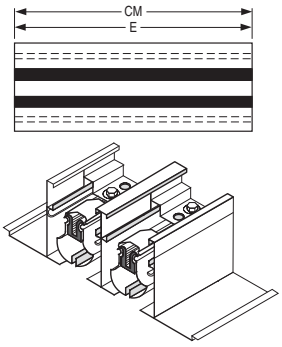


3 Slot:

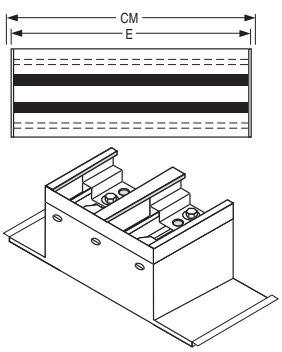


END CAP CONFIGURATION

O – Open End



C – Flat End Cap



CM = Ceiling Module E = Overall Length

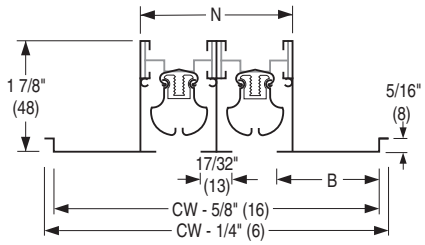
Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 1/8" (29)	1 3/8" (35)
	2	1/2" (13)	2 5/8" (67)
6"	1	2 1/8" (54)	1 3/8" (35)
	2	1 1/2" (38)	2 5/8" (67)
	3	7/8" (22)	3 7/8" (98)

End Condition	Face Length E
CC	Ceiling Module – 1" (25)
OC	Ceiling Module – 1/2" (13)
OO	Ceiling Module

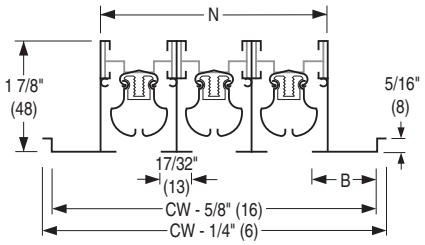
FRAME TYPES FOR TECHZONE™ TYPE CEILINGS 4" (102) AND 6" (152) WIDE:

TYPE NT 9/16" (14) NARROW T-BAR LAY-IN

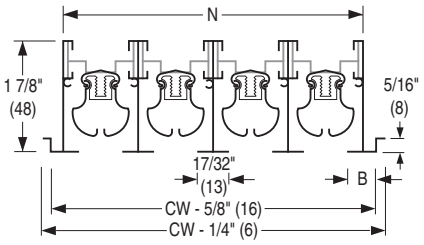
2 Slot:



3 Slot:

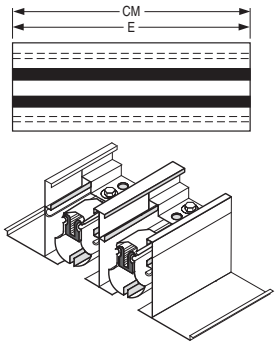


4 Slot:

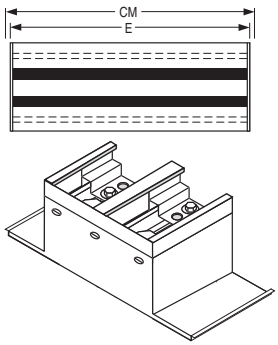


END CAP CONFIGURATION

O – Open End



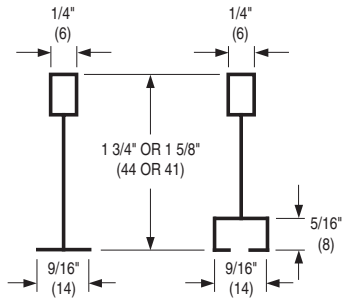
C – Flat End Cap



CM = Ceiling Module E = Overall Length

Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 5/16" (33)	1 3/8" (35)
	2	11/16" (17)	2 5/8" (67)
6"	1	2 5/16" (59)	1 3/8" (35)
	2	1 11/16" (43)	2 5/8" (67)
	3	1 1/16" (27)	3 7/8" (98)
	4	7/16" (11)	5 1/8" (130)

End Condition	Face Length E
CC	Ceiling Module – 5/8" (16)
OC	Ceiling Module – 5/16" (8)
OO	Ceiling Module



Flat Tee Detail **Bolt-Slot Detail**

Options and Accessories

90° MITERED CORNERS:

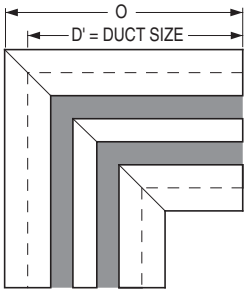
5050MC • 1/2" (13) SLOT
5075MC • 3/4" (19) SLOT
5010MC • 1" (25) SLOT
5015MC • 1 1/2" (38) SLOT

The standard mitered corners are 90° and 135°. Units are factory welded with precision to match and align with the associated straight leg.

Units are supplied with factory installed blank-offs in the slot (painted black) and are inactive.

SPECIAL MITERED CORNERS • OTHER ANGLE

*Available from 45 – 179° as SPL. (A detailed dimensional sketch is required for co-ordination with installing contractor).



D' = Duct Size		
Models	**No. of Slots**	**D'**
5050MC 5075MC	1 to 4	12 (305)
	5 to 10	24 (610)
5010MC 5015MC	1 to 4	16 (406)
	5 to 8	24 (610)
	9 to 10	36 (914)

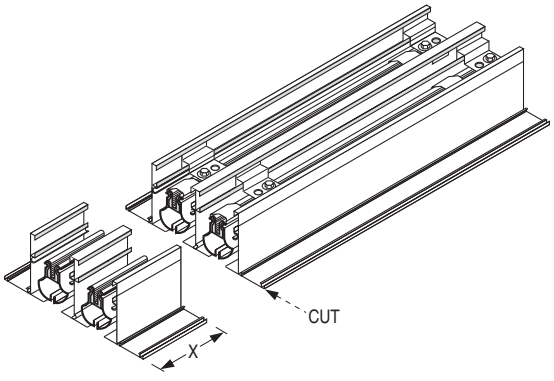
90° Mitered Corner Dimension 'O'

Frame Type					
A, B	**C, F, H, H2, J, T**	**D**	**E, G**	**KA, K1, K2**	**M, N, FL**
D' + 9/16 (14)	D' + 3/8 (10)	D' + 1/8 (3)	D' - 1/8 (3)	D' + 5/8 (16)	D'

FIELD TRIMMING OF DIFFUSERS:

If "X" is less than 3" (76) at either end (6" (152) total), standard **Model 5000** or **5000R** can be field-cut.

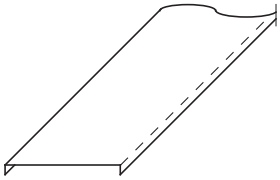
• Factory-Cut Diffusers **Model 5000** or **5000R** are ordered for a specific length from the factory, but can be trimmed as much as 6" (152) in length, (3" [76] from each end) with a fine tooth, high speed carbon steel metal cutting blade.



BLANK-OFFS:

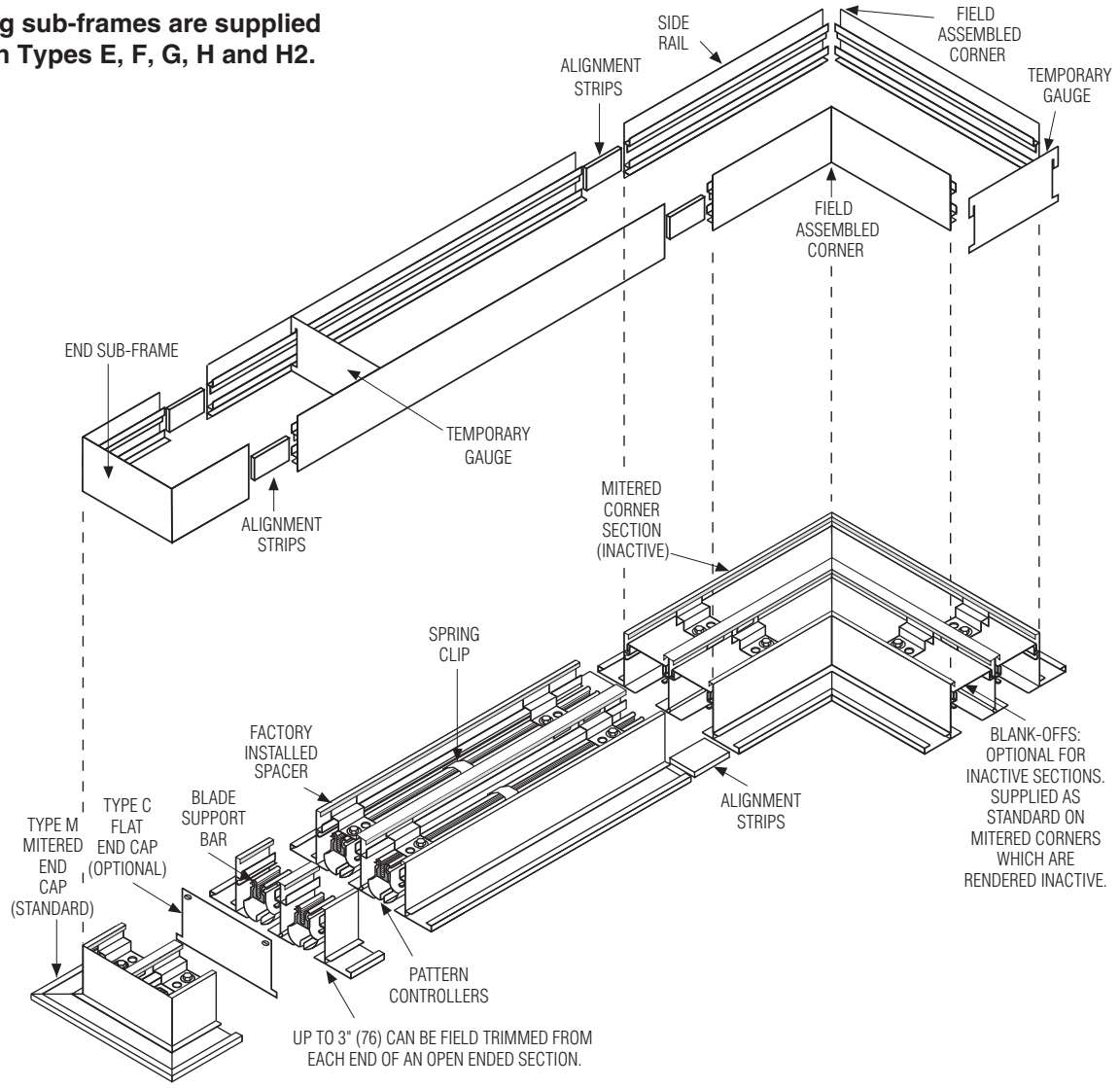
5050BO for 1/2" (13) SLOT
5075BO for 3/4" (19) SLOT
5010BO for 1" (25) SLOT
5015BO for 1 1/2" (38) SLOT

- Cold-rolled steel.
- Fits over neck.
- Black Finish
- Shipped in 6' (1829) lengths to be field-cut.



TYPICAL DIFFUSER AND SUB-FRAME ASSEMBLY:

Mounting sub-frames are supplied only with Types E, F, G, H and H2.



Diffuser Assembly Features:

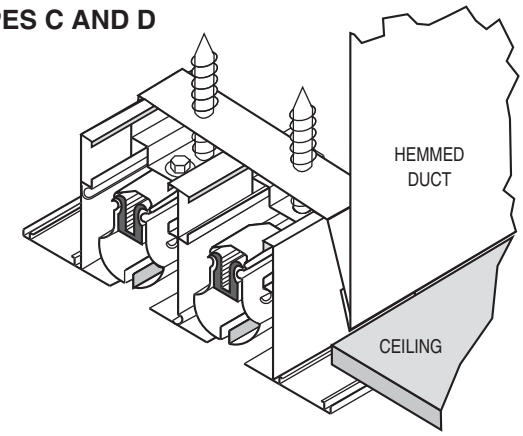
- Diffusers can be joined together end to end to form long continuous slots.
- The standard Type M end cap is mitered and offers a superior architectural finish on the visible surface.
- The optional Type F end cap can be field installed.
- The optional Type C flat end cap may be used where the diffuser ends at a wall or other stopping point.
- The standard 90° mitered corner section is factory welded and fully assembled to ensure a smooth professional finish. They are inactive.
- Alignment strips are factory supplied as standard on all multiple section frame and sub-frame assemblies and ensure close and positive alignment between sections.

Sub-Frame Features:

- Supplied with Frame Types E, F, G, H and H2.
- Assures a clean, accurately dimensioned opening to receive the diffuser.
- Allows the diffuser to be installed at the end of the job, minimizing risk of damage or contamination from paint or plaster.
- Diffuser can be simply removed and replaced without damage to architectural ceiling finishes.
- Types E, F, G, H and H2 are ideal as a wet plaster ground. In this case they should be installed sufficiently proud to allow for the finished ceiling thickness.
- Types E and G are designed to leave a diffuser totally flush with the finished ceiling.
- Types F, H and H2 are designed to leave a surface mount diffuser appearance.
- Type E may also be used where a diffuser runs flush along a wall.

HEMMED DUCT PREPARATION:

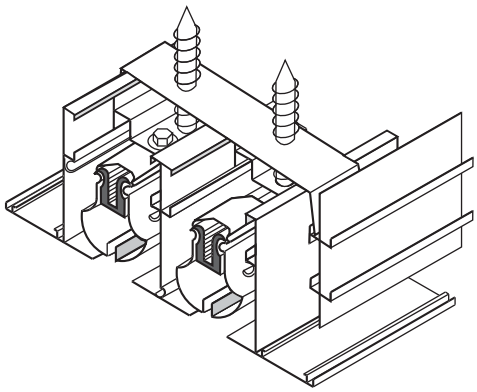
TYPES C AND D



- Far and away the most popular type of installation. Simple and quick.
- Diffuser simply pushes up into duct until the legs of the factory supplied mounting straps locate into the hems of the duct.
- Factory supplied levelling screws then draw the diffuser up until it is tight and snug with the ceiling.
- Duct should be fabricated with a 1/2" (13) hem on both long sides and opened approximately 1/8" (3).

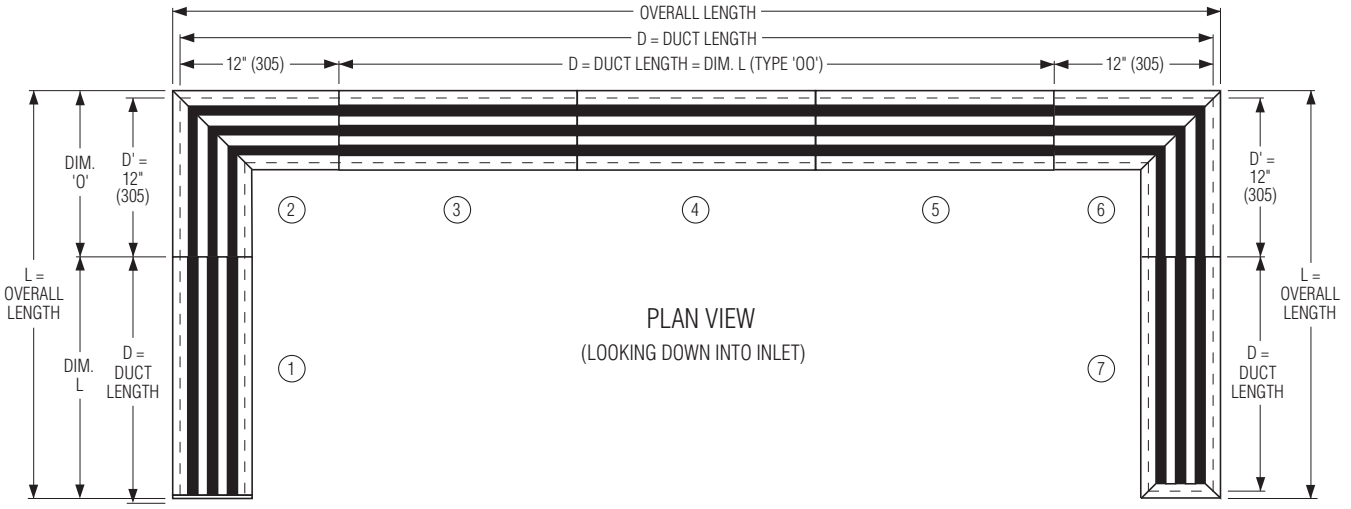
AUXILIARY SUB-FRAME PREPARATION:

TYPES E, F, G, H AND H2



- Sub-frame should be attached to inside of duct and/or a framed ceiling opening as deemed necessary.
- Factory supplied mounting straps locate into an extrusion slot in the sub-frame. Installation of diffuser is similar to the hemmed duct method shown to the left.

CONTINUOUS RUN DIMENSIONS:



The above example illustrates a typical 3 slot installation with two 90° mitered corner sections.

①	Type 'CO' End Cap configuration.
② and ⑥	'MC' Mitered Corner Section.
③, ④ and ⑤	Type 'OO' End Cap configuration.
⑦	Type 'MO' End Cap configuration.

Each straight section, regardless of total duct length may be ordered as a single section.

Example:

① and ⑦	Each section may be ordered as a single item, regardless of total length.
③, ④ and ⑤	One section may be ordered, regardless of total length.

Multiple sections are sub-divided by the factory into equal length sections at the factories' discretion.

Note: It is extremely difficult to achieve a perfect installation where compound miters are involved, such as above, when all sections are ordered from the factory fabricated to suit finished duct dimensions. This is due to field tolerance variations which may prevent proper alignment and butting together of individual sections due to insufficient material.

It is recommended that section ③, ④ or ⑤ are ordered oversized by 3" (76) and field cut to suit field conditions. 'OO' configuration lengths can be trimmed by up to 6" (152). 3" (76) from each end.

PERFORMANCE DATA:

SUPPLY • CONTINUOUS PRESSURIZED PLENUM

Model 5050 • 1/2" (13) Slot

No. of Slots	Total Pressure, Horizontal	.005	.020	.041	.074	.120	.173	.230	.310
	Total Pressure, Veritcal	.003	.014	.027	.051	.083	.116	.158	.215
1	Airflow, CFM/FT.	5	10	15	20	25	30	35	40
	Throw, Horizontal	1-1-6	3-6-12	6-10-14	8-12-18	10-14-18	12-14-20	12-14-20	14-16-24
	Throw, Vertical	2	6	9	11	12	13	14	15
	Noise Criteria	–	–	17	21	26	31	35	38
2	Airflow, CFM/FT.	10	20	30	40	50	60	70	80
	Throw, Horizontal	1-3-9	4-9-16	6-12-20	10-16-22	14-18-24	16-20-28	18-20-30	18-22-32
	Throw, Vertical	3	7	12	14	15	17	18	20
	Noise Criteria	–	15	20	24	28	34	38	41
3	Airflow, CFM/FT.	15	30	45	60	75	90	105	120
	Throw, Horizontal	2-4-10	6-12-20	10-16-24	14-20-28	18-20-30	20-24-38	20-24-40	22-28-44
	Throw, Vertical	4	10	15	18	21	22	25	23
	Noise Criteria	–	16	21	26	31	36	40	43
4	Airflow, CFM/FT.	20	40	60	80	100	120	140	160
	Throw, Horizontal	3-5-12	8-12-22	12-18-28	16-22-32	20-24-40	22-28-44	24-30-48	26-32-52
	Throw, Vertical	6	11	16	20	22	24	26	29
	Noise Criteria	–	17	22	27	32	37	41	44
5	Airflow, CFM/FT.	25	50	75	100	125	150	175	200
	Throw, Horizontal	3-6-14	8-14-24	14-20-30	18-24-40	22-28-46	26-32-50	28-40-52	30-40-58
	Throw, Vertical	6	12	20	26	27	30	30	33
	Noise Criteria	–	18	23	28	33	38	42	45
6	Airflow, CFM/FT.	30	60	90	120	150	180	210	240
	Throw, Horizontal	4-7-16	10-16-28	14-20-38	20-28-44	24-32-50	28-40-54	30-42-58	32-46-64
	Throw, Vertical	6	14	20	25	27	30	33	34
	Noise Criteria	–	19	24	29	34	39	43	46
7	Airflow, CFM/FT.	35	70	105	140	175	210	245	280
	Throw, Horizontal	5-8-18	12-18-30	16-24-42	22-30-48	26-36-54	30-42-58	38-46-64	40-48-68
	Throw, Vertical	6	14	22	27	30	32	36	38
	Noise Criteria	–	19	24	29	34	39	43	46
8	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Throw, Horizontal	6-10-20	14-20-32	18-30-44	24-36-52	28-40-58	32-46-64	40-48-68	42-52-72
	Throw, Vertical	7	15	24	29	33	36	39	40
	Noise Criteria	–	20	25	30	35	40	44	47

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.

2. All pressures are in inches w.g..

3. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.

4. Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

5. Noise criteria [NC] values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.

6. Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

7. Dash (–) in space indicates a Noise Criteria level of less than 15.

8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.018	.033
2	.035	.066
3	.053	.099
4	.070	.132
5	.088	.165
6	.105	.198
7	.123	.231
8	.140	.264

PERFORMANCE DATA:

SUPPLY • CONTINUOUS PRESSURIZED PLENUM

Models 5075 and 5075TZ • 3/4" (19) Slot

No. of Slots	Total Pressure, Horizontal	.004	.017	.030	.055	.089	.123	.176	.256
	Total Pressure, Veritcal	.003	.012	.026	.042	.065	.092	.125	.174
1	Airflow, CFM/FT.	5	10	20	25	30	35	40	50
	Throw, Horizontal	1-1-5	2-5-14	5-9-16	7-14-21	12-16-23	14-16-23	16-18-25	16-21-28
	Throw, Vertical	2	6	10	12	13	14	15	16
	Noise Criteria	–	–	16	21	26	30	33	38
2	Airflow, CFM/FT.	10	20	40	50	60	70	80	100
	Throw, Horizontal	1-2-10	4-9-21	7-16-23	14-21-28	16-23-32	21-23-35	21-25-44	23-28-46
	Throw, Vertical	3	8	11	15	18	20	21	22
	Noise Criteria	–	–	19	24	29	33	36	41
3	Airflow, CFM/FT.	15	30	60	75	90	105	120	150
	Throw, Horizontal	2-4-12	6-12-23	12-18-30	16-23-35	21-28-46	23-30-48	28-32-53	28-35-55
	Throw, Vertical	6	10	15	19	20	24	25	27
	Noise Criteria	–	–	21	26	31	35	38	43
4	Airflow, CFM/FT.	20	40	80	100	120	140	160	200
	Throw, Horizontal	2-5-14	8-14-28	16-23-35	21-28-46	23-32-53	28-35-55	32-44-60	32-46-64
	Throw, Vertical	5	11	18	21	25	27	30	31
	Noise Criteria	–	–	22	27	32	36	39	44
5	Airflow, CFM/FT.	25	50	100	125	150	175	200	250
	Throw, Horizontal	3-7-16	9-16-32	16-23-46	23-32-53	28-37-58	32-46-62	35-48-67	44-53-74
	Throw, Vertical	6	12	18	25	28	30	34	35
	Noise Criteria	–	–	23	28	33	37	40	45
6	Airflow, CFM/FT.	30	60	120	150	180	210	240	300
	Throw, Horizontal	4-8-17	10-18-35	18-28-48	23-35-55	30-46-62	35-48-69	44-53-74	46-58-78
	Throw, Vertical	7	13	21	25	30	32	36	39
	Noise Criteria	–	–	24	29	34	38	41	46
7	Airflow, CFM/FT.	35	70	140	175	210	245	280	350
	Throw, Horizontal	5-9-18	11-21-38	21-30-53	28-44-60	32-48-67	44-53-74	46-58-81	51-60-85
	Throw, Vertical	8	16	22	29	33	35	40	42
	Noise Criteria	–	–	24	29	34	38	41	46
8	Airflow, CFM/FT.	40	80	160	200	240	280	320	400
	Throw, Horizontal	6-10-21	12-21-41	21-32-55	28-46-64	37-53-74	46-58-78	51-60-85	53-64-90
	Throw, Vertical	8	17	21	30	35	40	42	43
	Noise Criteria	–	15	25	30	35	39	42	47

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.

2. All pressures are in inches w.g..

3. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.

4. Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

5. Noise criteria [NC] values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.

6. Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

7. Dash (–) in space indicates a Noise Criteria level of less than 15.

8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156
5	.122	.195
6	.146	.234
7	.171	.273
8	.195	.312

PERFORMANCE DATA:

SUPPLY • CONTINUOUS PRESSURIZED PLENUM

Model 5010 • 1" (25) Slot

No. of Slots	Total Pressure, Horizontal	.004	.016	.036	.065	.098	.138	.192	.245
	Total Pressure, Veritcal	.002	.009	.024	.038	.057	.082	.113	.148
1	Airflow, CFM/FT.	10	15	25	30	40	50	55	65
	Throw, Horizontal	1-4-10	3-6-13	8-13-18	10-16-21	13-16-23	16-18-26	18-18-26	18-21-29
	Throw, Vertical	2	8	12	13	15	16	17	18
	Noise Criteria	–	–	18	22	29	34	37	41
2	Airflow, CFM/FT.	20	30	50	60	80	100	110	130
	Throw, Horizontal	3-7-18	5-10-21	13-18-26	16-21-31	18-23-39	21-26-42	23-34-44	26-39-47
	Throw, Vertical	4	10	16	19	20	21	23	25
	Noise Criteria	–	–	21	25	32	37	40	44
3	Airflow, CFM/FT.	30	45	75	90	120	150	165	195
	Throw, Horizontal	5-9-21	8-14-26	16-21-31	18-26-42	23-29-47	26-31-49	29-34-55	31-36-57
	Throw, Vertical	6	11	18	22	25	27	30	31
	Noise Criteria	–	–	23	27	34	39	42	46
4	Airflow, CFM/FT.	40	60	100	120	160	200	220	260
	Throw, Horizontal	8-10-26	12-19-31	18-26-42	21-29-47	26-39-55	29-42-57	31-44-62	34-47-68
	Throw, Vertical	7	13	21	26	29	30	34	36
	Noise Criteria	–	–	24	28	35	40	43	47
5	Airflow, CFM/FT.	50	75	125	150	200	250	275	325
	Throw, Horizontal	10-12-29	16-21-36	20-29-47	23-34-52	31-44-60	39-47-68	42-49-73	44-52-78
	Throw, Vertical	8	15	22	27	30	36	37	40
	Noise Criteria	–	–	25	29	36	41	44	48
6	Airflow, CFM/FT.	60	90	150	180	240	300	330	390
	Throw, Horizontal	11-14-31	18-23-39	21-31-42	26-42-57	39-47-68	42-52-70	44-57-75	47-60-81
	Throw, Vertical	8	17	26	30	34	36	41	44
	Noise Criteria	–	15	26	30	37	42	45	49
7	Airflow, CFM/FT.	70	105	175	210	280	350	385	455
	Throw, Horizontal	12-16-39	20-26-44	26-39-55	29-44-60	42-52-73	47-55-78	49-60-83	52-62-88
	Throw, Vertical	9	18	28	32	37	41	43	48
	Noise Criteria	–	15	26	30	37	42	45	49
8	Airflow, CFM/FT.	80	120	200	240	320	400	440	520
	Throw, Horizontal	13-18-42	21-29-47	26-42-57	34-47-68	47-55-78	49-57-81	55-62-86	57-68-94
	Throw, Vertical	11	20	30	35	40	45	50	51
	Noise Criteria	–	16	27	31	38	43	46	50

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.

2. All pressures are in inches w.g..

3. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.

4. Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

5. Noise criteria [NC] values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.

6. Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

7. Dash (–) in space indicates a Noise Criteria level of less than 15.

8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.044
2	.060	.088
3	.090	.132
4	.121	.176
5	.151	.220
6	.181	.264
7	.211	.308
8	.241	.352

PERFORMANCE DATA:

SUPPLY • CONTINUOUS PRESSURIZED PLENUM

Model 5015 • 1 1/2" (38) Slot

No. of Slots	Total Pressure, Horizontal	.017	.032	.056	.082	.118	.154	.203	.250
	Total Pressure, Vertical	.010	.019	.033	.049	.071	.093	.122	.150
1	Airflow, CFM/FT.	18	25	33	40	48	55	63	70
	Throw, Horizontal	3-5-9	5-8-12	7-10-14	8-11-15	10-12-17	11-13-18	12-14-19	13-15-20
	Throw, Vertical	9	12	13	15	16	17	18	19
	Noise Criteria	–	–	21	26	31	35	38	41
2	Airflow, CFM/FT.	35	50	65	80	95	110	125	140
	Throw, Horizontal	5-8-14	8-12-17	10-13-20	12-16-25	13-17-27	15-18-29	16-19-30	17-20-32
	Throw, Vertical	11	16	19	20	21	23	25	27
	Noise Criteria	–	17	24	29	34	38	41	44
3	Airflow, CFM/FT.	53	75	98	120	143	165	188	210
	Throw, Horizontal	7-10-17	10-14-20	13-17-28	15-19-31	16-20-33	19-22-35	20-27-36	22-28-38
	Throw, Vertical	12	18	23	25	27	30	31	35
	Noise Criteria	–	19	26	31	36	40	43	46
4	Airflow, CFM/FT.	70	100	130	160	190	220	250	280
	Throw, Horizontal	9-14-22	12-17-27	14-20-32	17-25-36	18-27-38	20-29-40	22-31-44	24-33-47
	Throw, Vertical	15	21	26	29	31	34	36	40
	Noise Criteria	–	20	27	32	37	41	44	47
5	Airflow, CFM/FT.	88	125	163	200	238	275	313	350
	Throw, Horizontal	11-15-25	13-19-31	16-23-35	20-28-39	24-30-43	27-32-47	28-33-50	30-35-53
	Throw, Vertical	17	22	27	30	34	37	39	43
	Noise Criteria	–	21	28	33	38	42	45	48
6	Airflow, CFM/FT.	105	150	195	240	285	330	375	420
	Throw, Horizontal	12-17-27	14-20-32	18-27-40	25-31-44	27-33-46	29-37-49	30-38-52	31-39-55
	Throw, Vertical	18	26	31	34	37	41	43	45
	Noise Criteria	15	22	29	34	39	43	46	49

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.

2. All pressures are in inches w.g..

3. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.

4. Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

5. Noise criteria [NC] values are based on 10 dB room absorption, re 10^{-12} watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.

6. Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

7. Dash (–) in space indicates a Noise Criteria level of less than 15.

8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

PLENUM RETURN

Model 5050R • 1/2" (13) Slot

No. of Slots	Static Pressure	.011	.024	.045	.070	.108	.184	.279	.421
1	Airflow, CFM/FT.	10	15	20	25	30	40	50	60
	Noise Criteria	–	–	–	20	26	34	39	45
2	Airflow, CFM/FT.	20	30	40	50	60	80	100	120
	Noise Criteria	–	–	–	23	28	37	42	48
3	Airflow, CFM/FT.	30	45	60	75	90	120	150	180
	Noise Criteria	–	–	–	25	31	39	44	50
4	Airflow, CFM/FT.	40	60	80	100	120	160	200	240
	Noise Criteria	–	–	20	26	30	38	45	51
5	Airflow, CFM/FT.	50	75	100	125	150	200	250	300
	Noise Criteria	–	–	21	27	32	40	45	53
6	Airflow, CFM/FT.	60	90	120	150	180	240	300	360
	Noise Criteria	–	–	22	29	33	41	46	53
7	Airflow, CFM/FT.	70	105	140	175	210	280	350	420
	Noise Criteria	–	–	23	29	34	42	47	53
8	Airflow, CFM/FT.	80	120	160	200	240	320	400	480
	Noise Criteria	–	–	23	30	34	43	48	54

Models 5075R and 5075TZR • 3/4" (19) Slot

No. of Slots	Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	Airflow, CFM/FT.	10	20	30	40	50	60	70	80
	Noise Criteria	–	–	–	25	30	38	42	46
2	Airflow, CFM/FT.	20	40	60	80	100	120	140	160
	Noise Criteria	–	–	21	29	35	40	46	49
3	Airflow, CFM/FT.	30	60	90	120	150	180	210	240
	Noise Criteria	–	–	23	31	38	42	47	51
4	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Noise Criteria	–	–	24	33	38	44	47	52
5	Airflow, CFM/FT.	50	100	150	200	250	300	350	400
	Noise Criteria	–	–	25	33	40	44	48	53
6	Airflow, CFM/FT.	60	120	180	240	300	360	420	480
	Noise Criteria	–	–	26	34	40	45	49	54
7	Airflow, CFM/FT.	70	140	210	280	350	420	490	560
	Noise Criteria	–	–	27	35	40	46	49	54
8	Airflow, CFM/FT.	80	160	240	320	400	480	560	640
	Noise Criteria	–	–	28	36	41	46	49	56

Model 5010R • 1" (25) Slot

No. of Slots	Static Pressure	.020	.045	.070	.110	.165	.215	.291	.471
1	Airflow, CFM/FT.	20	30	40	50	60	70	80	100
	Noise Criteria	–	–	–	25	30	34	38	45
2	Airflow, CFM/FT.	40	60	80	100	120	140	160	200
	Noise Criteria	–	–	22	28	33	36	40	48
3	Airflow, CFM/FT.	60	90	120	150	180	210	240	300
	Noise Criteria	–	–	24	30	35	38	43	50
4	Airflow, CFM/FT.	80	120	160	200	240	280	320	400
	Noise Criteria	–	–	25	31	35	40	45	51
5	Airflow, CFM/FT.	100	150	200	250	300	350	400	500
	Noise Criteria	–	–	25	32	37	41	45	51
6	Airflow, CFM/FT.	120	180	240	300	360	420	480	600
	Noise Criteria	–	–	27	33	38	42	47	53
7	Airflow, CFM/FT.	140	210	280	350	420	490	560	700
	Noise Criteria	–	20	28	34	40	42	48	53
8	Airflow, CFM/FT.	160	240	320	400	480	560	640	800
	Noise Criteria	–	20	28	34	40	43	48	54

Model 5015R • 1 1/2" (38) Slot

No. of Slots	Static Pressure	.007	.029	.066	.117	.183	.263	.358	.468
1	Airflow, CFM/FT.	20	40	60	80	100	120	140	180
	Noise Criteria	–	–	21	29	33	40	44	48
2	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Noise Criteria	–	–	25	33	34	44	48	52
3	Airflow, CFM/FT.	60	120	180	240	300	360	420	480
	Noise Criteria	–	15	26	34	40	45	49	53
4	Airflow, CFM/FT.	80	160	240	320	400	480	560	640
	Noise Criteria	–	17	28	36	42	47	52	55
5	Airflow, CFM/FT.	100	200	300	400	500	600	700	800
	Noise Criteria	–	17	28	36	42	47	52	55
6	Airflow, CFM/FT.	120	240	360	480	600	720	840	960
	Noise Criteria	–	18	29	37	43	48	52	56

Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria [NC] values are based on a 10 ft. active section. For other lengths, use the correction factor table show here.
3. Dash (–) in space indicates a Noise Criteria [NC] level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15	20	25	30
Correction	- 8	- 5	- 4	- 2	- 1	0	+ 2	+ 3	+ 4	+ 5

HOW TO ORDER

LINEAR SLOT DIFFUSER – MODEL SERIES 5000

MODELS 5050, 5075, 5010, 5015, 5050R, 5075R, 5010R, 5015R, 5050BO, 5075BO, 5010BO, 5015BO

EXAMPLE: 5075 - 48" x 2 SLOT - C - AW - MM - —

1. **Models**

   Supply

   5050 1/2" (13) Slot
   5075 3/4" (19) Slot
   5010 1" (25) Slot
   5015 1 1/2" (38) Slot

   Return

   5050R 1/2" (13) Slot
   5075R 3/4" (19) Slot
   5010R 1" (25) Slot
   5015R 1 1/2" (38) Slot

   Blank-Off

   5050BO 1/2" (13) Slot – 6 ft. long
   5075BO 3/4" (19) Slot – 6 ft. long
   5010BO 1" (25) Slot – 6 ft. long
   5015BO 1 1/2" (38) Slot – 6 ft. long

2. **Nominal Length**

   inches or mm's

3. **No. of Slots**

   1 through 10

4. **Frame or Frame/Sub-Frame Combination**

   A 1 1/8" (29) Flange Frame, screwholes
   B 1 1/8" (29) Flange Frame, no screwholes
   C 1 1/8" (29) Flange Frame, concealed mounting
   D 7/8" (22) Flange Frame, concealed mounting
   E 3/4" (19) Flush Frame/sub-frame, concealed mounting
   F 1 1/8" (29) Flange Frame/ sub-frame, concealed mounting
   FL Fineline® Frame
   G 7/8" (22) Flush Frame/plaster sub-frame, concealed mounting
   H 1 1/8" (29) Flange Frame/plaster sub-frame, concealed mounting
   H2 7/8" (22) Flange Frame/plaster sub-frame, concealed mounting
   *J Tape & Spackle Frame, concealed mounting
   *KA Tape & Spackle Frame, Countersunk screw holes (both sides)
   *K1 Tape & Spackle Frame, HC5 Hard Ceiling Clip, 1/2" (13) drywall (both sides)
   *K2 Tape & Spackle Frame, HC1 Hard Ceiling Clip, 5/8" (16) drywall (both sides)
   M Flangeless Frame/Duct mounting
   N Spline Frame, concealed mounting
   T 7/8" (22) Flange Frame – T-Bar

5. **Finish**

   AW Appliance White (default)
   AL Aluminum
   BW British White
   BK Black
   DBP Dark Bronze Paint
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   MI Mill
   PC Prime Coat
   PPA Paint Prepared Aluminum
   SP Special Custom Color
   SA Satin (clear) anodized
   BC Brushed and clear coat lacquer

6. **End Cap Configuration**

   MM Mitered Mitered (default)
   MO Mitered Open
   MC Mitered Flat
   OO Open Open
   OC Open Flat
   CC Flat Flat
   FF Flanged Flanged
   FO Flanged Open
   FC Flanged Flat

OPTIONS & ACCESSORIES

7. **Angle Cut**

   — None (default)
   AC1 One End, Specify Angle
   AC2 Both Ends, Specify Angle

End Cap Availability

Frame or Frame/ Subframe Combination	End Cap
A, B, C, D, E, F, G, H, H2	M, C, F, O
FL	M, O
J, KA, K1, K2, T	M, C, O
M, N	C, O

Notes:

1. Flanged end caps (FF) may be shipped loose upon request for field attachment and are intended for use with Field Cut sections or for use by stocking representatives.

2. It is helpful to include a sketch for multiple units with mitered corners and angle cuts. Specify exact outside length of diffuser run and angles.

3. For lay-in T-Bar installations, specify nominal T-Bar opening length.

4. Frame type T with Type CC end caps is not recommended for use with 9/16" (14) lay-in T-Bar.

5. Blank-offs are supplied in 6 ft. sections for field trimming. Specify No. of slots only.

6. *Frame Types J, KA, K1 and K2 are supplied with "MI" Mill finish on the outer frame and AW Appliance White on the center tees.

HOW TO ORDER

MITERED CORNER SECTION – LINEAR SLOT DIFFUSER – MODEL SERIES 5000
MODELS 5050MC, 5075MC, 5010MC, 5015MC

EXAMPLE: 5075MC - 2 SLOT - 12 - C - AW - 90

1. **Models**
   - 5050MC 1/2" (13) Slot
   - 5075MC 3/4" (19) Slot
   - 5010MC 1" (25) Slot
   - 5015MC 1 1/2" (38) Slot
2. **No. of Slots**
   - 1 through 10
3. **Duct Length O. D.**
   - 12 12" Outside Length
   - 16 16" Outside Length
   - 24 24" Outside Length
   - 36 36" Outside Length

   (see page B16)
4. **Frame or Frame/Sub-Frame Combination**
   - A 1 1/8" (29) Flange Frame, screwholes
   - B 1 1/8" (29) Flange Frame, no screwholes
   - C 1 1/8" (29) Flange Frame, concealed mounting
   - D 7/8" (22) Flange Frame, concealed mounting
   - E 3/4" (19) Flush Frame & sub-frame, concealed mtg.
   - F 1 1/8" (29) Flange Frame & sub-frame, concealed mtg.
   - FL Fineline® Frame
   - G 7/8" (22) Flush Frame w/plaster & tile sub-frame, concealed mounting
   - H 1 1/8" (29) Flange Frame w/plaster & tile sub-frame, concealed mounting
   - H2 7/8" (22) Flange Frame w/plaster & tile sub-frame, concealed mounting
   - *J Tape & Spackle Frame, concealed mounting
   - *KA Tape & Spackle Frame, Countersunk screw holes (both sides)
   - *K1 Tape & Spackle Frame, HC5 Hard Ceiling Clip, 1/2" (13) drywall (both sides)
   - *K2 Tape & Spackle Frame, HC1 Hard Ceiling Clip, 5/8" (16) drywall (both sides)
   - M Flangeless Frame/Duct mounting
   - N Spline Frame, concealed mounting
   - T 7/8" (22) Flange Frame – T-Bar
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BW British White
   - BK Black
   - DBP Dark Bronze Paint
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared Aluminum
   - SP Special Custom Color
   - SA Satin (clear) anodized
   - BC Brushed and clear coat lacquer
6. **Mitered Angle**
   - 90 90° (default)
   - 135 135°
   - AN Degree of Angle (Specify angle = ____)

Notes:

1. It is helpful to include a sketch for multiple units with mitered corners and angle cuts. Specify exact outside length of diffuser run and angles.

2. Mitered corner selection is supplied inactive with integral blank-offs.

3. *Frame Types J, KA, K1 and K2 are supplied with "MI" Mill finish on the outer frame and AW Appliance White on the center tees.

HOW TO ORDER

TECHZONE™ LINEAR SLOT DIFFUSERS
MODEL SERIES 5075TZ • 3/4" (19) SLOT • 4" (102) AND 6" (152) CEILING MODULE

EXAMPLE: 5075TZ - 48" x 2 SLOT - 4" - L - AW - CC

1. **Models**
   Slot Width / Fabrication
   Supply
   5075TZ 3/4" (19) Slot
   Return
   5075TZR 3/4" (19) Slot
2. **Nominal Length**
   inches or mm's
3. **No. of Slots**
   1, 2, 3, 4
   4" (102) Ceiling Module, 1 and 2 slot only.
   6" (152) Ceiling Module.
4. **Ceiling Module Width**
   04 4" (102) Wide
   06 6" (152) Wide
5. **Frame Type**
   L Lay-in T-Bar
   NT Narrow T-Bar Lay-in
   TL Tegular Lay-in
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BW British White
   MI Mill
   PC Prime coat paint
7. **End Cap Configuration**
   CC Flat Flat (default)
   OO Open Open
   OC Open Flat

Notes:

1. Nailor 5075TZ Series Linear Diffusers are compatible with both Armstrong® TechZone™ and USG Interiors, Inc.® Logix™ Ceiling Systems.

2. Ensure Diffuser Frame Type selection correctly matches architectural suspension ceiling system T-Bar and ceiling panel type selection.

Frame Type L is for standard 15/16" (24) flat T-Bars usually with flush ceiling tiles.

Frame Type NT is for both 9/16" (14) flat T-Bars usually with tegular (drop-face) ceiling tiles and 9/16" (14) Bolt-Slot (regressed) T-Bars with tegular ceiling tiles which provides a flush finish.

Frame Type TL is for standard 15/16" (24) flat T-Bars with tegular (drop-face) ceiling tiles.

3. Frame Type TL is not available in 4 slots.

HOW TO SPECIFY

LINEAR SLOT DIFFUSERS – MODEL SERIES 5000
MODELS 5015, 5010, 5075, 5050, 5015R, 5010R, 5075R, 5050R

SUGGESTED SPECIFICATION:

Models 5015, 5010, 5075, 5050
Furnish and install **Nailor Model** (select one) **5015** (1 1/2" [38] slot), **5010** (1" [25] slot), **5075** (3/4" [19] slot), or **5050** (1/2" [13] slot) **Linear Slot Supply Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. The linear shall be supplied in 1 – 10 slots wide as specified. Pattern deflectors shall have an aerodynamic 'ice tong' shape that can be adjusted to regulate the volume and direction of the airflow. The maximum length of the deflectors shall be 36" (914), longer sizes shall be provided in multiple sections. The pattern deflector finish shall be black. The frame/border finish is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 5015R, 5010R, 5075R, 5050R
Furnish and install **Nailor Model** (select one) **5015R** (1 1/2" [38] slot), **5010R** (1" [25] slot), **5075R** (3/4" [19] slot), or **5050R** (1/2" [13] slot) **Linear Slot Return Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame border and end caps shall be extruded aluminum with extruded aluminum spacers. The linear shall be supplied in 1 – 10 slots wide as specified. The finish is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

TECHZONE™ LINEAR SLOT DIFFUSERS – MODEL SERIES 5000TZ
MODELS 5075TZ, 5075TZR

SUGGESTED SPECIFICATION:

Model 5075TZ
Furnish and install **Nailor Model 5075TZ** (3/4" [19] slot) **Linear Slot Supply Diffusers for TechZone™ Ceilings** of the sizes and capacities as shown on the plans and air distribution schedules.The linear diffuser must fit a lay-in style T-Bar as specified in either a 4" (102) or 6" (152) ceiling module width, as determined by the TechZone™ ceiling system selected. The linear shall be supplied with 1 – 4 slots as specified. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. Corrosion-resistant steel pattern deflectors shall have an aerodynamic "ice tong" shape that can be adjusted to regulate the volume and direction of the airflow. Pattern deflector finish shall be black. The maximum length of the deflectors shall be 36" (914), longer sizes shall be provided in multiple sections. The frame/border finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffusers, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Model 5075TZR
Furnish and install **Nailor Model 5075TZR** (3/4" [19] slot) **Linear Slot Return Diffusers for TechZone™ Ceilings** of the sizes and capacities as shown on the plans and air distribution schedules.The linear diffuser will have 1 – 4 slots, must fit a lay-in style T-Bar, as specified, and fit either a 4" (102) or 6" (152) ceiling module width, as determined by the TechZone™ ceiling system selected. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. Model 5075TZR is a matching return diffuser and supplied without pattern controllers. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffusers, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

LINEAR SLOT DIFFUSER PLENUMS

- ADAPTORS FOR MODEL SERIES 5000 LINEAR SLOT 'ICE TONG' DIFFUSERS
- HEMMED OR STRAIGHT LEG
- STANDARD OR MODIFIED MODELS
- 1 THROUGH 8 SLOTS

Model 5375

Standard Models:

5350(I) 1/2" (13) Slot
5375(I) 3/4" (19) Slot
5310(I) 1" (25) Slot
5315(I) 1 1/2" (38) Slot

Modified Performance Models:

5350(I)MP 1/2" (13) Slot
5375(I)MP 3/4" (19) Slot
5310(I)MP 1" (25) Slot
5315(I)MP 1 1/2" (38) Slot

• Suffix 'I' adds internal insulation

Model Series 5300 Diffuser Plenums are designed specifically to fit the 5000 Series 'Ice Tong' Linear Slot Diffusers. They have been designed for flexible duct connection with a model to suit each of the various frame/sub-frame 5000 Series combinations available. For drywall ceiling mounted applications, the plenums are installed separately. Unless there is access to the ceiling space, the plenum is intended to be installed during the drywall installation. Most applications of this type utilize concealed mounting straps on the 5000 Series. The plenums may be supplied with a hemmed leg into which the mounting straps snap or they locate in extrusion slots on sub-frames as the linear is drawn up to the plenum from below the ceiling. Model Series 5300 Plenums save on-site fabrication and field labor as well as maximizing performance of Model Series 5000. When room lay-out changes occur, the plenums can be simply relocated to satisfy the re-arrangement of air distribution requirements. The airflow discharge maintains a horizontal pattern that is close and tight to the ceiling throughout the full range of cataloged air volumes. Excellent for variable air volume applications. Model Series 5300MP Modified Performance Plenums are fabricated in a similar manner to the 5300 Series with the addition of internal sloping baffles for reduced throw and increased spread of the air pattern.

STANDARD FEATURES:

- Standard nominal lengths are 20", 24", 30", 36", 48", 60" and 72" (500, 600, 750, 900, 1200, 1500 and 1800 mm).
- Widths available to fit Model Series 5000 and 5000R with option of 1 to 8 slots.
- Easily installed with flexible duct.
- Ends caps can be turned up to allow plenums to be installed on continuous runs.

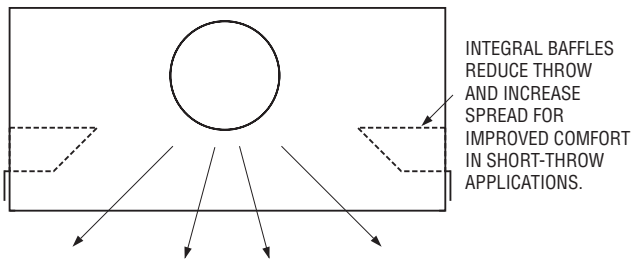
CONSTRUCTION MATERIAL:

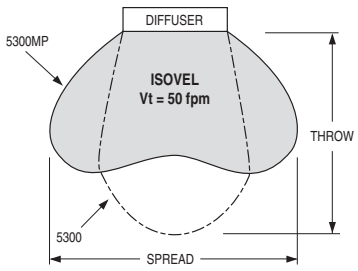
Corrosion-resistant steel.

OPTIONS & ACCESSORIES:

- Internal insulation for Models 5350I(MP), Models 5375I(MP), 5310I(MP) & 5315IMP or 1/4" (6) coated fiberglass or 3/8" (10) fiber-free foam.
- EX External Foil Back insulation.
- ID Inlet dampers with hand locking quadrant are available.
- IDCO Cable Operated Damper with a radial sliding blade design factory mounted on the inlet.

MP Modified Performance





DIMENSIONAL DATA:

ACCESSORIES FOR MODEL SERIES 5000 LINEAR SLOT ICE TONG DIFFUSER • 1 TO 8 SLOT MODELS 5350, 5375, 5310 AND 5315(I)(MP)

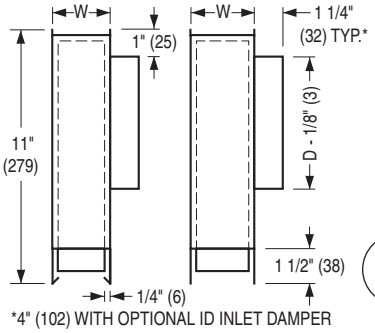
Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	4, 5, 6, 8, 10	102, 127, 152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size	
Code	Height	D (Round)	D (Oval)
H11	11" (279)	04 – 08	10 – 14
H13	13" (330)	04 – 08, 10 – 14	12 – 14
H15	15" (381)	04 – 08, 10R, 12R	14
H17	17" (432)	04 – 08, 10R – 14R	—

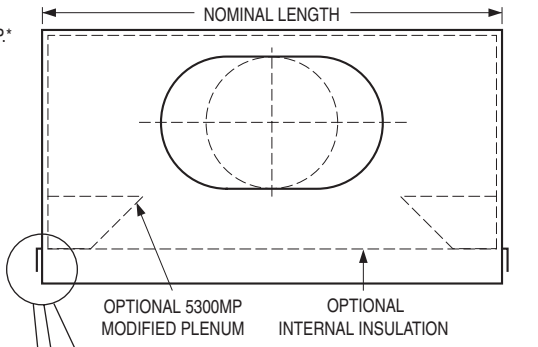
Equivalent oval: 10" (254) = 11" x 7 7/8" (279 x 200);
12" (305) = 14 1/8" x 7 7/8" (359 x 200);
14" (356) = 17 5/16" x 7 7/8" (440 x 200).

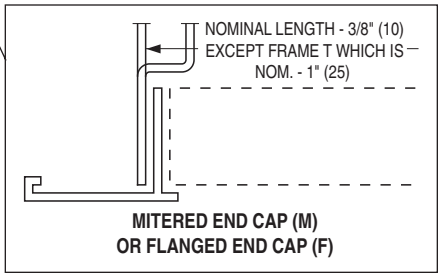
HEMMED LEG FRAME TYPES: C, D, J, N

STRAIGHT LEG FRAME TYPES: A, B, E, F, FL, G, H, H2, KA, K1, K2, M, T

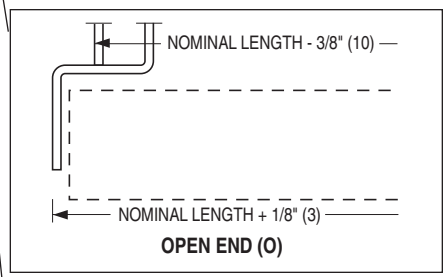


*4" (102) WITH OPTIONAL ID INLET DAMPER





MITERED END CAP (M)
OR FLANGED END CAP (F)



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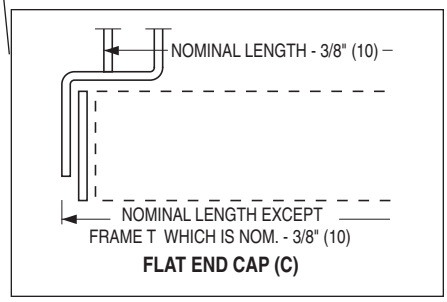


FLAT END CAP (C)

Model	No. of Slots	Plenum Width (W) For Various Frame Types							
		Imperial Units (inches)				Metric Units (mm)			
		A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G	A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G
5350	1	1 1/2	2	2 1/4	2 1/2	38	51	57	64
5375		1 3/4	2 1/4	2 1/2	2 3/4	44	57	64	70
5310		2	2 1/2	2 3/4	3	51	64	70	76
5315		2 1/2	3	3 1/4	3 1/2	64	76	83	89
5350	2	2 3/4	3 1/4	3 1/2	3 3/4	70	83	89	95
5375		3 1/4	3 3/4	4	4 1/4	83	95	102	108
5310		3 3/4	4 1/4	4 1/2	4 3/4	95	108	114	121
5315		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146
5350	3	4	4 1/2	4 3/4	5	102	114	121	127
5375		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146
5310		5 1/2	6	6 1/4	6 1/2	140	152	159	165
5315		7	7 1/2	7 3/4	8	178	191	197	203
5350	4	5 1/4	5 3/4	6	6 1/4	133	146	152	159
5375		6 1/4	6 3/4	7	7 1/4	159	171	178	184
5310		7 1/4	7 3/4	8	8 1/4	184	197	203	210
5315		9 1/4	9 3/4	10	10 1/4	235	248	254	260
5350	5	6 1/2	7	7 1/4	7 1/2	165	178	184	191
5375		7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222
5310		9	9 1/2	9 3/4	10	229	241	248	254
5315		11 1/2	12	12 1/4	12 1/2	292	305	311	318
5350	6	7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222
5375		9 1/4	9 3/4	10	10 1/4	235	248	254	260
5310		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298
5315		13 3/4	14 1/4	14 1/2	14 3/4	349	362	368	375
5350	7	9	9 1/2	9 3/4	10	229	241	248	254
5375		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298
5310		12 1/2	13	13 1/4	13 1/2	318	330	337	343
5315		16	16 1/2	16 3/4	17	406	419	425	432
5350	8	10 1/4	10 3/4	11	11 1/4	260	273	279	286
5375		12 1/4	12 3/4	13	13 1/4	311	324	330	337
5310		14 1/4	14 3/4	15	15 1/4	362	375	381	387
5315		18 1/4	18 3/4	19	19 1/4	464	476	483	489

DIMENSIONAL DATA:

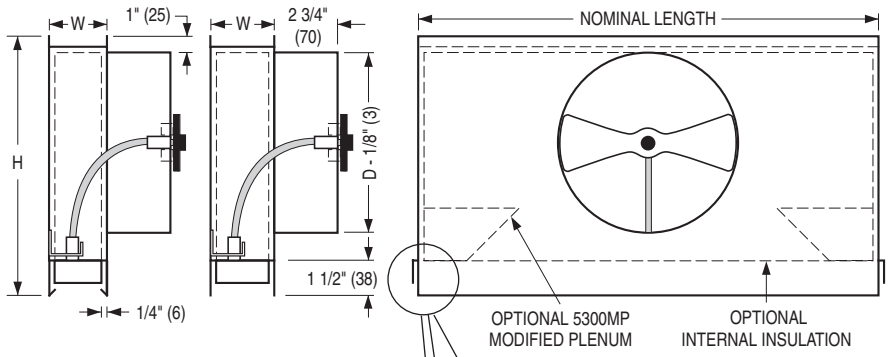
ACCESSORIES FOR MODEL SERIES 5000 LINEAR SLOT ICE TONG DIFFUSER • 1 TO 8 SLOT MODELS 5375(I), 5310(I), 5315(I), 5375(I)MP, 5310(I)MP, 5315(I)MP WITH IDCO OPTION

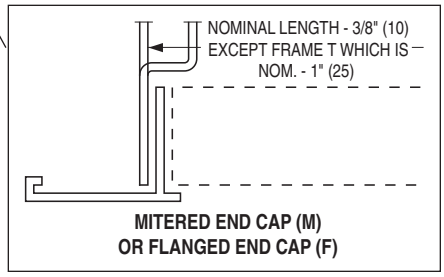
Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
20	508	6, 8, 10	152, 203, 254
24	610		
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size
Code	Height	D (Round)
H11	11" (279)	06 – 08
H13	13" (330)	10R
H15	15" (381)	12R
H17	17" (432)	14R

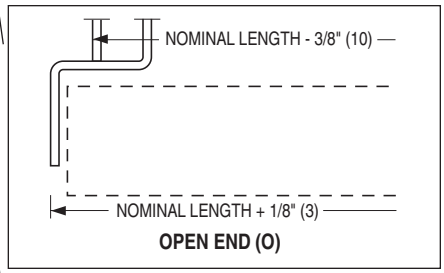
HEMMED LEG FRAME TYPES: C, D, J, N

STRAIGHT LEG FRAME TYPES: A, B, E, F, FL, G, H, H2, KA, K1, K2, M, T





MITERED END CAP (M)
OR FLANGED END CAP (F)



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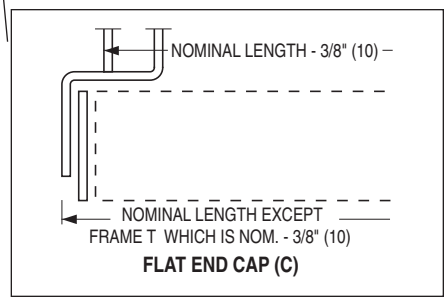


FLAT END CAP (C)

Model	No. of Slots	Plenum Width (W) For Various Frame Types							
		Imperial Units (inches)				Metric Units (mm)			
		A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G	A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G
5375	1	1 3/4	2 1/4	2 1/2	2 3/4	44	57	64	70
5310		2	2 1/2	2 3/4	3	51	64	70	76
5315		2 1/2	3	3 1/4	3 1/2	64	76	83	89
5375	2	3 1/4	3 3/4	4	4 1/4	83	95	102	108
5310		3 3/4	4 1/4	4 1/2	4 3/4	95	108	114	121
5315		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146
5375	3	4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146
5310		5 1/2	6	6 1/4	6 1/2	140	152	159	165
5315		7	7 1/2	7 3/4	8	178	191	197	203
5375	4	6 1/4	6 3/4	7	7 1/4	159	171	178	184
5310		7 1/4	7 3/4	8	8 1/4	184	197	203	210
5315		9 1/4	9 3/4	10	10 1/4	235	248	254	260
5375	5	7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222
5310		9	9 1/2	9 3/4	10	229	241	248	254
5315		11 1/2	12	12 1/4	12 1/2	292	305	311	318
5375	6	9 1/4	9 3/4	10	10 1/4	235	248	254	260
5310		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298
5315		13 3/4	14 1/4	14 1/2	14 3/4	349	362	368	375
5375	7	10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298
5310		12 1/2	13	13 1/4	13 1/2	318	330	337	343
5315		16	16 1/2	16 3/4	17	406	419	425	432
5375	8	12 1/4	12 3/4	13	13 1/4	311	324	330	337
5310		14 1/4	14 3/4	15	15 1/4	362	375	381	387
5315		18 1/4	18 3/4	19	19 1/4	464	476	483	489

LINEAR SLOT DIFFUSER PLENUMS FOR TECHZONE™ TYPE CEILINGS

- PLENUMS FOR 5075TZ SERIES TECHZONE™
- STRAIGHT LEG
- STANDARD OR MODIFIED PLENUM
- 1 THROUGH 4 SLOTS

Standard Model:

5375TZ(I) **3/4" (19) Slot**

Modified Performance Model:

5375TZ(I)MP 3/4" (19) Slot

• Suffix 'I' adds internal insulation

Model 5375TZ (MP)

Model Series 5375TZ(I)MP Diffuser Plenums are designed specifically to fit the Model Series 5000TZ(I) 'Ice Tong' Linear Slot Diffusers. They have been designed for flexible duct connection with a model to suit each of the various frame/sub-frame 5000TZ Series combinations available. For drywall ceiling mounted applications, the plenums are installed separately. Unless there is access to the ceiling space, the plenum is intended to be installed during the drywall installation. Most applications of this type utilize concealed mounting straps on the 5000TZ Series. The plenums may be supplied with a hemmed leg into which the mounting straps snap or they locate in extrusion slots on sub-frames as the linear is drawn up to the plenum from below the ceiling. Model Series 5300 Plenums save on-site fabrication and field labor. When room lay-out changes occur, the plenums can be simply relocated to satisfy the re-arrangement of air distribution requirements. Model Series 5300 Plenums maximize the 5000TZ Series performance. The airflow discharge maintains a horizontal pattern that is close and tight to the ceiling throughout the full range of cataloged air volumes. Excellent for variable air volume applications. Model Series 5375TZ(I)MP Modified Performance Plenums are fabricated in a similar manner to the 5300 Series with the addition of internal sloping baffles for reduced throw and increased spread of the air pattern.

STANDARD FEATURES:

- Straight Leg Frame Types are L, TL and NT.
- Nailor 5375TZ Series Plenums are designed specifically for field attachment to the 5075TZ Series Linear Slot Diffuser. They ensure optimum use of the 5075TZ Series VAV performance, providing a tight horizontal air pattern even at low volumes. Optional MP models incorporate integral baffles, which provide a reduction in throw and increased spread of the air pattern.
- Standard nominal lengths are 24", 30", 36", 48", 60" and 72" (600, 750, 900, 1200, 1500 and 1800 mm).
- Widths available to fit Model Series 5000TZ and 5000TZR with 1, 2, 3 or 4 slots.
- Easily installed with flexible duct.
- Ends caps can be turned up and field trimmed as necessary to allow plenums to fit diffuser length and provide a blank-off to reduce air leakage at end of diffuser.

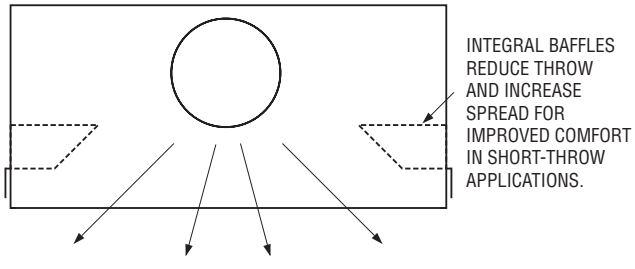
CONSTRUCTION MATERIAL:

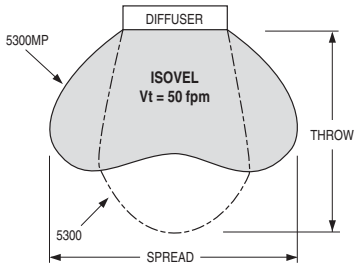
Corrosion-resistant steel.

OPTIONS & ACCESSORIES:

- Optional internal insulation for Models 5375TZ(I)(MP) 1/4" (6) coated fiberglass or 3/8" (10) fiber-free foam.
- ID Inlet are available.
- EX External Foil Back insulation.
- IDCO Cable Operated Damper with a radial sliding blade design factory mounted on the inlet and is only available with 06, 08, 10R, 12R and 14R round inlets.

MP Modified Performance





DIMENSIONAL DATA:

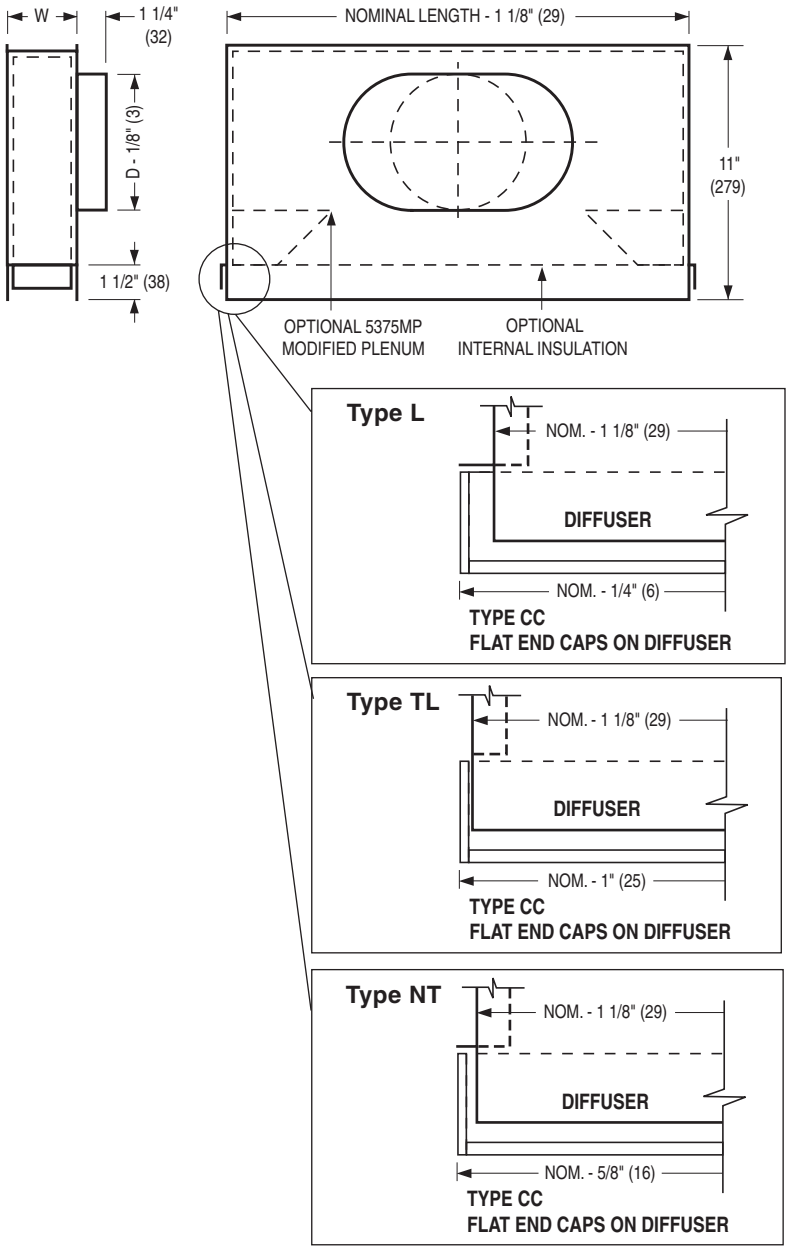
ADAPTORS FOR MODEL SERIES 5000TZ LINEAR SLOT DIFFUSER • 1 THROUGH 4 SLOT MODELS 5375TZ(I)(MP)

Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	4, 5, 6, 8, 10	102, 127, 152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Inlet sizes 4" – 8" (102 – 203) are round and 10" – 14" (254 – 356) are flat oval.

No. of Slots	Plenum Width (W) For Various Frame Types			
	Imperial Units (inches)		Metric Units (mm)	
	L, NT	TL	L, NT	TL
1	1 1/2	1 1/2	38	38
2	2 3/4	2 3/4	70	70
3	4	4	102	102
4	5 1/4	N/A	133	N/A

STRAIGHT LEG FRAME TYPES:
L, NT, TL



DIMENSIONAL DATA:

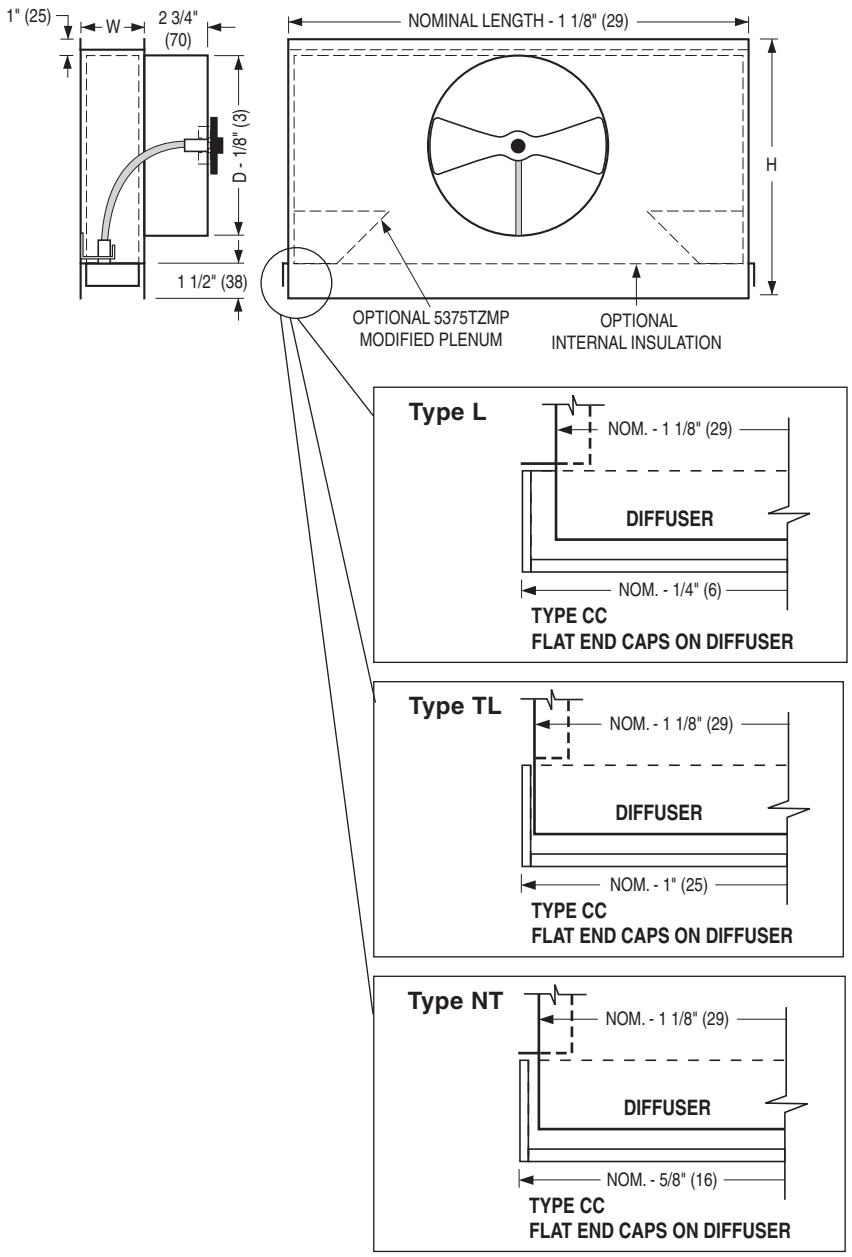
ADAPTORS FOR MODEL SERIES 5075TZ LINEAR SLOT DIFFUSER • 1 THROUGH 4 SLOT MODELS 5375TZ(MP) WITH IDCO OPTION

Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	6, 8, 10	152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size
Code	Height	D (Round)
H11	11" (279)	6" (152), 8" (203)
H13	13" (330)	10" (254)
H15	15" (381)	12" (305)
H15	17" (432)	14" (356)

No. of Slots	Plenum Width (W) For Various Frame Types			
	Imperial Units (inches)		Metric Units (mm)	
	L, NT	TL	L, NT	TL
1	1 1/2	1 1/2	38	38
2	2 3/4	2 3/4	70	70
3	4	4	102	102
4	5 1/4	N/A	133	N/A

STRAIGHT LEG FRAME TYPES:
L, NT, TL



PERFORMANCE DATA:

MODEL 5350(I) • 1/2" (13) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
	Total Pressure	.017	.038	.068	.107	.154	.209	.273	.346
	Noise Criteria	–	17	23	29	33	37	41	43
	Throw	3-4-8	5-6-10	6-8-12	7-9-13	8-10-14	9-11-15	9-11-16	10-12-16

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**35**	**50**	**65**	**80**	**95**	**110**	**125**	**140**
	Total Pressure	.023	.047	.080	.121	.171	.229	.295	.371
	Noise Criteria	–	19	25	30	34	37	40	43
	Throw	3-5-10	6-8-13	7-10-15	9-11-17	10-13-18	11-14-19	12-14-20	12-15-21
8" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.030	.051	.077	.109	.146	.188	.236	.29
	Noise Criteria	15	21	26	30	33	36	39	42
	Throw	6-8-13	7-10-15	9-11-17	10-13-18	11-14-19	12-14-20	12-15-21	13-16-22

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.025	.043	.064	.091	.122	.157	.198	.242
	Noise Criteria	–	20	26	30	34	37	40	42
	Throw	5-7-13	7-9-15	8-11-17	9-12-19	10-13-20	11-14-21	12-15-22	13-16-23
8" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.021	.036	.055	.077	.103	.133	.167	.205
	Noise Criteria	–	17	22	26	30	34	37	39
	Throw	5-7-13	7-9-15	8-11-17	9-12-19	10-13-20	11-14-21	12-15-22	13-16-23

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model.

   The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%.

   Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.018	.033
2	.035	.066
3	.053	.099
4	.070	.132

PERFORMANCE DATA:

MODEL 5350(I) • 1/2" (13) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	35	50	65	80	95	110	125	140
	Total Pressure	.021	.042	.072	.108	.153	.205	.265	.332
	Noise Criteria	–	20	26	31	36	39	42	45
	Throw	3-6-10	5-8-13	7-10-15	8-11-16	9-12-18	10-13-19	11-14-20	12-15-21

2 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.042	.074	.116	.168	.228	.298	.377	.465
	Noise Criteria	–	19	24	28	32	36	38	41
	Throw	2-6-13	5-9-16	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26
8" Round Inlet	Airflow, CFM	80	100	120	140	160	180	200	220
	Total Pressure	.039	.060	.087	.118	.154	.195	.241	.291
	Noise Criteria	16	20	24	28	31	34	37	39
	Throw	5-9-16	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26	14-19-27
10" Oval Inlet	Airflow, CFM	100	120	140	160	180	200	220	240
	Total Pressure	.041	.058	.079	.104	.131	.162	.196	.233
	Noise Criteria	18	22	26	29	32	35	37	39
	Throw	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26	14-19-27	15-19-28

2 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	120	140	160	180	200	220	240	260
	Total Pressure	.071	.097	.126	.160	.198	.239	.284	.334
	Noise Criteria	21	25	28	31	34	36	38	40
	Throw	8-12-20	9-14-22	11-15-23	12-16-25	13-17-26	14-18-27	15-19-28	15-20-29
10" Oval Inlet	Airflow, CFM	140	160	180	200	220	240	260	280
	Total Pressure	.065	.085	.107	.133	.161	.191	.224	.260
	Noise Criteria	22	25	28	31	33	35	37	39
	Throw	9-14-22	11-15-23	12-16-25	13-17-26	14-18-27	15-19-28	15-20-29	16-21-30

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model.
   The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%.
   Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.018	.033
2	.035	.066
3	.053	.099
4	.070	.132

PERFORMANCE DATA:

MODEL 5375(I) • 3/4" (19) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	20	30	40	50	60	70	80	90
	Total Pressure	.014	.031	.055	.085	.123	.168	.219	.277
	Noise Criteria	–	–	20	26	30	34	37	40
	Throw	2-4-08	4-6-11	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18
8" Round Inlet	Airflow, CFM	30	40	50	60	70	80	90	100
	Total Pressure	.026	.046	.073	.104	.142	.186	.235	.290
	Noise Criteria	–	17	22	26	30	32	35	38
	Throw	4-6-11	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18	11-14-19
10" Oval Inlet	Airflow, CFM	40	50	60	70	80	90	100	110
	Total Pressure	.037	.058	.084	.114	.149	.188	.232	.281
	Noise Criteria	–	18	22	26	29	32	35	37
	Throw	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18	11-14-19	11-14-20

1 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	35	50	65	80	95	110	125	140
	Total Pressure	.012	.024	.040	.061	.086	.115	.149	.187
	Noise Criteria	–	17	22	27	30	33	36	39
	Throw	2-5-11	5-8-14	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24
8" Round Inlet	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.020	.034	.052	.073	.098	.127	.159	.195
	Noise Criteria	–	17	22	26	29	31	34	37
	Throw	5-8-14	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25
10" Oval Inlet	Airflow, CFM	65	80	95	110	125	140	155	170
	Total Pressure	.027	.042	.059	.079	.101	.127	.156	.188
	Noise Criteria	–	19	23	27	30	32	34	37
	Throw	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25	14-18-26
12" Oval Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.037	.052	.070	.090	.113	.138	.166	.197
	Noise Criteria	16	20	23	26	29	31	34	36
	Throw	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25	14-18-26	15-19-26

1 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.039	.055	.074	.095	.119	.146	.176	.209
	Noise Criteria	18	22	26	29	32	35	36	39
	Throw	8-11-18	9-13-20	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27
10" Oval Inlet	Airflow, CFM	95	110	125	140	155	170	185	200
	Total Pressure	.050	.068	.087	.110	.134	.162	.191	.224
	Noise Criteria	20	23	26	29	31	33	35	37
	Throw	9-13-20	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27	15-20-28
12" Oval Inlet	Airflow, CFM	110	125	140	155	170	185	200	215
	Total Pressure	.048	.062	.078	.095	.115	.136	.159	.184
	Noise Criteria	21	24	26	29	31	33	36	37
	Throw	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27	15-20-28	16-21-29

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156

PERFORMANCE DATA:

MODEL 5375(I) • 3/4" (19) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.027	.045	.068	.096	.129	.167	.209	.257
	Noise Criteria	16	21	26	30	34	37	40	43
	Throw	5-8-15	7-10-18	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27
8" Round Inlet	Airflow, CFM	65	80	95	110	125	140	155	170
	Total Pressure	.036	.055	.077	.103	.134	.168	.205	.247
	Noise Criteria	17	22	26	29	32	35	38	41
	Throw	7-10-18	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27	14-18-28
10" Oval Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.044	.062	.083	.107	.134	.164	.197	.234
	Noise Criteria	16	22	26	30	33	36	39	41
	Throw	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27	14-18-28	15-19-29

2 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.022	.039	.061	.088	.119	.156	.198	.244
	Noise Criteria	–	16	21	25	29	32	35	38
	Throw	2-6-14	5-9-18	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32
8" Round Inlet	Airflow, CFM	80	100	120	140	160	180	200	220
	Total Pressure	.022	.034	.049	.067	.088	.111	.137	.166
	Noise Criteria	–	15	19	23	27	30	33	36
	Throw	5-9-18	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33
10" Oval Inlet	Airflow, CFM	100	120	140	160	180	200	220	240
	Total Pressure	.025	.036	.049	.064	.082	.101	.122	.145
	Noise Criteria	–	17	21	24	27	30	33	35
	Throw	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33	17-22-35
12" Oval Inlet	Airflow, CFM	120	140	160	180	200	220	240	260
	Total Pressure	.031	.042	.055	.070	.086	.104	.124	.145
	Noise Criteria	–	15	18	23	26	29	32	34
	Throw	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33	17-22-35	17-23-36

2 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	140	160	180	200	220	240	260	280
	Total Pressure	.054	.070	.089	.110	.133	.158	.186	.216
	Noise Criteria	20	23	26	28	31	33	35	37
	Throw	10-15-26	11-17-28	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38
10" Oval Inlet	Airflow, CFM	160	180	200	220	240	260	280	300
	Total Pressure	.049	.063	.077	.093	.111	.130	.151	.174
	Noise Criteria	20	23	25	28	30	32	34	36
	Throw	11-17-28	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38	19-25-39
12" Oval Inlet	Airflow, CFM	180	200	220	240	260	280	300	320
	Total Pressure	.044	.055	.066	.079	.092	.107	.123	.140
	Noise Criteria	20	23	25	27	29	31	33	35
	Throw	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38	19-25-39	19-25-40

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156

PERFORMANCE DATA:

MODEL 5375(I) • 3/4" (19) SLOT WIDTH

3 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.026	.047	.073	.106	.144	.188	.238	.294
	Noise Criteria	–	20	26	30	34	37	40	43
	Throw	5-8-16	8-11-20	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32
8" Round Inlet	Airflow, CFM	80	100	120	140	160	180	200	220
	Total Pressure	.030	.047	.068	.093	.122	.154	.190	.230
	Noise Criteria	15	20	25	29	32	35	37	39
	Throw	8-11-20	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32	16-21-33
10" Oval Inlet	Airflow, CFM	100	120	140	160	180	200	220	240
	Total Pressure	.040	.058	.078	.102	.130	.160	.194	.230
	Noise Criteria	19	23	27	30	33	35	37	39
	Throw	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32	16-21-33	17-22-35

3 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	125	150	175	200	225	250	275	300
	Total Pressure	.074	.107	.145	.190	.240	.297	.359	.427
	Noise Criteria	20	24	28	32	35	37	39	41
	Throw	8-13-23	10-15-27	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40
8" Round Inlet	Airflow, CFM	150	175	200	225	250	275	300	325
	Total Pressure	.057	.077	.101	.128	.157	.191	.227	.266
	Noise Criteria	20	24	27	30	33	35	37	39
	Throw	10-15-27	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42
10" Oval Inlet	Airflow, CFM	175	200	225	250	275	300	325	350
	Total Pressure	.051	.067	.085	.104	.126	.150	.176	.204
	Noise Criteria	22	25	27	30	32	34	36	38
	Throw	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42	20-27-43
12" Oval Inlet	Airflow, CFM	200	225	250	275	300	325	350	375
	Total Pressure	.041	.052	.064	.077	.092	.108	.125	.143
	Noise Criteria	20	23	26	28	30	32	34	38
	Throw	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42	20-27-43	21-28-45

3 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	180	210	240	270	300	330	360	390
	Total Pressure	.069	.094	.123	.156	.192	.233	.277	.325
	Noise Criteria	21	25	28	31	34	36	38	40
	Throw	11-16-29	13-19-33	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46
10" Oval Inlet	Airflow, CFM	210	240	270	300	330	360	390	420
	Total Pressure	.064	.084	.106	.131	.159	.189	.222	.257
	Noise Criteria	23	26	28	31	33	35	37	39
	Throw	13-19-33	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46	22-29-48
12" Oval Inlet	Airflow, CFM	240	270	300	330	360	390	420	450
	Total Pressure	.049	.063	.077	.093	.111	.130	.151	.174
	Noise Criteria	22	24	27	29	31	33	35	37
	Throw	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46	22-29-48	23-30-49

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156

PERFORMANCE DATA:

MODEL 5375(I) • 3/4" (19) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	75	100	125	150	175	200	225	250
	Total Pressure	.033	.058	.091	.131	.179	.233	.295	.365
	Noise Criteria	16	21	27	31	35	38	41	44
	Throw	6-9-18	9-13-22	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37
8" Round Inlet	Airflow, CFM	100	125	150	175	200	225	250	275
	Total Pressure	.031	.049	.070	.095	.124	.157	.194	.235
	Noise Criteria	17	22	26	31	34	37	39	41
	Throw	9-13-22	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37	19-25-38
10" Oval Inlet	Airflow, CFM	125	150	175	200	225	250	275	300
	Total Pressure	.042	.060	.082	.107	.135	.167	.202	.240
	Noise Criteria	21	24	27	31	34	36	38	40
	Throw	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37	19-25-38	19-27-39

4 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	160	190	220	250	280	310	340	370
	Total Pressure	.074	.159	.213	.275	.345	.422	.508	.602
	Noise Criteria	23	27	30	33	35	38	40	42
	Throw	9-14-27	12-18-31	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46
8" Round Inlet	Airflow, CFM	190	220	250	280	310	340	370	400
	Total Pressure	.071	.096	.124	.155	.190	.229	.271	.317
	Noise Criteria	22	25	28	31	33	36	38	40
	Throw	12-18-31	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47
10" Oval Inlet	Airflow, CFM	220	250	280	310	340	370	400	430
	Total Pressure	.064	.082	.103	.126	.152	.180	.210	.243
	Noise Criteria	22	25	28	31	33	35	37	39
	Throw	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47	23-32-49
12" Oval Inlet	Airflow, CFM	250	280	310	340	370	400	430	460
	Total Pressure	.046	.057	.070	.084	.100	.117	.135	.155
	Noise Criteria	21	24	27	29	31	33	35	37
	Throw	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47	23-32-49	24-33-50

4 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	220	260	300	340	380	420	460	500
	Total Pressure	.089	.124	.165	.212	.265	.324	.389	.459
	Noise Criteria	22	26	29	32	35	37	39	41
	Throw	12-18-33	15-21-37	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53
10" Oval Inlet	Airflow, CFM	260	300	340	380	420	460	500	540
	Total Pressure	.077	.103	.132	.165	.201	.242	.285	.333
	Noise Criteria	23	26	29	32	35	37	39	41
	Throw	15-21-37	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53	26-36-55
12" Oval Inlet	Airflow, CFM	300	340	380	420	460	500	540	580
	Total Pressure	.053	.068	.085	.104	.124	.147	.171	.198
	Noise Criteria	22	25	28	30	33	35	37	39
	Throw	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53	26-36-55	27-37-57

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156

PERFORMANCE DATA:

MODEL 5310(I) • 1" (25) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
	Total Pressure	.008	.018	.032	.049	.071	.097	.126	.160
	Noise Criteria	–	–	17	23	27	31	34	37
	Throw	1-3-07	3-5-09	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17
8" Round Inlet	**Airflow, CFM**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**
	Total Pressure	.015	.027	.042	.060	.082	.107	.136	.168
	Noise Criteria	–	–	17	23	27	30	32	35
	Throw	3-5-09	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17	11-13-18
10" Oval Inlet	**Airflow, CFM**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**
	Total Pressure	.022	.034	.048	.066	.086	.109	.135	.163
	Noise Criteria	–	15	20	24	27	29	32	35
	Throw	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17	11-13-18	12-13-19

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.019	.033	.049	.070	.093	.121	.151	.185
	Noise Criteria	–	18	23	26	30	33	36	38
	Throw	2-6-12	5-8-14	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23
8" Round Inlet	**Airflow, CFM**	**65**	**80**	**95**	**110**	**125**	**140**	**155**	**170**
	Total Pressure	.022	.033	.046	.062	.080	.101	.124	.149
	Noise Criteria	–	18	22	25	28	31	33	36
	Throw	5-8-14	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24
10" Oval Inlet	**Airflow, CFM**	**80**	**95**	**110**	**125**	**140**	**155**	**170**	**185**
	Total Pressure	.026	.037	.050	.064	.081	.099	.119	.141
	Noise Criteria	16	20	24	27	30	32	34	36
	Throw	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24	15-18-25
12" Oval Inlet	**Airflow, CFM**	**95**	**110**	**125**	**140**	**155**	**170**	**185**	**200**
	Total Pressure	.033	.044	.057	.071	.087	.105	.124	.145
	Noise Criteria	16	19	22	25	28	31	33	35
	Throw	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24	15-18-25	16-18-26

1 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**80**	**95**	**110**	**125**	**140**	**155**	**170**	**185**
	Total Pressure	.026	.037	.049	.064	.080	.098	.118	.140
	Noise Criteria	15	19	23	26	29	31	33	35
	Throw	5-9-16	7-11-18	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25
10" Oval Inlet	**Airflow, CFM**	**95**	**110**	**125**	**140**	**155**	**170**	**185**	**200**
	Total Pressure	.031	.041	.054	.067	.082	.099	.117	.137
	Noise Criteria	15	19	23	25	28	30	32	35
	Throw	7-11-18	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25	15-18-26
12" Oval Inlet	**Airflow, CFM**	**110**	**125**	**140**	**155**	**170**	**185**	**200**	**215**
	Total Pressure	.030	.038	.048	.059	.071	.084	.098	.113
	Noise Criteria	17	20	22	26	28	30	33	34
	Throw	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25	15-18-26	16-19-27

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206

PERFORMANCE DATA:

MODEL 5310(I) • 1" (25) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.020	.034	.052	.073	.098	.127	.159	.195
	Noise Criteria	–	17	23	27	31	34	37	40
	Throw	3-6-13	5-8-16	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26
8" Round Inlet	**Airflow, CFM**	**65**	**80**	**95**	**110**	**125**	**140**	**155**	**170**
	Total Pressure	.026	.039	.055	.074	.095	.119	.146	.176
	Noise Criteria	15	19	22	26	29	32	35	38
	Throw	5-8-16	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26	14-19-27
10" Oval Inlet	**Airflow, CFM**	**80**	**95**	**110**	**125**	**140**	**155**	**170**	**185**
	Total Pressure	.043	.060	.081	.104	.131	.160	.193	.229
	Noise Criteria	16	20	24	27	30	33	36	38
	Throw	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26	14-19-27	14-20-28

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**100**	**120**	**140**	**160**	**180**	**200**	**220**	**240**
	Total Pressure	.054	.077	.105	.137	.174	.214	.259	.309
	Noise Criteria	18	22	26	29	33	35	37	39
	Throw	4-8-19	7-11-22	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33
8" Round Inlet	**Airflow, CFM**	**120**	**140**	**160**	**180**	**200**	**220**	**240**	**260**
	Total Pressure	.041	.056	.073	.092	.113	.137	.163	.192
	Noise Criteria	17	21	24	27	30	32	34	36
	Throw	7-11-22	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34
10" Oval Inlet	**Airflow, CFM**	**140**	**160**	**180**	**200**	**220**	**240**	**260**	**280**
	Total Pressure	.038	.049	.063	.077	.093	.111	.130	.151
	Noise Criteria	18	21	24	27	29	31	33	35
	Throw	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34	17-24-36
12" Oval Inlet	**Airflow, CFM**	**160**	**180**	**200**	**220**	**240**	**260**	**280**	**300**
	Total Pressure	.032	.040	.049	.060	.071	.083	.097	.111
	Noise Criteria	17	21	23	25	27	29	31	33
	Throw	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34	17-24-36	18-25-37

2 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**160**	**180**	**200**	**220**	**240**	**260**	**280**	**300**
	Total Pressure	.059	.075	.093	.112	.133	.157	.182	.209
	Noise Criteria	20	23	25	27	29	31	33	35
	Throw	8-13-25	10-15-28	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37
10" Oval Inlet	**Airflow, CFM**	**180**	**200**	**220**	**240**	**260**	**280**	**300**	**320**
	Total Pressure	.052	.064	.077	.092	.108	.125	.143	.163
	Noise Criteria	19	21	23	26	28	30	32	34
	Throw	10-15-28	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37	18-26-38
12" Oval Inlet	**Airflow, CFM**	**200**	**220**	**240**	**260**	**280**	**300**	**320**	**340**
	Total Pressure	.045	.054	.064	.076	.088	.101	.115	.129
	Noise Criteria	19	22	24	26	28	30	32	34
	Throw	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37	18-26-38	19-27-39

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206

PERFORMANCE DATA:

MODEL 5310(I) • 1" (25) SLOT WIDTH

3 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**60**	**80**	**100**	**120**	**140**	**160**	**180**	**200**
	Total Pressure	.024	.043	.067	.096	.131	.171	.216	.267
	Noise Criteria	–	18	23	27	31	34	37	40
	Throw	2-6-13	5-9-17	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30
8" Round Inlet	**Airflow, CFM**	**80**	**100**	**120**	**140**	**160**	**180**	**200**	**220**
	Total Pressure	.034	.053	.077	.104	.136	.173	.213	.258
	Noise Criteria	–	18	23	26	29	32	35	37
	Throw	5-9-17	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30	15-19-31
10" Oval Inlet	**Airflow, CFM**	**100**	**120**	**140**	**160**	**180**	**200**	**220**	**240**
	Total Pressure	.029	.042	.057	.075	.095	.117	.141	.168
	Noise Criteria	16	20	23	26	29	32	34	36
	Throw	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30	15-19-31	16-20-32

3 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**125**	**150**	**175**	**200**	**225**	**250**	**275**	**300**
	Total Pressure	.071	.103	.140	.183	.231	.285	.345	.411
	Noise Criteria	17	21	25	28	31	34	36	38
	Throw	4-9-19	7-12-23	9-14-26	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37
8" Round Inlet	**Airflow, CFM**	**150**	**175**	**200**	**225**	**250**	**275**	**300**	**325**
	Total Pressure	.048	.065	.085	.108	.134	.162	.192	.226
	Noise Criteria	18	21	24	27	30	32	34	36
	Throw	7-12-38	9-14-38	11-16-38	12-18-38	14-19-38	15-21-38	17-22-38	18-23-38
10" Oval Inlet	**Airflow, CFM**	**175**	**200**	**225**	**250**	**275**	**300**	**325**	**350**
	Total Pressure	.045	.058	.074	.091	.110	.131	.154	.179
	Noise Criteria	19	22	25	27	29	31	33	35
	Throw	9-14-26	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37	18-23-38	19-24-40
12" Oval Inlet	**Airflow, CFM**	**200**	**225**	**250**	**275**	**300**	**325**	**350**	**375**
	Total Pressure	.032	.040	.049	.060	.071	.083	.097	.111
	Noise Criteria	17	20	23	25	27	29	31	33
	Throw	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37	18-23-38	19-24-40	20-25-41

3 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**
	Total Pressure	.063	.085	.111	.141	.174	.210	.250	.293
	Noise Criteria	18	21	25	29	31	33	35	37
	Throw	7-13-25	9-15-28	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42
10" Oval Inlet	**Airflow, CFM**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**
	Total Pressure	.054	.071	.090	.111	.134	.160	.188	.218
	Noise Criteria	20	22	25	27	30	32	34	36
	Throw	9-15-28	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42	20-26-44
12" Oval Inlet	**Airflow, CFM**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**
	Total Pressure	.036	.046	.057	.069	.082	.096	.111	.128
	Noise Criteria	19	21	23	26	28	30	32	34
	Throw	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42	20-26-44	21-28-45

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206

PERFORMANCE DATA:

MODEL 5310(I) • 1" (25) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	75	100	125	150	175	200	225	250
	Total Pressure	.030	.054	.084	.121	.164	.214	.271	.335
	Noise Criteria	15	19	24	28	32	35	38	40
	Throw	4-6-15	7-10-20	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34
8" Round Inlet	Airflow, CFM	100	125	150	175	200	225	250	275
	Total Pressure	.035	.054	.078	.106	.138	.175	.216	.261
	Noise Criteria	15	19	23	27	31	33	35	38
	Throw	7-10-20	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34	17-24-36
10" Oval Inlet	Airflow, CFM	125	150	175	200	225	250	275	300
	Total Pressure	.029	.041	.056	.073	.093	.115	.139	.165
	Noise Criteria	17	21	24	28	30	33	35	37
	Throw	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34	17-24-36	18-25-37

4 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	160	190	220	250	280	310	340	370
	Total Pressure	.104	.147	.198	.255	.320	.392	.472	.559
	Noise Criteria	19	23	27	30	33	35	37	39
	Throw	7-10-23	9-13-27	11-16-31	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42
8" Round Inlet	Airflow, CFM	190	220	250	280	310	340	370	400
	Total Pressure	.065	.087	.112	.140	.172	.207	.245	.287
	Noise Criteria	19	22	25	28	30	32	34	36
	Throw	9-13-27	11-16-31	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44
10" Oval Inlet	Airflow, CFM	220	250	280	310	340	370	400	430
	Total Pressure	.054	.070	.088	.108	.129	.153	.179	.207
	Noise Criteria	19	23	25	27	29	31	33	35
	Throw	11-16-1931	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44	20-29-45
12" Oval Inlet	Airflow, CFM	250	280	310	340	370	400	430	460
	Total Pressure	.039	.049	.061	.073	.086	.101	.116	.133
	Noise Criteria	17	20	23	25	27	29	31	33
	Throw	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44	20-29-45	21-31-47

4 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	220	260	300	340	380	420	460	500
	Total Pressure	.085	.118	.157	.202	.253	.309	.370	.437
	Noise Criteria	19	22	27	29	31	33	36	38
	Throw	9-13-29	12-17-33	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49
10" Oval Inlet	Airflow, CFM	260	300	340	380	420	460	500	540
	Total Pressure	.072	.095	.122	.153	.187	.224	.265	.309
	Noise Criteria	21	24	27	30	32	34	36	38
	Throw	12-17-33	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49	23-33-51
12" Oval Inlet	Airflow, CFM	300	340	380	420	460	500	540	580
	Total Pressure	.043	.056	.070	.085	.102	.121	.141	.162
	Noise Criteria	20	23	26	28	30	32	34	36
	Throw	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49	23-33-51	24-35-53

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206

HOW TO ORDER

LINEAR SLOT DIFFUSER PLENUMS – MODEL SERIES 5300

MODELS 5315(I), 5310(I), 5375(I), 5350(I), 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP

EXAMPLE: 5375 - 48" x 2 SLOT - H11 - C - MM - 08 - ID

1. **Models**

   Standard Plenum

   5350(I) 1/2" (13) Slot
   5375(I) 3/4" (19) Slot
   5310(I) 1" (25) Slot
   5315(I) 1 1/2" (38) Slot

   Modified Plenum

   5350(I)MP 1/2" (13) Slot
   5375(I)MP 3/4" (19) Slot
   5310(I)MP 1" (25) Slot
   5315(I)MP 1 1/2" (38) Slot

   (Add Suffix "I" for optional internal insulation)

2. **Nominal Length**

   Imperial Sizes

   inches / mm's
   20, 24, 30, 36, 48, 60, 72
   (508, 610, 762, 914, 1219, 1524, 1829)

   Metric Sizes

   mm's
   500, 600, 750, 900, 1200, 1500, 1800

3. **No. of Slots**

   1 through 8

4. **Plenum Height**

   H11 11" (279) standard (default)
   H13 13" (330)
   H15 15" (381)
   H17 17" (432)

5. **Linear Slot Diffuser 5000 Series Frame or Frame/Sub-Frame Combination**

   A, B, C, D, E, F, FL, G, H, H2, J, KA, K1, K2, M, N or T

6. **Linear Slot Diffuser 5000 Series End Caps**

   MM, MO, MC, OO, OC, CC, FF, FO or FC

7. **Plenum Inlet Size**

   04 4" (102) round
   05 5" (127) round
   06 6" (152) round
   07 7" (178) round
   08 8" (203) round
   10 10" (254) flat oval
   10R 10" (254) round
   12 12" (305) flat oval
   12R 12" (305) round
   14 14" (356) flat oval
   14R 14" (356) round

OPTIONS & ACCESSORIES

8. **Inlet Damper**

   — None (default)
   ID Inlet Damper with HLQ
   IDCO Cable Operated Damper

9a. **External Insulation**

   (Non-insulated models only)
   — None (default)
   EX Foil-Back Insulation, installed – R-4.2

9b. **Internal Insulation**

   ("I" models only)
   FGI 1/4" (6) Coated Fiberglass (default)
   FFI 3/8" (10) Fiber-free Foam

Notes:

1. Plenums are shipped loose as standard for field installation.

2. Standard plenum height is 11" (279). Inlet sizes 4" – 8" (102 – 203) are round, 10" – 14" (254 – 356) are flat oval. 10R, 12R and 14R round inlets require a minimum plenum height of inlet size + 3".

3. Plenums for frame/sub-frame types A, B, E, F, G, H, H2, KA, K1, K2 and M are for direct attachment to diffuser neck or sub-frame.

   Plenums for frame types C, D, J and N are hemmed for field attachment by use of concealed mounting straps.

4. End caps of plenums can be turned up for use on continuous runs.

5. For lay-in T-Bar installations, specify nominal T-Bar opening length. Plenums can be factory mounted when nominal length is same as finished length of linear. Please specify.

6. Standard internal insulation ("I" suffix models) is 1/4" (6) coated fiberglass.

7. IDCO Cable Operated Damper is only available on 5375(I)(MP) 3/4" (19), 5310 (I)(MP) 1" (25), and 5315(I)(MP) 1 1/2" (38) slot widths and only with 06, 08, 10R, 12R and 14R round inlets.

Available Inlet Sizes

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
H11	11" (279)	04 – 08	10 – 14
H13	13" (330)	04 – 08, 10R	12 – 14
H15	15" (381)	04 – 08, 10R, 12R	14
H17	17" (432)	04 – 08, 10R – 14R	–

HOW TO SPECIFY

LINEAR SLOT DIFFUSER PLENUMS – MODEL SERIES 5300

MODELS 5315(I), 5310(I), 5375(I), 5350(I), 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP

SUGGESTED SPECIFICATION:

Models 5315(I), 5310(I), 5375(I), 5350(I)

Furnish and install **Nailor Model** (select one) **5315(I)** (1 1/2" [38] slot), **5310(I)** (1" [25] slot), **5375(I)** (3/4" [19] slot), or **5350(I)** (1/2" [13] slot) **Plenums for Linear Slot Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3, 4, 5, 6, 7 or 8 slot linear as specified and the length shall be in standard nominal lengths of 20", 24", 30", 36", 48", 60" and 72" (508, 610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Models 5315I, 5310I, 5375I and 5350I shall have internal insulation.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP

Furnish and install **Nailor Model** (select one) **5315(I)MP** (1 1/2" [38] slot), **5310(I)MP** (1" [25] slot), **5375(I)MP** (3/4" [19] slot), or **5350(I)MP** (1/2" [13] slot) **Modified Performance Plenums for Linear Slot Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The modified performance plenums shall incorporate integral baffles, providing a reduction in throw and increased spread of the air pattern. The width shall fit a 1, 2, 3, 4, 5, 6, 7 or 8 slot linear as specified and the length shall be in standard nominal lengths of 20", 24", 30", 36", 48", 60" and 72" (508, 610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Models 5315IMP, 5310IMP, 5375IMP and 5350IMP shall have internal insulation.

(**IDCO**) An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Models 5315 and 5310 shall include a flexible rotary cable, connecting the damper to a Phillips head screw operator mounted inside the plenum, permitting air balancing at the diffuser face. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

TECHZONE™ LINEAR SLOT DIFFUSER PLENUMS
MODEL SERIES 5375TZ • 3/4" (19) SLOT
MODELS 5375TZ, 5375TZI, 5375TZMP, 5375TZIMP

EXAMPLE: 5375TZ - 48" x 2 SLOT - H11 - L - CC - 08 - ID - —

1. **Models**
   - 5375TZ Standard Plenum
   - 5375TZI Insulated Plenum (internal)
   - 5375TZMP Modified Performance Plenum
   - 5375TZIMP Insulated Modified Performance Plenum (internal)
2. **Nominal Length**
   Imperial Sizes
   inches / mm's
   24, 30, 36, 48, 60, 72
   (610, 762, 914, 1219, 1524, 1829)
   Metric Sizes
   mm's
   600, 750, 900, 1200, 1500, 1800
3. **No. of Slots**
   1 through 4
4. **Plenum Height**
   - H11 11" (279) standard (default)
   - H13 13" (330)
   - H15 15" (381)
   - H17 17" (432)
5. **Linear Slot Diffuser 5075TZ Series**
   Frame Type
   - L Lay-in T-Bar
   - NT Narrow T-Bar Lay-in
   - TL Tegular T-Bar Lay-in
6. **End Cap Configuration 5075TZ Series**
   - CC Flat Flat (default)
   - OO Open Open
   - OC Open Flat
7. **Plenum Inlet Size**
   - 04 4" (102) round
   - 05 5" (127) round
   - 06 6" (152) round
   - 07 7" (178) round
   - 08 8" (203) round
   - 10 10" (254) flat oval
   - 10R 10" (254) round
   - 12 12" (305) flat oval
   - 12R 12" (305) round
   - 14 14" (356) flat oval
   - 14R 14" (356) round

OPTIONS & ACCESSORIES

8. **Inlet Damper**
   - — None (default)
   - ID Inlet Damper with HLQ
   - IDCO Cable Operated Damper

9a. **External Insulation**
   - — None (default)
   - EX Foil Back R-4.2 (installed)

9b. **Internal Insulation**
   ("I" models only)
   - FGI 1/4" (6) Coated Fiberglass (default)
   - FFI 3/8" (10) Fiber-free Foam

Notes:

1. Plenums are shipped loose as standard for field installation.
2. Standard plenum height is 11" (279). Inlet sizes 4" – 8" (102 – 203) are round, 10" – 14" (254 – 356) are flat oval. 10R, 12R and 14R round inlets require a minimum plenum height of inlet size + 3".
3. End caps of plenums can be turned up for use on continuous runs.
4. Standard internal insulation ("I" suffix models) is 1/4" (6) coated fiberglass.
5. IDCO Cable Operated Damper is only available on 06, 08, 10R, 12R and 14R round inlets.
6. Frame Type TL is available in one through three slots only.

Available Inlet Sizes

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
H11	11" (279)	04 – 08	10 – 14
H13	13" (330)	04 – 08, 10R	12 – 14
H15	15" (381)	04 – 08, 10R, 12R	14
H17	17" (432)	04 – 08, 10R – 14R	–

HOW TO SPECIFY

TECHZONE™ LINEAR SLOT DIFFUSER PLENUMS
MODELS 5375TZ(I), 5375TZ(I)MP

SUGGESTED SPECIFICATION:

Model 5375TZ(I)

Furnish and install **Nailor Model** (select one) **5375TZ(I)** (3/4" [19] slot) **Plenums for Linear Slot Diffusers for TechZone™ Type Ceilings** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3 or 4 slot linear as specified and the length shall be in standard nominal lengths of 24", 30", 36", 48", 60" and 72" (610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Model 5375TZI shall have internal insulation.

(**IDCO**) An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Model 5375TZ(I)MP

Furnish and install **Nailor Model** (select one) **5375TZ(I)MP** (3/4" [19] slot) **Modified Performance Plenums for Linear Slot Diffusers for TechZone™ Type Ceilings** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3 or 4 slot linear as specified and the length shall be in standard nominal lengths of 24", 30", 36", 48", 60" and 72" (610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Model 5375TZIMP shall have internal insulation.

(**IDCO**) An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

LINEAR BAR GRILLES

- STANDARD OR HEAVY DUTY MODELS
- SUITABLE FOR CEILING, SIDEWALL, SILL OR FLOOR INSTALLATIONS
- FIXED BARS
- 7 CORE STYLES
- ALUMINUM CONSTRUCTION

1/2" (13) Bar Spacing Models:

49-240 • 1/4" (6) Bars • 0° Deflection • Pencil-Proof

49-241 • 1/4" (6) Bars • 15° Deflection • Pencil-Proof

49-243 • 1/4" (6) Bars • 30° Deflection • Pencil-Proof

49-280 • 1/8" (3) Bars • 0° Deflection

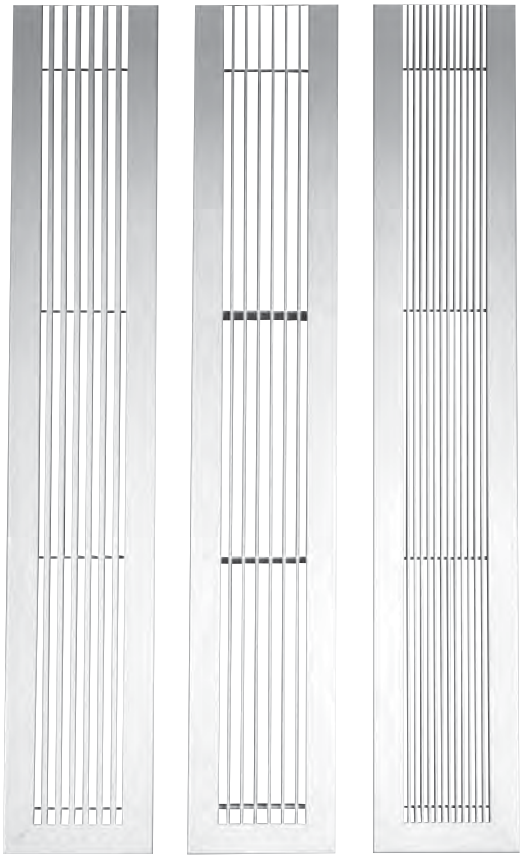
49-281 • 1/8" (3) Bars • 15° Deflection

1/4" (6) Bar Spacing Models:

49-480 • 1/8" (3) Bars • 0° Deflection

49-481 • 1/8" (3) Bars • 15° Deflection

• Suffix 'O' adds a steel opposed blade damper



Models 49-240, 49-280, 49-480

Model Series 4900 Linear Bar Grilles have been specially designed to provide the precision quality appearance required for architectural excellence with crisply sculptured styling, careful workmanship and effective air distribution. Designed for heating and cooling applications, supply and return, the grilles are manufactured with precision mitered corners to maximize quality.

STANDARD FEATURES:

• Deflection bars are fixed and are parallel to the long dimension.

• Available in 7 core styles and a variety of frame and sub-frame options.

• Diffusers are supplied in lengths of up to 6 ft. (1829) in a single section.

• Standard incremental units of length are 1, 2, 3, 4, 5 and 6 ft. (305, 610, 914, 1219, 1524 and 1829 mm). However, the 4900 Series is available in any nominal length to suit engineering and architectural requirements.

• Ideal for continuous length applications.

• Multiple sections are provided with alignment strips on the frame and sub-frame to provide superior, positive field alignment.

• End caps are staked and mitered for a superior quality appearance.

• Standard duty models are available for ceiling, wall or sill installations. Heavy duty models are designed specifically for use in floor installations.

CONSTRUCTION MATERIAL:

Extruded Aluminum.

FINISH OPTIONS:

• AW Appliance White frame is standard. Optional finish is AL Aluminum. Premium finishes are SA Satin (clear) Anodized or BC Brushed and Clear Coat lacquer.

Other finishes are available.

OPTIONS & ACCESSORIES:

• Heavy gauge steel opposed blade damper (add suffix '-O').

• HC Heavy Duty Core.

• DV Rear directional control vanes.

• MC Mitered Corner Sections.

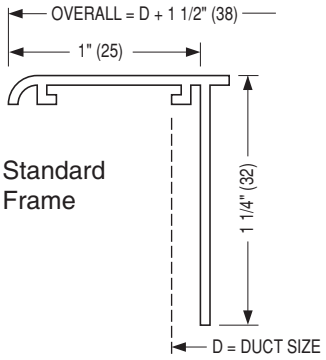
• AD Access Doors.

• BO Blank-offs.

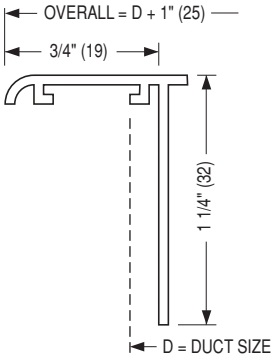
DIMENSIONAL DATA:

STANDARD DUTY FRAME TYPES

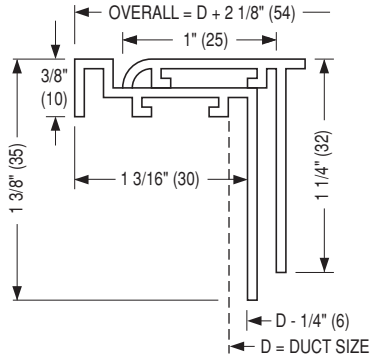
TYPE A
1" (25) Border



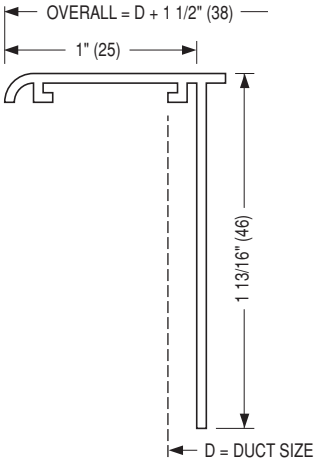
TYPE B
3/4" (19) Reduced Border



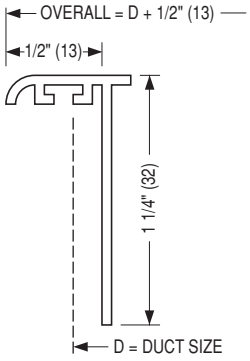
TYPE C
1" (25) Border and Sub-Frame



TYPE D
1" (25) Border
Deep Stack (permits DV option)



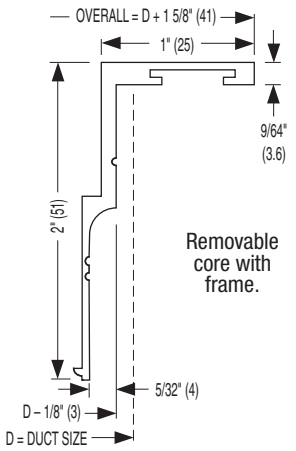
TYPE E
1/2" (13) Narrow Border



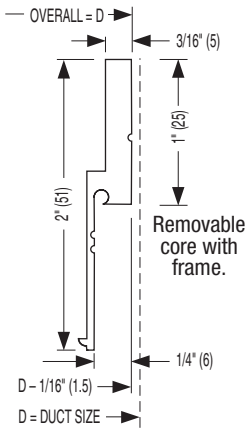
HEAVY DUTY MOUNTING FRAMES

FLOOR INSTALLATIONS

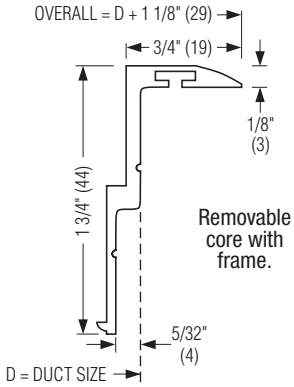
TYPE F
1" (25) Border Flange



TYPE G
No Flange
Flush Mounting

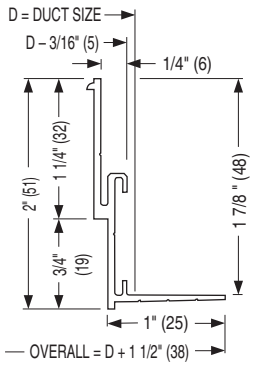


TYPE H
3/4" (19) Bevelled Border



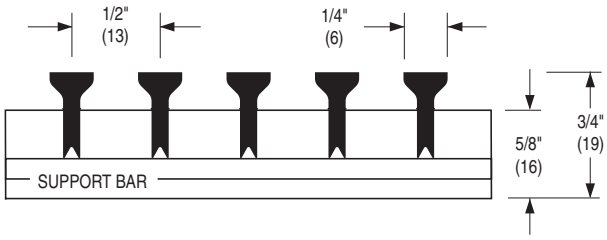
CEILING INSTALLATIONS

TYPE K
1" (25) Tape & Spackle
Border

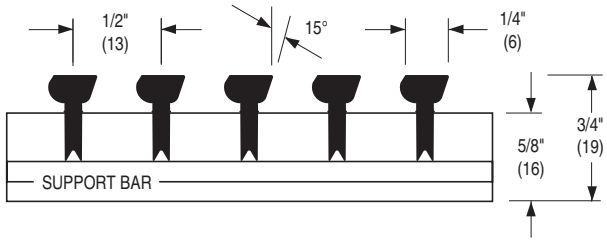


DIMENSIONAL DATA:
AVAILABLE CORE STYLES

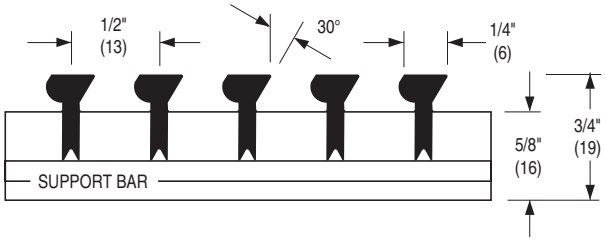
MODEL 49-240
1/2" (13) Spacing • 1/4" (6) Bars • 0° Deflection
"Pencil Proof"



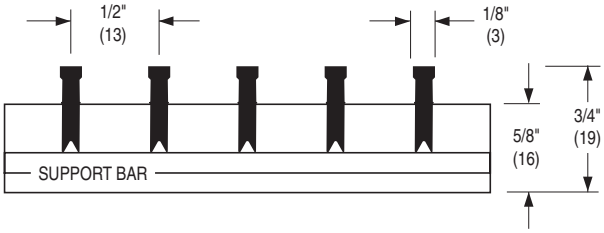
MODEL 49-241
1/2" (13) Spacing • 1/4" (6) Bars • 15° Deflection
"Pencil Proof"



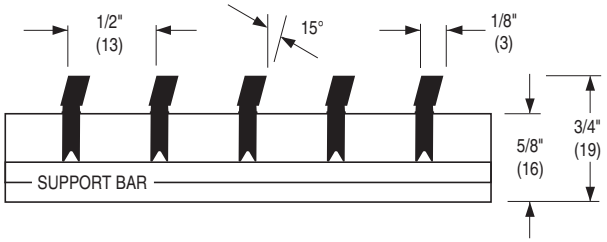
MODEL 49-243
1/2" (13) Spacing • 1/4" (6) Bars • 30° Deflection
"Pencil Proof"



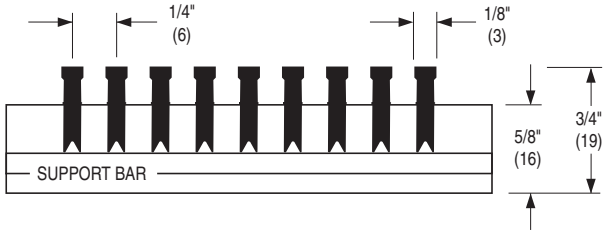
MODEL 49-280
1/2" (13) Spacing • 1/8" (3) Bars • 0° Deflection



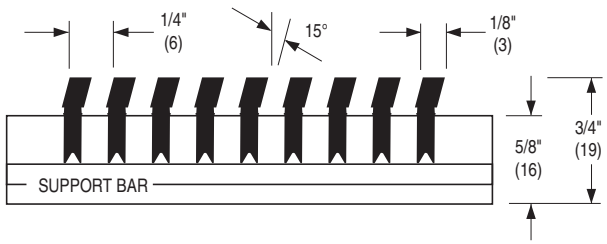
MODEL 49-281
1/2" (13) Spacing • 1/8" (3) Bars • 15° Deflection



MODEL 49-480
1/4" (6) Spacing • 1/8" (3) Bars • 0° Deflection
"Heel Proof"



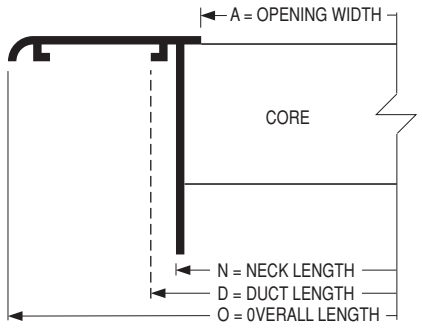
MODEL 49-481
1/4" (6) Spacing • 1/8" (3) Bars • 15° Deflection
"Heel Proof"



DIMENSIONAL DATA:

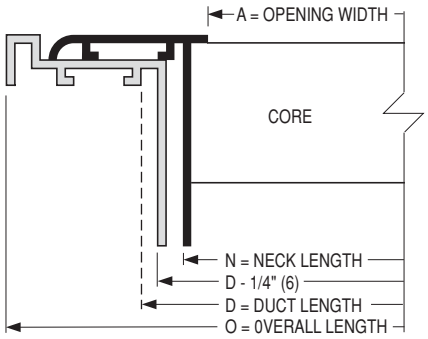
OVERALL LENGTH AND WIDTH

FRAME TYPES



Type	N	O
A	D - 1/2" (13)	D + 1 1/2" (38)
B	D - 1/2" (13)	D + 1" (25)
D	D - 1/2" (13)	D + 1 1/2" (38)
E	D - 1/2" (13)	D + 1/2" (13)
F	D	D + 1 5/8" (41)
G	D	D
H	D	D + 1 1/8" (29)
K	D	D + 1 1/2" (38)
Dimensions are for length or width.		

FRAME TYPES



Type	N	O
C	D - 1/2" (13)	D + 2 1/8" (54)
Dimensions are for length or width.		

STANDARD WIDTHS AND CORE

Duct Width D	1/4" (6) Spacing	
	Opening Width A	Number of Bars
1 1/2" (38)	3/4" (19)	2
2" (51)	1 1/4" (32)	4
2 1/2" (64)	1 3/4" (44)	6
3" (76)	2 1/4" (57)	8
3 1/2" (89)	2 3/4" (70)	10
4" (102)	3 1/4" (83)	12
5" (127)	4 1/4" (108)	16
6" (152)	5 1/4" (133)	20

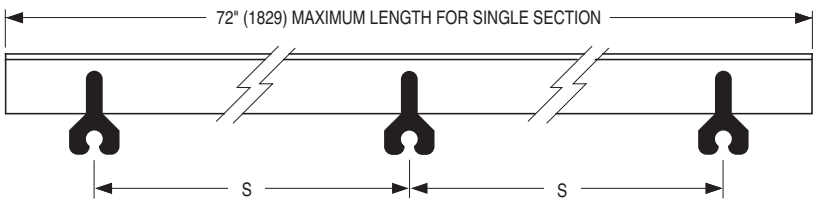
For frames types F, G, H & K increase the number of bars by two.

Dimensions are in inches (mm).

Duct Width D	1/2" (13) Spacing	
	Opening Width A	Number of Bars
1 1/2" (38)	3/4" (19)	1
2" (51)	1 1/4" (32)	2
2 1/2" (64)	1 3/4" (44)	3
3" (76)	2 1/4" (57)	4
3 1/2" (89)	2 3/4" (70)	5
4" (102)	3 1/4" (83)	6
5" (127)	4 1/4" (108)	8
6" (152)	5 1/4" (133)	10

For frames types F, G, H & K increase the numbers of bars by one.

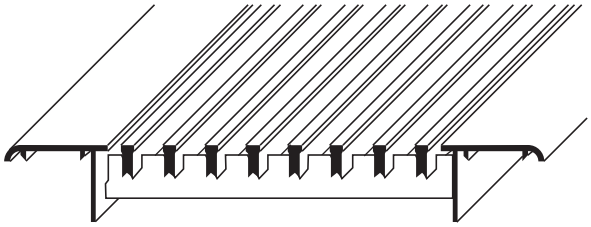
CROSS-BAR SPACING



Standard Core: S = 12" (305) maximum support bar spacing. Frame Types A, B, C, D and E.
Optional HC Heavy Duty Core: S = 8" (203) maximum.
Standard for ceiling installations with frame type K and floor models with frame types F, G and H which also include secondary reinforcing support bars on 8" (203) maximum centers. Structural support designed and installed by others.

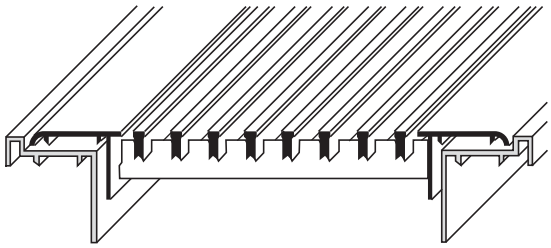
DIMENSIONAL DATA:
TYPICAL FRAME/CORE ASSEMBLIES

CORE WITH FRAME



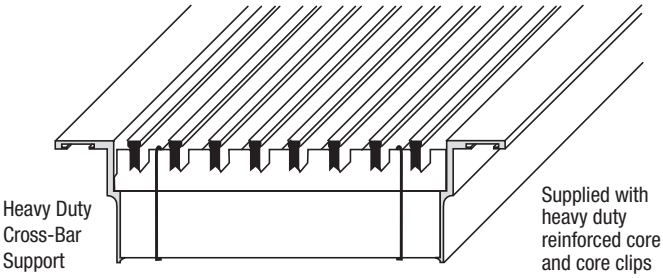
Type A Frame

CORE WITH FRAME & SUB-FRAME



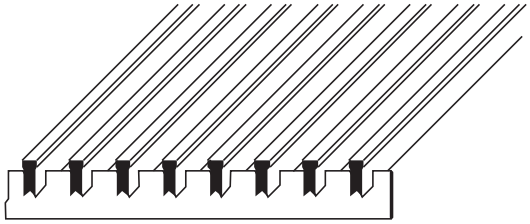
Type C Frame

CORE WITH HEAVY DUTY MOUNTING FRAME



Type F Heavy Duty Mounting Frame

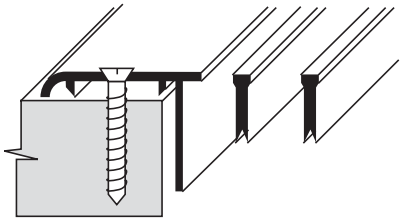
CORE ONLY NO FRAME



Type CO No Frame

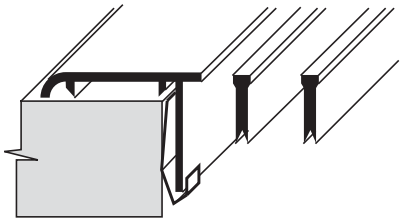
FASTENINGS

TYPE A • COUNTERSUNK SCREW HOLES



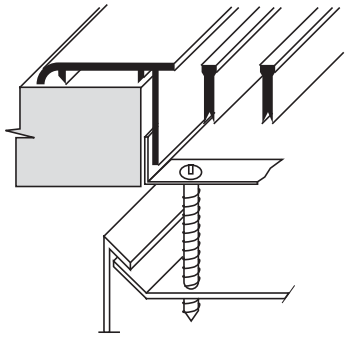
For ceiling, side wall, sill or floor.
Frame Types: A, B, C, D, F, K.

TYPE B • FRICTION SPRING CLIP



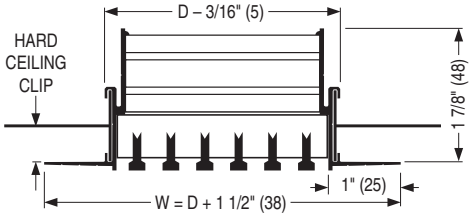
For sill installations.
Frame Types: A, B, D, E, F, G, H.

TYPE C • CONCEALED MOUNTING



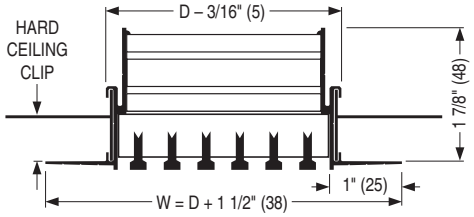
For ceiling, side wall, sill or floor.
Frame Types: A, B, C, D, E.
Not recommended for use with cores with 1/4" (6) bar spacing.

TYPE HC5 • HARD CEILING CLIPS



For 1/2" (13) drywall, frame type K only.

TYPE HC1 • HARD CEILING CLIPS



For 5/8" (16) drywall, frame type K only.

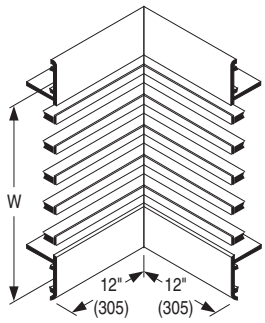
DIMENSIONAL DATA:
MITERED CORNER SECTIONS

49-240MC
49-241MC
49-243MC
49-280MC
49-281MC
49-480MC
49-481MC

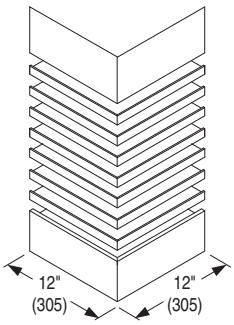
Factory welded with precision to match and align with the associated straight leg.
Standard mitered corner section for floor, ceiling or wall is 90°. Other angles are available.

SPECIAL MITERED CORNERS:
*Available from 45° – 179° as SPL. (A detailed sketch is required for co-ordination with installing contractors).

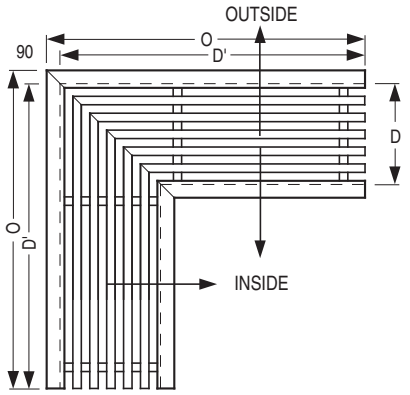
APPLICATION PATTERN



Type WC – Sidewall, inside



Type WD – Sidewall, outside

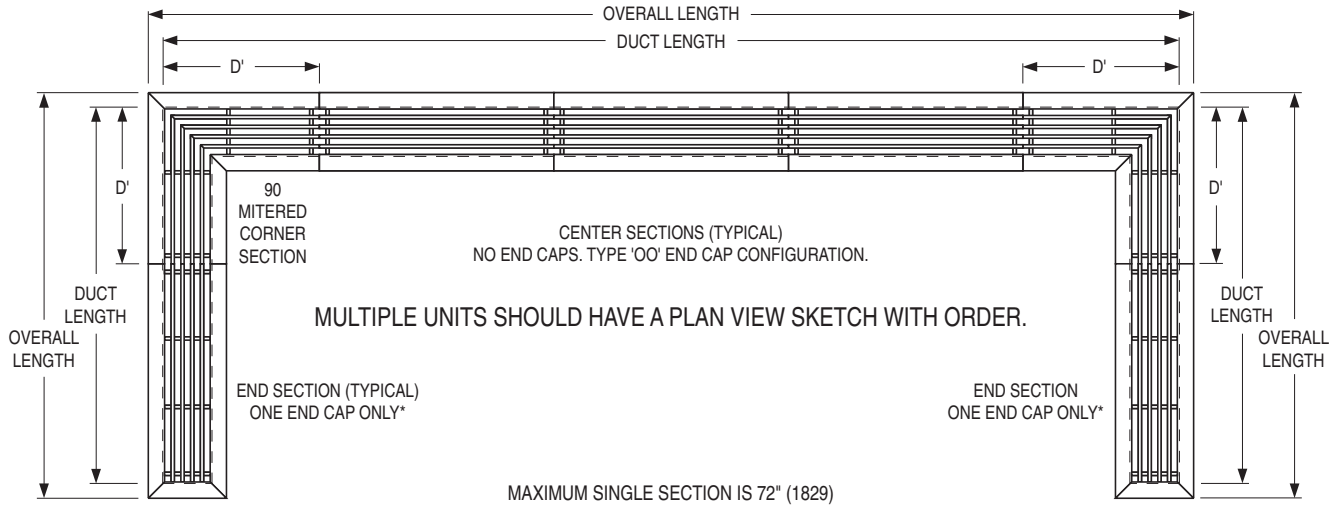


Floor, Ceiling or Sill
Type FO • 0° deflection
Type FA • Deflection inside
Type FB • Deflection outside

90° Mitered Corner Dimension 'O'

Duct Width D	Duct Length D'	Frame Type							
		A, D	B	C	E	F	G	H	K
1 1/2" – 4"	12"	12 3/4" (324)	12 1/2" (318)	13 1/16" (332)	12 1/4" (311)	12 13/16" (325)	12" (305)	12 9/16" (319)	12 3/4" (324)
4 1/2" – 12"	18"	18 3/4" (476)	18 1/2" (470)	19 1/16" (484)	18 1/4" (464)	18 13/16" (478)	18" (457)	18 9/16" (471)	18 3/4" (476)

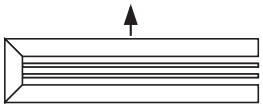
CONTINUOUS RUN DIMENSIONS



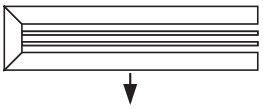
*End sections with single end caps and deflecting cores must be specified and ordered with the desired core deflection direction. End cap configurations (mitered end cap one end and open opposite end):

Type 'MO' = 0° deflection

Type 'MU' = 15° or 30°

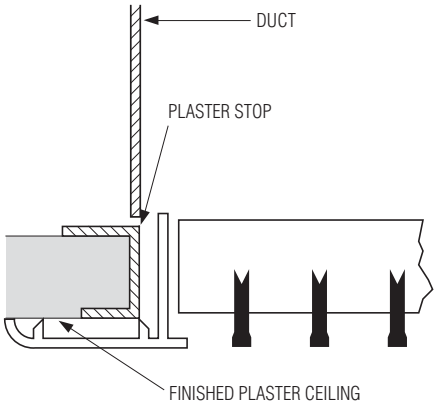


Type 'MD' = 15° or 30°

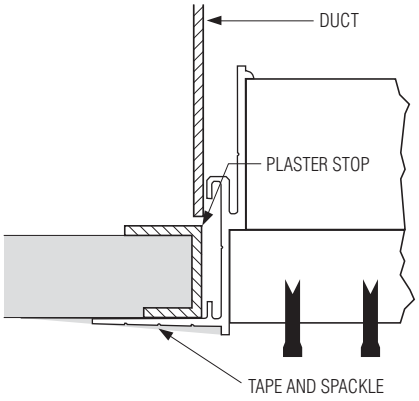


DIMENSIONAL DATA:
TYPICAL OPENING PREPARATIONS

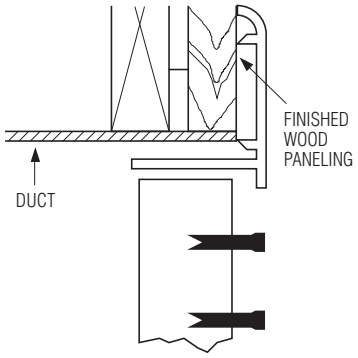
CEILING 1
Frame Types A, B, D, or E



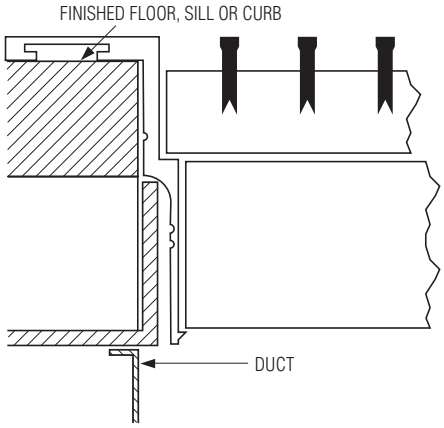
Frame Type K



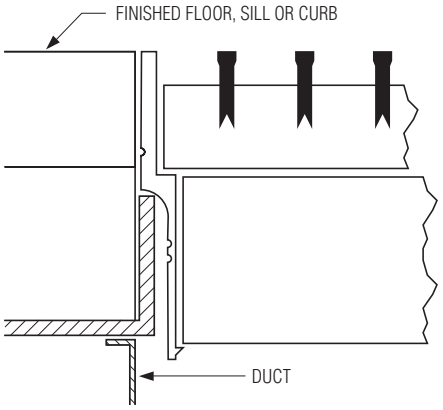
SIDE WALL 1
Frame Types A, B, D, or E



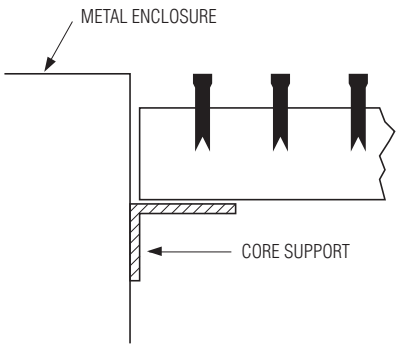
FLOOR OR SILL 1
Frame Types F or H



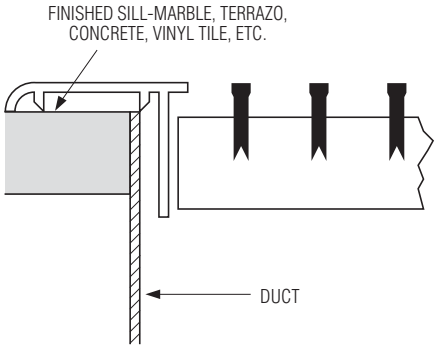
FLOOR OR SILL 2
Frame Type G



RAISED SILL 1
Core Only



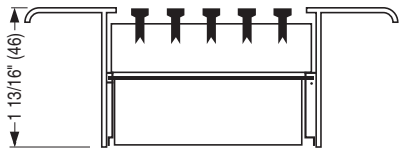
RAISED SILL 2
Frame Types A, B, D, or E



ACCESSORIES:
MODEL SERIES 4900

TYPE DV DIRECTIONAL VANES

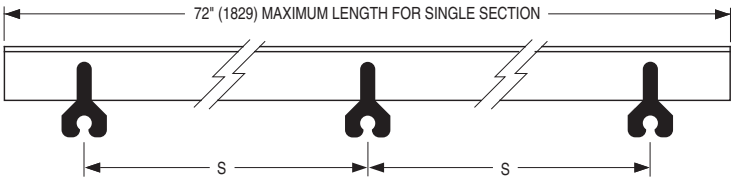
For widths 3" (76) and larger. Fully adjustable extruded aluminum blades on 3/4" (19) centers perpendicular to length.



Requires Frame Type D (deep stack), F, G, H or K.

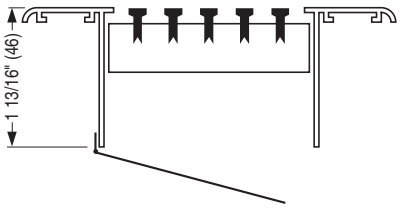
TYPE HC HEAVY DUTY CORE

Standard with Heavy duty mounting frame types F, G, H and K. Optional heavy duty core has cross bars on 8" (203) maximum centers (standard duty core is 12" [305]). Structural support designed and installed by others.



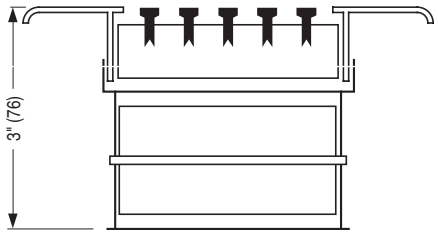
TYPE O SINGLE BLADE DAMPER

Friction hinge on 1 1/2" (38) and 2" (51) widths. Screwdriver operator on 2 1/2" (64) through 4" (102).



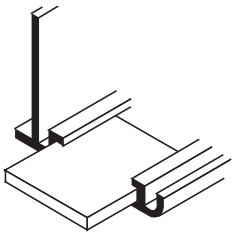
TYPE OBD OPPOSED BLADE DAMPER

For linear bar grilles with a nominal duct width of 2 1/2" (64) and wider.



ALIGNMENT STRIPS

Supplied as standard on multiple-section assemblies to provide positive and accurate field alignment, except frame G which uses alignment pins.

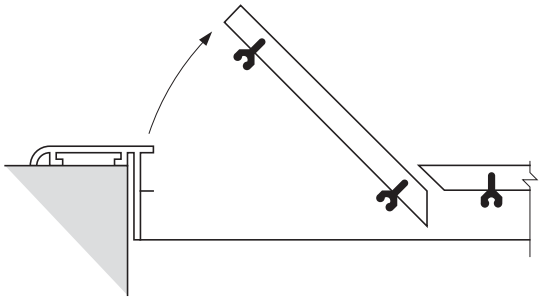


TYPE BO STEEL BLANK-OFF

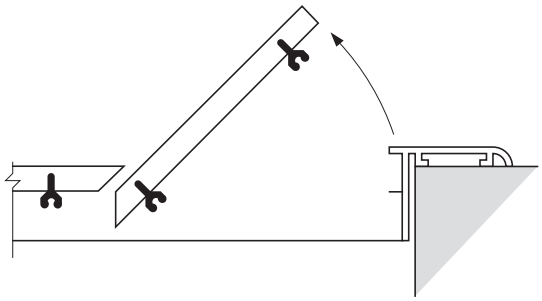
For all available widths. Supplied in 6' (1829) lengths for field cutting. Steel, painted black.

ACCESS DOORS

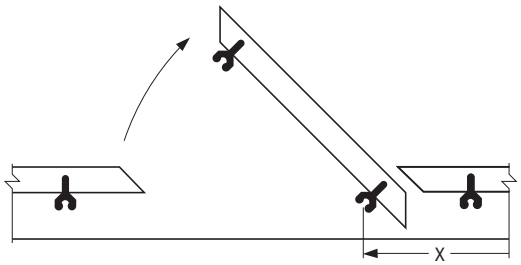
(Not available with Heavy Duty Frame/Border Types F, G, H or K).



❑ Type AD1L (left side)



❑ Type AD1R (right side)



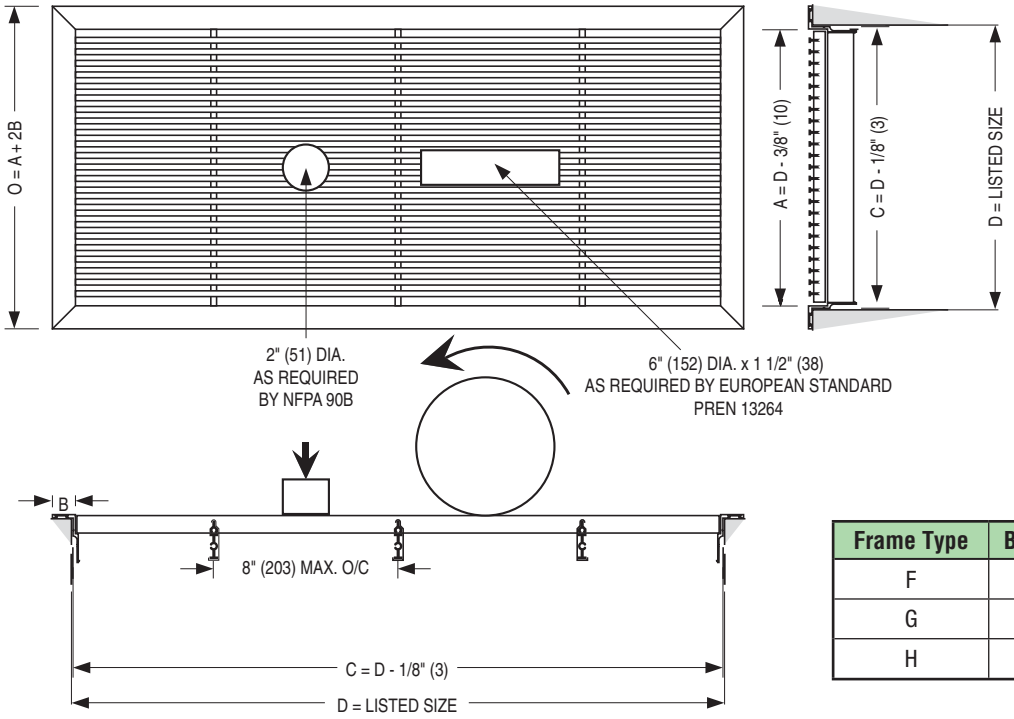
CENTER SECTION:

Type AD3L Type AD3R (not shown)
Specify `X´ dim.:
(distance from end of grille frame): _____ .

Access door is a 6" (152) core section hinged on one side. When selected with a deflected core, specify deflection:

Sill/ - To the front Wall - Up
Floor - To the rear Wall - Down

HEAVY DUTY MAXIMUM FLOOR LOADING:
FRAMES F, G, H • ALUMINUM REMOVABLE CORE



Frame Type	B Dimension
F	1" (25)
G	3/16" (5)
H	3/4" (19)

MAXIMUM RECOMMENDED FLOOR LOADING

Model Number	Concentrated Load lbs (kg)	Rolling Load lbs (kg)
49-480, 49-481	500 (227)	350 (159)
49-240, 49-241, 49-243	500 (227)	300 (136)
49-280, 49-281	300 (136)	250 (113)

DESCRIPTION:

1. Test results are based on standard construction heavy duty bar grilles with frame types F, G or H and with the standard core types as shown in the table. Support bars are spaced on maximum 8" (203) centers and units tested are with a maximum nominal duct width of 12" (305).

2. The maximum recommended load values shown in the chart represent the load that can be applied to the product without permanent deflection of the grille bars. The required load for actual structure failure is generally 2 to 5 times greater.

3. Concentrated load test is in accordance with NFPA 90B. Units were tested with a concentrated load on a 2" (51) diameter disk applied to the most critical area of the exposed face of the bar grille. In accordance with the standard the tests were conducted at an elevated temperature of 165° F (74° C). The standard requires the grilles to resist, without structural failure a concentrated load of 200 lbs (90.7 kg).

4. Rolling load test is in accordance with European Standard prEN 13264. Units were tested at the load shown with a 6" (152) diameter 1.5" (38) wide nylon wheel, traversed across the grille and supporting structure at 66 fpm (0.33 m/s) a minimum of 25 times in both the horizontal and vertical directions without structural failure.

PERFORMANCE DATA:

MODEL 49-240 • 1/2" (13) SPACING • 1/4" (6) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.010	.022	.039	.062	.087	.119	.156	.198	.245
.026	1 1/2"	Airflow, CFM/FT.		10	16	21	26	31	36	42	47	52
		Noise Criteria		–	–	–	19	24	30	34	37	40
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	7-7-7	8-9-10	10-11-12	11-12-14	12-14-16	14-16-18
			Side Wall	2-4-6	4-7-10	5-9-13	7-12-17	8-13-19	10-16-22	11-17-24	12-19-26	14-21-29
.045	2"	Airflow, CFM/FT.		18	27	36	45	54	63	72	81	90
		Noise Criteria		–	–	–	18	23	29	33	36	39
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	10-11-13	13-14-16	14-16-18	15-17-20	17-19-21
			Side Wall	3-5-7	5-9-12	7-11-16	9-14-20	11-17-23	13-19-26	14-21-28	15-22-30	17-25-33
.066	2 1/2"	Airflow, CFM/FT.		26	40	53	66	79	92	106	119	132
		Noise Criteria		–	–	–	20	26	31	35	38	41
		Throw	Sill or Floor	2-2-2	6-6-6	8-8-9	11-12-13	13-14-16	15-17-19	18-20-22	21-22-23	22-23-24
			Side Wall	4-6-9	6-9-12	8-12-17	11-16-22	13-19-25	15-21-28	18-25-32	21-28-36	22-30-39
.088	3"	Airflow, CFM/FT.		35	53	70	88	106	123	141	158	176
		Noise Criteria		–	–	15	21	27	32	36	39	42
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	12-13-15	15-16-18	18-19-21	20-22-24	24-24-25	26-26-27
			Side Wall	5-7-10	7-11-15	10-14-19	12-17-23	15-21-27	18-24-31	20-27-34	24-31-39	26-34-41
.110	3 1/2"	Airflow, CFM/FT.		44	66	88	110	132	154	176	198	220
		Noise Criteria		–	–	16	22	28	33	37	40	43
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-12	15-15-16	18-19-20	20-21-22	23-24-25	25-26-27	29-29-29
			Side Wall	5-7-10	9-12-16	12-16-20	15-20-25	18-23-28	20-26-32	23-29-36	25-32-39	29-36-43
.133	4"	Airflow, CFM/FT.		53	80	106	133	160	186	213	239	266
		Noise Criteria		–	–	17	23	29	34	38	41	44
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	22-23-24	24-25-26	28-28-28	31-31-31
			Side Wall	6-8-11	10-13-17	13-17-21	16-21-26	20-25-30	22-28-34	24-30-37	28-35-41	31-38-45
.177	5"	Airflow, CFM/FT.		71	106	142	177	212	248	283	318	354
		Noise Criteria		–	–	18	24	30	35	39	42	45
		Throw	Sill or Floor	4-4-4	10-10-10	15-15-15	18-18-18	22-22-23	25-25-25	27-27-28	30-30-30	34-34-34
			Side Wall	8-10-13	11-14-18	15-19-23	18-22-27	22-27-32	25-31-37	27-33-39	30-37-43	34-41-47
.222	6"	Airflow, CFM/FT.		89	133	178	222	266	310	355	400	444
		Noise Criteria		–	–	20	25	31	36	40	43	46
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	19-19-19	23-23-23	25-25-25	29-29-29	31-31-31	36-36-36
			Side Wall	9-11-14	13-16-20	16-20-24	20-24-29	24-29-34	28-33-39	30-35-40	34-40-45	38-44-49

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.035	.030
2"	.054	.046
2 1/2"	.075	.064
3"	.098	.083
3 1/2"	.120	.102
4"	.143	.121
5"	.187	.159
6"	.233	.198

PERFORMANCE DATA:

MODEL 49-241 • 1/2" (13) SPACING • 1/4" (6) BARS • 15° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.012	.025	.047	.074	.105	.142	.187	.237	.294
.031	1 1/2"	Airflow, CFM/FT.		12	19	25	31	37	43	50	56	62
		Noise Criteria		–	16	24	32	37	42	46	49	52
		Throw	Sill or Floor	1-1-1	3-3-3	5-5-5	7-7-7	9-9-10	10-11-12	12-13-15	13-15-17	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	7-12-17	9-14-20	10-16-23	12-18-25	13-20-27	14-22-30
.048	2"	Airflow, CFM/FT.		19	29	38	48	58	67	77	86	96
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-12-13	13-14-15	15-16-18	16-18-20	17-19-22
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-24	13-19-26	15-22-29	16-23-31	17-25-34
.067	2 1/2"	Airflow, CFM/FT.		27	40	54	67	80	94	107	120	134
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	5-5-5	9-9-9	11-11-12	13-14-15	15-16-18	17-19-21	20-21-22	22-22-23
			Side Wall	4-6-8	6-9-13	9-13-17	11-16-21	14-19-25	15-21-27	17-24-31	20-27-35	22-29-38
.086	3"	Airflow, CFM/FT.		34	52	69	86	103	120	138	155	172
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	2-2-2	6-6-6	10-10-11	12-13-14	15-16-18	18-19-20	20-21-23	23-24-25	25-25-25
			Side Wall	4-6-9	8-11-15	10-14-19	13-18-23	16-21-27	18-24-31	21-28-35	23-30-38	26-34-41
.105	3 1/2"	Airflow, CFM/FT.		42	63	84	105	126	147	168	189	210
		Noise Criteria		–	–	20	28	33	38	42	45	48
		Throw	Sill or Floor	2-2-2	8-8-8	11-11-12	15-15-15	17-18-19	21-21-22	22-23-25	25-25-26	28-28-29
			Side Wall	6-8-11	9-12-16	12-16-21	14-19-24	18-23-29	21-27-33	23-29-36	25-32-39	28-36-43
.127	4"	Airflow, CFM/FT.		51	76	102	127	152	178	203	228	254
		Noise Criteria		–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	19-20-21	22-22-23	24-25-26	27-27-27	30-30-30
			Side Wall	6-9-12	10-13-17	13-17-22	15-20-25	19-24-30	22-28-34	25-31-38	28-36-41	30-37-44
.167	5"	Airflow, CFM/FT.		67	100	134	167	200	234	267	301	334
		Noise Criteria		–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	21-21-22	24-24-25	26-27-28	30-30-30	32-32-32
			Side Wall	8-11-14	11-15-19	15-19-24	19-23-28	21-26-32	24-30-36	26-32-39	29-36-42	33-39-46
.210	6"	Airflow, CFM/FT.		84	126	168	210	252	294	336	378	420
		Noise Criteria		–	15	23	31	36	41	45	48	51
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	19-19-19	23-23-23	25-25-25	28-28-29	31-31-31	35-35-35
			Side Wall	9-12-15	14-17-21	17-21-25	20-24-29	24-29-34	27-32-38	29-35-40	32-38-43	36-42-47

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.037
2"	.058	.051
2 1/2"	.076	.066
3"	.095	.080
3 1/2"	.115	.098
4"	.137	.113
5"	.177	.148
6"	.230	.189

PERFORMANCE DATA:

MODEL 49-243 • 1/2" (13) SPACING • 1/4" (6) BARS • 30° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.012	.025	.047	.074	.105	.142	.187	.237	.294
.031	1 1/2"	Airflow, CFM/FT.		12	19	25	31	37	43	50	56	62
		Noise Criteria		–	16	24	32	37	42	46	49	52
		Throw	Sill or Floor	1-1-1	3-3-3	5-5-5	7-7-7	9-9-10	10-11-12	12-13-15	13-15-17	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	7-12-17	9-14-20	10-16-23	12-18-25	13-20-27	14-22-30
.048	2"	Airflow, CFM/FT.		19	29	38	48	58	67	77	86	96
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-12-13	13-14-15	15-16-18	16-18-20	17-19-22
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-24	13-19-26	15-22-29	16-23-31	17-25-34
.067	2 1/2"	Airflow, CFM/FT.		27	40	54	67	80	94	107	120	134
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	5-5-5	9-9-9	11-11-12	13-14-15	15-16-18	17-19-21	20-21-22	22-22-23
			Side Wall	4-6-8	6-9-13	9-13-17	11-16-21	14-19-25	15-21-27	17-24-31	20-27-35	22-29-38
.086	3"	Airflow, CFM/FT.		34	52	69	86	103	120	138	155	172
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	2-2-2	6-6-6	10-10-11	12-13-14	15-16-18	18-19-20	20-21-23	23-24-25	25-25-25
			Side Wall	4-6-9	8-11-15	10-14-19	13-18-23	16-21-27	18-24-31	21-28-35	23-30-38	26-34-41
.105	3 1/2"	Airflow, CFM/FT.		42	63	84	105	126	147	168	189	210
		Noise Criteria		–	–	20	28	33	38	42	45	48
		Throw	Sill or Floor	2-2-2	8-8-8	11-11-12	15-15-15	17-18-19	21-21-22	22-23-25	25-25-26	28-28-29
			Side Wall	6-8-11	9-12-16	12-16-21	14-19-24	18-23-29	21-27-33	23-29-36	25-32-39	28-36-43
.127	4"	Airflow, CFM/FT.		51	76	102	127	152	178	203	228	254
		Noise Criteria		–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	19-20-21	22-22-23	24-25-26	27-27-27	30-30-30
			Side Wall	6-9-12	10-13-17	13-17-22	15-20-25	19-24-30	22-28-34	25-31-38	28-36-41	30-37-44
.167	5"	Airflow, CFM/FT.		67	100	134	167	200	234	267	301	334
		Noise Criteria		–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	21-21-22	24-24-25	26-27-28	30-30-30	32-32-32
			Side Wall	8-11-14	11-15-19	15-19-24	19-23-28	21-26-32	24-30-36	26-32-39	29-36-42	33-39-46
.210	6"	Airflow, CFM/FT.		84	126	168	210	252	294	336	378	420
		Noise Criteria		–	15	23	31	36	41	45	48	51
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	19-19-19	23-23-23	25-25-25	28-28-29	31-31-31	35-35-35
			Side Wall	9-12-15	14-17-21	17-21-25	20-24-29	24-29-34	27-32-38	29-35-40	32-38-43	36-42-47

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.037
2"	.058	.051
2 1/2"	.076	.066
3"	.095	.080
3 1/2"	.115	.098
4"	.137	.113
5"	.177	.148
6"	.230	.189

PERFORMANCE DATA:

MODEL 49-280 • 1/2" (13) SPACING • 1/8" (3) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.009	.020	.035	.056	.078	.107	.140	.178	.220
.035	1 1/2"	Airflow, CFM/FT.		14	21	28	35	42	49	56	63	70
		Noise Criteria		–	–	16	22	28	32	36	39	42
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	7-7-7	8-9-10	10-11-12	11-12-14	12-14-17	13-15-18
			Side Wall	2-4-6	4-7-10	6-7-13	7-12-17	8-13-19	10-16-22	11-17-24	12-19-26	13-21-29
.055	2"	Airflow, CFM/FT.		22	33	44	55	66	77	88	99	110
		Noise Criteria		–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-11-12	13-14-16	14-16-18	15-17-20	17-19-21
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-23	13-19-26	14-21-28	15-22-30	17-25-33
.074	2 1/2"	Airflow, CFM/FT.		30	44	59	74	89	104	118	133	148
		Noise Criteria		–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	1-1-1	5-5-5	9-9-9	11-11-12	13-14-15	15-16-17	18-19-20	20-21-23	23-24-25
			Side Wall	4-6-8	6-9-13	9-13-17	11-16-21	13-18-24	15-21-28	17-24-31	20-27-35	23-31-39
.096	3"	Airflow, CFM/FT.		38	58	77	96	115	134	154	173	192
		Noise Criteria		–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	12-13-14	15-16-17	18-19-20	20-21-23	23-24-25	25-25-26
			Side Wall	5-7-10	7-10-14	10-14-19	12-17-23	15-20-26	18-24-30	20-27-34	23-30-38	25-33-41
.116	3 1/2"	Airflow, CFM/FT.		46	69	93	116	139	162	186	209	232
		Noise Criteria		–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-12	15-15-16	18-19-20	20-21-23	23-24-25	25-26-27	29-29-29
			Side Wall	5-7-10	9-12-16	12-16-20	15-20-25	18-23-28	20-26-32	23-29-36	25-32-39	29-36-43
.139	4"	Airflow, CFM/FT.		56	83	111	139	167	195	222	250	278
		Noise Criteria		–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	23-23-24	24-25-26	27-27-27	30-30-30
			Side Wall	6-8-11	10-13-17	13-17-21	16-20-25	20-25-30	22-28-34	24-30-37	28-35-41	31-38-44
.179	5"	Airflow, CFM/FT.		72	107	143	179	215	250	286	322	358
		Noise Criteria		–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	22-22-23	24-24-24	27-27-28	30-30-31	32-32-32
			Side Wall	8-10-13	11-14-18	15-19-23	18-22-27	22-27-32	24-30-36	27-33-39	30-37-43	34-41-47
.221	6"	Airflow, CFM/FT.		88	133	177	221	265	310	354	398	442
		Noise Criteria		–	–	–	20	24	29	33	36	39
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-28	31-31-31	32-32-32
			Side Wall	9-12-15	13-16-20	16-20-24	20-24-29	24-29-34	28-33-39	30-35-40	34-40-45	38-44-49

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.047	.040
2"	.066	.055
2 1/2"	.084	.073
3"	.107	.089
3 1/2"	.127	.113
4"	.150	.127
5"	.190	.163
6"	.232	.197

PERFORMANCE DATA:

MODEL 49-281 • 1/2" (13) SPACING • 1/8" (3) BARS • 15° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.009	.020	.035	.056	.078	.107	.140	.178	.220
.039	1 1/2"	Airflow, CFM/FT.		16	23	31	39	47	55	62	70	78
		Noise Criteria		–	18	27	33	38	43	47	50	53
		Throw	Sill or Floor	1-1-1	3-3-3	5-5-5	8-8-8	9-9-10	10-11-13	12-13-15	13-15-17	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	8-13-18	9-14-20	10-16-23	12-18-25	13-20-27	14-22-30
.056	2"	Airflow, CFM/FT.		22	34	45	56	67	78	90	101	112
		Noise Criteria		–	–	20	26	31	36	40	44	47
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-12-13	12-14-16	14-16-18	15-17-20	18-19-21
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-23	12-18-25	14-20-27	15-22-30	18-26-34
.075	2 1/2"	Airflow, CFM/FT.		30	45	60	75	90	105	120	135	150
		Noise Criteria		–	–	18	24	30	35	39	43	46
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-9	11-11-12	13-14-15	15-16-18	17-19-21	20-21-22	22-22-23
			Side Wall	4-6-8	6-9-13	8-12-17	11-16-21	13-19-25	15-21-27	17-24-31	20-27-35	22-30-38
.093	3"	Airflow, CFM/FT.		37	56	74	93	112	130	149	167	186
		Noise Criteria		–	–	17	23	29	34	38	42	45
		Throw	Sill or Floor	2-2-2	6-6-6	10-10-10	12-12-13	15-16-17	18-19-20	20-21-23	23-23-24	25-25-25
			Side Wall	4-6-9	7-10-14	10-13-18	12-17-22	15-20-26	18-24-30	20-26-33	23-30-37	25-32-39
.113	3 1/2"	Airflow, CFM/FT.		45	68	90	113	136	158	181	203	226
		Noise Criteria		–	–	17	23	29	34	38	42	45
		Throw	Sill or Floor	2-2-2	7-7-7	12-12-12	14-14-15	17-18-19	20-21-22	22-23-24	25-25-26	27-27-27
			Side Wall	5-7-10	8-11-15	12-16-20	14-18-23	17-22-27	20-25-31	22-28-35	25-32-39	27-34-41
.133	4"	Airflow, CFM/FT.		53	80	106	133	160	186	212	239	266
		Noise Criteria		–	–	18	24	30	35	39	43	46
		Throw	Sill or Floor	3-3-3	8-8-9	13-13-13	15-15-16	19-19-20	22-22-23	24-24-25	26-26-27	30-30-30
			Side Wall	6-8-11	9-12-16	13-17-21	15-19-24	19-24-29	22-27-33	24-30-36	26-33-39	30-37-43
.173	5"	Airflow, CFM/FT.		69	104	138	173	208	242	277	312	346
		Noise Criteria		–	–	18	24	30	35	39	43	46
		Throw	Sill or Floor	4-4-4	9-9-9	14-14-14	17-17-17	20-21-22	24-24-24	26-26-27	29-29-29	32-32-32
			Side Wall	8-10-13	11-14-18	15-19-23	17-21-26	20-25-31	24-29-35	26-33-38	29-35-41	32-39-45
.212	6"	Airflow, CFM/FT.		85	127	170	212	254	296	339	382	424
		Noise Criteria		–	–	18	24	30	35	39	43	46
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-28	30-30-30	34-34-34
			Side Wall	9-11-14	13-16-20	16-20-24	20-24-28	23-27-32	25-30-36	28-33-39	31-37-42	35-41-46

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.052	.047
2"	.067	.060
2 1/2"	.086	.075
3"	.103	.091
3 1/2"	.123	.103
4"	.143	.126
5"	.183	.157
6"	.222	.188

PERFORMANCE DATA:

MODEL 49-480 • 1/4" (6) SPACING • 1/8" (3) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.011	.024	.043	.068	.096	.130	.171	.218	.269
.031	1 1/2"	Airflow, CFM/FT.		12	19	25	31	37	43	50	56	62
		Noise Criteria		–	–	–	20	24	29	33	36	39
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	6-6-6	8-8-9	9-10-11	10-11-13	12-13-15	13-15-18
			Side Wall	2-4-6	4-7-10	6-9-13	7-11-16	8-13-19	9-15-21	10-16-23	12-18-25	13-20-28
.047	2"	Airflow, CFM/FT.		19	28	37	47	56	66	75	84	94
		Noise Criteria		–	–	–	18	23	29	32	36	39
		Throw	Sill or Floor	1-1-1	4-4-4	6-6-6	9-9-9	11-11-12	12-13-15	14-15-17	15-17-19	16-18-20
			Side Wall	3-5-7	5-8-11	7-11-15	9-14-19	11-16-22	12-18-25	14-20-27	15-22-29	16-24-32
.065	2 1/2"	Airflow, CFM/FT.		26	39	52	65	78	91	104	117	130
		Noise Criteria		–	–	–	20	24	30	34	37	40
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-8	10-10-11	13-14-15	15-16-17	16-18-20	20-20-21	22-22-22
			Side Wall	4-6-8	6-9-12	8-12-16	10-15-20	13-18-24	15-21-27	16-22-30	20-27-34	22-30-38
.083	3"	Airflow, CFM/FT.		33	50	66	83	100	116	133	149	166
		Noise Criteria		–	–	–	20	26	31	35	38	41
		Throw	Sill or Floor	2-2-2	6-6-6	9-9-10	12-12-13	15-16-17	18-19-20	20-21-22	23-23-23	25-25-25
			Side Wall	4-6-9	7-10-14	9-13-18	12-17-22	15-20-25	18-23-29	20-26-33	23-30-37	25-32-39
.102	3 1/2"	Airflow, CFM/FT.		41	61	82	102	122	143	163	184	204
		Noise Criteria		–	–	15	21	27	32	36	39	42
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	15-15-15	17-18-19	20-21-22	22-23-24	25-25-26	27-27-27
			Side Wall	5-7-10	8-11-15	10-15-20	15-19-24	17-22-27	20-25-31	22-28-35	25-32-39	27-34-41
.122	4"	Airflow, CFM/FT.		49	73	98	122	146	171	195	220	244
		Noise Criteria		–	–	16	22	29	33	37	40	43
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-13	15-15-16	19-19-20	21-21-23	24-24-25	26-26-27	29-29-30
			Side Wall	6-8-11	9-12-16	12-16-20	15-20-25	19-24-29	21-26-32	24-30-36	26-33-39	30-37-46
.157	5"	Airflow, CFM/FT.		63	94	125	157	188	220	251	282	314
		Noise Criteria		–	–	16	22	28	33	37	40	43
		Throw	Sill or Floor	4-4-4	9-9-9	14-14-14	17-17-17	21-21-22	24-24-24	27-27-27	29-29-29	32-32-32
			Side Wall	7-9-12	11-14-18	14-18-22	17-21-26	21-26-31	24-29-35	27-33-39	30-36-42	33-40-46
.194	6"	Airflow, CFM/FT.		78	116	155	194	233	272	310	349	388
		Noise Criteria		–	–	18	24	30	35	38	42	43
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-29	31-31-31	34-34-34
			Side Wall	8-10-13	12-15-19	15-19-23	20-24-28	23-27-32	26-31-37	29-34-39	33-39-44	37-43-48

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.034
2"	.056	.048
2 1/2"	.074	.064
3"	.092	.078
3 1/2"	.111	.098
4"	.131	.111
5"	.166	.143
6"	.203	.173

PERFORMANCE DATA:

MODEL 49-481 • 1/4" (6) SPACING • 1/8" (3) BARS • 15° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure		.012	.026	.049	.077	.109	.148	.195	.247	.304
.034	1 1/2"	Airflow, CFM/FT.		14	20	27	34	41	48	54	61	68
		Noise Criteria		–	–	22	30	35	39	43	46	49
		Throw	Sill or Floor	1-1-1	3-3-3	4-4-4	7-7-7	9-9-10	10-11-12	12-13-15	13-14-16	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	7-12-17	9-14-20	10-16-22	12-18-25	13-20-27	14-22-30
.049	2"	Airflow, CFM/FT.		20	29	39	49	59	69	78	88	98
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	4-4-4	6-6-6	9-9-9	11-11-12	12-13-15	14-16-18	15-17-19	16-18-20
			Side Wall	3-5-7	5-8-11	7-11-15	9-14-19	11-16-22	12-18-25	14-20-27	15-22-29	16-24-32
.065	2 1/2"	Airflow, CFM/FT.		26	39	52	65	78	91	104	117	130
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-8	10-10-11	13-14-15	14-15-17	17-18-20	19-20-21	21-21-22
			Side Wall	4-6-8	6-9-12	8-12-16	10-15-20	13-19-24	14-20-26	17-23-30	19-26-33	21-28-36
.082	3"	Airflow, CFM/FT.		33	49	66	82	98	115	131	148	164
		Noise Criteria		–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor	2-2-2	6-6-6	9-9-9	12-12-13	15-15-16	17-18-19	20-21-22	21-22-23	23-23-24
			Side Wall	4-6-9	7-10-13	9-13-17	12-16-21	15-20-25	17-22-28	20-26-32	21-28-35	23-31-39
.099	3 1/2"	Airflow, CFM/FT.		40	59	79	99	119	138	158	178	198
		Noise Criteria		–	–	20	28	33	37	41	44	47
		Throw	Sill or Floor	2-2-2	8-8-8	11-11-11	13-13-14	16-17-18	19-20-21	22-22-23	23-24-25	26-26-26
			Side Wall	5-7-9	8-11-14	11-15-19	13-17-22	16-21-26	19-24-30	22-28-34	23-30-37	26-33-40
.117	4"	Airflow, CFM/FT.		47	70	94	117	140	164	187	220	234
		Noise Criteria		–	–	21	28	34	38	42	45	48
		Throw	Sill or Floor	3-3-3	9-9-9	12-12-12	15-15-15	18-19-20	21-21-22	23-24-25	25-25-26	28-28-28
			Side Wall	5-7-10	9-12-15	12-16-20	15-19-24	18-23-28	21-26-32	23-29-35	25-32-39	29-36-42
.152	5"	Airflow, CFM/FT.		61	91	121	152	182	212	243	274	304
		Noise Criteria		–	–	22	29	34	39	43	46	49
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	23-23-24	25-25-26	28-28-28	31-31-31
			Side Wall	7-9-12	10-13-17	14-18-22	16-21-26	20-25-30	23-28-34	25-31-37	28-34-40	31-38-44
.186	6"	Airflow, CFM/FT.		74	111	149	186	223	260	298	335	372
		Noise Criteria		–	–	22	30	35	40	43	47	50
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	22-22-22	25-25-25	28-28-28	30-30-30	33-32-32
			Side Wall	8-10-13	11-14-18	15-19-23	19-23-27	23-27-31	25-30-35	28-33-39	31-37-42	34-40-45

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.045	.041
2"	.059	.053
2 1/2"	.074	.065
3"	.091	.080
3 1/2"	.108	.091
4"	.126	.108
5"	.161	.138
6"	.195	.166

HOW TO ORDER

LINEAR BAR GRILLES – MODEL SERIES 4900

MODELS 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481

EXAMPLE: 49 - 240 - O - 60" x 4" - B - AW - C - MM - —

1a. **Models**

49-240	1/2" (13) spacing, 1/4" (6) bars, 0° deflection
49-241	1/2" (13) spacing, 1/4" (6) bars, 15° deflection
49-243	1/2" (13) spacing, 1/4" (6) bars, 30° deflection
49-280	1/2" (13) spacing, 1/8" (3) bars, 0° deflection
49-281	1/2" (13) spacing, 1/8" (3) bars, 15° deflection
49-480	1/4" (6) spacing, 1/8" (3) bars, 0° deflection
49-481	1/4" (6) spacing, 1/8" (3) bars, 15° deflection

Blank-off

49-BO	Steel – 6 ft. long

1b. **Damper**

(model suffix)

—	None (default)
O	Steel Opposed Blade Damper

2. **Nominal Length**

inches or mm's

3. **Width**

inches or mm's

4. **Frame/Border Type**

A	1" (25) Flange
B	3/4" (19) Flange
C	1" (25) Flange and Sub-frame
D	1" (25) Flange with Deep Stack
E	1/2" (13) Flange
CO	Core only

Heavy Duty Frame/Border Type

F	1" (25) Flange, Heavy Duty (Floor)
G	No Flange, Heavy Duty (Floor)
H	3/4" (19) Beveled Flange, Heavy Duty (Floor)
K	Tape and Spackle

5. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime coat paint
PPA	Paint prepared aluminum
SP	Special custom color
SA	Satin (clear) anodized
LBA	Light Bronze anodized
MBA	Medium Bronze anodized
DBA	Dark Bronze anodized
BC	Brushed and clear coat lacquer
LBP	Light Bronze paint
MBP	Medium Bronze paint
DBP	Dark Bronze paint

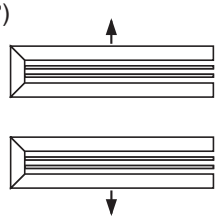
6. **Fastening**

N	None (default)
A	Screw Holes
B	Spring Clips
C	Concealed mounting
HC1	Hard Ceiling Clip - 5/8" (16) drywall
HC5	Hard Ceiling Clip - 1/2" (13) drywall

7. **End Cap Configuration**

(Not applicable on Frame/Border Type CO)

MM	Mitered Mitered (default)
OO	Open Open
MO	Mitered Open (0°)
MU	Mitered Open, Deflection up (15°, 30°)
MD	Mitered Open, Deflection down (15°, 30°)



OTHER OPTIONS AND ACCESSORIES:

8. **Access Door**

AD1L	Left Side
AD1R	Right Side
AD3L	Center, opens from Left Side Specify 'X' Dimension (in. [mm])
AD3R	Center, opens from Right Side Specify 'X' Dimension (in. [mm])

9. **Heavy Duty Core**

HC	Heavy Duty Core

10. **Deflector Vanes**

DV	Directional Vanes (D, F, G or H Frame only)

11. **Angle Cut**

—	None (default)
AC1	One end, Specify Angle
AC2	Both ends, Specify Angle

Notes:

1. Type A fastening is not available on Frame Types E, G or H. Types B and C fastening are not available with Frame Type K. Types HC1 and HC5 fastening are only available with Frame Type K.

2. Access door not available with Frame/Border Types F, G, H or K or when damper is required. AD1L and AD1R require mitered end cap same side.

3. Blank-offs are supplied in 6 ft. sections for field trimming. Specify width only.

4. Angle cut AC1 is not applicable with end cap MM. AC2 requires OO end cap. If AC1 or AC2 is selected with Frame/Border Type CO then end cap will not apply.

HOW TO ORDER

MITERED CORNER SECTION LINEAR BAR GRILLES – MODEL SERIES 4900
MODELS 49-240MC, 49-241MC, 49-243MC, 49-280MC, 49-281MC, 49-480MC, 49-481MC

EXAMPLE: 49 - 240MC - 4" - 12 - B - AW - C - FO - 90

1. **Models**
   - 49-240MC 1/2" (13) spacing, 1/4" (6) bars, 0° deflection
   - 49-241MC 1/2" (13) spacing, 1/4" (6) bars, 15° deflection
   - 49-243MC 1/2" (13) spacing, 1/4" (6) bars, 30° deflection
   - 49-280MC 1/2" (13) spacing, 1/8" (3) bars, 0° deflection
   - 49-281MC 1/2" (13) spacing, 1/8" (3) bars, 15° deflection
   - 49-480MC 1/4" (6) spacing, 1/8" (3) bars, 0° deflection
   - 49-481MC 1/4" (6) spacing, 1/8" (3) bars, 15° deflection
2. **Width**
   inches or mm's
3. **Duct Length - Overall Dimension**
   inches or mm's
   - 12 12" (305) (Default if width is ≤ 4" [102])
   - 18 18" (457) (Default if width is > 4" [102])
4. **Frame/Border Type**
   - A 1" (25) Flange
   - B 3/4" (19) Flange
   - C 1" (25) Flange and Sub-frame
   - D 1" (25) Flange with Deep Stack
   - E 1/2" (13) Flange

   Heavy Duty Frame/Border Type
   - F 1" (25) Flange, Heavy Duty (Floor)
   - G No Flange, Heavy Duty (Floor)
   - H 3/4" (19) Beveled Flange, Heavy Duty (Floor)
   - K Tape and Spackle
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime coat paint
   - PPA Paint prepared aluminum
   - SP Special custom color
   - SA Satin (clear) anodized
   - LBA Light Bronze anodized
   - MBA Medium Bronze anodized
   - DBA Dark Bronze anodized
   - BC Brushed and clear coat lacquer
   - LBP Light Bronze paint
   - MBP Medium Bronze paint
   - DBP Dark Bronze paint
6. **Fastening**
   - N None
   - A Screw Holes
   - B Spring Clips
   - C Concealed mounting
   - HC1 Hard Ceiling Clip - 5/8" (16) drywall
   - HC5 Hard Ceiling Clip - 1/2" (13) drywall
7. **Application/Pattern**

   0° Deflection Cores:
   - FO Floor, Ceiling, Sill (Flat)
   - WC Sidewall, Inside
   - WD Sidewall, Outside

   15° and 30° Deflection Cores:
   - FA Floor, Ceiling, Sill; Deflection Inside
   - FB Floor, Ceiling, Sill; Deflection Outside
   - WC Sidewall, Inside
   - WD Sidewall, Outside
8. **Mitered Angle**
   - 90 90° (default)
   - 135 135°
   - AN Degree of Angle (Specify angle = ____)

Notes:

1. Damper not available.

2. Type A fastening is not available on Frame Types E, G or H. Types B and C fastening are not available with Frame Type K. Types HC1 and HC5 fastening are only available with Frame Type K.

HOW TO SPECIFY

LINEAR BAR GRILLES – MODEL SERIES 4900

MODELS 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **49-240** (1/2" [13] spacing, 1/4" [6] bars, 0° deflection); **49-241** (1/2" [13] spacing, 1/4" [6] bars, 15° deflection); **49-243** (1/2" [13] spacing, 1/4" [6] bars, 30° deflection)**; 49-280** (1/2" [13] spacing, 1/8" [3] bars, 0° deflection); **49-281** (1/2" [13] spacing, 1/8" [3] bars, 15° deflection); **49-480** (1/4" [6] spacing, 1/8" [3] bars, 0° deflection); **49-481** (1/4" [6] spacing, 1/8" [3] bars, 15° deflection) **Linear Bar Grilles** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) shall be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous grille sections together. All frame types shall be extruded aluminum and include fastening as specified. A grille with a frame selection of A, B, C, D or E shall have a non-removable core that has fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 12" (305) centers. A grille with a heavy duty frame selection of F, G, H or K shall have a removable core that attaches with core clips. The core shall have fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 8" (203) centers. The finish is to be AW Appliance White (optional finishes are available).

(Optional) A damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided on all units.

The manufacturer shall provide published performance data for the linear bar grille, which shall be tested in accordance with ANSI/ ASHRAE Standard 70-2023.

LINEAR LOUVER DIFFUSERS

- EXTRUDED ALUMINUM
- ARCHITECTURAL
- HIGH CAPACITY
- SQUARE OR RECTANGULAR NECKS

Models:

48LL1 One-Way Pattern

48LL2 Two-Way Pattern

- **Suffix '-O' adds a steel OBD**
- **Suffix '-OA' adds an aluminum OBD**

Models 48LL1 and 48LL2

Model Series 48LL Linear Louver (Vane) Diffusers feature architectural linear styling for high capacity supply and return air applications in hard ceilings or sidewalls. They are designed for duct mounted installation. Designed for use in discrete lengths, the fixed louvers provide a tight horizontal discharge pattern over a wide range of airflow rates and are an excellent choice for VAV systems.

STANDARD FEATURES:

- Spring-loaded core. Removable without the use of tools for ease of installation and access to the optional damper.
- Secure core attachment.
- Installation is with concealed screws through the neck of the outer frame, providing an aesthetically clean visual appearance (Type N).
- Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).

CONSTRUCTION MATERIAL:

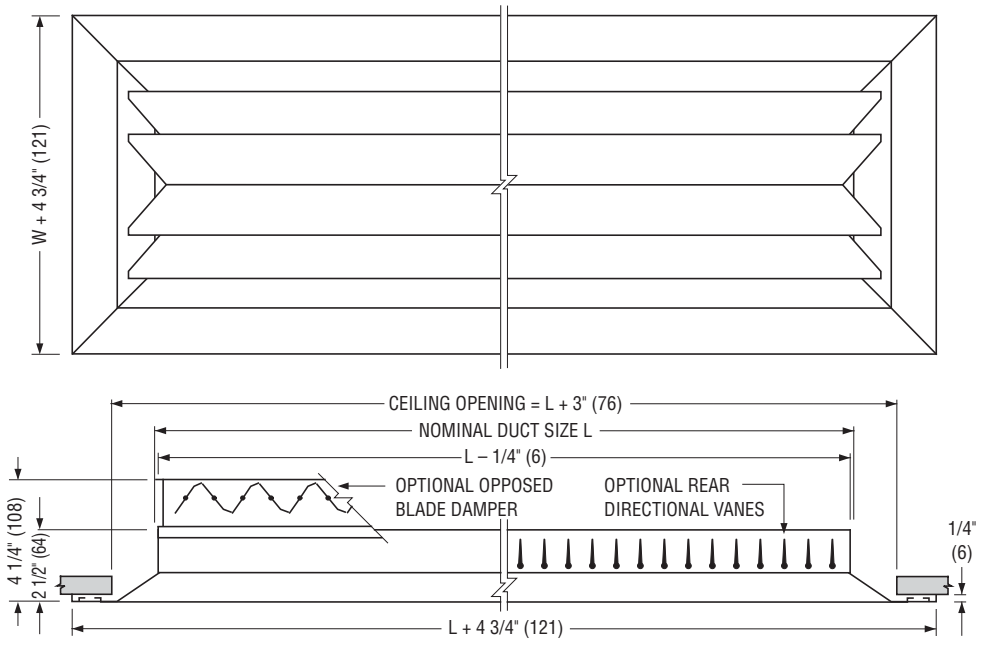
Extruded Aluminum.

FINISH OPTIONS:

- AW Appliance White is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

- Steel opposed blade damper (factory mounted) – Model 48LL1-O or 48LL2-O.
- Aluminum opposed blade damper (factory mounted) – Model 48LL1-OA or 48LL2-OA.
- DV Directional vanes (rear).
- Type A screw fastening (face).



DIMENSIONAL DATA:
LINEAR LOUVER DIFFUSERS

AVAILABLE SIZES:

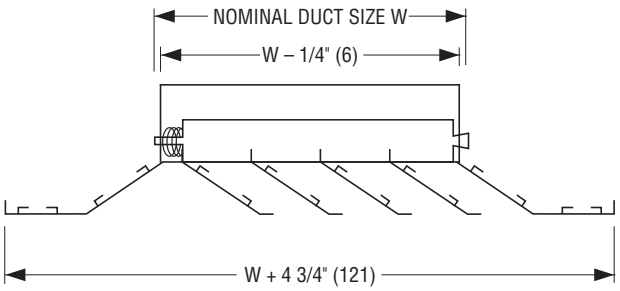
Unit Size is determined by duct width W. Diffuser necks are undersized.

Model 48LL1:

Available widths are 3", 4 1/2", 6", 7 1/2", 9", 10 1/2", 12" (76, 114, 152, 191, 229, 267, 305).

Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).

MODEL 48LL1
One-way pattern



Available Widths

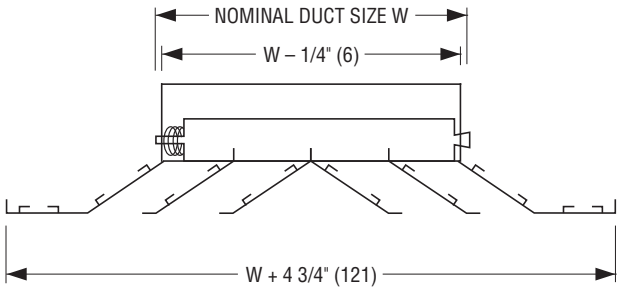
Nominal Duct Width W								
	inches	3	4 1/2	6	7 1/2	9	10 1/2	12
	mm	76	114	152	191	229	267	305

Model 48LL2:

Available widths are 3", 6", 9", 12" (76, 152, 229 and 305).

Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).

MODEL 48LL2
Two-way pattern



Available Widths

Nominal Duct Width W					
	inches	3	6	9	12
	mm	76	152	229	305

PERFORMANCE DATA:

LINEAR LOUVER DIFFUSERS

Model: 48LL1 • One-Way Pattern

Nominal Duct Width Size	Neck Velocity, FPM	300	400	500	600	700	800	900
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050
	Total Pressure	.037	.064	.101	.145	.197	.258	.326
3"	Airflow, CFM/FT.	75	100	125	150	175	200	225
	Noise Criteria	–	–	20	24	28	32	35
	Throw	14-17-24	16-20-28	16-22-31	20-24-34	21-26-38	20-28-39	24-30-42
4 1/2"	Airflow, CFM/FT.	113	150	188	225	263	300	338
	Noise Criteria	–	16	22	26	30	34	37
	Throw	18-22-32	21-26-37	23-29-41	28-32-44	28-34-48	30-37-51	32-39-55
6"	Airflow, CFM/FT.	150	200	250	300	350	400	450
	Noise Criteria	–	17	23	27	31	35	38
	Throw	21-25-36	24-29-31	27-33-46	29-36-51	32-39-55	34-41-59	36- 44-63
7 1/2"	Airflow, CFM/FT.	187	150	312	375	437	500	563
	Noise Criteria	–	17	23	27	31	35	38
	Throw	3-29-41	27-33-47	29-37-52	33-41-56	36-43-61	38-47-65	41-49-70
9"	Airflow, CFM/FT.	225	300	375	450	525	600	675
	Noise Criteria	–	18	24	28	32	36	39
	Throw	25-31-44	30-36-52	33-40-58	35-45-63	39-48-67	42-52-73	45-56-77
10 1/2"	Airflow, CFM/FT.	263	350	438	525	613	700	788
	Noise Criteria	–	18	25	28	33	37	40
	Throw	27-34-48	32-39-60	34-43-61	39-48-66	42-50-72	48-55-76	48-58-82
12"	Airflow, CFM/FT.	300	400	500	600	700	800	900
	Noise Criteria	–	19	25	29	33	37	40
	Throw	29-36-51	34-42-59	37-46-65	42-51-71	45-54-77	48-59-82	51-62-88

Model 48LL2 • Two-Way Pattern

Nominal Duct Width Size	Neck Velocity, FPM	300	400	500	600	700	800	900
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050
	Total Pressure	.037	.064	.101	.145	.197	.258	.326
3"	Airflow, CFM/FT.	75	100	125	150	175	200	225
	Noise Criteria	–	–	18	23	27	30	34
	Throw	8-12-22	11-16-25	13-20-28	16-22-30	19-23-33	20-25-35	21-26-37
6"	Airflow, CFM/FT.	150	200	250	300	350	400	450
	Noise Criteria	–	16	21	26	30	33	37
	Throw	11-17-30	16-23-34	19-27-39	23-30-42	27-33-45	28-34-49	30-36-52
9"	Airflow, CFM/FT.	225	300	375	450	525	600	675
	Noise Criteria	–	18	24	28	32	36	39
	Throw	25-31-44	30-36-52	33-40-58	35-45-63	39-48-67	42-52-73	45-56-77
12"	Airflow, CFM/FT.	300	400	500	600	700	800	900
	Noise Criteria	–	19	25	29	33	37	40
	Throw	16-24-42	21-32-48	26-38-54	32-42-59	37-45-64	39-48-68	41-51-72

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	- 3	- 1	0	+ 1	+ 2	+ 3	+ 5

Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10^{-12} watts. For other lengths, use the correction factor table shown.
5. Return Air Applications:

   Noise Criteria value is increased by + 4.

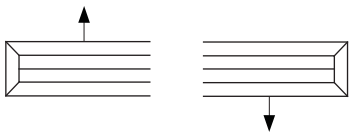
   Negative Static Pressure = 0.8 x Total Pressure.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

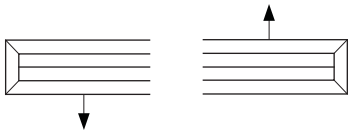
LINEAR LOUVER DIFFUSERS – MODEL SERIES 48LL
MODELS 48LL1 AND 48LL2

EXAMPLE: 48LL2 - O - 48" x 6" - AW - N - MM - DV

1. **Models**
   One-Way Pattern
   48LL1
   Two-Way Pattern
   48LL2
2. **Damper (OBD)**
   (standard model suffix)
   — None (default)
   O Steel (standard)
   OA Aluminum
3. **Nominal Length**
   inches (mm's)
4. **Width**
   inches (mm's)
   3, 4 1/2, 6, 7 1/2, 9, 10 1/2 and 12 - available on 48LL1
   (76, 114, 152, 191, 229, 267 and 305) - available on 48LL1
   inches (mm's)
   3, 6, 9 and 12 - available on 48LL2
   (76, 152, 229 and 305) - available on 48LL2
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime coat paint
   PPA Paint prepared aluminum
   SP Special
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
6. **Fastening**
   N None (default)
   A Screw Holes
7. **End Cap Configuration**
   MM Mitered Mitered (default)
   OO Open Open
   MO Mitered Open (for 48LL2)
   MU Mitered Open (for 48LL1)



MD Mitered Open (for 48LL1)



8. **Accessories**
   — None (default)
   DV Directional Vanes

Notes:

1. Maximum single section length is 72" (1800).

Multiple section assemblies are supplied in equal length sections with alignment strips.

2. Blank-offs are constructed of steel and supplied in 6 ft. sections for field trimming. Order Model 48BO separately.

3. Mitered corner sections are ordered separately. For one-way module, select (48MC1) or two-way module (48MC2).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **48LL1** (one-way pattern) or **48LL2** (two-way pattern) **Linear Louver (Vane) Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The diffuser shall be manufactured from extruded aluminum and incorporate fixed pattern discharge louvers for a horizontal throw pattern. The entire core assembly shall be removable without the use of tools. The length shall be available in standard nominal lengths of 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800 mm). The rectangular duct connection collar shall be an integral part of the frame assembly and be not less than 1 1/2" (38) high. The finish is to be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the diffuser, shall be provided on all units.

The manufacturer shall provide published performance data for the linear louver diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

LINEAR VANE DIFFUSERS

- EXTRUDED ALUMINUM
- ARCHITECTURAL
- FIXED VANES
- ONE-WAY AND TWO-WAY DEFLECTION CORE

Models:

48LV1 One-Way Pattern

48LV2 Two-Way Pattern

- **'-OBD' adds a steel OBD**
- **'-OBDA' adds an aluminum OBD**

Models 48LV1 and 48LV2

Model Series 48LV Linear Vane Diffusers are effective architectural designs suited for supply and return air applications. The linear vane diffusers feature extruded aluminum construction. Available in one-way or two-way pattern with fixed vanes that provide a tight coanda air pattern for optimal VAV performance. The core assembly is removable for ease of installation and access to the optional opposed blade damper.

STANDARD FEATURES:

- Extruded aluminum construction.
- Frame/Border is Type A with 1" (25) flange.
- Minimum length 8" (203). Maximum single section length is 96" (2438). Sizes over 96" (2438) will be supplied in multiple section assemblies with alignment strips for a clean and continuous appearance.
- Mitered endcaps.
- Removable core is secured with countersunk screws.
- Fastening: Type N is standard. Designed for duct mounted installation with concealed screws through the neck of the outer frame, providing an aesthetically clean visual appearance.

CONSTRUCTION MATERIAL:

Extruded Aluminum.

FINISH OPTIONS:

- AW Appliance White is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

- Steel opposed blade damper (factory mounted).
- Aluminum opposed blade damper (factory mounted).
- DV Directional vanes (not available with OBD).
- Type A screw holes (in outer frame).

Models 48LV1 and 48LV2

DIMENSIONAL DATA:

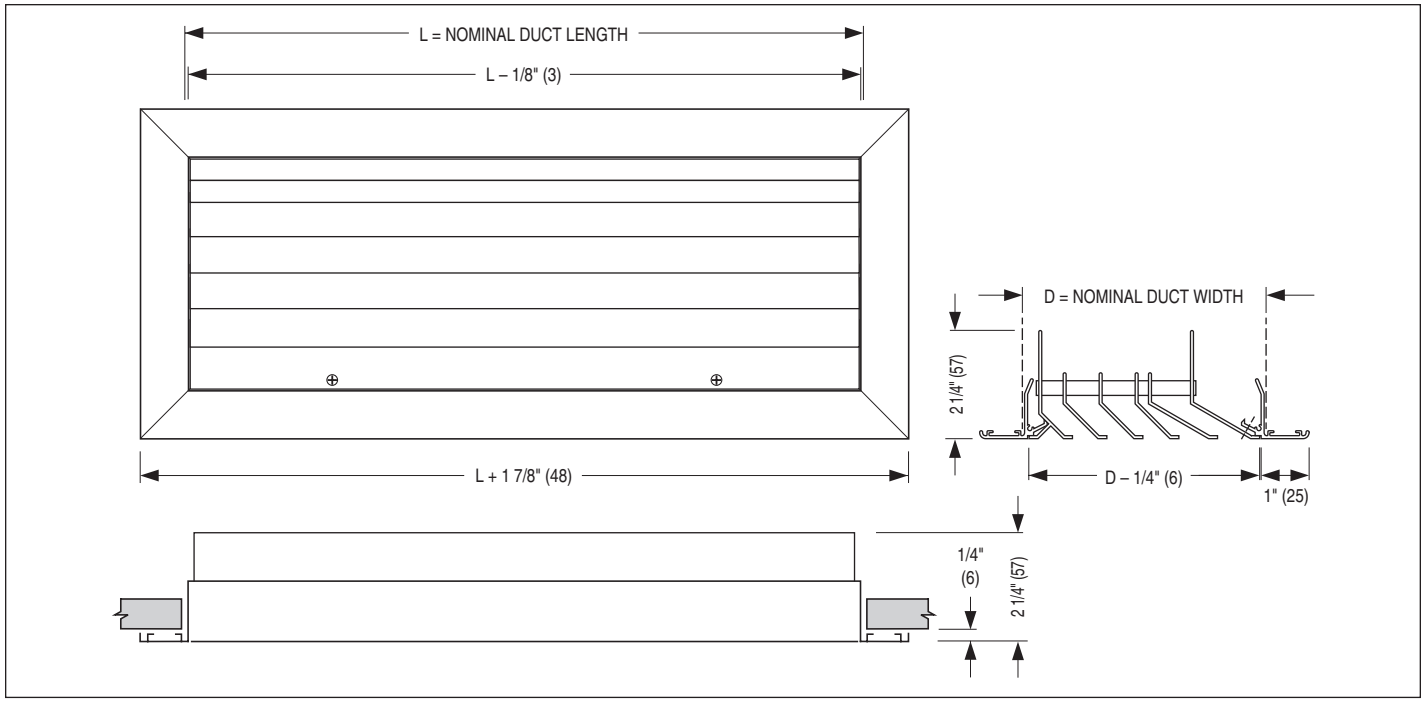
MODEL 48LV1 LINEAR VANE DIFFUSERS • ONE-WAY PATTERN

AVAILABLE SIZES:

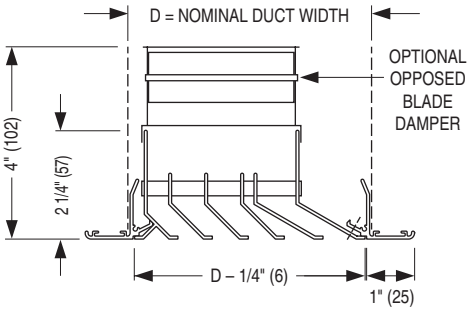
Duct width D is determined by diffuser listed width W. Diffuser necks are undersized.

Available widths are 3 1/2", 4 1/4", 5", 5 3/4", 6 1/2", 8", 9 1/2" and 11 3/4" (89, 108, 127, 146, 165, 203, 241 and 298).

Standard lengths are 12" to 96" (305 to 2438) in 12" (305) increments.

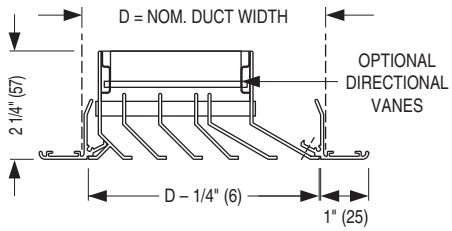


With Optional Opposed Blade Damper



Opposed blade dampers have a screwdriver slot face operator which is accessed by removing diffuser core.

With Optional Directional Vanes



Adjustable extruded aluminum vanes on 3/4" (19) centers perpendicular to length. Factory mounted.

Available Widths

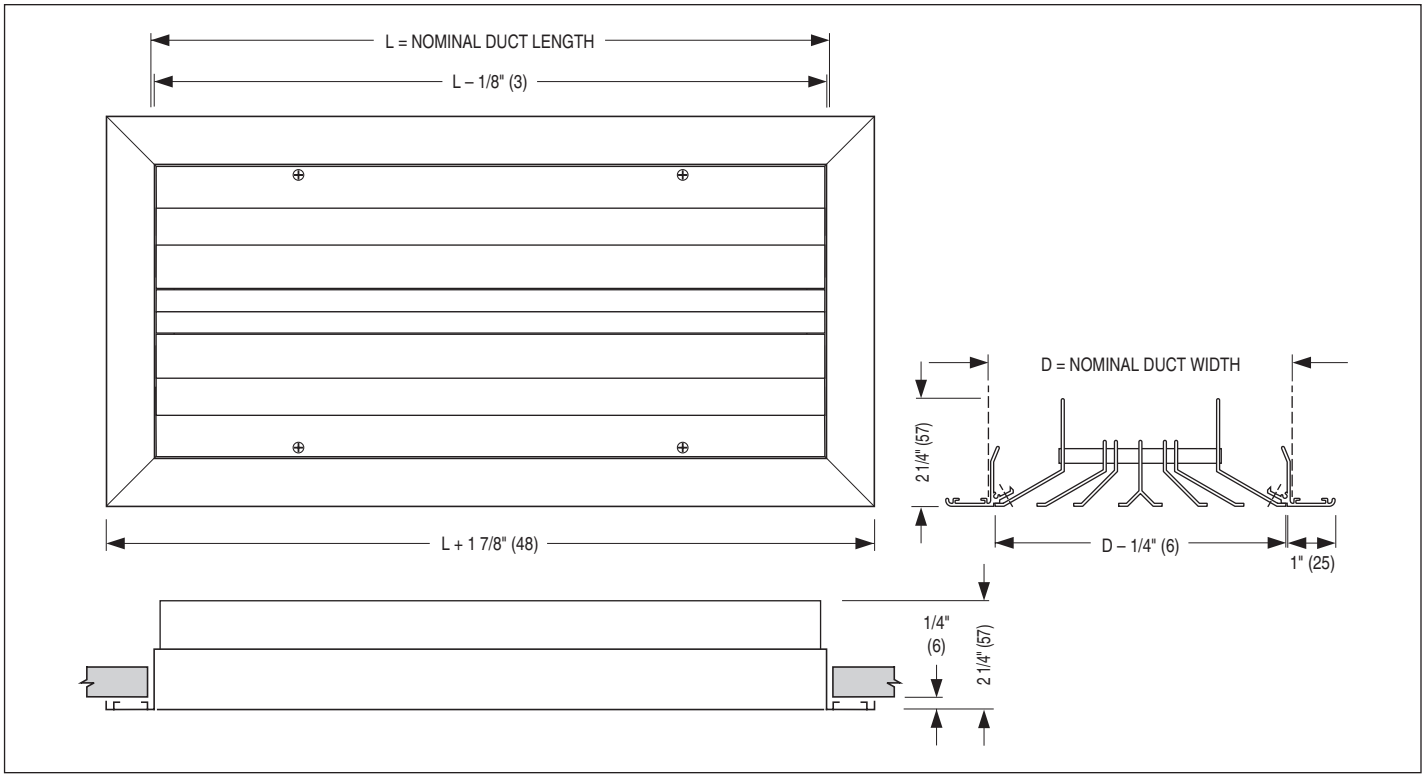
Listed Width W	3 1/2 (89)	4 1/4 (108)	5 (127)	5 3/4 (146)	6 1/2 (165)	8 (203)	9 1/2 (241)	11 3/4 (298)
Nom. Duct Width D	3 5/8 (92)	4 3/8 (111)	5 1/8 (130)	5 7/8 (149)	6 5/8 (168)	8 1/8 (206)	9 5/8 (244)	11 7/8 (302)

DIMENSIONAL DATA:

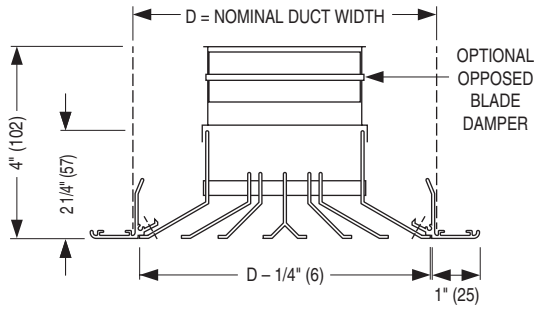
MODEL 48LV2 LINEAR VANE DIFFUSERS • TWO-WAY PATTERN

AVAILABLE SIZES:

Duct width D is determined by diffuser listed width W. Diffuser necks are undersized.
Available widths are 6 1/4", 7 3/4", 9 1/4", 10 3/4" and 12 1/4" (159, 197, 235, 273 and 311).
Standard lengths are 12" to 96" (305 to 2438) in 12" (305) increments.

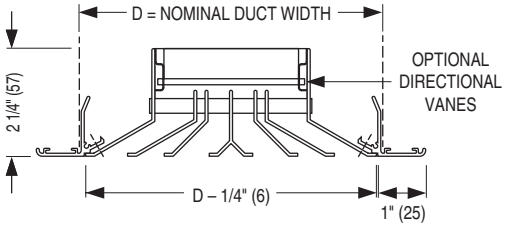


With Optional Opposed Blade Damper



Opposed blade dampers have a screwdriver slot face operator which is accessed by removing diffuser core.

With Optional Directional Vanes



Adjustable extruded aluminum vanes on 3/4" (19) centers perpendicular to length. Factory mounted.

Available Widths

Listed Width W	6 1/4 (159)	7 3/4 (197)	9 1/4 (235)	10 3/4 (273)	12 1/4 (311)
Nom. Duct Width D	6 3/8 (162)	7 7/8 (200)	9 3/8 (238)	10 7/8 (277)	12 3/8 (315)

PERFORMANCE DATA:

Model: 48LV1 • One-Way Pattern

Nominal Duct Width Size								
3 1/2"	Airflow, CFM/FT	21	31	41	51	61	71	81
	Total Pressure	.004	.008	.014	.021	.030	.041	.053
	Noise Criteria	-	-	22	27	31	35	38
	Ceiling Throw	6-9-14	8-12-17	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28
4 1/4"	Airflow, CFM/FT	30	45	60	75	90	105	120
	Total Pressure	.005	.012	.021	.032	.047	.063	.083
	Noise Criteria	-	17	25	30	35	38	41
	Ceiling Throw	6-9-17	9-14-21	12-17-24	16-19-27	17-21-30	18-23-32	20-24-34
5"	Airflow, CFM/FT	40	60	80	100	120	140	160
	Total Pressure	.007	.015	.026	.041	.059	.080	.105
	Noise Criteria	-	18	26	31	36	39	42
	Ceiling Throw	7-10-20	10-15-24	14-20-28	17-22-31	20-24-34	21-26-37	23-28-39
5 3/4"	Airflow, CFM/FT	52	78	104	130	156	182	208
	Total Pressure	.009	.019	.034	.054	.078	.106	.138
	Noise Criteria	-	21	28	33	37	41	44
	Ceiling Throw	8-12-22	12-18-27	16-22-32	20-25-35	22-27-39	24-30-42	26-32-45
6 1/2"	Airflow, CFM/FT	67	100	133	166	199	232	265
	Total Pressure	.011	.025	.044	.068	.098	.133	.173
	Noise Criteria	-	22	29	34	39	42	45
	Ceiling Throw	9-14-25	14-20-31	18-25-36	23-28-40	25-31-44	27-34-47	29-36-51
8"	Airflow, CFM/FT	90	135	180	225	270	315	360
	Total Pressure	.013	.030	.054	.084	.121	.165	.216
	Noise Criteria	-	23	29	35	39	43	46
	Ceiling Throw	10-16-30	16-24-36	21-30-42	26-33-47	30-36-51	32-39-55	34-42-59
9 1/2"	Airflow, CFM/FT	115	173	231	289	347	405	463
	Total Pressure	.016	.035	.063	.098	.142	.193	.252
	Noise Criteria	-	22	29	35	39	43	46
	Ceiling Throw	12-18-33	18-27-41	24-33-47	30-37-53	33-41-58	36-44-63	39-47-67
11 3/4"	Airflow, CFM/FT	160	238	316	394	472	550	628
	Total Pressure	.020	.044	.078	.121	.174	.236	.308
	Noise Criteria	-	23	30	35	39	43	46
	Ceiling Throw	14-22-39	21-32-48	28-39-55	35-44-62	39-48-68	42-52-73	45-55-78

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	- 3	- 1	0	+ 1	+ 2	+ 3	+ 5

Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10^{-12} watts. For other lengths, use the correction factor table shown.
5. Return Air Applications:

   Noise Criteria value is increased by + 4.

   Negative Static Pressure = 0.8 x Total Pressure.
6. Dash (–) in space indicates an Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

Model: 48LV2 • Two-Way Pattern

Nominal Duct Width Size								
6 1/4"	Airflow, CFM/FT	41	62	83	104	125	146	167
	Total Pressure	.005	.012	.021	.033	.048	.066	.086
	Noise Criteria	-	18	26	31	36	39	43
	Ceiling Throw	5-8-14	8-12-17	10-14-19	12-15-22	14-17-24	15-18-26	16-19-27
7 3/4"	Airflow, CFM/FT	62	94	126	158	190	222	254
	Total Pressure	.008	.018	.032	.050	.072	.099	.129
	Noise Criteria	-	21	28	34	38	42	45
	Ceiling Throw	6-9-17	9-14-21	13-17-24	15-19-27	17-21-29	18-22-32	20-24-34
9 1/4"	Airflow, CFM/FT	84	126	168	210	252	294	336
	Total Pressure	.010	.022	.040	.062	.089	.122	.159
	Noise Criteria	-	22	29	34	39	42	46
	Ceiling Throw	7-11-19	11-16-24	15-19-27	18-22-31	19-24-34	21-26-36	22-27-39
10 3/4"	Airflow, CFM/FT	107	161	215	269	323	377	431
	Total Pressure	.012	.027	.048	.075	.109	.148	.193
	Noise Criteria	-	23	30	35	39	43	46
	Ceiling Throw	8-12-22	12-19-27	17-22-31	20-25-35	22-27-38	24-29-41	25-31-44
12 1/4"	Airflow, CFM/FT	131	197	263	329	395	461	527
	Total Pressure	.014	.031	.055	.087	.125	.170	.223
	Noise Criteria	-	24	31	36	40	44	48
	Ceiling Throw	9-14-24	14-21-30	18-24-34	22-27-38	24-30-42	26-32-46	28-34-49

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	- 3	- 1	0	+ 1	+ 2	+ 3	+ 5

Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
3. Total Pressure is in inches w.g..
4. Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10^{-12} watts. For other lengths, use the correction factor table shown.
5. Return Air Applications:

   Noise Criteria value is increased by + 4.

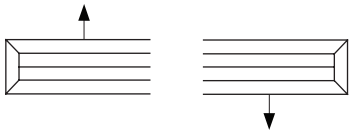
   Negative Static Pressure = 0.8 x Total Pressure.
6. Dash (–) in space indicates an Noise Criteria level of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

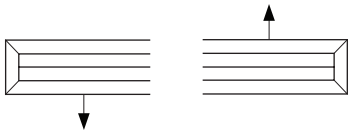
LINEAR VANE DIFFUSERS – MODEL SERIES 48LV
MODELS 48LV1 AND 48LV2

EXAMPLE: 48LV1 - 48" x 5" - A - AW - N - MM - OBD

1. **Models**
   - 48LV1 One-Way Pattern
   - 48LV2 Two-Way Pattern
2. **Length**
   - inches (mm's)
3. **Width**
   - inches (mm's)
   - **48LV1**
   - 3.5, 4.25, 5, 5.75, 6.5, 8, 9.5 and 11.75
   - (89, 108, 127, 146, 165, 203, 241 and 298)
   - **48LV2**
   - 6.25, 7.75, 9.25, 10.75 and 12.25
   - (159, 197, 235, 273 and 311)
4. **Frame/Border**
   - A 1" (25) Flange (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime coat paint
   - PPA Paint prepared aluminum
   - SP Special
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
6. **Fastening**
   - N None (default)
   - A Screw Holes
7. **End Cap Configuration**
   - MM Mitered Mitered (default)
   - OO Open Open
   - MO Mitered Open (for 48LV2)
   - MU Mitered Open (for 48LV1)



MD Mitered Open (for 48LV1)



8. **Damper**
   - — None (default)
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum
9. **Accessories**
   - — None (default)
   - DV Directional Vanes

Notes:

1. **Maximum single section length is 96" (2438). Longer lengths are supplied in multiple sections, the number and size determined by the factory.**

2. Widths are available in the above sizes only.

3. Standard Type N fastening requires concealed screws (by others) installed through neck into duct.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **48LV1** (one-way pattern) or **48LV2** (two-way pattern) **Linear Vane Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The diffuser shall be constructed from extruded aluminum. The fixed deflectors are to be removeable and the diffuser is to be fastened through the neck of the outer frame to ensure a clean appearance. Endcaps to be mitered and all multiple section sizes to be shipped with alignment strips. The finish is to be AW Appliance White (optional finishes are available).

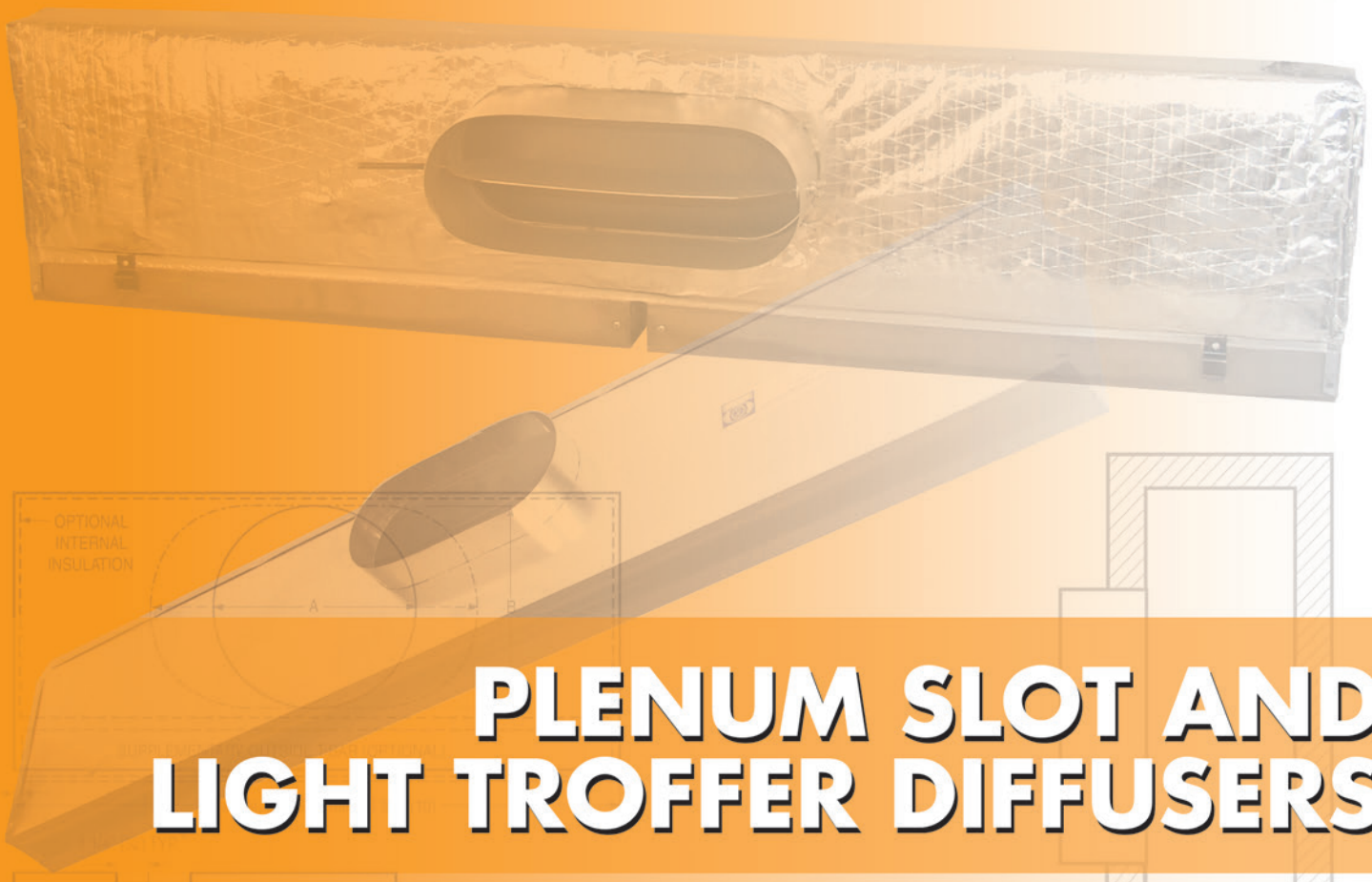
Optional steel opposed blade damper (OBD) or aluminum opposed blade damper (OBDA) shall be mounted to the neck of the diffuser. The damper must be operable through the face of the diffuser.

Optional directional vanes (DV) to have fully adjustable extruded aluminum blades on 3/4" (19) centers. The blades shall be perpendicular to the linear vanes.

The manufacturer shall provide published performance data for the linear vane diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

NOTES:

Nailor® Industries Inc.



PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

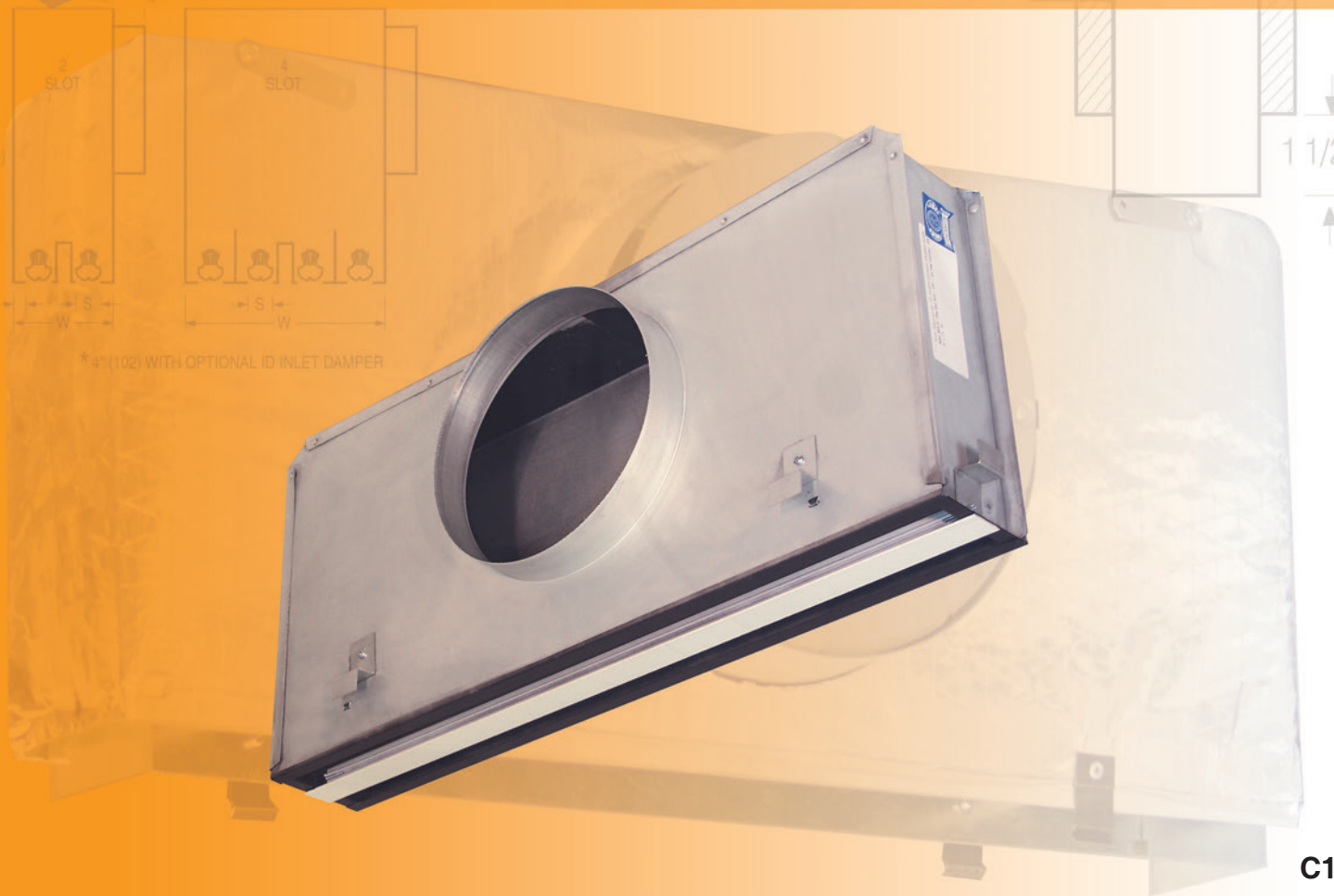


TABLE OF CONTENTS

		Page No.
General Product Overview		**C3**
Plenum Slot Diffusers		
Adjustable 'Wiper Blade' Pattern Controller		
5700	Series • Supply • Lay-in T-Bar	**C6**
5700-F	Series • Supply • Narrow Regressed T-Bar	**C8**
5700R	Series • Return • Lay-in T-Bar	**C54**
5700R-F	Series • Return • Narrow Regressed T-Bar	**C56**
Adjustable 'Ice Tong' Blade Pattern Controller		
5800	Series • Supply • Lay-in T-Bar	**C23**
5800-F	Series • Supply • Narrow Regressed T-Bar	**C25**
5800R	Series • Return • Lay-in T-Bar	**C54**
5800R-F	Series • Return • Narrow Regressed T-Bar	**C56**
Curved Blade 'Flip Flop' Pattern Controller		
5600	Series • Supply • Lay-in T-Bar	**C46**
5600-F	Series • Supply • Narrow Regressed T-Bar	**C48**
5600R	Series • Return • Lay-in T-Bar	**C54**
N Series		
59N	Series • Supply • Horizontal Discharge	**C64**
59ND	Series • Supply • Horizontal/Vertical Discharge	**C64**
59NR	Series • Supply/Return • Horizontal Discharge	**C64**
59NDR	Series • Supply/Return • Horizontal/Vertical Discharge	**C64**
BS Series		
59BS	Series • Supply	**C74**
59BSR	Series • Supply/Return	**C74**
Options and Accessories for Plenum Slot Diffusers		
5600, 5700, 5800 Series • Supply		**C61**
5600R, 5700R, 5800R Series • Return		**C61**
59N, 59BS Series • Supply and Return		**C79**
Light Troffer Diffusers		
Single and Double Side		
5410	Series • Supply • Single Side	**C80**
5420	Series • Supply • Double Side	**C80**
5400R	Series • Return	**C80**

GENERAL PRODUCT OVERVIEW

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

The Plenum Slot Ceiling Diffusers and Light Troffer Diffusers have been developed for an extremely unobtrusive method of air distribution. Nailor offers various types of this very discreet, cost effective, air distribution product. The Plenum Slot Diffusers are for use in suspended ceiling grid systems and are offered in four distinctive performance styles. The Light Troffer Diffusers are available in many standard sizes and can be custom built to suit most types of air handling light fixtures.

PLENUM SLOT DIFFUSERS

The Nailor line of Plenum Slot Diffusers have been designed to integrate and blend with T-Bar suspended grid systems. They are available for Standard Lay-in T-Bar systems as well as the Narrow Regressed T-Bar systems. Four different styles are available in a wide range of sizes and capacities for an optimum combination of application flexibility, and performance requirements. All models are available with external foil back or internal insulation. Matching return air diffusers are available for all models.

ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER SUPPLY AIR

This series features a friction pivoted, adjustable, extruded aluminum pattern controller in each slot. The pattern controller has a gasketed 'wiper blade' design. The direction of the airflow can be adjusted a full 180° from the face of the diffuser. This diffuser is available in 1 1/2" (38), 1" (25), and 3/4" (19) slot widths. Suffix 'I' adds internal insulation.

Standard Lay-in T-Bar –
Model Series 5700, 5700I **Page C6**
Narrow Regressed T-Bar –
Model Series 5700(I)-F, 5700(I)-F2 **Page C8**

Models 5710 and 5715-F

Models 5810 and 5810-F2

ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER SUPPLY AIR

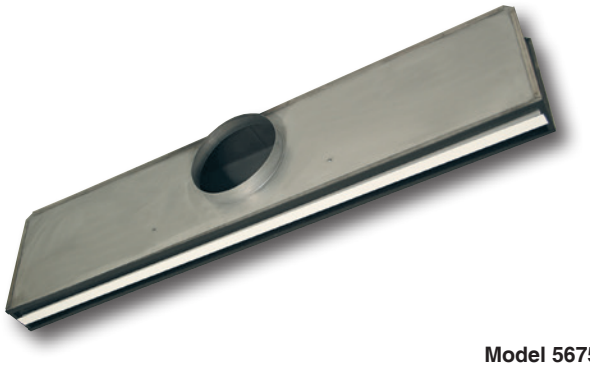
This series features a friction pivoted, adjustable, extruded aluminum pattern controller in each slot. The pattern controller has a gasketed 'ice tong' design. The direction of the airflow can be adjusted a full 180° from the face of the diffuser. This diffuser is available in 1 1/2" (38), 1" (25), 3/4" (19) and 1/2" (13) slot widths. Suffix 'I' adds internal insulation.

Standard Lay-in T-Bar –
Model Series 5800, 5800I **Page C23**
Narrow Regressed T-Bar –
Model Series 5800(I)-F, 5800(I)-F2 **Page C25**

CURVED BLADE 'FLIP FLOP' PATTERN CONTROLLER SUPPLY AIR

This series features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the face for either a left or right discharge direction. This diffuser is available with a 3/4" (19) slot width, and with a choice of 1, 2, 3 or 4 parallel slots. Suffix 'I' adds internal insulation.

Standard Lay-in T-Bar –
Model Series 5600, 5600I **Page C46**
Narrow Regressed T-Bar –
Model Series 5600(I)-F **Page C48**



Model 5675

RETURN AIR PLENUMS FOR 5800, 5700 AND 5600 SERIES

This series of return air plenums are designed to match and complement their supply air counterpart. The plenums are for ductless return and include a light shield. Where required, extruded aluminum center tees will be used. Suffix 'I' adds internal insulation.

Model Series –

5700R(I), 5800R(I), 5600R(I) **Page C54**
5700R(I)-F, 5800R(I)-F **Page C56**
5700R(I)-F2, 5800R(I)-F2 **Page C56**

Models 5675R, 5810R-F and 5775R-F2

Model 59ND

N SERIES
PREMIUM PERFORMANCE
SUPPLY AIR

This supply diffuser has a 3/4" (19) slot that incorporates an extruded aluminum pattern controller for a fixed horizontal discharge pattern. This plenum is also available with a down-blow section that incorporates two hinged pattern controllers to provide a vertical discharge pattern in addition to the horizontal discharge pattern. Suffix 'I' adds internal insulation.

Horizontal Discharge –

Models 59N, 59NI **Page C64**

Horizontal/Vertical Discharge –

Models 59ND, 59NDI **Page C64**

N SERIES
PREMIUM PERFORMANCE
SUPPLY/RETURN AIR

The plenum slot diffusers in this series combines a return air plenum attached to the side of the N Series Horizontal Discharge plenum or the combination Horizontal/Vertical Discharge plenum diffuser offered in the same series. Suffix 'I' adds internal insulation.

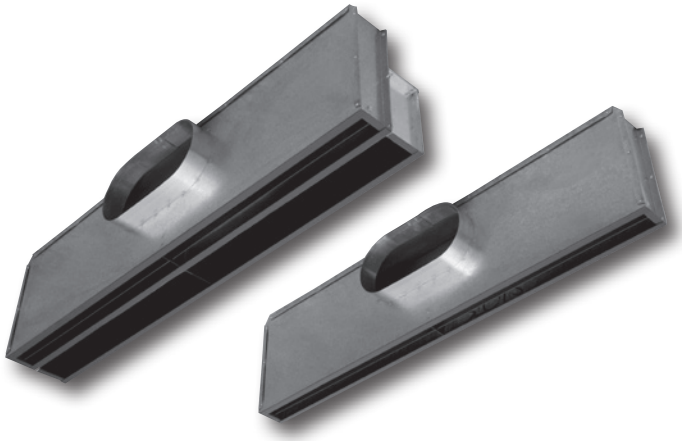
Horizontal Discharge –

Models 59NR, 59NRI **Page C64**

Horizontal/Vertical Discharge –

Models 59NDR, 59NDRI **Page C64**

Model 59NDR



Models 59BSR and 59BS

BS SERIES
PREMIUM PERFORMANCE
ADJUSTABLE VERTICAL DISCHARGE

The plenum slot diffuser in this series provides premium performance in curtain wall applications. Available in both supply and supply/return models. Suffix 'I' adds internal insulation.

Model Series – Supply

59BS(I) **Page C74**

Model Series – Supply/Return

59BSR(I) **Page C74**

OPTIONS AND ACCESSORIES

Nailor offers a wide range of accessories and options for plenum slot diffusers. Inlet dampers, plaster frames, mounting clips, supplementary T-Bars and cross-notching are available.

5800, 5700, 5600 Series • Supply **Page C61**
5800R, 5700R, 5600R Series • Return **Page C61**
59N, 59BS Series • Supply and Return **Page C79**

Model 5715 48" 1 Slot-10-ID-CN-EX-M2

Models 5410 and 5420

LIGHT TROFFER DIFFUSERS
SUPPLY OR RETURN AIR

Nailor's Light Troffer Diffusers are designed to attach easily to standard air handling fluorescent light troffers. They provide an inconspicuous appearance with high engineering performance. Nailor manufactures both a single side or a double side diffuser.

Supply Air –

Single Side – Model 5410 **Page C80**
Double Side – Model 5420 **Page C80**

Return Air –

Single Side – Model 5410R **Page C80**

ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER

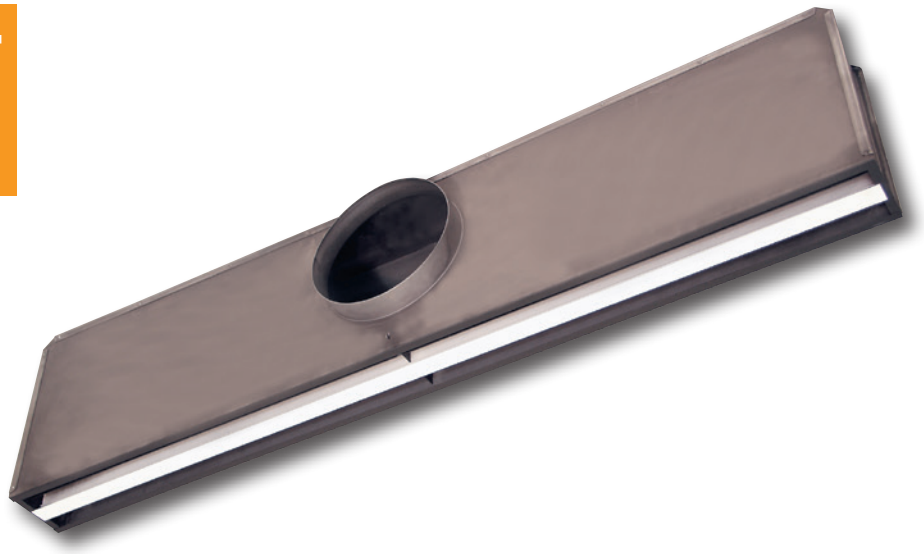
- FOR STANDARD LAY-IN T-BAR
- SUPPLY

Uninsulated Models:

5775 3/4" (19) Slot Width
5710 1" (25) Slot Width
5715 1 1/2" (38) Slot Width

Insulated Models:

5775I 3/4" (19) Slot Width
5710I 1" (25) Slot Width
5715I 1 1/2" (38) Slot Width



Model 5710

Model Series 5700 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the 5700 Series design offers the optimum combination of application flexibility, high performance and low cost.

Model Series 5700 features a friction pivoted adjustable extruded aluminum pattern controller in each slot. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar, assuring positive directional control. The pattern controller may also be set for vertical discharge.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5700 Series therefore provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.
- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 36" (900 mm) and longer. This permits a 2-way opposite blow pattern from a single slot.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers and center T-Bars.

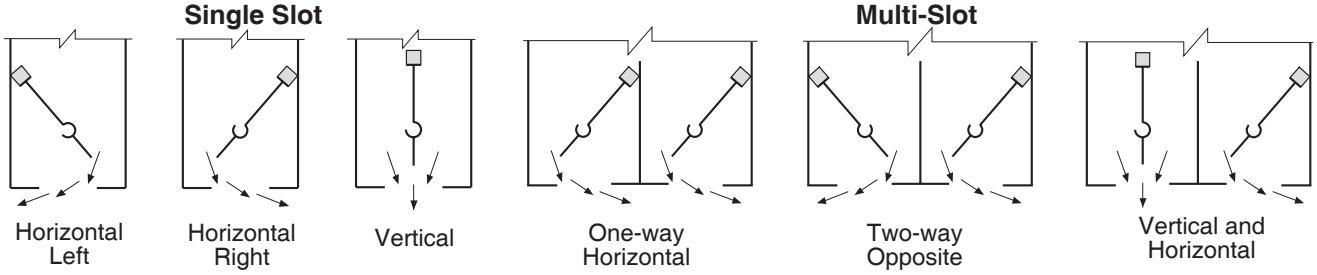
FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

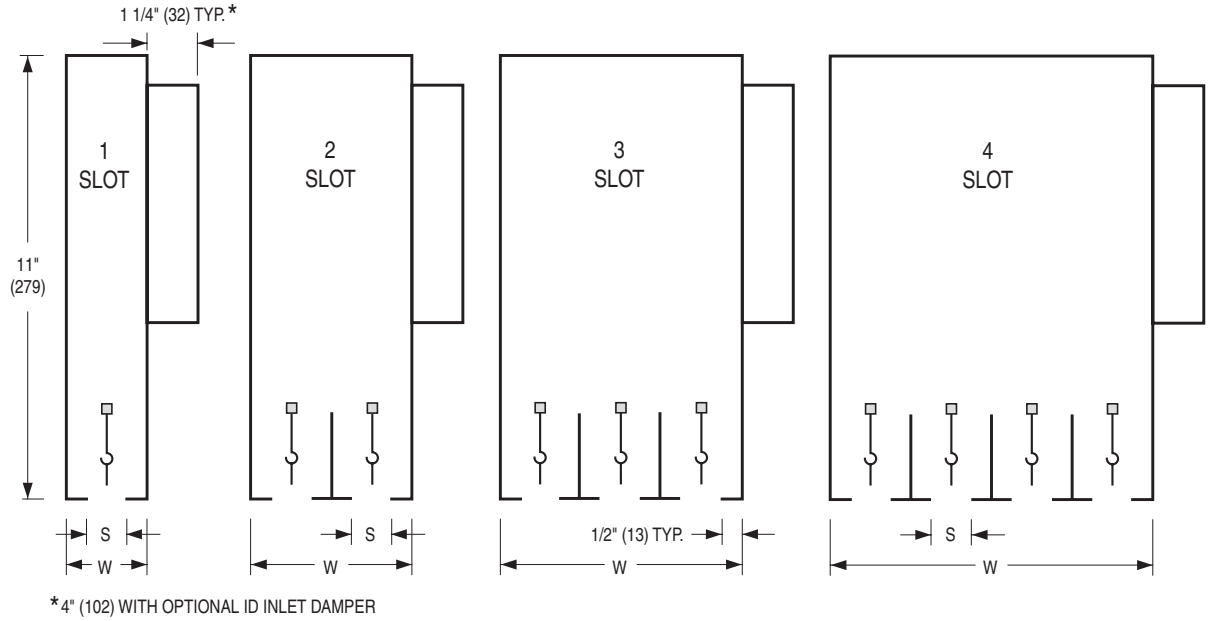
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

Air Patterns



DIMENSIONAL DATA:

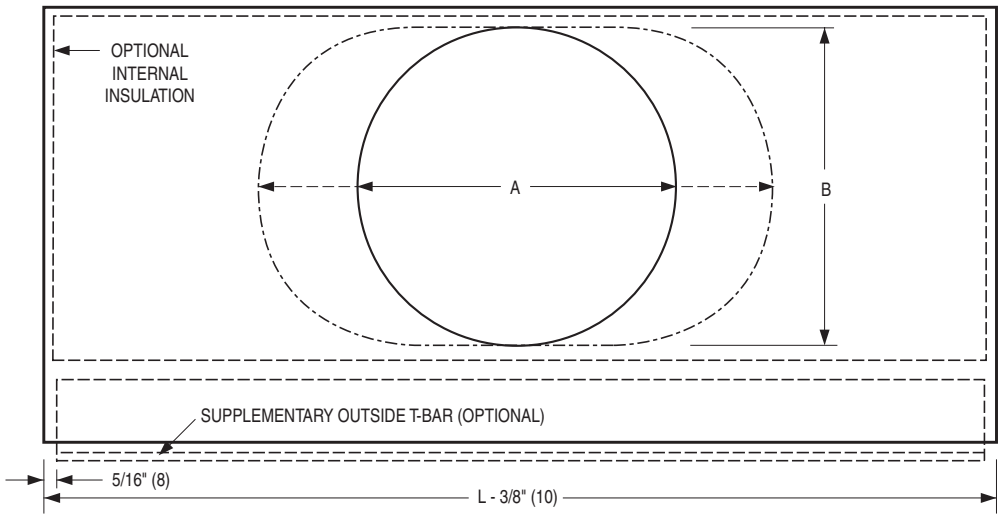
MODEL SERIES: 5700 • STANDARD LAY-IN T-BAR MODELS



*4" (102) WITH OPTIONAL ID INLET DAMPER

		S Slot Width		
		3/4" (19)	1" (25)	1 1/2" (38)
W Width	1 Slot	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3 1/2" (89)	4" (102)	5" (127)
	3 Slot	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 Slot	7" (178)	8" (203)	10" (254)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER

- FOR NARROW REGRESSED T-BAR
- SUPPLY

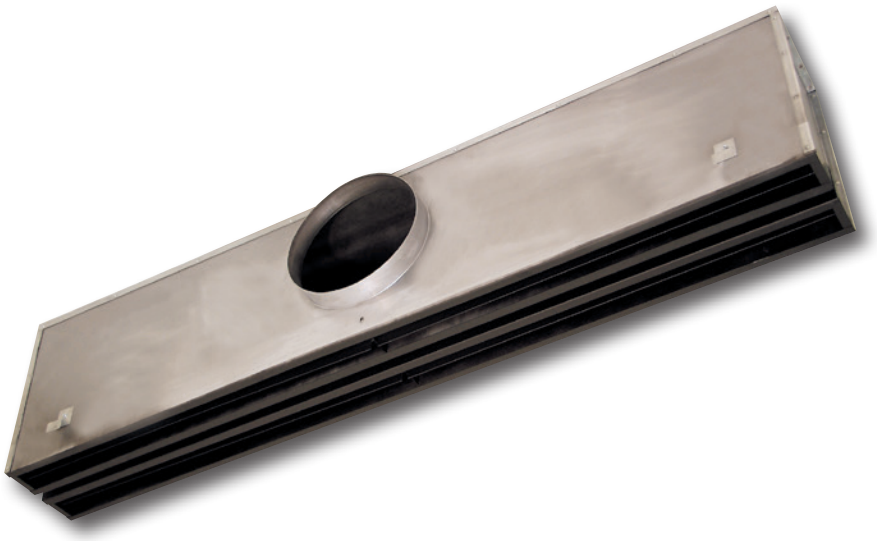
Straddle Mount Models:

5775(I)-F 3/4" (19) Slot Width
5710(I)-F 1" (25) Slot Width
5715(I)-F 1 1/2" (38) Slot Width

Flat Face T-Bar Models:

5775(I)-F2 3/4" (19) Slot Width
5710(I)-F2 1" (25) Slot Width
5715(I)-F2 1 1/2" (38) Slot Width

• Suffix 'I' adds internal insulation



Model 5715-F

Model Series 5700-F and 5700-F2 Plenum Slot Ceiling Diffusers have been specially developed to integrate with and complement 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features a friction pivoted adjustable extruded aluminum pattern controller. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar. The pattern controller may also be set for vertical discharge.

The single slot units, for all models, are for installation alongside a main T-Bar runner. Model Series 5700-F two slot units incorporate a center hat channel and are designed to straddle, longitudinally, a main T-Bar runner. The 5700-F2 Series multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5700-F is available in a one or two slot configuration and Model Series 5700-F2 is available in a one, two, three, or four slot configuration.
- The single slot units are for installation alongside a main runner.
- 5700-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5700-F2 multi-slot units include 1" (25) flat face T-Bars.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers. The 5700-F2 Series include center T-Bars on multi-slot units that are extruded aluminum.

FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

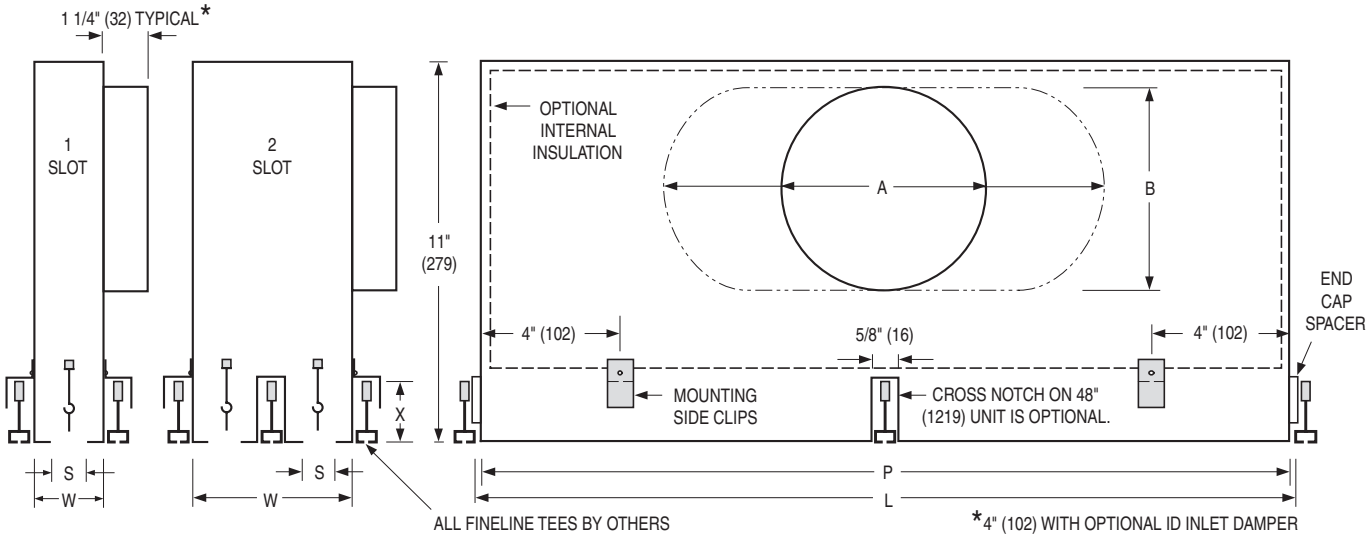
OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

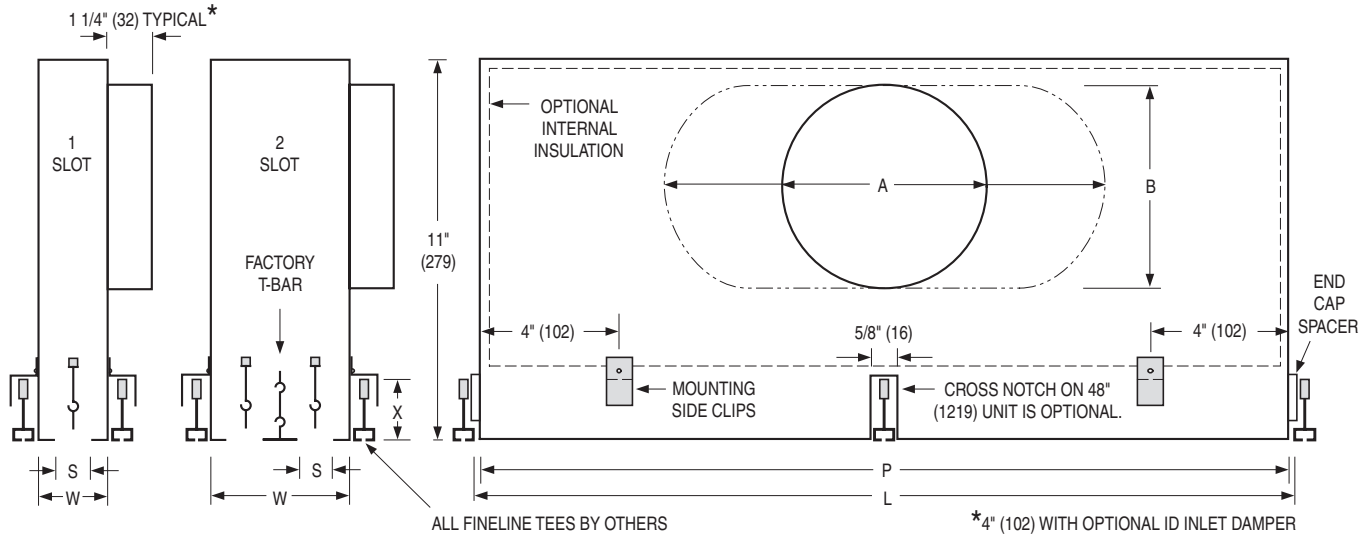
DIMENSIONAL DATA:

MODEL SERIES: 5700-F AND 5700-F2 • NARROW REGRESSED T-BAR MODELS

MODEL SERIES 5700-F



MODEL SERIES 5700-F2

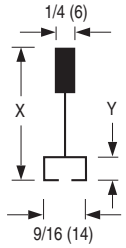


Imperial Ceiling Modules (in.)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



Model Series 5700-F

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5775-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5710-F	1" (25)	2" (51)	4 5/8" (117)
5715-F	1 1/2" (38)	2 1/2" (64)	5 5/8" (143)

Model Series 5700-F2

Model	S Slot Width	Width W			
		1 Slot	2 Slot	3 Slot	4 Slot
5775-F2	3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
5710-F2	1" (25)	2" (51)	4" (102)	6" (152)	8" (203)
5715-F2	1 1/2" (38)	2 1/2" (64)	5" (127)	7 1/2" (191)	10" (254)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)

T-Bar Type (Manufacturer)		X	Y
A	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
C	Certainteed Smoothline	1 5/8" (41)	5/16" (8)
D	Donn Fineline	1 25/32" (45)	5/16" (8)

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5775(I) • 3/4" (19) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**40**	**50**	**60**	**70**	**80**	**90**	**100**
	Total Pressure	.032	.051	.073	.099	.130	.164	.202
	Static Pressure	.031	.048	.069	.093	.122	.154	.190
	Noise Criteria	–	–	19	24	29	32	36
	Throw	2-4-10	3-6-12	4-7-15	6-8-17	6-10-19	7-11-20	8-12-21
8" Round Inlet	**Airflow, CFM**	**70**	**80**	**90**	**100**	**110**	**120**	**130**
	Total Pressure	.073	.095	.121	.149	.180	.215	.252
	Static Pressure	.071	.093	.118	.146	.176	.210	.246
	Noise Criteria	19	23	27	30	34	36	39
	Throw	6-8-17	6-10-19	7-11-20	8-12-21	9-13-22	10-15-23	10-16-24
10" Round Inlet	**Airflow, CFM**	**100**	**110**	**120**	**130**	**140**	**150**	**160**
	Total Pressure	.124	.150	.179	.210	.243	.279	.317
	Static Pressure	.121	.147	.175	.205	.238	.273	.311
	Noise Criteria	27	30	33	36	38	40	42
	Throw	8-12-21	9-13-22	10-15-23	10-16-24	11-17-25	12-18-26	13-19-26

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**70**	**90**	**110**	**130**	**150**	**170**	**190**
	Total Pressure	.040	.066	.099	.138	.184	.236	.295
	Static Pressure	.032	.054	.080	.112	.149	.191	.239
	Noise Criteria	–	18	24	30	34	38	42
	Throw	3-6-11	4-7-13	6-9-15	7-11-16	8-12-17	9-13-18	10-14-19
8" Round Inlet	**Airflow, CFM**	**100**	**120**	**140**	**160**	**180**	**200**	**220**
	Total Pressure	.054	.078	.106	.138	.175	.216	.262
	Static Pressure	.051	.073	.099	.130	.164	.203	.246
	Noise Criteria	15	20	25	30	33	37	40
	Throw	5-8-14	6-10-15	8-11-17	9-13-18	10-13-19	11-14-20	12-15-21
10" Oval Inlet	**Airflow, CFM**	**140**	**160**	**180**	**200**	**220**	**240**	**260**
	Total Pressure	.084	.109	.138	.171	.207	.246	.289
	Static Pressure	.079	.103	.130	.161	.194	.231	.271
	Noise Criteria	21	25	29	32	36	38	41
	Throw	8-11-17	9-13-18	10-13-19	11-14-20	12-15-21	13-15-22	13-26-23
12" Oval Inlet	**Airflow, CFM**	**160**	**180**	**200**	**220**	**240**	**260**	**280**
	Total Pressure	.091	.115	.142	.172	.204	.240	.278
	Static Pressure	.089	.113	.139	.168	.200	.235	.273
	Noise Criteria	22	26	29	33	35	38	40
	Throw	9-13-18	10-13-19	11-14-20	12-15-21	13-15-22	13-16-23	14-17-23

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**90**	**110**	**130**	**150**	**170**	**190**	**210**
	Total Pressure	.050	.074	.104	.138	.177	.221	.270
	Static Pressure	.037	.056	.078	.104	.134	.167	.204
	Noise Criteria	–	20	25	30	34	38	41
	Throw	3-6-10	4-7-11	6-9-12	7-9-13	8-10-14	8-10-15	9-11-15
8" Round Inlet	**Airflow, CFM**	**90**	**120**	**150**	**180**	**210**	**240**	**270**
	Total Pressure	.032	.058	.090	.130	.176	.230	.292
	Static Pressure	.028	.050	.079	.114	.155	.202	.256
	Noise Criteria	–	16	23	29	34	38	42
	Throw	3-6-10	5-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17
10" Oval Inlet	**Airflow, CFM**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Total Pressure	.044	.069	.099	.135	.176	.223	.275
	Static Pressure	.040	.063	.091	.123	.161	.204	.252
	Noise Criteria	–	18	24	29	33	37	40
	Throw	5-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17	11-13-18
12" Oval Inlet	**Airflow, CFM**	**170**	**200**	**230**	**260**	**270**	**300**	**330**
	Total Pressure	.074	.102	.135	.173	.187	.230	.279
	Static Pressure	.071	.099	.130	.167	.180	.222	.268
	Noise Criteria	19	24	29	32	34	37	40
	Throw	8-10-14	9-11-15	9-11-16	10-12-17	10-12-17	11-13-18	11-14-19

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5775(I) • 3/4" (19) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**40**	**50**	**60**	**75**	**100**	**125**	**150**
	Total Pressure	.013	.020	.029	.045	.080	.125	.180
	Static Pressure	.010	.016	.023	.036	.064	.100	.144
	Noise Criteria	–	–	–	17	26	33	39
	Throw	1-2-5	1-3-8	2-5-12	4-8-15	7-10-20	8-13-23	10-15-26
8" Round Inlet	**Airflow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure	.018	.034	.047	.071	.123	.188	.284
	Static Pressure	.012	.023	.032	.049	.084	.128	.194
	Noise Criteria	–	–	12	19	27	34	41
	Throw	2-5-12	5-8-16	6-10-17	8-12-19	11-16-22	13-17-24	16-19-27
10" Round Inlet	**Airflow, CFM**	**60**	**80**	**100**	**120**	**140**	**160**	**180**
	Total Pressure	.016	.028	.043	.062	.085	.111	.140
	Static Pressure	.015	.026	.040	.058	.079	.104	.131
	Noise Criteria	–	19	24	29	32	36	40
	Throw	6-7-16	7-8-18	8-10-20	9-12-22	10-14-24	11-16-26	12-18-28

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**
	Total Pressure	.014	.032	.057	.089	.129	.175	.229
	Static Pressure	.007	.016	.028	.045	.064	.087	.114
	Noise Criteria	–	–	15	23	28	36	40
	Throw	1-2-8	2-5-11	4-8-15	6-10-17	8-11-19	10-14-21	11-16-22
8" Round Inlet	**Airflow, CFM**	**70**	**105**	**140**	**175**	**210**	**245**	**280**
	Total Pressure	.011	.025	.044	.069	.099	.135	.177
	Static Pressure	.008	.019	.033	.052	.075	.103	.134
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-4-9	3-6-13	5-9-17	7-11-19	9-13-20	10-16-22	12-17-23
10" Oval Inlet	**Airflow, CFM**	**90**	**115**	**145**	**180**	**230**	**295**	**320**
	Total Pressure	.013	.021	.033	.052	.084	.138	.163
	Static Pressure	.011	.018	.029	.045	.073	.121	.142
	Noise Criteria	–	–	17	21	29	36	39
	Throw	2-5-11	4-7-14	5-9-17	8-11-19	10-15-21	12-17-24	14-18-25
12" Oval Inlet	**Airflow, CFM**	**100**	**140**	**180**	**220**	**260**	**300**	**340**
	Total Pressure	.012	.024	.040	.059	.083	.111	.142
	Static Pressure	.012	.023	.038	.057	.079	.105	.135
	Noise Criteria	–	18	23	27	31	35	40
	Throw	3-12-18	5-13-20	7-14-21	9-15-22	11-16-23	13-17-24	14-18-26

2 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**110**	**140**	**170**	**200**	**230**	**260**	**290**
	Total Pressure	.035	.056	.083	.115	.152	.194	.242
	Static Pressure	.017	.027	.040	.056	.074	.094	.117
	Noise Criteria	–	15	21	27	31	35	39
	Throw	2-5-11	3-7-13	5-9-14	7-10-15	8-11-16	9-12-17	10-13-18
8" Round Inlet	**Airflow, CFM**	**125**	**165**	**205**	**245**	**285**	**325**	**350**
	Total Pressure	.028	.048	.075	.107	.144	.188	.218
	Static Pressure	.018	.031	.048	.069	.094	.122	.141
	Noise Criteria	–	15	22	28	33	37	40
	Throw	3-6-12	5-8-14	7-11-15	8-12-17	10-13-18	11-14-19	11-14-20
10" Oval Inlet	**Airflow, CFM**	**150**	**190**	**230**	**270**	**310**	**350**	**390**
	Total Pressure	.028	.045	.065	.090	.119	.151	.188
	Static Pressure	.023	.036	.053	.073	.096	.123	.152
	Noise Criteria	–	17	23	28	32	36	40
	Throw	4-8-14	6-10-15	8-11-16	9-12-17	11-13-19	11-14-20	12-15-21
12" Oval Inlet	**Airflow, CFM**	**180**	**220**	**260**	**300**	**340**	**380**	**420**
	Total Pressure	.030	.045	.063	.084	.107	.134	.164
	Static Pressure	.027	.041	.057	.075	.097	.127	.148
	Noise Criteria	–	20	25	29	33	37	40
	Throw	7-10-15	8-11-16	9-12-17	10-13-18	11-14-20	12-15-21	13-15-22

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5775(I) • 3/4" (19) SLOT WIDTH

3 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**75**	**100**	**125**	**150**	**175**	**200**
	Total Pressure	.013	.028	.050	.079	.114	.155	.202
	Static Pressure	.008	.019	.034	.052	.075	.103	.134
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-5-10	2-7-14	4-9-18	7-11-22	9-13-26	10-15-28	12-18-30
8" Round Inlet	**Airflow, CFM**	**65**	**80**	**100**	**125**	**160**	**200**	**255**
	Total Pressure	.013	.019	.030	.047	.077	.120	.195
	Static Pressure	.011	.016	.025	.039	.064	.100	.162
	Noise Criteria	–	–	15	20	27	34	40
	Throw	2-5-12	4-6-19	4-9-18	7-11-22	10-14-27	12-18-30	15-23-34
10" Round Inlet	**Airflow, CFM**	**80**	**110**	**140**	**170**	**200**	**230**	**260**
	Total Pressure	.016	.030	.049	.072	.100	.132	.168
	Static Pressure	.014	.026	.043	.063	.087	.115	.147
	Noise Criteria	–	17	22	27	32	37	40
	Throw	4-6-19	6-9-22	8-12-25	10-15-27	12-18-30	13-20-32	15-23-34

3 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**80**	**120**	**160**	**200**	**240**	**280**	**320**
	Total Pressure	.013	.030	.053	.083	.120	.163	.213
	Static Pressure	.004	.010	.017	.027	.038	.052	.068
	Noise Criteria	–	–	15	23	28	32	37
	Throw	1-2-9	2-5-13	4-9-17	6-11-20	9-13-22	10-15-23	12-16-24
8" Round Inlet	**Airflow, CFM**	**100**	**150**	**200**	**250**	**300**	**350**	**400**
	Total Pressure	.014	.031	.055	.087	.125	.170	.222
	Static Pressure	.009	.020	.035	.054	.078	.106	.139
	Noise Criteria	–	–	17	24	30	35	40
	Throw	1-5-14	3-8-16	6-11-20	9-14-22	11-16-24	13-19-26	14-20-28
10" Oval Inlet	**Airflow, CFM**	**115**	**145**	**185**	**230**	**295**	**370**	**470**
	Total Pressure	.012	.019	.031	.048	.079	.125	.201
	Static Pressure	.009	.015	.024	.037	.061	.096	.155
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-5-13	3-8-16	5-10-18	9-13-22	11-16-24	14-19-27	17-21-30
12" Oval Inlet	**Airflow, CFM**	**125**	**185**	**245**	**305**	**365**	**425**	**485**
	Total Pressure	.011	.025	.044	.068	.097	.131	.171
	Static Pressure	.010	.022	.038	.059	.084	.114	.148
	Noise Criteria	–	–	18	25	31	36	40
	Throw	4-7-16	7-10-19	9-13-22	11-16-25	13-19-27	15-20-29	17-22-31

3 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**125**	**175**	**225**	**275**	**325**	**350**	**375**
	Total Pressure	.025	.048	.079	.119	.166	.192	.221
	Static Pressure	.023	.045	.074	.111	.155	.180	.206
	Noise Criteria	–	15	21	28	34	37	41
	Throw	2-4-11	3-8-14	5-10-16	8-12-18	10-14-20	11-15-21	12-16-22
8" Round Inlet	**Airflow, CFM**	**175**	**225**	**275**	**325**	**375**	**425**	**475**
	Total Pressure	.033	.054	.081	.113	.151	.194	.242
	Static Pressure	.017	.028	.041	.058	.077	.099	.123
	Noise Criteria	–	16	22	28	32	36	40
	Throw	3-7-14	5-10-16	8-12-18	9-14-19	11-15-21	12-15-22	13-16-23
10" Oval Inlet	**Airflow, CFM**	**250**	**300**	**350**	**400**	**450**	**500**	**550**
	Total Pressure	.047	.068	.092	.120	.152	.188	.227
	Static Pressure	.033	.047	.064	.084	.106	.131	.159
	Noise Criteria	15	21	26	30	34	38	41
	Throw	6-11-17	9-13-18	10-14-20	12-15-21	13-16-23	14-17-24	14-18-25
12" Oval Inlet	**Airflow, CFM**	**275**	**325**	**375**	**425**	**475**	**525**	**575**
	Total Pressure	.042	.058	.077	.099	.124	.152	.182
	Static Pressure	.033	.046	.061	.079	.098	.120	.144
	Noise Criteria	16	21	26	30	33	37	40
	Throw	8-12-18	9-14-19	11-15-21	12-15-22	13-16-23	14-17-24	15-18-25

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5775(I) • 3/4" (19) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	60	90	120	150	180	210	240
	Total Pressure	.013	.030	.053	.083	.119	.162	.212
	Static Pressure	.007	.016	.029	.046	.066	.089	.117
	Noise Criteria	–	–	15	23	28	33	38
	Throw	1-3-9	3-6-14	5-9-19	7-12-24	9-14-28	11-17-30	13-19-32
8" Round Inlet	Airflow, CFM	80	100	125	155	195	250	315
	Total Pressure	.014	.021	.033	.051	.081	.133	.211
	Static Pressure	.010	.016	.025	.039	.061	.101	.160
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-4-12	3-7-15	5-9-19	8-12-28	10-15-30	13-19-33	17-25-37
10" Round Inlet	Airflow, CFM	110	150	190	230	270	310	350
	Total Pressure	.020	.036	.058	.085	.118	.155	.198
	Static Pressure	.017	.033	.052	.076	.105	.139	.177
	Noise Criteria	–	18	24	29	34	38	42
	Throw	4-8-16	7-12-25	10-15-30	12-18-32	14-21-34	16-24-37	18-28-39

4 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	100	150	200	250	300	350	400
	Total Pressure	.014	.031	.055	.087	.125	.170	.222
	Static Pressure	.013	.029	.051	.079	.114	.155	.203
	Noise Criteria	–	–	16	23	30	36	42
	Throw	1-2-10	2-5-14	4-10-19	7-12-22	10-14-25	13-16-28	16-19-31
8" Round Inlet	Airflow, CFM	120	180	240	300	360	420	480
	Total Pressure	.015	.033	.059	.093	.134	.182	.238
	Static Pressure	.006	.014	.025	.039	.057	.077	.101
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-5-12	3-8-17	6-11-22	10-14-24	11-17-27	13-20-29	15-22-31
10" Oval Inlet	Airflow, CFM	145	180	225	290	360	450	580
	Total Pressure	.014	.022	.034	.056	.087	.135	.225
	Static Pressure	.010	.015	.023	.038	.059	.093	.154
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-5-14	3-8-16	5-11-21	9-14-24	12-18-27	14-21-29	18-24-34
12" Oval Inlet	Airflow, CFM	260	320	380	440	500	560	620
	Total Pressure	.034	.051	.073	.097	.126	.158	.193
	Static Pressure	.027	.041	.057	.077	.099	.124	.152
	Noise Criteria	–	19	24	29	33	37	40
	Throw	8-12-23	10-15-25	12-18-27	14-21-29	16-22-31	18-23-33	20-25-35

4 Slot • 60" (1524) Long

6" Round Inlet	Airflow, CFM	180	220	260	300	340	380	420
	Total Pressure	.039	.059	.082	.109	.140	.175	.214
	Static Pressure	.035	.053	.074	.098	.126	.157	.192
	Noise Criteria	.168	15	20	25	30	33	37
	Throw	2-5-14	3-8-16	5-10-17	7-12-19	8-14-21	9-16-23	10-18-25
8" Round Inlet	Airflow, CFM	220	270	320	370	420	470	520
	Total Pressure	.037	.056	.078	.104	.134	.168	.206
	Static Pressure	.011	.016	.023	.031	.040	.050	.061
	Noise Criteria	–	15	20	25	30	34	38
	Throw	3-8-16	5-10-17	7-12-19	9-14-20	11-15-22	13-16-23	15-17-25
10" Oval Inlet	Airflow, CFM	310	370	430	490	550	610	670
	Total Pressure	.050	.071	.096	.124	.156	.192	.232
	Static Pressure	.029	.041	.055	.072	.090	.111	.134
	Noise Criteria	15	21	26	30	34	37	40
	Throw	7-12-19	9-14-20	11-16-22	12-17-23	14-18-25	15-19-26	16-19-27
12" Oval Inlet	Airflow, CFM	320	380	440	500	560	620	680
	Total Pressure	.040	.056	.075	.097	.122	.150	.180
	Static Pressure	.029	.042	.056	.072	.090	.111	.133
	Noise Criteria	–	19	24	28	31	35	38
	Throw	7-12-19	10-14-21	11-16-22	13-17-24	14-18-25	15-19-26	16-20-28

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5710(I) • 1" (25) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**20**	**40**	**60**	**80**	**100**	**120**	**140**
	Total Pressure	.006	.025	.056	.099	.155	.223	.304
	Static Pressure	.005	.018	.041	.072	.113	.162	.221
	Noise Criteria	–	–	18	24	31	37	41
	Throw	1-2-8	5-7-13	7-10-16	10-13-19	12-15-21	13-16-23	14-17-25
8" Round Inlet	**Airflow, CFM**	**30**	**55**	**80**	**105**	**130**	**155**	**180**
	Total Pressure	.012	.039	.083	.144	.220	.313	.422
	Static Pressure	.011	.038	.080	.138	.211	.300	.404
	Noise Criteria	–	–	20	26	34	38	43
	Throw	3-6-11	7-10-16	10-13-19	12-16-22	13-16-23	14-17-25	16-19-28
10" Round Inlet	**Airflow, CFM**	**50**	**75**	**100**	**125**	**150**	**175**	**200**
	Total Pressure	.025	.057	.101	.158	.228	.311	.406
	Static Pressure	.025	.056	.099	.155	.222	.303	.396
	Noise Criteria	–	15	23	30	35	39	41
	Throw	6-8-14	9-12-18	12-15-21	13-16-23	14-17-25	16-19-28	18-21-30

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**50**	**75**	**100**	**125**	**150**	**175**	**200**
	Total Pressure	.016	.036	.064	.100	.143	.195	.255
	Static Pressure	.012	.027	.047	.074	.107	.145	.190
	Noise Criteria	–	–	19	26	32	36	40
	Throw	4-7-13	7-11-16	9-13-18	12-15-20	13-16-23	14-17-25	15-18-26
8" Round Inlet	**Airflow, CFM**	**70**	**100**	**130**	**160**	**190**	**220**	**250**
	Total Pressure	.021	.042	.072	.108	.153	.205	.265
	Static Pressure	.018	.037	.063	.095	.135	.180	.233
	Noise Criteria	–	15	22	28	33	36	41
	Throw	7-11-16	9-13-18	12-13-21	13-16-23	15-18-26	16-19-27	17-20-28
10" Oval Inlet	**Airflow, CFM**	**80**	**115**	**150**	**185**	**220**	**255**	**290**
	Total Pressure	.025	.051	.087	.132	.186	.250	.323
	Static Pressure	.023	.048	.082	.124	.176	.236	.305
	Noise Criteria	–	15	23	30	34	38	42
	Throw	8-12-17	12-14-20	13-16-23	14-17-25	16-19-27	17-20-28	18-22-31
12" Oval Inlet	**Airflow, CFM**	**110**	**150**	**190**	**230**	**270**	**310**	**350**
	Total Pressure	.037	.069	.110	.162	.223	.294	.372
	Static Pressure	.035	.066	.105	.154	.212	.280	.357
	Noise Criteria	–	17	22	29	33	37	40
	Throw	11-14-17	13-16-23	15-18-26	16-20-28	17-21-30	18-23-32	20-24-34

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**70**	**100**	**130**	**160**	**190**	**220**	**250**
	Total Pressure	.027	.054	.092	.139	.196	.263	.339
	Static Pressure	.019	.038	.064	.085	.138	.185	.238
	Noise Criteria	–	17	24	30	37	39	42
	Throw	5-8-13	6-11-16	10-13-18	11-14-20	12-15-22	13-16-23	14-17-25
8" Round Inlet	**Airflow, CFM**	**80**	**115**	**150**	**185**	**220**	**255**	**290**
	Total Pressure	.022	.045	.076	.116	.164	.221	.285
	Static Pressure	.018	.038	.065	.098	.139	.187	.242
	Noise Criteria	–	15	22	27	32	37	40
	Throw	6-9-13	9-12-16	11-13-19	12-15-21	13-16-23	14-17-25	15-19-26
10" Oval Inlet	**Airflow, CFM**	**110**	**150**	**190**	**230**	**270**	**310**	**350**
	Total Pressure	.033	.061	.098	.143	.197	.260	.331
	Static Pressure	.030	.055	.089	.130	.179	.236	.301
	Noise Criteria	–	18	25	30	35	38	42
	Throw	9-12-16	11-13-19	12-15-21	13-16-24	14-18-25	16-19-27	17-21-29
12" Oval Inlet	**Airflow, CFM**	**160**	**200**	**240**	**280**	**320**	**360**	**400**
	Total Pressure	.068	.107	.154	.209	.273	.346	.427
	Static Pressure	.065	.101	.146	.198	.259	.328	.405
	Noise Criteria	–	20	25	30	34	37	40
	Throw	11-14-19	13-16-22	14-17-24	15-18-26	16-19-28	17-21-30	18-22-32

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5710(I) • 1" (25) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**75**	**100**	**125**	**150**	**175**	**200**
	Total Pressure	.016	.036	.064	.100	.144	.196	.256
	Static Pressure	.012	.026	.046	.073	.105	.142	.186
	Noise Criteria	–	15	22	27	32	36	38
	Throw	2-6-13	6-10-19	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30
8" Round Inlet	**Airflow, CFM**	**70**	**100**	**130**	**160**	**190**	**220**	**250**
	Total Pressure	.021	.043	.072	.109	.154	.207	.267
	Static Pressure	.018	.037	.063	.095	.135	.186	.233
	Noise Criteria	–	15	22	27	32	36	40
	Throw	5-9-18	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30	19-23-32
10" Round Inlet	**Airflow, CFM**	**90**	**125**	**160**	**195**	**230**	**265**	**300**
	Total Pressure	.032	.061	.100	.149	.207	.274	.352
	Static Pressure	.030	.057	.094	.140	.194	.258	.330
	Noise Criteria	–	16	24	30	35	38	41
	Throw	8-12-19	11-16-23	14-19-26	16-20-28	18-22-30	20-24-32	22-25-33

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**80**	**115**	**150**	**185**	**220**	**255**	**290**
	Total Pressure	.025	.051	.086	.131	.185	.249	.322
	Static Pressure	.014	.029	.050	.076	.107	.144	.186
	Noise Criteria	–	–	16	23	29	35	40
	Throw	3-6-14	4-10-20	8-14-25	11-18-28	13-20-30	16-23-33	19-25-36
8" Round Inlet	**Airflow, CFM**	**85**	**110**	**140**	**175**	**220**	**285**	**360**
	Total Pressure	.019	.033	.053	.083	.131	.219	.349
	Static Pressure	.015	.025	.041	.064	.101	.170	.271
	Noise Criteria	–	–	–	15	22	29	37
	Throw	3-6-16	4-10-20	7-13-24	11-16-27	14-20-30	18-24-34	22-27-38
10" Oval Inlet	**Airflow, CFM**	**110**	**140**	**180**	**230**	**290**	**370**	**430**
	Total Pressure	.021	.033	.055	.090	.143	.233	.315
	Static Pressure	.018	.029	.048	.079	.126	.205	.276
	Noise Criteria	–	–	–	20	27	35	40
	Throw	4-10-21	7-13-25	11-18-28	14-22-32	19-25-36	24-29-40	25-31-43
12" Oval Inlet	**Airflow, CFM**	**110**	**140**	**180**	**225**	**285**	**365**	**465**
	Total Pressure	.016	.025	.042	.066	.105	.172	.280
	Static Pressure	.014	.023	.039	.060	.097	.159	.258
	Noise Criteria	–	–	–	16	23	31	39
	Throw	5-11-22	7-14-25	12-18-28	13-20-30	19-25-36	23-28-37	25-31-44

2 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**70**	**115**	**160**	**205**	**250**	**295**	**340**
	Total Pressure	.019	.050	.097	.159	.237	.329	.437
	Static Pressure	.010	.027	.052	.086	.127	.177	.235
	Noise Criteria	–	–	19	26	32	36	38
	Throw	3-5-12	6-9-17	9-12-19	11-16-22	14-18-25	15-19-27	16-20-28
8" Round Inlet	**Airflow, CFM**	**90**	**150**	**210**	**270**	**330**	**390**	**450**
	Total Pressure	.016	.044	.086	.142	.212	.297	.395
	Static Pressure	.011	.032	.062	.102	.153	.214	.284
	Noise Criteria	–	–	15	23	30	35	40
	Throw	4-7-15	8-12-19	12-16-23	15-18-26	16-20-28	18-22-31	19-23-33
10" Oval Inlet	**Airflow, CFM**	**160**	**225**	**290**	**355**	**420**	**485**	**550**
	Total Pressure	.031	.060	.100	.151	.211	.281	.361
	Static Pressure	.024	.048	.080	.120	.168	.224	.288
	Noise Criteria	–	15	22	29	34	39	43
	Throw	8-12-19	12-16-23	15-19-26	17-21-30	19-23-32	20-24-34	21-26-37
12" Oval Inlet	**Airflow, CFM**	**220**	**300**	**380**	**460**	**540**	**620**	**700**
	Total Pressure	.036	.066	.106	.155	.214	.282	.360
	Static Pressure	.029	.054	.087	.127	.175	.231	.294
	Noise Criteria	–	19	26	32	37	41	44
	Throw	12-16-23	15-19-26	18-22-31	19-23-33	21-25-36	22-27-38	24-29-41

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5710(I) • 1" (25) SLOT WIDTH

3 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270
	Total Pressure	.040	.071	.112	.161	.219	.286	.362
	Static Pressure	.028	.049	.077	.110	.150	.196	.248
	Noise Criteria	–	15	21	27	32	36	40
	Throw	4-8-15	6-10-20	8-12-24	10-14-28	12-18-30	14-20-32	15-21-34
8" Round Inlet	Airflow, CFM	120	160	200	240	280	320	360
	Total Pressure	.048	.073	.112	.154	.219	.277	.346
	Static Pressure	.036	.059	.087	.121	.165	.210	.278
	Noise Criteria	–	15	21	27	31	36	40
	Throw	5-9-18	8-13-24	10-16-30	12-19-32	14-22-35	17-25-37	19-27-40
10" Round Inlet	Airflow, CFM	160	210	260	310	360	410	460
	Total Pressure	.042	.072	.111	.158	.212	.276	.347
	Static Pressure	.037	.064	.098	.140	.189	.245	.308
	Noise Criteria	–	15	22	28	32	36	40
	Throw	8-12-25	10-16-29	12-20-33	14-24-37	16-28-40	18-30-42	22-32-45

3 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	80	120	160	200	240	280	320
	Total Pressure	.016	.037	.066	.103	.148	.202	.264
	Static Pressure	.008	.018	.032	.050	.072	.098	.128
	Noise Criteria	–	–	16	23	29	34	38
	Throw	1-2-6	2-3-11	3-6-15	4-10-19	6-11-22	8-13-24	10-15-26
8" Round Inlet	Airflow, CFM	175	225	275	325	375	425	475
	Total Pressure	.042	.071	.114	.153	.208	.260	.323
	Static Pressure	.038	.045	.076	.099	.127	.166	.209
	Noise Criteria	–	15	21	27	31	35	40
	Throw	3-7-17	5-11-21	8-13-23	10-16-25	12-18-27	14-20-29	15-22-31
10" Oval Inlet	Airflow, CFM	225	300	375	450	525	600	675
	Total Pressure	.044	.078	.121	.175	.238	.310	.393
	Static Pressure	.033	.059	.092	.132	.180	.235	.298
	Noise Criteria	–	16	23	29	34	38	42
	Throw	5-11-21	10-14-24	12-18-27	14-21-30	17-23-32	19-24-34	21-26-36
12" Oval Inlet	Airflow, CFM	280	360	440	520	600	680	760
	Total Pressure	.046	.076	.114	.159	.211	.272	.339
	Static Pressure	.038	.062	.093	.130	.173	.222	.277
	Noise Criteria	–	15	21	27	31	35	40
	Throw	9-14-23	12-18-27	14-22-30	16-24-32	19-26-34	22-28-36	25-30-39

3 Slot • 60" (1524) Long

6" Round Inlet	Airflow, CFM	80	120	180	240	280	340	390
	Total Pressure	.023	.051	.115	.204	.278	.410	.540
	Static Pressure	.012	.028	.063	.111	.152	.224	.294
	Noise Criteria	–	–	17	25	30	36	39
	Throw	2-3-11	4-9-17	8-13-21	11-16-24	13-18-26	16-20-29	17-22-31
8" Round Inlet	Airflow, CFM	140	200	260	320	380	440	500
	Total Pressure	.022	.045	.077	.116	.163	.219	.283
	Static Pressure	.012	.024	.041	.062	.088	.118	.152
	Noise Criteria	–	–	17	23	29	34	38
	Throw	4-7-15	6-9-19	9-12-22	11-15-25	14-18-28	17-20-31	20-23-34
10" Oval Inlet	Airflow, CFM	200	280	360	440	520	600	680
	Total Pressure	.028	.054	.090	.134	.188	.250	.321
	Static Pressure	.020	.038	.063	.095	.132	.176	.226
	Noise Criteria	–	–	18	25	30	35	39
	Throw	7-10-21	10-12-23	12-15-26	14-17-29	17-20-32	19-23-35	22-26-37
12" Oval Inlet	Airflow, CFM	250	350	430	520	610	700	800
	Total Pressure	.031	.061	.092	.135	.186	.245	.320
	Static Pressure	.025	.048	.073	.107	.147	.194	.253
	Noise Criteria	–	–	18	24	29	33	37
	Throw	11-17-25	16-21-29	19-23-32	21-25-36	22-27-39	24-29-41	25-31-44

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5710(I) • 1" (25) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**60**	**100**	**140**	**180**	**220**	**260**	**300**
	Total Pressure	.014	.039	.077	.127	.190	.265	.353
	Static Pressure	.008	.023	.045	.074	.111	.155	.207
	Noise Criteria	–	–	16	24	31	36	38
	Throw	2-3-12	2-5-14	4-10-20	7-13-25	10-15-31	12-18-34	13-20-35
8" Round Inlet	**Airflow, CFM**	**150**	**200**	**250**	**300**	**350**	**400**	**450**
	Total Pressure	.046	.081	.127	.183	.249	.326	.412
	Static Pressure	.034	.061	.095	.137	.187	.244	.309
	Noise Criteria	–	16	23	29	34	38	42
	Throw	5-10-20	8-13-27	11-17-32	13-20-35	15-23-38	17-26-40	19-29-43
10" Round Inlet	**Airflow, CFM**	**175**	**250**	**325**	**400**	**450**	**500**	**550**
	Total Pressure	.038	.078	.132	.199	.252	.311	.377
	Static Pressure	.032	.066	.111	.169	.213	.264	.319
	Noise Criteria	–	16	24	31	34	38	41
	Throw	7-12-24	12-18-33	16-25-39	19-28-42	21-31-44	23-33-47	26-35-49

4 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**140**	**170**	**200**	**230**	**260**	**290**	**320**
	Total Pressure	.053	.078	.108	.143	.182	.227	.276
	Static Pressure	.044	.066	.091	.120	.153	.191	.232
	Noise Criteria	–	–	20	24	28	31	35
	Throw	2-5-13	3-7-16	4-10-19	6-11-21	7-12-23	8-14-25	9-16-27
8" Round Inlet	**Airflow, CFM**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Total Pressure	.046	.073	.105	.142	.186	.235	.290
	Static Pressure	.025	.040	.057	.078	.102	.129	.159
	Noise Criteria	–	15	21	26	30	34	37
	Throw	3-7-17	5-10-21	7-13-24	9-15-26	11-17-28	13-19-30	15-21-32
10" Oval Inlet	**Airflow, CFM**	**250**	**330**	**410**	**490**	**570**	**650**	**730**
	Total Pressure	.041	.072	.111	.158	.214	.278	.351
	Static Pressure	.028	.048	.075	.107	.144	.188	.237
	Noise Criteria	–	15	22	28	33	37	40
	Throw	5-10-21	8-14-25	12-17-28	14-21-31	16-24-34	18-25-36	20-27-38
12" Oval Inlet	**Airflow, CFM**	**275**	**375**	**475**	**575**	**675**	**775**	**875**
	Total Pressure	.034	.063	.101	.148	.204	.269	.343
	Static Pressure	.025	.047	.075	.110	.152	.200	.255
	Noise Criteria	–	15	20	26	31	36	40
	Throw	7-13-25	12-17-28	14-21-32	17-24-34	20-26-37	22-28-39	24-30-42

4 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**100**	**160**	**200**	**265**	**315**	**370**	**425**
	Total Pressure	.020	.051	.080	.140	.198	.273	.360
	Static Pressure	.004	.009	.015	.026	.037	.051	.067
	Noise Criteria	–	–	17	26	29	34	38
	Throw	1-3-10	1-3-11	2-4-13	3-7-17	5-11-19	6-12-20	8-14-22
8" Round Inlet	**Airflow, CFM**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Total Pressure	.036	.057	.082	.111	.145	.184	.227
	Static Pressure	.016	.025	.036	.048	.063	.080	.099
	Noise Criteria	–	–	18	23	27	30	33
	Throw	2-4-13	3-7-17	4-9-18	6-12-20	7-13-21	10-16-23	12-18-25
10" Oval Inlet	**Airflow, CFM**	**225**	**325**	**425**	**525**	**625**	**725**	**825**
	Total Pressure	.023	.049	.084	.128	.181	.243	.315
	Static Pressure	.015	.031	.053	.081	.114	.154	.199
	Noise Criteria	–	15	20	27	33	37	41
	Throw	2-5-16	6-12-20	9-15-22	12-17-24	14-19-26	16-21-28	18-23-30
12" Oval Inlet	**Airflow, CFM**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
	Total Pressure	.032	.057	.089	.128	.174	.228	.288
	Static Pressure	.023	.041	.063	.091	.124	.162	.206
	Noise Criteria	–	–	18	24	29	34	37
	Throw	4-10-19	7-13-21	11-17-24	13-18-26	16-20-28	17-21-30	18-23-32

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**30**	**50**	**70**	**90**	**110**	**130**	**150**
	Total Pressure	.014	.038	.075	.124	.185	.258	.344
	Static Pressure	.012	.034	.067	.111	.166	.232	.308
	Noise Criteria	–	–	–	22	28	33	38
	Throw	2-3-18	4-9-15	6-10-16	10-14-20	11-15-22	12-16-24	14-17-25
8" Round Inlet	**Airflow, CFM**	**50**	**70**	**90**	**110**	**130**	**150**	**170**
	Total Pressure	.028	.054	.089	.133	.186	.248	.318
	Static Pressure	.026	.051	.085	.127	.177	.236	.303
	Noise Criteria	–	16	17	23	29	33	37
	Throw	4-8-15	6-10-16	10-14-20	11-15-22	12-16-24	14-17-25	16-19-27
10" Round Inlet	**Airflow, CFM**	**70**	**90**	**110**	**130**	**150**	**170**	**190**
	Total Pressure	.040	.067	.100	.140	.186	.239	.298
	Static Pressure	.039	.065	.097	.133	.181	.232	.290
	Noise Criteria	–	15	20	26	30	34	38
	Throw	6-10-16	10-14-20	11-15-22	12-16-24	14-17-25	16-19-27	18-20-28

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**75**	**100**	**125**	**150**	**175**	**200**	**225**
	Total Pressure	.031	.055	.086	.124	.169	.220	.279
	Static Pressure	.022	.039	.061	.087	.119	.155	.196
	Noise Criteria	–	–	15	23	27	32	36
	Throw	3-6-15	5-11-20	8-13-21	10-15-24	12-18-25	14-20-28	15-21-29
8" Round Inlet	**Airflow, CFM**	**100**	**130**	**160**	**190**	**220**	**250**	**280**
	Total Pressure	.034	.057	.087	.122	.164	.211	.265
	Static Pressure	.029	.048	.073	.103	.139	.179	.224
	Noise Criteria	–	–	19	24	29	33	37
	Throw	5-11-20	9-13-22	10-16-24	13-19-27	15-21-29	17-22-32	18-25-35
10" Oval Inlet	**Airflow, CFM**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Total Pressure	.035	.055	.080	.109	.142	.180	.222
	Static Pressure	.032	.051	.073	.099	.130	.164	.203
	Noise Criteria	–	–	19	24	28	32	35
	Throw	7-12-22	9-14-23	12-18-26	14-20-29	16-22-32	18-24-34	19-26-36
12" Oval Inlet	**Airflow, CFM**	**140**	**180**	**220**	**260**	**300**	**340**	**380**
	Total Pressure	.036	.059	.088	.123	.164	.211	.264
	Static Pressure	.034	.056	.083	.116	.155	.199	.249
	Noise Criteria	–	16	22	28	32	36	40
	Throw	9-14-23	12-18-26	14-20-29	18-24-34	19-26-36	20-27-38	21-28-40

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**100**	**130**	**160**	**190**	**220**	**250**	**280**
	Total Pressure	.044	.075	.113	.159	.214	.276	.346
	Static Pressure	.028	.047	.072	.101	.135	.175	.219
	Noise Criteria	–	–	20	25	30	32	38
	Throw	6-10-16	8-11-18	10-14-20	12-15-21	13-16-23	14-17-25	15-18-26
8" Round Inlet	**Airflow, CFM**	**125**	**160**	**195**	**230**	**265**	**300**	**335**
	Total Pressure	.041	.067	.099	.138	.183	.235	.293
	Static Pressure	.033	.054	.080	.111	.148	.189	.236
	Noise Criteria	–	–	20	25	30	34	38
	Throw	8-12-17	10-14-20	12-15-21	14-17-24	15-18-25	16-19-27	17-20-28
10" Oval Inlet	**Airflow, CFM**	**140**	**180**	**220**	**260**	**300**	**340**	**380**
	Total Pressure	.038	.063	.094	.131	.174	.224	.280
	Static Pressure	.033	.055	.082	.114	.152	.195	.244
	Noise Criteria	–	–	20	25	30	34	37
	Throw	10-13-18	12-15-21	13-16-23	15-17-25	16-19-27	17-20-28	18-21-30
12" Oval Inlet	**Airflow, CFM**	**180**	**230**	**280**	**330**	**380**	**430**	**480**
	Total Pressure	.047	.077	.114	.158	.210	.269	.335
	Static Pressure	.044	.071	.105	.146	.194	.248	.309
	Noise Criteria	–	18	24	30	34	38	42
	Throw	12-15-21	14-17-24	15-18-26	16-20-28	18-21-30	19-23-32	20-24-34

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**
	Total Pressure	.021	.046	.082	.129	.185	.252	.330
	Static Pressure	.015	.033	.059	.092	.133	.181	.236
	Noise Criteria	–	–	15	23	28	33	38
	Throw	2-4-13	5-10-20	8-13-23	11-17-28	13-19-27	15-21-30	18-29-32
8" Round Inlet	**Airflow, CFM**	**90**	**125**	**160**	**195**	**230**	**265**	**300**
	Total Pressure	.029	.056	.091	.136	.189	.251	.322
	Static Pressure	.025	.048	.079	.117	.162	.215	.276
	Noise Criteria	–	–	19	25	30	35	39
	Throw	4-9-17	9-13-23	11-17-25	13-20-28	17-22-32	19-25-34	23-29-38
10" Round Inlet	**Airflow, CFM**	**125**	**160**	**195**	**230**	**265**	**300**	**335**
	Total Pressure	.053	.087	.129	.179	.238	.305	.381
	Static Pressure	.050	.081	.121	.168	.223	.286	.357
	Noise Criteria	–	16	21	26	31	35	39
	Throw	9-13-23	11-17-25	13-20-28	17-22-32	19-25-34	23-29-38	24-30-40

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**110**	**150**	**190**	**230**	**270**	**310**	**350**
	Total Pressure	.043	.081	.129	.190	.261	.345	.439
	Static Pressure	.024	.044	.071	.104	.143	.189	.241
	Noise Criteria	–	–	16	22	27	31	36
	Throw	3-7-17	4-9-21	8-14-28	11-18-31	13-20-33	16-23-36	18-27-38
8" Round Inlet	**Airflow, CFM**	**180**	**225**	**270**	**315**	**360**	**405**	**450**
	Total Pressure	.060	.093	.135	.183	.239	.303	.374
	Static Pressure	.045	.070	.101	.137	.179	.226	.280
	Noise Criteria	–	–	20	26	29	34	37
	Throw	7-13-27	11-18-31	13-20-33	16-23-36	19-28-39	20-28-40	23-30-42
10" Oval Inlet	**Airflow, CFM**	**230**	**280**	**330**	**380**	**430**	**480**	**530**
	Total Pressure	.064	.095	.132	.175	.224	.280	.341
	Static Pressure	.051	.076	.106	.140	.180	.224	.273
	Noise Criteria	–	17	22	27	31	34	37
	Throw	11-18-31	14-21-34	17-26-38	19-28-39	21-29-41	24-31-43	26-32-45
12" Oval Inlet	**Airflow, CFM**	**220**	**280**	**340**	**400**	**460**	**520**	**580**
	Total Pressure	.039	.063	.093	.128	.170	.217	.270
	Static Pressure	.032	.052	.077	.107	.141	.180	.224
	Noise Criteria	–	–	20	25	29	33	37
	Throw	9-16-30	14-21-34	17-26-38	20-28-40	23-30-42	26-32-45	29-34-48

2 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**135**	**180**	**225**	**270**	**315**	**360**	**405**
	Total Pressure	.060	.107	.167	.241	.328	.428	.542
	Static Pressure	.031	.055	.085	.123	.167	.219	.277
	Noise Criteria	–	–	17	23	28	33	40
	Throw	3-7-17	4-8-20	7-13-27	11-17-30	12-19-32	14-22-35	17-26-38
8" Round Inlet	**Airflow, CFM**	**175**	**230**	**285**	**340**	**395**	**450**	**505**
	Total Pressure	.050	.086	.132	.188	.254	.329	.415
	Static Pressure	.034	.059	.090	.128	.173	.225	.283
	Noise Criteria	–	–	18	23	27	32	36
	Throw	3-7-20	7-13-27	11-18-31	13-20-33	16-23-36	19-28-39	20-29-41
10" Oval Inlet	**Airflow, CFM**	**215**	**280**	**345**	**410**	**475**	**540**	**585**
	Total Pressure	.051	.087	.131	.185	.249	.322	.378
	Static Pressure	.040	.068	.103	.145	.195	.252	.296
	Noise Criteria	–	–	19	25	29	33	36
	Throw	7-14-28	11-18-31	14-21-34	17-26-38	19-28-39	21-29-41	23-30-42
12" Oval Inlet	**Airflow, CFM**	**295**	**350**	**425**	**500**	**575**	**650**	**725**
	Total Pressure	.054	.075	.111	.154	.203	.260	.323
	Static Pressure	.045	.063	.093	.128	.170	.217	.270
	Noise Criteria	–	15	22	27	32	35	39
	Throw	9-16-30	14-21-34	17-26-38	20-28-40	23-30-42	26-32-45	27-33-46

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH

3 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**110**	**140**	**170**	**200**	**230**	**260**	**290**
	Total Pressure	.043	.070	.103	.143	.189	.242	.301
	Static Pressure	.025	.041	.061	.084	.111	.142	.176
	Noise Criteria	–	15	21	26	31	35	40
	Throw	2-5-15	4-9-19	6-11-23	8-13-27	10-15-31	12-17-34	14-19-37
8" Round Inlet	**Airflow, CFM**	**150**	**200**	**250**	**300**	**350**	**400**	**450**
	Total Pressure	.042	.074	.115	.166	.226	.295	.374
	Static Pressure	.029	.052	.081	.116	.158	.206	.261
	Noise Criteria	–	15	22	28	33	37	41
	Throw	4-10-20	7-13-23	10-16-26	13-19-30	16-22-33	19-25-36	22-28-39
10" Round Inlet	**Airflow, CFM**	**225**	**275**	**325**	**375**	**425**	**475**	**525**
	Total Pressure	.057	.086	.120	.159	.204	.255	.312
	Static Pressure	.046	.068	.095	.127	.163	.204	.249
	Noise Criteria	–	17	23	28	32	36	40
	Throw	9-15-30	12-18-33	15-21-36	18-27-42	21-31-45	23-34-48	26-38-51

3 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Total Pressure	.030	.047	.068	.092	.120	.152	.188
	Static Pressure	.024	.038	.055	.075	.098	.124	.153
	Noise Criteria	–	–	–	20	24	28	36
	Throw	3-5-16	4-8-20	6-13-25	8-14-26	10-16-28	13-19-31	14-20-32
8" Round Inlet	**Airflow, CFM**	**180**	**235**	**290**	**345**	**400**	**455**	**510**
	Total Pressure	.046	.078	.118	.167	.225	.291	.366
	Static Pressure	.029	.049	.075	.106	.143	.185	.232
	Noise Criteria	–	–	18	24	28	33	36
	Throw	6-11-23	11-15-28	14-19-31	18-23-35	19-25-38	22-27-40	29-29-41
10" Oval Inlet	**Airflow, CFM**	**270**	**330**	**390**	**450**	**510**	**570**	**630**
	Total Pressure	.045	.067	.094	.125	.160	.200	.244
	Static Pressure	.030	.044	.062	.082	.106	.132	.161
	Noise Criteria	–	–	19	23	27	31	35
	Throw	14-21-34	16-24-36	19-27-37	22-28-38	24-29-41	26-31-44	27-32-46
12" Oval Inlet	**Airflow, CFM**	**275**	**350**	**425**	**500**	**575**	**650**	**725**
	Total Pressure	.030	.048	.070	.098	.129	.165	.205
	Static Pressure	.022	.035	.052	.072	.096	.122	.152
	Noise Criteria	–	–	15	20	25	29	32
	Throw	14-21-34	18-23-35	21-27-37	24-29-41	26-31-44	27-33-46	28-35-48

3 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**170**	**200**	**230**	**260**	**290**	**320**	**350**
	Total Pressure	.053	.073	.096	.123	.153	.186	.223
	Static Pressure	.040	.055	.073	.094	.117	.142	.170
	Noise Criteria	–	15	21	25	30	35	40
	Throw	1-3-10	3-5-12	5-7-14	7-9-16	9-11-18	11-13-20	13-15-22
8" Round Inlet	**Airflow, CFM**	**230**	**280**	**330**	**380**	**430**	**480**	**530**
	Total Pressure	.046	.068	.095	.125	.161	.200	.244
	Static Pressure	.034	.051	.071	.094	.120	.149	.182
	Noise Criteria	–	15	20	24	28	32	36
	Throw	2-5-15	3-7-18	4-10-19	6-12-21	7-14-22	9-15-23	11-16-24
10" Oval Inlet	**Airflow, CFM**	**300**	**375**	**450**	**525**	**600**	**675**	**750**
	Total Pressure	.046	.072	.104	.141	.184	.233	.288
	Static Pressure	.034	.053	.076	.104	.136	.072	.212
	Noise Criteria	–	16	21	26	31	34	38
	Throw	4-8-18	6-12-21	8-14-23	11-17-24	13-18-26	14-19-28	16-21-29
12" Oval Inlet	**Airflow, CFM**	**375**	**475**	**575**	**675**	**775**	**875**	**975**
	Total Pressure	.046	.074	.108	.149	.197	.251	.312
	Static Pressure	.034	.054	.079	.109	.143	.183	.227
	Noise Criteria	–	15	21	26	31	36	40
	Throw	6-13-21	9-15-23	12-18-25	14-19-28	16-21-30	18-22-31	19-23-33

See page C73 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Total Pressure	.041	.064	.093	.126	.165	.209	.258
	Static Pressure	.018	.028	.040	.055	.072	.091	.112
	Noise Criteria	–	15	20	26	31	35	39
	Throw	2-4-14	3-7-18	4-10-21	6-12-25	8-14-28	10-16-33	12-17-37
8" Round Inlet	**Airflow, CFM**	**175**	**225**	**275**	**325**	**375**	**425**	**475**
	Total Pressure	.044	.073	.109	.152	.203	.260	.325
	Static Pressure	.032	.052	.078	.109	.145	.186	.232
	Noise Criteria	–	15	21	27	31	35	40
	Throw	4-9-21	7-13-27	10-16-33	13-19-38	15-22-40	17-25-43	19-28-45
10" Oval Inlet	**Airflow, CFM**	**225**	**300**	**375**	**450**	**525**	**600**	**675**
	Total Pressure	.044	.078	.121	.175	.238	.310	.393
	Static Pressure	.033	.059	.092	.133	.181	.236	.299
	Noise Criteria	–	16	23	29	34	38	42
	Throw	7-13-27	12-18-36	15-22-40	18-27-44	21-31-48	24-36-51	27-38-54

4 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**160**	**200**	**240**	**280**	**320**	**360**	**400**
	Total Pressure	.036	.056	.080	.109	.143	.181	.223
	Static Pressure	.029	.045	.065	.089	.116	.147	.181
	Noise Criteria	–	15	21	26	31	36	41
	Throw	1-2-10	2-4-14	3-5-17	4-7-19	5-8-22	6-9-25	7-10-28
8" Round Inlet	**Airflow, CFM**	**230**	**290**	**350**	**410**	**470**	**530**	**590**
	Total Pressure	.042	.067	.097	.133	.175	.223	.276
	Static Pressure	.031	.049	.071	.098	.128	.163	.202
	Noise Criteria	–	15	21	27	32	36	40
	Throw	2-5-16	4-8-20	5-12-24	7-14-28	9-16-30	13-19-30	15-21-32
10" Oval Inlet	**Airflow, CFM**	**320**	**400**	**480**	**560**	**640**	**720**	**800**
	Total Pressure	.045	.071	.102	.139	.182	.230	.284
	Static Pressure	.038	.060	.086	.117	.153	.194	.239
	Noise Criteria	–	16	22	27	31	36	40
	Throw	4-10-22	7-14-28	10-17-31	13-20-33	15-22-35	17-25-38	19-28-40
12" Oval Inlet	**Airflow, CFM**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**
	Total Pressure	.051	.080	.115	.156	.204	.258	.318
	Static Pressure	.038	.060	.086	.117	.153	.193	.239
	Noise Criteria	–	16	22	27	32	36	40
	Throw	7-14-28	10-17-31	14-21-34	16-24-37	19-28-40	21-30-42	23-31-44

4 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**210**	**240**	**270**	**300**	**330**	**360**	**390**
	Total Pressure	.060	.078	.099	.122	.148	.176	.206
	Static Pressure	.049	.064	.080	.099	.120	.143	.168
	Noise Criteria	15	18	22	25	26	31	33
	Throw	1-3-11	2-3-13	2-4-15	3-5-17	4-6-19	5-7-21	6-8-22
8" Round Inlet	**Airflow, CFM**	**320**	**370**	**420**	**470**	**520**	**570**	**620**
	Total Pressure	.066	.089	.114	.143	.175	.211	.249
	Static Pressure	.054	.072	.093	.116	.142	.171	.202
	Noise Criteria	15	21	24	28	32	34	37
	Throw	3-6-18	4-9-21	5-11-22	6-13-23	7-15-24	8-17-25	9-19-27
10" Oval Inlet	**Airflow, CFM**	**340**	**420**	**500**	**580**	**660**	**740**	**820**
	Total Pressure	.044	.067	.095	.128	.166	.208	.256
	Static Pressure	.037	.056	.079	.107	.138	.173	.213
	Noise Criteria	–	15	20	25	30	34	39
	Throw	3-7-19	5-11-22	7-14-24	9-16-26	12-18-27	14-20-29	16-22-31
12" Oval Inlet	**Airflow, CFM**	**525**	**625**	**725**	**825**	**925**	**1025**	**1125**
	Total Pressure	.067	.095	.128	.165	.208	.255	.307
	Static Pressure	.063	.090	.120	.156	.196	.241	.290
	Noise Criteria	15	20	25	29	33	36	40
	Throw	7-15-24	10-17-27	13-20-29	15-22-30	17-23-32	19-24-34	21-25-36

See page C73 for performance data notes.

HOW TO SPECIFY

MODELS 5775(I), 5710(I) AND 5715(I)
'WIPER BLADE' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR LAY-IN T-BAR

SUGGESTED SPECIFICATION:

Standard Lay-in T-Bar

Furnish and install **Nailor Model** (select one) **5775(I)** (3/4" [19] slot), **5710(I)** (1" [25] slot) or **5715(I)** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. Multi-slot units shall include extruded aluminum center T-Bars. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5775I, 5710I or 5715I shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

MODELS 5775(I)-F, 5710(I)-F, 5715(I)-F, 5775(I)-F2, 5710(I)-F2 AND 5715(I)-F2
'WIPER BLADE' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS

SUGGESTED SPECIFICATION:

Narrow Regressed T-Bar, Straddle Mount

Furnish and install **Nailor Model** (select one) **5775(I)-F** (3/4" [19] slot), **5710(I)-F** (1" [25] slot) or **5715(I)-F** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two slots as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish. Models 5775I-F, 5710I-F or 5715I-F shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Narrow Regressed T-Bar, Flat Face T-Bar(s)

Furnish and install **Nailor Model** (select one) **5775(I)-F2** (3/4" [19] slot), **5710(I)-F2** (1" [25] slot) or **5715(I)-F2** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. Multi-slot units shall include extruded aluminum center T-Bars. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing or factory supplied 1" (25) flat face center T-Bar when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one, two, three or four slots as specified. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5775I-F2, 5710I-F2 or 5715I-F2 shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER

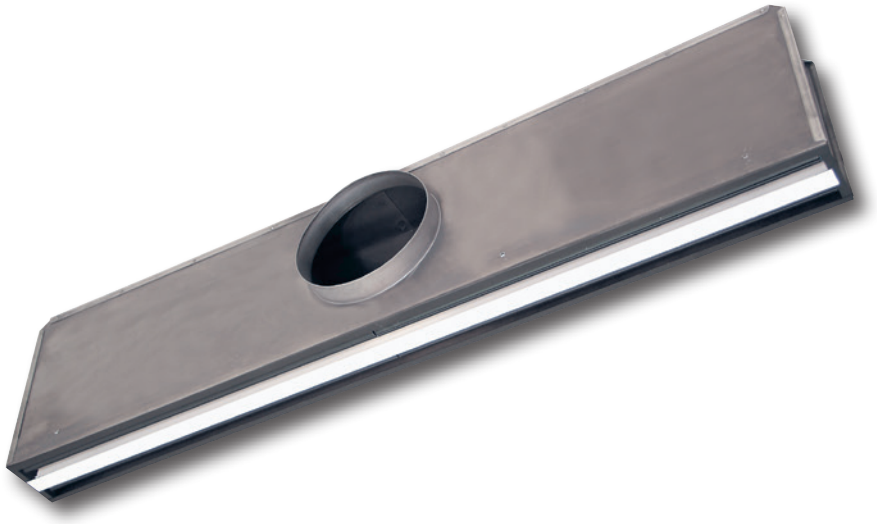
- FOR STANDARD LAY-IN T-BAR
- SUPPLY

Uninsulated Models:

5850 1/2" (13) Slot Width
5875 3/4" (19) Slot Width
5810 1" (25) Slot Width

Insulated Models:

5850I 1/2" (13) Slot Width
5875I 3/4" (19) Slot Width
5810I 1" (25) Slot Width



Model 5810

Model Series 5800 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, so offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the 5800 Series design offers the discerning engineer and architect premium quality construction and design features.

Model Series 5800 features the same 'ice-tong' pattern controller as used in the 5000 Series Linear Slot Diffuser, providing total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser, and pattern controllers may also be adjusted for volume control.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow. Therefore, the 5800 Series provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'. Pattern controllers also permit volume control.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.
- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 36" (900) and longer, permitting a 2-way opposite blow pattern from a single slot.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum and pattern controllers. Aluminum center T-Bars.

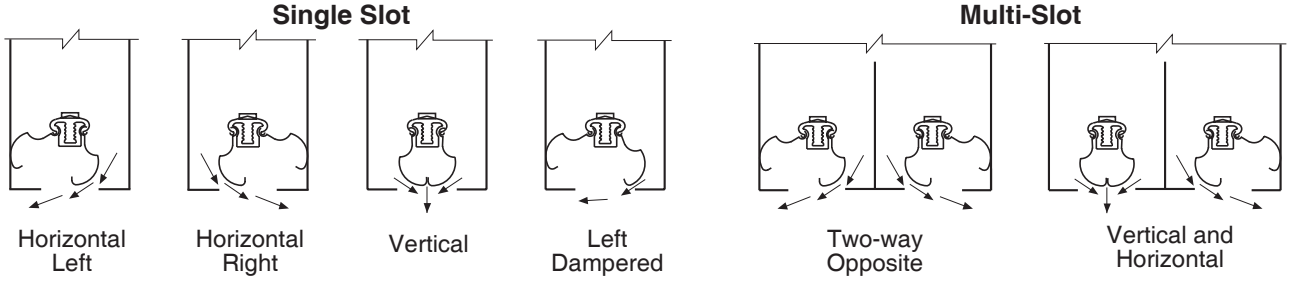
FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

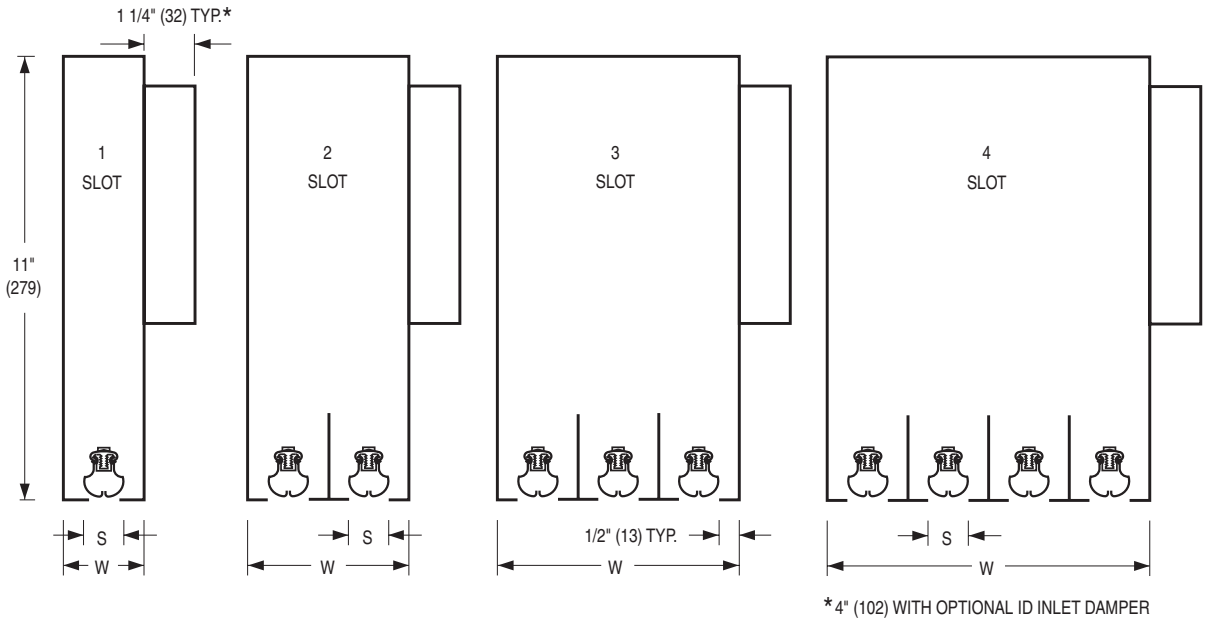
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

Air Patterns



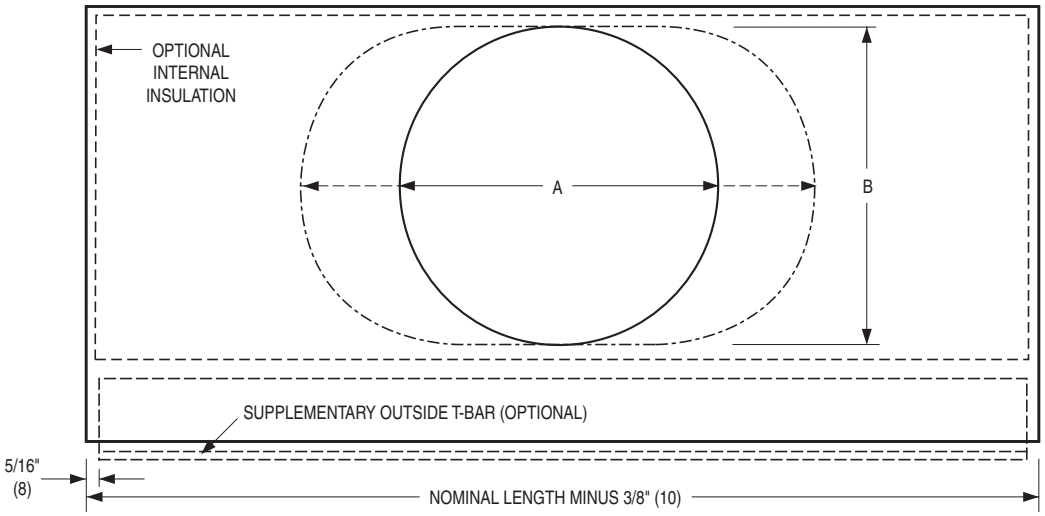
DIMENSIONAL DATA:

MODEL SERIES: 5800 • STANDARD LAY-IN T-BAR MODELS



		S Slot Width		
		1/2" (13)	3/4" (19)	1" (25)
W Width	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)
	2 Slot	3" (76)	3 1/2" (89)	4" (102)
	3 Slot	4 1/2" (114)	5 1/4" (133)	6" (152)
	4 Slot	6" (152)	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER

- FOR NARROW REGRESSED T-BAR
- SUPPLY

Straddle Mount Models:

5850(I)-F 1/2" (13) Slot Width
5875(I)-F 3/4" (19) Slot Width
5810(I)-F 1" (25) Slot Width

Flat Face Center T-Bar Models:

5850(I)-F2 1/2" (13) Slot Width
5875(I)-F2 3/4" (19) Slot Width
5810(I)-F2 1" (25) Slot Width

• Suffix 'I' adds internal insulation

Model 5810-F2

Model Series 5800-F and 5800-F2 Plenum Slot Ceiling Diffusers have been specially developed to integrate with and compliment 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features an 'ice tong' pattern controller that provides total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may also be adjusted for volume control. In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow.

The single slot units, for all models, are for installation alongside a main T-Bar runner. The 5800-F Series two slot units incorporate a center hat channel and are designed to straddle, longitudinally, along a main T-Bar runner. The 5800-F2 Series multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5800-F is available in a one or two slot configuration and Series 5800-F2 is available in a one, two, three, or four slot configurations.
- The single slot units are for installation alongside a main runner.
- 5800-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5800-F2 multi-slot units include 1" (25) flat face T-Bars.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel. The 5800-F2 Series includes center T-Bars on multi-slot units that are extruded aluminum.

FINISH OPTIONS:

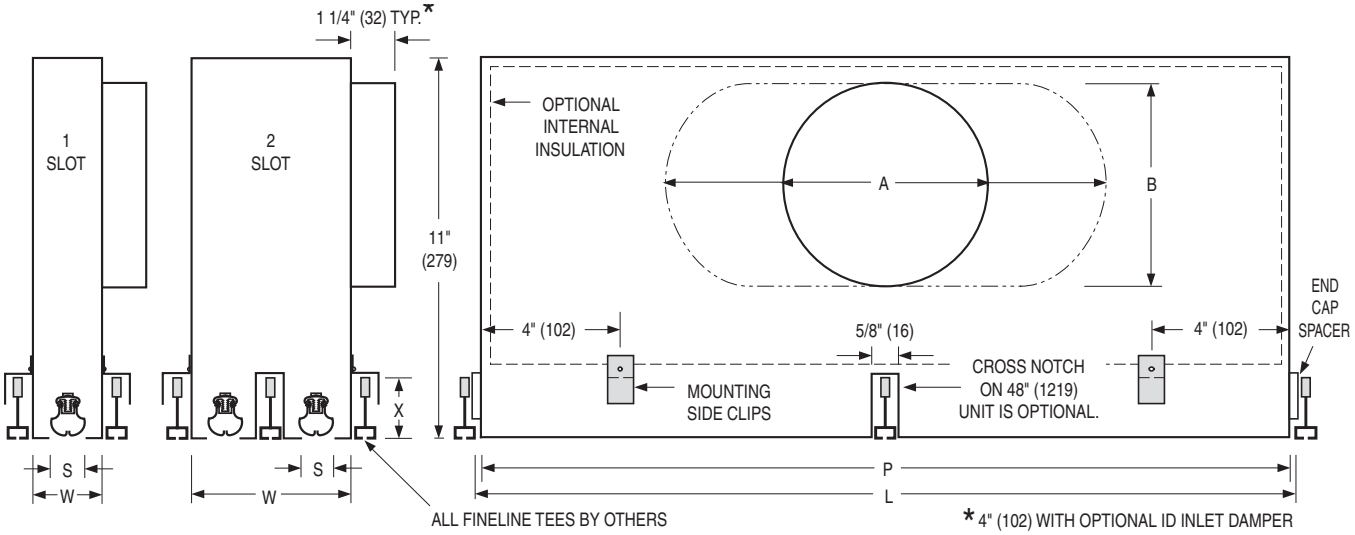
Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

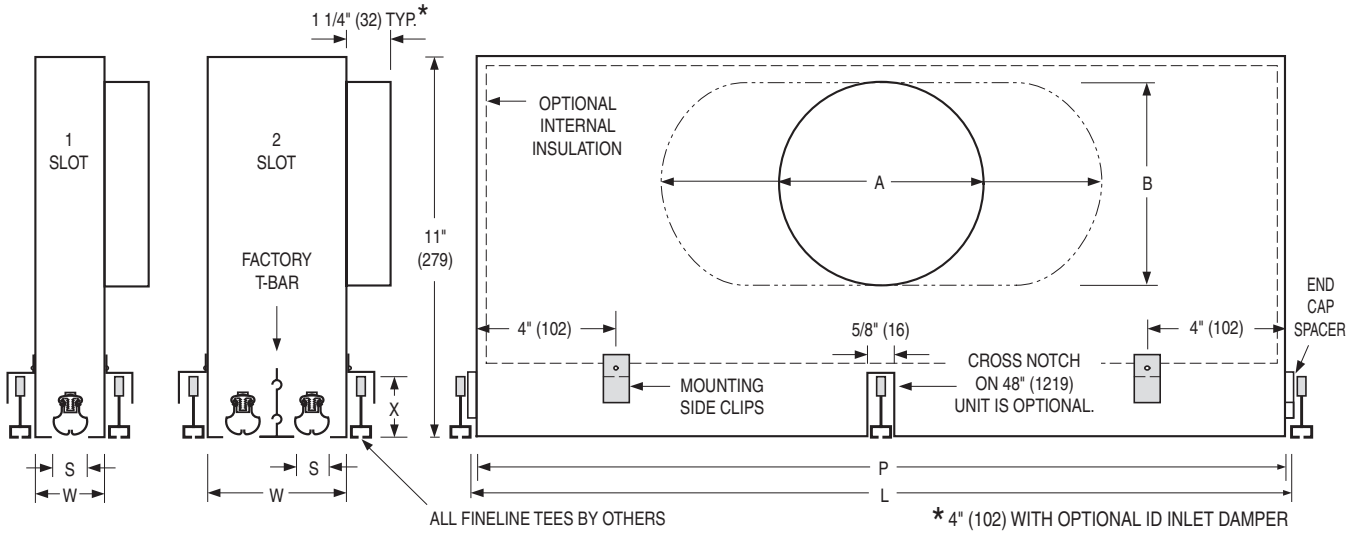
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

DIMENSIONAL DATA:

MODEL SERIES: 5800-F AND 5800-F2 • NARROW REGRESSED T-BAR MODELS



MODEL SERIES 5800-F



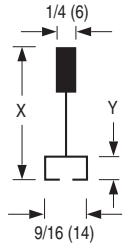
MODEL SERIES 5800-F2

Imperial Ceiling Modules (in.)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



Model Series 5800-F

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5850-F	1/2" (13)	1 1/2" (38)	3 5/8" (92)
5875-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5810-F	1" (25)	2" (51)	4 5/8" (117)

Model Series 5800-F2

Model	S Slot Width	Width W			
		1 Slot	2 Slot	3 Slot	4 Slot
5850-F2	1/2" (13)	1 1/2" (38)	3" (76)	4 1/2" (114)	6" (152)
5875-F2	3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
5810-F2	1" (25)	2" (51)	4" (102)	6" (152)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)

T-Bar Type (Manufacturer)		X	Y
A	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
C	Certainteed Smoothline	1 5/8" (41)	5/16" (8)
D	Donn Fineline	1 25/32" (45)	5/16" (8)

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**65**	**80**	**95**	**110**	**125**	**140**
	Total Pressure	.120	.171	.228	.289	.356	.429	.506
	Static Pressure	.115	.164	.216	.274	.335	.401	.472
	Noise Criteria	19	25	29	33	37	40	42
	Throw	7-12-21	10-15-25	13-18-28	15-21-31	17-23-33	19-25-35	20-26-37
8" Round Inlet	**Airflow, CFM**	**55**	**70**	**85**	**105**	**120**	**135**	**150**
	Total Pressure	.133	.189	.251	.318	.390	.467	.550
	Static Pressure	.132	.187	.247	.312	.382	.457	.538
	Noise Criteria	18	24	28	33	36	39	41
	Throw	9-14-24	13-19-30	14-21-33	18-24-36	20-26-38	22-28-40	23-30-42

1 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**55**	**75**	**90**	**110**	**125**	**145**	**160**
	Total Pressure	.119	.169	.218	.272	.327	.385	.442
	Static Pressure	.114	.159	.204	.251	.299	.347	.397
	Noise Criteria	14	21	27	31	35	38	41
	Throw	6-10-20	9-14-24	11-17-28	13-20-31	15-22-33	16-24-35	17-26-37
8" Round Inlet	**Airflow, CFM**	**65**	**85**	**100**	**120**	**135**	**155**	**170**
	Total Pressure	.126	.165	.205	.245	.285	.328	.370
	Static Pressure	.123	.161	.199	.237	.276	.315	.354
	Noise Criteria	16	22	27	31	34	37	40
	Throw	8-13-23	11-16-27	13-19-30	15-22-33	17-24-35	18-25-37	20-27-39
10" Oval Inlet	**Airflow, CFM**	**75**	**95**	**110**	**130**	**145**	**165**	**180**
	Total Pressure	.132	.168	.205	.243	.281	.320	.359
	Static Pressure	.131	.166	.202	.239	.276	.314	.351
	Noise Criteria	16	21	26	30	33	36	39
	Throw	8-13-24	11-17-28	13-20-31	16-22-34	17-24-36	19-26-38	20-28-40

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**85**	**100**	**120**	**140**	**160**	**175**	**195**
	Total Pressure	.074	.117	.157	.202	.248	.307	.361
	Static Pressure	.068	.107	.141	.178	.216	.267	.309
	Noise Criteria	23	30	33	36	38	40	43
	Throw	4-6-14	7-10-17	6-11-18	8-13-21	9-14-24	9-15-25	11-17-26
8" Round Inlet	**Airflow, CFM**	**80**	**95**	**115**	**135**	**155**	**170**	**190**
	Total Pressure	.091	.127	.165	.204	.244	.283	.324
	Static Pressure	.088	.123	.159	.195	.232	.270	.307
	Noise Criteria	16	22	27	31	35	37	40
	Throw	9-10-15	9-12-17	11-14-18	13-15-19	14-18-20	15-19-23	18-22-26
10" Oval Inlet	**Airflow, CFM**	**110**	**125**	**145**	**165**	**185**	**200**	**220**
	Total Pressure	.097	.129	.172	.209	.258	.299	.352
	Static Pressure	.095	.126	.169	.205	.252	.292	.343
	Noise Criteria	22	27	30	33	36	38	41
	Throw	10-11-14	11-12-16	12-13-18	12-14-20	13-15-21	14-17-23	15-18-25
12" Oval Inlet	**Airflow, CFM**	**125**	**145**	**170**	**190**	**215**	**235**	**260**
	Total Pressure	.107	.142	.192	.235	.292	.341	.406
	Static Pressure	.106	.141	.190	.232	.289	.337	.401
	Noise Criteria	21	25	30	33	36	38	41
	Throw	9-11-16	12-13-17	11-15-18	13-16-20	14-17-22	15-18-24	16-20-28

See page C32 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**65**	**85**	**110**	**130**	**155**	**175**	**200**
	Total Pressure	.058	.100	.154	.203	.274	.350	.436
	Static Pressure	.050	.087	.132	.173	.231	.295	.365
	Noise Criteria	16	22	27	29	33	35	38
	Throw	3-5-10	5-7-14	7-10-17	8-11-18	9-13-20	9-14-22	10-15-23
8" Round Inlet	**Airflow, CFM**	**75**	**100**	**125**	**145**	**170**	**195**	**220**
	Total Pressure	.061	.099	.145	.196	.256	.323	.397
	Static Pressure	.058	.094	.136	.185	.240	.302	.370
	Noise Criteria	19	24	27	31	34	37	39
	Throw	6-8-15	8-11-18	9-13-21	10-14-23	12-16-25	12-17-27	13-19-29
10" Oval Inlet	**Airflow, CFM**	**85**	**110**	**135**	**160**	**185**	**210**	**235**
	Total Pressure	.065	.105	.152	.207	.269	.339	.416
	Static Pressure	.063	.102	.148	.201	.261	.328	.403
	Noise Criteria	18	24	28	32	36	39	41
	Throw	5-7-15	7-11-19	9-13-22	11-15-24	12-17-26	13-19-28	14-20-30
12" Oval Inlet	**Airflow, CFM**	**110**	**140**	**170**	**200**	**230**	**260**	**290**
	Total Pressure	.058	.094	.136	.184	.239	.301	.370
	Static Pressure	.057	.091	.132	.179	.232	.292	.358
	Noise Criteria	24	28	32	35	37	40	42
	Throw	5-8-16	7-11-20	10-14-23	11-16-26	13-18-28	14-20-30	15-22-32

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**70**	**90**	**110**	**130**	**150**	**170**
	Total Pressure	.086	.123	.162	.204	.250	.298	.348
	Static Pressure	.090	.127	.167	.209	.252	.296	.342
	Noise Criteria	15	23	28	33	36	40	43
	Throw	8-13-22	11-17-26	14-20-30	16-23-33	18-25-36	20-27-38	21-28-40
8" Round Inlet	**Airflow, CFM**	**80**	**100**	**120**	**140**	**160**	**180**	**200**
	Total Pressure	.053	.088	.130	.178	.235	.298	.368
	Static Pressure	.050	.082	.121	.166	.218	.276	.341
	Noise Criteria	-	15	23	24	34	36	41
	Throw	9-15-25	13-19-30	16-22-33	19-25-37	21-27-39	23-29-42	25-31-44
10" Oval Inlet	**Airflow, CFM**	**85**	**110**	**135**	**160**	**185**	**210**	**220**
	Total Pressure	.050	.081	.119	.164	.215	.273	.337
	Static Pressure	.048	.078	.115	.158	.207	.262	.324
	Noise Criteria	15	22	26	31	34	37	40
	Throw	9-15-26	13-19-30	16-21-33	18-24-35	20-26-37	22-27-39	23-29-41

2 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**90**	**120**	**150**	**180**	**210**	**240**	**270**
	Total Pressure	.059	.100	.150	.209	.277	.355	.443
	Static Pressure	.045	.074	.110	.152	.200	.254	.315
	Noise Criteria	11	19	25	30	34	37	40
	Throw	7-12-22	9-16-26	11-19-30	13-22-32	15-24-35	16-26-37	17-28-38
8" Round Inlet	**Airflow, CFM**	**105**	**135**	**165**	**200**	**235**	**265**	**300**
	Total Pressure	.049	.082	.122	.169	.223	.284	.353
	Static Pressure	.043	.071	.105	.145	.191	.244	.302
	Noise Criteria	-	19	25	30	34	38	41
	Throw	8-13-22	11-17-26	13-19-29	15-22-32	17-24-34	19-25-36	20-27-38
10" Oval Inlet	**Airflow, CFM**	**115**	**150**	**185**	**225**	**260**	**295**	**330**
	Total Pressure	.076	.125	.171	.227	.279	.323	.371
	Static Pressure	.073	.120	.163	.215	.263	.302	.344
	Noise Criteria	14	21	26	31	35	38	41
	Throw	10-15-26	12-18-29	14-20-32	16-22-34	18-24-36	19-25-37	20-27-39
12" Oval Inlet	**Airflow, CFM**	**120**	**160**	**200**	**240**	**280**	**320**	**360**
	Total Pressure	.093	.139	.188	.234	.273	.316	.347
	Static Pressure	.091	.136	.183	.226	.263	.302	.330
	Noise Criteria	17	23	28	32	35	38	40
	Throw	9-15-25	13-19-30	16-23-34	18-25-37	20-28-40	22-30-42	23-32-44

See page C32 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**100**	**135**	**170**	**210**	**245**	**280**	**315**
	Total Pressure	.061	.103	.155	.221	.294	.377	.470
	Static Pressure	.041	.068	.101	.141	.187	.240	.298
	Noise Criteria	17	24	28	33	36	39	42
	Throw	5-9-18	8-13-22	10-16-25	11-18-27	13-20-29	14-22-31	15-23-33
8" Round Inlet	**Airflow, CFM**	120	160	200	240	280	320	360
	Total Pressure	.045	.076	.113	.159	.211	.271	.338
	Static Pressure	.036	.060	.089	.125	.165	.211	.263
	Noise Criteria	12	19	25	30	35	38	42
	Throw	7-11-19	10-14-22	11-16-25	13-18-27	14-20-29	15-21-30	16-22-32
10" Oval Inlet	**Airflow, CFM**	**135**	**180**	**225**	**265**	**310**	**355**	**400**
	Total Pressure	.043	.072	.107	.149	.198	.254	.317
	Static Pressure	.038	.063	.094	.131	.173	.222	.276
	Noise Criteria	15	22	27	31	35	39	42
	Throw	8-13-20	11-15-23	13-16-26	15-18-28	16-20-30	17-20-31	18-22-33
12" Oval Inlet	**Airflow, CFM**	**165**	**220**	**275**	**335**	**390**	**430**	**450**
	Total Pressure	.043	.073	.109	.153	.204	.261	.326
	Static Pressure	.040	.066	.099	.138	.183	.235	.292
	Noise Criteria	20	28	30	34	37	41	43
	Throw	9-14-23	11-17-27	14-20-30	15-22-33	17-23-35	18-25-37	19-26-38

2 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**135**	**170**	**205**	**245**	**280**	**315**	**350**
	Total Pressure	.118	.167	.227	.283	.346	.417	.487
	Static Pressure	.084	.109	.141	.162	.186	.211	.229
	Noise Criteria	17	22	27	30	33	36	41
	Throw	4-7-13	5-10-16	6-12-19	7-14-21	8-16-23	9-17-24	9-18-26
8" Round Inlet	**Airflow, CFM**	**140**	**180**	**220**	**260**	**300**	**340**	**370**
	Total Pressure	.053	.079	.112	.150	.194	.243	.298
	Static Pressure	.037	.055	.078	.104	.134	.168	.206
	Noise Criteria	15	21	26	30	33	37	40
	Throw	6-9-15	7-11-18	8-12-19	9-14-21	10-15-22	11-16-24	11-17-25
10" Oval Inlet	**Airflow, CFM**	**150**	**200**	**250**	**310**	**350**	**400**	**440**
	Total Pressure	.044	.067	.094	.127	.164	.206	.251
	Static Pressure	.035	.053	.074	.099	.128	.160	.196
	Noise Criteria	18	23	28	31	34	37	39
	Throw	7-10-18	9-13-22	11-16-25	13-18-28	14-20-30	15-22-32	16-23-34
12" Oval Inlet	**Airflow, CFM**	**190**	**240**	**290**	**340**	**390**	**420**	**520**
	Total Pressure	.039	.059	.083	.111	.144	.181	.229
	Static Pressure	.034	.051	.072	.096	.124	.155	.190
	Noise Criteria	22	26	30	32	35	37	38
	Throw	7-11-19	10-16-25	12-19-29	14-22-33	16-24-36	17-26-39	18-28-41

See page C32 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

3 Slot • 24" (1219) Long

6" Round Inlet	**Airflow, CFM**	**85**	**115**	**140**	**170**	**195**	**225**	**250**
	Total Pressure	.108	.155	.199	.253	.301	.362	.417
	Static Pressure	.095	.132	.164	.202	.234	.273	.307
	Noise Criteria	19	25	30	34	37	40	42
	Throw	10-16-25	13-19-28	15-21-30	17-23-32	18-24-33	19-26-35	20-27-36
8" Round Inlet	**Airflow, CFM**	**100**	**130**	**160**	**190**	**220**	**240**	**265**
	Total Pressure	.084	.137	.187	.235	.289	.320	.368
	Static Pressure	.079	.128	.173	.215	.263	.289	.330
	Noise Criteria	15	22	27	31	35	37	40
	Throw	11-17-26	14-20-30	17-22-32	19-24-34	21-26-36	22-27-37	23-28-39
10" Oval Inlet	**Airflow, CFM**	**105**	**135**	**160**	**190**	**215**	**245**	**270**
	Total Pressure	.070	.116	.160	.213	.261	.303	.348
	Static Pressure	.068	.112	.154	.204	.250	.289	.330
	Noise Criteria	13	20	25	30	34	37	40
	Throw	11-16-26	14-19-29	16-21-32	18-23-34	20-25-36	22-27-37	23-28-39

3 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**105**	**140**	**175**	**210**	**245**	**280**	**315**
	Total Pressure	.100	.107	.159	.222	.293	.373	.463
	Static Pressure	.044	.072	.105	.144	.187	.235	.288
	Noise Criteria	14	21	27	31	35	38	41
	Throw	6-10-20	9-15-25	12-18-29	14-21-32	16-24-34	17-26-36	18-28-38
8" Round Inlet	**Airflow, CFM**	**115**	**155**	**195**	**235**	**275**	**315**	**355**
	Total Pressure	.038	.064	.096	.135	.179	.230	.288
	Static Pressure	.031	.051	.075	.105	.138	.176	.219
	Noise Criteria	8	17	23	29	33	37	41
	Throw	6-10-19	9-14-24	12-17-27	14-20-30	16-22-33	18-24-35	19-26-37
10" Oval Inlet	**Airflow, CFM**	**135**	**180**	**225**	**265**	**310**	**355**	**400**
	Total Pressure	.045	.074	.107	.141	.184	.230	.282
	Static Pressure	.041	.066	.095	.124	.161	.200	.243
	Noise Criteria	17	24	28	32	35	38	41
	Throw	11-17-28	14-20-31	16-22-34	18-24-36	19-26-38	20-27-40	21-29-41
12" Oval Inlet	**Airflow, CFM**	**145**	**195**	**245**	**290**	**340**	**390**	**440**
	Total Pressure	.045	.075	.112	.156	.206	.264	.328
	Static Pressure	.042	.070	.104	.144	.191	.243	.302
	Noise Criteria	19	24	28	31	34	37	39
	Throw	10-15-26	13-19-30	16-23-34	19-25-37	21-27-39	22-29-41	24-31-43

3 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**130**	**180**	**200**	**255**	**290**	**340**	**375**
	Total Pressure	.076	.133	.200	.286	.375	.482	.588
	Static Pressure	.045	.075	.110	.151	.198	.251	.309
	Noise Criteria	13	21	26	31	35	38	40
	Throw	4-8-17	7-13-22	9-16-25	12-19-28	13-21-29	15-23-31	16-24-33
8" Round Inlet	**Airflow, CFM**	**155**	**200**	**245**	**290**	**335**	**380**	**425**
	Total Pressure	.046	.075	.111	.154	.203	.258	.320
	Static Pressure	.032	.053	.079	.108	.141	.179	.221
	Noise Criteria	10	18	24	30	34	38	41
	Throw	7-11-20	9-14-24	12-17-27	13-20-29	15-21-31	16-23-33	18-25-35
10" Oval Inlet	**Airflow, CFM**	**175**	**230**	**290**	**345**	**405**	**450**	**500**
	Total Pressure	.039	.067	.102	.144	.193	.250	.313
	Static Pressure	.030	.052	.079	.112	.149	.193	.241
	Noise Criteria	16	22	28	32	35	38	40
	Throw	7-12-22	10-16-26	13-19-30	15-21-32	17-23-35	18-25-37	19-26-37
12" Oval Inlet	**Airflow, CFM**	**185**	**250**	**315**	**380**	**445**	**510**	**575**
	Total Pressure	.033	.059	.093	.135	.184	.241	.306
	Static Pressure	.028	.051	.080	.115	.157	.206	.262
	Noise Criteria	8	17	24	29	34	38	41
	Throw	9-13-22	12-17-26	15-20-30	17-22-32	19-24-35	21-26-37	22-28-38

See page C32 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

3 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**180**	**235**	**285**	**340**	**390**	**445**	**495**
	Total Pressure	.053	.083	.118	.162	.211	.268	.330
	Static Pressure	.035	.053	.074	.099	.128	.160	.196
	Noise Criteria	13	20	25	30	33	36	39
	Throw	3-5-12	5-9-17	7-12-20	9-14-23	10-16-25	11-18-28	12-19-29
10" Oval Inlet	**Airflow, CFM**	**200**	**265**	**325**	**385**	**445**	**510**	**580**
	Total Pressure	.044	.071	.102	.140	.184	.235	.292
	Static Pressure	.032	.050	.071	.096	.125	.158	.194
	Noise Criteria	15	19	26	30	33	36	39
	Throw	5-8-16	8-12-21	10-15-25	12-17-28	14-19-31	16-21-33	17-22-35
12" Oval Inlet	**Airflow, CFM**	**220**	**290**	**360**	**430**	**500**	**570**	**665**
	Total Pressure	.036	.058	.086	.119	.157	.201	.254
	Static Pressure	.030	.047	.068	.093	.122	.155	.192
	Noise Criteria	15	21	26	30	34	37	39
	Throw	6-10-18	9-13-23	11-16-26	13-19-29	15-21-32	16-23-34	18-24-36

4 Slot • 24" (1219) Long

6" Round Inlet	**Airflow, CFM**	**100**	**125**	**155**	**180**	**205**	**215**	**240**
	Total Pressure	.100	.127	.178	.226	.279	.302	.361
	Static Pressure	.071	.099	.136	.169	.205	.220	.259
	Noise Criteria	18	24	29	33	36	37	40
	Throw	10-15-25	13-18-28	15-21-31	17-23-33	18-25-35	18-26-35	20-27-37
8" Round Inlet	**Airflow, CFM**	**110**	**145**	**175**	**205**	**230**	**260**	**280**
	Total Pressure	.100	.115	.154	.195	.232	.280	.314
	Static Pressure	.070	.104	.137	.172	.203	.243	.271
	Noise Criteria	18	25	30	34	37	40	42
	Throw	13-18-28	16-21-32	18-24-34	19-26-36	20-27-37	22-28-39	22-29-40
10" Oval Inlet	**Airflow, CFM**	**125**	**155**	**190**	**225**	**260**	**290**	**325**
	Total Pressure	.100	.115	.145	.174	.204	.231	.263
	Static Pressure	.087	.109	.136	.162	.188	.211	.238
	Noise Criteria	20	24	29	32	35	37	40
	Throw	14-19-29	17-22-32	19-24-34	21-26-37	22-28-38	23-29-40	25-31-41

4 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**115**	**155**	**195**	**235**	**275**	**315**	**355**
	Total Pressure	.064	.109	.164	.231	.307	.393	.490
	Static Pressure	.040	.066	.097	.132	.172	.216	.265
	Noise Criteria	12	19	25	30	34	37	40
	Throw	6-10-20	9-15-25	12-18-28	14-21-31	16-24-33	17-26-35	19-28-37
8" Round Inlet	**Airflow, CFM**	**125**	**170**	**210**	**255**	**295**	**340**	**380**
	Total Pressure	.038	.064	.096	.135	.179	.231	.287
	Static Pressure	.029	.048	.072	.099	.131	.168	.208
	Noise Criteria	10	18	24	29	33	37	40
	Throw	8-12-22	11-16-26	13-19-30	15-22-32	17-24-34	19-26-37	20-28-38
10" Oval Inlet	**Airflow, CFM**	**145**	**195**	**240**	**290**	**335**	**385**	**430**
	Total Pressure	.044	.072	.104	.138	.180	.226	.276
	Static Pressure	.039	.063	.091	.118	.153	.190	.231
	Noise Criteria	12	19	25	29	33	36	40
	Throw	9-14-25	12-17-28	14-20-31	16-22-34	18-24-36	19-26-38	20-27-39
12" Oval Inlet	**Airflow, CFM**	**170**	**220**	**270**	**320**	**370**	**420**	**470**
	Total Pressure	.044	.073	.109	.151	.200	.255	.317
	Static Pressure	.040	.067	.099	.137	.181	.231	.287
	Noise Criteria	17	23	28	32	35	38	40
	Throw	10-16-26	14-20-31	17-23-35	20-26-38	22-29-41	24-31-43	26-33-45

See page C32 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5850(I) • 1/2" (13) SLOT WIDTH

4 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**155**	**200**	**245**	**290**	**335**	**380**	**425**
	Total Pressure	.086	.142	.209	.287	.377	.478	.591
	Static Pressure	.044	.070	.102	.137	.177	.220	.269
	Noise Criteria	13	20	25	29	33	36	39
	Throw	5-10-19	8-14-22	10-17-24	12-19-27	14-21-28	15-23-30	17-24-31
8" Round Inlet	**Airflow, CFM**	**180**	**230**	**280**	**330**	**380**	**430**	**480**
	Total Pressure	.047	.076	.110	.151	.197	.248	.305
	Static Pressure	.029	.047	.068	.091	.118	.147	.179
	Noise Criteria	11	18	24	29	33	37	40
	Throw	4-8-17	6-11-21	8-14-24	10-16-27	11-18-29	12-19-31	13-21-33
10" Oval Inlet	**Airflow, CFM**	**195**	**255**	**310**	**370**	**420**	**480**	**520**
	Total Pressure	.040	.064	.093	.126	.164	.206	.253
	Static Pressure	.030	.049	.071	.096	.124	.154	.188
	Noise Criteria	12	20	26	31	35	39	41
	Throw	7-11-20	10-15-25	13-19-29	15-21-33	17-23-35	19-26-38	20-27-39
12" Oval Inlet	**Airflow, CFM**	**225**	**290**	**355**	**420**	**485**	**550**	**615**
	Total Pressure	.039	.063	.091	.124	.161	.202	.248
	Static Pressure	.032	.052	.074	.100	.129	.162	.197
	Noise Criteria	15	21	26	31	34	37	40
	Throw	8-13-23	12-18-28	15-21-32	18-24-36	20-27-39	22-29-41	24-31-44

4 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**200**	**260**	**320**	**380**	**440**	**500**	**560**
	Total Pressure	.046	.078	.118	.167	.224	.289	.362
	Static Pressure	.025	.041	.062	.088	.118	.152	.191
	Noise Criteria	17	21	24	29	34	38	42
	Throw	3-7-13	6-10-17	8-13-21	10-16-24	11-18-26	13-20-28	14-21-30
10" Oval Inlet	**Airflow, CFM**	**225**	**300**	**375**	**450**	**525**	**600**	**675**
	Total Pressure	.036	.062	.094	.134	.181	.234	.295
	Static Pressure	.024	.040	.061	.085	.114	.148	.185
	Noise Criteria	14	21	26	31	35	38	41
	Throw	6-9-18	8-13-22	10-15-25	12-18-28	13-19-30	14-21-32	15-22-33
12" Oval Inlet	**Airflow, CFM**	**250**	**340**	**430**	**520**	**610**	**700**	**790**
	Total Pressure	.034	.058	.089	.126	.171	.221	.279
	Static Pressure	.025	.042	.064	.090	.120	.155	.195
	Noise Criteria	12	16	23	28	33	37	40
	Throw	6-10-18	9-14-22	12-16-25	13-19-27	15-21-29	16-22-31	18-24-32

Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**55**	**70**	**85**	**100**	**115**	**130**	**145**
	Total Pressure	.108	.156	.211	.272	.341	.414	.496
	Static Pressure	.103	.149	.200	.257	.320	.389	.464
	Noise Criteria	18	24	28	32	36	38	42
	Throw	6-11-20	10-15-25	12-18-28	14-20-31	16-22-33	18-24-35	19-26-37
8" Round Inlet	**Airflow, CFM**	**60**	**75**	**90**	**110**	**125**	**140**	**155**
	Total Pressure	.120	.173	.233	.301	.375	.456	.543
	Static Pressure	.118	.170	.229	.294	.367	.445	.531
	Noise Criteria	18	24	28	33	36	39	41
	Throw	8-14-23	13-18-29	16-22-32	18-25-36	21-27-38	23-30-41	25-32-43

1 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**65**	**80**	**95**	**115**	**135**	**150**	**180**
	Total Pressure	.075	.116	.152	.217	.270	.315	.402
	Static Pressure	.068	.105	.136	.193	.238	.276	.344
	Noise Criteria	13	18	24	29	33	36	41
	Throw	6-9-19	8-12-22	9-14-24	11-17-27	12-19-30	13-20-31	15-22-34
8" Round Inlet	**Airflow, CFM**	**70**	**90**	**110**	**130**	**150**	**170**	**190**
	Total Pressure	.053	.095	.143	.192	.239	.279	.336
	Static Pressure	.050	.091	.136	.183	.226	.263	.316
	Noise Criteria	12	21	26	31	34	38	42
	Throw	6-9-19	9-13-24	11-16-28	13-19-31	15-21-33	17-23-36	18-25-38
10" Oval Inlet	**Airflow, CFM**	**80**	**105**	**125**	**145**	**165**	**190**	**210**
	Total Pressure	.075	.122	.177	.232	.282	.311	.355
	Static Pressure	.073	.120	.173	.226	.276	.302	.344
	Noise Criteria	14	21	27	32	36	38	41
	Throw	7-12-22	11-16-27	13-19-31	15-21-34	17-24-36	18-25-38	20-26-40

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**85**	**100**	**120**	**140**	**160**	**175**	**195**
	Total Pressure	.087	.124	.167	.217	.273	.306	.344
	Static Pressure	.080	.113	.151	.194	.241	.266	.292
	Noise Criteria	21	27	31	33	35	38	40
	Throw	2-4-13	2-6-15	3-7-16	5-9-19	6-10-22	6-11-22	7-11-22
8" Round Inlet	**Airflow, CFM**	**105**	**120**	**140**	**160**	**180**	**195**	**215**
	Total Pressure	.081	.115	.154	.198	.247	.275	.304
	Static Pressure	.078	.111	.148	.190	.236	.261	.286
	Noise Criteria	21	26	28	32	35	37	40
	Throw	2-5-15	3-7-17	4-9-19	6-11-22	8-12-25	8-13-25	9-14-26
10" Oval Inlet	**Airflow, CFM**	**120**	**130**	**150**	**170**	**190**	**210**	**240**
	Total Pressure	.082	.116	.155	.199	.247	.273	.300
	Static Pressure	.080	.113	.151	.193	.240	.265	.291
	Noise Criteria	21	23	28	30	32	34	38
	Throw	8-12-16	9-13-17	11-14-19	12-15-20	13-15-22	13-17-24	15-18-26
12" Oval Inlet	**Airflow, CFM**	**110**	**130**	**150**	**180**	**200**	**220**	**250**
	Total Pressure	.039	.044	.065	.085	.132	.151	.211
	Static Pressure	.038	.041	.063	.081	.128	.149	.201
	Noise Criteria	12	18	23	28	31	34	38
	Throw	9-12-16	10-13-17	11-14-19	12-15-21	14-16-23	15-17-24	16-18-26

See page C38 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

1 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**100**	**115**	**135**	**155**	**175**	**190**	**210**
	Total Pressure	.112	.144	.171	.201	.234	.259	.289
	Static Pressure	.094	.120	.138	.158	.179	.194	.210
	Noise Criteria	23	28	31	34	37	39	41
	Throw	4-6-14	6-9-17	7-12-20	8-14-22	9-15-24	10-17-26	11-18-28
8" Round Inlet	**Airflow, CFM**	**120**	**145**	**165**	**190**	**210**	**235**	**255**
	Total Pressure	.110	.143	.166	.192	.220	.242	.265
	Static Pressure	.102	.131	.151	.172	.196	.212	.229
	Noise Criteria	23	28	32	35	38	40	42
	Throw	5-7-16	8-11-20	9-15-23	10-17-26	12-18-28	13-21-30	14-22-32
10" Oval Inlet	**Airflow, CFM**	**135**	**160**	**185**	**215**	**240**	**265**	**290**
	Total Pressure	.107	.138	.160	.185	.211	.230	.251
	Static Pressure	.103	.132	.152	.174	.197	.213	.231
	Noise Criteria	22	27	32	34	38	40	41
	Throw	6-8-17	9-13-22	11-17-25	12-19-28	14-21-31	15-24-33	16-25-35
12" Oval Inlet	**Airflow, CFM**	**150**	**175**	**205**	**235**	**265**	**290**	**320**
	Total Pressure	.110	.141	.163	.187	.213	.232	.252
	Static Pressure	.107	.138	.158	.181	.205	.223	.241
	Noise Criteria	22	26	32	34	38	40	40
	Throw	6-8-17	9-13-22	12-17-24	13-19-27	15-21-30	16-24-32	17-25-34

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**55**	**80**	**105**	**140**	**165**	**180**	**200**
	Total Pressure	.031	.063	.101	.164	.217	.275	.340
	Static Pressure	.026	.052	.081	.130	.169	.212	.259
	Noise Criteria	2	12	19	26	30	32	37
	Throw	3-7-14	7-11-19	10-14-22	13-17-25	15-19-27	16-21-29	17-22-30
8" Round Inlet	**Airflow, CFM**	**100**	**120**	**140**	**160**	**180**	**200**	**220**
	Total Pressure	.036	.059	.088	.121	.159	.202	.249
	Static Pressure	.031	.051	.075	.103	.134	.170	.209
	Noise Criteria	-	22	23	29	32	34	40
	Throw	9-15-25	13-18-28	15-20-31	17-23-33	18-24-35	20-25-36	21-26-38
10" Oval Inlet	**Airflow, CFM**	**120**	**140**	**160**	**180**	**200**	**220**	**240**
	Total Pressure	.039	.065	.096	.132	.173	.219	.270
	Static Pressure	.038	.062	.091	.124	.163	.205	.253
	Noise Criteria	16	23	28	32	34	38	41
	Throw	11-17-27	15-20-31	17-23-34	20-26-36	21-27-38	23-29-39	24-30-41

2 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**90**	**120**	**150**	**180**	**210**	**240**	**270**
	Total Pressure	.045	.077	.117	.166	.223	.288	.362
	Static Pressure	.031	.051	.077	.109	.145	.187	.234
	Noise Criteria	5	14	21	27	32	36	40
	Throw	6-11-21	9-15-26	11-18-30	13-21-34	15-23-36	16-25-39	18-27-41
8" Round Inlet	**Airflow, CFM**	**115**	**145**	**180**	**210**	**245**	**275**	**310**
	Total Pressure	.049	.080	.117	.161	.212	.270	.336
	Static Pressure	.040	.063	.092	.125	.164	.208	.257
	Noise Criteria	15	19	24	29	34	37	41
	Throw	7-13-23	11-17-28	13-20-32	16-23-34	18-25-37	18-27-39	20-29-41
10" Oval Inlet	**Airflow, CFM**	**135**	**170**	**205**	**240**	**275**	**310**	**345**
	Total Pressure	.054	.082	.116	.156	.201	.252	.309
	Static Pressure	.050	.075	.106	.142	.183	.229	.280
	Noise Criteria	17	23	28	32	35	38	41
	Throw	9-15-26	13-19-30	15-22-34	18-24-37	20-27-40	22-29-42	23-30-44
12" Oval Inlet	**Airflow, CFM**	**155**	**200**	**245**	**290**	**335**	**380**	**425**
	Total Pressure	.054	.082	.116	.156	.201	.253	.309
	Static Pressure	.050	.077	.108	.145	.186	.233	.285
	Noise Criteria	17	23	27	31	35	37	41
	Throw	9-15-25	14-19-29	16-22-33	19-24-36	21-27-39	23-29-41	24-30-43

See page C38 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**90**	**130**	**170**	**215**	**255**	**295**	**335**
	Total Pressure	.060	.104	.160	.231	.311	.402	.505
	Static Pressure	.032	.055	.085	.120	.161	.208	.261
	Noise Criteria	10	18	25	30	35	38	42
	Throw	5-9-16	8-11-19	9-13-22	10-15-23	12-16-25	12-18-27	13-19-28
8" Round Inlet	**Airflow, CFM**	**105**	**150**	**195**	**240**	**285**	**330**	**375**
	Total Pressure	.036	.063	.097	.138	.186	.241	.303
	Static Pressure	.026	.045	.069	.098	.132	.170	.213
	Noise Criteria	7	16	22	28	32	36	40
	Throw	5-9-17	9-13-21	11-15-24	12-17-26	14-19-28	15-20-30	16-22-31
10" Oval Inlet	**Airflow, CFM**	**130**	**180**	**230**	**280**	**330**	**380**	**430**
	Total Pressure	.040	.069	.105	.149	.200	.260	.328
	Static Pressure	.035	.059	.090	.127	.171	.222	.279
	Noise Criteria	11	19	25	30	34	37	41
	Throw	6-7-15	7-11-20	10-14-24	10-16-26	12-18-29	13-19-31	14-21-33
12" Oval Inlet	**Airflow, CFM**	**170**	**225**	**285**	**345**	**405**	**460**	**520**
	Total Pressure	.035	.060	.092	.131	.176	.228	.288
	Static Pressure	.032	.053	.081	.115	.154	.200	.252
	Noise Criteria	15	19	24	29	34	37	40
	Throw	7-11-19	10-14-23	11-16-26	13-18-29	16-19-30	18-21-33	20-23-35

2 Slot • 60" (1524) Long

6" Round Inlet	**Airflow, CFM**	**145**	**190**	**230**	**270**	**310**	**355**	**395**
	Total Pressure	.077	.125	.181	.245	.319	.409	.503
	Static Pressure	.040	.061	.086	.115	.148	.184	.225
	Noise Criteria	14	21	27	31	35	38	42
	Throw	2-4-11	3-7-15	5-8-17	5-10-20	5-11-22	6-12-23	7-14-24
8" Round Inlet	**Airflow, CFM**	**175**	**225**	**275**	**325**	**375**	**425**	**475**
	Total Pressure	.053	.084	.121	.164	.213	.268	.330
	Static Pressure	.036	.056	.079	.106	.136	.170	.207
	Noise Criteria	15	22	27	32	36	39	42
	Throw	3-5-13	4-8-17	6-10-20	7-12-23	7-14-25	8-15-27	9-17-28
10" Oval Inlet	**Airflow, CFM**	**200**	**260**	**315**	**375**	**430**	**490**	**545**
	Total Pressure	.042	.067	.095	.129	.167	.211	.258
	Static Pressure	.033	.051	.071	.095	.123	.153	.186
	Noise Criteria	15	21	27	31	35	39	41
	Throw	4-6-14	5-9-19	7-11-22	8-14-25	8-16-27	9-17-29	11-19-31
12" Oval Inlet	**Airflow, CFM**	**210**	**270**	**330**	**395**	**455**	**515**	**575**
	Total Pressure	.037	.057	.081	.110	.142	.178	.218
	Static Pressure	.031	.047	.067	.089	.114	.143	.174
	Noise Criteria	14	21	26	31	34	39	40
	Throw	4-6-14	5-9-19	7-11-22	8-14-24	8-16-26	9-17-28	12-19-30

3 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**100**	**135**	**165**	**200**	**225**	**255**	**280**
	Total Pressure	.045	.098	.143	.211	.292	.319	.408
	Static Pressure	.037	.081	.102	.155	.201	.215	.287
	Noise Criteria	14	22	27	32	35	38	41
	Throw	8-12-22	12-17-26	14-20-29	17-23-32	18-25-34	20-26-35	21-28-37
8" Round Inlet	**Airflow, CFM**	**100**	**135**	**170**	**200**	**235**	**270**	**305**
	Total Pressure	.050	.078	.118	.156	.200	.248	.302
	Static Pressure	.045	.068	.102	.134	.170	.209	.252
	Noise Criteria	15	19	25	30	33	37	40
	Throw	10-15-26	13-19-28	15-20-31	16-23-33	17-24-35	19-25-36	20-36-38
10" Oval Inlet	**Airflow, CFM**	**135**	**175**	**210**	**245**	**285**	**325**	**360**
	Total Pressure	.042	.066	.094	.126	.164	.207	.254
	Static Pressure	.038	.058	.083	.112	.145	.182	.223
	Noise Criteria	14	21	26	31	34	37	40
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39

See page C38 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

3 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**120**	**160**	**200**	**235**	**275**	**310**	**350**
	Total Pressure	.057	.098	.151	.213	.285	.364	.460
	Static Pressure	.030	.050	.075	.106	.142	.182	.228
	Noise Criteria	6	16	23	28	33	37	40
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
8" Round Inlet	**Airflow, CFM**	**135**	**180**	**225**	**275**	**320**	**365**	**410**
	Total Pressure	.052	.089	.134	.188	.250	.320	.402
	Static Pressure	.036	.060	.089	.124	.165	.211	.263
	Noise Criteria	15	19	24	29	34	37	41
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
10" Oval Inlet	**Airflow, CFM**	**150**	**205**	**255**	**305**	**355**	**410**	**460**
	Total Pressure	.046	.076	.113	.157	.209	.268	.334
	Static Pressure	.040	.066	.098	.135	.179	.228	.283
	Noise Criteria	12	20	26	30	35	38	41
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
12" Oval Inlet	**Airflow, CFM**	**160**	**220**	**280**	**340**	**400**	**460**	**520**
	Total Pressure	.033	.060	.095	.138	.187	.244	.309
	Static Pressure	.030	.054	.085	.122	.166	.216	.272
	Noise Criteria	6	16	23	29	34	39	43
	Throw	9-14-23	13-18-28	16-21-32	18-24-35	20-26-38	22-28-40	23-29-42

3 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**140**	**185**	**235**	**285**	**335**	**380**	**430**
	Total Pressure	.069	.120	.189	.273	.373	.481	.610
	Static Pressure	.034	.059	.091	.129	.173	.223	.280
	Noise Criteria	12	20	27	32	37	40	44
	Throw	2-5-13	5-10-18	8-13-22	10-16-24	11-18-27	13-20-29	14-22-31
8" Round Inlet	**Airflow, CFM**	**155**	**215**	**275**	**340**	**400**	**460**	**520**
	Total Pressure	.046	.083	.130	.189	.256	.333	.421
	Static Pressure	.033	.058	.089	.126	.169	.218	.273
	Noise Criteria	8	17	23	29	33	37	40
	Throw	3-6-15	6-12-21	10-16-26	13-20-28	14-22-31	17-25-34	18-27-36
10" Oval Inlet	**Airflow, CFM**	**180**	**250**	**320**	**390**	**460**	**530**	**600**
	Total Pressure	.041	.071	.110	.157	.213	.278	.352
	Static Pressure	.033	.056	.085	.121	.162	.211	.265
	Noise Criteria	7	17	23	29	33	36	40
	Throw	4-7-16	7-14-23	12-18-28	15-23-31	16-25-34	20-28-37	21-31-39
12" Oval Inlet	**Airflow, CFM**	**215**	**285**	**355**	**425**	**490**	**560**	**630**
	Total Pressure	.041	.070	.107	.151	.201	.259	.325
	Static Pressure	.035	.059	.090	.126	.169	.217	.271
	Noise Criteria	7	18	25	30	34	38	41
	Throw	7-11-22	11-16-28	14-19-32	17-22-36	19-25-38	21-27-41	23-29-43

3 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**225**	**275**	**325**	**370**	**420**	**470**	**520**
	Total Pressure	.064	.095	.131	.172	.218	.273	.331
	Static Pressure	.036	.054	.073	.097	.122	.152	.183
	Noise Criteria	12	19	24	30	33	37	42
	Throw	7-11-22	9-14-25	11-17-28	13-18-29	15-20-31	15-22-32	17-24-34
10" Oval Inlet	**Airflow, CFM**	**255**	**315**	**370**	**430**	**485**	**545**	**600**
	Total Pressure	.048	.073	.099	.133	.168	.210	.253
	Static Pressure	.033	.049	.066	.088	.111	.139	.167
	Noise Criteria	12	19	24	29	34	38	41
	Throw	8-13-24	11-16-27	13-19-30	15-21-32	17-23-34	18-25-35	20-27-37
12" Oval Inlet	**Airflow, CFM**	**270**	**330**	**390**	**450**	**510**	**570**	**630**
	Total Pressure	.038	.056	.077	.102	.129	.162	.195
	Static Pressure	.028	.042	.056	.075	.094	.118	.142
	Noise Criteria	11	18	24	29	34	38	40
	Throw	8-13-24	12-16-26	14-19-29	16-21-31	18-23-33	19-25-34	21-27-36

See page C38 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**120**	**155**	**195**	**235**	**270**	**300**	**330**
	Total Pressure	.090	.131	.182	.242	.293	.338	.386
	Static Pressure	.064	.089	.115	.145	.165	.179	.194
	Noise Criteria	16	22	27	32	35	37	39
	Throw	7-12-21	10-16-24	13-21-27	16-24-30	17-26-32	19-28-33	20-30-34
8" Round Inlet	**Airflow, CFM**	**145**	**180**	**220**	**260**	**290**	**335**	**365**
	Total Pressure	.062	.090	.121	.159	.195	.230	.266
	Static Pressure	.051	.072	.095	.122	.146	.169	.194
	Noise Criteria	15	19	26	31	34	37	39
	Throw	11-16-26	13-19-29	15-21-31	16-22-33	17-24-35	18-25-36	19-26-37
10" Oval Inlet	**Airflow, CFM**	**165**	**205**	**245**	**285**	**325**	**365**	**405**
	Total Pressure	.044	.065	.090	.119	.153	.191	.233
	Static Pressure	.038	.055	.075	.100	.127	.158	.193
	Noise Criteria	12	19	24	29	33	36	40
	Throw	6-10-20	8-13-24	10-16-27	12-18-30	14-20-32	15-22-34	16-24-36

4 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**140**	**180**	**225**	**270**	**315**	**355**	**400**
	Total Pressure	.064	.107	.164	.233	.315	.402	.508
	Static Pressure	.029	.049	.074	.103	.138	.178	.222
	Noise Criteria	8	17	24	29	34	37	41
	Throw	6-12-21	10-16-25	13-19-28	15-22-30	16-24-32	18-26-33	19-27-35
8" Round Inlet	**Airflow, CFM**	**165**	**220**	**270**	**325**	**375**	**430**	**480**
	Total Pressure	.047	.082	.126	.180	.242	.315	.395
	Static Pressure	.032	.056	.086	.123	.165	.214	.269
	Noise Criteria	15	19	24	29	34	38	41
	Throw	7-13-23	11-17-28	13-20-32	16-23-34	18-25-37	18-27-39	20-29-41
10" Oval Inlet	**Airflow, CFM**	**190**	**250**	**305**	**360**	**415**	**475**	**530**
	Total Pressure	.040	.072	.111	.159	.215	.281	.353
	Static Pressure	.031	.057	.089	.128	.174	.227	.286
	Noise Criteria	8	18	24	29	34	38	41
	Throw	9-17-26	15-23-32	20-26-35	23-31-38	25-34-40	27-36-41	29-38-45
12" Oval Inlet	**Airflow, CFM**	**210**	**275**	**340**	**405**	**470**	**535**	**600**
	Total Pressure	.033	.059	.092	.132	.179	.233	.294
	Static Pressure	.027	.049	.076	.110	.149	.194	.245
	Noise Criteria	9	17	24	29	34	37	41
	Throw	9-17-25	16-23-31	21-26-34	24-31-37	26-34-39	28-36-40	30-38-44

4 Slot • 48" (1219) Long

8" Round Inlet	**Airflow, CFM**	**190**	**250**	**310**	**370**	**430**	**490**	**550**
	Total Pressure	.050	.086	.130	.182	.244	.314	.393
	Static Pressure	.026	.046	.070	.099	.133	.172	.216
	Noise Criteria	15	21	24	29	33	37	41
	Throw	5-10-19	8-13-22	10-15-24	13-17-26	14-19-28	16-21-29	17-22-31
10" Oval Inlet	**Airflow, CFM**	**225**	**290**	**360**	**430**	**500**	**565**	**635**
	Total Pressure	.043	.071	.108	.153	.205	.264	.332
	Static Pressure	.029	.048	.073	.104	.140	.182	.229
	Noise Criteria	13	20	24	29	33	36	39
	Throw	6-11-21	9-15-24	12-17-26	15-19-28	16-22-31	19-24-32	20-25-34
12" Oval Inlet	**Airflow, CFM**	**255**	**325**	**390**	**450**	**525**	**590**	**660**
	Total Pressure	.035	.058	.089	.125	.168	.217	.273
	Static Pressure	.026	.044	.067	.095	.128	.166	.209
	Noise Criteria	14	18	25	30	33	36	40
	Throw	6-11-21	9-15-24	13-17-25	16-19-27	17-22-30	20-24-31	21-25-33

See page C38 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5875(I) • 3/4" (19) SLOT WIDTH

4 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**250**	**315**	**375**	**440**	**500**	**565**	**625**
	Total Pressure	.066	.102	.142	.192	.245	.310	.376
	Static Pressure	.032	.048	.065	.086	.109	.136	.163
	Noise Criteria	16	20	26	32	35	38	42
	Throw	5-10-17	9-13-22	9-16-27	12-18-29	14-20-32	15-22-34	16-24-36
10" Oval Inlet	**Airflow, CFM**	**290**	**365**	**435**	**505**	**575**	**650**	**720**
	Total Pressure	.048	.073	.101	.135	.173	.218	.265
	Static Pressure	.027	.041	.056	.074	.093	.116	.140
	Noise Criteria	20	24	30	32	35	38	42
	Throw	6-11-19	10-15-24	11-18-29	14-21-32	16-23-35	17-25-37	19-27-39
12" Oval Inlet	**Airflow, CFM**	**320**	**360**	**455**	**540**	**635**	**715**	**800**
	Total Pressure	.042	.067	.099	.135	.179	.227	.283
	Static Pressure	.029	.045	.065	.090	.118	.150	.186
	Noise Criteria	18	23	26	29	34	38	41
	Throw	6-11-19	10-15-24	12-18-28	15-21-31	17-23-34	18-25-36	20-27-38

Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**55**	**70**	**85**	**100**	**115**	**130**	**145**
	Total Pressure	.096	.141	.195	.255	.325	.400	.485
	Static Pressure	.090	.133	.184	.241	.305	.377	.455
	Noise Criteria	18	23	27	31	35	37	41
	Throw	8-13-22	10-15-25	12-18-28	14-20-30	15-21-32	16-22-34	18-24-35
8" Round Inlet	**Airflow, CFM**	**65**	**80**	**95**	**110**	**125**	**140**	**155**
	Total Pressure	.106	.157	.216	.284	.360	.444	.537
	Static Pressure	.104	.153	.211	.277	.351	.433	.524
	Noise Criteria	18	24	28	32	36	39	42
	Throw	10-16-26	13-19-29	16-22-32	18-24-35	20-26-37	21-27-39	23-29-41
10" Oval Inlet	**Airflow, CFM**	**75**	**90**	**110**	**125**	**145**	**160**	**180**
	Total Pressure	.127	.187	.258	.339	.430	.531	.642
	Static Pressure	.125	.186	.255	.335	.425	.524	.634
	Noise Criteria	18	23	28	32	36	38	42
	Throw	12-18-28	15-22-32	19-25-35	21-27-38	23-30-40	25-31-43	27-33-45

1 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**55**	**80**	**100**	**120**	**140**	**165**	**200**
	Total Pressure	.057	.095	.143	.197	.260	.333	.411
	Static Pressure	.049	.082	.121	.167	.219	.278	.344
	Noise Criteria	11	17	23	28	31	36	40
	Throw	7-11-21	9-15-25	12-17-29	13-20-32	15-20-34	16-23-36	17-24-38
8" Round Inlet	**Airflow, CFM**	**65**	**85**	**110**	**130**	**150**	**180**	**200**
	Total Pressure	.049	.081	.121	.167	.220	.280	.346
	Static Pressure	.046	.078	.115	.158	.208	.264	.326
	Noise Criteria	9	17	23	28	32	37	39
	Throw	9-13-24	12-18-29	15-21-34	17-24-37	19-25-39	21-28-42	22-30-44
10" Oval Inlet	**Airflow, CFM**	**75**	**100**	**125**	**150**	**175**	**200**	**225**
	Total Pressure	.053	.089	.131	.181	.238	.303	.374
	Static Pressure	.052	.086	.128	.176	.231	.293	.362
	Noise Criteria	13	20	26	31	35	38	41
	Throw	10-15-26	14-20-32	17-24-37	20-27-40	22-29-43	24-32-46	26-34-48

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**65**	**85**	**110**	**130**	**155**	**175**	**200**
	Total Pressure	.024	.043	.068	.098	.133	.174	.220
	Static Pressure	.009	.016	.025	.036	.049	.063	.079
	Noise Criteria	6	15	21	28	33	36	40
	Throw	4-7-13	8-10-15	10-12-16	11-13-18	11-14-20	12-14-21	13-17-23
8" Round Inlet	**Airflow, CFM**	**75**	**100**	**130**	**160**	**185**	**215**	**240**
	Total Pressure	.020	.036	.057	.082	.111	.145	.183
	Static Pressure	.013	.022	.034	.049	.066	.085	.107
	Noise Criteria	6	15	22	28	33	37	41
	Throw	6-8-12	8-10-16	10-13-18	12-15-19	13-16-21	15-18-23	16-19-25
10" Oval Inlet	**Airflow, CFM**	**80**	**110**	**140**	**170**	**200**	**230**	**250**
	Total Pressure	.016	.028	.043	.062	.084	.109	.202
	Static Pressure	.012	.022	.034	.048	.064	.083	.105
	Noise Criteria	5	15	22	27	33	37	40
	Throw	6-9-14	7-12-16	10-14-19	12-15-21	13-17-22	15-18-24	16-20-25
12" Oval Inlet	**Airflow, CFM**	**90**	**120**	**150**	**180**	**210**	**240**	**280**
	Total Pressure	.016	.028	.044	.062	.084	.109	.274
	Static Pressure	.014	.025	.038	.054	.073	.094	.118
	Noise Criteria	12	16	22	27	33	37	39
	Throw	6-9-12	9-12-16	11-14-18	12-15-22	13-16-24	14-17-25	15-19-27

See page C44 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

1 Slot • 60" (1524) Long

6" Round Inlet	Airflow, CFM	105	125	150	170	195	215	240
	Total Pressure	.060	.106	.165	.237	.321	.418	.528
	Static Pressure	.020	.035	.054	.076	.103	.133	.167
	Noise Criteria	19	25	29	33	36	39	41
	Throw	4-7-13	6-10-16	8-13-18	9-15-20	10-16-22	11-18-23	12-19-25
8" Round Inlet	Airflow, CFM	115	140	170	200	225	255	280
	Total Pressure	.039	.069	.106	.152	.204	.266	.333
	Static Pressure	.022	.039	.060	.085	.114	.148	.186
	Noise Criteria	19	25	30	33	37	40	42
	Throw	5-9-15	8-12-19	10-16-21	12-18-23	13-20-26	14-22-27	16-23-29
10" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	260
	Total Pressure	.032	.057	.087	.124	.167	.217	.273
	Static Pressure	.023	.041	.063	.090	.121	.157	.197
	Noise Criteria	17	22	28	31	35	38	40
	Throw	6-10-16	9-14-21	12-18-23	14-21-25	15-23-28	16-25-29	19-26-32
12" Oval Inlet	Airflow, CFM	135	165	195	225	255	285	325
	Total Pressure	.031	.054	.083	.118	.159	.206	.259
	Static Pressure	.025	.043	.067	.095	.128	.166	.209
	Noise Criteria	12	18	23	27	33	37	39
	Throw	6-10-16	9-14-21	13-18-23	15-21-24	16-23-27	17-25-28	20-26-31

2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	50	70	90	110	150	185	200
	Total Pressure	.038	.069	.106	.150	.200	.257	.320
	Static Pressure	.034	.060	.092	.128	.170	.217	.269
	Noise Criteria	7	11	15	22	29	35	40
	Throw	5-10-19	9-14-24	13-18-28	15-21-31	17-23-34	19-25-36	20-27-38
8" Round Inlet	Airflow, CFM	80	110	140	170	200	215	240
	Total Pressure	.043	.073	.110	.154	.206	.264	.330
	Static Pressure	.039	.066	.099	.139	.184	.236	.293
	Noise Criteria	7	16	23	29	34	38	43
	Throw	8-13-24	13-18-28	16-22-32	19-24-34	21-27-37	23-29-39	25-31-40
10" Oval Inlet	Airflow, CFM	80	110	140	170	200	230	260
	Total Pressure	.035	.059	.086	.118	.154	.194	.238
	Static Pressure	.033	.055	.081	.110	.143	.180	.277
	Noise Criteria	7	16	18	27	33	38	43
	Throw	10-15-24	14-19-28	17-22-32	19-24-34	21-26-36	23-28-38	26-32-42

2 Slot • 36" (914) Long

6" Round Inlet	Airflow, CFM	120	160	200	240	280	320	360
	Total Pressure	.062	.107	.165	.235	.318	.413	.521
	Static Pressure	.036	.062	.095	.134	.180	.233	.293
	Noise Criteria	12	20	26	31	36	39	43
	Throw	7-12-22	10-17-27	12-20-31	14-23-33	16-25-36	17-27-38	18-29-40
8" Round Inlet	Airflow, CFM	130	170	215	255	295	340	380
	Total Pressure	.049	.082	.124	.172	.229	.296	.368
	Static Pressure	.039	.066	.098	.137	.182	.233	.290
	Noise Criteria	15	19	26	31	35	39	42
	Throw	8-14-24	11-19-28	14-21-34	17-24-36	19-26-38	20-29-40	21-31-42
10" Oval Inlet	Airflow, CFM	135	180	225	265	310	355	400
	Total Pressure	.047	.077	.114	.157	.207	.263	.325
	Static Pressure	.042	.070	.102	.140	.183	.232	.286
	Noise Criteria	11	19	25	30	35	38	42
	Throw	10-16-26	14-20-31	17-23-36	20-26-38	22-28-41	24-31-42	25-33-44
12" Oval Inlet	Airflow, CFM	175	235	290	350	410	465	525
	Total Pressure	.037	.063	.096	.136	.183	.237	.299
	Static Pressure	.033	.055	.084	.120	.161	.208	.261
	Noise Criteria	13	20	26	32	36	39	42
	Throw	12-17-27	16-24-33	20-28-38	22-32-40	26-35-45	27-38-47	28-41-49

See page C44 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**65**	**105**	**150**	**190**	**230**	**270**	**315**
	Total Pressure	.078	.120	.174	.234	.302	.379	.472
	Static Pressure	.030	.046	.064	.086	.110	.138	.168
	Noise Criteria	14	20	26	30	34	37	40
	Throw	6-10-18	8-12-20	10-14-22	11-15-24	12-17-25	13-18-27	14-19-28
8" Round Inlet	**Airflow, CFM**	**100**	**150**	**200**	**250**	**300**	**350**	**400**
	Total Pressure	.056	.086	.123	.165	.214	.269	.329
	Static Pressure	.035	.052	.074	.098	.127	.158	.193
	Noise Criteria	13	20	26	31	35	38	42
	Throw	8-12-21	11-15-23	13-17-26	14-19-28	16-21-29	17-22-31	18-23-32
10" Oval Inlet	**Airflow, CFM**	**80**	**140**	**195**	**250**	**305**	**365**	**420**
	Total Pressure	.040	.069	.103	.145	.194	.251	.314
	Static Pressure	.030	.051	.078	.110	.149	.192	.242
	Noise Criteria	9	17	24	29	33	37	41
	Throw	5-8-18	8-12-22	10-15-26	12-18-29	13-20-32	15-21-34	16-23-36
12" Oval Inlet	**Airflow, CFM**	**180**	**240**	**300**	**360**	**420**	**480**	**540**
	Total Pressure	.048	.078	.113	.155	.201	.254	.312
	Static Pressure	.042	.067	.098	.133	.173	.218	.267
	Noise Criteria	14	21	26	31	35	39	42
	Throw	8-13-22	11-16-25	14-19-28	16-21-30	17-23-32	19-24-34	20-26-35

2 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**120**	**170**	**220**	**270**	**320**	**370**	**420**
	Total Pressure	.049	.080	.117	.163	.217	.279	.349
	Static Pressure	.024	.039	.058	.080	.109	.140	.178
	Noise Criteria	12	20	26	31	35	39	42
	Throw	4-7-15	6-10-18	8-13-21	10-15-23	12-18-28	13-20-29	15-21-31
10" Oval Inlet	**Airflow, CFM**	**100**	**160**	**215**	**270**	**325**	**385**	**440**
	Total Pressure	.043	.071	.105	.146	.194	.250	.315
	Static Pressure	.029	.047	.070	.097	.132	.169	.215
	Noise Criteria	15	20	25	29	34	38	41
	Throw	5-8-16	7-11-20	9-15-23	12-17-25	13-19-27	14-21-29	15-22-31
12" Oval Inlet	**Airflow, CFM**	**200**	**260**	**320**	**380**	**440**	**500**	**560**
	Total Pressure	.037	.061	.091	.125	.168	.217	.273
	Static Pressure	.029	.046	.069	.095	.130	.167	.212
	Noise Criteria	10	19	25	30	34	38	42
	Throw	10-15-24	12-19-25	15-21-27	17-23-31	19-23-32	20-25-36	22-27-39

3 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**85**	**110**	**140**	**175**	**200**	**235**	**270**
	Total Pressure	.039	.063	.096	.138	.180	.236	.299
	Static Pressure	.026	.041	.061	.084	.110	.139	.171
	Noise Criteria	10	15	23	28	32	36	39
	Throw	6-11-21	10-15-24	12-18-28	14-20-29	16-21-32	17-24-34	18-25-34
8" Round Inlet	**Airflow, CFM**	**100**	**130**	**160**	**195**	**230**	**270**	**310**
	Total Pressure	.036	.058	.087	.122	.161	.206	.255
	Static Pressure	.030	.047	.070	.097	.126	.160	.196
	Noise Criteria	10	16	24	28	33	37	40
	Throw	8-14-24	13-18-28	15-22-32	18-25-34	21-26-37	22-29-39	24-31-40
10" Oval Inlet	**Airflow, CFM**	**115**	**155**	**195**	**240**	**280**	**330**	**375**
	Total Pressure	.039	.063	.094	.131	.172	.219	.271
	Static Pressure	.036	.057	.085	.117	.153	.193	.238
	Noise Criteria	9	16	22	29	32	36	40
	Throw	9-16-26	15-21-31	18-25-35	21-28-37	25-30-40	26-33-43	28-35-44

See page C44 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

3 Slot • 36" (914) Long

6" Round Inlet	Airflow, CFM	130	170	210	250	290	330	370
	Total Pressure	.054	.090	.134	.186	.248	.317	.396
	Static Pressure	.024	.038	.055	.075	.098	.123	.152
	Noise Criteria	10	16	24	29	33	37	41
	Throw	7-11-22	9-15-24	12-16-28	13-19-29	15-20-32	16-21-34	16-23-34
8" Round Inlet	Airflow, CFM	140	190	235	280	325	375	420
	Total Pressure	.038	.064	.094	.129	.170	.219	.271
	Static Pressure	.028	.044	.063	.086	.112	.142	.174
	Noise Criteria	10	17	25	30	34	38	42
	Throw	9-14-25	12-18-28	15-20-32	17-23-34	19-25-37	21-26-39	21-28-40
10" Oval Inlet	Airflow, CFM	155	210	265	320	375	430	485
	Total Pressure	.039	.064	.094	.129	.170	.216	.268
	Static Pressure	.033	.053	.077	.104	.136	.172	.211
	Noise Criteria	9	18	24	30	34	38	42
	Throw	10-16-27	14-20-31	17-23-35	20-26-37	22-28-40	24-30-42	25-32-44
12" Oval Inlet	Airflow, CFM	210	270	330	390	450	510	570
	Total Pressure	.035	.060	.090	.127	.168	.216	.269
	Static Pressure	.029	.050	.076	.106	.141	.181	.225
	Noise Criteria	11	19	25	30	34	37	40
	Throw	10-16-28	15-22-34	19-26-39	22-29-43	25-32-46	27-34-48	29-36-51

3 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	170	220	275	315	360	400	440
	Total Pressure	.080	.133	.202	.275	.364	.459	.572
	Static Pressure	.029	.046	.068	.092	.120	.151	.186
	Noise Criteria	18	22	28	32	36	38	41
	Throw	8-11-19	9-14-22	11-16-24	13-18-28	13-20-30	14-21-31	16-23-32
8" Round Inlet	Airflow, CFM	190	250	310	365	425	485	520
	Total Pressure	.056	.089	.128	.172	.226	.286	.354
	Static Pressure	.032	.049	.069	.092	.118	.147	.180
	Noise Criteria	6	21	26	32	36	38	41
	Throw	8-11-21	9-15-25	12-18-28	14-19-29	17-21-31	18-22-33	19-24-34
10" Oval Inlet	Airflow, CFM	200	250	320	385	450	520	590
	Total Pressure	.047	.076	.113	.154	.202	.257	.318
	Static Pressure	.033	.054	.078	.107	.139	.176	.216
	Noise Criteria	15	20	26	31	35	38	41
	Throw	9-15-23	11-17-27	14-20-30	16-22-32	18-24-34	20-25-36	20-27-37
12" Oval Inlet	Airflow, CFM	220	280	340	405	475	560	635
	Total Pressure	.044	.072	.105	.144	.189	.239	.295
	Static Pressure	.036	.058	.084	.114	.149	.188	.231
	Noise Criteria	5	20	26	30	34	38	41
	Throw	9-13-23	12-17-26	15-20-29	17-22-31	19-24-34	21-26-36	23-28-39

3 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	210	260	310	370	425	480	535
	Total Pressure	.063	.094	.131	.174	.224	.280	.342
	Static Pressure	.028	.041	.058	.078	.101	.126	.155
	Noise Criteria	15	22	27	32	35	39	42
	Throw	6-12-20	8-15-24	11-17-27	13-19-29	15-22-31	17- 25-35	20-26-37
10" Oval Inlet	Airflow, CFM	275	330	395	460	525	595	630
	Total Pressure	.056	.083	.115	.154	.197	.247	.303
	Static Pressure	.032	.047	.066	.088	.114	.143	.175
	Noise Criteria	20	24	28	34	35	40	43
	Throw	11-16-26	13-20-30	14-21-32	17-23-35	20-25-37	22-30-39	24-33-42
12" Oval Inlet	Airflow, CFM	250	300	350	420	550	610	680
	Total Pressure	.048	.072	.100	.134	.171	.215	.263
	Static Pressure	.035	.053	.074	.099	.127	.159	.195
	Noise Criteria	11	18	23	29	34	38	40
	Throw	8-14-24	11-17-26	13-19-29	15-22-31	19-26-35	22-28-37	24-30-41

See page C44 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

4 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**125**	**150**	**170**	**200**	**235**	**270**	**320**
	Total Pressure	.046	.075	.116	.162	.220	.281	.356
	Static Pressure	.023	.035	.052	.072	.095	.121	.150
	Noise Criteria	10	20	25	28	33	36	40
	Throw	6-11-21	9-15-24	12-17-28	14-20-30	16-22-32	18-24-34	18-26-35
8" Round Inlet	**Airflow, CFM**	**125**	**160**	**205**	**250**	**295**	**340**	**385**
	Total Pressure	.035	.054	.083	.117	.157	.202	.253
	Static Pressure	.026	.040	.060	.083	.109	.139	.172
	Noise Criteria	10	17	23	29	33	37	40
	Throw	8-14-24	12-18-28	15-21-32	18-25-35	21-27-37	23-30-39	24-32-41
10" Oval Inlet	**Airflow, CFM**	**145**	**185**	**210**	**270**	**320**	**370**	**420**
	Total Pressure	.037	.056	.086	.121	.160	.205	.256
	Static Pressure	.032	.048	.072	.100	.132	.168	.208
	Noise Criteria	15	17	23	28	33	37	40
	Throw	9-16-26	14-21-31	18-24-35	21-28-38	25-31-40	27-34-43	28-36-45

4 Slot • 36" (914) Long

6" Round Inlet	**Airflow, CFM**	**145**	**190**	**240**	**285**	**335**	**380**	**430**
	Total Pressure	.059	.099	.153	.214	.290	.371	.469
	Static Pressure	.022	.035	.051	.069	.090	.113	.139
	Noise Criteria	9	17	24	29	32	35	39
	Throw	7-11-22	8-15-24	11-16-27	12-18-28	14-20-31	15-20-32	16-21-34
8" Round Inlet	**Airflow, CFM**	**160**	**225**	**285**	**345**	**405**	**470**	**530**
	Total Pressure	.039	.068	.102	.144	.193	.251	.313
	Static Pressure	.025	.040	.058	.079	.103	.130	.160
	Noise Criteria	10	18	24	30	33	36	40
	Throw	9-14-25	11-18-28	14-20-31	16-22-33	18-24-36	20-25-37	21-26-39
10" Oval Inlet	**Airflow, CFM**	**190**	**265**	**335**	**405**	**475**	**550**	**620**
	Total Pressure	.039	.065	.097	.135	.179	.230	.286
	Static Pressure	.030	.048	.070	.096	.125	.157	.194
	Noise Criteria	9	18	24	29	33	36	40
	Throw	10-16-27	13-20-31	16-23-34	19-25-36	21-27-39	23-29-40	24-30-42
12" Oval Inlet	**Airflow, CFM**	**235**	**310**	**385**	**455**	**530**	**605**	**680**
	Total Pressure	.035	.060	.092	.129	.172	.221	.276
	Static Pressure	.027	.047	.072	.101	.134	.172	.214
	Noise Criteria	10	17	23	28	33	36	40
	Throw	10-16-26	14-20-30	17-23-33	20-25-35	22-27-38	24-29-39	25-30-41

4 Slot • 48" (1219) Long

8" Round Inlet	**Airflow, CFM**	**225**	**300**	**370**	**440**	**510**	**580**	**650**
	Total Pressure	.060	.101	.151	.210	.278	.356	.444
	Static Pressure	.032	.052	.076	.104	.136	.173	.213
	Noise Criteria	12	19	26	31	34	39	42
	Throw	6-12-20	10-16-27	13-18-30	15-22-33	16-25-35	18-27-37	20-28-40
10" Oval Inlet	**Airflow, CFM**	**240**	**320**	**400**	**480**	**565**	**645**	**730**
	Total Pressure	.047	.079	.117	.162	.214	.273	.340
	Static Pressure	.031	.050	.073	.100	.131	.166	.205
	Noise Criteria	15	19	26	30	34	38	41
	Throw	10-14-24	12-18-29	15-21-31	17-23-34	19-25-36	21-27-37	22-28-39
12" Oval Inlet	**Airflow, CFM**	**275**	**360**	**445**	**530**	**615**	**700**	**785**
	Total Pressure	.040	.065	.097	.133	.176	.224	.279
	Static Pressure	.030	.048	.070	.096	.125	.158	.195
	Noise Criteria	15	21	25	30	34	37	40
	Throw	10-14-24	13-18-28	16-21-30	18-23-33	20-25-35	22-27-36	23-28-38

See page C44 for performance data notes.

PERFORMANCE DATA • MODEL SERIES 5800

MODEL: 5810(I) • 1" (25) SLOT WIDTH

4 Slot • 60" (1524) Long

8" Round Inlet	**Airflow, CFM**	**310**	**370**	**430**	**490**	**550**	**610**	**670**
	Total Pressure	.078	.112	.154	.202	.256	.318	.386
	Static Pressure	.025	.038	.053	.071	.091	.115	.141
	Noise Criteria	18	23	28	32	36	39	42
	Throw	8-11-19	9-13-21	10-15-22	11-16-23	12-17-25	12-18-26	13-19-27
10" Oval Inlet	**Airflow, CFM**	**350**	**420**	**495**	**565**	**640**	**710**	**785**
	Total Pressure	.058	.085	.119	.157	.202	.251	.308
	Static Pressure	.029	.043	.060	.080	.104	.130	.159
	Noise Criteria	15	19	26	31	35	38	41
	Throw	9-13-23	11-16-28	13-19-28	15-20-30	16-21-32	17-23-33	18-25-35
12" Oval Inlet	**Airflow, CFM**	**385**	**470**	**555**	**640**	**725**	**810**	**895**
	Total Pressure	.052	.078	.109	.145	.187	.233	.286
	Static Pressure	.032	.048	.067	.090	.116	.145	.178
	Noise Criteria	12	19	25	29	34	37	41
	Throw	11-16-28	14-19-32	16-22-34	18-24-37	20-26-39	22-28-41	23-30-42

Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

MODELS 5850(I), 5875(I) AND 5810(I)
'ICE TONG' SUPPLY AIR PLENUM SLOT DIFFUSERS

SUGGESTED SPECIFICATION:

Standard Lay-in T-Bar

Furnish and install **Nailor Model** (select one) **5850(I)** (1/2" [13] slot), **5875(I)** (3/4" [19] slot) or **5810(I)** (1" [25] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5850I, 5875I or 5810I shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

MODELS 5850(I)-F, 5875(I)-F, 5810(I)-F, 5850(I)-F2, 5875(I)-F2 AND 5810(I)-F2
'ICE TONG' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS

SUGGESTED SPECIFICATION:

Narrow Regressed T-Bar, Straddle Mount

Furnish and install **Nailor Model** (select one) **5850(I)-F** (1/2" [13] slot), **5875(I)-F** (3/4" [19] slot) or **5810(I)-F** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two slots as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish. Models 5850I-F, 5875I-F or 5810I-F shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Narrow Regressed T-Bar, Flat Face T-Bar(s)

Furnish and install **Nailor Model** (select one) **5850(I)-F2** (1/2" [13] slot), **5875(I)-F2** (3/4" [19] slot) or **5810(I)-F2** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5850I-F2, 5875I-F2 or 5810I-F2 shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ADJUSTABLE 'FLIP FLOP' PATTERN CONTROLLER

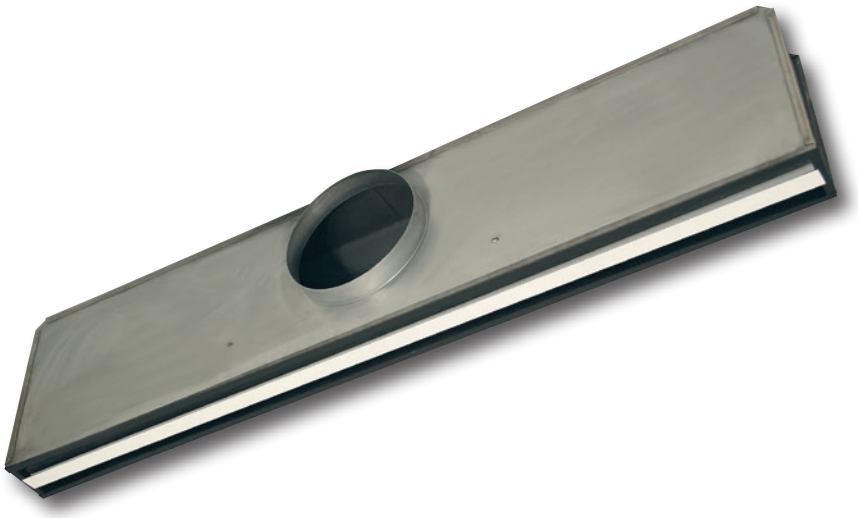
- FOR STANDARD LAY-IN T-BAR
- SUPPLY

Uninsulated Models:

5675 3/4" (19) Slot Width
5610 1" (25) Slot Width

Insulated Models:

5675I 3/4" (19) Slot Width
5610I 1" (25) Slot Width



Model Series 5600 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, so offering an extremely unobtrusive method of air distribution. Designed with the popular 3/4" (19) or 1" (25) slot spacing, the 5600 Series design offers high performance and extremely good value, where budgetary restraints are a consideration.

Model Series 5600 features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the diffuser face for either a left or right discharge direction.

In either horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow. Factory furnished center tees are dropped below the diffuser face to match the ceiling grid. Therefore, the 5600 Series provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.
- Factory installed center T-Bars on multi-slot models are standard.
- Blades are shipped locked. They may be set for left or right airflow pattern after installation.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

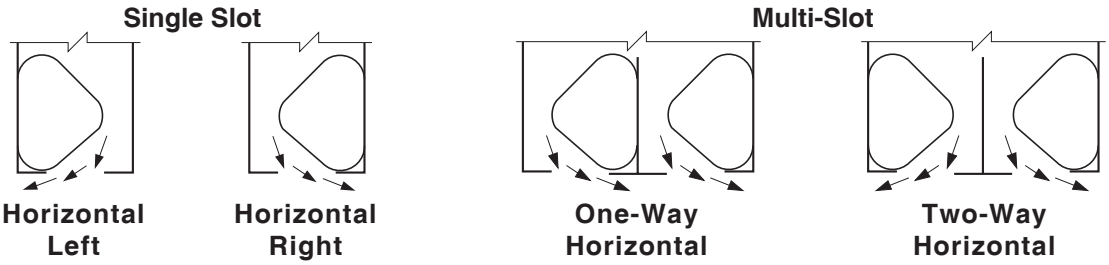
FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

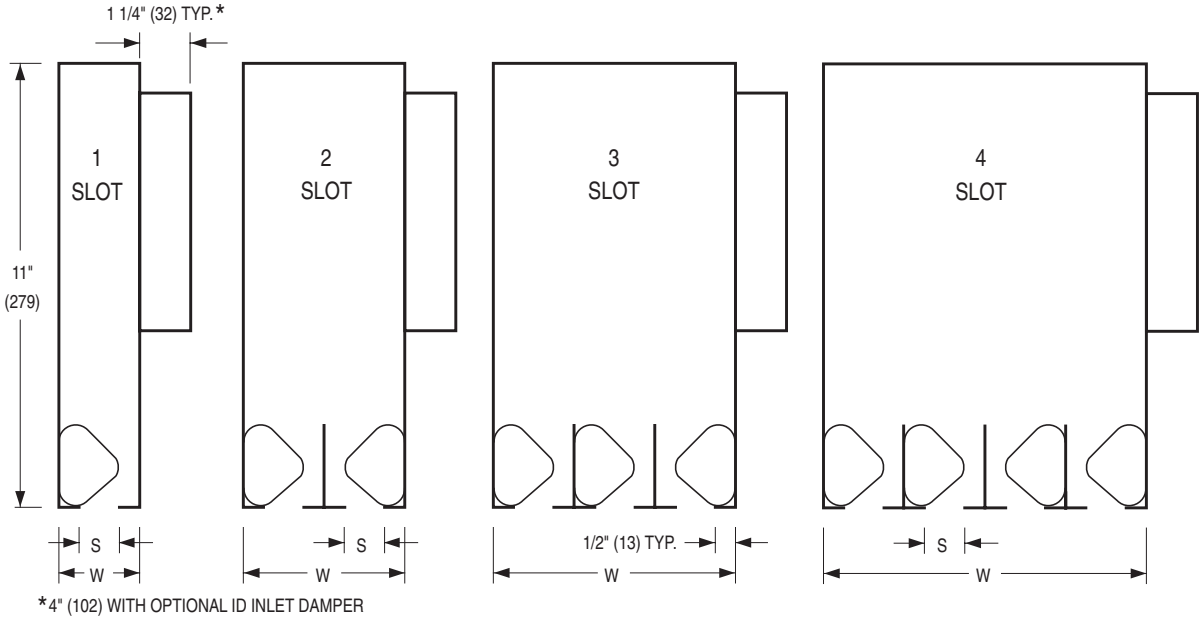
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

Air Patterns



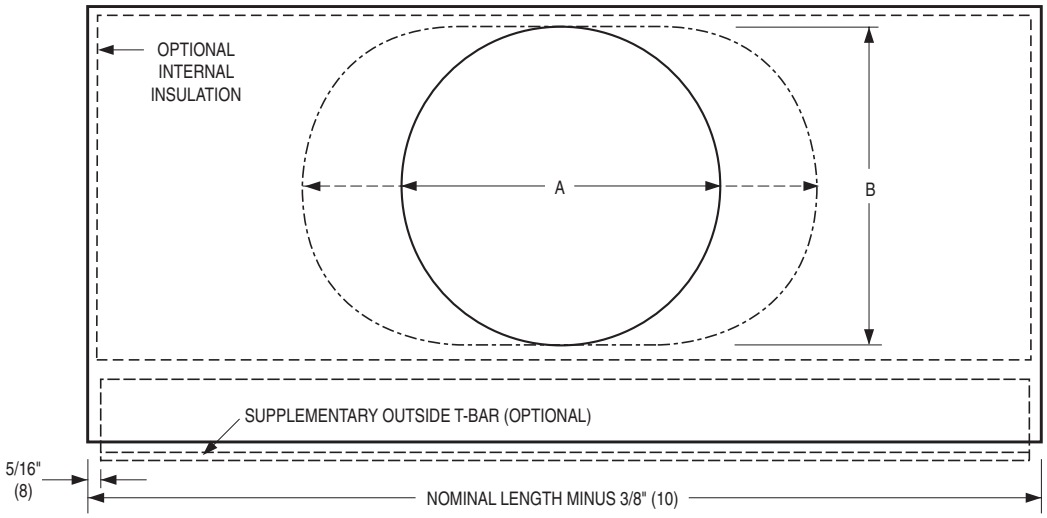
DIMENSIONAL DATA:

MODEL SERIES: 5600 • STANDARD LAY-IN T-BAR MODELS



		S Slot Width	
		3/4" (19)	1" (25)
W Width	1 Slot	1 3/4" (44)	2" (51)
	2 Slot	3 1/2" (89)	4" (102)
	3 Slot	5 1/4" (133)	6" (152)
	4 Slot	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

ADJUSTABLE 'FLIP FLOP' PATTERN CONTROLLER

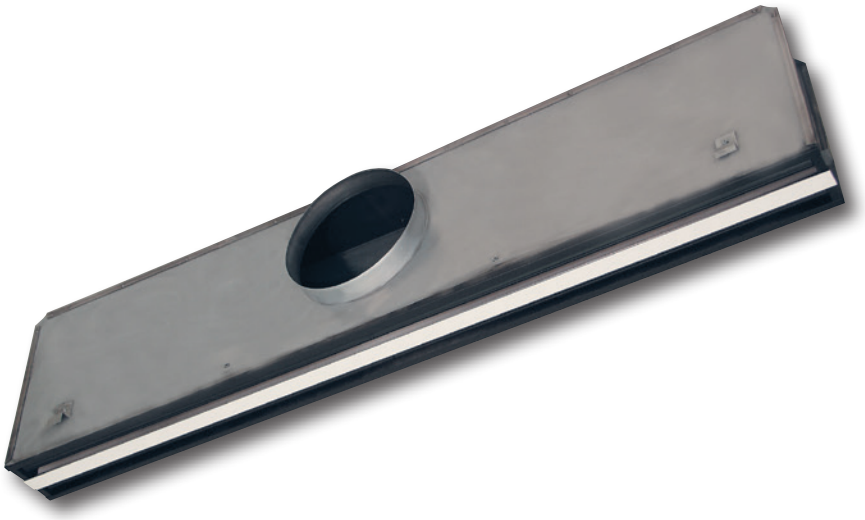
- FOR NARROW REGRESSED T-BAR
- SUPPLY

Straddle Mount Models:

5675(I)-F 3/4" (19) Slot Width

5610(I)-F 1" (25) Slot Width

• Suffix 'I' adds internal insulation



Model 5610-F

Model Series 5600-F Plenum Slot Ceiling Diffusers have been specially developed to integrate with and compliment 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features a 'Flip Flop' roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be rotated with fingers from the diffuser face for either a left or right discharge direction. Either horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow.

The single slot units, for all models, are for installation alongside a main T-Bar runner. The 5600-F Series two slot units incorporate a center hat channel and are designed to straddle, longitudinally, along a main T-Bar runner.

STANDARD FEATURES:

- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5600-F is available in a one or two slot configuration.
- The single slot units are for installation alongside a main runner.
- 5600-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

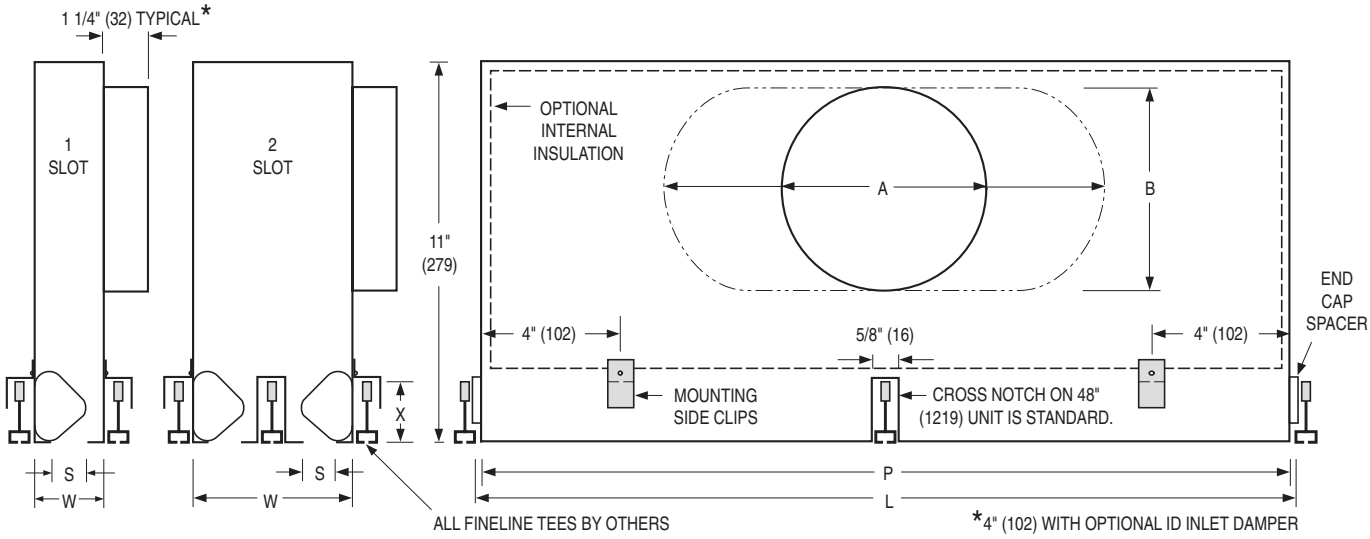
OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

DIMENSIONAL DATA:

MODEL SERIES: 5600-F • NARROW REGRESSED T-BAR MODELS

MODEL SERIES 5600-F

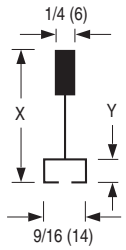


Imperial Ceiling Modules (in.)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



Model Series 5600-F

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5675-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5610-F	1" (25)	2" (51)	4 5/8" (117)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	–	–	7 7/8" (200)	7 7/8" (200)

T-Bar Type (Manufacturer)		X	Y
A	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
C	Certainteed Smoothline	1 5/8" (41)	5/16" (8)
D	Donn Fineline	1 25/32" (45)	5/16" (8)

PERFORMANCE DATA • MODEL SERIES 5600

MODEL: 5675(I) • 3/4" (19) SLOT WIDTH

1 Slot • 24" (610) Long, 6" (152) Inlet • 48" (1219) Long, 8" (203) Inlet

Airflow, CFM/FT.	20	30	40	50	60	70
Static Pressure	.027	.059	.104	.153	.228	.307
Noise Criteria	20	23	27	30	33	35
Throw 1	3.3	6.3	8.0	9.5	10.7	11.7
Throw 2	11.5	15.0	19.0	21.0	23.0	24.5

2 Slot • 24" (610) Long, 8" (203) Inlet • 48" (1219) Long, 10" (254) Inlet

Airflow, CFM/FT.	40	60	80	100	120	140
Static Pressure	.028	.061	.115	.165	.240	.335
Noise Criteria	20	24	29	33	36	38
Throw 1	3.7	7.7	9.0	10.5	12.0	13.0
Throw 2	12.5	16.0	19.0	22.0	24.0	25.5

3 Slot • 24" (610) Long, 8" (203) Inlet • 48" (1219) Long, 10" (254) Inlet

Airflow, CFM/FT.	60	90	120	150	180	210
Static Pressure	.030	.064	.120	.184	.265	.350
Noise Criteria	21	25	30	35	39	42
Throw 1	4.5	9.0	10.2	11.5	13.0	14.0
Throw 2	12.7	17.0	20.0	23.0	25.2	27.5

4 Slot • 24" (610) Long, 10" (254) Inlet • 48" (1219) Long, 12" (305) Inlet

Airflow, CFM/FT.	80	120	160	200	240	280
Static Pressure	.034	.071	.134	.203	.292	.392
Noise Criteria	22	26	31	37	41	45
Throw 1	5.2	10.0	11.2	12.0	13.5	15.0
Throw 2	13.5	17.7	21.0	24.5	265	29.0

Performance Notes:

1. Throws are given at 150 and 50 fpm terminal velocities under isothermal conditions.

   Throw 1 is Throw @ 150 feet per minute terminal velocity at 9'-0" ceiling height.

   Throw 2 is Throw @ 50 feet per minute terminal velocity at 9'-0" ceiling height.
2. All Pressures are in inches w.g..
3. Throw data is for one-way blow in opposite direction to inlet collar under isothermal conditions.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079
3	.083	.117
4	.108	.156

PERFORMANCE DATA • MODEL SERIES 5600

MODEL: 5610(I) • 1" (25) SLOT WIDTH

1 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**50**	**75**	**95**	**120**	**140**	**165**	**185**
	Total Pressure	.046	.093	.141	.216	.287	.390	.483
	Static Pressure	.042	.083	.125	.191	.252	.342	.423
	Noise Criteria	–	18	23	29	32	36	38
	Throw	6-11-20	11-16-25	14-19-28	17-22-31	19-24-33	21-26-35	23-27-37
8" Round Inlet	**Airflow, CFM**	**50**	**80**	**105**	**135**	**160**	**190**	**215**
	Total Pressure	.044	.102	.162	.248	.332	.446	.554
	Static Pressure	.043	.098	.156	.238	.318	.427	.529
	Noise Criteria	–	17	23	29	33	37	40
	Throw	4-8-16	9-13-22	12-17-25	15-19-29	17-21-31	19-23-33	20-25-35
10" Oval Inlet	**Airflow, CFM**	**60**	**85**	**110**	**135**	**160**	**185**	**210**
	Total Pressure	.056	.103	.162	.232	.314	.408	.513
	Static Pressure	.055	.101	.159	.228	.308	.400	.503
	Noise Criteria	–	15	22	27	31	35	38
	Throw	5-10-19	10-15-25	13-19-29	16-22-33	19-24-35	21-26-38	22-28-40

1 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**80**	**120**	**155**	**195**	**230**	**270**	**305**
	Total Pressure	.040	.109	.175	.256	.334	.428	.516
	Static Pressure	.029	.084	.133	.190	.241	.300	.353
	Noise Criteria	–	17	24	30	35	39	43
	Throw	6-11-20	11-16-26	14-20-30	17-23-34	19-25-36	21-27-38	23-29-40
8" Round Inlet	**Airflow, CFM**	**100**	**140**	**180**	**220**	**260**	**300**	**340**
	Total Pressure	.043	.084	.138	.204	.283	.375	.479
	Static Pressure	.038	.074	.120	.178	.246	.326	.416
	Noise Criteria	–	15	22	28	32	36	40
	Throw	8-11-19	11-15-23	14-18-26	16-20-29	17-22-31	19-24-33	20-25-34
10" Oval Inlet	**Airflow, CFM**	**100**	**145**	**190**	**235**	**280**	**325**	**370**
	Total Pressure	.036	.076	.128	.191	.265	.350	.447
	Static Pressure	.034	.071	.119	.177	.246	.325	.414
	Noise Criteria	–	18	24	29	32	36	39
	Throw	3-6-14	6-10-19	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32
12" Oval Inlet	**Airflow, CFM**	**120**	**170**	**220**	**270**	**320**	**370**	**420**
	Total Pressure	.049	.097	.160	.238	.331	.439	.562
	Static Pressure	.047	.093	.153	.228	.317	.421	.538
	Noise Criteria	–	20	26	31	35	39	42
	Throw	5-11-21	10-16-26	14-20-30	17-23-33	20-25-36	22-27-38	24-29-40

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All Pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079

PERFORMANCE DATA • MODEL SERIES 5600

MODEL: 5610(I) • 1" (25) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	**Airflow, CFM**	**90**	**125**	**160**	**195**	**230**	**265**	**300**
	Total Pressure	.051	.097	.156	.228	.313	.412	.524
	Static Pressure	.037	.069	.111	.161	.220	.288	.366
	Noise Criteria	–	21	27	32	36	40	43
	Throw	11-15-25	15-20-29	18-23-33	21-26-36	23-28-38	25-30-40	26-31-42
8" Round Inlet	**Airflow, CFM**	**90**	**130**	**170**	**210**	**250**	**290**	**330**
	Total Pressure	.041	.070	.111	.166	.233	.313	.405
	Static Pressure	.037	.061	.096	.142	.199	.267	.346
	Noise Criteria	–	19	25	30	35	38	41
	Throw	8-13-21	13-17-26	16-20-29	18-23-32	20-25-34	22-26-36	23-28-38
10" Oval Inlet	**Airflow, CFM**	**100**	**145**	**190**	**235**	**280**	**325**	**370**
	Total Pressure	.042	.071	.116	.178	.257	.353	.465
	Static Pressure	.040	.066	.107	.165	.238	.327	.432
	Noise Criteria	–	17	25	31	36	40	43
	Throw	10-15-24	14-20-29	18-23-33	21-26-36	23-28-39	25-30-41	27-32-43

2 Slot • 48" (1219) Long

6" Round Inlet	**Airflow, CFM**	**150**	**185**	**220**	**255**	**290**	**325**	**360**
	Total Pressure	.092	.133	.183	.242	.310	.387	.472
	Static Pressure	.053	.073	.098	.128	.162	.201	.244
	Noise Criteria	–	–	21	26	31	36	39
	Throw	7-10-16	8-12-18	10-13-19	11-14-21	12-16-22	13-17-23	13-17-24
8" Round Inlet	**Airflow, CFM**	**160**	**220**	**280**	**340**	**400**	**460**	**520**
	Total Pressure	.049	.089	.140	.201	.274	.357	.450
	Static Pressure	.035	.063	.097	.138	.186	.241	.303
	Noise Criteria	–	15	23	29	34	39	43
	Throw	9-14-20	13-18-25	15-20-29	18-22-31	19-24-34	21-26-36	22-27-38
10" Oval Inlet	**Airflow, CFM**	**180**	**250**	**320**	**390**	**460**	**530**	**600**
	Total Pressure	.042	.077	.126	.188	.263	.352	.454
	Static Pressure	.034	.062	.101	.151	.213	.285	.367
	Noise Criteria	–	16	24	30	35	39	43
	Throw	10-14-22	13-18-26	16-20-29	19-23-32	20-24-34	22-26-35	23-27-37
12" Oval Inlet	**Airflow, CFM**	**200**	**285**	**370**	**455**	**540**	**625**	**710**
	Total Pressure	.047	.098	.165	.247	.345	.460	.590
	Static Pressure	.042	.087	.146	.219	.306	.407	.522
	Noise Criteria	–	18	26	32	37	41	44
	Throw	9-14-22	13-18-27	16-21-31	18-24-33	20-25-36	22-27-38	23-28-40

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All Pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079

HOW TO SPECIFY

MODELS 5675(I) AND 5610(I)
'FLIP FLOP' SUPPLY AIR PLENUM SLOT DIFFUSERS

SUGGESTED SPECIFICATION:

Standard Lay-in T-Bar
Furnish and install **Nailor Models 5675(I)** (3/4" [19] slot) or **5610(I)** (1" [25] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a roll-formed, curved blade, 'flip flop' style pattern controller in each slot. The pattern deflector shall be adjustable from the face of the diffuser for a left or right blow pattern. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5675I or 5610I shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

MODELS 5675(I)-F AND 5610(I)-F
'FLIP FLOP' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS

SUGGESTED SPECIFICATION:

Narrow Regressed T-Bar, Straddle Mount
Furnish and install **Nailor Models 5675(I)-F** (3/4" [19] slot) or **5610(I)-F** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include a roll-formed, curved blade, 'flip flop' style pattern controller in each slot. The pattern deflector shall be adjustable from the face of the diffuser for a left or right blow pattern. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5675I-F or 5610I-F shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

RETURN AIR PLENUMS

- FOR STANDARD LAY-IN T-BAR
- COMPLIMENTS THE SUPPLY SERIES
- INCLUDES LIGHT BARRIERS

5700R Series:

5775R(I) 3/4" (19) Slot Width
5710R(I) 1" (25) Slot Width
5715R(I) 1 1/2" (38) Slot Width

5800R Series:

5850R(I) 1/2" (13) Slot Width
5875R(I) 3/4" (19) Slot Width
5810R(I) 1" (25) Slot Width

5600R Series:

5675R(I) 3/4" (19) Slot Width
5610R(I) 1" (25) Slot Width

• Suffix 'I' adds internal insulation

Models 5675R, 5775R

These models have been designed as a matching return to compliment their respective supply models. They return room air to the ceiling plenum and are designed for ductless return applications.

The design incorporates a light shield which blocks any stray light in the ceiling plenum, emitted from the rear of the light fixtures, from emerging through the face. At the same time, it prevents see-through in the opposite direction.

STANDARD FEATURES:

- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard height is 7" (178) for 1 and 2 slot units and 11" (279) for 3 and 4 slot units.
- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Series 5700R is available in 3 slot widths.
- Series 5800R is available in 3 slot widths.
- Series 5600R is available in 2 slot widths.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum casing, extruded aluminum center T-Bars.

FINISH OPTIONS:

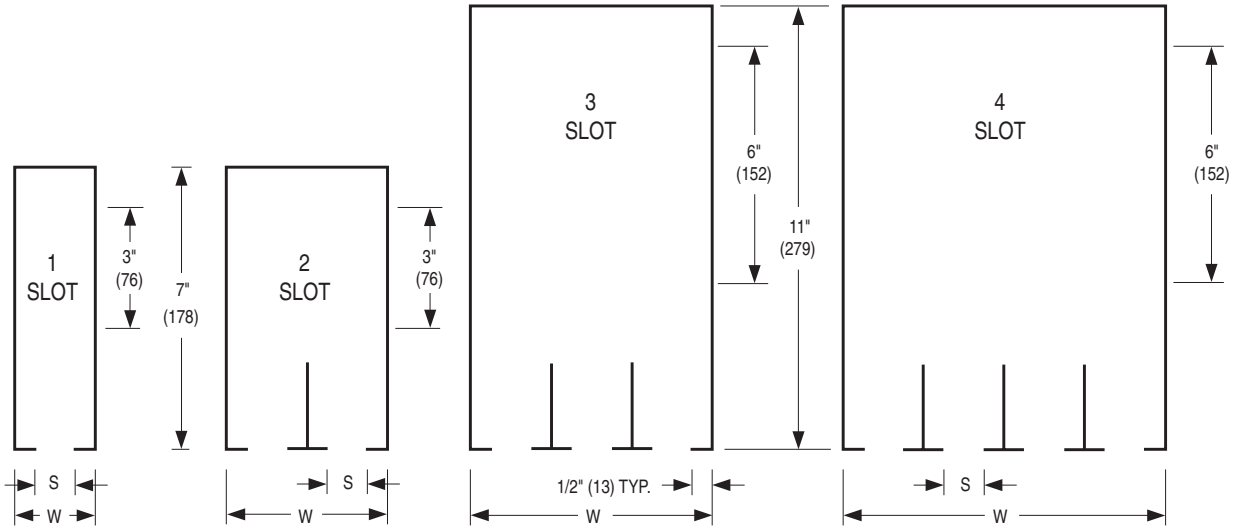
Black on exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

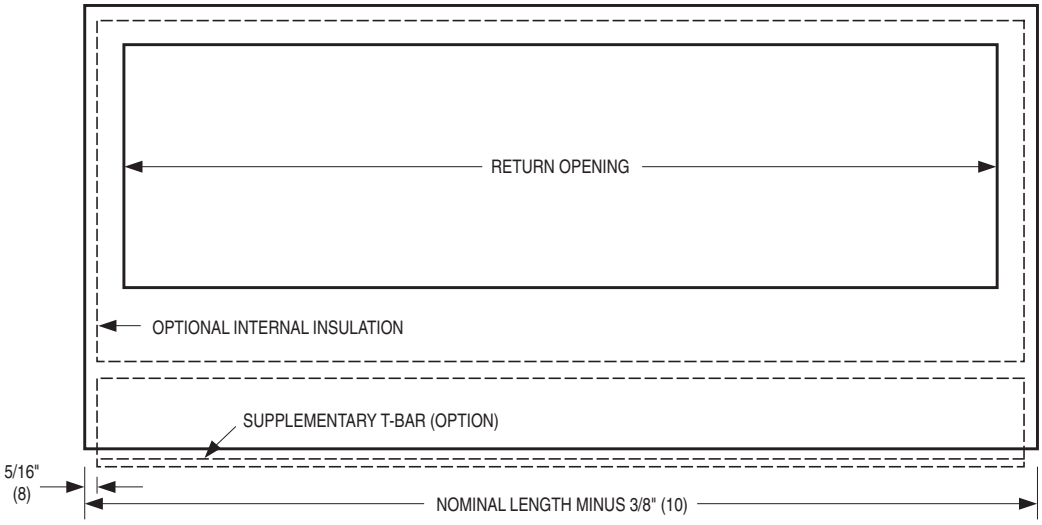
- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

DIMENSIONAL DATA:

MODEL SERIES: 5700R, 5800R, 5600R • STANDARD LAY-IN T-BAR MODELS



		Models			
			5675R(I)	5610R(I)	
		5850R(I)	5875R(I)	5810R(I)	
			5775R(I)	5710R(I)	5715R(I)
S Slot Width		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W Width	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 Slot	4 1/2" (115)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 Slot	6" (152)	7" (178)	8" (203)	10" (254)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

RETURN AIR PLENUMS

- FOR NARROW REGRESSED T-BAR
- COMPLIMENTS THE SUPPLY SERIES
- INCLUDES LIGHT BARRIERS

Straddle Style:

5850R(I)-F 1/2" (13) Slot Width
5775R(I)-F 3/4" (19) Slot Width
5875R(I)-F 3/4" (19) Slot Width
5710R(I)-F 1" (25) Slot Width
5810R(I)-F 1" (25) Slot Width
5715R(I)-F 1 1/2" (38) Slot Width

1" (25) Flat Face T-Bar Styles:

5850R(I)-F2 1/2" (13) Slot Width
5775R(I)-F2 3/4" (19) Slot Width
5875R(I)-F2 3/4" (19) Slot Width
5710R(I)-F2 1" (25) Slot Width
5810R(I)-F2 1" (25) Slot Width
5715R(I)-F2 1 1/2" (38) Slot Width

• Suffix 'I' adds internal insulation

Models 5810R-F, 5775R-F2

These models have been designed as a matching return to compliment their respective supply models. They return room air to the ceiling plenum and are designed for ductless return applications.

The design incorporates a light shield which blocks any stray light in the ceiling plenum, emitted from the rear of the light fixtures, from emerging through the face. At the same time, it prevents see-through in the opposite direction.

The single slot units, for all models, are for installation alongside a main T-Bar runner. Model Series 5700R-F and 5800R-F two slot units incorporate a center hat channel and are designed to straddle, longitudinally, a main T-Bar runner. The Model Series 5700R-F2 and 5800R-F2 multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

STANDARD FEATURES:

- Available in 24" (600) or 48" (1200) nominal lengths, to suit both imperial and metric ceiling grids.
- A cross notch is a recommended option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5700R-F and 5800R-F are available in one or two slot configurations.
- Series 5700R-F2 and 5800R-F2 are available in one, two, three or four slot configurations.
- The single slot units are for installation alongside a main T-Bar runner.
- 5700R-F and 5800R-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5700R-F2 and 5800R-F2 multi-slot units include 1" (25) flat face tees.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel. Series 5700-F2 and 5800-F2 include extruded aluminum center T-Bars on multi-slot units.

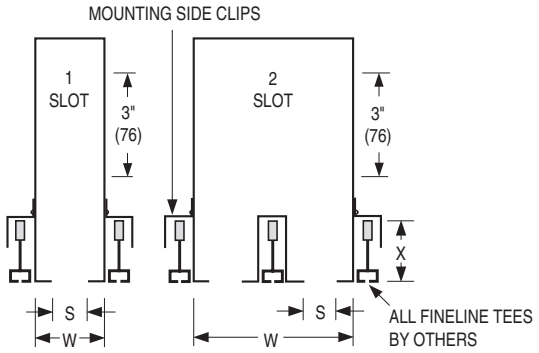
FINISH OPTIONS:

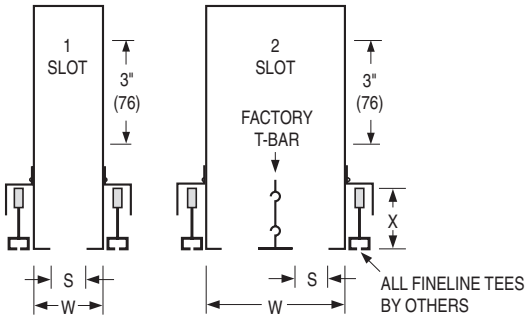
Black on exposed surfaces. AW Appliance White on center T-Bars.

OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

DIMENSIONAL DATA:
MODEL SERIES: 5700R-F, 5700R-F2, 5800R-F AND 5800R-F2 • NARROW REGRESSED T-BAR



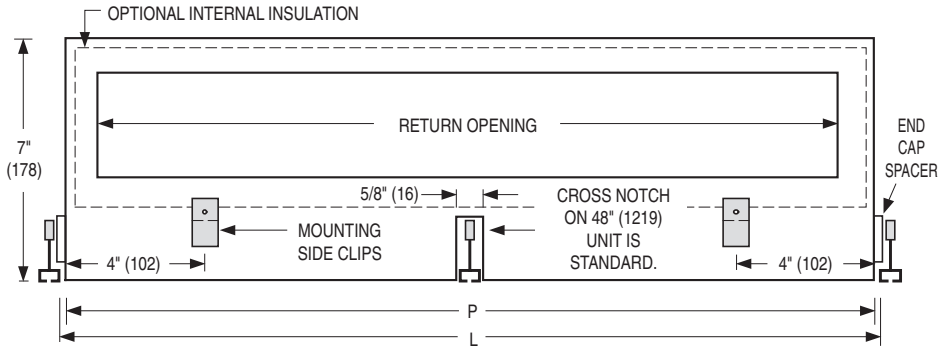


MODEL SERIES 5700R-F AND 5800R-F

		Models			
		5850R(I)-F	5875R(I)-F	5810R(I)-F	
			5775R(I)-F	5710R(I)-F	5715R(I)-F
S Slot Width		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W Width	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3 5/8" (92)	4 1/8" (105)	4 5/8" (117)	5 5/8" (143)

MODEL SERIES 5700R-F2 AND 5800R-F2

		Models			
		5850R(I)-F2	5875R(I)-F2	5810R(I)-F2	
			5775R(I)-F2	5710R(I)-F2	5715R(I)-F2
S Slot Width		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W Width	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 Slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 Slot	6" (152)	7" (178)	8" (203)	10" (254)



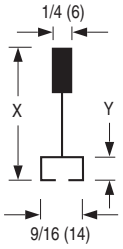
Imperial Ceiling Modules (inches)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184

T-Bar Type (Manufacturer)		X	Y
A	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
C	Certainteed Smoothline	1 5/8" (41)	5/16" (8)
D	Donn Fineline	1 25/32" (45)	5/16" (8)



PERFORMANCE DATA • MODEL SERIES 5700R

MODEL: 5775R(I)

3/4" (19) Slot • 24" (610) Long

1 Slot	Airflow, CFM	30	45	60	75	90	105	120	135	150
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

3/4" (19) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

MODEL: 5710R(I)

1" (25) Slot • 24" (610) Long

1 Slot	Airflow, CFM	40	60	80	100	120	140	160	180	200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

1" (25) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	160	240	320	400	480	560	640	720	800
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

MODEL: 5715R(I)

1 1/2" (38) Slot • 24" (610) Long

1 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

1 1/2" (38) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	240	360	480	600	720	840	960	1080	1200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

Performance Notes:

1. Neg. Static Pressure is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
3. Dash (–) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • MODEL SERIES 5800R

MODEL: 5850R(I)

1/2" (13) Slot • 24" (610) Long

1 Slot	Airflow, CFM	20	30	40	50	60	70	80	90	100
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	40	60	80	100	120	140	160	180	200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

1/2" (13) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	40	60	80	100	120	140	160	180	200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	160	240	320	400	480	560	640	720	800
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

MODEL: 5875R(I)

3/4" (19) Slot • 24" (610) Long

1 Slot	Airflow, CFM	30	45	60	75	90	105	120	135	150
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	90	135	180	225	270	315	360	405	450
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

3/4" (19) Slot • 48" (1219) Long

1Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	180	270	360	450	540	630	720	810	900
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	240	360	480	600	720	840	960	1080	1200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

Performance Notes:

1. Neg. Static Pressure is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
3. Dash (–) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA • MODEL SERIES 5800R

MODEL: 5810R(I)

1" (25) Slot • 24" (610) Long

1 Slot	Airflow, CFM	40	60	80	100	120	140	160	180	200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	160	240	320	400	480	560	640	720	800
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

1" (25) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	80	120	160	200	240	280	320	360	400
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	160	240	320	400	480	560	640	720	800
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
3 Slot	Airflow, CFM	240	360	480	600	720	840	960	1080	1200
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
4 Slot	Airflow, CFM	320	480	640	800	960	1120	1280	1440	1600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

PERFORMANCE DATA • MODEL SERIES 5600R

MODEL: 5675R(I)

3/4" (19) Slot • 24" (610) Long

1 Slot	Airflow, CFM	30	45	60	75	90	105	120	135	150
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

3/4" (19) Slot • 48" (1219) Long

1 Slot	Airflow, CFM	60	90	120	150	180	210	240	270	300
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
2 Slot	Airflow, CFM	120	180	240	300	360	420	480	540	600
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

Performance Notes:

1. Neg. Static Pressures is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10^{-12} watts.
3. Dash (–) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Options and Accessories

MODEL SERIES: 5600, 5700, 5800 – SUPPLY AND 5600R, 5700R, 5800R – RETURN

PF SLOT DIFFUSER PLASTER FRAME

The PF Plaster Frame, for plenum slot diffusers enables the installation of Lay-in T-Bar style diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

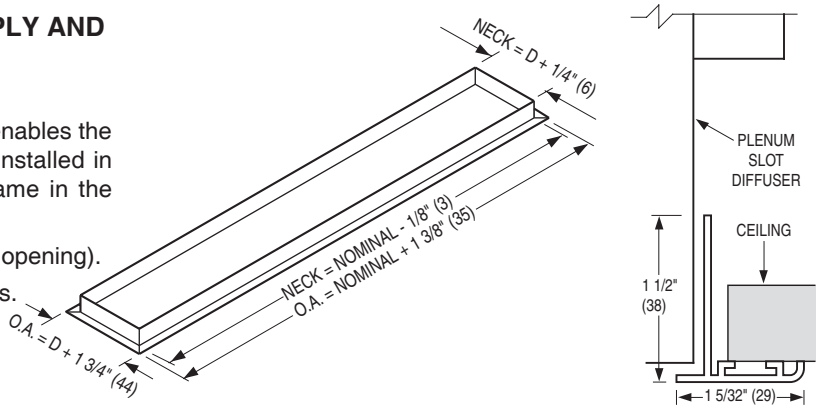
(**Note:** Diffuser will not fit through a plaster frame opening).

Material: Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

Width = Diffuser Width (D) + 1/2" (13)

Length = Nominal Diffuser Length + 1/4" (6)

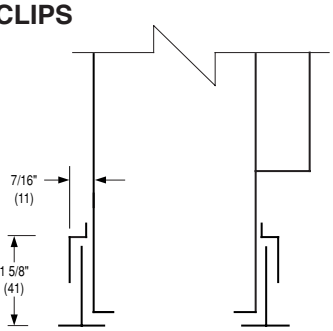


T-BAR MOUNTING CLIPS

The factory installed mounting clips assist to reinforce and stabilize the plenum during and after installation.

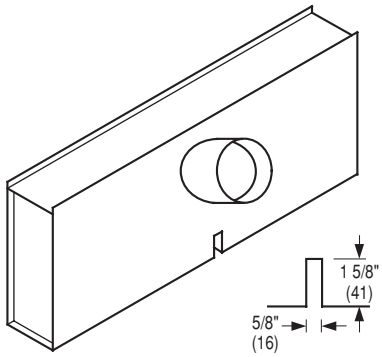
M1 One Side (2 supplied opposite inlet side)

M2 Both sides (4 total supplied)



CN CROSS DAMPER

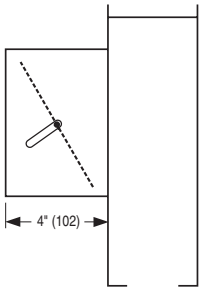
The CN Cross Notch option allows a 48" (1200) plenum unit to be installed in a 24" x 24" (600 x 600) ceiling grid. Available on both supply and return models.



ID INLET DAMPER

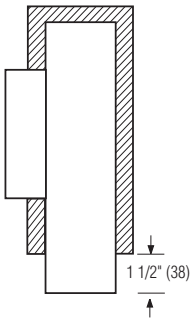
(Supply models only)

This single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



EX EXTERNAL FOIL BACK INSULATION

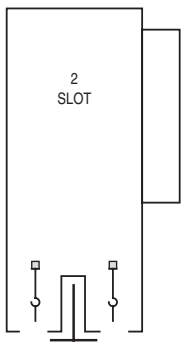
1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-kraft (FSK) facing that provides a vapor barrier. The insulation is wrapped around the outside of the plenum. It is an option on all non-insulated models.



ST STRADDLE T-BAR

The ST Straddle T-Bar option is a center channel that allows the plenum to straddle the T-Bar.

It is an option on both 2 or 4 slot units. (The T-Bar is supplied by others).



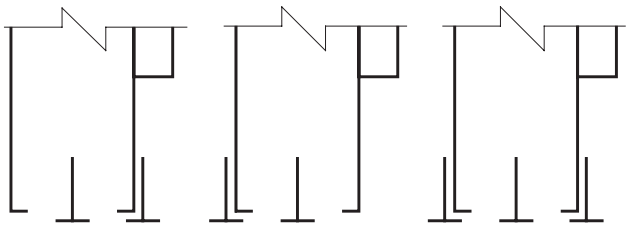
SUPPLEMENTARY T-BARS

T1 One on inlet side

T0 One opposite inlet side

T2 Two on both sides

As standard, multiple slot plenums include factory installed center T-Bars. However, if required, supplementary T-Bars can be ordered as an optional accessory for either one side or both sides of the plenum.



HOW TO ORDER

MODEL SERIES: 5600, 5700 AND 5800 PLENUM SLOT DIFFUSERS

EXAMPLE: 5675I - 48 x 2 - 08 - ID - CN

1. **Model Series**

Supply

5675(I) "Flip Flop" Pattern Controller 3/4" (19) Slot Width
5610(I) "Flip Flop" Pattern Controller 1" (25) Slot Width
5775(I) "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710(I) "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715(I) "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850(I) "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875(I) "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810(I) "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

Return

5675R(I) "Flip Flop" Pattern Controller 3/4" (19) Slot Width
5775R(I) "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710R(I) "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715R(I) "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850R(I) "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875R(I) "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810R(I) "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

2. **Nominal Length**

Imperial Sizes

inches (mm's)
20, 24, 30, 36, 48, 60
(508, 610, 762, 914, 1219, 1524)

Metric Sizes

(mm's)
500 , 600, 750, 900, 1200, 1500

3. **Number of Slots**

1 One
2 Two
3 Three
4 Four

4. **Inlet Size (supply only)**

04 4" (102) Round
05 5" (127) Round
06 6" (152) Round
07 7" (178) Round
08 8" (203) Round
09 9" (229) Oval
10 10" (254) Oval
12 12" (305) Oval

5. **Options & Accessories:**

(Default is 'None' unless noted otherwise)

ID Inlet Damper (supply only)
CN Cross Notch
PF Plaster Frame
ST Straddle T-Bar
(available with 2 slot and 4 slot models only)

Supplementary T-Bars

T1 One (inlet side)
T0 One (opposite inlet side)
T2 Two (both sides)
M1 Mounting Clips - one side (2)
M2 Mounting Clips - both sides (4)
EX External Foil Back Insulation R-4.2 (installed)
EIC Extended Inlet Collar (2.25" [57]) with bead *
EQT Earthquake Tabs

Internal Insulation

("I" models only)
FGI 1/4" (6.35) Coated fiberglass (default)
FFI 3/8" (9.53) Fiber-free foam

Notes:

1. **Model Series 5600** and **5800** are not available in a 1 1/2" (38) slot width.

2. If more than one accessory is desired, list in order.

3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

4.*Extended Inlet Collar option is available with 5600(I), 5700(I) and 5800(I) supply models only.

HOW TO ORDER

MODEL SERIES: 5700-F(2) AND 5800-F(2)
PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED (FINELINE TYPE) CEILING GRIDS

EXAMPLE: 5775I-F - 48 x 2 - 08 - ID - CN - ST - M2 - D - –

1. **Model Series**

Supply

(Straddle Mount)

5675(I)-F "Flip Flop" Pattern Controller 3/4" (19) Slot Width
5610(I)-F "Flip Flop" Pattern Controller 1" (25) Slot Width
5775(I)-F "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710(I)-F "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715(I)-F "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850(I)-F "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875(I)-F "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810(I)-F "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

(Flat Face T-Bars)

5775(I)-F2 "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710(I)-F2 "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715(I)-F2 "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850(I)-F2 "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875(I)-F2 "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810(I)-F2 "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

Return

(Straddle Mount)

5775R(I)-F "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710R(I)-F "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715R(I)-F "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850R(I)-F "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875R(I)-F "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810R(I)-F "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

(Flat Face T-Bars)

5775R(I)-F2 "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
5710R(I)-F2 "Wiper Blade" Pattern Controller 1" (25) Slot Width
5715R(I)-F2 "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
5850R(I)-F2 "Ice Tong" Pattern Controller 1/2" (13) Slot Width
5875R(I)-F2 "Ice Tong" Pattern Controller 3/4" (19) Slot Width
5810R(I)-F2 "Ice Tong" Pattern Controller 1" (25) Slot Width
(Add suffix "I" for optional internal insulation)

2. **Nominal Length**

Imperial Sizes

inches (mm's)
24, 48
(610, 1219)

Metric Sizes

(mm's)
600, 1200

3. **Number of Slots**

1 One
2 Two
3 Three
4 Four

4. **Inlet Size (supply only)**

04 4" (102) Round
05 5" (127) Round
06 6" (152) Round
07 7" (178) Round
08 8" (203) Round
09 9" (229) Oval
10 10" (254) Oval
12 12" (305) Oval

5. **Cross Notch**

00 None
CN Cross Notch on 48" (1219 or 1200) unit (default)

6. **Included Accessories**

ST Straddle T-Bar on -F two slot models only (default)
M2 T-Bar Mounting Clips - (4) (default)

7. **Specified T-Bar ***

A 1 3/4" (44) high
C 1 5/8" (41) high
D 1 25/32" (45) high

8. **Optional Accessories:**

(Default is 'None' unless noted otherwise)

ID Inlet Damper (supply only)
EX External Foil Back Insulation R-4.2 (installed)
EIC Extended Inlet Collar (2.25" [57]) with bead **
EQT Earthquake Tabs

Internal Insulation

("I" models only)
FGI 1/4" (6.35) Coated fiberglass (default)
FFI 3/8" (9.53) Fiber-free foam

Notes:

1. **Model Series 5700-F(2)** is not available with a 1/2" (13) slot width. **Model Series 5800-F(2)** is not available with a 1 1/2" (38) slot width.

2. -F models are available in a 1, or 2 slot configuration. -F2 models are available in a 1, 2, 3 or 4 slot configuration.

3. *Specified T-Bar: Type A Chicago Metallic Ultraline. Type C Certainteed Smoothline. Type D USG Donn Fineline.

4. Standard Internal Insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

5.**Extended Inlet Collar option is available with 5600(I)-F, 5700(I)-F(2) and 5800(I)-F(2) supply models only.

59N SERIES

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- SUPPLY AND SUPPLY/RETURN

Supply Models:

59N(I) Horizontal Discharge
59ND(I) Horizontal/Vertical Discharge

Supply/Return Models:

59NR(I) Horizontal Discharge
59NDR(I) Horizontal/Vertical Discharge

• Suffix 'I' adds internal insulation

Models 59ND and 59NDR

The 59N Series Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include an aerodynamic extruded aluminum pattern controller that provides a fixed horizontal discharge that produces a tight blanket of air into the room, maximizing coanda effect and induction of room air. In addition, Models 59ND and 59NDR include a central down-blow section, which incorporates two pattern controllers (shipped in wide open position), that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59NR and 59NDR.

STANDARD FEATURES:

- Choice of horizontal or horizontal/vertical discharge with either a supply or a supply/return combination.
- An aerodynamic, extruded aluminum pattern controller provides a fixed horizontal discharge.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.
- Standard H9 plenum height is 9" (229).
- Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.
- Standard unit size is 9" (229) in height.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

FINISH OPTIONS:

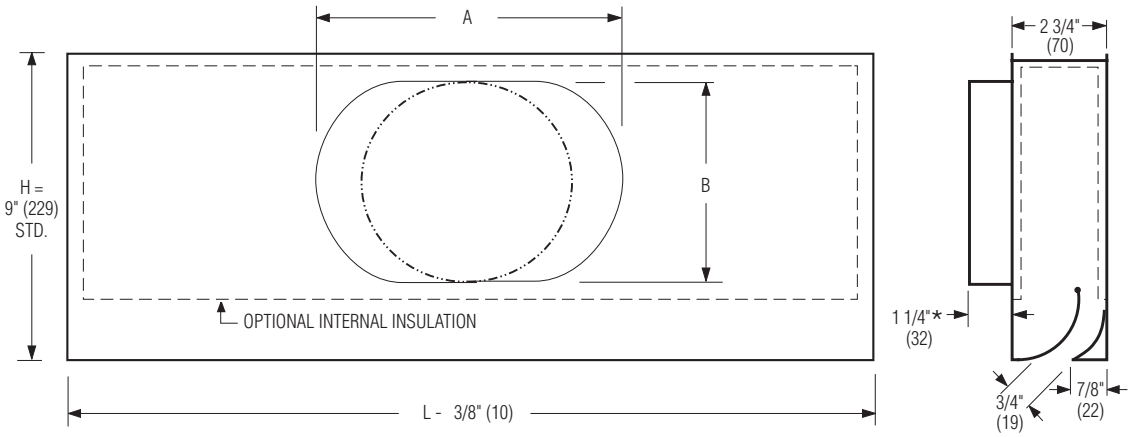
Black on pattern controllers and exposed surfaces.

OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.
- For additional options and accessories, see page C79.

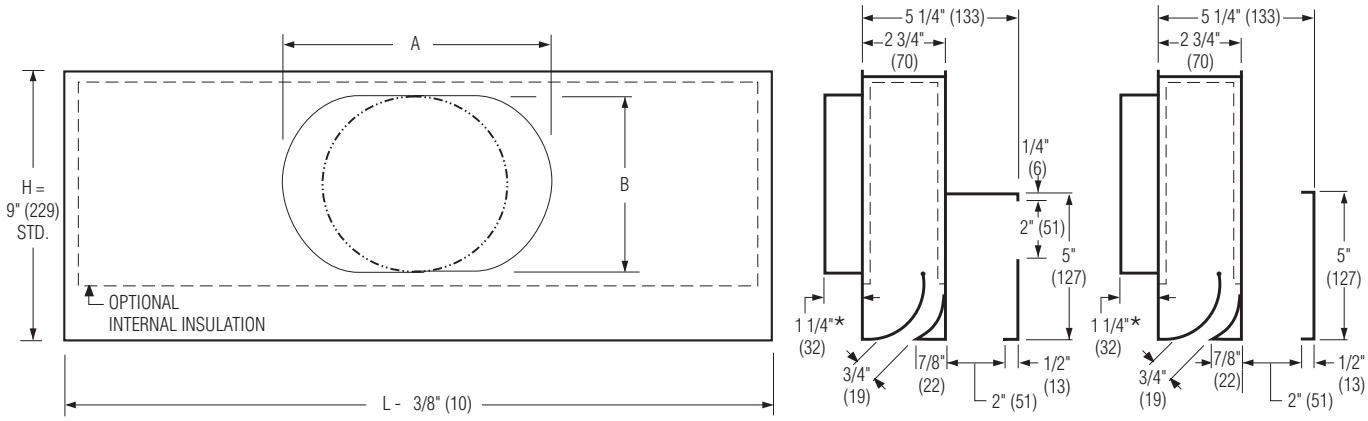
DIMENSIONAL DATA:
MODELS: 59N(I) AND 59NR(I)

Supply • Models 59N(I)



* 4" (102) WITH OPTIONAL ID INLET DAMPER

Supply/Return • Models 59NR(I)



* 4" (102) WITH OPTIONAL ID INLET DAMPER

SR STANDARD SIDE INLET RETURN ILLUSTRATED

TR OPTIONAL TOP INLET RETURN ILLUSTRATED

Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

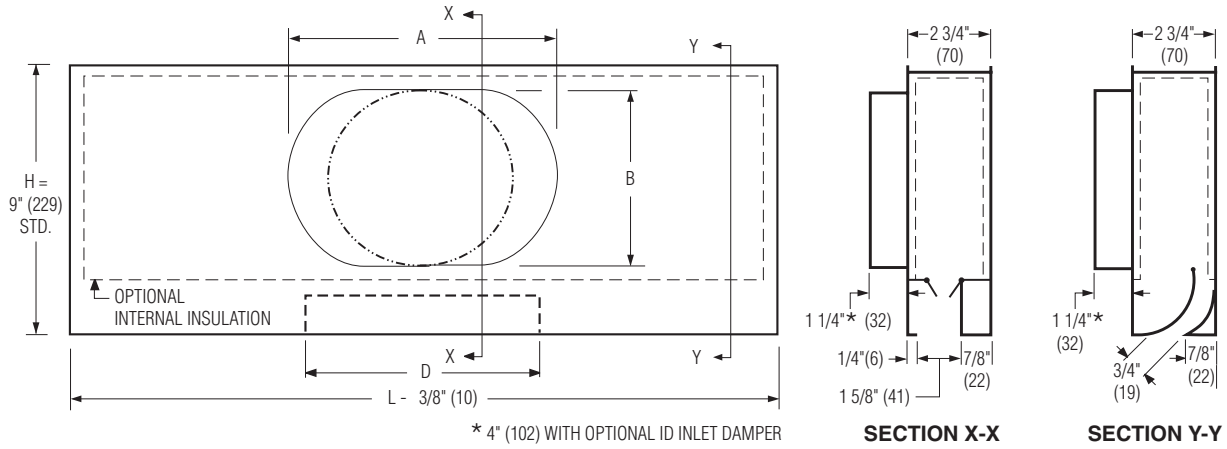
Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

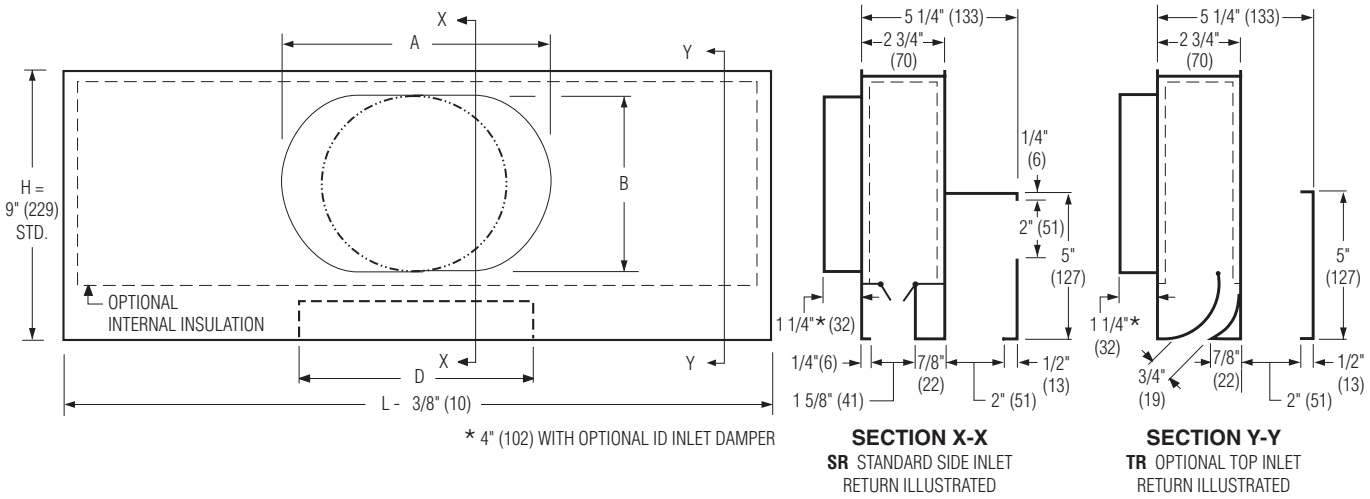
Dimensions are in inches (mm).

DIMENSIONAL DATA:
MODELS: 59ND(I) AND 59NDR(I)

Supply • Models 59ND(I)



Supply/Return • Models 59NDR(I)



Nominal Length L		Available Down-Blow Slot Dim. D	Available Inlet Sizes
Imperial Modules	Metric Modules		
24 (610)	600	8, 12 (203, 305)	6, 8, 10 (152, 203, 254)
36 (914)	900	12, 15 (305, 381)	
48 (1219)	1200	12, 15, 18 (305, 381, 457)	
60 (1524)	1500	15, 18, 21 (381, 457, 533)	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

Dimensions are in inches (mm).

PERFORMANCE DATA
MODELS 59N(I) AND 59NR(I) • HORIZONTAL PATTERN • 9" (229) HIGH PLENUM (STD.)

24" (610) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.039	.070	.110	.158	.215	.281	.355	.439
	Static Pressure	.033	.059	.093	.134	.182	.238	.303	.372
	Noise Criteria	–	16	22	27	31	34	36	39
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	12-16-23	13-17-24
8" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.023	.041	.064	.092	.125	.163	.207	.255
	Static Pressure	.021	.038	.059	.084	.115	.150	.190	.234
	Noise Criteria	–	–	17	23	26	29	31	34
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	13-16-23	13-17-24

36" (914) Long

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.057	.101	.157	.227	.309	.403	.511	.630
	Static Pressure	.044	.078	.121	.174	.237	.310	.393	.484
	Noise Criteria	–	20	26	29	32	35	39	43
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.035	.062	.096	.139	.189	.247	.312	.386
	Static Pressure	.030	.053	.082	.118	.161	.211	.267	.329
	Noise Criteria	–	–	22	25	28	32	35	39
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29

48" (1219) Long

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.069	.107	.155	.211	.275	.348	.430
	Static Pressure	.030	.053	.083	.119	.162	.211	.268	.330
	Noise Criteria	–	–	20	24	29	33	36	40
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.028	.050	.079	.113	.154	.201	.255	.315
	Static Pressure	.024	.042	.066	.095	.130	.169	.214	.264
	Noise Criteria	–	–	18	22	27	30	33	37
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33

60" (1524) Long

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.048	.085	.133	.191	.260	.340	.430	.532
	Static Pressure	.034	.060	.094	.135	.184	.241	.305	.376
	Noise Criteria	–	17	23	27	32	36	39	43
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.034	.061	.095	.137	.187	.244	.309	.381
	Static Pressure	.027	.048	.075	.108	.148	.193	.244	.301
	Noise Criteria	–	15	20	24	29	32	35	39
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM (STD.)

24" (610) Long with 8" (203) Down-Blow

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.035	.059	.089	.122	.162	.205	.253	.307
	Static Pressure	.029	.048	.071	.097	.127	.160	.196	.236
	Noise Criteria	–	–	16	21	26	31	34	37
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15
8" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.024	.041	.061	.085	.111	.142	.175	.213
	Static Pressure	.022	.037	.055	.076	.099	.126	.155	.188
	Noise Criteria	–	–	–	18	21	25	28	31
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15

36" (914) Long with 12" (305) Down-Blow

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.057	.095	.143	.198	.262	.333	.413	.501
	Static Pressure	.043	.070	.103	.141	.184	.231	.284	.342
	Noise Criteria	18	22	27	31	35	38	42	45
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.032	.054	.082	.115	.155	.198	.248	.302
	Static Pressure	.027	.045	.068	.095	.127	.162	.202	.246
	Noise Criteria	–	–	18	23	27	30	34	37
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28

48" (1219) Long with 12" (305) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.044	.077	.118	.167	.224	.290	.364	.446
	Static Pressure	.035	.061	.093	.131	.175	.226	.283	.346
	Noise Criteria	–	19	24	28	32	36	39	42
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.041	.069	.106	.148	.198	.255	.318	.389
	Static Pressure	.036	.061	.093	.130	.173	.222	.277	.338
	Noise Criteria	–	–	16	22	26	30	34	37
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32

60" (1524) Long with 15" (381) Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.050	.088	.135	.192	.260	.337	.424	.521
	Static Pressure	.036	.063	.096	.136	.184	.237	.298	.365
	Noise Criteria	–	20	26	31	36	40	43	46
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.052	.087	.129	.179	.235	.299	.369	.447
	Static Pressure	.045	.074	.109	.150	.196	.248	.305	.368
	Noise Criteria	–	18	23	27	31	35	39	42
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PERFORMANCE DATA:

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM (STD.)

36" (914) Long with 15" (381) Down-Blow

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.050	.086	.132	.184	.247	.317	.396	.483
	Static Pressure	.036	.061	.092	.127	.169	.215	.267	.324
	Noise Criteria	15	21	26	30	35	38	42	44
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.030	.051	.079	.111	.150	.193	.243	.296
	Static Pressure	.025	.042	.065	.091	.122	.157	.197	.240
	Noise Criteria	–	15	20	24	28	32	35	37
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23

48" (1219) Long with 15" (381) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.068	.104	.148	.199	.258	.323	.396
	Static Pressure	.030	.052	.079	.112	.150	.194	.242	.296
	Noise Criteria	–	15	21	26	30	34	37	40
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.037	.063	.095	.133	.179	.230	.286	.350
	Static Pressure	.032	.055	.082	.115	.154	.197	.245	.299
	Noise Criteria	–	–	19	23	27	31	34	38
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32

48" (1219) Long with 18" (457) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.038	.066	.102	.145	.194	.251	.315	.387
	Static Pressure	.029	.050	.077	.109	.145	.187	.234	.287
	Noise Criteria	–	16	21	26	30	34	37	40
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.065	.099	.138	.184	.236	.293	.357
	Static Pressure	.034	.057	.086	.120	.159	.203	.252	.306
	Noise Criteria	–	15	20	24	28	32	35	38
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31

60" (1524) Long with 18" (457) Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.051	.090	.139	.198	.268	.348	.438	.539
	Static Pressure	.037	.065	.100	.142	.192	.248	.312	.383
	Noise Criteria	15	21	26	31	36	40	43	46
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.043	.076	.115	.163	.218	.281	.351	.430
	Static Pressure	.036	.063	.095	.134	.179	.230	.287	.351
	Noise Criteria	–	15	21	27	32	36	39	42
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PERFORMANCE DATA

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 7" (178) HIGH PLENUM (OPT.)

24" (610) Long with 8" Down-Blow

6" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.050	.082	.119	.162	.209	.263	.321	.385
	Static Pressure	.043	.068	.098	.131	.168	.208	.252	.300
	Noise Criteria	–	–	23	26	29	33	37	40
	Horizontal Throw	2-4-11	4-7-14	5-9-17	7-11-20	9-13-22	10-15-24	12-17-26	13-18-27
	Vertical Throw	2-3-11	4-6-14	5-8-16	6-10-18	7-12-20	8-13-22	10-15-23	11-16-24
8" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.036	.059	.086	.118	.154	.194	.238	.287
	Static Pressure	.033	.053	.077	.104	.135	.170	.208	.249
	Noise Criteria	–	–	20	23	26	29	33	36
	Horizontal Throw	2-4-11	4-7-14	5-9-17	7-11-20	9-13-22	10-15-24	12-17-26	13-18-27
	Vertical Throw	2-3-11	4-6-14	5-8-16	6-10-18	7-12-20	8-13-22	10-15-23	11-16-24

36" (914) Long with 12" Down-Blow

6" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.054	.093	.141	.198	.264	.340	.424	.518
	Static Pressure	.037	.062	.093	.129	.170	.217	.269	.326
	Noise Criteria	–	22	26	30	34	38	41	46
	Horizontal Throw	3-5-11	4-7-15	6-9-18	7-11-21	8-13-24	10-14-26	11-16-28	12-17-30
	Vertical Throw	2-4-11	3-6-15	5-9-19	6-11-14	8-9-16	9-10-17	11-11-19	8-11-20
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.048	.082	.122	.170	.224	.286	.355	.430
	Static Pressure	.041	.068	.101	.139	.183	.231	.286	.345
	Noise Criteria	–	–	22	26	30	33	37	40
	Horizontal Throw	3-5-11	4-7-15	6-9-19	7-11-21	8-13-24	10-14-26	11-16-28	12-17-30
	Vertical Throw	2-4-11	3-6-15	5-9-19	6-11-14	8-9-16	9-10-17	11-11-19	8-11-20

48" (1219) Long with 12" Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.063	.108	.164	.232	.310	.400	.501	.613
	Static Pressure	.049	.084	.127	.177	.236	.303	.379	.462
	Noise Criteria	–	20	24	28	32	36	40	43
	Horizontal Throw	7-11-20	9-14-24	11-16-27	12-19-30	14-21-32	16-23-34	17-25-36	19-26-37
	Vertical Throw	3-5-11	5-7-14	7-10-17	8-12-19	10-14-22	12-16-23	13-18-24	15-19-25
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.047	.083	.128	.183	.248	.322	.406	.500
	Static Pressure	.039	.069	.107	.153	.207	.268	.338	.416
	Noise Criteria	–	–	21	25	29	33	37	41
	Horizontal Throw	7-11-20	9-14-24	11-16-27	12-19-30	14-21-32	16-23-34	17-25-36	19-26-37
	Vertical Throw	3-5-11	5-7-14	7-10-17	8-12-19	10-14-22	12-16-23	13-18-24	15-19-25

60" (1524) Long with 15" Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.078	.136	.207	.292	.392	.506	.635	.778
	Static Pressure	.057	.098	.148	.207	.277	.355	.444	.542
	Noise Criteria	–	24	29	33	37	41	45	48
	Horizontal Throw	4-8-15	7-11-19	9-14-22	11-16-25	13-18-27	15-20-29	16-22-31	18-23-32
	Vertical Throw	3-5-13	5-8-16	7-11-19	9-14-22	11-16-25	13-18-27	15-20-28	16-22-29
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.071	.123	.188	.267	.358	.462	.579	.709
	Static Pressure	.059	.102	.155	.219	.293	.377	.472	.577
	Noise Criteria	–	21	26	30	34	38	42	45
	Horizontal Throw	4-8-15	7-11-19	9-14-22	11-16-25	13-18-27	15-20-29	16-22-31	18-23-32
	Vertical Throw	3-5-13	5-8-16	7-11-19	9-14-22	11-16-25	13-18-27	15-20-28	16-22-29

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PERFORMANCE DATA

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 7" (178) HIGH PLENUM (OPT.)

36" (914) Long with 15" Down-Blow

6" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.060	.102	.153	.213	.281	.359	.446	.541
	Static Pressure	.043	.071	.105	.144	.187	.236	.290	.349
	Noise Criteria	–	–	23	27	31	35	38	42
	Horizontal Throw	2-3-10	3-5-14	4-7-17	5-8-19	6-10-22	7-12-24	9-13-26	10-15-28
	Vertical Throw	1-3-9	2-3-10	3-4-15	4-5-18	5-7-20	6-8-22	6-9-24	7-10-25
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.046	.078	.116	.161	.213	.271	.336	.407
	Static Pressure	.038	.064	.095	.131	.171	.217	.267	.322
	Noise Criteria	–	–	22	26	30	33	36	40
	Horizontal Throw	2-3-10	3-5-14	4-7-17	5-8-19	6-10-22	7-12-24	9-13-26	10-15-28
	Vertical Throw	1-3-9	2-3-10	3-4-15	4-5-18	5-7-20	6-8-22	6-9-24	7-10-25

48" (1219) Long with 15" Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.057	.099	.150	.211	.281	.362	.452	.552
	Static Pressure	.044	.074	.112	.156	.207	.265	.330	.401
	Noise Criteria	–	–	23	27	31	34	38	42
	Horizontal Throw	7-10-17	9-13-21	10-15-24	12-17-27	13-19-29	15-21-31	16-23-33	17-24-34
	Vertical Throw	2-4-11	4-6-14	6-9-17	7-11-20	9-13-22	11-15-23	12-17-25	14-19-25
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.050	.086	.131	.184	.245	.315	.394	.481
	Static Pressure	.043	.073	.110	.153	.204	.262	.326	.397
	Noise Criteria	–	–	22	26	29	33	37	40
	Horizontal Throw	7-10-17	9-13-21	10-15-24	12-17-27	13-19-29	15-21-31	16-23-33	17-24-34
	Vertical Throw	2-4-11	4-6-14	6-9-17	7-11-20	9-13-22	11-15-23	12-17-25	14-19-25

48" (1219) Long with 18" Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.056	.096	.146	.205	.273	.350	.437	.533
	Static Pressure	.042	.072	.108	.150	.199	.254	.314	.382
	Noise Criteria	–	20	24	27	31	35	38	42
	Horizontal Throw	2-4-11	4-6-14	5-9-18	7-11-21	8-13-23	10-14-26	11-16-28	12-18-29
	Vertical Throw	2-3-7	4-4-9	3-6-12	5-7-14	5-9-15	7-9-17	7-11-19	8-12-19
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.052	.089	.134	.188	.249	.318	.396	.482
	Static Pressure	.045	.076	.113	.157	.208	.265	.328	.398
	Noise Criteria	–	–	22	25	29	33	36	40
	Horizontal Throw	2-4-11	4-6-14	5-9-18	7-11-21	8-13-23	10-14-26	11-16-28	12-18-29
	Vertical Throw	2-3-7	4-4-9	3-6-12	5-7-14	5-9-15	7-9-17	7-11-19	8-12-19

60" (1524) Long with 18" Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.072	.124	.189	.267	.357	.460	0.576	0.705
	Static Pressure	.051	.086	.130	.182	.242	.309	0.385	0.469
	Noise Criteria	–	23	28	32	37	40	44	48
	Horizontal Throw	7-19-17	8-14-21	10-15-24	14-18-27	14-20-29	16-22-32	18-23-34	20-25-35
	Vertical Throw	3-6-14	5-9-17	7-12-20	9-14-23	11-16-25	13-18-27	14-20-28	16-22-29
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.064	.110	.167	.234	.312	.401	0.501	0.612
	Static Pressure	.052	.089	.134	.187	.248	.317	0.395	0.480
	Noise Criteria	–	21	25	30	34	38	42	45
	Horizontal Throw	7-19-17	8-14-21	10-15-24	14-18-27	14-20-29	16-22-32	18-23-34	20-25-35
	Vertical Throw	3-6-14	5-9-17	7-12-20	9-14-23	11-16-25	13-18-27	14-20-28	16-22-29

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PERFORMANCE DATA:

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 11" (279) HIGH PLENUM (OPT.)

24" (610) Long with 8" (203) Down-Blow

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.028	.050	.078	.112	,152	.199	.251	.310
	Static Pressure	.022	.039	.061	.088	.120	.157	.199	.245
	Noise Criteria	–	–	15	20	25	30	33	36
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15
8" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.019	.034	.053	.076	.104	.136	.172	.212
	Static Pressure	.017	.031	.048	.069	.094	.123	.155	.192
	Noise Criteria	–	–	–	15	20	25	28	31
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15

36" (914) Long with 12" (305) Down-Blow

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.040	.070	.110	.159	.216	.282	.357	.441
	Static Pressure	.027	.047	.074	.107	.145	.190	.240	.296
	Noise Criteria	–	15	21	26	31	34	38	41
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28
8" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.023	.040	.063	.090	.123	.160	.203	.250
	Static Pressure	.018	.033	.051	.073	.100	.131	.165	.204
	Noise Criteria	–	–	15	20	25	28	32	35
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28

48" (1219) Long with 12" (305) Down-Blow

8" Round Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.037	.065	.102	.147	.200	.261	.331	.408
	Static Pressure	.029	.052	.082	.188	.160	.209	.264	.327
	Noise Criteria	–	16	21	25	29	33	36	39
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.024	.043	.067	.097	.132	.172	.217	.268
	Static Pressure	.021	.038	.059	.084	.115	.150	.190	.235
	Noise Criteria	–	–	–	19	23	27	31	34
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32

60" (1524) Long with 15" (381) Down-Blow

8" Round Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.039	.069	.108	.156	.213	.278	.352	.434
	Static Pressure	.028	.049	.076	.110	.150	.196	.248	.306
	Noise Criteria	–	–	20	25	30	34	37	40
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.026	.047	.073	.106	.144	.188	.188	.293
	Static Pressure	.022	.039	.060	.087	.118	.154	.154	.241
	Noise Criteria	–	–	–	21	26	30	33	36
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	–.010	–.018	–.027	–.038	–.050	–.063	–.079	–.098

See page C73 for performance data notes.

PERFORMANCE DATA NOTES:

Model Series 5700
Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Models 59ND(I),59NDR(I)
Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in inches w.g.
3. Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.
4. Dash (—) in space indicates an NC level of less than 15.
5. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

59BS SERIES

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- ADJUSTABLE VERTICAL DISCHARGE

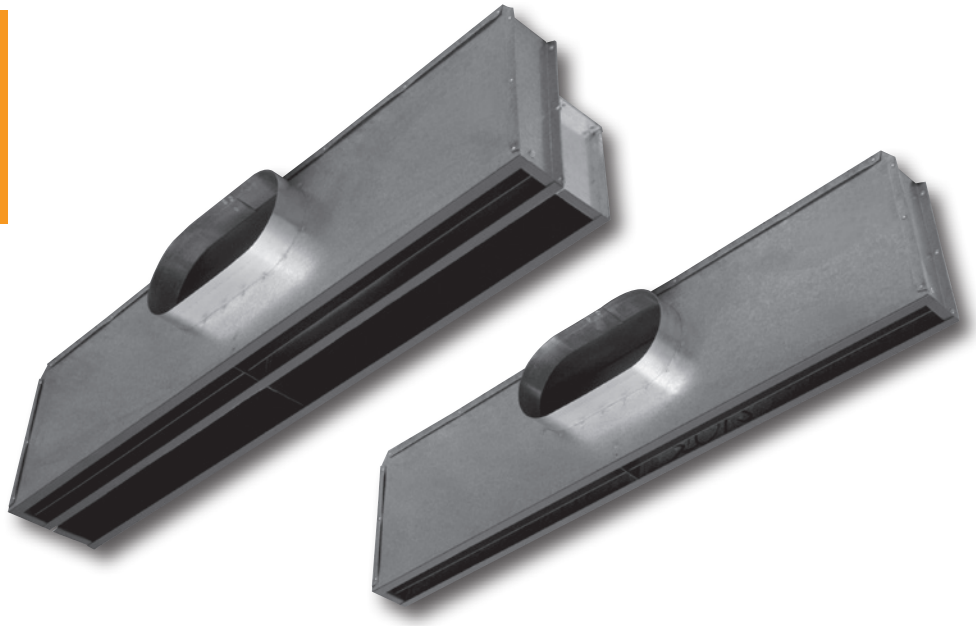
Supply Model:

59BS(I)

Supply/Return Model:

59BSR(I)

• Suffix 'I' adds internal insulation



Models 59BSR and 59BS

Model Series 59BS Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance in perimeter curtain wall applications and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include extruded aluminum pattern controllers that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59BSR and 59BSRI.

STANDARD FEATURES:

• Adjustable pattern controller that provides a vertical discharge.

• Choice of either a supply or a supply/return combination.

• Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.

• Standard H9 plenum height is 9" (229).

• Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

FINISH OPTIONS:

Black on pattern controllers and exposed surfaces.

OPTIONS AND ACCESSORIES:

• Internal insulation (add suffix 'I' to model number).

• EQT Earthquake Tabs.

• Low height 7" (178) option when space is a restriction.

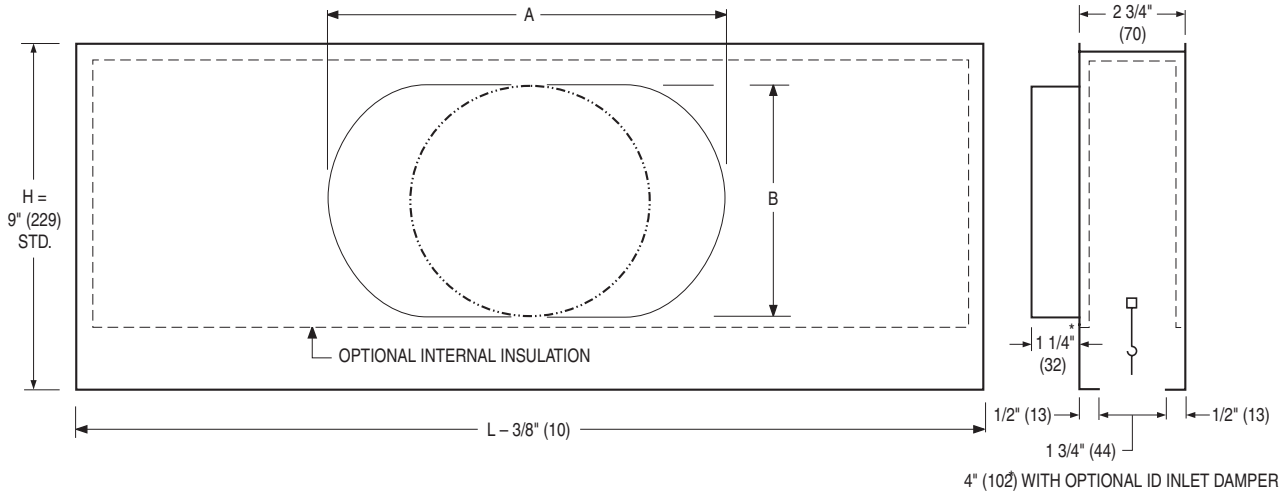
• High profile 11" (279) height option.

• Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.

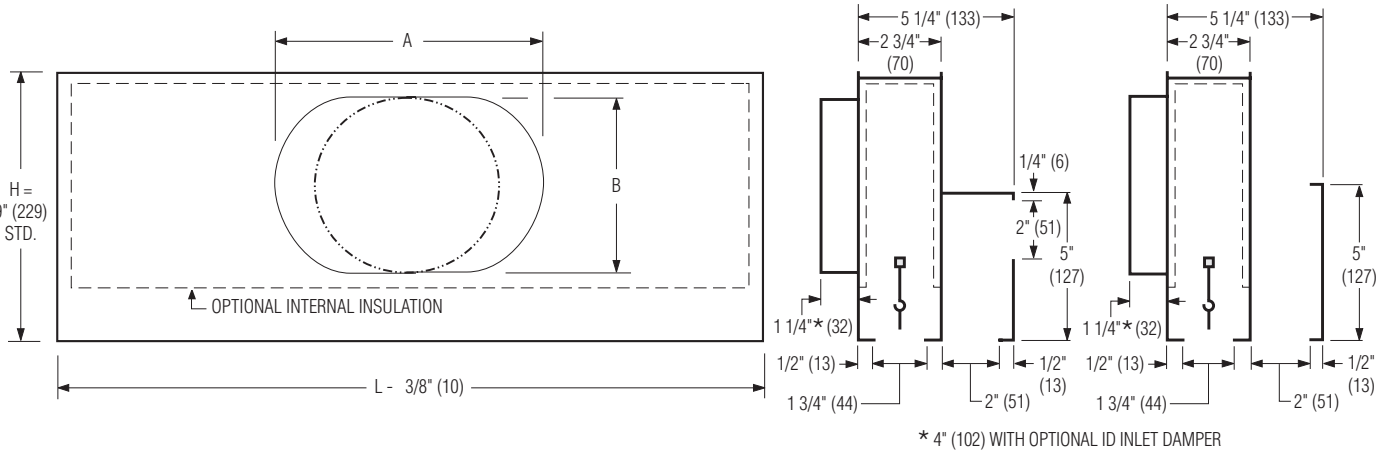
• For additional options and accessories, see page C79.

DIMENSIONAL DATA:
MODELS: 59BS(I) AND 59BSR(I)

Supply • Models 59BS(I)



Supply/Return • Models 59BSR(I)



SR STANDARD SIDE INLET RETURN ILLUSTRATED

TR OPTIONAL TOP INLET RETURN ILLUSTRATED

Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

PERFORMANCE DATA:

MODELS: 59BS(I) and 59BSR(I) • VERTICAL PATTERN

24" (610) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.018	.033	.051	.073	.100	.130	.165	.204
	Static Pressure	.012	.022	.035	.050	.068	.088	.112	.138
	Noise Criteria	–	–	–	–	–	20	25	29
	Vertical Throw	5	6	7	8	9	9	10	11

36" (914) Long

8" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173
	Static Pressure	.011	.020	.032	.046	.062	.081	.103	.127
	Noise Criteria	–	–	–	–	–	20	23	27
	Vertical Throw	6	7	8	9	10	11	12	13

48" (1219) Long

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.024	.042	.066	.094	.129	.168	.212	.262
	Static Pressure	.016	.029	.045	.065	.088	.115	.146	.180
	Noise Criteria	–	–	–	–	20	24	26	31
	Vertical Throw	7	9	10	11	12	13	14	15

60" (1524) Long

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.029	.051	.080	.115	.157	.205	.259	.320
	Static Pressure	.017	.031	.048	.069	.094	.123	.156	.192
	Noise Criteria	–	–	–	–	22	27	32	37
	Vertical Throw	8	10	11	12	13	14	15	17

Return Section

R Models	Airflow, CFM/Ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

Performance Notes:

1. Vertical throws are given at 50 fpm terminal velocities for a free jet under isothermal conditions.
2. Throw correction factors for different ΔT's.
   20°F cooling x 1.40
   10°F heating x 0.85
   15°F heating x 0.72
   20°F heating x 0.60
3. All pressures are in inches w.g..
4. Tested with pattern controller set fully open for vertical discharge. Straight flexible duct connection.
5. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
6. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 59N 'N-SLOT' AND 59BS 'BS-SLOT' PLENUM SLOT DIFFUSERS

EXAMPLE: 59NDR - 48 - 08 - H9 - D15 - SR - –

1. **Model Series**

59N(I)	Supply
59NR(I)	Supply/Return
59ND(I)	Supply with Down Blow
59NDR(I)	Supply/Return with Down Blow
59NDR-SPL	Supply/Return with Down Blow
59BS(I)	Supply
59BSR(I)	Supply/Return

(Add suffix "I" for optional internal insulation)

2. **Nominal Length**

Imperial Sizes
inches (mm's)
24, 36, 48, 60
(610, 914, 1219, 1524)

Metric Sizes
(mm's)
(600, 900, 1200, 1500)

3. **Inlet Size**

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Oval

4. **Height**

H9	9" (229) (default)
H7	7" (178)
H11	11" (279)

5. **Down Blow (Length) Selection**
(Models 59ND(I) and 59NDR(I) only)

D8, D12	24" (600)
D12, D15	36" (900)
D12, D15, D18	48" (1200)
D15, D18, D21	60" (1500)

6. **Return Inlet Selection**
(Models 59NR(I), 59NDR(I), 59BSR(I) only)

SR	Side Return (default)
TR	Top Return

7. **Options and Accessories**

–	None (default)
ID	Inlet Damper
PF	Plaster Frame

Supplementary T-Bars

T1	One (inlet side)
T0	One (opposite inlet side)
T2	Two (both sides)
M1	T-Bar Mounting Clips (2)
M2	T-Bar Mounting Clips (4)
EX	External Foil Back Insulation
EQT	Earthquake Tabs
EC	Extended Inlet Collar with Bead 3" (76)
FS	Diamond Flow Sensor with Extended Inlet Collar and Bead*
RBK	Return section painted black internally

Internal Insulation
("I" models only)

FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

Fineline T-Bar**
(Only available on 24" & 48" lengths)

FNLA	1 3/4" (44) High
FNLC	1 5/8" (41) High
FNLD	1 25/32" (45) High

Notes:

1. **Model 59NDR-SPL** is a special application design. 13 1/2" (343) high with insulated cross-talk return. No height options on this model. No return inlet option.

2. *FS Diamond Flow Sensor is only available with 6" (152) and 8" (203) round inlet sizes. Requires H11 11" (279) high plenum option. FS option is not available on internally insulated (I) models. Not available when ID Inlet Damper is selected.

3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

4. **Fineline® T-Bar options are not available with supplementary T-Bars T1, T0, T2 or mounting clips M1 or M2.

MODELS 59BS(I) AND 59BSR(I) • 'BS SLOT' PLENUM DIFFUSERS

SUGGESTED SPECIFICATION:

Vertical Discharge, Supply

Furnish and install **Nailor Model** (select one) **59BS** or **59BSI Adjustable Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59BSI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Vertical Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59BSR** or **59BSRI Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening and a side inlet for connection to the supply air duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59BSRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

MODELS 59N(I), 59NR(I), 59ND(I) AND 59NDR(I) • 'N SLOT' PLENUM DIFFUSERS

SUGGESTED SPECIFICATION:

Horizontal Discharge, Supply

Furnish and install **Nailor Model** (select one) **59N** or **59NI Horizontal Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Horizontal Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59NR** or **59NRI Horizontal Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot and a side inlet for connection to the supply air duct. The return air section shall have a rectangular return opening on the side that functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Horizontal/Vertical Discharge, Supply

Furnish and install **Nailor Model** (select one) **59ND** or **59NDI Horizontal/Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot. The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NDI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Horizontal/Vertical Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59NDR** or **59NDRI Horizontal/Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and integral return air section. The supply plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot opening, the end sections shall incorporate an extruded aluminum fixed horizontal pattern controller within a 3/4" (19) slot. The supply plenum shall include a side inlet for connection to the duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59NDRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Options and Accessories

MODEL SERIES: 59N AND 59BS

PF SLOT DIFFUSER PLASTER FRAME

Slot diffuser mounting frames allow plenum slot diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

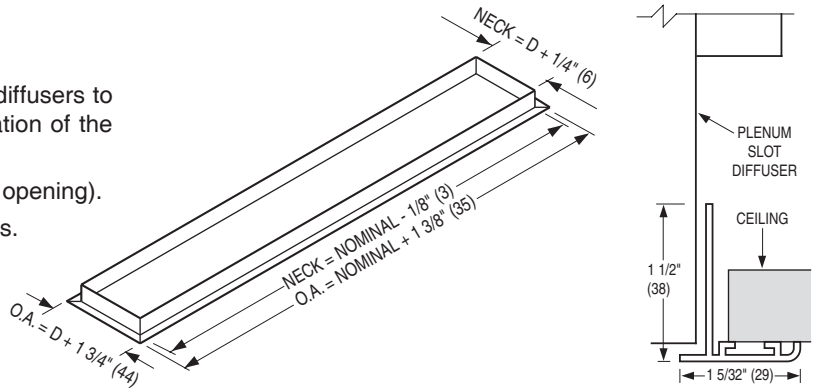
(**Note:** Diffuser will not fit through a plaster frame opening).

Material: Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

Width = Diffuser Width (D) + 1/2" (13)

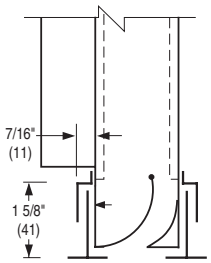
Length = Nominal Diffuser Length + 1/4" (6)



MOUNTING CLIPS

M1 One Side (2 opposite inlet side)

M2 Both sides (4)



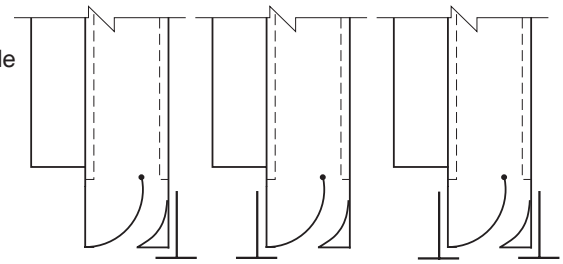
SUPPLEMENTARY T-BARS

T1 One on inlet side

T0 One opposite inlet side

T2 Two on both sides

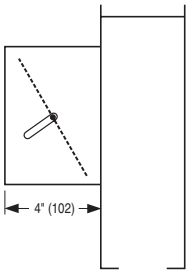
Note: Center T-Bars are supplied by Nailor as standard.



ID INLET DAMPER

(Supply models only)

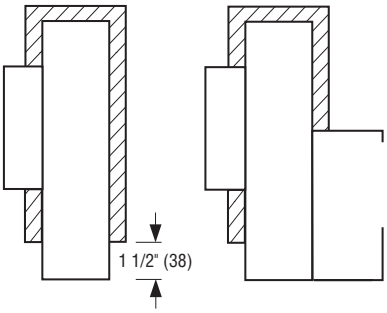
The single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



EXTERNAL FOIL BACK INSULATION

EX 1/2" (13) thick

1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-craft (FSK) facing, providing a vapor barrier.



FINELINE/BOLT-SLOT T-BAR CEILING CONSTRUCTION

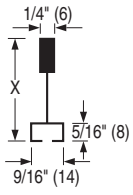
(24" [610] and 48" [1219] Nominal length only)

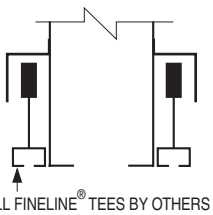
Plenum length = Nominal - 5/8" (16)

FNLA Armstrong Silhouette

FNLC Chicago Metallic Ultraline

FNLD Donn Fineline





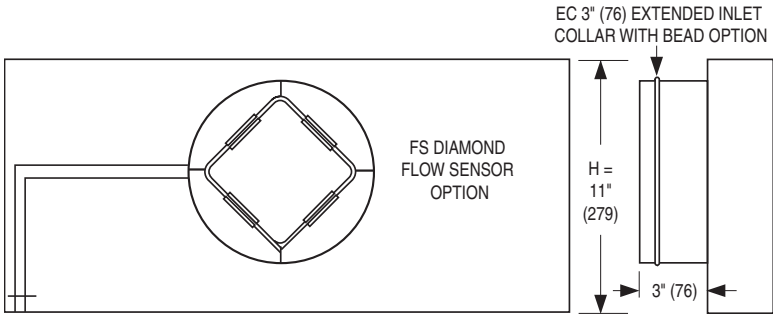
T-Bar Type (Manufacturer)		X
FNLA	Armstrong Silhouette	1 3/4" (44)
FNLC	Chicago Metallic Ultraline	1 5/8" (41)
FNLD	Donn Fineline	1 25/32" (45)

EC EXTENDED INLET COLLAR WITH BEAD

FS DIAMOND FLOW SENSOR WITH EXTENDED INLET COLLAR AND BEAD

Optional multi-point Diamond Flow sensor provides accurate field balancing. Gauge taps are conveniently located flush in the slot face eliminating the need for ceiling access. Includes 3" (76) extended inlet collar. 6" (152) and 8" (203) round inlet sizes only.

Units with FS option are 11" (279) high.



Fineline® is a registered trademark of USG Interiors Inc.

LIGHT TROFFER DIFFUSERS

- SINGLE OR DOUBLE SIDE
- SUPPLY AND RETURN

Models:

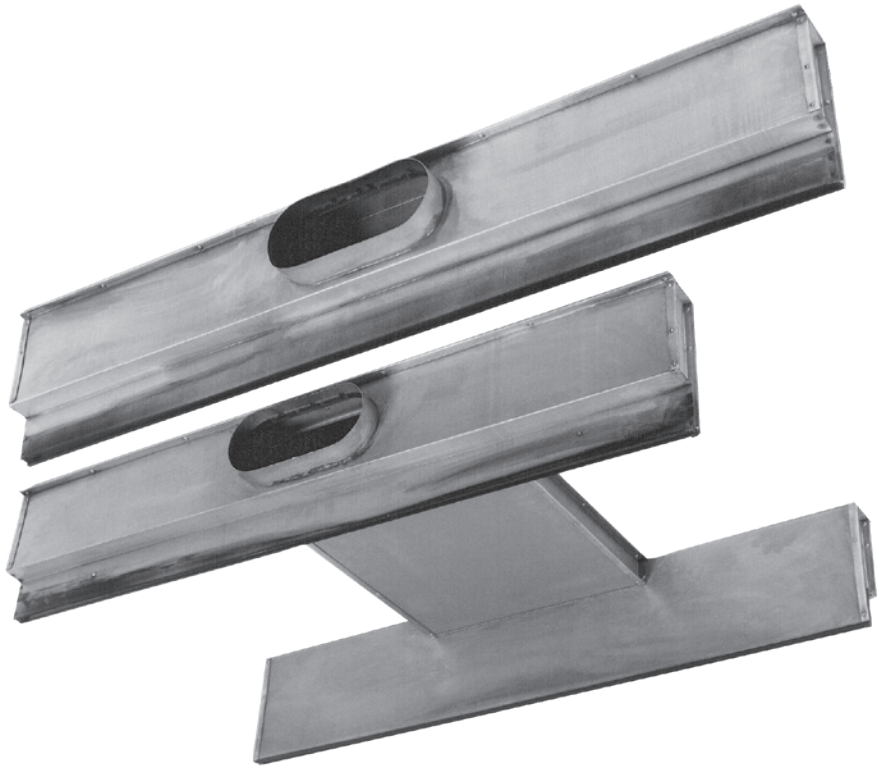
Supply:

5410 Single Side

5420 Double Side

Return:

5410R Single Side



Models 5410 and 5420

Model Series 5400 Light Troffer Diffusers have been designed to provide an inconspicuous appearance with high engineering performance.

Model Series 5400 Diffusers attach easily to standard air handling fluorescent light troffers. Custom fabrication is available to suit individual light troffer designs. Lighting and air distribution are provided through a single ceiling opening. The air opening is an unobtrusive slot at the side of the light troffer.

STANDARD FEATURES:

- Diffusers are available in single or double side configurations.
- Standard design is for use with flush slot type (non-regressed) light troffers and fits most models.
- Custom fabrication is available to suit individual light troffer designs.
- Available to suit light troffer lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) for both imperial and metric ceiling grids.
- Adjustable piano-type hinge pattern controllers.
- Top inlet or low profile side inlet models.
- Inlet collars are sized for nominal duct connection.
- Return models are available.
- Available with adjustable telescopic cross-over for field sizing to suit light troffer (low profile models only).
- Units are shipped knocked down for field assembly.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel construction.

FINISH OPTIONS:

BK Black on exposed surfaces.

OPTIONS AND ACCESSORIES:

RS Regressed slot option (pattern controller and horizontal lip are reversed).

IN Internal insulation.

EX External foil back insulation.

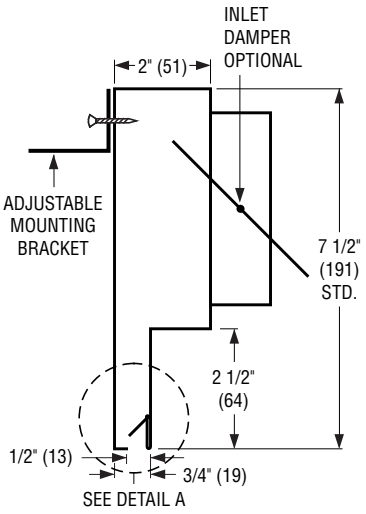
HC High clearance option on double side units.

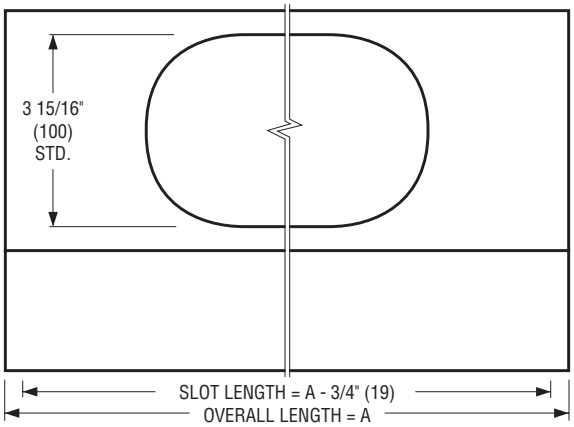
TE Telescopic adjustable cross-over.

ID Inlet damper (side inlets only).

DIMENSIONAL DATA:

MODEL: 5410 • SUPPLY • SINGLE SIDE



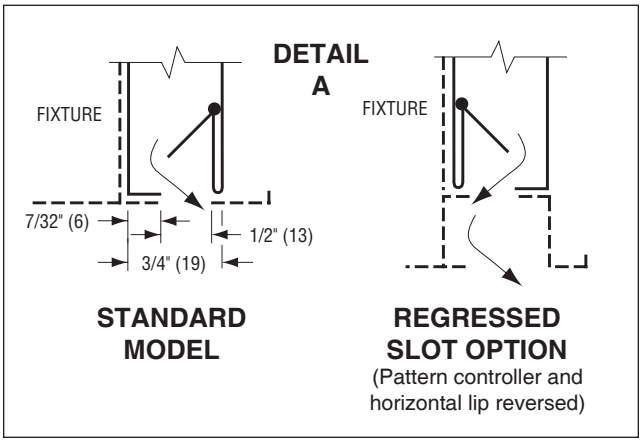


INLET SELECTION:

Side Inlet
S4 4" (102) Round
S5 5" (127) Oval
S6 6" (152) Oval

Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Nominal L	A	Fixture Nominal L	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264



SPECIFY:

'A' dimension
(if non-standard) _____ .

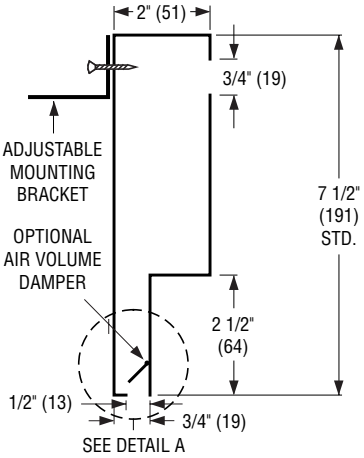
NOTE:

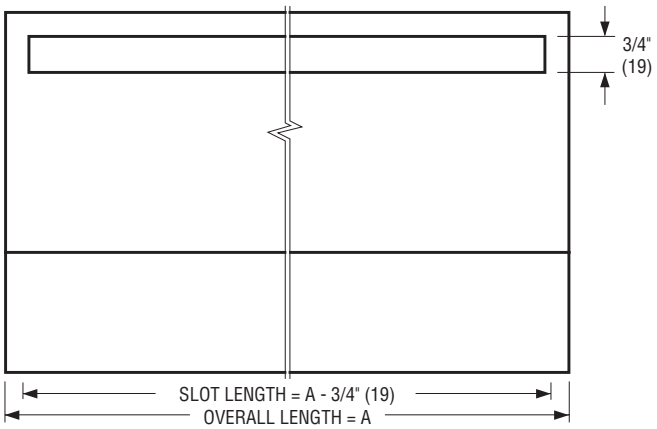
The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

Dimensions are in inches (mm).

DIMENSIONAL DATA:

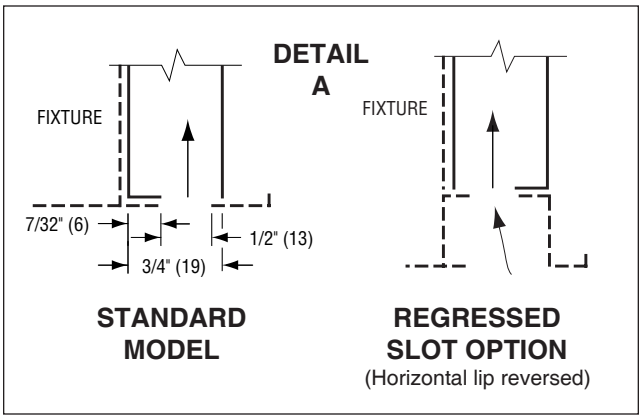
MODEL: 5410R • RETURN • SINGLE SIDE





Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W	A	Fixture Size W	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264



SPECIFY:

'A' dimension
(if non-standard) _____ .

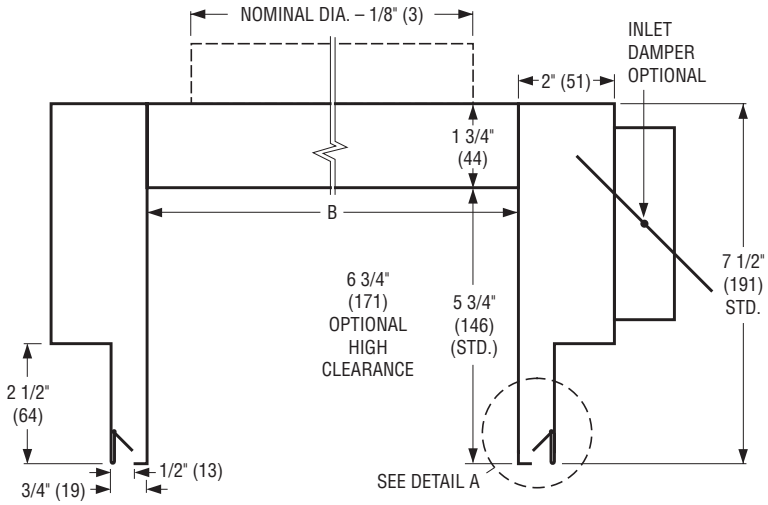
NOTE:

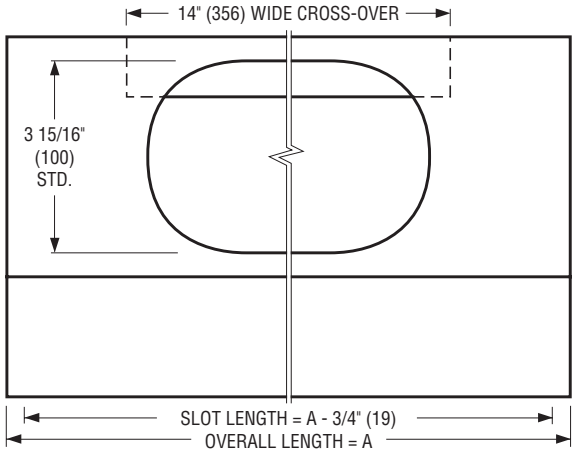
The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

Dimensions are in inches (mm).

DIMENSIONAL DATA:

MODEL: 5420 • SUPPLY • DOUBLE SIDE (SADDLE)





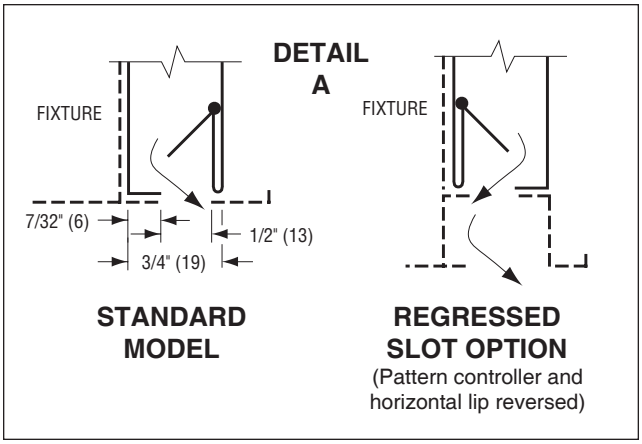
INLET SELECTION:

Side Inlet		
S4	4" (102)	Round
S5	5" (127)	Oval
S6	6" (152)	Oval
S8	8" (203)	Oval

Top Inlet		
T4	4" (102)	Round
T5	5" (127)	Round
T6	6" (152)	Round
T7	7" (178)	Round
T8	8" (203)	Round

Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W x L	A	Fixture Size W x L	A
12 x 48	41 1/2	300 x 1200	1054
20 x 60	41 1/2	500 x 1500	1054
24 x 24	17 1/2	600 x 600	445
24 x 48	41 1/2	600 x 1200	1054
30 x 30	23 1/2	750 x 750	597
36 x 36	25 3/4	900 x 900	654



SPECIFY:

'B' dimension (always required unless TE Telescopic adjustable cross-over option specified) _____ .
'A' dimension (if non-standard) _____ .

TE Telescopic Option:

Unit Width	"B" Dimension Adjustment
20" (500)	15" – 18" (381 – 457)
24" (600)	19" – 22" (483 – 559)
30" (750)	25" – 28" (635 – 711)
36" (900)	31" – 34" (787 – 864)

NOTE:

The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

PERFORMANCE DATA:

MODEL: 5410

Single Side • 24" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	30	40	50	60	70	80	90
Total Pressure	.040	.060	.100	.130	.170	.220	.360
Static Pressure	.030	.050	.090	.120	.150	.200	.330
Noise Criteria	15	23	29	34	38	43	46
Throw	2-5	3-7	4-8	5-10	6-11	7-12	8-13

Single Side • 36" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110
Total Pressure	.050	.070	.110	.140	.180	.220	.260	.320
Static Pressure	.040	.060	.100	.120	.160	.190	.230	.280
Noise Criteria	–	20	25	29	33	37	40	43
Throw	3-6	3-7	4-8	5-10	6-12	6-14	8-15	9-16

Single Side • 48" and 60" Long Light Troffer • 6" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110	120
Total Pressure	.030	.060	.080	.110	.130	.160	.220	.280	.300
Static Pressure	.030	.050	.070	.100	.120	.150	.200	.260	.280
Noise Criteria	–	–	17	21	25	29	34	36	40
Throw	2-5	3-7	4-7	5-9	6-11	7-12	7-14	8-15	9-16

Performance Notes:

1. Performance data is based on typical samples of light troffers. Performance may vary with other makes and models of light troffers.
2. Throws are given at 150 and 50 fpm terminal velocities, under isothermal conditions.
3. All pressures are in inches w.g..
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Length in feet	Ak Factor per foot	
	Single	Double
2	.057	.093
3	.089	.145
4	.120	.197

PERFORMANCE DATA:

MODEL: 5420

Double Side • 24" Long Light Troffer • 5" Round Inlet • Top Inlet

Airflow, CFM	60	70	80	100	120	140	160	180	200
Total Pressure	.070	.100	.120	.170	.250	.340	.370	.410	.450
Static Pressure	.060	.090	.100	.140	.200	.260	.280	.300	.310
Noise Criteria	–	23	26	30	34	36	40	41	42
Throw	2-4	2-5	3-7	4-8	5-9	5-10	6-11	7-12	7-12

Double Side • 48" and 60" Long Light Troffer • 8" Round Inlet • Top Inlet

Airflow, CFM	60	80	100	120	140	160	180	200	220
Total Pressure	.030	.070	.080	.090	.130	.180	.230	.270	.350
Static Pressure	.030	.060	.070	.080	.120	.170	.210	.250	.320
Noise Criteria	–	–	–	18	23	26	28	29	35
Throw	1-3	2-5	3-6	4-7	4-8	5-9	5-11	6-13	7-15

Double Side • 24" Long Light Troffer • 6" Oval Inlet • Side Inlet

Airflow, CFM	60	70	80	100	120	140	160	180	200
Total Pressure	.080	.110	.120	.170	.250	.320	.350	.370	.400
Static Pressure	.070	.100	.110	.150	.230	.290	.310	.320	.340
Noise Criteria	22	25	27	33	35	37	42	43	45
Throw	2-4	2-5	3-7	4-8	5-9	5-10	6-11	7-12	7-12

Double Side • 48" and 60" Long Light Troffer • 6" Oval Inlet • Side Inlet

Airflow, CFM	60	80	100	120	140	160	180	200	220
Total Pressure	.040	.070	.090	.110	.160	.210	.280	.330	.410
Static Pressure	.030	.060	.080	.090	.140	.180	.240	.280	.352
Noise Criteria	–	–	–	22	27	29	32	34	37
Throw	1-3	2-5	3-6	4-7	4-8	5-9	5-11	6-13	7-15

Performance Notes:

1. Performance data is based on typical samples of light troffers. Performance may vary with other makes and models of light troffers.
2. Throws are given at 150 and 50 fpm terminal velocities, under isothermal conditions.
3. All pressures are in inches w.g..
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Length in feet	Ak Factor per foot	
	Single	Double
2	.057	.093
3	.089	.145
4	.120	.197

HOW TO ORDER

MODEL SERIES: 5400
LIGHT TROFFER DIFFUSERS

EXAMPLE: 5420 - S6 - 2448 - AD = 41.5" - BD = 21.0"

1. **Model Series**

Supply

5410	Single Side
5420	Double Side

Return

5410R	Single Side

2. **Inlet Type/Size (Supply)**

Side Inlet:

S4	4" (102)	Oval
S5	5" (127)	Oval
S6	6" (152)	Oval
S8	8" (203)	Oval

Top Inlet:

T4	4" (102)	Round
T5	5" (127)	Round
T6	6" (152)	Round
T7	7" (178)	Round
T8	8" (203)	Round

(Returns are non-ducted)

3. **Ceiling Module (Fixture) Size (Width x Length)**

Double Side

Imperial (inches)		Metric (mm's)
1248	12" x 48"	300 x 1200
2060	20" x 60"	500 x 1500
2424	24" x 24"	600 x 600
2448	24" x 48"	600 x 1200
3030	30" x 30"	750 x 750
3636	36" x 36"	900 x 900

Single Side

Imperial (inches)		Metric (mm's)
24	24"	600
36	36"	900
48	48"	1200
60	60"	1500

Options and Accessories

4. **Insulation**

–	None (default)
EX	External Foil Back Insulation (installed) R-4.2
IN	Internal Fiberglass

5. **Inlet Damper**

–	None (default)
ID	Inlet Damper with HLQ (Side Inlet Only)

6. **High Clearance**

–	None (default)
HC	High Clearance

7. **Telescopic**

–	None (default)
TE	Telescopic Cross-over (5420, Side Inlet Only)

8. **Regressed Slot**

–	None (default)
RS	Regressed Slot Light Fixture

9. **'A' Dimension Overall Length (See Chart for Standard Dimension)**

17	Standard Size "A" = 17.5 (445)
23	Standard Size "A" = 23.5 (597)
25	Standard Size "A" = 25.75 (654)
41	Standard Size "A" = 41.5 (1054)
AD	A Dimension. Specify if not standard, inches (mm's)

10. **'B' Dimension Straddle Width (Model 5420 Only)**

BD	B Dimension. Specify, inches (mm's)

Telescopic Option Only:

TE20	15" – 18" (381 – 457)
TE24	19" – 22" (483 – 559)
TE30	25" – 28" (635 – 711)
TE36	31" – 34" (787 – 864)
AD	A Dimension. Specify if not standard, inches (mm's)

Notes:

1. Specify 'A' dimension (overall length) if non-standard (see table). Active Slot Length = A - 3/4" (19).

2. Specify 'B' dimension for double side units (refer to submittal units (refer to submittal drawing). Troffer straddle width always required unless TE option specified.

3. In all cases the light troffer manufacturer should supply an approved fully dimensioned drawing to ensure compatibility. In some cases (recommended), a sample light fixture will be required to be sent to the factory.

4. Double side (saddle) units are shipped knocked-down for field assembly.

Standard Dimensional Data:

'A' Dim. Code	Troffer Size (Ceiling Module)			
	Imperial Modules (inches)		Metric Modules (mm)	
	Fixture Size W x L	A Overall Length	Fixture Size W x L	A Overall Length
41	12 x 48	41 1/2	300 x 1200	1054
41	20 x 60	41 1/2	500 x 1500	1054
17	24 x 24	17 1/2	600 x 600	445
41	24 x 48	41 1/2	600 x 1200	1054
23	30 x 30	23 1/2	750 x 750	597
25	36 x 36	25 3/4	900 x 900	654

TE Telescopic Option:

"B" Dim. Code	Unit Width	"B" Dimension Adjustment
TE20	20" (500)	15" – 18" (381 – 457)
TE24	24" (600)	19" – 22" (483 – 559)
TE30	30" (750)	25" – 28" (635 – 711)
TE36	36" (900)	31" – 34" (787 – 864)

Not available on 12" (300) width.

HOW TO SPECIFY

MODELS 5410, 5410R AND 5420 • LIGHT TROFFER DIFFUSERS

SUGGESTED SPECIFICATION:

Single Side, Supply

Furnish and install **Nailor Model 5410 Light Troffer Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a side inlet. The slot opening shall incorporate a piano-type hinge pattern controller. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Double Side, Supply

Furnish and install **Nailor Model 5420 Double Side Light Troffer Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a top or side inlet as specified. The slot openings shall incorporate piano-type hinge pattern controllers. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Single Side Return

Furnish and install **Nailor Model 5410R Single Side Light Troffer Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have a rectangular return opening. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). All exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer return diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Nailor Industries Inc.

CEILING DIFFUSERS

TABLE OF CONTENTS

	Page No.
General Product Overview	**D6**
Exclusive Steel Grille, Register and Diffuser Warranty	**D13**
Square and Rectangular Pattern Ceiling Diffusers	
6500 • Steel • Fixed Pattern	**D14**
6550 • Steel • Adjustable Pattern	**D14**
6200 • Aluminum • Fixed Pattern	**D14**
6250 • Aluminum • Adjustable Pattern	**D14**
6500FP • Steel • Fiberglass Plenum	**D18**
6200-MRI • Aluminum • 100% Aluminum • MRI	**D20**
6500IV • Steel • Fixed Pattern • Induction Vanes	**D39**
6200IV • Aluminum • Fixed Pattern • Induction Vanes	**D39**
6400 • Aluminum • Fixed Pattern • Extra High Capacity	**D46**
6400IV • Aluminum • Fixed Pattern • Extra High Capacity • Induction Vanes	**D65**
Stamped Square Ceiling Diffusers	
RNS • Steel • Fixed Pattern	**D87**
ARNS • Aluminum • Fixed Pattern	**D87**
RNSA • Steel • Adjustable Pattern	**D91**
ARNSA • Aluminum • Adjustable Pattern	**D91**
RNS3 • Steel • Fixed Pattern 3 Cones • Non-removable Core	**D95**
ARNS3 • Aluminum • Fixed Pattern 3 Cones • Non-removable Core	**D95**
RNS2 • Steel • Fixed Pattern	**D98**
TWR • Steel • "Twister" Swirl Pattern • High Induction	**D101**
Architectural Square Ceiling Diffusers	
UNI • Steel • Flat Panel	**D104**
AUNI • Aluminum • Flat Panel	**D104**
UNI w/RC Option • Steel • Flat Panel • Retaining Channel Option	**D106**
UNI2 • Steel • Flat Panel • Corner Posts	**D112**
AUNI2 • Aluminum • Flat Panel • Corner Posts	**D112**
UNI-PD • Steel • Downblast • Fixed Perforated	**D115**
UNI-AD • Steel • Downblast • Adjustable	**D118**
UNI-RP • Steel • Round Plaque Face • Round Neck	**D121**
5000CTD • Aluminum • Ceiling Tile Slot • Supply	**D128**
5000CTD-F • Aluminum • Ceiling Tile Slot • Fineline® • Supply	**D128**
5000RCTD • Aluminum • Ceiling Tile Slot • Return	**D128**
5000RCTD-F • Aluminum • Ceiling Tile Slot • Fineline® • Return	**D128**
6600 • Steel • Plaque Diffuser	**D134**
66UNI • Steel • Plaque Diffuser with Perimeter Slots	**D139**
Round Ceiling Diffusers	
RNR • Steel • Adjustable Horizontal Pattern	**D143**
ARNR • Aluminum • Adjustable Horizontal Pattern	**D143**
RNRA1 • Steel • Adjustable Horizontal to Vertical Pattern	**D146**
ARNRA1 • Aluminum • Adjustable Horizontal to Vertical Pattern	**D146**
6300R • Aluminum • Fully Adjustable Horizontal/Vertical Pattern	**D148**
RUNI • Steel • Architectural Plaque Face Horizontal Pattern	**D150**
ARUNI • Aluminum • Architectural Plaque Face Horizontal Pattern	**D150**
RDB • Steel • Downblast • Adjustable Horizontal/Vertical Pattern	**D152**

TABLE OF CONTENTS

Page No.

Perforated Supply Ceiling Diffusers

Deflectors • 1, 2, 3 or 4-Way Adjustable Pattern
4320 • Steel • Flush Face **D156**
4325 • Steel • Drop Face **D156**
4320A • Aluminum Face • Flush Face **D156**
4325A • Aluminum Face • Drop Face **D156**
4320AA • Aluminum Face • Flush Face **D156**
4325AA • Aluminum Face • Drop Face **D156**

Curved Blade • 1, 2, 3 or 4-Way Pattern
4320CB• Steel • Flush Face **D166**
4325CB• Steel • Drop Face **D166**
4320CBA • Aluminum Face • Flush Face **D166**
4325CBA • Aluminum Face • Drop Face **D166**
4320CBAA • Aluminum • Flush Face **D166**
4325CBAA • Aluminum • Drop Face **D166**

Full Face • Curved Blade • 1, 2, 3 or 4-Way Pattern
4340CB • Steel Face • Square Neck **D174**
4340CBA • Aluminum • Square Neck **D174**

Fixed • 4-Way Pattern
4320F • Steel • Flush Face **D182**
4325F • Steel • Drop Face **D182**
4320FA • Aluminum Face/Steel Backpan • Flush Face **D182**
4325FA • Aluminum Face/Steel Backpan • Drop Face **D182**
4320FAA • Aluminum • Flush Face **D182**
4325FAA • Aluminum • Drop Face **D182**

Modular Core • 1, 2, 3 or 4-Way Adjustable Pattern
4320M • Steel • Flush Face • Square Neck **D188**
4325M • Steel • Drop Face • Square Neck **D188**
4320MA • Aluminum Face • Flush Face • Square Neck **D188**
4325MA • Aluminum Face • Drop Face • Square Neck **D188**
4320MR • Steel • Flush Face • Round Neck **D192**
4325MR • Steel • Drop Face • Round Neck **D192**
4320MRA • Aluminum Face • Flush Face • Round Neck **D192**
4325MRA • Aluminum Face • Drop Face • Round Neck **D192**
4340M • Steel Face • Full Face • Square Neck **D176**
4340MA • Aluminum Face • Full Face • Square Neck **D176**

Adjustable 4-Way Star Pattern Controller
4320S • Steel • Flush Face • Square Neck **D198**
4325S • Steel • Drop Face • Square Neck **D198**
4320SA • Aluminum Face • Flush Face • Square Neck **D198**
4325SA • Aluminum Face • Drop Face • Square Neck **D198**
4320SAA • Aluminum • Flush Face • Square Neck **D198**
4325SAA • Aluminum • Drop Face • Square Neck **D198**

TABLE OF CONTENTS

Page No.

Perforated Supply Ceiling Diffusers (continued)

Premium Architectural

4330 • Steel Face • Flush Face • Adjustable Deflectors **D204**
4330A • Aluminum Face • Flush Face • Adjustable Deflectors **D204**
4330AA • Aluminum • Flush Face • Adjustable Deflectors **D204**
4330CB • Steel Face • Curved Blade Pattern Controllers **D212**
4330CBA • Aluminum Face • Curved Blade Pattern Controllers **D212**
4330CBAA • Aluminum • Curved Blade Pattern Controllers **D212**

All Aluminum Perforated Ceiling Diffusers

4310A • Supply • Round Neck **D222**
4310AR • Return • Round Neck **D222**

Perforated Ceiling Diffusers • Supply and Return • Fiberglass Plenum

4350 • Supply **D225**
4350R • Return **D225**

Perforated Return Ceiling Diffusers

4360 • Steel • Flush Face **D228**
4365 • Steel • Drop Face **D228**
4360A • Aluminum Face • Flush Face **D228**
4365A • Aluminum Face • Drop Face **D228**
4360AA • Aluminum • Flush Face **D228**
4365AA • Aluminum • Drop Face **D228**
4340R • Steel Face • Flush Face • Square Neck **D178**
4340RA • Aluminum Face • Flush Face • Square Neck **D178**
4302 • Steel • Flush Face • Ductless Application **D235**
4302-DF • Steel • Drop Face • Ductless Application **D235**
4302-F • Steel • Fineline® • Ductless Application **D235**
4302A • Aluminum • Flush Face • Ductless Application **D235**
4330R • Steel Face • Architectural **D217**
4330RA • Aluminum Face • Architectural **D217**

Eggcrate Return Ceiling Diffusers

4260 • Steel • Aluminum Eggcrate **D238**
4260AA • Aluminum • Aluminum Eggcrate **D238**

Modular Core Ceiling Diffusers

7500 • Steel • 1, 2, 3 or 4-way Adjustable Pattern **D243**
7200 • Aluminum • 1, 2, 3 or 4-way Adjustable Pattern **D243**

Curved Blade Ceiling Diffusers

61CC • Steel • 1, 2, 3 or 4-way Pattern **D250**
61CCD • Steel • 1 or 2-way Pattern w/Directional Vanes **D250**
51CC • Aluminum • 1, 2, 3 or 4-way Pattern **D250**
51CCD • Aluminum • 1 or 2-way Pattern w/Directional Vanes **D250**

Ceiling Diffuser Options and Accessories

Product Overview **D255**
DFS, DFA Mounting Frames **D256**
Options and Finishes **D257**

TABLE OF CONTENTS

Page No.

Ceiling Diffuser Options and Accessories (continued)

Air Balancing Devices

4275, 4250, 4675 • Round Neck Dampers **D258**
OBD • Opposed Blade Damper • Diffuser Mount **D259**
OBDD • Opposed Blade Damper • Duct Mount **D260**
EGR, EGS/L • Equalizing Grid • Round Neck and Square or Rectangular Neck **D261**
DEGR • Damper with Grid • Round Neck **D261**
DEGS/L • Damper with Grid • Square or Rectangular Neck **D262**
EX, EXD • Volume Extractors • 2" (51) or 1" (25) Spacing **D263**
4695/QB • Quadrant Blanks • Models UNI and AUNI Round Neck Plaque Diffusers Accessory **D264**
4693/QB • Quadrant Blanks • Model UNI2 Square Plaque Diffusers Accessory **D265**
4293/QB • Quadrant Blanks • Models RNS3, ARNS3 Round Neck Diffusers Accessory **D266**
4295/QB • Quadrant Blanks • Model Series RNS and RNSA Round Neck Diffusers Accessory **D267**

GENERAL PRODUCT OVERVIEW

Ceiling Diffusers

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional workmanship with the backing of an industry leader - these add up to true value; prime reasons for specifying Nailor Ceiling Diffusers.

Architectural excellence and engineering selections demand high quality products and shipping schedules demand service, all part of the package.

SQUARE AND RECTANGULAR PATTERN

Nailor's pattern diffusers are typically used in applications where considerable volumes of air are required while maintaining relatively low noise levels and pressure drops. A full range of models are available and consist of a choice of corrosion-resistant steel or aluminum construction, fixed and adjustable patterns, as well as extra high capacity models. Induction vanes are also available for those jobs that require quick equalization of cool and warm air such as in VAV systems with high cooling loads. The louvered cores are removable and are available in an assortment of patterns.

Steel High Capacity Construction – Fiberglass Plenum

Fixed Pattern	Model 6500FP	**Page D18**

Steel Construction –

Fixed Pattern	Model 6500	**Page D14**
Adjustable Pattern	Model 6550	**Page D14**
Induction Vane	Model 6500IV	**Page D39**

Suffix '-O' adds a steel OBD

Aluminum Construction –

Fixed Pattern	Model 6200	**Page D14**
Adjustable Pattern	Model 6250	**Page D14**
Induction Vane	Model 6200IV	**Page D39**

Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Aluminum High Capacity Construction –

100% Aluminum	Model 6200-MRI	**Page D20**
Fixed Pattern	Model 6400	**Page D46**
Induction Vane	Model 6400IV	**Page D65**

Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Models 6500, 6500IV, 6400, 6550

Models RNS, ARNSA, RNS2

STAMPED SQUARE

These diffusers are a very popular choice for general air distribution applications. The diffusers are designed to provide high performance at a cost effective price. The stamped one-piece cones and die-formed clean curves supply a 360° diffusion pattern and provide the high performance necessary in VAV systems. Integral round necks provide a secure connection for flexible duct applications. Nailor's "classic" four-cone, removable core design is available in most ceiling module sizes, a choice of corrosion-resistant steel or aluminum, and an option of fixed or adjustable patterns. A two and three cone fixed pattern diffuser also accompanies this series.

Steel Construction –

Fixed Pattern	Model RNS	**Page D87**
Adjustable Pattern	Model RNSA	**Page D91**
Fixed Pattern 3 Cone	Model RNS3	**Page D95**
Fixed Pattern 2 Cone	Model RNS2	**Page D98**

Aluminum Construction –

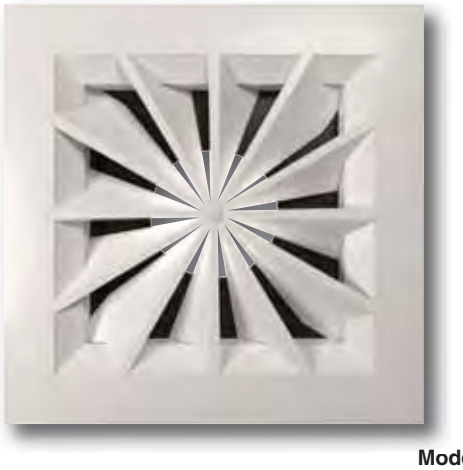
Fixed Pattern	Model ARNS	**Page D87**
Adjustable Pattern	Model ARNSA	**Page D91**
Fixed Pattern 3 Cone	Model ARNS3	**Page D95**

"TWISTER" HIGH INDUCTION STAMPED FACE

The "Twister" diffuser is engineered to optimize air distribution effectiveness. This next generation diffuser has a high induction, 360° swirl pattern for a superior coanda effect. It is available for a 2' x 2' (600 x 600) ceiling module with a choice of five round neck sizes.

Steel Construction – High Induction

Fixed Pattern	Model TWR "Twister" Swirl Pattern	**Page D101**



Model TWR

Models UNI, 5000CTD, UNI-PD

ARCHITECTURAL SQUARE

Designed with the architect in mind, the diffusers in this series are fashioned to blend in with most ceiling types in order to create the ultimate in aesthetic looks. Nailor has accomplished this while still offering a variety of diffuser designs that provide flexibility in both style, selection and engineering performance.

Flat Panel		
Steel Construction –	Model UNI	**Page D104**
Aluminum Construction –	Model AUNI	**Page D104**
Steel with Ceiling Tile –	Model UNI-RC	**Page D106**
Downblast –		
Steel Fixed Perforated –	Model UNI-PD	**Page D115**
Steel Adjustable –	Model UNI-AD	**Page D118**
Steel Round Plaque Face –	Model UNI-RP	**Page D121**
Ceiling Tile Slot –		
Supply	Model Series 5000CTD	**Page D128**
Return	Model Series 5000RCTD	**Page D128**
Plaque Face		
Steel Construction –	Model UNI2	**Page D112**
Aluminum Construction –	Model AUNI2	**Page D112**
Steel Construction –	Model 6600	**Page D134**
Plaque Face with Perimeter Slots		
Steel Construction –	Model 66UNI	**Page D139**

ROUND

Nailor's round diffusers are available in steel or aluminum construction, with adjustable or fixed patterns. Included in this series of diffusers is a 'Plaque' style for architectural ceilings and a 'Downblast' type for high ceiling areas.

Adjustable Horizontal Pattern		
Steel Construction –	Model RNR	**Page D143**
Aluminum Construction –	Model ARNR	**Page D143**
Adjustable Horizontal to Vertical Pattern		
Steel Construction –	Model RNRA1	**Page D146**
Aluminum Construction –	Model ARNRA1	**Page D146**
Fully Adjustable Horizontal/Vertical Pattern		
Aluminum Construction –	Model 6300R	**Page D148**
Plaque Face Horizontal Pattern		
Steel Construction –	Model RUNI	**Page D150**
Aluminum Construction –	Model ARUNI	**Page D150**
Downblast Adjustable Horizontal/Vertical Pattern		
Steel Construction –	Model RDB	**Page D152**

Models RUNI, RNR, RDB

Perforated Ceiling Diffusers

Nailor manufactures a full range of supply air and matching return air Perforated Ceiling Diffusers. The perforated face is available in both corrosion-resistant steel and aluminum, with 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. As standard, backpans are available in corrosion-resistant steel with an option of aluminum, and some premium models are available with extruded aluminum frames. The diffusers can be selected to suit most common ceiling types, and are available with both flush and drop face styles. A variety of pattern controllers and deflector core styles are offered, allowing for a selection to be made based upon style, performance, and budgetary considerations. Match the supply air with the corresponding return air and the results will be a smooth, aesthetically balanced ceiling appearance.

Supply Air

ADJUSTABLE PATTERN DEFLECTORS ON FACE

The stamped deflectors for this series of models are mounted in a 4-way discharge pattern on the rear of the perforated face and can be easily field adjusted to a 1, 2, or 3-way pattern. These diffusers are available with round or square necks. For the matching return, see Model Series 4360/4365.

Flush Face

Steel –	Model 4320	**Page D156**
Aluminum Face –	Model 4320A	**Page D156**
Aluminum –	Model 4320AA	**Page D156**

Drop Face

Steel –	Model 4325	**Page D156**
Aluminum Face –	Model 4325A	**Page D156**
Aluminum –	Model 4325AA	**Page D156**

Model 4320

Model 4320CB

CURVED BLADE PATTERN CONTROLLERS

The curved blade pattern controllers are individually adjustable and available as standard in a 4-way discharge pattern. The blades are mounted directly beneath the neck of the diffuser. A 1, 2, or 3-way discharge pattern is available as an option. These diffusers are offered with round or square necks. For the matching return, see Model Series 4360/4365.

Flush Face

Steel –	Model 4320CB	**Page D166**
Aluminum Face –	Model 4320CBA	**Page D166**
Aluminum –	Model 4320CBAA	**Page D166**

Drop Face

Steel –	Model 4325CB	**Page D166**
Aluminum Face –	Model 4325CBA	**Page D166**
Aluminum –	Model 4325CBAA	**Page D166**

FULL FACE CURVED BLADE PATTERN CONTROLLERS

This grille frame style, full face diffuser features curved blade pattern controllers with extruded aluminum frames and blades, and a perforated face that is offered in either corrosion-resistant steel or aluminum. The curved blade pattern controllers are individually adjustable and are in a 4-way discharge pattern as standard. A 1, 2, or 3-way discharge pattern is available as an option. These diffusers are available with square necks only. For the matching return, see Model Series 4340R.

Flush Face

Steel –	Model 4340CB	**Page D174**
Aluminum –	Model 4340CBA	**Page D174**

Model 4340CB

ADJUSTABLE DISCHARGE PATTERN

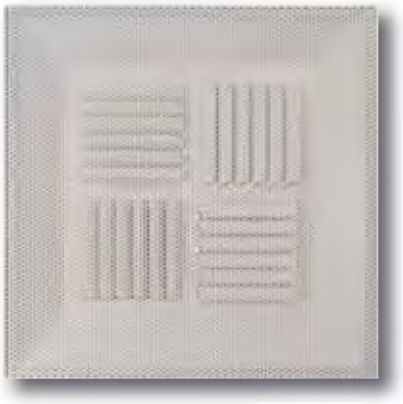
This diffuser has pattern controllers that are factory set in a fixed 4-way discharge pattern. The controllers can be field adjusted to a 1, 2 or 3-way pattern as required. These diffusers are available with round or square necks. For the matching return, see Model Series 4360/4365.

Flush Face

Steel Face/Steel Backpan –	Model 4320F	**Page D182**
Aluminum Face/Steel Backpan –	Model 4320FA	**Page D182**
Aluminum Face/Aluminum Backpan –	Model 4320FAA	**Page D182**

Drop Face

Steel Face/Steel Backpan –	Model 4325F	**Page D182**
Aluminum Face/Steel Backpan –	Model 4325FA	**Page D182**
Aluminum Face/Aluminum Backpan –	Model 4325FAA	**Page D182**



Model 4320F

Model 4320M

MODULAR CORE, SQUARE NECK

This perforated diffuser has four individual, corrosion-resistant steel, spring-loaded modular pattern controllers that are mounted in the neck of the diffuser. They are shipped in a 4-way discharge pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. These diffusers are available with square necks. For the matching return, see Model Series 4360/4365.

Flush Face

Steel –	Model 4320M	**Page D188**
Aluminum Face –	Model 4320MA	**Page D188**

Drop Face

Steel –	Model 4325M	**Page D188**
Aluminum Face –	Model 4325MA	**Page D188**

MODULAR CORE, ROUND NECK, LOW PROFILE

This model has a low profile backpan that includes an integral round neck. It incorporates four individual, corrosion-resistant steel, spring loaded modular pattern controllers that are mounted inside the backpan. The modular cores are shipped in a 4-way pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. These diffusers are available with round necks only. For the matching return, see Model Series 4360/4365.

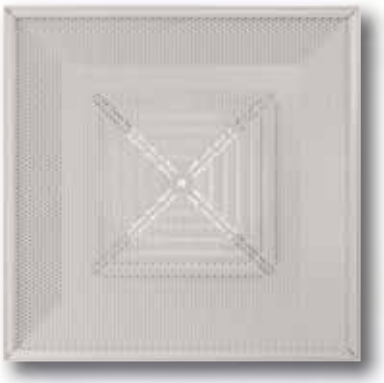
Flush Face

Steel –	Model 4320MR	**Page D192**
Aluminum Face –	Model 4320MRA	**Page D192**

Drop Face

Steel –	Model 4325MR	**Page D192**
Aluminum Face –	Model 4325MRA	**Page D192**

Model 4320MR



Model 4320S

ADJUSTABLE STAR PATTERN, ROUND OR SQUARE NECK

This diffusers features four individually stamped pattern controllers mounted directly under the neck that produces a long throw 4-way 'star pattern'. The factory set pattern controller is easily rotated from side throw to corner throw in the field. Individual vanes can be field adjusted to suit the desired air pattern. For the matching return, see Model Series 4360/4365.

Flush Face

Steel –	Model 4320S	**Page D198**
Aluminum Face –	Model 4320SA	**Page D198**
Aluminum –	Model 4320SAA	**Page D198**

Drop Face

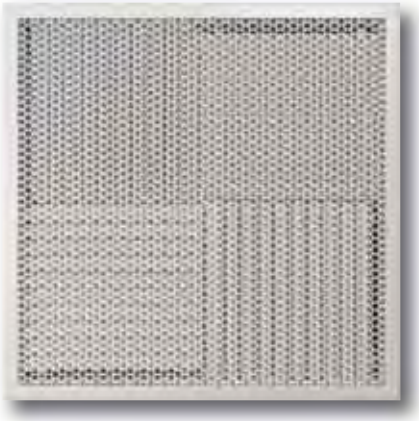
Steel –	Model 4325S	**Page D198**
Aluminum Face –	Model 4325SA	**Page D198**
Aluminum –	Model 4325SAA	**Page D198**

FULL FACE MODULAR CORE

This grille frame style, full face diffuser, features an extruded aluminum frame with a corrosion-resistant steel modular core. The modular core is shipped in a 4-way pattern and can easily be field adjusted to provide a 1, 2, or 3-way pattern. These diffusers are available with square necks only. For the matching return, see Model Series 4340R.

Flush Face

Steel Face –	Model 4340M	**Page D176**
Aluminum Face –	Model 4340MA	**Page D176**



Model 4340M

Model 4330

PREMIUM ARCHITECTURAL, ADJUSTABLE DEFLECTORS ON FACE

The perforated diffusers in this series have an extruded aluminum frame with a narrow border that is visible within the T-Bar module. The stamped steel deflectors are mounted in a 4-way discharge pattern and can be easily field adjusted to a 1, 2 or 3-way pattern. The diffusers are available with round or square necks. For the matching return, see Model Series 4330R.

Flush Face

Steel Face –	Model 4330	**Page D204**
Aluminum Face –	Model 4330A	**Page D204**
Aluminum –	Model 4330AA	**Page D204**

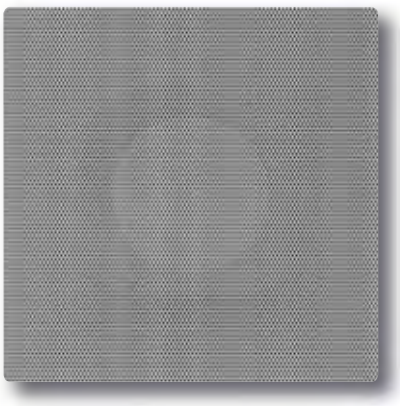
PREMIUM ARCHITECTURAL, CURVED BLADE PATTERN CONTROLLERS

The perforated diffusers in this series have an extruded aluminum frame with a narrow border that is visible within the T-Bar module. The extruded aluminum curved blade pattern controllers are individually adjustable and are in a 4-way discharge pattern as standard. A 1, 2, or 3-way discharge pattern is available as an option. For the matching return, see Model 4330R.

Flush Face

Steel Face –	Model 4330CB	**Page D212**
Aluminum Face –	Model 4330CBA	**Page D212**
Aluminum –	Model 4330CBAA	**Page D212**

Model 4330CB



Model 4310A

ALL ALUMINUM PERFORATED FOR MRI ROOMS

This diffuser is 100% aluminum and can be used for MRI rooms. It features a smooth, contoured wrap-around perforated face. The supply air diffuser includes a round disc pattern deflector that provides a true 360° radial horizontal air pattern. The matching return air diffuser is suitable for ducted return applications.

Flush Face

Supply Air –	Model 4310A	**Page D222**
Return Air –	Model 4310AR	**Page D222**

PERFORATED

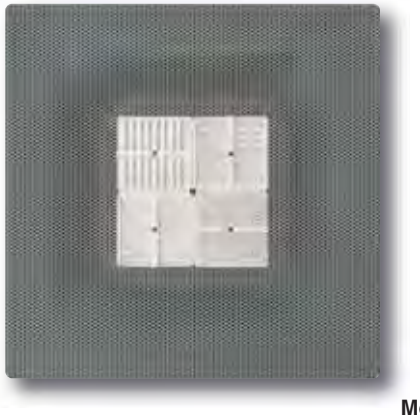
This perforated supply and return model with a corrosion-resistant steel diffuser face with a one-piece, pre-scored, molded fiberglass plenum with a foil-back vapour barrier and a 4-way discharge pattern. An extruded aluminum frame with a narrow border that is visible within the T-Bar module. See Model Series 4330 and 4330CB for the matching supply air diffusers.

Supply

Steel –	Model 4350	**Page D225**

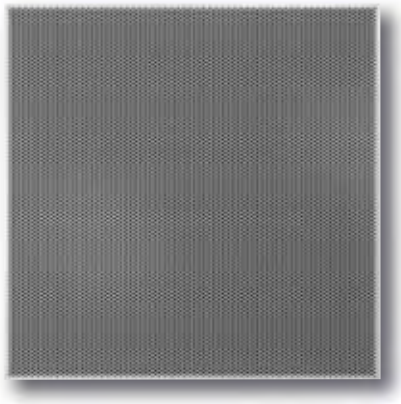
Return

Steel –	Model 4350R	**Page D225**



Model 4350

Return Air



Model 4360

STANDARD BACKPAN DESIGN

This perforated return diffuser is designed with a backpan that allows for both ducted and non-ducted applications. Available with a round or square neck for ducted applications and a full face design, square neck for either ducted or non-ducted applications. See Model Series 4320/4325, 4320CB/4325CB, 4320F/4325F and 4320M/ 4325M for the matching supply air diffusers.

Flush Face

Steel –	Model 4360	**Page D228**
Aluminum Face –	Model 4360A	**Page D228**
Aluminum –	Model 4360AA	**Page D228**

Drop Face

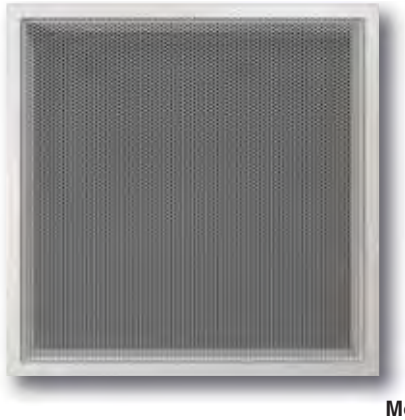
Steel –	Model 4365	**Page D228**
Aluminum Face –	Model 4365A	**Page D228**
Aluminum –	Model 4365AA	**Page D228**

EXTRUDED FRAME

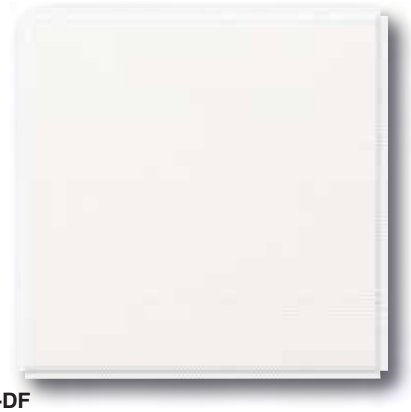
This grille frame style, full face diffuser has an extruded aluminum frame and is offered with a choice of a corrosion-resistant steel or an aluminum perforated face. The diffusers are available with square necks only and can be used in both ductless and ducted applications. See Model Series 4340CB and 4340M for the matching supply diffusers.

Flush Face

Steel Face –	Model 4340R	**Page D178**
Aluminum Face –	Model 4340RA	**Page D178**



Model 4340R



Model 4302-DF

PANELS

This economical perforated return panel is for use in a ductless return or as an exhaust grille in exposed grid T-Bar ceiling systems. When installed, the appearance matches that of the 4320/4325, 4320CB/ 4325CB, 4320F/ 4325F and 4320M/4325M supply diffusers.

Flush Face

Steel –	Model 4302	**Page D235**
Aluminum –	Model 4302A	**Page D235**

Drop Face

Steel –	Model 4302-DF	**Page D235**

Fineline®

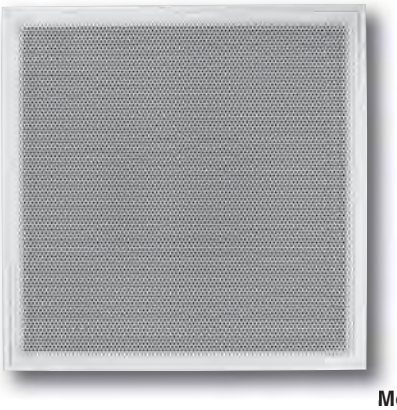
Steel –	Model 4302-F	**Page D235**

PREMIUM

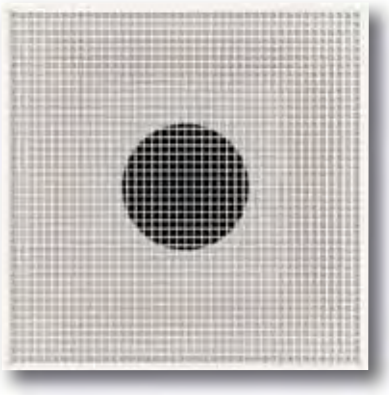
This perforated return has an extruded aluminum frame with a narrow border that is visible within the T-Bar module. See Model Series 4330 and 4330CB for the matching supply air diffusers.

Flush Face

Steel Face –	Model 4330R	**Page D217**
Aluminum Face –	Model 4330RA	**Page D217**



Model 4330R



Model 4260

EGGCRATE RETURN

This aluminum face return diffuser features 1/2" x 1/2" x 1/2" (13 x 13 x 13) eggcrate that provides a high free area. It is offered with either a round or square neck for ducted return applications. The backpan or frame is available in both corrosion-resistant steel and aluminum construction.

Return

Steel Frame/Backpan –	Model 4260	**Page D238**
Aluminum Face –	Model 4260AA	**Page D238**

SQUARE MODULAR CORE

This steel diffuser has four individual, corrosion-resistant steel, spring-loaded modular pattern controllers. The pattern controllers are shipped in a 4-way discharge pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. They are available with square necks and optional round transitions.

Modular Core

Steel –	Model 7500	**Page D243**
Aluminum –	Model 7200	**Page D243**

Suffix '-O' adds a steel OBD

Model 7500

Model 61CC

CURVED BLADE

The curved blade deflectors for this diffuser are individually adjustable and integrated in a modular sized panel to suit many ceiling systems. If ordered with directional vanes a 1 or 2-way discharge pattern is available. If directional vanes are not required, the curved blade deflectors are offered in a 1, 2, 3, or 4-way discharge pattern.

Steel Construction

Directional Vanes –	Model 61CCD	**Page D250**
No Directional Vanes –	Model 61CC	**Page D250**

Aluminum Construction

Directional Vanes –	Model 51CCD	**Page D250**
No Directional Vanes –	Model 51CC	**Page D250**

OPTIONS & ACCESSORIES

Nailor offers an extensive selection of accessories for ceiling diffusers. Air balancing devices, air extractors and a selection of mounting frames are several of the accessories available. **Pages D255 – D267**

EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2, UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.

No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

SQUARE & RECTANGULAR PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS

Steel Models:

6500 Fixed Pattern

6550 Adjustable Pattern

Aluminum Models:

6200 Fixed Pattern

6250 Adjustable Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**
  (available on aluminum models only)

Models 6500 and 6550

Model Series 6500 and 6200 Pattern Ceiling Diffusers have been specially designed to provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Snap-in). These models offer a great degree of design flexibility.

Model Series 6550 and 6250 Adjustable Pattern Ceiling Diffusers offer the same features as the 6500 and 6200 Series, however, they feature four hinged, individually adjustable deflecting vanes. These vanes allow air pattern adjustment from horizontal to vertical and further enhance the flexibility of the diffuser. Ideal for applications with higher ceiling heights or for heating applications to minimize stratification.

STANDARD FEATURES:

• Spring loaded core. It is removable without the use of tools.

• High neck collars for solid connection.

• Secure core attachment.

• A wide variety of frame styles to suit most ceiling applications.

• Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).

• Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D22).

• Clean lines with no unsightly visible screws.

• Opposed blade damper with screwdriver slot operator.

CONSTRUCTION MATERIAL:

6500 Series – Corrosion-resistant steel. 6200 Series – Heavy-gauge aluminum extrusions.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, DL, TL, M and F: see next page.

OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

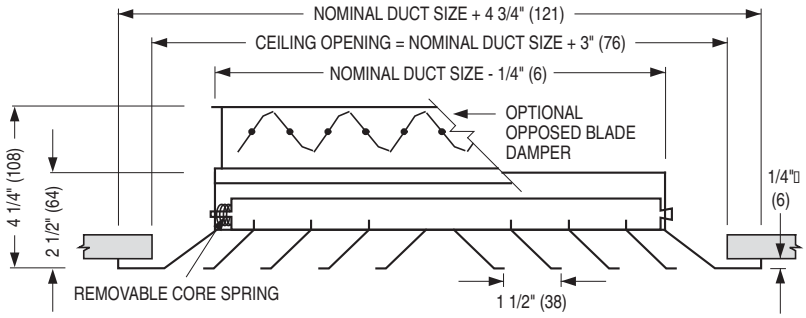
SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

EQT Earthquake Tabs

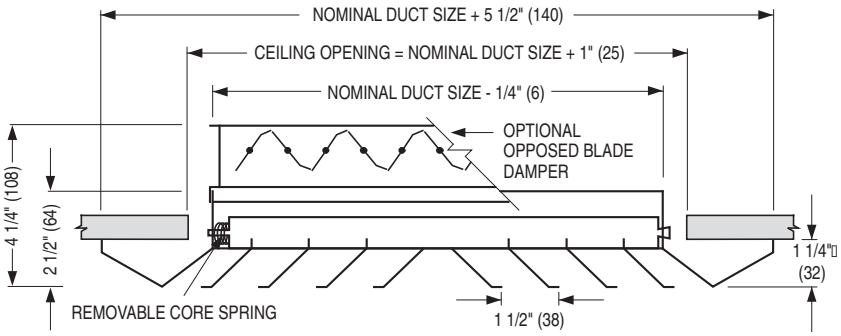
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

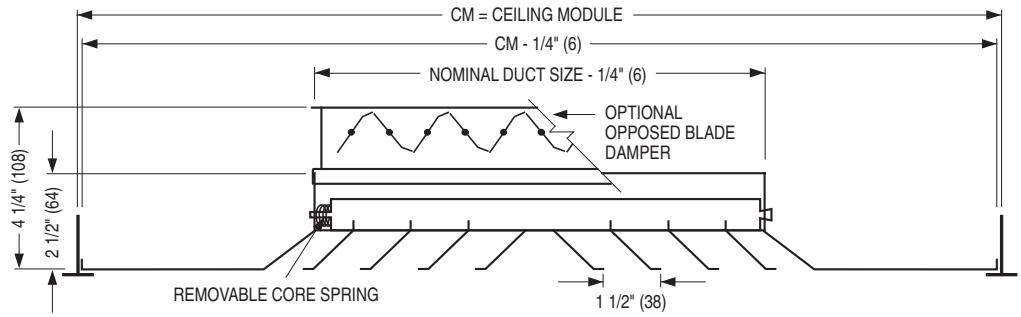
MODEL SERIES 6500 AND 6200



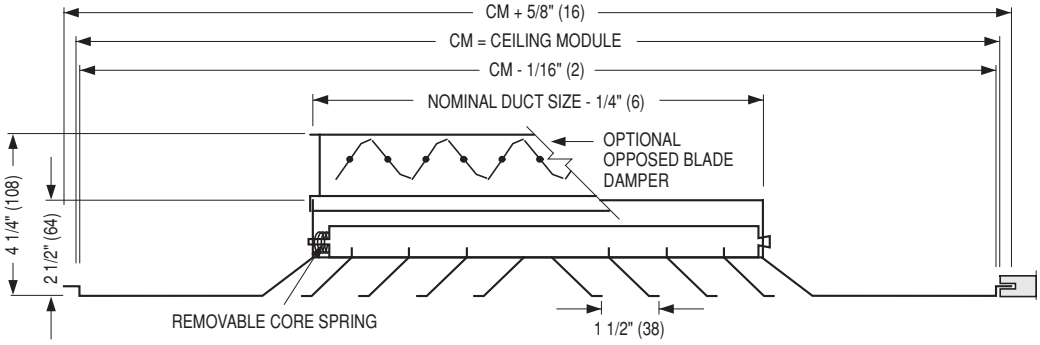
Type S - Surface Mount Frame



Type B - Beveled Drop Face Frame



Type L - Lay-In T-Bar Frame



Type SP - Spline Frame

SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID. (SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

Extended Panel Diffusers
Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

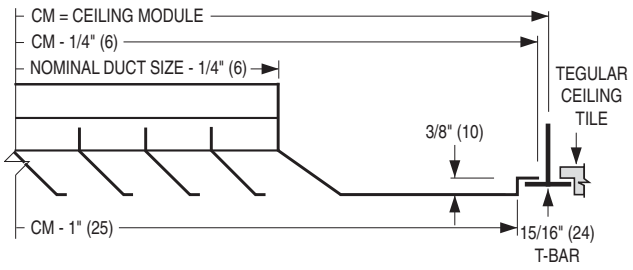
Table 1

Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

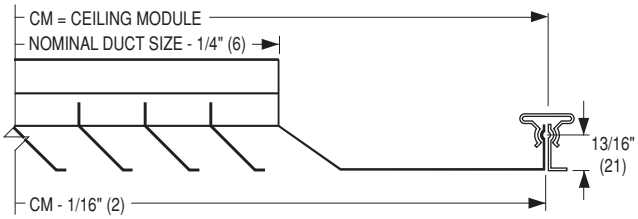
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6500 AND 6200

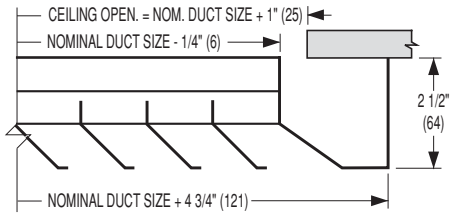
Type TL Tegular Lay-in



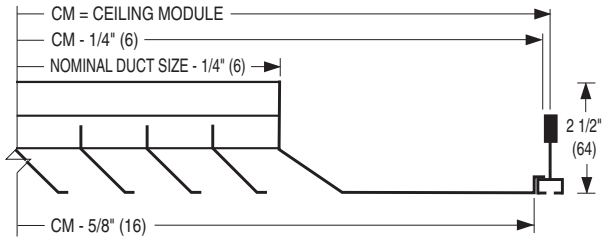
Type M Metal Pan (Snap-in)



Type D Deep Drop Face

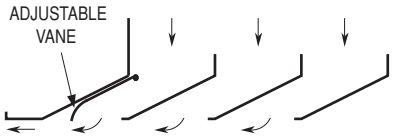


Type F Fineline®

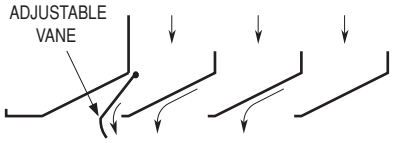


ADJUSTABLE DISCHARGE PATTERN: MODELS 6550 AND 6250

Horizontal Pattern
Adjustable Vane
Open Position



Vertical Pattern
Adjustable Vane
Closed Position



Models 6550 and 6250 Adjustable Diffusers provide continuous adjustment – from horizontal to vertical – on each face of the diffuser. They feature four hinged, independently adjustable control vanes attached to the outer cone.

FEATURES:

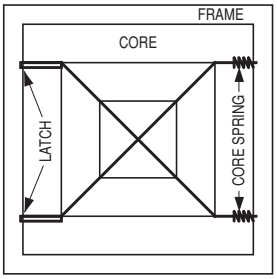
- Unit size is determined by duct dimensions. Diffuser necks are under sized to suit ductwork.
- Square or rectangular 1, 2, 3 or 4-way core style diffusers up to and including 24" x 24" (610 x 610) neck size.
- Square duct sizes are recommended.
- Discharge patterns on all sides are independently adjustable.
- No tools required to adjust pattern.
- Can be adjusted from diffuser face without removing core.

REMOVABLE CORE

- Standard feature of **Models 6500, 6550, 6200** and **6250.**
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

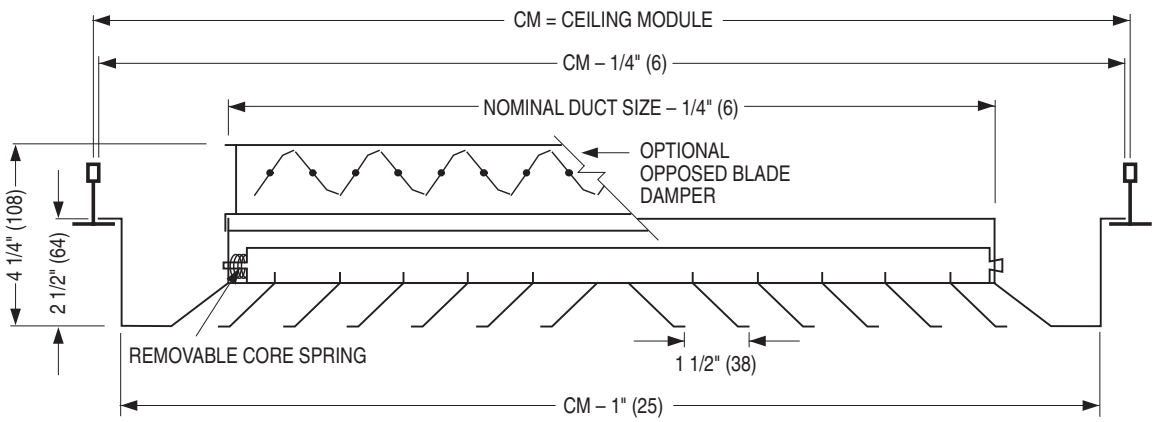
HOW TO REMOVE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6500 TYPE DL DROPPED FACE LAY-IN T-BAR MOUNT



AVAILABLE SIZES:

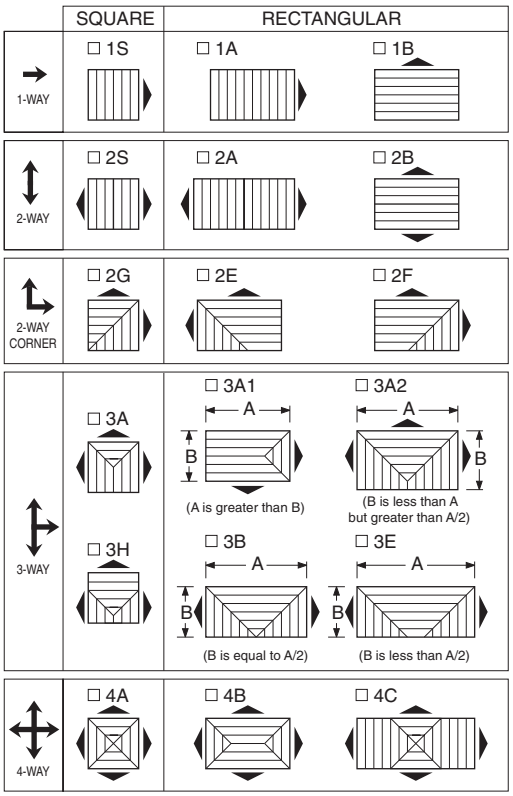
Imperial Modules				Metric Modules	
Imperial Units (in.)		Metric Units (mm)		Metric Units (mm)	
Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size
24 x 24	18 x 18	610 x 610	457 x 457	600 x 600	457 x 457
48 x 24	42 x 18	1219 x 610	1067 x 457	1200 x 600	1067 x 457
48 x 48	42 x 42	1219 x 1219	1067 x 1067	1200 x 1200	1067 x 1067

Minimum duct (neck) size: 6" x 6" (152 x 152).

Maximum duct (neck) size: see table.

Available in 3" (76) increments only.

CORE STYLE SELECTION



Patterns are shown in plan view (looking down into inlet).

SQUARE PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- HIGH CAPACITY
- FIBERGLASS PLENUM
- STEEL FACE

Model:

6500FP Steel Face with Fiberglass Plenum

Model 6500FP

Model 6500FP Pattern Ceiling Diffusers have been specially designed to provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

STANDARD FEATURES:

- Spring loaded 15" x 15" (381 x 381) removable core.
- 4-way discharge pattern.
- Pre-scored plenum for 6", 8", 10", 12", 14" or 15" (152, 203, 254, 305, 356 or 381) diameter spin-in or tab back inlet collar (by others).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel diffuser face and core assembly.
- One piece molded fiberglass backpan with foil back vapor barrier R-6.0 value.

FINISH OPTIONS:

Standard finish is AW Appliance White (optional finishes are available).

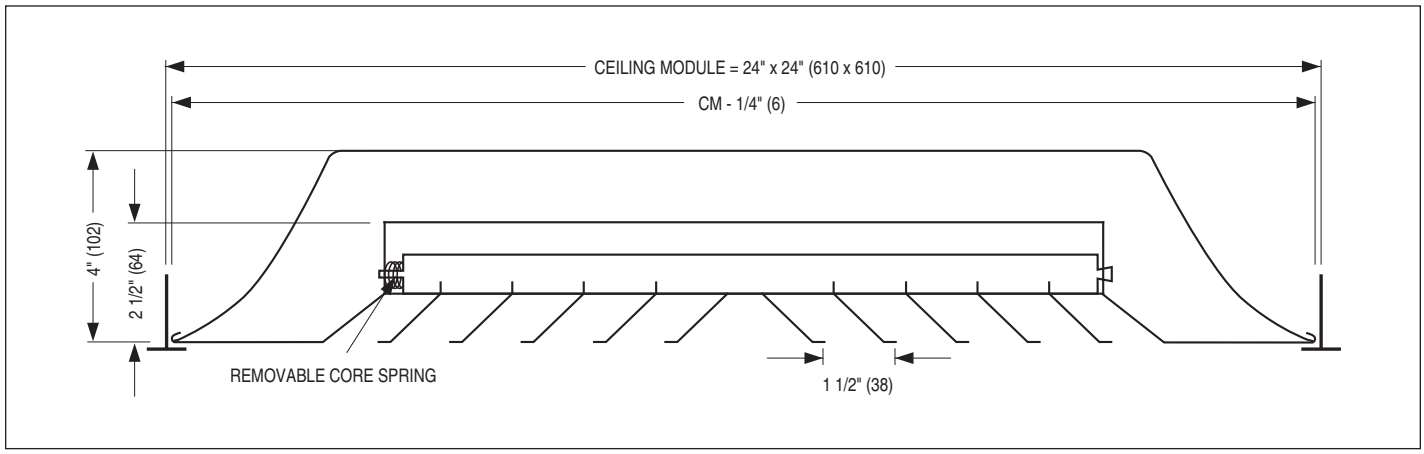
AVAILABLE SIZES:

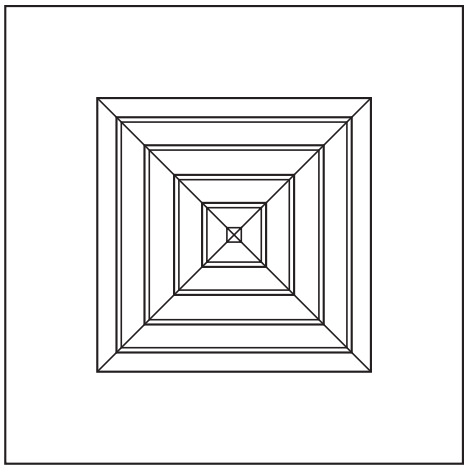
Ceiling Module size 24" x 24" (610 x 610) for Type L Lay-in T-Bar ceilings.

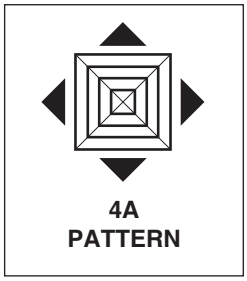
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPE:

MODEL 6500FP TYPE L LAY-IN T-BAR







4A
PATTERN

PATTERN CEILING DIFFUSERS

- SUITABLE FOR MRI
- 100% ALUMINUM
- HIGH CAPACITY
- SQUARE NECK

Model:

6200-MRI Aluminum

Model 6200-MRI

Model 6200-MRI Pattern Ceiling Diffusers is a high capacity louvered face directional diffuser that has been designed to supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Model 6200-MRI Ceiling Diffusers are available in 1, 2, 3 or 4-way directional blow patterns with fixed pattern discharge louvers for a horizontal throw pattern. The diffusers are constructed entirely from aluminum and suitable for MRI applications.

STANDARD FEATURES:

• A wide variety of frame styles to suit most ceiling applications.

• Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes.

• Clean lines with no unsightly visible screws.

• Fixed core.

CONSTRUCTION MATERIAL:

• 100% Aluminum.

AVAILABLE SIZES:

• Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

• Duct sizes are available in 3" (76) increments.

• If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module sized extended panel will be added.

MINIMUM DUCT SIZE:

• 6" x 6" (152 x 152).

MAXIMUM DUCT SIZE:

See dimensional table on next page.

FINISH OPTIONS:

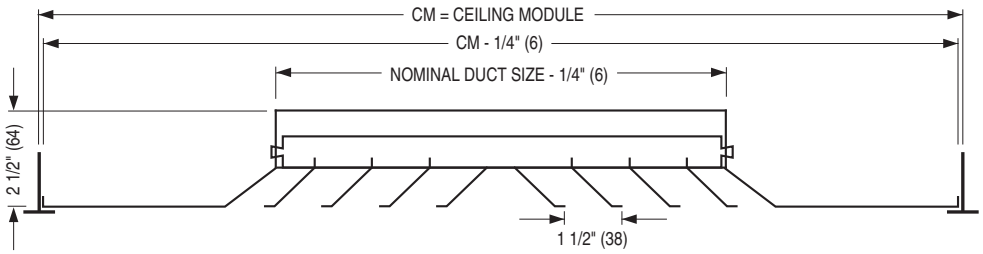
Standard finish is AW Appliance White (optional finishes are available).

OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

DIMENSIONAL DATA AND FRAME TYPE:

MODEL 6200-MRI TYPE L LAY-IN T-BAR

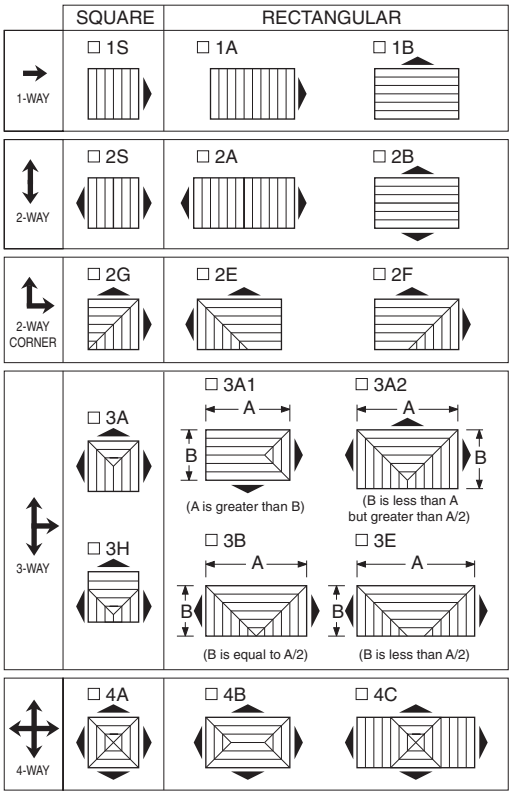


AVAILABLE SIZES:

Imperial Modules				Metric Modules	
Imperial Units (in.)		Metric Units (mm)		Metric Units (mm)	
Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size
12 x 12	9 x 9	305 x 305	229 x 229	300 x 300	152 x 152
20 x 20	15 x 15	508 x 508	381 x 381	500 x 500	381 x 381
24 x 12	21 x 9	610 x 305	533 x 229	600 x 300	457 x 152
24 x 24	21 x 21	610 x 610	533 x 533	600 x 600	457 x 457
48 x 24	45 x 12	1219 x 610	1143 x 533	1200 x 600	1067 x 457

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module sized extended panel will be added.
Minimum duct size: 6 x 6 (152 x 152).
Maximum duct size: see table.
Available in 3" (76) increments only.

CORE STYLE SELECTION



Patterns are shown in plan view (looking down into inlet).

STANDARD CORE STYLES:

MODEL SERIES 6500 AND 6200

Type 1S

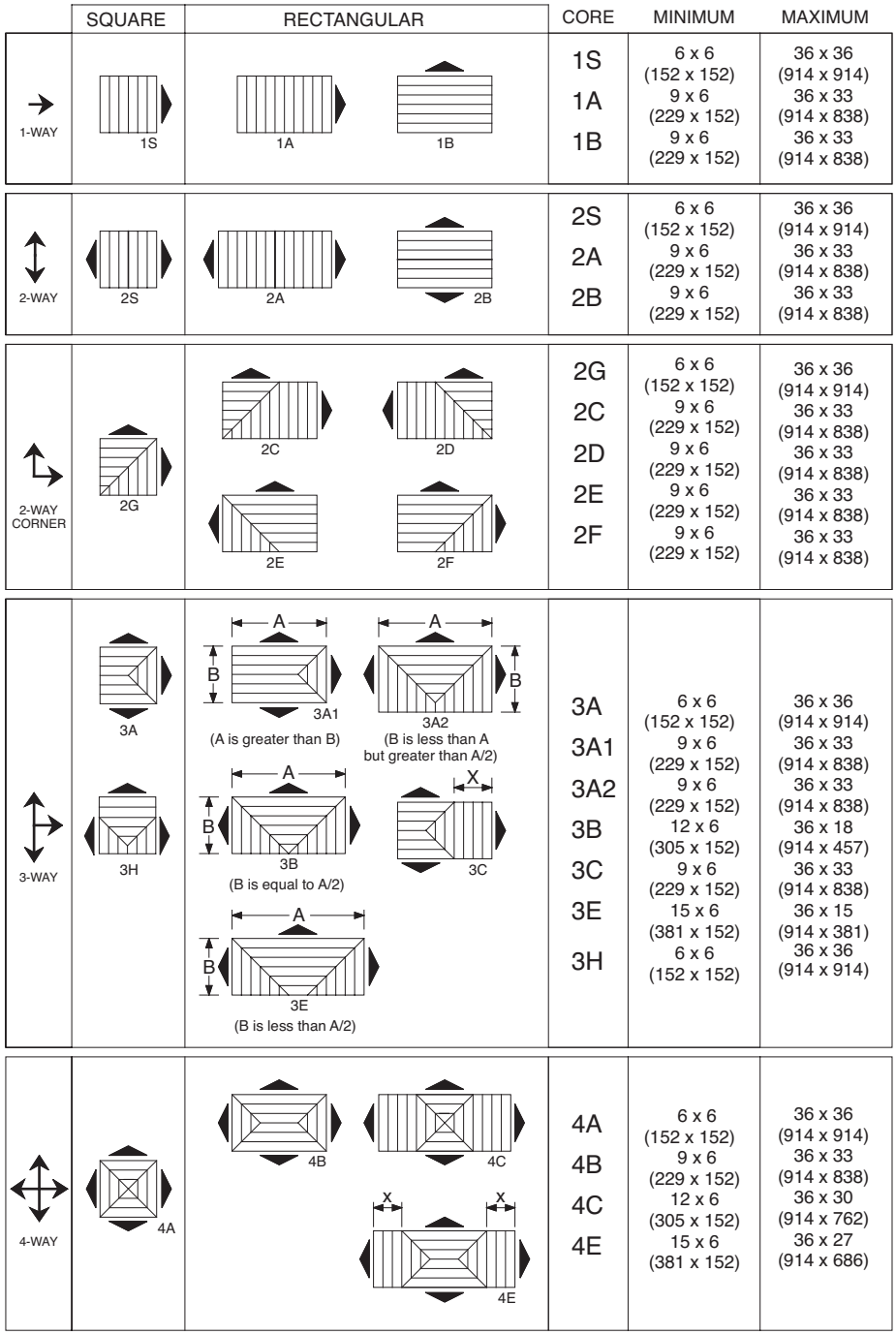
Type 2S

Type 2G

Type 3A

Type 4A

Contact factory for special core configurations.



CORE	SIZES AVAILABLE MINIMUM	SIZES AVAILABLE MAXIMUM
1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2G 2C 2D 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
3A 3A1 3A2 3B 3C 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 9 x 6 (229 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 33 (914 x 838) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
4A 4B 4C 4E	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762) 36 x 27 (914 x 686)

Dimensions are in inches (mm).

Notes:

1. Duct sizes are available in 3" (76) increments.
2. Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that cataloged flow division is obtained.
3. Patterns are shown in plan view (looking down into inlet).

PERFORMANCE DATA:

MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —		100 10		125 17		150 22		175 26		200 31		225 35	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
6 x 6 .25 SQ. FT.	4A	CFM/SIDE	19		25		31		37		44		50		56	
		THROW, FT.	4-5-8		4-6-10		6-8-10		6-8-11		8-9-12		8-9-12		9-10-13	
	3A	CFM/SIDE	19	28	25	38	31	47	37	56	44	66	50	75	56	85
		THROW, FT.	4-5-8	5-8-11	4-6-10	6-9-12	6-8-10	8-10-14	6-8-11	8-11-15	8-9-12	9-12-16	8-9-12	9-12-17	9-10-13	10-13-18
	2S 2G	CFM/SIDE	37		50		62		75		88		100		113	
		THROW, FT.	8-9-12		9-10-14		10-11-16		11-12-17		12-13-18		12-13-19		12-14-20	
	1S	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	9-11-15		10-12-17		11-14-19		12-15-22		13-16-22		14-17-24		15-18-25	
	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —		225 14		280 20		340 26		395 31		450 35		505 38	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 9 .56 SQ. FT.	4A	CFM/SIDE	42		56		70		84		98		112		126	
		THROW, FT.	6-8-12		7-10-14		10-11-15		10-12-16		11-12-17		11-14-19		12-15-20	
	3A	CFM/SIDE	42	63	56	85	70	106	84	127	98	148	112	169	126	190
		THROW, FT.	6-8-12	9-11-14	7-10-14	10-12-17	10-11-15	11-13-19	10-12-16	12-14-20	11-12-17	13-15-21	11-14-19	13-16-22	12-15-20	14-18-24
	2S 2G	CFM/SIDE	84		112		141		169		197		225		253	
		THROW, FT.	9-10-15		11-13-18		12-15-20		13-16-22		14-17-23		15-18-25		16-19-28	
	1S	CFM/SIDE	169		225		282		338		394		450		507	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	
	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 10		400 17		500 23		600 28		700 33		800 36		900 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 12 1.0 SQ. FT.	4A	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	8-13-15		11-14-18		13-15-21		14-17-22		14-18-24		15-20-25		17-21-27	
	3A	CFM/SIDE	75	112	100	150	125	187	150	225	175	262	200	300	225	338
		THROW, FT.	8-13-15	11-14-19	11-14-18	12-15-21	13-15-21	14-17-24	14-17-22	15-19-26	14-18-24	16-20-27	15-20-25	17-21-30	17-21-27	19-22-31
	2S 2G	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	12-15-20		15-17-25		17-19-27		18-20-29		19-21-31		20-25-34		21-25-36	
	1S	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	16-20-28		18-22-32		21-25-37		22-26-39		23-28-41		25-29-41		28-33-47	
	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 10		625 19		780 25		935 30		1090 33		1250 39		1400 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 15 1.56 SQ. FT.	4A	CFM/SIDE	117		156		195		234		273		312		350	
		THROW, FT.	13-16-21		14-18-24		16-19-27		18-21-29		19-22-30		20-24-33		21-26-35	
	3A	CFM/SIDE	117	175	156	234	195	292	234	351	273	409	312	468	350	527
		THROW, FT.	13-16-21	14-17-23	14-18-24	17-19-29	16-19-27	19-22-31	18-21-29	21-23-34	19-22-30	22-25-36	19-24-35	22-29-39	21-26-35	25-29-42
	2S 2G	CFM/SIDE	234		312		390		468		546		625		700	
		THROW, FT.	16-20-27		19-22-31		21-25-36		22-27-40		24-29-42		27-31-45		27-35-47	
	1S	CFM/SIDE	467		625		780		935		1090		1250		1400	
		THROW, FT.	21-25-36		23-29-42		26-32-47		29-36-51		30-39-55		32-42-57		36-44-61	
	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 12		900 21		1125 27		1350 31		1575 36		1800 39		2025 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 2.25 SQ. FT.	4A	CFM/SIDE	168		225		281		337		394		450		506	
		THROW, FT.	15-19-25		17-20-29		19-24-32		20-25-36		22-27-37		24-29-41		25-31-43	
	3A	CFM/SIDE	168	253	225	338	281	422	337	506	394	590	450	675	506	760
		THROW, FT.	15-19-25	17-22-29	17-20-29	20-25-33	19-24-32	23-27-38	20-25-36	25-32-42	22-27-37	26-32-45	24-29-41	27-35-48	25-31-43	32-36-51
	2S 2G	CFM/SIDE	337		450		562		675		787		900		1012	
		THROW, FT.	19-23-32		22-26-38		24-30-43		26-31-46		30-34-49		30-35-53		32-39-55	
	1S	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	25-33-45		30-36-51		34-42-58		36-45-61		39-48-66		43-52-70		46-55-75	

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 14		1225 22		1530 28		1835 32		2140 37		2450 40		2750 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 21 3.06 SQ. FT.	4A	CFM/SIDE	230		306		382		460		535		612		688	
		THROW, FT.	18-21-30		19-25-34		21-28-39		23-30-41		25-32-44		26-34-46		28-39-51	
	3A	CFM/SIDE	230	345	306	460	382	573	460	688	535	802	612	918	688	1030
		THROW, FT.	15-19-26	20-25-34	17-22-29	23-28-39	19-25-34	26-31-45	20-26-36	28-34-50	22-28-39	29-36-53	23-29-40	34-39-56	25-34-45	34-43-59
	2S 2G	CFM/SIDE	458		612		765		917		1070		1225		1375	
		THROW, FT.	22-27-39		25-31-45		28-35-50		31-39-55		32-42-59		35-45-62		39-48-66	
	1S	CFM/SIDE	917		1225		1530		1835		2140		2450		2750	
		THROW, FT.	29-37-51		34-43-59		39-50-67		43-53-71		46-56-77		50-60-82		53-64-88	
	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 15		1600 23		2000 29		2400 33		2800 37		3200 41		3600 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 24 4.0 SQ. FT.	4A	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	20-24-33		24-27-40		27-31-44		29-33-47		31-35-51		33-40-55		35-40-58	
	3A	CFM/SIDE	300	450	400	600	500	750	600	900	700	1050	800	1200	900	1350
		THROW, FT.	20-24-33	23-28-39	24-27-40	26-31-46	27-31-44	29-36-52	29-33-47	31-38-56	31-33-51	36-41-59	33-40-55	36-43-64	35-40-58	39-47-67
	2S 2G	CFM/SIDE	600		800		1000		1200		1400		1600		1800	
		THROW, FT.	25-33-45		30-36-51		34-42-58		36-45-61		39-48-66		43-52-70		46-55-75	
	1S	CFM/SIDE	1200		1600		2000		2400		2800		3200		3600	
		THROW, FT.	35-40-59		38-48-67		45-54-77		48-58-82		51-62-90		54-67-93		59-70-101	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 16		2500 24		3125 30		3750 35		4375 39		5000 42		5625 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 30 6.25 SQ. FT.	4A	CFM/SIDE	469		625		782		937		1093		1250		1406	
		THROW, FT.	25-31-42		29-36-48		34-40-55		36-44-61		38-46-65		40-50-69		46-52-73	
	3A	CFM/SIDE	469	703	625	938	782	1172	937	1405	1093	1640	1250	1875	1406	2110
		THROW, FT.	25-31-42	28-34-49	29-36-48	32-39-57	34-40-55	35-44-64	36-44-61	39-49-69	38-46-65	41-49-74	40-50-69	44-57-78	46-52-73	49-60-83
	2S 2G	CFM/SIDE	937		1250		1562		1875		2187		2500		2812	
		THROW, FT.	32-40-55		37-47-63		42-53-72		47-57-77		50-60-83		53-65-88		57-68-95	
	1S	CFM/SIDE	1875		2500		3125		3750		4375		5000		5625	
		THROW, FT.	42-53-72		49-60-83		56-69-93		60-72-102		63-77-109		69-83-116		72-88-123	
	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 18		3600 25		4500 31		5400 36		6300 40		7200 44		8100 48	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 36 9.0 SQ. FT.	4A	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	30-37-51		34-41-57		39-46-67		41-51-74		44-53-78		51-57-83		51-64-87	
	3A	CFM/SIDE	675	1010	900	1350	1125	1687	1350	2025	1575	2362	1800	2700	2025	3038
		THROW, FT.	30-37-51	34-44-60	34-41-57	40-48-68	39-46-67	46-56-78	41-51-74	48-60-82	44-53-78	52-64-88	51-57-83	58-70-94	51-64-87	62-74-100
	2S 2G	CFM/SIDE	1350		1800		2250		2700		3150		3600		4050	
		THROW, FT.	40-45-67		43-54-76		50-61-86		54-65-92		58-70-101		61-76-104		67-79-113	
	1S	CFM/SIDE	2700		3600		4500		5400		6300		7200		8100	
		THROW, FT.	49-61-85		59-70-99		66-80-114		72-85-122		76-91-131		82-97-142		87-106-150	

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • ROUND NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	400 .026		600 .058		800 .103		900 .130		1000 .161		1200 .231		1400 .315	
	RETURN FACTORS —SP=0.7 TP NC + 0	CFM NC	78 —		118 11		157 19		176 21		196 25		235 30		274 35	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 6" ROUND	4A	CFM/SIDE THROW, FT.	20 2-4-6		29 4-7-10		39 6-8-11		44 7-8-12		49 7-8-13		59 8-9-14		69 8-10-15	
	3A	CFM/SIDE THROW, FT.	20 2-4-6	29 2-4-7	29 4-7-10	44 4-8-11	39 6-8-11	59 7-9-12	44 7-8-12	66 8-9-13	49 7-8-13	74 8-9-14	59 8-9-14	88 9-10-15	69 8-10-15	103 9-11-17
	2S 2G	CFM/SIDE THROW, FT.	39 3-4-9		59 5-6-13		78 6-9-15		88 6-10-16		98 7-11-17		118 8-13-18		137 9-14-20	
	1S	CFM/SIDE THROW, FT.	78 4-7-14		118 6-10-18		157 9-14-21		176 10-15-23		196 11-16-24		235 12-18-26		274 13-19-28	
	RETURN FACTORS —SP=0.8 TP NC + 0	CFM NC	140 —		209 13		279 21		314 23		349 27		419 32		489 37	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 8" ROUND	4A	CFM/SIDE THROW, FT.	35 4-8-10		52 6-9-13		70 8-10-15		79 9-11-15		87 9-12-17		105 10-13-19		122 11-14-20	
	3A	CFM/SIDE THROW, FT.	35 4-8-10	52 4-9-11	52 6-9-13	79 7-10-14	70 8-10-15	105 9-11-17	79 9-11-15	118 10-12-17	87 9-12-17	131 10-13-19	105 10-13-19	157 11-14-21	122 11-14-0	183 12-15-22
	2S 2G	CFM/SIDE THROW, FT.	70 5-17-14		105 6-9-17		140 8-13-20		157 9-14-22		175 10-15-23		209 12-17-25		244 10-13-1	
	1S	CFM/SIDE THROW, FT.	140 7-12-19		209 9-14-24		279 13-19-28		314 14-21-30		349 15-22-32		419 16-24-34		489 17-26-37	
	RETURN FACTORS —SP=0.9 TP NC + 2	CFM NC	218 —		327 16		436 24		491 26		545 30		654 35		763 40	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 10" ROUND	4A	CFM/SIDE THROW, FT.	55 4-8-12		82 8-11-17		109 10-13-19		123 11-14-20		136 12-15-21		164 12-16-23		191 13-17-24	
	3A	CFM/SIDE THROW, FT.	55 4-8-12	82 4-9-13	82 8-11-17	123 9-12-19	109 10-13-19	164 11-14-21	123 11-14-20	184 12-15-22	136 12-15-21	204 13-17-23	164 12-16-23	245 13-18-25	191 13-17-24	286 14-19-26
	2S 2G	CFM/SIDE THROW, FT.	109 5-7-15		164 7-11-22		218 10-15-25		245 12-17-27		273 13-19-28		327 14-21-30		382 15-23-34	
	1S	CFM/SIDE THROW, FT.	218 7-12-22		327 12-17-31		436 15-23-25		491 17-26-37		545 19-27-39		654 20-29-42		763 22-32-45	
	RETURN FACTORS —SP=1.0 TP NC + 3	CFM NC	314 —		471 18		628 26		707 28		785 32		942 37		1099 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 12" ROUND	4A	CFM/SIDE THROW, FT.	79 6-9-15		118 8-11-18		157 10-15-23		1771 13-17-24		196 14-18-25		236 15-20-28		275 17-21-30	
	3A	CFM/SIDE THROW, FT.	79 6-9-15	118 7-10-17	118 8-11-18	177 9-12-20	157 10-15-23	236 11-17-25	177 13-17-24	265 14-19-26	196 14-18-25	294 15-20-28	236 15-20-28	353 17-23-31	275 17-21-30	412 19-23-33
	2S 2G	CFM/SIDE THROW, FT.	157 6-9-19		236 9-14-26		314 11-16-29		353 14-21-32		393 15-23-34		471 16-24-38		550 18-27-40	
	1S	CFM/SIDE THROW, FT.	314 9-14-28		471 14-21-37		628 19-28-42		707 21-32-45		785 23-34-47		942 24-36-51		1099 27-39-55	
	RETURN FACTORS —SP=1.1 TP NC + 4	CFM NC	427 —		641 20		854 28		961 30		1068 34		1282 39		1495 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 14" ROUND	4A	CFM/SIDE THROW, FT.	107 7-10-19		160 10-15-23		214 14-19-26		240 15-20-29		267 17-21-30		320 19-23-32		374 21-26-38	
	3A	CFM/SIDE THROW, FT.	107 7-10-19	160 8-11-21	160 10-15-23	240 11-17-25	214 14-19-26	320 15-21-29	240 15-20-29	360 17-22-32	267 17-21-30	401 19-23-33	320 19-23-32	481 21-25-35	374 21-26-38	561 23-29-42
	2S 2G	CFM/SIDE THROW, FT.	214 7-11-22		320 11-16-31		427 14-22-36		481 16-24-38		534 18-27-40		641 19-28-43		748 21-31-47	
	1S	CFM/SIDE THROW, FT.	427 11-16-32		641 16-24-42		854 24-33-50		961 24-37-52		1068 27-39-55		1282 29-42-60		1495 33-45-65	
	RETURN FACTORS —SP=1.3 TP NC + 6	CFM NC	558 —		837 22		1116 30		1256 32		1395 36		1674 41		1953 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 16" ROUND	4A	CFM/SIDE THROW, FT.	140 8-12-21		209 12-19-26		279 17-21-31		314 19-23-32		349 20-25-35		419 22-28-42		488 24-30-48	
	3A	CFM/SIDE THROW, FT.	140 8-12-21	209 9-13-23	209 12-19-26	314 13-21-29	279 17-21-31	419 19-23-34	314 19-23-32	471 21-25-35	349 20-25-35	523 22-28-39	419 22-28-42	628 24-31-46	488 24-30-48	732 26-33-53
	2S 2G	CFM/SIDE THROW, FT.	279 8-13-25		419 13-19-35		558 16-25-41		628 19-28-43		698 20-30-45		837 23-34-49		977 26-37-54	
	1S	CFM/SIDE THROW, FT.	558 13-19-38		837 19-28-49		1116 25-38-57		1256 28-42-60		1395 31-44-63		1674 36-48-69		1953 42-52-75	

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=1.2 TP NC + 0	CFM NC	110 —		150 14		185 20		225 25		260 29		300 33		335 37	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 6 .375 SQ. FT.	4B	CFM/SIDE	37	18	50	25	62	31	75	37	87	44	100	50	112	56
		THROW, FT.	7-11-13	5-6-10	10-12-16	6-7-11	11-13-18	7-10-12	12-14-19	7-10-13	12-16-20	10-11-14	13-17-22	10-12-15	14-18-23	11-12-16
	3A1	CFM/SIDE	47	18	62	25	78	31	94	37	109	44	125	50	140	56
		THROW, FT.	10-11-14	5-6-10	11-12-17	6-7-11	12-13-19	7-10-12	13-14-20	7-10-13	14-16-22	10-11-14	14-17-23	10-12-15	16-18-26	11-12-16
	3A2	CFM/SIDE	42	35	55	47	70	58	84	70	98	82	112	94	126	105
		THROW, FT.	8-12-14	6-8-13	10-13-17	8-10-14	12-14-19	10-12-16	13-16-21	10-13-17	13-17-22	12-13-18	14-18-23	12-14-19	16-19-25	13-16-21
	2A 2B	CFM/SIDE	56		75		93		112		131		150		168	
		THROW, FT.	11-12-16		12-14-19		13-16-22		14-18-23		16-19-24		17-20-26		18-22-29	
	2C 2E 2D 2F	CFM/SIDE	75	37	100	50	125	62	150	75	175	87	200	100	225	112
		THROW, FT.	12-14-19	8-12-14	13-16-22	10-13-17	14-18-25	12-14-19	16-19-29	13-16-21	17-21-29	13-17-25	18-22-31	14-18-23	20-23-33	16-20-25
	1A 1B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	14-17-23		17-19-29		19-22-31		21-23-34		22-25-36		23-29-39		25-29-42	
	RETURN FACTORS —SP=1.6 TP NC + 1	CFM NC	150 —		200 14		250 20		300 26		350 31		400 35		450 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 6 .50 SQ. FT.	4B 4C	CFM/SIDE	56	18	75	25	94	31	113	37	131	44	150	50	169	56
		THROW, FT.	11-13-17	5-6-10	12-14-19	6-7-11	13-17-22	7-10-12	14-18-23	7-10-13	16-19-26	10-11-14	17-20-26	10-11-14	18-22-29	11-12-16
	3A1	CFM/SIDE	66	18	87	25	109	31	131	37	153	44	175	50	197	56
		THROW, FT.	11-13-18	5-6-10	12-14-20	6-7-11	13-17-23	7-10-12	14-18-26	7-10-13	16-19-26	10-11-14	17-20-29	10-11-14	18-22-30	11-12-16
	3B	CFM/SIDE	75	37	100	50	126	62	150	75	176	87	200	100	226	112
		THROW, FT.	11-16-20	8-12-14	14-18-23	10-13-17	16-20-27	12-14-19	18-22-29	13-16-21	18-23-31	13-17-25	20-25-32	14-18-23	22-27-34	16-20-25
	2A 2B	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	11-13-18		12-14-20		13-17-23		14-18-26		16-19-26		17-20-29		18-22-30	
	2C 2E 2D 2F	CFM/SIDE	112	37	150	50	188	62	225	75	263	87	300	100	338	112
		THROW, FT.	14-17-23	8-12-14	17-19-29	10-13-17	19-22-31	12-14-19	21-23-34	13-16-21	22-25-36	13-17-25	23-29-39	14-18-23	25-29-42	16-20-25
	1A 1B	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	14-17-23		17-19-29		19-22-31		21-23-34		22-25-36		23-29-39		25-29-42	
	RETURN FACTORS —SP=1.9 TP NC + 1	CFM NC	190 —		250 15		310 21		375 27		440 32		500 36		565 40	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 6 .625 SQ. FT.	4B 4C	CFM/SIDE	75	18	100	25	125	31	150	37	175	44	200	50	225	56
		THROW, FT.	11-13-18	5-6-10	12-14-20	6-7-11	13-17-23	7-10-12	14-18-26	7-10-13	16-19-26	10-11-14	17-20-29	10-11-14	18-22-30	11-12-16
	4E	CFM/SIDE	56	37	75	50	94	62	113	75	131	87	150	100	169	112
		THROW, FT.	11-12-16	10-11-14	12-14-19	11-12-17	12-17-22	12-13-19	14-18-23	13-14-20	16-19-26	14-16-22	16-20-26	14-17-23	18-22-29	16-18-26
	3A1	CFM/SIDE	84	18	112	25	140	31	169	37	197	44	225	50	253	56
		THROW, FT.	12-13-19	5-6-10	13-16-22	6-7-11	14-18-24	7-10-12	16-19-26	7-10-13	17-20-28	10-11-14	18-22-30	10-11-14	19-23-34	11-12-16
	2A 2B	CFM/SIDE	94		125		156		187		219		250		281	
		THROW, FT.	12-14-20		13-16-23		14-19-26		16-20-28		17-22-30		18-23-31		19-26-35	
	2C 2E 2D 2F	CFM/SIDE	150	37	200	50	250	62	300	75	350	87	400	100	450	112
		THROW, FT.	14-17-23	8-12-14	17-19-29	10-13-17	19-22-31	12-14-19	21-23-34	13-16-21	22-25-36	13-17-22	23-29-39	14-18-23	25-29-42	16-20-25
	1A 1B	CFM/SIDE	188		250		312		375		438		500		563	
		THROW, FT.	16-19-26		18-22-30		21-25-34		22-29-38		23-29-40		25-31-43		29-32-45	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=2.6 TP NC + 2	CFM NC	225 —		300 16		375 22		450 28		525 33		600 37		675 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 6 .75 SQ. FT.	4B 4C	CFM/SIDE	94	18	125	25	156	31	188	37	218	44	250	50	281	56
		THROW, FT.	12-14-20	5-6-10	13-17-23	6-7-11	14-19-25	7-10-12	16-20-28	7-10-13	17-22-30	10-11-14	18-23-31	10-11-14	19-26-35	11-12-16
	4E	CFM/SIDE	56	56	75	75	94	94	113	113	131	131	150	150	169	169
		THROW, FT.	11-13-17	11-13-17	12-14-19	12-14-19	13-17-22	13-17-22	14-18-23	14-18-23	16-19-26	16-19-26	17-20-26	17-20-26	18-22-29	18-22-29
	3A1	CFM/SIDE	103	18	137	25	172	31	206	37	240	44	275	50	309	56
		THROW, FT.	12-14-20	5-6-10	13-17-23	6-7-11	14-19-25	7-10-12	16-20-28	7-10-13	17-22-30	10-11-14	18-23-31	10-11-14	19-26-35	11-12-16
	2A 2B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	13-16-22		16-18-26		18-20-29		19-22-31		20-23-34		22-26-36		23-26-38	
	2C 2E 2D 2F	CFM/SIDE	187	37	250	50	313	62	375	75	438	87	500	100	563	112
		THROW, FT.	16-19-26	8-12-14	18-22-30	10-13-17	21-25-34	12-14-19	22-29-38	13-16-21	23-29-40	13-17-22	25-31-43	14-18-23	29-32-45	16-19-25
	1A 1B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	17-21-29		19-23-32		22-26-38		23-29-42		25-30-44		29-32-47		29-36-52	
	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	260 —		350 16		435 22		525 29		610 33		700 38		785 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 6 .875 SQ. FT.	4B 4C	CFM/SIDE	112	18	150	25	187	31	225	37	262	44	300	50	337	56
		THROW, FT.	13-16-22	5-6-10	16-18-26	6-7-11	18-20-29	7-10-12	19-22-31	7-10-13	20-23-34	10-11-14	22-26-36	10-11-14	23-26-38	11-12-16
	4E	CFM/SIDE	75	56	100	75	125	94	150	113	175	131	200	150	225	169
		THROW, FT.	11-13-18	11-13-17	12-14-20	12-14-19	13-17-23	13-17-22	14-18-26	14-18-23	16-19-26	16-19-26	17-20-29	17-20-26	18-22-30	18-22-29
	3A1	CFM/SIDE	122	18	162	25	203	31	244	37	284	44	325	50	365	56
		THROW, FT.	13-16-22	5-6-10	16-18-26	6-7-11	18-20-29	7-10-12	19-22-31	7-10-13	20-23-34	10-11-14	22-26-36	10-11-14	23-26-38	11-12-16
	2A 2B	CFM/SIDE	131		175		218		262		306		350		393	
		THROW, FT.	13-16-22		16-18-26		18-20-29		19-22-31		20-23-34		22-26-36		23-26-38	
	2C 2E 2D 2F	CFM/SIDE	225	37	300	50	375	62	450	75	525	87	600	100	675	112
		THROW, FT.	17-21-29	8-12-14	19-23-32	10-13-17	22-26-38	12-14-19	23-29-42	13-16-21	25-30-44	13-17-22	29-32-47	14-18-23	29-36-49	16-19-25
	1A 1B	CFM/SIDE	262		350		437		525		612		700		787	
		THROW, FT.	17-21-29		19-23-32		22-26-38		23-29-42		25-30-44		29-32-47		29-36-49	
	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	300 —		400 16		500 23		600 30		700 34		800 39		900 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 6 1.0 SQ. FT.	4B 4C	CFM/SIDE	131	18	175	25	219	31	263	37	306	44	350	50	394	56
		THROW, FT.	13-16-22	5-6-10	16-18-26	6-7-11	18-20-29	7-10-12	19-22-31	7-10-13	20-23-34	10-11-14	22-26-36	10-11-14	23-26-38	11-12-16
	4E	CFM/SIDE	75	75	100	100	125	125	150	150	175	175	200	200	225	225
		THROW, FT.	11-13-18	11-13-18	12-14-20	12-14-20	13-17-23	13-17-23	14-18-26	14-18-26	16-19-26	16-19-26	17-20-29	17-20-29	18-22-30	18-22-30
	3A1	CFM/SIDE	141	18	187	25	234	31	281	37	328	44	375	50	422	56
		THROW, FT.	13-16-22	5-6-10	16-18-26	6-7-11	18-20-29	7-10-12	19-22-31	7-10-13	20-23-34	10-11-14	22-26-36	10-11-14	23-26-38	11-12-16
	2A 2B	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	13-16-22		16-18-26		18-20-29		19-22-31		20-23-34		22-26-36		23-26-38	
	2C 2E 2D 2F	CFM/SIDE	260	37	350	50	438	62	525	75	613	87	700	100	788	112
		THROW, FT.	17-21-29	8-12-14	19-23-32	10-13-17	22-26-38	12-14-19	23-29-42	13-16-21	25-30-44	13-17-22	29-32-47	14-18-23	29-36-49	16-19-25
	1A 1B	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	18-22-31		21-25-36		23-29-42		25-30-44		29-32-47		29-34-51		31-38-53	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	375 —		500 17		625 24		750 30		875 35		1000 40		1125 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 6 1.25 SQ. FT.	4B 4C	CFM/SIDE	169	18	225	25	281	31	338	37	393	44	450	50	506	56
		THROW, FT.	16-19-26	5-6-10	18-22-30	6-8-12	21-25-34	8-10-13	22-29-38	8-10-14	23-29-40	10-12-16	25-31-43	10-12-16	27-32-45	12-13-17
	4E	CFM/SIDE	94	94	125	125	156	156	188	188	219	219	250	250	282	282
		THROW, FT.	13-16-22	13-16-22	14-18-25	14-18-25	16-21-29	16-21-29	17-22-30	17-22-30	18-23-32	18-23-32	19-25-34	19-25-34	21-29-38	21-29-38
	3A1	CFM/SIDE	178	18	237	25	297	31	356	37	415	44	475	50	534	56
		THROW, FT.	16-19-26	5-6-10	18-22-30	6-8-12	21-25-34	8-10-13	22-29-38	8-10-14	23-29-40	10-12-16	25-31-43	10-12-16	27-32-45	12-13-17
	2A 2B	CFM/SIDE	187		250		312		375		437		500		562	
		THROW, FT.	16-19-26		18-22-30		21-25-34		22-29-38		23-29-40		25-31-43		27-32-45	
	2C 2D 2E 2F	CFM/SIDE	337	37	450	50	563	62	675	75	788	87	900	100	1013	112
		THROW, FT.	18-22-31	8-12-14	21-25-36	10-13-17	23-29-42	12-14-19	25-30-44	13-16-21	27-32-47	13-17-22	29-34-51	14-18-23	31-38-53	16-19-25
	1A 1B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	19-23-32		22-29-39		25-31-44		27-34-47		29-36-51		31-39-55		32-42-57	
	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	225 —		300 17		375 23		450 28		525 33		600 36		675 40	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 9 .75 SQ. FT.	4B 4C	CFM/SIDE	70	42	94	56	117	70	141	84	164	98	188	112	211	126
		THROW, FT.	10-13-17	6-8-13	12-14-19	8-10-14	13-16-22	10-12-16	14-17-23	10-13-17	16-18-25	12-13-18	16-19-27	12-14-19	17-21-29	13-16-21
	3A1	CFM/SIDE	91	42	121	56	152	70	183	84	213	98	244	112	274	126
		THROW, FT.	13-16-22	6-8-13	14-18-25	8-10-14	16-21-29	10-12-16	17-22-30	10-13-17	18-23-32	12-13-18	19-25-34	12-14-19	21-29-38	13-16-21
	3A2	CFM/SIDE	75	75	100	100	125	125	150	150	175	175	200	200	225	225
		THROW, FT.	13-15-20	13-15-20	14-17-22	14-17-22	15-20-25	15-20-25	17-21-27	17-21-27	18-22-31	18-22-31	20-24-31	20-24-31	21-25-34	21-25-34
	2A 2B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	14-17-23		17-19-29		19-22-31		21-23-34		22-25-36		23-27-39		25-29-42	
	2C 2D 2E 2F	CFM/SIDE	141	84	188	112	234	141	281	169	328	197	375	225	422	253
		THROW, FT.	15-18-25	13-15-20	18-21-31	14-17-22	21-24-34	15-20-25	22-25-36	17-21-27	24-27-39	18-22-31	25-29-42	20-24-31	27-31-45	21-25-34
	1A 1B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	18-22-31		21-25-35		24-28-41		25-31-45		27-32-48		31-35-50		31-39-53	
	RETURN FACTORS —SP=1.7 TP NC + 3	CFM NC	280 —		375 18		470 24		565 29		655 34		750 37		845 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 9 .93 SQ. FT.	4B 4C	CFM/SIDE	98	42	131	56	165	70	198	84	230	98	263	112	296	126
		THROW, FT.	13-16-22	6-8-13	14-18-25	8-10-14	16-21-29	10-12-16	17-22-30	10-13-17	18-23-32	12-13-18	19-25-34	12-14-19	21-29-38	13-16-21
	4E	CFM/SIDE	70	70	94	94	117	117	141	141	164	164	188	188	211	211
		THROW, FT.	12-14-19	12-14-19	13-16-22	13-16-22	14-18-25	14-18-25	16-19-29	16-19-29	17-21-29	17-21-29	18-22-31	18-22-31	19-23-32	19-23-32
	3A1	CFM/SIDE	120	42	159	56	200	70	240	84	279	98	319	112	359	126
		THROW, FT.	14-17-23	6-8-13	17-19-29	8-10-14	19-22-31	10-12-16	21-23-34	10-13-17	22-25-36	12-13-18	23-27-39	12-14-19	25-29-42	13-16-21
	3A2	CFM/SIDE	117	82	155	110	196	137	233	165	272	192	312	219	351	247
		THROW, FT.	14-15-22	11-14-18	15-18-25	13-15-21	17-21-28	14-17-24	18-22-31	15-18-25	20-24-32	17-20-27	21-25-35	17-21-31	22-27-39	18-22-31
	2A 2B	CFM/SIDE	140		187		235		281		328		375		422	
		THROW, FT.	14-17-23		17-19-29		19-22-31		21-23-34		22-25-36		23-29-39		25-29-42	
	2C 2D 2E 2F	CFM/SIDE	197	84	263	112	329	141	394	169	459	197	525	225	592	253
		THROW, FT.	17-21-28	13-15-20	20-24-32	14-17-22	22-27-36	15-20-25	24-31-41	17-21-27	25-31-43	18-22-30	27-34-46	20-24-32	31-35-49	21-25-34
	1A 1B	CFM/SIDE	281		375		470		563		656		750		845	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=2.1 TP NC + 3	CFM NC	335 —		450 19		560 25		675 30		790 35		900 38		1010 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 9 1.125 SQ. FT.	4B 4C	CFM/SIDE	126	42	169	56	211	70	254	84	296	98	338	112	380	126
		THROW, FT.	14-17-23	6-8-13	17-19-29	8-10-14	19-22-31	10-12-16	21-23-34	10-13-17	22-25-36	12-13-18	23-27-39	12-14-19	25-29-42	13-16-21
	4E	CFM/SIDE	99	70	132	94	164	117	197	141	230	164	263	188	296	211
		THROW, FT.	13-16-22	12-14-19	14-18-25	13-16-22	16-21-29	14-18-25	17-22-30	16-19-29	18-23-32	17-21-29	19-25-34	18-22-31	21-29-38	19-23-32
	3A1	CFM/SIDE	147	42	197	56	246	70	295	84	345	98	394	112	443	126
		THROW, FT.	14-17-23	6-8-13	17-19-29	8-10-14	19-22-31	10-12-16	21-23-34	10-13-17	22-25-36	12-13-18	23-27-39	12-14-19	25-29-42	13-16-21
	3B	CFM/SIDE	168	84	225	112	281	141	337	169	394	197	450	225	506	253
		THROW, FT.	17-21-28	13-15-20	19-23-32	14-17-22	21-27-36	15-20-25	23-28-40	17-21-27	25-30-42	18-22-31	27-32-46	20-24-31	28-34-47	21-25-34
	2A 2B	CFM/SIDE	163		225		281		337		394		450		506	
		THROW, FT.	16-19-26		18-22-30		21-25-34		22-29-38		23-29-40		25-31-43		29-32-45	
	2C 2D 2E 2F	CFM/SIDE	253	84	338	112	421	141	506	169	591	197	675	225	759	253
		THROW, FT.	18-22-31	13-15-20	21-25-35	14-17-22	24-28-41	15-20-25	25-31-45	17-21-27	27-32-48	18-22-31	29-35-50	20-24-31	31-39-53	21-25-34
	1A 1B	CFM/SIDE	337		450		562		675		788		900		1012	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	
	RETURN FACTORS —SP=2.5 TP NC + 4	CFM NC	395 —		525 19		655 25		785 31		915 36		1050 38		1180 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 9 1.125 SQ. FT.	4B 4C	CFM/SIDE	154	42	206	56	258	70	309	84	360	98	413	112	464	126
		THROW, FT.	16-19-26	6-8-13	18-22-30	8-10-14	21-25-34	10-12-16	22-29-38	10-13-17	23-29-40	12-13-18	25-31-43	12-14-19	29-32-45	13-16-21
	4E	CFM/SIDE	98	98	131	131	163	163	196	196	229	229	261	261	294	294
		THROW, FT.	13-16-22	13-16-22	14-18-25	14-18-25	16-21-29	16-21-29	17-22-30	17-22-30	18-23-32	18-23-32	19-25-34	19-25-34	21-29-38	21-29-38
	3A1	CFM/SIDE	175	42	234	56	292	70	351	84	410	98	468	112	527	126
		THROW, FT.	16-19-26	6-8-13	18-22-30	8-10-14	21-25-34	10-12-16	22-29-38	10-13-17	23-29-40	12-13-18	25-31-43	12-14-19	29-32-45	13-16-21
	2A 2B	CFM/SIDE	196		262		327		393		458		525		590	
		THROW, FT.	16-19-26		18-22-30		21-25-34		22-27-38		23-29-40		25-31-43		29-32-45	
	2C 2D 2E 2F	CFM/SIDE	308	84	412	112	514	141	617	169	720	197	825	225	927	253
		THROW, FT.	20-24-34	13-15-20	22-27-39	14-17-22	25-31-45	15-20-25	27-32-48	17-21-27	31-35-50	18-22-29	31-36-55	20-24-31	34-41-57	21-25-34
	1A 1B	CFM/SIDE	393		524		655		786		917		1050		1180	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	
	RETURN FACTORS —SP=2.9 TP NC + 4	CFM NC	450 —		600 19		750 25		900 31		1050 36		1200 38		1350 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 9 1.5 SQ. FT.	4B 4C	CFM/SIDE	183	42	244	56	305	70	366	84	427	98	488	112	549	126
		THROW, FT.	17-21-28	7-8-14	20-24-32	8-11-15	22-27-36	11-13-17	24-29-41	11-14-18	25-31-43	13-14-20	27-34-46	13-15-21	31-35-49	14-17-22
	4E	CFM/SIDE	126	99	169	132	211	164	253	197	295	230	337	263	379	296
		THROW, FT.	15-18-25	14-17-24	18-21-31	15-20-27	21-24-34	17-22-31	22-25-36	18-24-32	24-27-39	20-25-35	25-31-42	21-27-36	27-31-45	22-31-41
	3A1	CFM/SIDE	204	42	272	56	340	70	408	84	476	98	544	112	612	126
		THROW, FT.	17-21-28	7-8-14	20-24-32	8-11-15	22-27-36	11-13-17	24-29-41	11-14-18	25-31-43	13-14-20	27-34-46	13-15-21	31-35-49	14-17-22
	2A 2B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	18-22-31		21-25-35		24-28-41		25-31-45		27-32-48		29-35-50		31-39-53	
	2C 2D 2E 2F	CFM/SIDE	365	84	488	112	609	141	731	169	853	197	975	225	1097	253
		THROW, FT.	21-25-35	13-15-20	24-31-42	14-17-22	27-34-48	15-20-25	29-36-50	17-21-27	31-39-55	18-22-29	34-42-59	20-24-31	35-45-62	21-25-34
	1A 1B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.9 TP NC + 5	CFM NC	560 —		750 20		935 26		1125 32		1310 37		1500 39		1685 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 9 1.875 SQ. FT.	4B 4C	CFM/SIDE	238	42	319	56	398	70	478	84	557	98	638	112	716	126
		THROW, FT.	18-22-31	7-8-14	21-25-35	8-11-15	24-28-41	11-13-17	25-31-45	11-14-18	27-32-48	13-14-20	29-35-50	13-15-21	31-39-53	14-17-22
	4E	CFM/SIDE	155	126	206	169	258	211	310	253	361	295	413	337	465	379
		THROW, FT.	17-21-28	15-18-25	20-24-32	18-21-31	22-27-36	21-24-34	24-31-41	22-25-36	25-31-42	24-27-39	27-34-46	25-29-42	31-35-49	27-31-45
	3A1	CFM/SIDE	259	42	347	56	433	70	520	84	606	98	694	112	779	126
		THROW, FT.	18-22-31	7-8-14	21-25-35	8-11-15	24-28-41	11-13-17	25-31-45	11-14-18	27-32-48	13-14-20	29-35-50	13-15-21	31-39-53	14-17-22
	2A 2B	CFM/SIDE	281		375		468		562		655		750		842	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	476	84	638	112	796	141	956	169	1113	197	1275	225	1432	253
		THROW, FT.	22-27-39	13-15-20	25-31-45	14-17-22	28-35-50	15-20-25	31-39-55	17-21-27	32-42-59	18-22-31	35-45-62	20-24-31	39-48-66	21-25-34
	1A 1B	CFM/SIDE	562		750		937		1125		1310		1500		1685	
		THROW, FT.	22-27-39		25-31-45		28-35-50		31-39-55		32-42-59		35-45-62		39-48-66	
	RETURN FACTORS —SP=5.0 TP NC + 6	CFM NC	675 —		900 21		1125 27		1350 33		1575 38		1800 40		2025 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 9 2.25 SQ. FT.	4B 4C	CFM/SIDE	295	42	394	56	492	70	591	84	689	98	788	112	886	126
		THROW, FT.	20-24-34	7-8-14	22-27-39	8-11-15	25-31-45	11-13-17	27-32-48	11-14-18	29-35-50	13-14-20	31-36-55	13-15-21	34-41-57	14-17-22
	4E	CFM/SIDE	183	155	244	206	305	258	366	310	427	361	488	413	549	465
		THROW, FT.	17-21-28	17-21-28	20-24-32	20-24-32	22-27-36	22-27-36	24-31-41	24-31-41	25-31-42	25-31-42	27-34-46	27-34-46	31-35-49	31-35-49
	3A1	CFM/SIDE	316	42	422	56	527	70	633	84	738	98	844	112	949	126
		THROW, FT.	20-24-34	7-8-14	22-27-39	8-11-15	25-31-45	11-13-17	27-32-48	11-14-18	29-35-50	13-14-20	31-36-55	13-15-21	34-41-57	14-17-22
	2A 2B	CFM/SIDE	337		450		562		675		787		900		1012	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	590	84	788	112	984	141	1181	169	1378	197	1575	225	1772	253
		THROW, FT.	24-31-42	13-15-20	28-34-48	14-17-22	32-39-55	15-20-25	34-42-57	17-21-27	36-45-62	18-22-29	41-49-66	20-24-31	43-52-70	21-25-34
	1A 1B	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	24-31-42		28-34-48		32-39-55		34-42-57		36-45-62		41-49-66		43-52-70	
	RETURN FACTORS —SP=1.6 TP NC + 2	CFM NC	375 —		500 19		625 25		750 30		875 34		1000 38		1125 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 12 1.25 SQ. FT.	4B 4C	CFM/SIDE	112	75	150	100	187	125	225	150	262	175	300	200	337	225
		THROW, FT.	13-15-21	8-13-15	14-17-24	11-14-18	15-20-27	13-15-21	17-21-29	14-17-22	18-22-31	14-18-24	20-24-34	15-20-25	21-25-35	17-21-27
	3A1	CFM/SIDE	150	75	200	100	250	125	300	150	350	175	400	200	450	225
		THROW, FT.	15-18-25	8-13-15	18-21-31	11-14-18	21-24-34	13-15-21	22-25-36	14-17-22	24-27-39	14-18-24	25-29-42	15-20-25	27-31-45	17-21-27
	3A2	CFM/SIDE	117	129	156	172	195	215	234	258	273	301	312	344	351	387
		THROW, FT.	11-14-18	14-15-22	13-15-21	15-18-25	14-17-24	17-21-28	15-18-25	18-22-31	17-20-27	20-24-32	17-21-29	21-25-35	18-22-31	22-27-39
	2A 2B	CFM/SIDE	187		250		312		375		437		500		567	
		THROW, FT.	17-21-28		20-24-32		22-27-36		24-29-41		25-31-43		27-34-46		31-35-49	
	2C 2D 2E 2F	CFM/SIDE	225	150	300	200	375	250	450	300	525	350	600	400	675	450
		THROW, FT.	18-22-31	14-17-24	21-25-35	15-20-27	24-28-41	17-22-31	25-31-45	18-24-32	27-32-48	20-25-35	31-35-50	21-27-36	31-39-53	22-31-41
	1A 1B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=1.9 TP NC + 3	CFM NC	450 —		600 20		750 26		900 31		1050 35		1200 39		1350 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 12 1.5 SQ. FT.	4A 4B 4C	CFM/SIDE	150	75	200	100	250	125	300	150	350	175	400	200	450	225
		THROW, FT.	15-18-25	8-13-15	18-21-31	11-14-18	21-24-34	13-15-21	22-25-36	14-17-22	24-27-39	14-18-24	25-31-42	15-20-25	27-31-45	17-21-27
	3A1	CFM/SIDE	187	75	250	100	312	125	375	150	437	175	500	200	562	225
		THROW, FT.	17-21-28	8-13-15	20-24-32	11-14-18	22-27-36	13-15-21	24-31-41	14-17-22	25-31-43	14-18-24	27-34-46	15-20-25	31-35-49	17-21-27
	3A2	CFM/SIDE	168	141	225	187	281	234	337	281	394	328	450	375	506	422
		THROW, FT.	14-17-24	13-15-21	15-20-27	14-17-24	17-22-31	15-20-27	18-24-32	17-21-31	20-25-35	18-22-31	21-27-36	20-24-34	22-31-41	21-25-35
	2A 2B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	18-22-31		21-25-35		24-28-41		25-31-45		27-32-48		29-35-50		31-39-53	
	2C 2D 2E 2F	CFM/SIDE	300	150	400	200	500	250	600	300	700	350	800	400	900	450
		THROW, FT.	20-24-34	14-17-24	22-27-39	15-20-27	25-31-45	17-22-31	27-32-48	18-24-32	29-35-50	20-25-35	31-36-55	21-27-36	34-41-57	22-31-41
	1A 1B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	
	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	525 —		700 20		875 26		1050 31		1225 35		1400 39		1575 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 12 1.75 SQ. FT.	4A 4B 4C	CFM/SIDE	187	75	250	100	312	125	375	150	437	175	500	200	562	225
		THROW, FT.	17-21-28	8-13-15	20-24-32	11-14-18	22-27-36	13-15-21	24-31-41	14-17-22	25-32-43	14-18-24	27-34-46	15-20-25	31-35-49	17-21-27
	4E	CFM/SIDE	150	112	200	150	250	187	300	225	350	262	400	300	450	337
		THROW, FT.	15-18-25		18-21-31	15-18-25	21-24-34		22-25-36		24-27-39		25-31-42	22-25-36	27-31-45	
	3A1	CFM/SIDE	225	75	300	100	375	125	450	150	525	175	600	200	675	225
		THROW, FT.	18-22-31	8-13-15	21-25-35	11-14-18	24-28-41	13-15-21	25-31-45	14-17-22	27-32-48	14-18-24	29-35-50	15-20-25	31-39-53	17-21-27
	3A2	CFM/SIDE	230	148	306	197	382	246	460	295	535	345	612	394	688	443
		THROW, FT.	14-17-24	13-15-21	15-20-27	14-17-24	17-22-31	15-20-27	18-24-32	17-21-31	20-25-35	18-22-31	21-27-36	20-24-34	22-31-41	21-25-35
	2A 2B	CFM/SIDE	262		350		437		525		612		700		787	
		THROW, FT.	18-22-31		21-25-35		24-28-41		25-31-45		27-32-48		29-35-50		31-39-53	
	2C 2D 2E 2F	CFM/SIDE	375	150	500	200	625	250	750	300	875	350	1000	400	1125	450
		THROW, FT.	21-25-35	14-17-24	24-31-42	15-20-27	27-34-48	17-22-31	29-36-50	18-24-32	31-39-55	20-25-35	34-42-59	21-27-36	35-45-62	22-31-41
	1A 1B	CFM/SIDE	525		700		875		1050		1225		1400		1575	
		THROW, FT.	22-27-39		25-31-45		28-35-50		31-39-55		32-42-59		35-45-62		39-48-66	
	RETURN FACTORS —SP=2.6 TP NC + 5	CFM NC	600 12		800 21		1000 27		1200 32		1400 36		1600 40		1800 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 12 2.0 SQ. FT.	4A 4B 4C	CFM/SIDE	225	75	300	100	375	125	450	150	525	175	600	200	675	225
		THROW, FT.	18-22-31	8-13-15	21-25-35	11-14-18	24-28-41	13-15-21	25-31-45	14-17-22	27-32-48	14-18-24	31-35-50	15-20-25	31-39-53	17-21-27
	4E	CFM/SIDE	150	150	200	200	250	250	300	300	350	350	400	400	450	450
		THROW, FT.	15-18-25	15-18-25	18-21-31	18-21-31	21-24-34	21-24-34	22-25-36	22-25-36	24-27-39	24-27-39	25-31-42	25-31-42	27-31-45	27-31-45
	3A1	CFM/SIDE	262	75	350	100	437	175	525	150	612	175	700	200	787	225
		THROW, FT.	18-22-31	8-13-15	21-25-35	11-14-18	24-28-41	13-15-21	25-31-45	14-17-22	27-32-48	14-18-24	29-35-50	15-20-25	31-39-53	17-21-27
	3B	CFM/SIDE	300	150	400	200	500	250	600	300	700	350	800	400	900	450
		THROW, FT.	15-18-25	14-17-24	18-21-31	15-20-27	21-24-34	17-22-31	22-25-36	18-24-32	24-27-39	20-25-35	25-31-42	21-27-36	27-31-45	22-31-41
	2A 2B	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	450	150	600	200	750	250	900	300	1050	350	1200	400	1350	450
		THROW, FT.	21-25-35	14-17-24	24-31-42	15-20-27	27-34-48	17-22-31	29-36-50	18-24-32	31-39-55	20-25-35	34-42-59	21-27-36	35-45-62	22-31-41
	1A 1B	CFM/SIDE	600		800		1000		1200		1400		1600		1800	
		THROW, FT.	24-31-42		28-34-48		32-39-55		34-42-57		36-45-62		41-49-66		43-52-70	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.3 TP NC + 6	CFM NC	750 15		1000 23		1250 29		1500 33		1750 37		2000 41		2250 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 12 2.5 SQ. FT.	4B 4C	CFM/SIDE	300	75	400	100	500	125	600	150	700	175	800	200	900	225
		THROW, FT.	20-24-34	8-13-15	22-27-39	11-14-18	25-31-45	13-15-21	27-32-48	14-17-22	29-35-50	14-18-24	31-36-55	15-20-25	34-41-57	17-21-27
	4E	CFM/SIDE	183	183	250	250	313	313	375	375	437	437	500	500	562	562
		THROW, FT.	17-21-28	17-21-28	20-24-32	20-24-32	22-27-36	22-27-36	24-31-41	24-31-41	25-31-43	25-31-43	27-34-46	27-34-46	31-35-49	31-35-49
	3A1	CFM/SIDE	337	75	450	100	562	125	675	150	787	175	900	200	1012	225
		THROW, FT.	20-24-34	8-13-15	22-27-39	11-14-18	25-31-45	13-15-21	27-32-48	14-17-22	29-35-50	14-18-24	31-36-55	15-20-25	34-41-57	17-21-27
	2A 2B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	
	2C 2D 2E 2F	CFM/SIDE	600	150	800	200	1000	250	1200	300	1400	350	1600	400	1800	450
		THROW, FT.	24-31-41	14-17-24	28-34-48	15-20-27	32-39-55	17-22-31	34-42-57	18-24-32	36-45-62	20-25-35	41-49-66	21-27-36	43-52-70	22-31-41
	1A 1B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	25-31-45		31-35-50		34-41-57		36-45-62		39-48-66		42-50-70		45-53-74	
	RETURN FACTORS —SP=4.0 TP NC + 7	CFM NC	900 16		1200 25		1500 30		1800 34		2100 38		2400 42		2700 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 12 3.0 SQ. FT.	4B 4C	CFM/SIDE	375	75	500	100	625	125	750	150	875	175	1000	200	1125	225
		THROW, FT.	21-25-35	8-13-15	24-31-42	11-14-18	27-34-48	13-15-21	29-36-50	14-17-22	31-39-55	14-18-24	34-42-59	15-20-25	35-45-62	17-21-27
	4E	CFM/SIDE	225	225	300	300	375	375	450	450	525	525	600	600	675	675
		THROW, FT.	18-22-31	18-22-31	21-25-35	21-25-35	24-28-41	24-28-41	25-31-45	25-31-45	27-32-48	27-32-48	29-35-50	29-35-50	31-39-53	31-39-53
	3A1	CFM/SIDE	412	75	550	100	687	125	825	150	962	175	1100	200	1237	225
		THROW, FT.	21-25-35	8-13-15	24-31-42	11-14-18	27-34-48	13-15-21	29-36-50	14-17-22	31-39-55	14-18-24	34-42-59	15-20-25	35-45-62	17-21-27
	2A 2B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	21-25-35		24-31-42		27-34-48		29-36-50		31-39-55		34-42-59		35-45-62	
	2C 2D 2E 2F	CFM/SIDE	750	150	1000	200	1250	250	1500	300	1750	350	2000	400	2250	450
		THROW, FT.	25-31-45	14-17-24	31-35-50	15-20-27	34-41-57	17-22-31	36-45-62	18-24-32	39-48-66	20-25-35	42-50-70	21-27-36	45-53-74	22-31-41
	1A 1B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	27-34-46		31-39-53		35-45-60		39-48-64		42-50-70		45-55-74		48-57-80	
	RETURN FACTORS —SP=2.0 TP NC + 4	CFM NC	560 14		750 21		935 28		1125 32		1310 36		1500 39		1685 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 15 1.875 SQ. FT.	4B 4C	CFM/SIDE	164	117	219	156	273	195	328	234	383	273	438	312	492	351
		THROW, FT.	14-17-24	11-14-18	15-20-27	13-15-21	17-22-31	14-17-24	18-24-32	15-18-25	20-25-35	17-20-27	21-27-36	17-21-31	22-31-41	18-22-31
	3A1	CFM/SIDE	222	117	297	156	371	195	445	234	519	273	594	312	668	351
		THROW, FT.	18-22-31	11-14-18	21-25-35	13-15-21	24-28-41	14-17-24	25-31-45	15-18-25	31-39-55	17-20-27	31-35-50	17-21-31	31-39-53	18-22-31
	3A2	CFM/SIDE	168	197	225	262	281	328	337	394	394	459	450	525	506	590
		THROW, FT.	13-16-22	18-22-30	15-18-25	21-25-34	16-21-28	24-28-39	18-22-33	25-33-43	19-24-33	27-33-46	21-25-36	28-36-49	22-27-37	33-37-52
	2A 2B	CFM/SIDE	281		375		468		562		656		750		843	
		THROW, FT.	20-24-34		22-27-39		25-31-45		27-32-48		29-35-50		31-36-55		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	329	234	438	312	547	390	657	468	766	546	876	624	985	702
		THROW, FT.	25-33-45	18-22-30	30-36-51	21-25-34	34-42-58	24-28-39	36-45-61	25-31-43	39-48-66	27-33-46	43-52-70	28-36-49	46-55-75	33-37-52
	1A 1B	CFM/SIDE	562		750		937		1125		1312		1500		1687	
		THROW, FT.	24-28-42		27-33-48		30-37-54		33-42-58		34-45-63		37-48-66		42-51-70	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=2.1 TP NC + 5	CFM NC	655 14		875 21		1090 28		1310 33		1530 36		1750 39		1970 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 15 2.185 SQ. FT.	4B 4C	CFM/SIDE	210	117	281	156	361	195	422	234	493	273	563	312	634	351
		THROW, FT.	19-24-33	12-15-19	22-27-37	13-16-22	25-30-43	15-18-25	27-33-48	16-19-27	28-34-51	18-21-28	33-37-54	18-22-33	33-42-57	19-24-33
	4E	CFM/SIDE	164	164	218	218	273	273	327	327	382	382	437	437	491	491
		THROW, FT.	18-22-30	18-22-30	21-25-36	21-25-36	24-28-39	24-28-39	25-31-43	25-31-43	27-33-46	27-33-46	28-36-49	28-36-49	33-37-52	33-37-52
	3A1	CFM/SIDE	269	117	359	156	448	195	539	234	629	273	719	312	809	351
		THROW, FT.	19-24-33	12-15-19	22-27-37	13-16-22	25-30-43	15-18-25	27-33-48	16-19-27	28-34-51	18-21-28	33-37-54	18-22-33	33-42-57	19-24-33
	3A2	CFM/SIDE	230	213	306	284	382	355	460	426	535	498	612	569	688	641
		THROW, FT.	16-19-27	15-18-25	19-22-33	16-21-28	22-25-36	18-24-33	24-27-39	19-25-34	25-28-42	21-27-37	27-31-45	22-28-39	28-33-48	24-33-43
	2A 2B	CFM/SIDE	327		437		596		656		766		875		985	
		THROW, FT.	21-25-36		24-28-42		27-33-48		28-34-51		31-37-54		33-39-58		36-43-61	
	2C 2E 2D 2F	CFM/SIDE	422	234	563	312	702	390	844	468	966	546	1126	624	1268	702
		THROW, FT.	22-27-37	18-22-30	25-33-45	21-25-34	28-36-51	24-28-39	29-39-54	25-33-43	33-42-58	27-33-46	36-45-63	28-36-49	37-48-66	33-37-52
	1A 1B	CFM/SIDE	655		875		1092		1312		1532		1750		1970	
		THROW, FT.	25-33-45		30-36-51		33-42-58		36-45-61		39-48-66		43-52-70		46-55-75	
	RETURN FACTORS —SP=2.6 TP NC + 6	CFM NC	750 14		1000 22		1250 29		1500 34		1750 37		2000 39		2250 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 15 2.5 SQ. FT.	4B 4C	CFM/SIDE	258	117	344	156	430	195	516	234	602	273	688	312	774	351
		THROW, FT.	19-24-33	12-15-19	22-27-37	13-16-22	25-30-43	15-18-25	27-33-48	16-19-27	28-34-51	18-21-28	31-37-54	18-22-31	33-42-57	19-24-33
	4E	CFM/SIDE	164	211	218	281	273	352	327	422	382	492	437	563	491	633
		THROW, FT.	18-22-30	19-24-33	21-25-36	22-27-37	24-28-39	25-30-43	25-31-43	27-33-48	27-33-46	28-34-51	28-36-49	33-37-54	33-37-52	33-42-57
	3A1	CFM/SIDE	316	117	422	156	527	195	633	234	738	273	844	312	949	351
		THROW, FT.	21-25-36	12-15-19	24-28-42	13-16-22	27-33-48	15-18-25	28-34-51	16-19-27	31-37-54	18-21-28	33-39-58	18-22-31	36-43-61	19-24-33
	3A2	CFM/SIDE	300	225	400	300	500	375	600	450	700	525	800	600	900	675
		THROW, FT.	19-24-33	16-19-27	22-27-37	19-22-33	25-30-43	22-25-36	27-33-48	24-27-39	28-34-51	25-28-42	31-37-54	27-33-45	33-42-57	28-33-48
	2A 2B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	22-27-37		25-33-45		28-36-51		31-39-54		33-42-58		36-45-63		37-48-66	
	2C 2E 2D 2F	CFM/SIDE	516	234	688	312	860	390	1032	468	1204	546	1376	624	1548	702
		THROW, FT.	24-28-42	18-22-30	27-33-48	21-25-34	30-37-54	24-28-39	33-42-58	25-31-43	34-45-63	27-33-46	37-48-66	28-36-49	42-51-70	33-37-52
	1A 1B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	27-33-48		33-37-54		36-43-61		39-48-66		41-51-70		45-54-75		48-57-79	
	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	935 14		1250 23		1565 30		1875 36		2190 39		2500 40		2810 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 15 3.125 SQ. FT.	4B 4C	CFM/SIDE	351	117	469	156	587	195	703	234	822	273	938	312	1054	351
		THROW, FT.	20-24-34	11-14-18	22-27-39	13-15-21	25-31-45	14-17-24	27-32-48	15-18-25	29-35-50	17-20-27	31-36-55	17-21-29	34-41-57	18-22-31
	4E	CFM/SIDE	258	211	344	281	430	352	516	422	602	492	688	583	775	633
		THROW, FT.	18-22-31	18-22-31	21-25-31	21-25-35	24-28-41	24-28-41	25-31-45	25-31-45	27-32-48	27-32-48	31-35-50	31-35-50	31-39-53	31-39-53
	3A1	CFM/SIDE	410	117	547	156	685	195	820	234	958	273	1094	312	1224	351
		THROW, FT.	21-25-35	11-14-18	24-31-42	13-15-21	27-34-48	14-17-24	29-36-50	15-18-25	31-39-55	17-20-27	34-42-59	17-21-29	35-45-62	18-22-31
	3B	CFM/SIDE	468	234	625	312	782	391	937	469	1095	547	1250	625	1406	702
		THROW, FT.	24-30-40	18-22-30	28-34-46	21-25-34	32-38-52	24-28-39	34-44-58	25-33-43	36-44-62	27-33-46	38-48-66	28-36-49	44-50-70	33-37-52
	2A 2B	CFM/SIDE	468		625		782		937		1095		1250		1405	
		THROW, FT.	22-27-39		25-31-45		28-35-50		31-39-55		32-42-59		35-45-62		39-48-66	
	2C 2E 2D 2F	CFM/SIDE	702	234	938	312	1175	390	1407	468	1644	546	1876	624	2108	702
		THROW, FT.	25-33-45	18-22-30	30-36-51	21-25-34	34-42-58	24-28-39	36-45-61	25-33-43	39-48-66	27-33-46	43-52-70	28-36-49	51-55-75	33-37-52
	1A 1B	CFM/SIDE	937		1250		1565		1875		2190		2500		2810	
		THROW, FT.	28-36-49		33-42-57		37-48-64		42-51-69		45-54-75		48-58-79		51-61-85	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.8 TP NC + 7	CFM NC	1125 13		1500 23		1875 31		2250 37		2625 40		3000 41		3375 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 15 3.75 SQ. FT.	4B 4C	CFM/SIDE	446	117	594	156	742	195	891	234	1039	273	1188	312	1336	351
		THROW, FT.	22-27-37	12-15-19	25-33-45	13-16-22	28-36-51	15-18-25	33-39-54	16-19-27	33-45-58	18-21-28	36-45-63	18-22-30	37-48-66	19-24-33
	4E	CFM/SIDE	306	258	408	344	510	430	612	516	714	602	816	688	918	775
		THROW, FT.	21-25-36	19-24-33	24-28-42	22-27-37	27-33-48	25-30-43	28-34-51	27-33-48	33-37-54	28-34-51	33-39-58	33-37-54	36-43-61	33-42-57
	3A1	CFM/SIDE	504	117	672	156	840	195	1008	234	1176	273	1344	312	1512	351
		THROW, FT.	24-28-42	12-15-19	27-33-48	13-16-22	30-37-54	15-18-25	33-45-58	16-19-27	34-45-63	18-21-28	37-48-66	18-22-30	42-51-70	19-24-33
	2A 2B	CFM/SIDE	562		750		937		1125		1312		1500		1682	
		THROW, FT.	24-28-42		27-33-48		30-37-54		33-42-58		34-45-63		37-48-66		42-51-70	
	2C 2D 2E 2F	CFM/SIDE	890	234	1188	312	1485	390	1782	468	2079	546	2376	624	2873	702
		THROW, FT.	28-36-49	18-22-30	33-42-49	21-25-34	37-48-64	24-28-39	42-51-69	25-33-43	45-54-75	27-33-46	48-58-79	28-36-49	51-61-85	33-37-52
	1A 1B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	30-37-52		34-43-60		39-48-67		42-52-73		46-57-78		49-60-85		52-64-90	
	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	785 14		1050 21		1310 27		1575 32		1840 36		2100 40		2360 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 18 2.625 SQ. FT.	4B 4C	CFM/SIDE	225	169	300	225	375	280	450	337	526	394	600	450	674	506
		THROW, FT.	16-19-27	13-16-22	19-22-33	15-18-25	22-25-36	16-21-28	24-27-40	18-22-30	25-28-42	19-24-33	27-33-45	21-25-36	28-33-48	22-27-37
	3A1	CFM/SIDE	309	169	412	225	514	281	619	337	723	394	825	450	927	506
		THROW, FT.	21-25-36	13-16-22	24-28-42	15-18-25	27-33-48	16-21-28	28-34-51	18-22-30	33-37-54	19-24-33	33-39-58	21-25-36	36-43-61	22-27-37
	3A2	CFM/SIDE	279	230	372	306	464	382	557	460	652	535	744	612	836	688
		THROW, FT.	21-25-36	15-18-25	24-28-42	16-21-28	27-33-48	18-24-33	28-34-51	19-25-34	33-37-54	21-27-37	33-39-58	22-28-39	36-43-61	24-33-43
	2A 2B	CFM/SIDE	393		525		655		787		920		1050		1180	
		THROW, FT.	22-27-37		25-33-42		28-36-46		30-39-54		33-42-58		36-45-63		37-48-66	
	2C 2D 2E 2F	CFM/SIDE	450	338	600	450	750	560	900	675	1060	790	1200	900	1350	1010
		THROW, FT.	22-27-37	19-24-33	25-33-42	22-27-37	28-36-46	25-30-43	30-39-54	27-33-48	33-42-58	28-34-51	36-45-63	33-37-54	37-48-66	33-42-57
	1A 1B	CFM/SIDE	787		1050		1310		1575		1840		2100		2360	
		THROW, FT.	29-35-51		35-40-58		38-46-66		42-51-70		45-54-75		48-58-80		51-61-85	
	RETURN FACTORS —SP=2.5 TP NC + 6	CFM NC	900 15		1200 22		1500 28		1800 33		2100 37		2400 40		2700 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 18 3.0 SQ. FT.	4B 4C	CFM/SIDE	281	169	375	225	469	281	563	337	656	394	750	450	844	506
		THROW, FT.	22-27-38	14-18-24	26-30-45	16-19-27	29-35-51	18-22-30	30-37-54	19-24-33	33-40-58	21-26-35	35-42-62	22-27-38	38-46-66	24-29-40
	4E	CFM/SIDE	225	225	300	300	375	375	450	450	525	525	600	600	675	675
		THROW, FT.	21-26-35	21-26-35	24-29-40	24-29-40	27-32-46	27-32-46	29-35-51	29-35-51	30-37-54	30-37-54	33-40-58	33-40-58	35-45-61	35-45-61
	3A1	CFM/SIDE	366	169	487	225	609	281	731	337	853	394	975	450	1098	506
		THROW, FT.	24-29-40	14-18-24	27-35-48	16-19-27	30-38-54	18-22-30	35-42-58	19-24-33	35-45-62	21-26-35	38-48-67	22-27-38	40-51-70	24-29-40
	3A2	CFM/SIDE	300	300	400	400	500	500	600	600	700	700	800	800	900	900
		THROW, FT.	25-31-43	20-23-32	29-34-50	23-27-40	32-40-58	27-31-43	34-41-61	29-32-47	40-45-65	31-34-50	40-47-70	32-40-54	43-52-74	34-40-58
	2A 2B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	24-29-40		27-35-48		30-38-54		35-42-58		35-45-62		38-48-67		40-51-70	
	2C 2D 2E 2F	CFM/SIDE	562	338	750	450	938	562	1125	675	1313	787	1500	900	1688	1012
		THROW, FT.	26-30-45	21-26-35	29-35-51	24-29-40	32-40-58	27-32-46	35-45-62	29-35-51	37-48-67	30-37-54	40-51-70	33-40-58	45-54-75	35-45-61
	1A 1B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	30-38-53		35-45-61		40-51-69		45-54-74		48-58-80		51-62-85		54-66-91	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	1125 15		1500 23		1875 29		2250 34		2625 38		3000 42		3375 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 18 3.75 SQ. FT.	4B 4C	CFM/SIDE	394	169	525	225	657	281	788	337	918	394	1050	450	1181	506
		THROW, FT.	24-29-40	14-18-24	27-35-48	16-19-27	30-38-54	18-22-30	35-42-58	19-24-35	35-45-62	21-26-35	38-48-67	22-27-38	40-51-70	24-29-40
	4E	CFM/SIDE	281	281	375	375	469	469	563	563	657	657	750	750	845	845
		THROW, FT.	22-27-38	22-27-38	26-30-45	26-30-45	29-35-51	29-35-51	30-37-54	30-37-54	32-40-58	32-40-58	35-42-62	35-42-62	38-46-66	38-46-66
	3A1	CFM/SIDE	478	169	637	225	797	281	956	337	1115	394	1275	450	1434	506
		THROW, FT.	26-30-45	14-18-24	29-35-51	16-19-27	32-40-58	18-22-30	35-45-62	19-24-35	37-48-67	21-26-35	40-51-70	22-27-38	45-54-75	24-29-40
	3A2	CFM/SIDE	469	327	625	437	782	546	937	656	1093	766	1250	875	1406	984
		THROW, FT.	22-27-38	19-24-32	26-30-45	22-27-37	29-35-51	26-30-42	30-37-54	27-35-46	32-40-58	29-35-50	35-42-62	30-38-53	38-46-66	35-40-56
	2A 2B	CFM/SIDE	562		750		937		1125		1312		1500		1687	
		THROW, FT.	26-30-45		29-35-51		32-40-58		35-45-62		37-48-67		40-51-70		45-54-75	
	2C 2D 2E 2F	CFM/SIDE	787	337	1050	450	1313	562	1575	675	1838	787	2100	900	2363	1012
		THROW, FT.	29-35-51	21-26-35	35-40-58	24-29-40	38-46-66	27-32-46	42-51-70	29-35-51	45-54-75	30-37-54	48-58-80	33-40-58	51-61-85	35-45-61
	1A 1B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	32-40-56		37-46-62		42-53-72		46-56-78		50-61-83		53-64-91		56-69-96	
	RETURN FACTORS —SP=3.6 TP NC + 8	CFM NC	1350 16		1800 24		2250 30		2700 35		3150 39		3600 42		4050 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 18 4.5 SQ. FT.	4B 4C	CFM/SIDE	506	169	675	225	844	281	1013	337	1181	394	1350	450	1519	506
		THROW, FT.	26-30-45	14-18-24	29-35-51	16-19-27	33-40-58	18-22-30	35-45-62	19-24-35	37-48-67	21-26-35	40-51-70	22-27-38	45-54-75	24-29-40
	4E	CFM/SIDE	339	339	452	452	565	565	678	678	791	791	904	904	1020	1020
		THROW, FT.	22-27-38	22-27-38	26-30-45	26-30-45	29-35-51	29-35-51	30-37-54	30-37-54	33-40-58	33-40-58	35-42-62	35-42-62	38-46-66	38-46-66
	3A1	CFM/SIDE	591	169	787	225	984	281	1181	337	1378	394	1575	450	1772	506
		THROW, FT.	27-35-48	14-18-24	32-38-54	16-19-27	37-45-62	18-22-30	38-48-66	19-24-35	42-51-70	21-26-35	46-56-75	22-27-38	50-59-80	24-29-40
	3B	CFM/SIDE	675	337	900	450	1125	562	1350	675	1575	787	1800	900	2025	1012
		THROW, FT.	27-35-48	21-26-35	32-38-54	24-29-40	37-45-62	27-32-46	38-48-66	29-35-51	42-51-70	30-37-54	46-56-75	33-40-58	50-59-80	35-45-61
	2A 2B	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	27-35-48		32-38-54		37-45-62		38-48-66		42-51-70		46-56-75		50-59-80	
	2C 2D 2E 2F	CFM/SIDE	1010	337	1350	450	1688	562	2025	675	2363	787	2700	900	3038	1012
		THROW, FT.	32-40-56	21-26-35	37-46-64	24-29-40	42-53-72	27-32-46	46-56-78	29-35-51	50-61-83	30-37-54	53-64-91	33-40-58	56-69-96	35-45-61
	1A 1B	CFM/SIDE	1350		1800		2250		2700		3150		3600		4050	
		THROW, FT.	35-40-59		38-48-67		45-54-77		48-58-82		51-62-90		54-67-93		59-70-101	
	RETURN FACTORS —SP=2.1 TP NC + 7	CFM NC	1050 15		1400 22		1750 28		2100 33		2450 37		2800 41		3150 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 21 3.5 SQ. FT.	4B 4C	CFM/SIDE	295	230	394	306	493	382	590	460	690	535	788	612	887	688
		THROW, FT.	20-25-34	17-20-29	24-29-39	19-24-32	27-32-44	20-27-37	29-37-49	22-29-39	31-37-53	24-31-42	32-41-56	25-32-44	37-42-59	27-37-49
	3A1	CFM/SIDE	410	230	547	306	684	382	820	460	957	535	1094	612	1231	688
		THROW, FT.	25-31-42	17-20-29	29-37-51	19-24-32	32-41-58	20-27-37	37-44-61	22-29-39	37-48-66	24-31-42	41-51-71	25-32-44	42-54-75	27-37-49
	3A2	CFM/SIDE	375	300	500	400	625	500	750	600	875	700	1000	800	1125	900
		THROW, FT.	25-31-42	19-22-31	29-37-51	22-25-37	32-41-58	25-29-41	37-44-61	27-31-44	37-48-66	29-32-48	41-51-71	31-37-51	42-54-75	32-37-54
	2A 2B	CFM/SIDE	525		700		875		1050		1225		1400		1575	
		THROW, FT.	27-32-48		31-37-54		34-42-61		37-48-66		39-51-71		42-54-75		48-58-80	
	2C 2D 2E 2F	CFM/SIDE	591	459	788	612	986	764	1180	920	1380	1070	1576	1224	1774	1376
		THROW, FT.	29-37-51	24-29-41	34-41-58	27-32-48	39-48-66	31-37-54	41-51-70	32-39-58	44-54-75	37-42-61	49-59-80	37-44-66	53-63-85	41-49-70
	1A 1B	CFM/SIDE	1050		1400		1750		2100		2450		2800		3150	
		THROW, FT.	34-42-59		39-49-68		44-56-76		49-59-83		53-65-88		56-68-87		59-73-102	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1310 16		1750 23		2185 29		2625 34		3060 38		3500 41		3935 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 21 4.375 SQ. FT.	4B 4C	CFM/SIDE	425	230	569	306	710	382	852	460	995	535	1138	612	1279	688
		THROW, FT.	25-31-42	17-20-29	24-37-51	19-24-32	32-41-58	20-27-37	37-44-61	22-29-39	37-48-66	24-31-42	41-51-71	25-32-44	42-54-75	27-37-49
	4E	CFM/SIDE	360	295	480	394	600	492	720	591	840	690	960	788	1080	887
		THROW, FT.	24-29-41		27-32-48		31-37-54		32-39-58		37-42-61		37-44-66		41-49-70	
	3A1	CFM/SIDE	540	230	722	306	901	382	1082	460	1262	535	1444	612	1623	688
		THROW, FT.	27-32-48	17-20-29	31-37-54	19-24-32	34-42-61	20-27-37	37-48-66	22-29-39	39-51-71	24-31-42	42-54-75	25-32-44	48-58-80	27-37-49
	3A2	CFM/SIDE	468	422	625	562	782	701	937	844	1093	983	1250	1125	1406	1264
		THROW, FT.	25-31-42	20-25-34	29-37-51	24-29-39	32-41-58	27-32-44	37-44-61	29-37-49	37-48-66	31-37-53	41-51-71	32-41-56	42-54-75	37-42-61
	2A 2B	CFM/SIDE	655		875		1092		1312		1530		1750		1968	
		THROW, FT.	29-37-51		34-41-58		39-48-66		41-51-70		44-54-75		49-59-80		53-63-85	
	2C 2D 2E 2F	CFM/SIDE	853	457	1138	612	1421	764	1705	920	1990	1070	2276	1224	2559	1376
		THROW, FT.	31-37-54	24-29-41	37-42-61	27-32-48	41-49-70	31-37-54	44-54-75	32-39-58	48-58-80	37-42-61	51-61-85	37-44-66	54-65-90	41-49-70
	1A 1B	CFM/SIDE	1310		1750		2185		2625		3060		3500		3935	
		THROW, FT.	37-42-63		41-51-71		48-58-82		51-61-87		54-66-95		58-71-99		63-75-107	
	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	1575 16		2100 24		2625 30		3150 34		3675 38		4200 42		4725 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 21 5.25 SQ. FT.	4B 4C	CFM/SIDE	558	230	744	306	930	382	1115	460	1306	535	1488	612	1674	688
		THROW, FT.	27-32-48	17-20-29	31-37-54	19-24-32	34-42-61	20-27-37	37-48-66	22-29-39	39-51-71	24-31-42	42-54-75	25-32-44	48-58-80	27-37-49
	4E	CFM/SIDE	427	360	568	480	710	600	852	720	945	840	1135	960	1280	1080
		THROW, FT.	25-31-42	25-31-42	29-37-61	29-37-51	32-41-58	32-41-58	37-44-61	37-44-61	37-48-66	37-48-66	41-51-71	41-51-71	42-54-75	42-54-75
	3A1	CFM/SIDE	672	230	897	306	1121	382	1345	460	1570	535	1794	612	2018	688
		THROW, FT.	29-37-51	17-20-29	34-41-58	19-24-32	39-48-66	20-27-37	41-51-70	22-29-39	44-54-75	24-31-42	49-59-80	25-32-44	53-63-85	27-37-49
	3A2	CFM/SIDE	675	450	900	600	1125	750	1350	900	1575	1050	1800	1200	2025	1350
		THROW, FT.	25-31-42	22-27-37	29-37-51	25-31-42	32-41-58	29-34-49	37-44-61	31-37-54	37-48-66	32-39-58	41-51-71	34-42-61	42-54-75	37-48-65
	2A 2B	CFM/SIDE	787		1050		1312		1575		1837		2100		2362	
		THROW, FT.	31-37-54		37-42-61		41-49-70		44-54-75		48-58-80		51-61-85		54-65-90	
	2C 2D 2E 2F	CFM/SIDE	1115	460	1488	612	1861	764	2230	920	2605	1070	2976	1224	3349	1376
		THROW, FT.	34-42-59	24-29-41	39-49-68	27-32-48	44-56-76	31-37-54	49-59-83	32-39-58	53-65-88	37-42-61	56-68-97	37-44-66	59-73-102	41-49-70
	1A 1B	CFM/SIDE	1575		2100		2625		3150		3675		4200		4725	
		THROW, FT.	41-51-70		39-58-80		54-66-90		58-70-99		61-75-105		66-80-114		70-85-122	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1500 17		2000 25		2500 30		3000 35		3500 39		4000 43		4500 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 24 5.0 SQ. FT.	4B 4C	CFM/SIDE	450	300	600	400	750	500	900	600	1050	700	1200	800	1350	900
		THROW, FT.	25-31-42	19-22-31	29-37-51	22-25-37	32-41-58	25-29-41	33-44-61	27-31-44	37-48-66	29-32-48	41-51-71	31-37-51	42-54-75	32-37-54
	4E	CFM/SIDE	375	375	500	500	625	625	750	750	875	875	1000	1000	1125	1125
		THROW, FT.	25-31-42	25-31-42	29-37-51	29-37-51	32-41-58	32-41-58	33-44-61	37-44-61	37-48-66	37-48-66	41-51-71	41-51-71	42-54-75	42-54-75
	3A1	CFM/SIDE	600	300	800	400	1000	500	1200	600	1400	700	1600	800	1800	900
		THROW, FT.	29-37-51	19-22-31	34-41-58	22-25-37	39-48-66	25-29-41	41-51-70	27-31-44	44-54-75	29-32-48	49-59-80	31-37-51	53-63-85	32-37-54
	3A2	CFM/SIDE	515	470	687	625	859	782	1031	937	1203	1093	1375	1250	1548	1406
		THROW, FT.	31-37-54	25-31-42	37-42-61	29-37-51	41-49-70	32-41-58	44-54-75	33-44-61	48-58-80	37-48-66	51-61-85	41-51-71	54-65-90	42-54-75
	2A 2B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	32-41-56		37-48-65		42-54-73		48-58-78		51-61-85		54-66-90		58-70-97	
	2C 2D 2E 2F	CFM/SIDE	900	600	1200	800	1500	1000	1800	1200	2100	1400	2400	1600	2700	1800
		THROW, FT.	37-42-63	29-37-51	41-51-71	34-41-58	48-58-82	39-48-66	51-61-87	41-51-70	54-66-85	44-54-75	58-71-99	49-59-80	63-75-107	53-63-85
	1A 1B	CFM/SIDE	1500		2000		2500		3000		3500		4000		4500	
		THROW, FT.	38-47-67		45-54-76		48-61-85		54-65-95		58-72-99		62-76-106		66-79-113	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

PERFORMANCE DATA:

MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
	RETURN FACTORS —SP=3.3 TP NC + 8	CFM NC	1800 18		2400 25		3000 31		3600 36		4200 40		4800 43		5400 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 24 6.0 SQ. FT.	4B 4C	CFM/SIDE	600	300	800	400	1000	500	1200	600	1400	700	1600	800	1800	900
		THROW, FT.	29-37-51	19-22-31	34-41-58	22-25-37	39-48-66	25-29-41	41-51-70	27-31-44	44-54-75	29-32-48	49-59-80	31-37-51	53-63-85	32-37-54
	4E	CFM/SIDE	450	450	600	600	750	750	900	900	1050	1050	1200	1200	1350	1350
		THROW, FT.	25-31-42	24-31-42	29-37-51	29-37-51	32-41-58	32-41-58	35-44-61	35-44-61	37-48-66	37-48-66	41-51-71	41-51-71	42-54-75	42-54-75
	3A1	CFM/SIDE	750	300	1000	400	1250	500	1500	600	1750	700	2000	800	2250	900
		THROW, FT.	31-37-54	19-22-31	37-42-61	22-25-37	41-49-70	25-29-41	44-54-75	27-31-44	48-58-80	29-32-48	51-61-85	31-37-51	54-65-90	32-37-54
	3A2	CFM/SIDE	676	562	900	750	1125	937	1350	1125	1575	1312	1800	1500	2025	1687
		THROW, FT.	27-32-48	24-29-41	34-37-54	27-32-48	34-42-61	31-37-54	37-48-66	32-39-58	39-51-71	35-42-61	42-54-75	37-44-66	48-58-80	41-49-70
	2A 2B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	32-41-56		37-48-65		42-54-73		48-58-78		51-61-85		54-66-90		58-70-97	
	2C 2D 2E 2F	CFM/SIDE	1200	600	1600	800	2000	1000	2400	1200	2800	1400	3200	1600	3600	1800
		THROW, FT.	37-42-63	25-31-42	41-51-71	29-37-51	48-58-82	32-41-58	51-61-87	35-44-61	54-66-95	37-48-66	58-71-99	41-51-71	63-75-107	42-54-75
	1A 1B	CFM/SIDE	1800		2400		3000		3600		4200		4800		5400	
		THROW, FT.	41-51-70		48-58-80		54-66-90		58-70-99		61-75-105		66-80-114		70-85-122	
	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19		3000 26		3750 32		4500 37		5250 41		6000 44		6750 47	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 30 7.5 SQ. FT.	4B 4C	CFM/SIDE	657	468	875	625	1093	782	1313	937	1532	1093	1750	1250	1969	1406
		THROW, FT.	29-37-51	20-25-34	34-41-58	24-29-39	39-48-66	27-32-44	41-51-70	29-37-49	44-54-75	31-37-53	49-59-80	32-41-56	53-63-85	37-42-59
	3A1	CFM/SIDE	890	468	1187	625	1484	782	1781	937	2078	1093	2375	1250	2672	1406
		THROW, FT.	32-41-56	20-25-34	37-48-65	24-29-39	42-54-73	27-32-44	48-58-78	29-37-49	51-61-85	31-37-53	54-66-90	32-41-56	58-70-97	37-42-59
	3A2	CFM/SIDE	787	675	1050	900	1312	1125	1575	1350	1837	1575	2100	1800	2362	2025
		THROW, FT.	31-37-54	22-27-37	37-42-61	25-31-42	41-49-70	29-34-49	44-54-75	31-37-54	48-58-80	32-39-58	51-61-85	37-42-61	54-65-90	37-48-65
	2A 2B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	34-42-59		39-49-68		44-56-76		49-59-83		53-65-88		56-68-97		59-73-102	
	2C 2D 2E 2F	CFM/SIDE	1312	938	1750	1250	2188	1562	2625	1875	3063	2187	3500	2500	3938	2812
		THROW, FT.	37-42-63	29-37-51	41-51-71	34-41-58	48-58-82	39-48-66	51-61-87	41-51-70	54-66-95	44-54-75	58-71-99	49-59-80	63-75-107	53-63-85
	1A 1B	CFM/SIDE	2250		3000		3750		4500		5250		6000		6750	
		THROW, FT.	48-60-82		56-68-94		64-78-106		68-82-116		72-88-124		78-94-134		82-100-144	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

CFM - cubic feet per minute
TP - total pressure - inches w.g.
T - throw in feet
NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.
Neck Velocity – feet per minute

Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
2. Sound levels in performance tables are for steel construction – **Model 6500**. Apply the following corrections for aluminum construction – **Model 6200**.
TP = Listed value x 1.25.
NC = Listed value + 4.
3. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
4. Correction factors for adjustable models - see next page.
5. Correction factors for round inlets - see next page.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA CORRECTIONS:

MODELS 6500 AND 6200

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

CORRECTION FACTORS FOR MODELS 6550 AND 6250 (ADJUSTABLE PATTERN CONTROLLERS) – TABLE 2

Refer to the performance data for the **Models 6500** and **6200**. Apply the corrections from Table 2 to the data for square, 4-way core styles, as follows:

- NC = listed + correction
- Total Pressure = listed x factor
- Horizontal Throw = listed
- Vertical Throw = listed x factor

Apply the throw factor to the 50 fpm terminal velocity throw only.

Example:

18" x 18", **Model 6500**, 1350 cfm, 20°F temperature difference heating, vertical projection, (Page D23).

- NC = 31 + 6 = 37
- TP = .13 x 2.1 = .273
- Throw = 36 x.9 = 32.4 feet @ 50 fpm terminal velocity.

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 3

- Add the NC correction factor from Table 3 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 3 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 3 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D23).

- NC = 23 + 7 = 30
- Total Pressure = .09 x 1.65 = 0.149
- Throw = 21 x 1.15 = 24.15 feet @ 50 fpm terminal velocity.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D23).

- Return NC = 28 + 4 = 32.
- Return negative SP = 1.3 x (– .13) = – .169.

TABLE 2 Correction Factors 6550/6250 Adjustable

NECK SIZE	NC (add)		TOTAL PRESSURE (multiply)		VERTICAL THROW (multiply)			
					COOLING, ΔT	HEATING, ΔT		
	H	V	H	V	20°F	0°F	20°F	40°F
6 x 6	2	6	1.2	1.5	1.3	1.1	0.8	0.6
9 x 9	2	6	1.4	2.1	1.5	1.2	0.9	0.6
12 x 12	2	6	1.4	2.1	1.6	1.3	1.0	0.6
15 x 15	2	6	1.4	2.1	1.7	1.3	1.0	0.6
18 x 18	2	6	1.4	2.1	1.7	1.3	0.9	0.6
21 x 21	2	6	1.4	2.1	1.7	1.3	0.8	0.5
24 x 24	2	6	1.6	2.2	1.5	1.1	0.7	0.3

TABLE 3 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

SQUARE & RECTANGULAR INDUCTION VANE CEILING DIFFUSERS

- INDUCTION VANES
- LOUVERED FACE
- HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS

Steel Model:

6500IV Fixed Pattern

Aluminum Model:

6200IV Fixed Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**
  (available on aluminum models only)

Model 6500IV – front and back view

Model Series 6500IV and 6200IV Pattern Ceiling Diffusers have been specially designed to provide a high capacity, high induction, louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling.

Induction vanes mounted behind the louvers create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with the warm room air. This high induction characteristic is ideal for VAV applications involving high cooling loads as it quickly equalizes the air temperature, reduces the throw and minimizes the potential for uncomfortable drafts.

Available in a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Pan Snap-in). These models therefore offer a great degree of design flexibility.

STANDARD FEATURES:

• Spring loaded core. It is removable without the use of tools.

• High neck collars for solid connection.

• Secure core attachment.

• A wide variety of frame styles to suit most ceiling applications.

• Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).

• Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D42).

• Clean lines with no unsightly visible screws.

• Opposed blade damper with screwdriver slot operator.

CONSTRUCTION MATERIAL:

6500IV Series – Corrosion-resistant steel. 6200IV Series – Heavy-gauge aluminum extrusions.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, TL, M and F: see next page.

OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

ONA Offset Neck Adaptor:

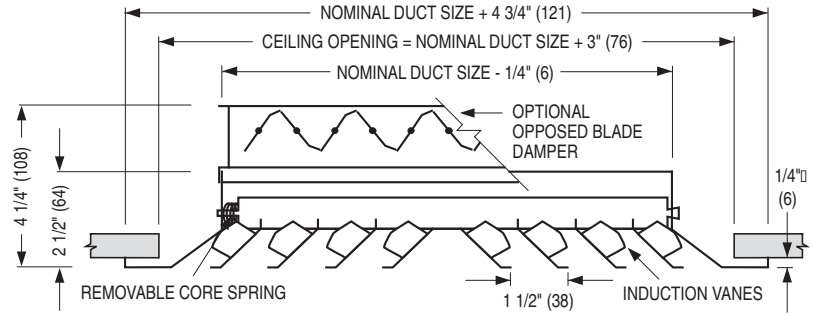
Fits outside duct and is available for square and rectangular necks (if a damper is required, order separately for remote mount. See Model OBDD). For detail drawing; see page D41.

EQT Earthquake Tabs

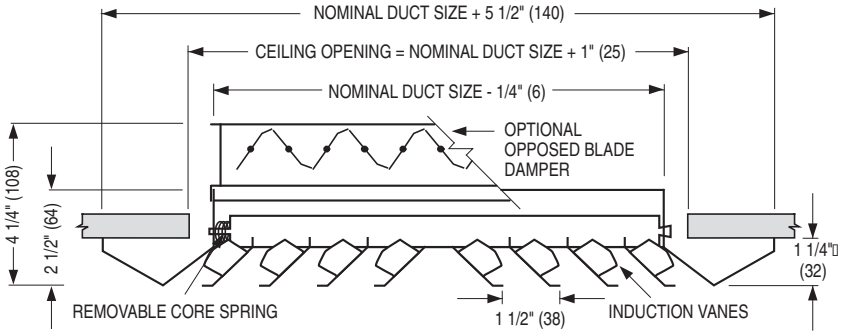
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

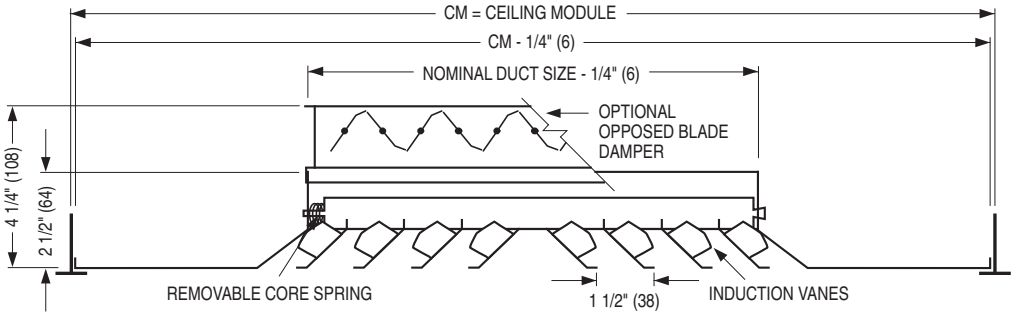
MODEL SERIES 6500IV AND 6200IV



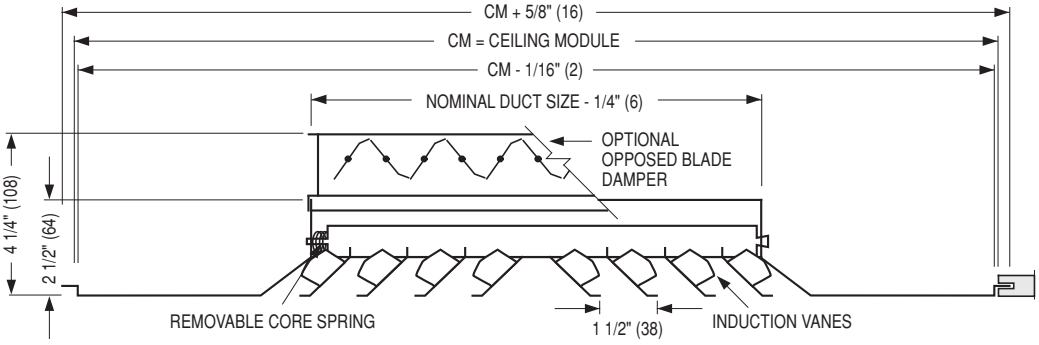
Type S - Surface Mount Frame



Type B - Beveled Drop Face Frame



Type L - Lay-In T-Bar Frame



Type SP - Spline Frame

SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.
(SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

Extended Panel Diffusers
Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

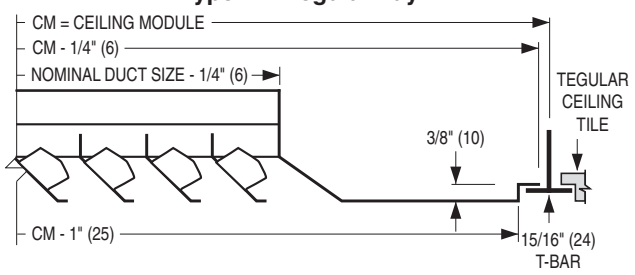
Table 1

Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

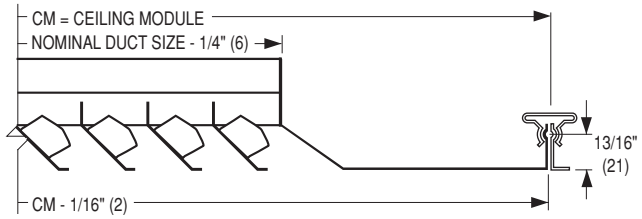
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6500IV AND 6200IV

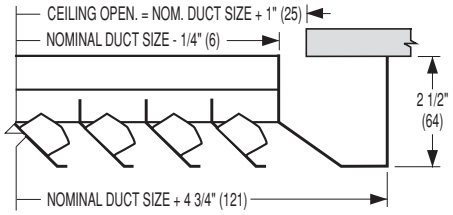
Type TL Tegular Lay-in



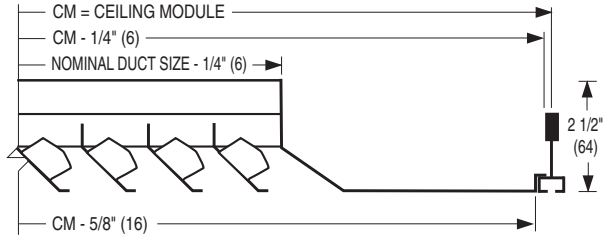
Type M Metal Pan (Snap-in)



Type D Deep Drop Face



Type F Fineline®

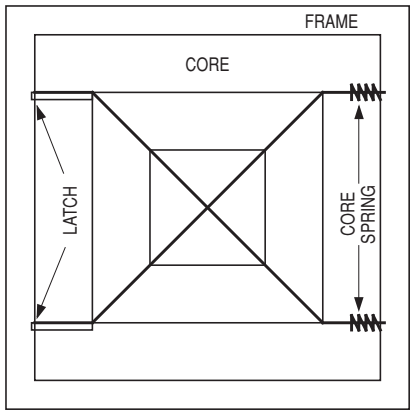


REMOVABLE CORE

- Standard feature of **Models 6500IV** and **6200IV.**
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

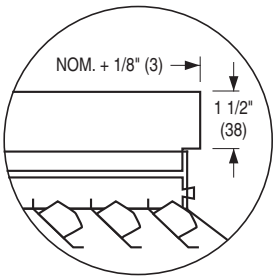
HOW TO REMOVE "REMOVABLE" CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



OFFSET NECK ADAPTOR

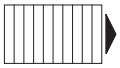
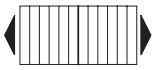
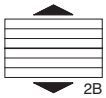
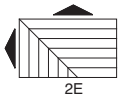
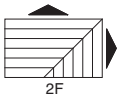
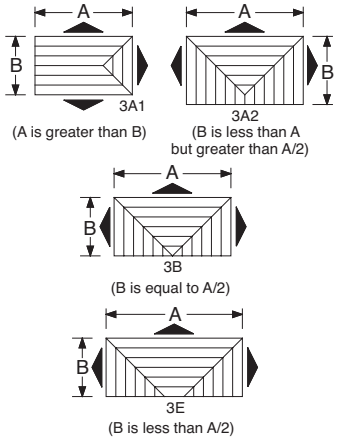
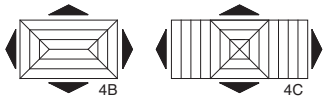
ONA – Offset Neck Adaptor. Fits outside duct (if a damper is required; order separately for remote mount. See Model OBDD).



STANDARD CORE STYLES:

MODEL SERIES 6500IV AND 6200IV

Contact factory for special core configurations.

	SQUARE	RECTANGULAR	CORE	SIZES AVAILABLE MINIMUM	SIZES AVAILABLE MAXIMUM
1-WAY	1S	 1A 1B	1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY	2S	 2A  2B	2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY CORNER	2G	 2E  2F	2G 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
3-WAY	3A 3H	 3A1 (A is greater than B) 3A2 (B is less than A but greater than A/2) 3B (B is equal to A/2) 3E (B is less than A/2)	3A 3A1 3A2 3B 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
4-WAY	4A	 4B 4C	4A 4B 4C	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762)

Dimensions are in inches (mm).

Notes:

1. Duct sizes are available in 3" (76) increments.
2. Patterns are shown in plan view (looking down into inlet).

PERFORMANCE DATA:

MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035		400 .062		500 .097		600 .140		700 .191		800 .249		900 .316	
	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —		100 14		125 21		150 26		175 30		200 35		225 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
6 x 6 .25 SQ. FT.	4A	CFM/SIDE	19		25		31		37		44		50		56	
		THROW, FT.	3-4-6		3-5-8		5-6-8		5-6-9		6-7-10		6-7-10		7-8-10	
	3A	CFM/SIDE	19	28	25	38	31	47	37	56	44	66	50	75	56	85
		THROW, FT.	3-4-6	4-6-9	3-5-8	5-7-10	5-6-8	6-8-11	5-6-9	6-9-12	6-7-10	7-10-13	6-7-10	7-10-14	7-8-10	8-10-14
	2S 2G	CFM/SIDE	37		50		62		75		88		100		113	
		THROW, FT.	6-7-10		7-8-11		8-9-13		9-10-14		10-10-14		10-10-15		10-11-16	
	1S	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	7-9-12		8-10-14		9-11-15		10-12-18		10-13-18		11-14-19		12-14-20	
	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —		225 18		280 24		340 30		395 35		450 39		505 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 9 .56 SQ. FT.	4A	CFM/SIDE	42		56		70		84		98		112		126	
		THROW, FT.	5-6-10		6-8-11		8-9-12		8-10-13		9-10-14		9-11-15		10-12-16	
	3A	CFM/SIDE	42	63	56	85	70	106	84	127	98	148	112	169	126	190
		THROW, FT.	5-6-10	7-9-11	6-8-11	8-10-14	8-9-12	9-10-15	8-10-13	10-11-16	9-10-14	10-12-17	9-11-15	10-13-18	10-12-16	11-14-19
	2S 2G	CFM/SIDE	84		112		141		169		197		225		253	
		THROW, FT.	7-8-12		9-10-14		10-12-16		10-13-18		11-14-18		12-14-20		13-15-22	
	1S	CFM/SIDE	169		225		282		338		394		450		507	
		THROW, FT.	10-12-16		11-14-18		13-15-21		14-18-23		14-18-25		15-19-26		18-20-28	
	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 14		400 21		500 27		600 32		700 37		800 40		900 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 12 1.0 SQ. FT.	4A	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	6-10-12		9-11-14		10-12-17		11-14-18		11-14-19		12-16-20		14-17-22	
	3A	CFM/SIDE	75	112	100	150	125	187	150	225	175	262	200	300	225	338
		THROW, FT.	6-10-12	9-11-15	9-11-14	11-13-17	10-12-17	11-14-19	11-14-18	12-15-21	11-14-19	13-16-22	12-16-20	14-17-24	14-17-22	15-18-25
	2S 2G	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	10-12-16		12-14-20		14-15-22		14-16-23		15-17-25		16-20-27		17-20-29	
	1S	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	13-16-22		14-18-26		17-20-30		18-21-31		18-22-33		20-23-33		22-26-38	
	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 14		625 23		780 29		935 34		1090 37		1250 43		1400 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 15 1.56 SQ. FT.	4A	CFM/SIDE	117		156		195		234		273		312		350	
		THROW, FT.	10-13-17		11-14-19		13-15-22		14-17-23		15-18-24		16-19-26		17-21-28	
	3A	CFM/SIDE	117	175	156	234	195	292	234	351	273	409	312	468	350	527
		THROW, FT.	10-13-17	11-14-18	11-14-19	14-18-23	13-15-22	15-18-25	14-17-23	17-18-27	15-18-24	18-20-29	16-19-26	18-23-31	17-21-28	20-23-34
	2S 2G	CFM/SIDE	234		312		390		468		546		625		700	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	1S	CFM/SIDE	467		625		780		935		1090		1250		1400	
		THROW, FT.	17-20-29		18-23-34		21-26-38		23-29-41		24-31-44		26-34-46		29-35-49	
	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 16		900 25		1125 31		1350 35		1575 40		1800 43		2025 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 2.25 SQ. FT.	4A	CFM/SIDE	168		225		281		337		394		450		506	
		THROW, FT.	12-15-20		14-16-23		15-19-26		16-20-29		18-22-30		19-23-33		20-25-34	
	3A	CFM/SIDE	168	253	225	338	281	422	337	506	394	590	450	675	506	760
		THROW, FT.	12-15-20	14-18-23	14-16-23	16-20-26	15-19-26	18-22-30	16-20-29	20-26-34	18-22-30	21-26-36	19-23-33	22-28-38	20-25-34	26-29-41
	2S 2G	CFM/SIDE	337		450		562		675		787		900		1012	
		THROW, FT.	15-18-26		18-21-30		19-24-34		21-25-37		24-27-39		24-28-42		26-31-44	
	1S	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	20-26-36		24-29-41		27-34-46		29-36-49		31-38-53		34-42-56		37-44-60	

For performance notes, see D44.

PERFORMANCE DATA:

MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035		400 .062		500 .097		600 .140		700 .191		800 .249		900 .316	
	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 18		1225 26		1530 32		1835 36		2140 41		2450 44		2750 47	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 21 3.06 SQ. FT.	4A	CFM/SIDE THROW, FT.	230 14-17-24		306 15-20-27		382 17-22-31		460 18-24-33		535 20-27-35		612 21-27-37		688 22-31-41	
	3A	CFM/SIDE THROW, FT.	230 12-15-21	345 16-20-27	306 14-18-23	460 18-22-31	382 15-20-27	573 21-25-36	460 16-21-29	688 22-27-40	535 18-22-31	802 23-29-42	612 18-23-32	918 27-31-45	688 20-27-36	1030 27-34-47
	2S 2G	CFM/SIDE THROW, FT.	458 18-22-31		612 20-25-36		765 22-28-40		917 25-31-44		1070 27-34-47		1225 27-36-50		1375 31-38-48	
	1S	CFM/SIDE THROW, FT.	917 23-30-41		1225 27-34-47		1530 31-40-54		1835 34-42-57		2140 37-45-62		2450 40-48-66		2750 42-51-70	
	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 19		1600 27		2000 33		2400 37		2800 41		3200 45		3600 48	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 24 4.0 SQ. FT.	4A	CFM/SIDE THROW, FT.	300 16-19-26		400 19-22-32		500 22-25-35		600 23-26-38		700 25-28-41		800 26-32-44		900 28-32-46	
	3A	CFM/SIDE THROW, FT.	300 16-19-26	450 18-22-31	400 19-22-32	600 19-25-37	500 22-25-35	750 23-29-42	600 23-26-38	900 25-30-45	700 25-28-41	1050 29-33-47	800 26-32-44	1200 29-34-51	900 28-32-46	1350 31-38-54
	2S 2G	CFM/SIDE THROW, FT.	600 20-26-36		800 24-29-41		1000 27-34-46		1200 29-36-49		1400 31-38-53		1600 34-42-56		1800 37-44-60	
	1S	CFM/SIDE THROW, FT.	1200 28-32-47		1600 30-38-54		2000 36-43-62		2400 38-46-66		2800 41-50-72		3200 43-54-74		3600 47-56-81	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 20		2500 28		3125 34		3750 39		4375 43		5000 46		5625 50	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 30 6.25 SQ. FT.	4A	CFM/SIDE THROW, FT.	469 20-25-34		625 23-29-38		782 27-32-44		937 29-35-49		1093 30-37-52		1250 32-40-55		1406 37-42-58	
	3A	CFM/SIDE THROW, FT.	469 20-25-34	703 22-27-39	625 23-29-38	938 26-31-46	782 27-32-44	1172 28-35-51	937 29-35-49	1405 31-39-55	1093 30-37-52	1640 33-39-59	1250 32-40-55	1875 35-46-62	1406 37-42-58	2110 39-48-66
	2S 2G	CFM/SIDE THROW, FT.	937 26-32-44		1250 30-38-50		1562 34-42-58		1875 38-46-62		2187 40-48-66		2500 42-52-70		2812 46-54-76	
	1S	CFM/SIDE THROW, FT.	1875 34-42-58		2500 39-48-66		3125 45-55-74		3750 48-58-82		4375 50-62-87		5000 55-66-117		5625 58-70-98	
	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 22		3600 29		4500 35		5400 40		6300 44		7200 48		8100 52	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 36 9.0 SQ. FT.	4A	CFM/SIDE THROW, FT.	675 24-30-41		900 27-33-46		1125 31-37-54		1350 33-41-59		1575 35-42-62		1800 41-46-66		2025 41-51-70	
	3A	CFM/SIDE THROW, FT.	675 24-30-41	1010 27-35-46	900 27-33-46	1350 32-38-54	1125 31-37-54	1687 37-45-62	1350 33-41-59	2025 38-48-66	1575 35-42-62	2362 42-51-70	1800 41-46-66	2700 46-56-75	2025 41-51-70	3038 50-59-80
	2S 2G	CFM/SIDE THROW, FT.	1350 32-36-54		1800 34-43-61		2250 40-49-69		2700 43-52-74		3150 46-56-81		3600 49-61-83		4050 54-63-90	
	1S	CFM/SIDE THROW, FT.	2700 39-49-68		3600 47-56-79		4500 53-64-91		5400 58-68-98		6300 61-73-105		7200 66-78-114		8100 70-85-120	

CFM - cubic feet per minute
Neck Velocity - feet per minute
TP - total pressure - inches w.g.
NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
2. Sound levels in performance tables are for steel construction – **Model 6500IV**. Apply the following corrections for aluminum construction – **Model 6200IV**.
TP = Listed value x 1.25.
NC = Listed value + 4.
3. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
4. Correction factors for round inlets - see next page.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA CORRECTIONS :

MODEL SERIES 6500IV AND 6200IV

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D43).

- Return NC = 32 + 4 = 36.
- Return negative SP = 1.3 x (– .14) = – .182.

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D43).

- NC = 27 + 7 = 34
- Total Pressure = .097 x 1.65 = 0.160
- Throw = 17 x 1.15 = 19.55 feet @ 50 fpm terminal velocity.

TABLE 2 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

SQUARE AND RECTANGULAR PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- EXTRA HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS
- ALUMINUM

Aluminum Model:

6400 Fixed Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 6400

Model Series 6400 Fixed Pattern Ceiling Diffusers have been specially designed to provide an extra high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. The Model 6400 differs from the 6200 Series diffuser only in that the leading edge on all angular discharge louvers is straight, without the horizontal lip. This results in a relatively deeper primary air stream emanating from the diffuser, which produces shorter throws and slightly lower sound levels. The 6400 Series relies on the ceiling coanda effect in order to maintain the catalogued throws for engineered air distribution and performance and is recommended for applications with higher ceiling heights or for heating applications to minimize stratification.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Snap-in). These models therefore offer a great degree of design flexibility.

STANDARD FEATURES:

- Spring loaded core. It is removable without the use of tools.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D49).
- Clean lines with no unsightly visible screws.
- Opposed blade damper with screwdriver slot operator.

CONSTRUCTION MATERIAL:

Aluminum.

AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S and B: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, TL, M and F: see next page.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

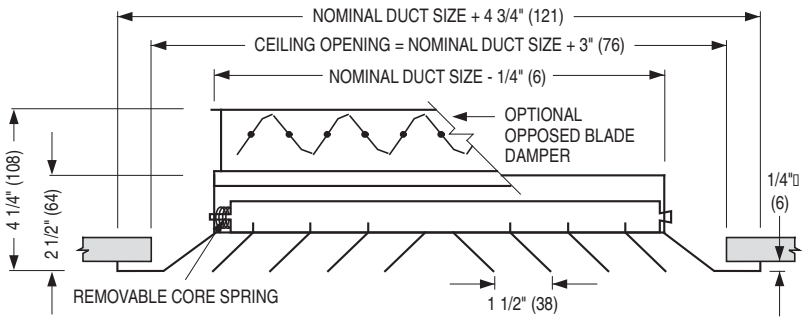
EQT Earthquake Tabs

For additional options and accessories; see page D255.

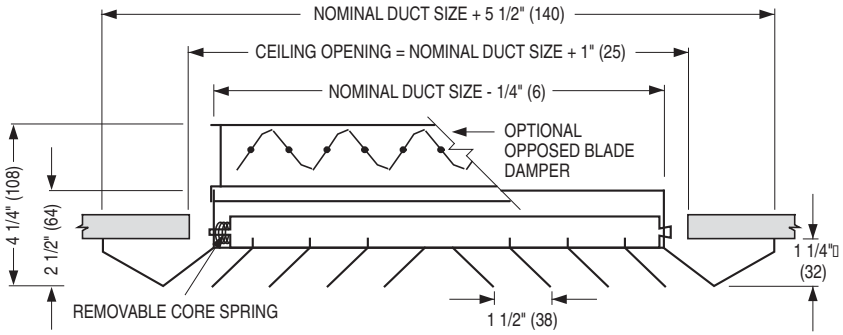
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6400

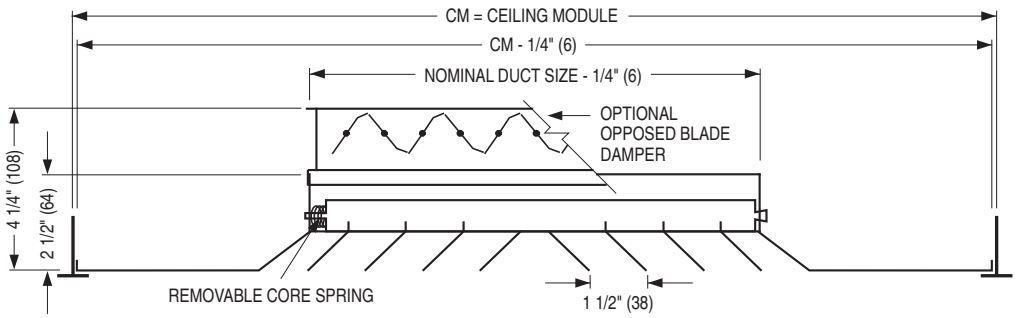
Type S
Surface Mount
Frame



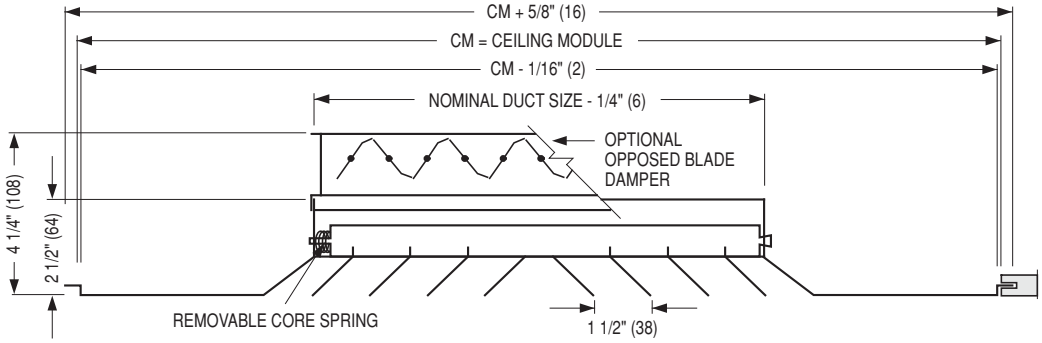
Type B
Beveled Drop
Face Frame



Type L
Lay-In
T-Bar Frame



Type SP
Spline Frame



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.
(SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

Extended Panel Diffusers
Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

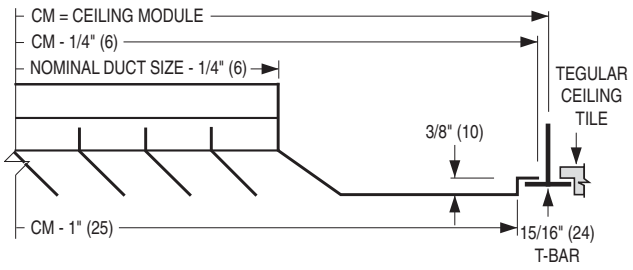
Table 1

Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

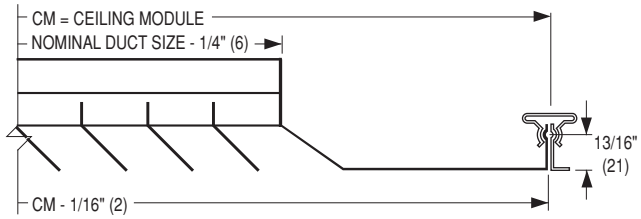
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6400

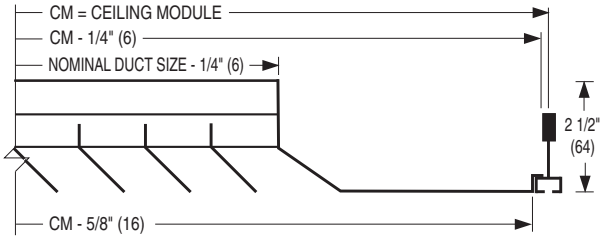
Type TL Tegular Lay-in



Type M Metal Pan (Snap-in)



Type F Fineline®

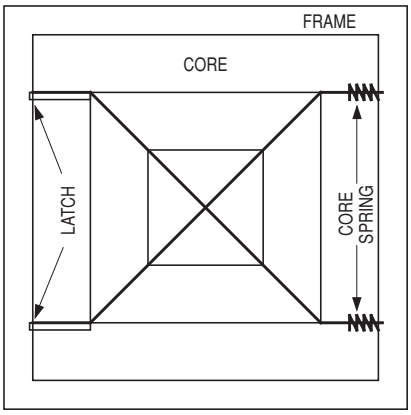


REMOVABLE CORE

- Standard feature of **Model 6400.**
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

HOW TO REMOVE "REMOVABLE" CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



STANDARD CORE STYLES:

MODEL SERIES 6400

Type 1S

Type 2S

Type 2G

Type 3A

Type 4A

Contact factory for special core configurations.

	SQUARE	RECTANGULAR	CORE	SIZES AVAILABLE MINIMUM	SIZES AVAILABLE MAXIMUM
1-WAY	1S	1A, 1B	1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY	2S	2A, 2B	2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY CORNER	2G	2C, 2D, 2E, 2F	2G 2C 2D 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
3-WAY	3A, 3H	3A1 (A is greater than B), 3A2 (B is less than A but greater than A/2), 3B (B is equal to A/2), 3C, 3E (B is less than A/2)	3A 3A1 3A2 3B 3C 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 9 x 6 (229 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 33 (914 x 838) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
4-WAY	4A	4B, 4C, 4E	4A 4B 4C 4E	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762) 36 x 27 (914 x 686)

Dimensions are in inches (mm).

Notes:

1. Duct sizes are available in 3" (76) increments.
2. Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that cataloged flow division is obtained.
3. Patterns are shown in plan view (looking down into inlet).

PERFORMANCE DATA:

MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —		100 10		125 17		150 22		175 26		200 31		225 35	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
6 x 6 .25 SQ. FT.	4A	CFM/SIDE	19		25		31		37		44		50		56	
		THROW, FT.	4-5-8		5-6-9		6-8-10		6-8-11		8-9-12		8-9-12		9-10-13	
	3A	CFM/SIDE	19	28	25	38	31	47	37	56	44	66	50	75	56	85
		THROW, FT.	4-5-8	5-8-11	5-6-9	6-9-12	6-8-10	8-10-14	6-8-11	8-11-15	8-9-12	9-12-16	8-9-12	9-12-17	9-10-13	10-13-18
	2S 2G	CFM/SIDE	37		50		62		75		88		100		113	
		THROW, FT.	8-9-12		9-10-14		10-11-16		11-12-17		12-13-18		12-14-19		13-15-22	
	1S	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	9-11-15		10-12-17		11-14-19		12-15-22		13-16-22		14-17-24		15-18-25	
	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —		225 14		280 20		340 26		395 31		450 35		505 38	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 9 .56 SQ. FT.	4A	CFM/SIDE	42		56		70		84		98		112		126	
		THROW, FT.	5-6-10		6-8-11		8-9-12		8-10-13		9-10-14		9-11-15		10-12-16	
	3A	CFM/SIDE	42	63	56	85	70	106	84	127	98	148	112	169	126	190
		THROW, FT.	5-6-10	8-10-13	6-8-11	9-11-15	8-9-12	10-12-17	8-10-13	11-13-18	9-10-14	12-14-19	9-11-15	12-15-22	10-12-16	13-16-22
	2S 2G	CFM/SIDE	84		112		141		169		197		225		253	
		THROW, FT.	9-10-15		11-13-18		12-15-20		13-16-22		14-17-23		15-18-25		16-19-28	
	1S	CFM/SIDE	169		225		282		338		394		450		507	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	
	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 10		400 17		500 23		600 28		700 33		800 36		900 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 12 1.0 SQ. FT.	4A	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	6-9-11		8-10-13		9-11-15		10-12-16		10-13-17		11-14-18		12-15-19	
	3A	CFM/SIDE	75	112	100	150	125	187	150	225	175	262	200	300	225	338
		THROW, FT.	6-9-11	9-11-15	8-10-13	10-12-17	9-11-15	11-14-19	10-12-16	12-15-22	10-13-17	13-16-22	11-14-18	14-17-24	12-15-19	15-18-25
	2S 2G	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	1S	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		23-27-38		24-29-41	
	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 10		625 19		780 25		935 30		1090 33		1250 38		1400 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 15 1.56 SQ. FT.	4A	CFM/SIDE	117		156		195		234		273		312		350	
		THROW, FT.	8-10-13		9-11-15		10-12-17		11-13-18		12-14-19		12-15-22		13-16-24	
	3A	CFM/SIDE	117	175	156	234	195	292	234	351	273	409	312	468	350	527
		THROW, FT.	8-10-13	11-13-18	9-11-15	13-15-22	10-12-17	15-17-24	11-13-18	16-18-26	12-14-19	17-19-28	12-15-22	18-22-30	13-16-24	19-22-32
	2S 2G	CFM/SIDE	234		312		390		468		546		625		700	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	1S	CFM/SIDE	467		625		780		935		1090		1250		1400	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 12		900 21		1125 27		1350 31		1575 36		1800 39		2025 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 2.25 SQ. FT.	4A	CFM/SIDE	168		225		281		337		394		450		506	
		THROW, FT.	9-11-15		10-12-17		11-14-19		12-15-21		13-16-22		14-17-24		15-18-25	
	3A	CFM/SIDE	168	253	225	338	281	422	337	506	394	590	450	675	506	760
		THROW, FT.	9-11-15	12-15-20	10-12-17	14-17-23	11-14-19	16-19-26	12-15-21	17-22-29	13-16-22	18-22-31	14-17-24	19-24-33	15-18-25	22-25-35
	2S 2G	CFM/SIDE	337		450		562		675		787		900		1012	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	1S	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS		NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS	—SP=2.6 TP NC + 8	CFM NC	915 14		1225 22		1530 28		1835 32		2140 37		2450 40		2750 43	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 21 3.06 SQ. FT.		4A	CFM/SIDE	230		306		382		460		535		612		688	
			THROW, FT.	10-12-17		11-14-19		12-16-22		13-17-23		14-18-25		15-19-26		16-22-29	
		3A	CFM/SIDE	230	345	306	460	382	573	460	688	535	802	612	918	688	1030
			THROW, FT.	10-12-17	13-16-22	11-14-19	15-18-25	12-16-22	17-20-29	13-17-23	18-22-32	14-18-25	19-23-34	15-19-26	22-25-36	16-22-29	22-28-38
	2S	2G	CFM/SIDE	458		612		765		917		1070		1225		1375	
			THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
		1S	CFM/SIDE	917		1225		1530		1835		2140		2450		2750	
			THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	RETURN FACTORS	—SP=2.7 TP NC + 8	CFM NC	1200 15		1600 23		2000 29		2400 33		2800 37		3200 41		3600 44	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 24 4.0 SQ. FT.		4A	CFM/SIDE	300		400		500		600		700		800		900	
			THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
		3A	CFM/SIDE	300	450	400	600	500	750	600	900	700	1050	800	1200	900	1350
			THROW, FT.	11-13-18	14-17-24	13-15-22	16-19-28	15-17-24	18-22-32	16-18-26	19-23-34	17-19-28	22-25-36	18-22-30	22-26-39	19-22-32	24-29-41
	2S	2G	CFM/SIDE	600		800		1000		1200		1400		1600		1800	
			THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
		1S	CFM/SIDE	1200		1600		2000		2400		2800		3200		3600	
			THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
	RETURN FACTORS	—SP=3.1 TP NC + 8	CFM NC	1875 16		2500 24		3125 30		3750 35		4375 39		5000 42		5625 46	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 30 6.25 SQ. FT.		4A	CFM/SIDE	469		625		782		937		1093		1250		1406	
			THROW, FT.	12-15-20		14-17-23		16-19-26		17-21-29		18-22-31		19-24-33		22-25-35	
		3A	CFM/SIDE	469	703	625	938	782	1172	937	1405	1093	1640	1250	1875	1406	2110
			THROW, FT.	12-15-20	16-19-28	14-17-23	18-22-32	16-19-26	20-25-36	17-21-29	22-28-39	18-22-31	23-28-42	19-24-33	25-32-44	22-25-35	28-34-47
	2S	2G	CFM/SIDE	937		1250		1562		1875		2187		2500		2812	
			THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
		1S	CFM/SIDE	1875		2500		3125		3750		4375		5000		5625	
			THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-66		41-50-70	
	RETURN FACTORS	—SP=3.6 TP NC + 9	CFM NC	2700 18		3600 25		4500 31		5400 36		6300 40		7200 44		8100 48	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 36 9.0 SQ. FT.		4A	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
			THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
		3A	CFM/SIDE	675	1010	900	1350	1125	1687	1350	2025	1575	2362	1800	2700	2025	3038
			THROW, FT.	13-16-22	17-22-30	15-18-25	20-24-34	17-20-29	23-28-39	18-22-32	24-30-41	19-23-34	26-32-44	22-25-36	29-35-47	22-28-38	31-37-50
	2S	2G	CFM/SIDE	1350		1800		2250		2700		3150		3600		4050	
			THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
		1S	CFM/SIDE	2700		3600		4500		5400		6300		7200		8100	
			THROW, FT.	26-32-45		31-37-52		35-42-60		38-45-64		40-48-69		43-51-75		46-56-79	

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=1.2 TP NC + 0	CFM NC	110 —		150 14		185 20		225 25		260 29		300 33		335 37	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 6 .375 SQ. FT.	4B	CFM/SIDE	37	18	50	25	62	31	75	37	87	44	100	50	112	56
		THROW, FT.	6-9-11	4-5-8	8-10-13	5-6-9	9-11-15	6-8-10	10-12-16	6-8-11	10-13-17	8-9-12	11-14-18	8-9-12	12-15-19	9-10-13
	3A1	CFM/SIDE	47	18	62	25	78	31	94	37	109	44	125	50	140	56
		THROW, FT.	8-9-12	4-5-8	9-10-14	5-6-9	10-11-16	6-8-10	11-12-17	6-8-11	12-13-18	8-9-12	12-14-19	8-9-12	13-15-22	9-10-13
	3A2	CFM/SIDE	42	35	55	47	70	58	84	70	98	82	112	94	126	105
		THROW, FT.	6-9-11	5-6-10	8-10-13	6-8-11	9-11-15	8-9-12	10-12-16	8-10-13	10-13-17	9-10-14	11-14-18	9-11-15	12-15-19	10-12-16
	2A 2B	CFM/SIDE	56		75		93		112		131		150		168	
		THROW, FT.	9-11-14		10-12-16		11-14-18		12-15-19		13-16-22		14-17-22		15-18-24	
	2C 2E / 2D 2F	CFM/SIDE	75	37	100	50	125	62	150	75	175	87	200	100	225	112
		THROW, FT.	9-11-15	6-9-11	10-12-17	8-10-13	11-14-19	9-11-15	12-15-22	10-12-16	13-16-22	10-13-19	14-17-24	11-14-18	15-18-25	12-15-19
	1A 1B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	RETURN FACTORS —SP=1.6 TP NC + 1	CFM NC	150 —		200 14		250 20		300 26		350 31		400 35		450 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 6 .50 SQ. FT.	4B / 4C	CFM/SIDE	56	18	75	25	94	31	113	37	131	44	150	50	169	56
		THROW, FT.	9-11-14	4-5-8	10-12-16	5-6-9	11-14-18	6-8-10	12-15-19	6-8-11	13-16-22	8-9-12	14-17-22	8-9-12	15-18-24	9-10-13
	3A1	CFM/SIDE	66	18	87	25	109	31	131	37	153	44	175	50	197	56
		THROW, FT.	9-11-15	4-5-8	10-12-17	5-6-9	11-14-19	6-8-10	12-15-22	6-8-11	13-16-22	8-9-12	14-17-24	8-9-12	15-18-25	9-10-13
	3B	CFM/SIDE	75	37	100	50	126	62	150	75	176	87	200	100	226	112
		THROW, FT.	6-9-11	6-9-11	8-10-13	8-10-13	9-11-15	9-11-15	10-12-16	10-12-16	10-13-17	10-13-17	11-14-18	11-14-18	12-15-19	12-15-19
	2A 2B	CFM/SIDE	75		100		125		150		175		200		225	
		THROW, FT.	9-11-15		10-12-17		11-14-19		12-15-22		13-16-22		14-17-24		15-18-25	
	2C 2E / 2D 2F	CFM/SIDE	112	37	150	50	188	62	225	75	263	87	300	100	338	112
		THROW, FT.	11-13-18	6-9-11	13-15-22	8-10-13	15-17-24	9-11-15	16-18-26	10-12-16	17-19-28	10-13-17	18-22-30	11-14-18	19-22-32	12-15-19
	1A 1B	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	RETURN FACTORS —SP=1.9 TP NC + 1	CFM NC	190 —		250 15		310 21		375 27		440 32		500 36		565 40	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 6 .625 SQ. FT.	4B / 4C	CFM/SIDE	75	18	100	25	125	31	150	37	175	44	200	50	225	56
		THROW, FT.	9-11-15	4-5-8	10-12-17	5-6-9	11-14-19	6-8-10	12-15-22	6-8-11	13-16-22	8-9-12	14-17-24	8-9-12	15-18-25	9-10-13
	4E	CFM/SIDE	56	37	75	50	94	62	113	75	131	87	150	100	169	112
		THROW, FT.	9-11-14	8-9-12	10-12-16	9-10-14	11-14-18	10-11-16	12-15-19	11-12-17	13-16-22	12-13-18	14-17-22	12-14-19	15-18-24	13-15-22
	3A1	CFM/SIDE	84	18	112	25	140	31	169	37	197	44	225	50	253	56
		THROW, FT.	10-11-16	4-5-8	11-13-18	5-6-9	12-15-20	6-8-10	13-16-22	6-8-11	14-17-23	8-9-12	15-18-25	8-9-12	16-19-28	9-10-13
	2A 2B	CFM/SIDE	94		125		156		187		219		250		281	
		THROW, FT.	10-12-17		11-14-19		12-16-22		13-17-23		14-18-25		15-19-26		16-22-29	
	2C 2E / 2D 2F	CFM/SIDE	150	37	200	50	250	62	300	75	350	87	400	100	450	112
		THROW, FT.	11-13-18	6-9-11	13-15-22	8-10-13	15-17-24	9-11-15	16-18-26	10-12-16	17-19-28	10-13-17	18-22-30	11-14-18	19-22-32	12-15-19
	1A 1B	CFM/SIDE	188		250		312		375		438		500		563	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=2.6 TP NC + 2	CFM NC	225 —		300 16		375 22		450 28		525 33		600 37		675 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 6 .75 SQ. FT.	4B 4C	CFM/SIDE	94	18	125	25	156	31	188	37	218	44	250	50	281	56
		THROW, FT.	10-12-17	4-5-8	11-14-19	5-6-9	12-16-21	6-8-10	13-17-23	6-8-11	14-18-25	8-9-12	15-19-26	8-9-12	16-22-29	9-10-13
	4E	CFM/SIDE	56	56	75	75	94	94	113	113	131	131	150	150	169	169
		THROW, FT.	9-11-14	9-11-14	10-12-16	10-12-16	11-14-18	11-14-18	12-15-19	12-15-19	13-16-22	13-16-22	14-17-22	14-17-22	15-18-24	15-18-24
	3A1	CFM/SIDE	103	18	137	25	172	31	206	37	240	44	275	50	309	56
		THROW, FT.	10-12-17	4-5-8	11-14-19	5-6-9	12-16-21	6-8-10	13-17-23	6-8-11	14-18-25	8-9-12	15-19-26	8-9-12	16-22-29	9-10-1
	2A 2B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	2C 2D 2E 2F	CFM/SIDE	187	37	250	50	313	62	375	75	438	87	500	100	563	112
		THROW, FT.	12-15-20	6-9-11	14-17-23	8-10-13	16-19-26	9-11-15	17-22-29	10-12-16	18-22-31	10-13-17	19-24-33	11-14-18	22-25-35	12-15-19
	1A 1B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		20-25-36		21-27-37	
	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	260 —		350 16		435 22		525 29		610 33		700 38		785 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 6 .875 SQ. FT.	4B 4C	CFM/SIDE	112	18	150	25	187	31	225	37	262	44	300	50	337	56
		THROW, FT.	11-13-18	4-5-8	13-15-22	5-6-9	15-17-24	6-8-10	16-18-26	6-8-11	17-19-28	8-9-12	18-22-30	8-9-12	19-22-32	9-10-13
	4E	CFM/SIDE	75	56	100	75	125	94	150	113	175	131	200	150	225	169
		THROW, FT.	9-11-15	9-11-14	10-12-17	10-12-16	11-14-19	11-14-18	12-15-22	12-15-19	13-16-22	13-16-22	14-17-24	14-17-22	15-18-25	15-18-24
	3A1	CFM/SIDE	122	18	162	25	203	31	244	37	284	44	325	50	365	56
		THROW, FT.	11-13-18	4-5-8	13-15-22	5-6-9	15-17-24	6-8-10	16-18-26	6-8-11	17-19-28	8-9-12	18-22-30	8-9-12	19-22-32	9-10-13
	2A 2B	CFM/SIDE	131		175		218		262		306		350		393	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	2C 2D 2E 2F	CFM/SIDE	225	37	300	50	375	62	450	75	525	87	600	100	675	112
		THROW, FT.	13-16-22	6-9-11	15-18-25	8-10-13	17-20-29	9-11-15	18-22-32	10-12-16	19-23-34	10-13-17	22-25-36	11-14-18	22-28-38	12-15-19
	1A 1B	CFM/SIDE	262		350		437		525		612		700		787	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	300 —		400 16		500 23		600 30		700 34		800 39		900 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 6 1.0 SQ. FT.	4B 4C	CFM/SIDE	131	18	175	25	219	31	263	37	306	44	350	50	394	56
		THROW, FT.	11-13-18	4-5-8	13-15-22	5-6-9	15-17-24	6-8-10	16-18-26	6-8-11	17-19-28	8-9-12	18-22-30	8-9-12	19-22-32	9-10-13
	4E	CFM/SIDE	75	75	100	100	125	125	150	150	175	175	200	200	225	225
		THROW, FT.	9-11-15	9-11-15	10-12-17	10-12-17	11-14-19	11-14-19	12-15-22	12-15-22	13-16-22	13-16-22	14-17-24	14-17-24	15-18-25	15-18-25
	3A1	CFM/SIDE	141	18	187	25	234	31	281	37	328	44	375	50	422	56
		THROW, FT.	11-13-18	4-5-8	13-15-22	5-6-9	15-17-24	6-8-10	16-18-26	6-8-11	17-19-28	8-9-12	18-22-30	8-9-12	19-22-32	9-10-13
	2A 2B	CFM/SIDE	150		200		250		300		350		400		450	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	2C 2D 2E 2F	CFM/SIDE	260	37	350	50	438	62	525	75	613	87	700	100	788	112
		THROW, FT.	13-16-22	6-9-11	15-18-25	8-10-13	17-20-29	9-11-15	18-22-32	10-12-16	19-23-34	10-13-17	22-25-36	11-14-18	22-28-38	12-15-19
	1A 1B	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	375 —		500 17		625 24		750 30		875 35		1000 40		1125 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 6 1.25 SQ. FT.	4B 4C	CFM/SIDE	169	18	225	25	281	31	338	37	393	44	450	50	506	56
		THROW, FT.	12-15-20	4-5-8	14-17-23	5-6-9	16-19-26	6-8-10	17-22-29	6-8-11	18-22-31	8-9-12	19-24-33	8-9-12	21-25-35	9-10-13
	4E	CFM/SIDE	94	94	125	125	156	156	188	188	219	219	250	250	282	282
		THROW, FT.	10-12-17	10-12-17	11-14-19	11-14-19	12-16-22	12-16-22	13-17-23	13-17-23	14-18-25	14-18-25	15-19-26	15-19-26	16-22-29	16-22-29
	3A1	CFM/SIDE	178	18	237	25	297	31	356	37	415	44	475	50	534	56
		THROW, FT.	12-15-20	4-5-8	14-17-23	5-6-9	16-19-26	6-8-10	17-22-29	6-8-11	18-22-31	8-9-12	19-24-33	8-9-12	21-25-35	9-10-13
	2A 2B	CFM/SIDE	187		250		312		375		437		500		562	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		21-25-35	
	2C 2E 2D 2F	CFM/SIDE	337	37	450	50	563	62	675	75	788	87	900	100	1013	112
		THROW, FT.	14-17-24	6-9-11	16-19-28	8-10-13	18-22-32	9-11-15	19-23-34	10-12-16	22-25-36	10-13-17	22-26-39	11-14-18	24-29-41	12-15-19
	1A 1B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	225 —		300 17		375 23		450 28		525 33		600 36		675 40	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 9 .75 SQ. FT.	4B 4C	CFM/SIDE	70	42	94	56	117	70	141	84	164	98	188	112	211	126
		THROW, FT.	8-10-13	5-6-10	9-11-15	6-8-11	10-12-17	8-9-12	11-13-18	8-10-13	12-14-19	9-10-14	12-15-22	9-11-15	13-16-22	10-12-16
	3A1	CFM/SIDE	91	42	121	56	152	70	183	84	213	98	244	112	274	126
		THROW, FT.	10-12-17	5-6-10	11-14-19	6-8-11	12-16-22	8-9-12	13-17-23	8-10-13	14-18-25	9-10-14	15-19-26	9-11-15	16-22-29	10-12-16
	3A2	CFM/SIDE	75	75	100	100	125	125	150	150	175	175	200	200	225	225
		THROW, FT.	9-11-14	9-11-14	10-12-16	10-12-16	11-14-18	11-14-18	12-15-19	12-15-19	13-16-22	13-16-22	14-17-22	14-17-22	15-18-24	15-18-24
	2A 2B	CFM/SIDE	112		150		187		225		262		300		337	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	2C 2E 2D 2F	CFM/SIDE	141	84	188	112	234	141	281	169	328	197	375	225	422	253
		THROW, FT.	11-13-18	9-11-14	13-15-22	10-12-16	15-17-24	11-14-18	16-18-26	12-15-19	17-19-28	13-16-22	18-22-30	14-17-22	19-22-32	15-18-24
	1A 1B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	RETURN FACTORS —SP=1.7 TP NC + 3	CFM NC	280 —		375 18		470 24		565 29		655 34		750 37		845 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 9 .93 SQ. FT.	4B 4C	CFM/SIDE	98	42	131	56	165	70	198	84	230	98	263	112	296	126
		THROW, FT.	10-12-17	5-6-10	11-14-19	6-8-11	12-16-22	8-9-12	13-17-23	8-10-13	14-18-25	9-10-14	15-19-26	9-11-15	16-22-29	10-12-16
	4E	CFM/SIDE	70	70	94	94	117	117	141	141	164	164	188	188	211	211
		THROW, FT.	9-11-15	9-11-15	10-12-17	10-12-17	11-14-19	11-14-19	12-15-22	12-15-22	13-16-22	13-16-22	14-17-24	14-17-24	15-18-25	15-18-25
	3A1	CFM/SIDE	120	42	159	56	200	70	240	84	279	98	319	112	359	126
		THROW, FT.	11-13-18	5-6-10	13-15-22	6-8-11	15-17-24	8-9-12	16-18-26	8-10-13	17-19-28	9-10-14	18-22-30	9-11-15	19-22-32	10-12-16
	3A2	CFM/SIDE	117	82	155	110	196	137	233	165	272	192	312	219	351	247
		THROW, FT.	10-11-16	8-10-13	11-13-18	9-11-15	12-15-20	10-12-17	13-16-22	11-13-18	14-17-23	12-14-19	15-18-25	12-15-22	16-19-28	13-16-22
	2A 2B	CFM/SIDE	140		187		235		281		328		375		422	
		THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
	2C 2E 2D 2F	CFM/SIDE	197	84	263	112	329	141	394	169	459	197	525	225	592	253
		THROW, FT.	12-15-20	9-11-14	14-17-23	10-12-16	16-19-26	11-14-18	17-22-29	12-15-19	18-22-31	13-16-22	19-24-33	14-17-22	22-25-35	15-18-24
	1A 1B	CFM/SIDE	281		375		470		563		656		750		845	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=2.1 TP NC + 3	CFM NC	335 —		450 19		560 25		675 30		790 35		900 38		1010 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 9 1.125 SQ. FT.	4B 4C	CFM/SIDE	126	42	169	56	211	70	254	84	296	98	338	112	380	126
		THROW, FT.	11-13-18	5-6-10	13-15-22	6-8-11	15-17-24	8-9-12	16-18-26	8-10-13	17-19-28	9-10-14	18-22-30	9-11-15	19-22-32	10-12-16
	4E	CFM/SIDE	99	70	132	94	164	117	197	141	230	164	263	188	296	211
		THROW, FT.	10-12-17	9-11-15	11-14-19	10-12-17	12-16-22	11-14-19	13-17-23	12-15-22	14-18-25	13-16-22	15-19-26	14-17-24	16-22-29	15-18-25
	3A1	CFM/SIDE	147	42	197	56	246	70	295	84	345	98	394	112	443	126
		THROW, FT.	11-13-18	5-6-10	13-15-22	6-8-11	15-17-24	8-9-12	16-18-26	8-10-13	17-19-28	9-10-14	18-22-30	9-11-15	19-22-32	10-12-16
	3B	CFM/SIDE	168	84	225	112	281	141	337	169	394	197	450	225	506	253
		THROW, FT.	9-11-15	9-11-14	10-12-17	10-12-16	11-14-19	11-14-18	12-15-22	12-15-19	13-16-22	13-16-22	14-17-24	14-17-22	15-18-25	15-18-24
	2A 2B	CFM/SIDE	163		225		281		337		394		450		506	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	
	2C 2D 2E 2F	CFM/SIDE	253	84	338	112	421	141	506	169	591	197	675	225	759	253
		THROW, FT.	13-16-22	9-11-14	15-18-25	10-12-16	17-20-29	11-14-18	18-22-32	12-15-19	19-23-34	13-16-22	22-25-36	14-17-22	22-28-38	15-18-24
	1A 1B	CFM/SIDE	337		450		562		675		788		900		1012	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	RETURN FACTORS —SP=2.5 TP NC + 4	CFM NC	395 —		525 19		655 25		785 31		915 36		1050 38		1180 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 9 1.125 SQ. FT.	4B 4C	CFM/SIDE	154	42	206	56	258	70	309	84	360	98	413	112	464	126
		THROW, FT.	12-15-20	5-6-10	14-17-23	6-8-11	16-19-26	8-9-12	17-22-29	8-10-13	18-22-31	9-10-14	19-24-33	9-11-15	22-25-35	10-12-16
	4E	CFM/SIDE	98	98	131	131	163	163	196	196	229	229	261	261	294	294
		THROW, FT.	10-12-17	10-12-17	11-14-19	11-14-19	12-16-22	12-16-22	13-17-23	13-17-23	14-18-25	14-18-25	15-19-26	15-19-26	16-22-29	16-22-29
	3A1	CFM/SIDE	175	42	234	56	292	70	351	84	410	98	468	112	527	126
		THROW, FT.	12-15-20	5-6-10	14-17-23	6-8-11	16-19-26	8-9-12	17-22-29	8-10-13	18-22-31	9-10-14	19-24-33	9-11-15	22-25-35	10-12-16
	2A 2B	CFM/SIDE	196		262		327		393		458		525		590	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	
	2C 2D 2E 2F	CFM/SIDE	308	84	412	112	514	141	617	169	720	197	825	225	927	253
		THROW, FT.	14-17-24	9-11-14	16-19-28	10-12-16	18-22-32	11-14-18	19-23-34	12-15-19	22-25-36	13-16-22	22-26-39	14-17-22	24-29-41	15-18-24
	1A 1A 1B	CFM/SIDE	393		524		655		786		917		1050		1180	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	RETURN FACTORS —SP=2.9 TP NC + 4	CFM NC	450 —		600 19		750 25		900 31		1050 36		1200 38		1350 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 9 1.5 SQ. FT.	4B 4C	CFM/SIDE	183	42	244	56	305	70	366	84	427	98	488	112	549	126
		THROW, FT.	12-15-20	5-6-10	14-17-23	6-8-11	16-19-26	8-9-12	17-22-29	8-10-13	18-22-31	9-10-14	19-24-33	9-11-15	22-25-35	10-12-16
	4E	CFM/SIDE	126	99	169	132	211	164	253	197	295	230	337	263	379	296
		THROW, FT.	11-13-18	10-12-17	13-15-22	11-14-19	15-17-24	12-16-22	16-18-26	13-17-23	17-19-28	14-18-25	18-22-30	15-19-26	19-22-32	16-22-29
	3A1	CFM/SIDE	204	42	272	56	340	70	408	84	476	98	544	112	612	126
		THROW, FT.	12-15-20	5-6-10	14-17-23	6-8-11	16-19-26	8-9-12	17-22-29	8-10-13	18-22-31	9-10-14	19-24-33	9-11-15	22-25-35	10-12-16
	2A 2B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	2C 2D 2E 2F	CFM/SIDE	365	84	488	112	609	141	731	169	853	197	975	225	1097	253
		THROW, FT.	15-18-25	9-11-14	17-22-30	10-12-16	19-24-34	11-14-18	22-26-36	12-15-19	22-28-39	13-16-22	24-30-42	14-17-22	25-32-44	15-18-24
	1A 1B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.9 TP NC + 5	CFM NC	560 —		750 20		935 26		1125 32		1310 37		1500 39		1685 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 9 1.875 SQ. FT.	4B 4C	CFM/SIDE	238	42	319	56	398	70	478	84	557	98	638	112	716	126
		THROW, FT.	13-16-22	5-6-10	15-18-25	6-8-11	17-20-29	8-9-12	18-22-32	8-10-13	19-23-34	9-10-14	22-25-36	9-11-15	22-28-38	10-12-16
	4E	CFM/SIDE	155	126	206	169	258	211	310	253	361	295	413	337	465	379
		THROW, FT.	12-15-20	11-13-18	14-17-23	13-15-22	16-19-26	15-17-24	17-22-29	16-18-26	18-22-30	17-19-28	19-24-33	18-22-30	22-25-35	19-22-32
	3A1	CFM/SIDE	259	42	347	56	433	70	520	84	606	98	694	112	779	126
		THROW, FT.	13-16-22	5-6-10	15-18-25	6-8-11	17-20-29	8-9-12	18-22-32	8-10-13	19-23-34	9-10-14	22-25-36	9-11-15	22-28-38	10-12-16
	2A 2B	CFM/SIDE	281		375		468		562		655		750		842	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	2C 2D 2E 2F	CFM/SIDE	476	84	638	112	796	141	956	169	1113	197	1275	225	1432	253
		THROW, FT.	16-19-28	9-11-14	18-22-32	10-12-16	20-25-36	11-14-18	22-28-39	12-15-19	23-30-42	13-16-22	25-32-44	14-17-22	28-34-47	15-18-24
	1A 1B	CFM/SIDE	562		750		937		1125		1310		1500		1685	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	RETURN FACTORS —SP=5.0 TP NC + 6	CFM NC	675 —		900 21		1125 27		1350 33		1575 38		1800 40		2025 44	
				A	B	A	B	A	B	A	B	A	B	A	B	A B
36 x 9 2.25 SQ. FT.	4B 4C	CFM/SIDE	295	42	394	56	492	70	591	84	689	98	788	112	886	126
		THROW, FT.	14-17-24	5-6-10	16-19-28	6-8-11	18-22-32	8-9-12	19-23-34	8-10-13	22-25-36	9-10-14	22-26-39	9-11-15	24-29-41	10-12-16
	4E	CFM/SIDE	183	155	244	206	305	258	366	310	427	361	488	413	549	465
		THROW, FT.	12-15-20	12-15-20	14-17-23	14-17-23	16-19-26	16-19-26	17-22-29	17-22-29	18-22-31	18-22-31	19-24-33	19-24-33	22-25-35	22-25-35
	3A1	CFM/SIDE	316	42	422	56	527	70	633	84	738	98	844	112	949	126
		THROW, FT.	14-17-24	5-6-10	16-19-28	6-8-11	18-22-32	8-9-12	19-23-34	8-10-13	22-25-36	9-10-14	22-26-39	9-11-15	24-29-41	10-12-16
	2A 2B	CFM/SIDE	337		450		562		675		787		900		1012	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	2C 2D 2E 2F	CFM/SIDE	590	84	788	112	984	141	1181	169	1378	197	1575	225	1772	253
		THROW, FT.	17-22-30	9-11-14	20-24-34	10-12-16	23-28-39	11-14-18	24-30-41	12-15-19	26-32-44	13-16-22	29-35-47	14-17-22	31-37-50	15-18-24
	1A 1B	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
	RETURN FACTORS —SP=1.6 TP NC + 2	CFM NC	375 —		500 19		625 25		750 30		875 34		1000 38		1125 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 12 1.25 SQ. FT.	4B 4C	CFM/SIDE	112	75	150	100	187	125	225	150	262	175	300	200	337	225
		THROW, FT.	9-11-15	6-9-11	10-12-17	8-10-13	11-14-19	9-11-15	12-15-22	10-12-16	13-16-22	10-13-17	14-17-24	11-14-18	15-18-25	12-15-19
	3A1	CFM/SIDE	150	75	200	100	250	125	300	150	350	175	400	200	450	225
		THROW, FT.	11-13-18	6-9-11	13-15-22	8-10-13	15-17-24	9-11-15	16-18-26	10-12-16	17-19-28	10-13-17	18-22-30	11-14-18	19-22-32	12-15-19
	3A2	CFM/SIDE	117	129	156	172	195	215	234	258	273	301	312	344	351	387
		THROW, FT.	8-10-13	10-11-16	9-11-15	11-13-18	10-12-17	12-15-20	11-13-18	13-16-22	12-14-19	14-17-23	12-15-22	15-18-25	13-16-22	16-19-28
	2A 2B	CFM/SIDE	187		250		312		375		437		500		567	
		THROW, FT.	12-15-20		14-17-23		16-19-26		17-22-29		18-22-31		19-24-33		22-25-35	
	2C 2D 2E 2F	CFM/SIDE	225	150	300	200	375	250	450	300	525	350	600	400	675	450
		THROW, FT.	13-16-22	10-12-17	15-18-25	11-14-19	17-20-29	12-16-22	18-22-32	13-17-23	19-23-34	14-18-25	22-25-36	15-19-26	22-28-38	16-22-29
	1A 1B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=1.9 TP NC + 3	CFM NC	450 —		600 20		750 26		900 31		1050 35		1200 39		1350 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 12 1.5 SQ. FT.	4B 4C	CFM/SIDE	150	75	200	100	250	125	300	150	350	175	400	200	450	225
		THROW, FT.	11-13-18	6-9-11	13-15-22	8-10-13	15-17-24	9-11-15	16-18-26	10-12-16	17-19-28	10-13-17	18-22-30	11-14-18	19-22-32	12-15-19
	3A1	CFM/SIDE	187	75	250	100	312	125	375	150	437	175	500	200	562	225
		THROW, FT.	12-15-20	6-9-11	14-17-23	8-10-13	16-19-26	9-11-15	17-22-29	10-12-16	18-22-31	10-13-17	19-24-33	11-14-18	22-25-35	12-15-1
	3A2	CFM/SIDE	168	141	225	187	281	234	337	281	394	328	450	375	506	422
		THROW, FT.	10-12-17	9-11-15	11-14-19	10-12-17	12-16-22	11-14-19	13-17-23	12-15-22	14-18-25	13-16-22	15-19-26	14-17-24	16-22-29	15-18-25
	2A 2B	CFM/SIDE	225		300		375		450		525		600		675	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	2C 2D 2E 2F	CFM/SIDE	300	150	400	200	500	250	600	300	700	350	800	400	900	450
		THROW, FT.	14-17-24	10-12-17	16-19-28	11-14-19	18-22-32	12-16-22	19-23-34	13-17-23	22-25-36	14-18-25	22-26-39	15-19-26	24-29-41	16-22-29
	1A 1B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	525 —		700 20		875 26		1050 31		1225 35		1400 39		1575 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 12 1.75 SQ. FT.	4B 4C	CFM/SIDE	187	75	250	100	312	125	375	150	437	175	500	200	562	225
		THROW, FT.	12-15-20	6-9-11	14-17-23	8-10-13	16-19-26	9-11-15	17-22-29	10-12-16	18-22-31	10-13-17	19-24-33	11-14-18	22-25-35	12-15-19
	4E	CFM/SIDE	150	112	200	150	250	187	300	225	350	262	400	300	450	337
		THROW, FT.	11-13-18	11-13-18	13-15-22	13-15-22	15-17-24	15-17-24	16-18-26	16-18-26	17-19-28	17-19-28	18-22-30	18-22-30	19-22-32	19-22-32
	3A1	CFM/SIDE	225	75	300	100	375	125	450	150	525	175	600	200	675	225
		THROW, FT.	13-16-22	6-9-11	15-18-25	8-10-13	17-20-29	9-11-15	18-22-32	10-12-16	19-23-34	10-13-17	22-25-36	11-14-18	22-28-38	12-15-19
	3A2	CFM/SIDE	148	230	197	306	246	382	295	460	345	535	394	612	443	688
		THROW, FT.	10-12-17	10-12-17	11-14-19	11-14-19	12-16-22	12-16-22	13-17-23	13-17-23	14-18-25	14-18-25	15-19-26	15-19-26	16-22-29	16-22-29
	2A 2B	CFM/SIDE	262		350		437		525		612		700		787	
		THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
	2C 2D 2E 2F	CFM/SIDE	375	150	500	200	625	250	750	300	875	350	1000	400	1125	450
		THROW, FT.	15-18-25	10-12-17	17-22-30	11-14-19	19-24-34	12-16-22	22-26-36	13-17-23	22-28-39	14-18-25	24-30-42	15-19-26	25-32-44	16-22-29
	1A 1B	CFM/SIDE	525		700		875		1050		1225		1400		1575	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	RETURN FACTORS —SP=2.6 TP NC + 5	CFM NC	600 12		800 21		1000 27		1200 32		1400 36		1600 40		1800 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 12 2.0 SQ. FT.	4B 4C	CFM/SIDE	225	75	300	100	375	125	450	150	525	175	600	200	675	225
		THROW, FT.	13-16-22	6-9-11	15-18-25	8-10-13	17-20-29	9-11-15	18-22-32	10-12-16	19-23-34	10-13-17	22-25-36	11-14-18	22-28-38	12-15-19
	4E	CFM/SIDE	150	150	200	200	250	250	300	300	350	350	400	400	450	450
		THROW, FT.	11-13-18	11-13-18	13-15-22	13-15-22	15-17-24	15-17-24	16-18-26	16-18-26	17-19-28	17-19-28	18-22-30	18-22-30	19-22-32	19-22-32
	3A1	CFM/SIDE	262	75	350	100	437	175	525	150	612	175	700	200	787	225
		THROW, FT.	13-16-22	6-9-11	15-18-25	8-10-13	17-20-29	9-11-15	18-22-32	10-12-16	19-23-34	10-13-17	22-25-36	11-14-18	22-28-38	12-15-19
	3B	CFM/SIDE	300	150	400	200	500	250	600	300	700	350	800	400	900	450
		THROW, FT.	11-13-18	10-12-17	13-15-22	11-14-19	15-17-24	12-16-22	16-18-26	13-17-23	17-19-28	14-18-25	18-22-30	15-19-26	19-22-32	16-22-29
	2A 2B	CFM/SIDE	300		400		500		600		700		800		900	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	2C 2D 2E 2F	CFM/SIDE	450	150	600	200	750	250	900	300	1050	350	1200	400	1350	450
		THROW, FT.	15-18-25	10-12-17	17-22-30	11-14-19	19-24-34	12-16-22	22-26-36	13-17-23	22-28-39	14-18-25	24-30-42	15-19-26	25-32-44	16-22-29
	1A 1B	CFM/SIDE	600		800		1000		1200		1400		1600		1800	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.3 TP NC + 6	CFM NC	750 15		1000 23		1250 29		1500 33		1750 37		2000 41		2250 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 12 2.5 SQ. FT.	4B 4C	CFM/SIDE	300	75	400	100	500	125	600	150	700	175	800	200	900	225
		THROW, FT.	14-17-24	6-9-11	16-19-28	8-10-13	18-22-32	9-11-15	19-23-34	10-12-16	21-25-36	10-13-17	22-26-39	11-14-18	24-29-41	12-15-19
	4E	CFM/SIDE	183	183	250	250	313	313	375	375	437	437	500	500	562	562
		THROW, FT.	12-15-20	12-15-20	14-17-23	14-17-23	16-19-26	16-19-26	17-22-29	17-22-29	18-22-31	18-22-31	19-24-33	19-24-33	22-25-35	22-25-35
	3A1	CFM/SIDE	337	75	450	100	562	125	675	150	787	175	900	200	1012	225
		THROW, FT.	14-17-24	6-9-11	16-19-28	8-10-13	18-22-32	9-11-15	19-23-34	10-12-16	21-25-36	10-13-17	22-26-39	11-14-18	24-29-41	12-15-19
	2A 2B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	2C 2D 2E 2F	CFM/SIDE	600	150	800	200	1000	250	1200	300	1400	350	1600	400	1800	450
		THROW, FT.	17-22-30	10-12-17	20-24-34	11-14-19	23-28-39	12-16-22	24-30-41	13-17-23	26-32-44	14-18-25	29-35-47	15-19-26	31-37-50	16-22-29
	1A 1B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	18-22-32		22-25-36		24-29-41		26-32-44		28-34-47		30-36-50		32-38-53	
	RETURN FACTORS —SP=4.0 TP NC + 7	CFM NC	900 16		1200 25		1500 30		1800 34		2100 38		2400 42		2700 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 12 3.0 SQ. FT.	4B 4C	CFM/SIDE	375	75	500	100	625	125	750	150	875	175	1000	200	1125	225
		THROW, FT.	15-18-25	6-9-11	17-22-30	8-10-13	19-24-34	9-11-15	22-26-36	10-12-16	22-28-39	10-13-17	24-30-42	11-14-18	25-32-44	12-15-19
	4E	CFM/SIDE	225	225	300	300	375	375	450	450	525	525	600	600	675	675
		THROW, FT.	13-16-22	13-16-22	15-18-25	15-18-25	17-20-29	17-20-29	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-28-38	22-28-38
	3A1	CFM/SIDE	412	75	550	100	687	125	825	150	962	175	1100	200	1237	225
		THROW, FT.	15-18-25	6-9-11	17-22-30	8-10-13	19-24-34	9-11-15	22-26-36	10-12-16	22-28-39	10-13-17	24-30-42	11-14-18	25-32-44	12-15-19
	2A 2B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	2C 2D 2E 2F	CFM/SIDE	750	150	1000	200	1250	250	1500	300	1750	350	2000	400	2250	450
		THROW, FT.	18-22-32	10-12-17	22-25-36	11-14-19	24-29-41	12-16-22	26-32-44	13-17-23	28-34-47	14-18-25	30-36-50	15-19-26	32-38-53	16-22-29
	1A 1B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	RETURN FACTORS —SP=2.0 TP NC + 4	CFM NC	560 14		750 21		935 28		1125 32		1310 36		1500 39		1685 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 15 1.875 SQ. FT.	4B 4C	CFM/SIDE	164	117	219	156	273	195	328	234	383	273	438	312	492	351
		THROW, FT.	10-12-17	8-10-13	11-14-19	9-11-15	12-16-22	10-12-17	13-17-23	11-13-18	14-18-25	12-14-19	15-19-26	12-15-22	16-22-29	13-16-22
	3A1	CFM/SIDE	222	117	297	156	371	195	445	234	519	273	594	312	668	351
		THROW, FT.	13-16-22	8-10-13	15-18-25	9-11-15	17-20-29	10-12-17	18-22-32	11-13-18	19-23-34	12-14-19	22-25-36	12-15-22	22-28-38	13-16-22
	3A2	CFM/SIDE	168	197	225	262	281	328	337	394	394	459	450	525	506	590
		THROW, FT.	9-11-15	12-15-20	10-12-17	14-17-23	11-14-19	16-19-26	12-15-22	17-22-29	13-16-22	18-22-31	14-17-24	19-24-33	15-18-25	22-25-35
	2A 2B	CFM/SIDE	281		375		468		562		656		750		843	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	2C 2D 2E 2F	CFM/SIDE	329	234	438	312	547	390	657	468	766	546	876	624	985	702
		THROW, FT.	17-22-30	12-15-20	20-24-34	14-17-23	23-28-39	16-19-26	24-30-41	17-22-29	26-32-44	18-22-31	29-35-47	19-24-33	31-37-50	22-25-35
	1A 1B	CFM/SIDE	562		750		937		1125		1312		1500		1687	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=2.1 TP NC + 5	CFM NC	655 12		875 21		1090 28		1310 33		1530 36		1750 39		1970 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 15 2.185 SQ. FT.	4B 4C	CFM/SIDE	210	117	281	156	361	195	422	234	493	273	563	312	634	351
		THROW, FT.	13-16-22	8-10-13	15-18-25	9-11-15	17-20-29	10-12-17	18-22-32	11-13-18	19-23-34	12-14-19	22-25-36	12-15-22	22-28-38	13-16-22
	4E	CFM/SIDE	164	164	218	218	273	273	327	327	382	382	437	437	491	491
		THROW, FT.	12-15-20	12-15-20	14-17-24	14-17-24	16-19-26	16-19-26	17-22-29	17-22-29	18-22-31	18-22-31	19-24-33	19-24-33	22-25-35	22-25-35
	3A1	CFM/SIDE	269	117	359	156	448	195	539	234	629	273	719	312	809	351
		THROW, FT.	13-16-22	8-10-13	15-18-25	9-11-15	17-20-29	10-12-17	18-22-32	11-13-18	19-23-34	12-14-19	22-25-36	12-15-22	22-28-38	13-16-22
	3A2	CFM/SIDE	230	213	306	284	382	355	460	426	535	498	612	569	688	641
		THROW, FT.	11-13-18	10-12-17	13-15-22	11-14-19	15-17-24	12-16-22	16-18-26	13-17-23	17-19-28	14-18-25	18-22-30	15-19-26	19-22-32	16-22-29
	2A 2B	CFM/SIDE	327		437		596		656		766		875		985	
		THROW, FT.	14-17-24		16-19-28		18-22-32		19-23-34		22-25-36		22-26-39		24-29-41	
	2C 2D 2E 2F	CFM/SIDE	422	234	563	312	702	390	844	468	966	546	1126	624	1268	702
		THROW, FT.	15-18-25	12-15-20	17-22-30	14-17-23	19-24-34	16-19-26	22-26-36	17-22-29	22-28-39	18-22-31	24-30-42	19-24-33	25-32-44	22-25-35
	1A 1B	CFM/SIDE	655		875		1092		1312		1532		1750		1970	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
	RETURN FACTORS —SP=2.6 TP NC + 6	CFM NC	750 14		1000 22		1250 29		1500 34		1750 37		2000 39		2250 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 15 2.5 SQ. FT.	4B 4C	CFM/SIDE	258	117	344	156	430	195	516	234	602	273	688	312	774	351
		THROW, FT.	13-16-22	8-10-13	15-18-25	9-11-15	17-20-29	10-12-17	18-22-32	11-13-18	19-23-34	12-14-19	22-25-36	12-15-22	22-28-38	13-16-22
	4E	CFM/SIDE	211	164	281	218	352	273	422	327	492	382	563	437	633	491
		THROW, FT.	13-16-22	12-15-20	15-18-25	14-17-24	17-20-29	16-19-26	18-22-32	17-22-29	19-23-34	18-22-31	22-25-36	19-24-33	22-28-38	22-25-35
	3A1	CFM/SIDE	316	117	422	156	527	195	633	234	738	273	844	312	949	351
		THROW, FT.	14-17-24	8-10-13	16-19-28	9-11-15	18-22-32	10-12-17	19-23-34	11-13-18	22-25-36	12-14-19	22-26-39	12-15-22	24-29-41	13-16-22
	3A2	CFM/SIDE	300	225	400	300	500	375	600	450	700	525	800	600	900	675
		THROW, FT.	13-16-22	11-13-18	15-18-25	13-15-22	17-20-29	15-17-24	18-22-32	16-18-26	19-23-34	17-19-28	22-25-36	18-22-30	22-28-38	19-22-32
	2A 2B	CFM/SIDE	375		500		625		750		875		1000		1125	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	2C 2D 2E 2F	CFM/SIDE	516	234	688	312	860	390	1032	468	1204	546	1376	624	1548	702
		THROW, FT.	16-19-28	12-15-20	18-22-32	14-17-23	20-25-36	16-19-26	22-28-39	17-22-29	23-30-42	18-22-31	25-32-44	19-24-33	28-34-47	22-25-35
	1A 1B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	18-22-32		22-25-36		24-29-41		26-32-44		28-34-47		30-36-50		32-38-53	
	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	935 14		1250 23		1565 30		1875 36		2190 39		2500 40		2810 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 15 3.125 SQ. FT.	4B 4C	CFM/SIDE	351	117	469	156	587	195	703	234	822	273	938	312	1054	351
		THROW, FT.	14-17-24	8-10-13	16-19-28	9-11-15	18-22-32	10-12-17	19-23-34	11-13-18	22-25-36	12-14-19	22-26-39	12-15-22	24-29-41	13-16-22
	4E	CFM/SIDE	258	211	344	281	430	352	516	422	602	492	688	583	775	633
		THROW, FT.	13-16-22	13-16-22	15-18-25	15-18-25	17-20-29	17-20-29	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-28-38	22-28-38
	3A1	CFM/SIDE	410	117	547	156	685	195	820	234	958	273	1094	312	1224	351
		THROW, FT.	15-18-25	8-10-13	17-22-30	9-11-15	19-24-34	10-12-17	22-26-36	11-13-18	22-28-39	12-14-19	24-30-42	12-15-22	25-32-44	13-16-22
	3B	CFM/SIDE	468	234	625	312	782	391	937	469	1095	547	1250	625	1406	702
		THROW, FT.	12-15-20	12-15-20	14-17-23	14-17-23	16-19-26	16-19-26	17-22-29	17-22-29	18-22-31	18-22-31	19-24-33	19-24-33	22-25-35	22-25-35
	2A 2B	CFM/SIDE	468		625		782		937		1095		1250		1405	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	2C 2D 2E 2F	CFM/SIDE	702	234	938	312	1175	390	1407	468	1644	546	1876	624	2108	702
		THROW, FT.	17-22-30	12-15-20	20-24-34	14-17-23	23-28-39	16-19-26	24-30-41	17-22-29	26-32-44	18-22-31	29-35-47	19-24-33	34-37-50	22-25-35
	1A 1B	CFM/SIDE	937		1250		1565		1875		2190		2500		2810	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.8 TP NC + 7	CFM NC	1125 13		1500 23		1875 31		2250 37		2625 40		3000 41		3375 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 15 3.75 SQ. FT.	4B 4C	CFM/SIDE	446	117	594	156	742	195	891	234	1039	273	1188	312	1336	351
		THROW, FT.	15-18-25	8-10-13	17-22-30	9-11-15	19-24-34	10-12-17	22-26-36	11-13-18	22-30-39	12-14-19	24-30-42	12-15-22	25-32-44	13-16-22
	4E	CFM/SIDE	306	258	408	344	510	430	612	516	714	602	816	688	918	775
		THROW, FT.	14-17-24	13-16-22	16-19-28	15-18-25	18-22-32	17-20-29	19-23-34	18-22-32	22-25-36	19-23-34	22-26-39	22-25-36	24-29-41	22-28-38
	3A1	CFM/SIDE	504	117	672	156	840	195	1008	234	1176	273	1344	312	1512	351
		THROW, FT.	16-19-28	8-10-13	18-22-32	9-11-15	20-25-36	10-12-17	22-30-39	11-13-18	23-30-42	12-14-19	25-32-44	12-15-22	28-34-47	13-16-22
	2A 2B	CFM/SIDE	562		750		937		1125		1312		1500		1682	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	2C 2D 2E 2F	CFM/SIDE	890	234	1188	312	1485	390	1782	468	2079	546	2376	624	2873	702
		THROW, FT.	19-24-33	12-15-20	22-28-33	14-17-23	25-32-43	16-19-26	28-34-46	17-22-29	30-36-50	18-22-31	32-39-53	19-24-33	34-41-57	22-25-35
	1A 1B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	20-25-35		23-29-40		26-32-45		28-35-49		31-38-52		33-40-57		35-43-60	
	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	785 14		1050 21		1310 27		1575 32		1840 36		2100 40		2360 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 18 2.625 SQ. FT.	4B 4C	CFM/SIDE	225	169	300	225	375	280	450	337	526	394	600	450	674	506
		THROW, FT.	11-13-18	9-11-15	13-15-22	10-12-17	15-17-24	11-14-19	16-18-27	12-15-22	17-19-28	13-16-22	18-22-30	14-17-24	19-22-32	15-18-25
	3A1	CFM/SIDE	309	169	412	225	514	281	619	337	723	394	825	450	927	506
		THROW, FT.	14-17-24	9-11-15	16-19-28	10-12-17	18-22-32	11-14-19	19-23-34	12-15-22	22-25-36	13-16-22	22-26-39	14-17-24	24-29-41	15-18-25
	3A2	CFM/SIDE	279	230	372	306	464	382	557	460	652	535	744	612	836	688
		THROW, FT.	14-17-24	10-12-17	16-19-28	11-14-19	18-22-32	12-16-22	19-23-34	13-17-23	22-25-36	14-18-25	22-26-39	15-19-26	24-29-41	16-22-29
	2A 2B	CFM/SIDE	393		525		655		787		920		1050		1180	
		THROW, FT.	15-18-25		17-22-30		19-24-31		22-26-36		22-28-39		24-30-42		25-32-44	
	2C 2D 2E 2F	CFM/SIDE	450	338	600	450	750	560	900	675	1060	790	1200	900	1350	1010
		THROW, FT.	15-18-25	13-16-22	17-22-30	15-18-25	19-24-31	17-20-29	22-26-36	18-22-32	22-28-39	19-23-34	24-30-42	22-25-36	25-32-44	22-28-38
	1A 1B	CFM/SIDE	787		1050		1310		1575		1840		2100		2360	
		THROW, FT.	18-22-32		22-25-36		24-29-41		26-32-44		28-34-47		30-36-50		32-38-53	
	RETURN FACTORS —SP=2.5 TP NC + 6	CFM NC	900 15		1200 22		1500 28		1800 33		2100 37		2400 40		2700 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 18 3.0 SQ. FT.	4B 4C	CFM/SIDE	281	169	375	225	469	281	563	337	656	394	750	450	844	506
		THROW, FT.	14-17-24	9-11-15	16-19-28	10-12-17	18-22-32	11-14-19	19-23-34	12-15-22	22-25-36	13-16-22	22-26-39	14-17-24	24-29-41	15-18-25
	4E	CFM/SIDE	225	225	300	300	375	375	450	450	525	525	600	600	675	675
		THROW, FT.	13-16-22	13-16-22	15-18-25	15-18-25	17-20-29	17-20-29	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-28-38	22-28-38
	3A1	CFM/SIDE	366	169	487	225	609	281	731	337	853	394	975	450	1098	506
		THROW, FT.	15-18-25	9-11-15	17-22-30	10-12-17	19-24-34	11-14-19	22-26-36	12-15-22	22-28-39	13-16-22	24-30-42	14-17-24	25-32-44	15-18-25
	3A2	CFM/SIDE	300	300	400	400	500	500	600	600	700	700	800	800	900	900
		THROW, FT.	14-17-24	11-13-18	16-19-28	13-15-22	18-22-32	15-17-24	19-23-34	16-18-26	22-25-36	17-19-28	22-26-39	18-22-30	24-29-41	19-22-32
	2A 2B	CFM/SIDE	450		600		750		900		1050		1200		1350	
		THROW, FT.	15-18-25		17-22-30		19-24-34		22-26-36		22-28-39		24-30-42		25-32-44	
	2C 2D 2E 2F	CFM/SIDE	562	338	750	450	938	562	1125	675	1313	787	1500	900	1688	1012
		THROW, FT.	16-19-28	13-16-22	18-22-32	15-18-25	20-25-36	17-20-29	22-28-39	18-22-32	23-30-42	19-23-34	25-32-44	22-25-36	28-34-47	22-28-38
	1A 1B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	1125 15		1500 23		1875 29		2250 34		2625 38		3000 42		3375 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 18 3.75 SQ. FT.	4B 4C	CFM/SIDE	394	169	525	225	657	281	788	337	918	394	1050	450	1181	506
		THROW, FT.	15-18-25	9-11-15	17-22-30	10-12-17	19-24-34	11-14-19	22-26-36	12-15-22	22-28-39	13-16-22	24-30-42	14-17-24	25-32-44	15-18-25
	4E	CFM/SIDE	281	281	375	375	469	469	563	563	657	657	750	750	845	845
		THROW, FT.	14-17-24	14-17-24	16-19-28	16-19-28	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-26-39	22-26-39	24-29-41	24-29-41
	3A1	CFM/SIDE	478	169	637	225	797	281	956	337	1115	394	1275	450	1434	506
		THROW, FT.	16-19-28	9-11-15	18-22-32	10-12-17	20-25-36	11-14-19	22-28-39	12-15-22	23-30-42	13-16-22	25-32-44	14-17-24	28-34-47	15-18-25
	3A2	CFM/SIDE	469	327	625	437	782	546	937	656	1093	766	1250	875	1406	984
		THROW, FT.	14-17-24	12-15-20	16-19-28	14-17-23	18-22-32	16-19-26	19-23-34	17-22-29	22-25-36	18-22-31	22-26-39	19-24-33	24-29-41	22-25-35
	2A 2B	CFM/SIDE	562		750		937		1125		1312		1500		1687	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	2C 2D 2E 2F	CFM/SIDE	787	337	1050	450	1313	562	1575	675	1838	787	2100	900	2363	1012
		THROW, FT.	18-22-32	13-16-22	22-25-36	15-18-25	24-29-41	17-20-29	26-32-44	18-22-32	28-34-47	19-23-34	30-36-50	22-25-36	32-38-53	22-28-38
	1A 1B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	20-25-35		23-29-39		26-33-45		29-35-49		31-38-52		33-40-57		35-43-60	
	RETURN FACTORS —SP=3.6 TP NC + 8	CFM NC	1350 16		1800 24		2250 30		2700 35		3150 39		3600 42		4050 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 18 4.5 SQ. FT.	4B 4C	CFM/SIDE	506	169	675	225	844	281	1013	337	1181	394	1350	450	1519	506
		THROW, FT.	16-19-28	9-11-15	18-22-32	10-12-17	22-25-36	11-14-19	22-28-39	12-15-22	23-30-42	13-16-22	25-32-44	14-17-24	28-34-47	15-18-25
	4E	CFM/SIDE	339	339	452	452	565	565	678	678	791	791	904	904	1020	1020
		THROW, FT.	14-17-24	14-17-24	16-19-28	16-19-28	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-26-39	22-26-39	24-29-41	24-29-41
	3A1	CFM/SIDE	591	169	787	225	984	281	1181	337	1378	394	1575	450	1772	506
		THROW, FT.	17-22-30	9-11-15	20-24-34	10-12-17	23-28-39	11-14-19	24-30-41	12-15-22	26-32-44	13-16-22	29-35-47	14-17-24	31-37-50	15-18-25
	3B	CFM/SIDE	675	337	900	450	1125	562	1350	675	1575	787	1800	900	2025	1012
		THROW, FT.	13-16-22	13-16-22	15-18-25	15-18-25	17-20-29	17-20-29	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-28-38	22-28-38
	2A 2B	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
	2C 2D 2E 2F	CFM/SIDE	1010	337	1350	450	1688	562	2025	675	2363	787	2700	900	3038	1012
		THROW, FT.	20-25-35	13-16-22	23-29-40	15-18-25	26-33-45	17-20-29	29-35-49	18-22-32	31-38-52	19-23-34	33-40-57	22-25-36	35-43-60	22-28-38
	1A 1B	CFM/SIDE	1350		1800		2250		2700		3150		3600		4050	
		THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
	RETURN FACTORS —SP=2.1 TP NC + 7	CFM NC	1050 15		1400 22		1750 28		2100 33		2450 37		2800 41		3150 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 21 3.5 SQ. FT.	4B 4C	CFM/SIDE	295	230	394	306	493	382	590	460	690	535	788	612	887	688
		THROW, FT.	12-15-20	10-12-17	14-17-23	11-14-19	16-19-26	12-16-22	17-22-29	13-17-23	18-22-31	14-18-25	19-24-33	15-19-26	22-25-35	16-22-29
	3A1	CFM/SIDE	410	230	547	306	684	382	820	460	957	535	1094	612	1231	688
		THROW, FT.	15-18-25	10-12-17	17-22-30	11-14-19	19-24-34	12-16-22	22-26-36	13-17-23	22-28-39	14-18-25	24-30-42	15-19-26	25-32-44	16-22-29
	3A2	CFM/SIDE	375	300	500	400	625	500	750	600	875	700	1000	800	1125	900
		THROW, FT.	15-18-25	11-13-18	17-22-30	13-15-22	19-24-34	15-17-24	22-26-36	16-18-26	22-28-39	17-19-28	24-30-42	18-22-30	25-32-44	19-22-32
	2A 2B	CFM/SIDE	525		700		875		1050		1225		1400		1575	
		THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
	2C 2D 2E 2F	CFM/SIDE	591	459	788	612	986	764	1180	920	1380	1070	1576	1224	1774	1376
		THROW, FT.	17-22-30	14-17-24	20-24-34	16-19-28	23-28-39	18-22-32	24-30-41	19-23-34	26-32-44	22-25-36	29-35-47	22-26-39	31-37-50	24-29-41
	1A 1B	CFM/SIDE	1050		1400		1750		2100		2450		2800		3150	
		THROW, FT.	20-25-35		23-29-40		26-33-45		29-35-49		31-38-52		33-40-51		35-43-60	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1310 16		1750 23		2185 29		2625 34		3060 38		3500 41		3935 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 21 4.375 SQ. FT.	4B 4C	CFM/SIDE	425	230	569	306	710	382	852	460	995	535	1138	612	1279	688
		THROW, FT.	15-18-25	10-12-17	17-22-30	11-14-19	19-24-34	12-16-22	22-26-36	13-17-23	22-28-39	14-18-25	24-30-42	15-19-26	25-32-44	16-22-29
	4E	CFM/SIDE	360	295	480	394	600	492	720	591	840	690	960	788	1080	887
		THROW, FT.	14-17-24	14-17-24	16-19-28	16-19-28	18-22-32	18-22-32	19-23-34	19-23-34	22-25-36	22-25-36	22-26-39	22-26-39	24-29-41	24-29-41
	3A1	CFM/SIDE	540	230	722	306	901	382	1082	460	1262	535	1444	612	1623	688
		THROW, FT.	16-19-28	10-12-17	18-22-32	11-14-19	20-25-36	12-16-22	22-28-39	13-17-23	23-30-42	14-18-25	25-32-44	15-19-26	28-34-47	16-22-29
	3A2	CFM/SIDE	468	422	625	562	782	701	937	844	1093	983	1250	1125	1406	1264
		THROW, FT.	15-18-25	12-15-20	17-22-30	14-17-23	19-24-34	16-19-26	22-26-36	17-22-29	22-28-39	18-22-31	24-30-42	19-24-33	25-32-44	22-25-36
	2A 2B	CFM/SIDE	655		875		1092		1312		1530		1750		1968	
		THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
	2C 2D 2E 2F	CFM/SIDE	853	457	1138	612	1421	764	1705	920	1990	1070	2276	1224	2559	1376
		THROW, FT.	18-22-32	14-17-24	22-25-36	16-19-28	24-29-41	18-22-32	26-32-44	19-23-34	28-34-47	22-25-36	30-36-50	22-26-39	32-38-53	24-29-41
	1A 1B	CFM/SIDE	1310		1750		2185		2625		3060		3500		3935	
		THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	1575 16		2100 24		2625 30		3150 34		3675 38		4200 42		4725 45	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 21 5.25 SQ. FT.	4B 4C	CFM/SIDE	558	230	744	306	930	382	1115	460	1306	535	1488	612	1674	688
		THROW, FT.	16-19-28	10-12-17	18-22-32	11-14-19	20-25-36	12-16-22	22-28-39	13-17-23	23-30-42	14-18-25	25-32-44	15-19-26	28-34-47	16-22-29
	4E	CFM/SIDE	427	360	568	480	710	600	852	720	945	840	1135	960	1280	1080
		THROW, FT.	15-18-25	15-18-25	17-22-30	17-22-30	19-24-34	19-24-34	22-26-36	22-26-36	22-28-39	22-28-39	24-30-42	24-30-42	25-32-44	25-32-44
	3A1	CFM/SIDE	672	230	897	306	1121	382	1345	460	1570	535	1794	612	2018	688
		THROW, FT.	17-22-30	10-12-17	20-24-34	11-14-19	23-28-39	12-16-22	24-30-41	13-17-23	26-32-44	14-18-25	29-35-47	15-19-26	31-37-50	16-22-29
	3A2	CFM/SIDE	675	450	900	600	1125	750	1350	900	1575	1050	1800	1200	2025	1350
		THROW, FT.	15-18-25	13-16-22	17-22-30	15-18-25	19-24-34	17-20-29	22-26-36	18-22-32	22-28-39	19-23-34	24-30-42	22-25-36	25-32-44	22-28-38
	2A 2B	CFM/SIDE	787		1050		1312		1575		1837		2100		2362	
		THROW, FT.	18-22-32		22-25-36		24-29-41		26-32-44		28-34-47		30-36-50		32-38-53	
	2C 2D 2E 2F	CFM/SIDE	1115	460	1488	612	1861	764	2230	920	2605	1070	2976	1224	3349	1376
		THROW, FT.	20-25-35	14-17-24	23-29-40	16-19-28	26-33-45	18-22-32	29-35-49	19-23-34	31-38-52	22-25-36	33-40-57	22-26-39	35-43-60	24-29-41
	1A 1B	CFM/SIDE	1575		2100		2625		3150		3675		4200		4725	
		THROW, FT.	24-30-41		23-34-47		32-39-53		34-41-58		36-44-62		39-47-67		41-50-72	
	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1500 17		2000 25		2500 30		3000 35		3500 39		4000 43		4500 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 24 5.0 SQ. FT.	4B 4C	CFM/SIDE	450	300	600	400	750	500	900	600	1050	700	1200	800	1350	900
		THROW, FT.	15-18-25	11-13-18	17-22-30	13-15-22	19-24-34	15-17-24	22-26-36	16-18-26	22-28-39	17-19-28	24-30-42	18-22-30	25-32-44	19-22-32
	4E	CFM/SIDE	375	375	500	500	625	625	750	750	875	875	1000	1000	1125	1125
		THROW, FT.	15-18-25	15-18-25	17-22-30	17-22-30	19-24-34	19-24-34	22-26-36	22-26-36	22-28-39	22-28-39	24-30-42	24-30-42	25-32-44	25-32-44
	3A1	CFM/SIDE	600	300	800	400	1000	500	1200	600	1400	700	1600	800	1800	900
		THROW, FT.	17-22-30	11-13-18	20-24-34	13-15-22	23-28-39	15-17-24	24-30-41	16-18-26	26-32-44	17-19-28	29-35-47	18-22-30	31-37-50	19-22-32
	3A2	CFM/SIDE	515	470	687	625	859	782	1031	937	1203	1093	1375	1250	1548	1406
		THROW, FT.	18-22-32	15-18-25	22-25-36	17-22-30	24-29-41	19-24-34	26-32-44	22-26-36	28-34-47	22-28-39	30-36-50	24-30-42	32-38-53	25-32-44
	2A 2B	CFM/SIDE	750		1000		1250		1500		1750		2000		2250	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	900	600	1200	800	1500	1000	1800	1200	2100	1400	2400	1600	2700	1800
		THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
	1A 1B	CFM/SIDE	1500		2000		2500		3000		3500		4000		4500	
		THROW, FT.	35-43-61		41-49-69		44-55-77		49-59-86		53-65-90		56-69-96		60-72-103	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.3 TP NC + 8	CFM NC	1800 18		2400 25		3000 31		3600 36		4200 40		4800 43		5400 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 24 6.0 SQ. FT.	4B 4C	CFM/SIDE	600	300	800	400	1000	500	1200	600	1400	700	1600	800	1800	900
		THROW, FT.	17-22-30	11-13-18	20-24-34	13-15-22	23-28-39	15-17-24	24-30-41	16-18-26	26-32-44	17-19-28	29-35-47	18-22-30	31-37-50	19-22-32
	4E	CFM/SIDE	450	450	600	600	750	750	900	900	1050	1050	1200	1200	1350	1350
		THROW, FT.	15-18-25	15-18-25	17-22-30	17-22-30	19-24-34	19-24-34	22-26-36	22-26-36	22-28-39	22-28-39	24-30-42	24-30-42	25-32-41	25-32-44
	3A1	CFM/SIDE	750	300	1000	400	1250	500	1500	600	1750	700	2000	800	2250	900
		THROW, FT.	18-22-32	11-13-18	22-25-36	13-15-22	24-29-41	15-17-24	26-32-44	16-18-26	28-34-47	17-19-28	30-36-50	18-22-30	32-38-53	19-22-32
	3A2	CFM/SIDE	676	562	900	750	1125	937	1350	1125	1575	1312	1800	1500	2025	1687
		THROW, FT.	16-19-28	14-17-24	18-22-32	16-19-28	20-25-36	18-22-32	22-28-39	19-23-34	23-30-42	22-25-36	25-32-44	22-26-39	28-34-47	24-29-41
	2A 2B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	1200	600	1600	800	2000	1000	2400	1200	2800	1400	3200	1600	3600	1800
		THROW, FT.	22-25-37	15-18-25	24-30-42	17-22-30	28-34-48	19-24-34	30-36-51	22-26-36	32-39-56	22-28-39	34-42-58	24-30-42	37-44-63	25-32-44
	1A 1B	CFM/SIDE	1800		2400		3000		3600		4200		4800		5400	
		THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-67		41-50-72	
	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19		3000 26		3750 32		4500 37		5250 41		6000 44		6750 47	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 30 7.5 SQ. FT.	4B 4C	CFM/SIDE	657	468	875	625	1093	782	1313	937	1532	1093	1750	1250	1969	1406
		THROW, FT.	17-22-30	12-15-20	20-24-34	14-17-23	23-28-39	16-19-26	24-30-41	17-22-29	26-32-44	18-22-31	29-35-47	19-24-33	31-37-50	22-25-35
	3A1	CFM/SIDE	890	468	1187	625	1484	782	1781	937	2078	1093	2375	1250	2672	1406
		THROW, FT.	19-24-33	12-15-20	22-28-38	14-17-23	25-32-43	16-19-26	28-34-46	17-22-29	30-36-50	18-22-31	32-39-53	19-24-33	34-41-57	22-25-35
	3A2	CFM/SIDE	787	675	1050	900	1312	1125	1575	1350	1837	1575	2100	1800	2362	2025
		THROW, FT.	18-22-32	13-16-22	22-25-36	15-18-25	24-29-41	17-20-29	26-32-44	18-22-32	28-34-47	19-23-34	30-36-50	22-25-36	32-38-53	22-28-38
	2A 2B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	20-25-35		23-29-40		26-33-45		29-35-49		31-38-52		33-40-57		35-43-60	
	2C 2D 2E 2F	CFM/SIDE	1312	938	1750	1250	2188	1562	2625	1875	3063	2187	3500	2500	3938	2812
		THROW, FT.	22-25-37	17-22-30	24-30-42	20-24-34	28-34-48	23-28-39	30-36-51	24-30-41	32-39-56	26-32-44	34-42-58	29-35-47	37-44-63	31-37-50
	1A 1B	CFM/SIDE	2250		3000		3750		4500		5250		6000		6750	
		THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-67		41-50-72	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

CFM - cubic feet per minute
VP - velocity pressure - inches w.g.
TP - total pressure - inches w.g.
T - throw in feet
NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.
Neck Velocity - feet per minute

Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 30% with a downward projection of approximately 30 degrees.
2. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
3. Correction factors for round inlets - see next page.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA CORRECTIONS:

MODEL 6400

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 2

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D50).

- NC = 23 + 7 = 30
- Total Pressure = .08 x 1.65 = 0.132
- Throw = 15 x 1.15 = 17.25 feet @ 50 fpm terminal velocity.

TABLE 2 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D50).

- Return NC = 28 + 4 = 32.
- Return negative SP = 1.3 x (– .116) = – .151.

RECOMMENDED MAXIMUM AIRFLOW – TABLE 3

Diffuser mounting height and air temperature differential (ΔT) are both to be considered when selecting diffusers. As air travels from a diffuser, room air is entrained into the supply air stream and the delivery pattern thickens.
If the volume or throw requirement is too great, the lower part of the supply air stream can intrude into the occupied zone causing objectionable drafts. Consult Table 3 to verify selection.

TABLE 3 Maximum Recommended Airflow

CEILING HEIGHT (ft.)	MAX. AIRFLOW PER DIFFUSER (CFM)				MAX. REC. COOLING TEMP. DIFFERENTIAL ΔT
	4-way	3-way	2-way (2A, 2B)	1-way & 2S	
7	400	300	200	100	15°F
8	600	450	300	150	20°F
9	1200	900	600	300	25°F
10	1800	1350	900	450	25°F
12	3200	2400	1600	800	30°F
14	4800	3600	2400	1200	30°F
16	6000	4500	3000	1500	30°F

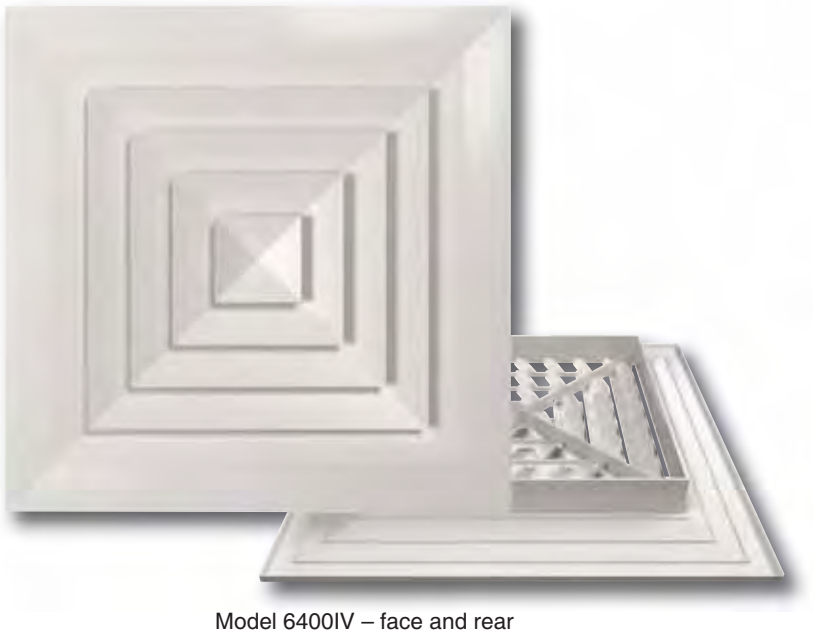
SQUARE AND RECTANGULAR INDUCTION VANE CEILING DIFFUSERS

- INDUCTION VANES
- LOUVERED FACE
- EXTRA HIGH CAPACITY
- 1, 2, 3 OR 4-WAY BLOW PATTERN
- SQUARE, RECTANGULAR OR ROUND NECKS
- EXTRUDED ALUMINUM

Extruded Aluminum Model:

6400IV Fixed Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 6400IV – face and rear

Model Series 6400IV Induction Vane Pattern Ceiling Diffuser has been specially designed for optimum performance in both heating and cooling applications. The 6400IV is a high capacity, high induction, louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops.

The diffuser features aerodynamically designed straight angled louvers on 1 1/2" (38) centers. The induction vanes, mounted on the back of each louver are also spaced on 1 1/2" (38) centers and angled at 45 degrees. Vane sets on adjacent parallel louvers run in opposite directions and cause primary air to emerge from each louver at alternating angles. The induction vanes create counter-flowing jets of turbulent discharge air that promote high induction rates and rapid temperature equalization. This high induction characteristic is ideal for VAV applications involving both high cooling and heating loads, producing superior room air mixing while minimizing the potential for uncomfortable drafts in the occupied space.

Available in a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Pan Snap-in). These models therefore offer a great degree of design flexibility.

STANDARD FEATURES:

• Spring loaded core. It is removable without the use of tools.

• High neck collars for solid connection.

• Secure core attachment.

• A wide variety of frame styles to suit most ceiling applications.

• Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).

• Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D68).

• Clean lines with no unsightly visible screws.

• Opposed blade damper with screwdriver slot operator for square and rectangular necks.

CONSTRUCTION MATERIAL:

Extruded aluminum.

AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with OBD.

Types L, SP, TL, M and F: see next page.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

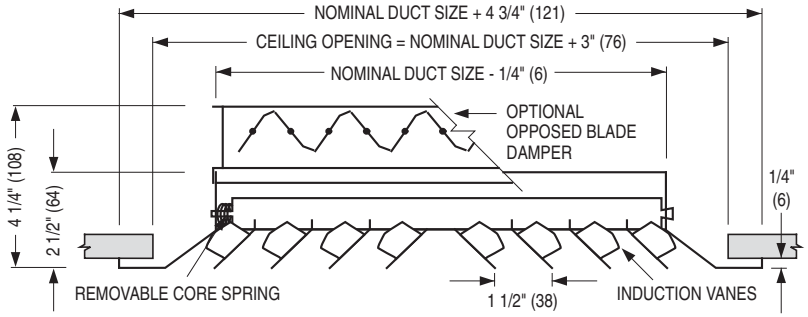
EX	External Foil-Back Insulation (installed) – R-4.2.
MIB	Molded Insulation Blanket R-6.0.
SR	Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

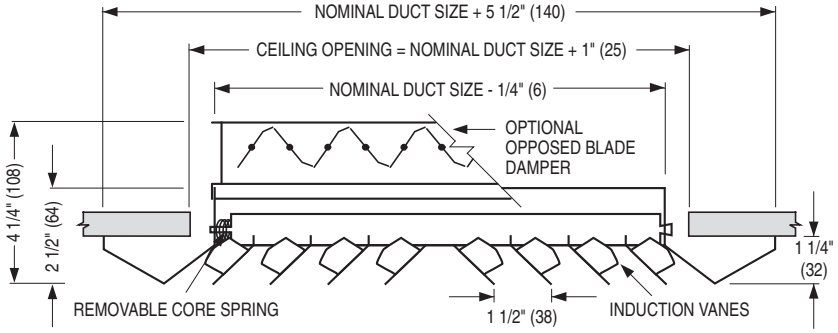
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6400

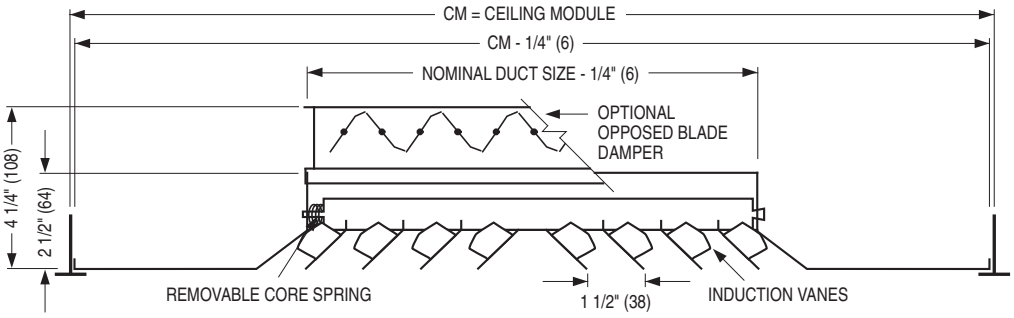
Type S
Surface Mount
Frame



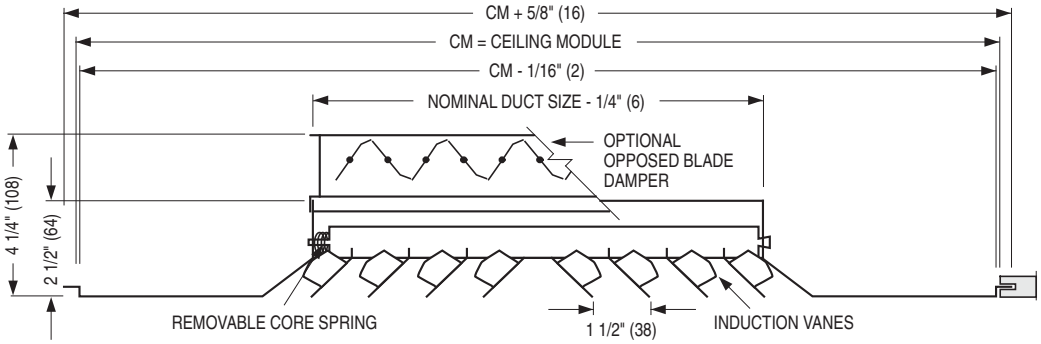
Type B
Beveled Drop
Face Frame



Type L
Lay-In
T-Bar Frame



Type SP
Spline Frame



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.
(SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

Extended Panel Diffusers
Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

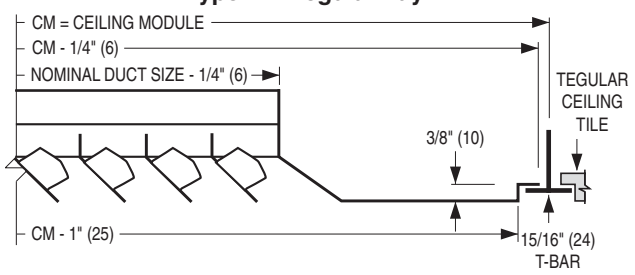
Table 1

Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

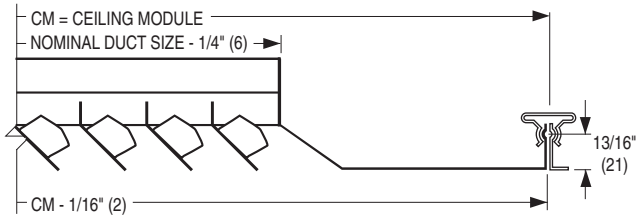
DIMENSIONAL DATA AND FRAME TYPES:

MODEL SERIES 6400IV

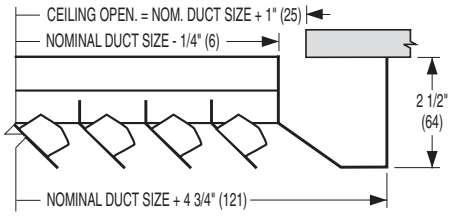
Type TL Tegular Lay-in



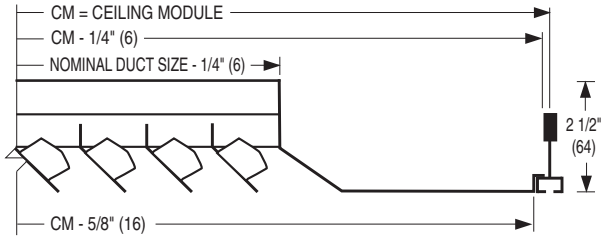
Type M Metal Pan (Snap-in)



Type D Deep Drop Face



Type F Fineline®

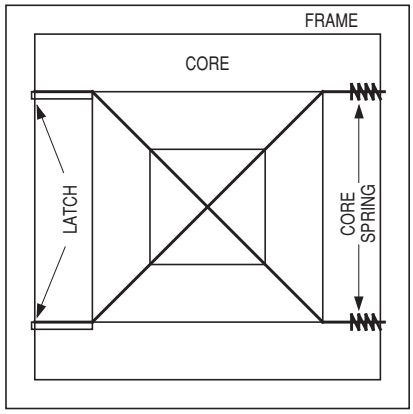


SPRING LOADED REMOVABLE CORE

- Standard feature of **Model 6400IV.**
- Engineered design permits fast and easy removal for speedy "through the neck" installation in hard duct drops and for access to optional air balancing devices.
- No tools required.
- No unsightly, retaining screws visible to spoil smooth aesthetic lines.
- Latching mechanism ensures core remains securely in place.

HOW TO REMOVE CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core sideways against the core springs, pull down the core slightly and remove. Reverse procedure to re-install.



STANDARD CORE STYLES:

MODEL 6400IV

Type 1S

Type 2S

Type 2G

Type 3A

Type 4A

Contact factory for special core configurations.

	SQUARE	RECTANGULAR	CORE	SIZES AVAILABLE MINIMUM	SIZES AVAILABLE MAXIMUM
1-WAY	1S	1A, 1B	1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY	2S	2A, 2B	2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
2-WAY CORNER	2G	2C, 2D, 2E, 2F	2G 2C 2D 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
3-WAY	3A, 3H	3A1 (A is greater than B), 3A2 (B is less than A but greater than A/2), 3B (B is equal to A/2), 3C, 3E (B is less than A/2)	3A 3A1 3A2 3B 3C 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 9 x 6 (229 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 33 (914 x 838) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
4-WAY	4A	4B, 4C, 4E	4A 4B 4C 4E	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762) 36 x 27 (914 x 686)

Dimensions are in inches (mm).

Notes:

1. Duct sizes are available in 3" (76) increments.
2. Specify the "x" dimension for 3C and 4E patterns. These are non-standard, custom fabrication core styles.
3. Patterns are shown in plan view (looking down into inlet).

ADPI – AIR DIFFUSION PERFORMANCE INDEX ANALYSIS

ROOM TEMPERATURE/VELOCITY TRAVERSE

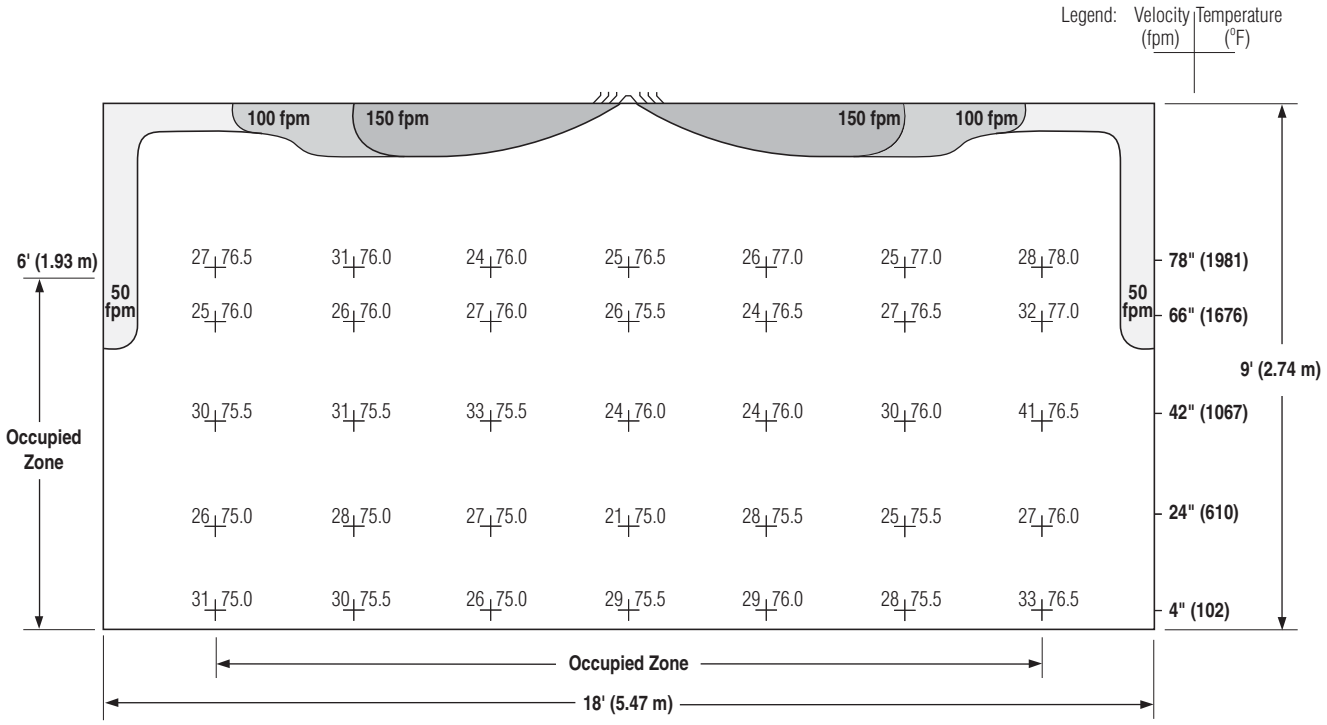


Figure 1. ADPI Analysis.

Air Diffusion Performance Index (ADPI) is a single number rating of air diffuser performance when in cooling mode. ADPI relates the space conditions of local traverse temperatures and velocities to occupants' thermal comfort.

Extensive studies have determined relationships between local temperatures, velocities and comfort reaction. On the basis of the temperature and velocity at a specific point, an effective draft temperature can be calculated for that location.

Equation for Effective Draft Temperature:

$$ø = (t_x - t_c) - 0.07\ (V_x - 30)$$

where: ø = effective draft temperature

t_x = local air temperature (°F).

t_c = ambient temperature (setpoint, °F).

V_x = local air velocity (fpm).

Research has shown that a high percentage of people are comfortable when the effective draft temperature is between -3 and +2 at a velocity less than 70 fpm. ADPI is defined as the percentage of locations in the occupied space, which meet this comfort criteria and therefore represents the overall comfort level of an occupied space. The higher the ADPI number, the higher the comfort level in the space. For most commercial applications including offices, ADPI values of 80 or higher are desired.

ADPI values vary as the ratio of the throw (T) to the characteristic length (L) vary, for a particular diffuser and flow rate. Throw values (T) at 50 fpm terminal velocity are used for diffusers in most commercial and institutional buildings. Length (L) is measured from the center of the diffuser to the closest wall, or to the meeting point with the throw of another diffuser.

Ranges of T/L to yield desired values of the ADPI for various types of supply air outlet are provided in the Space Air Diffusion Chapter in the ASHRAE Fundamentals Handbook. Using louvered ceiling diffusers, for an ADPI greater than 80, the suggested range of T_{50}/L is 1.0 – 3.4.

These T/L guideline values were developed from testing a particular air outlets' ADPI at several cooling room loads via the method reported in ANSI/ASHRAE Standard 113 1990, "Method of Testing for Room Air Diffusion." The ADPI T/L technique uses isothermal throw data as cataloged and determined under ANSI/ASHRAE Standard 70 "Method of Testing for Rating the Performance of Air Outlets and Inlets."

Figure 1 is an example in a single plane of a temperature and velocity traverse to determine the ADPI for a space, based upon the method prescribed in ANSI/ASHRAE Standard 113.

Notes on Figure 1.

Test Room Size: 18' x 24' x 9'

Diffuser: 6400IV, 12" x 12" neck, 4-way pattern.

Supply Air: 400 cfm @ 56°F

Setpoint: 76°F (ΔT = 20°F)

Cooling Load: 20.1 Btuh/sq.ft.

Throw: 13 ft. (@50 fpm terminal velocity)

T_{50}/L = 1.45

ADPI = 100

APPLICATION AND AIR PATTERN GUIDELINES

The use of overhead ceiling diffusers is currently far and away the most popular and economical way to introduce conditioned air into an occupied space. Commercial buildings require cooling a predominant amount of the time and overhead cooling is a well understood science. Most ceiling diffusers perform extremely well, even in variable volume applications during the cooling mode.

Ceiling diffusers take advantage of a phenomenon known as the coanda or ceiling effect. A low pressure zone is developed at the ceiling and the air projection tends to stick to or hug the ceiling as its travels away from the diffuser. This characteristic of non-free air jets usually enables the ventilation of conditioned spaces without undesirable cold air drafts dropping into the occupied zone during the cooling mode. High levels of occupant comfort and satisfaction can therefore be achieved.

Conversely, overhead heating which may be required intermittently, particularly in the perimeter of a building is usually more of a compromise. The natural buoyancy of warm heating air tends to keep the air pattern up at or near the ceiling. If the air is too warm, stratification and short circuiting may result, where the air does not have an opportunity to mix well with the room air and the warmth therefore does not reach the occupied space. ASHRAE recommends a maximum temperature differential of 15°F ΔT for comfort heating.

Figure 2 illustrates a traditional pattern diffuser (e.g. Nailor Model 6400) with angled louvers, developed for high capacity at low sound levels. A distinct directional (4-way) air pattern is produced with a partial downblow component, but at low flows as typically encountered in VAV systems, the air may fall away from the ceiling or dump, producing drafts in the occupied space during cooling. Air emanates from this diffuser design at an angle of approximately 20 degrees down from the ceiling. It is therefore not recommended for ceiling heights below 10' 6" due to the possibility of excessive velocities in the occupied space. Figure 3 illustrates the currently popular pattern diffuser, which features the addition of a horizontal lip on the leading edge of the louvers (e.g. Nailor Models 6200 and 6500). This feature was added by most manufacturers to help maintain good ceiling effect at low flows during cooling when VAV systems became predominant. However this design increases the risk of stratification and short circuiting during the heating mode.

The Nailor 6400IV Induction Vane Diffuser has been designed to optimize performance in both heating and cooling applications. Figure 4 illustrates a typical isovel envelope for the Nailor 6400IV diffuser. The depth of the envelope is somewhere between the aforementioned diffuser designs. Induction vanes increase turbulence as the conditioned air enters the space, resulting in an increase in room air induction and more rapid temperature equalization. Notice that the induction vanes also produce an increase in the spread of the air stream. This produces a more evenly distributed air pattern with shorter throws. Diffuser placement flexibility is therefore increased and the potential for opposing diffuser air streams colliding and entering the occupied space is reduced.

The Nailor 6400IV diffuser is therefore the perfect choice for commercial applications where comfort cooling and heating is desired.

6400IV Diffuser Air Pattern Smoke Test

The photo in Figure 5 illustrates how the induction vanes on a 4-way blow pattern generate turbulence and increase room air induction at the point of discharge. Rapid mixing of primary and room air and temperature equalization is achieved; resulting in gentle, draftless air movement in the occupied space, ensuring a high degree of occupant comfort.

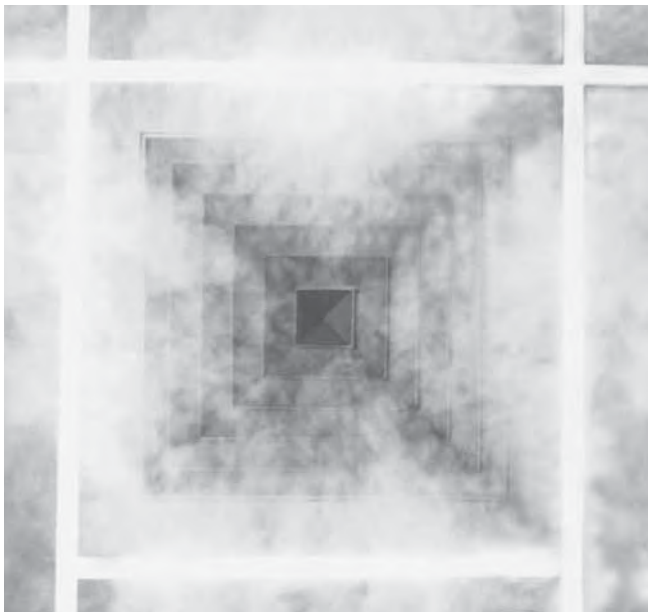


Figure 5. Laboratory Smoke Test.
6400IV Induction Vane Diffuser, 4-way Blow Pattern.

Figure 2.
Traditional Pattern Diffuser.

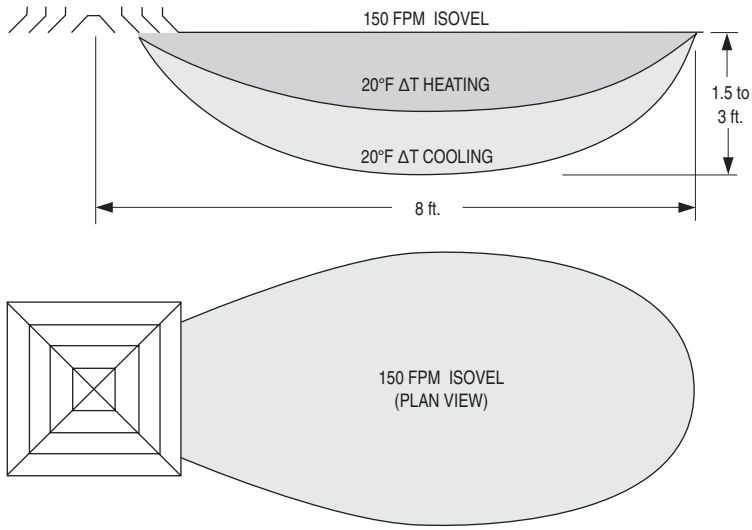


Figure 3.
Pattern Diffuser with Horizontal Lip on Louvers.

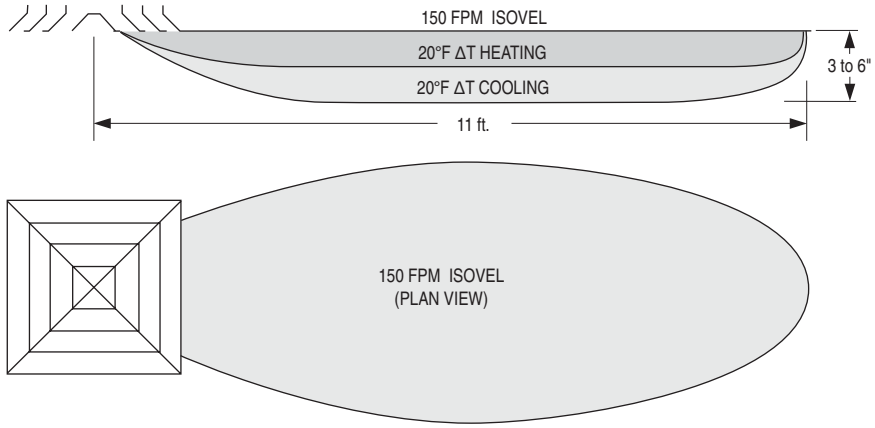
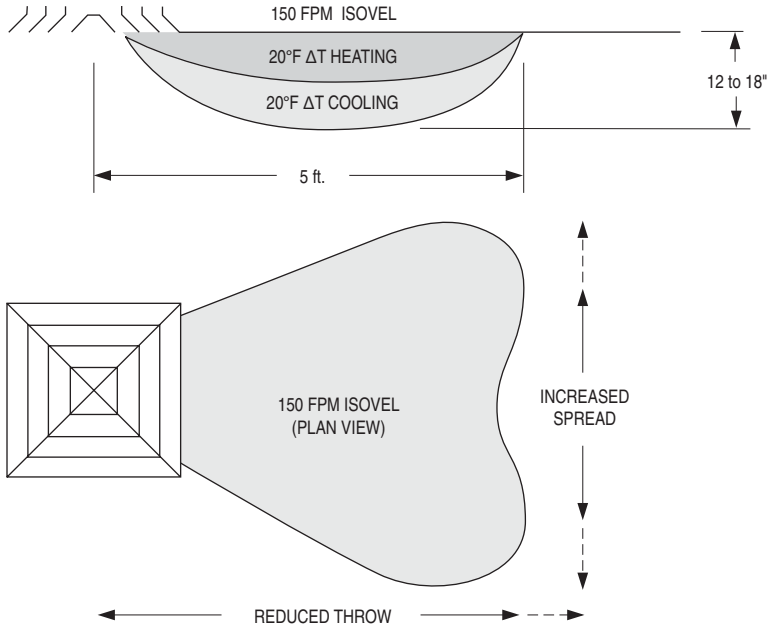


Figure 4.
6400IV Series
Induction Vane Diffuser



Note:
These illustrations are provided for guidance purposes in order to illustrate the relative difference between pattern ceiling diffusers with and without induction vanes. The 150 fpm throw isovel for a 12" x 12" neck @ 400 cfm is illustrated. A 4-way diffuser is shown, but the airstream projection is only shown in one direction for reasons of space and is the same for the other three sides.

PERFORMANCE DATA:

MODEL 6400IV • SQUARE NECK

Core Style 4A • 4-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	1-2-2	2-2-4	2-3-5	3-5-7	3-6-8	4-6-10	4-7-12
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-2-3	2-3-5	3-5-7	4-5-9	4-6-11	5-8-13	6-9-16
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-2-4	3-4-7	4-5-10	5-7-13	6-8-16	7-10-19	8-11-22
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	2-3-5	3-5-8	4-6-12	6-8-15	7-10-19	8-12-23	9-14-26
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-3-6	4-6-10	6-8-15	7-10-19	9-12-24	10-15-28	12-17-33
	Noise Criteria	—	—	—	16	23	30	35
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	31	36
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-12	7-10-18	9-12-24	10-15-29	12-18-35	14-21-41
	Noise Criteria	—	—	12	19	26	32	37

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance.
   Correction factors for addition of a neck mounted opposed blade damper (fully open):
   Total Pressure: Multiply catalog value by x 1.20.
   Noise Criteria: Add + 4 to catalog value.
4. Correction factor for round inlets, see next page.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODEL 6400IV • SQUARE NECK

Core Style 3A • 3-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw, Side A	1-1-2 (6)	2-2-4 (13)	2-3-5 (19)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Throw, Side B	2-2-3 (9)	2-3-5 (19)	3-4-6 (28)	3-5-8 (38)	4-5-10 (47)	5-6-12 (56)	5-7-14 (66)
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw, Side A	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11(70)	5-7-13 (84)	6-8-15 (99)
	Throw, Side B	2-2-4 (21)	3-4-7 (43)	4-5-9 (64)	5-7-12 (84)	6-8-15 (105)	7-9-18 (127)	8-11-21 (148)
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw, Side A	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Throw, Side B	2-3-5 (38)	3-5-8 (75)	5-6-12 (113)	6-8-16 (150)	7-10-19 (188)	8-12-23 (225)	10-14-27 (263)
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	4-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-23 (235)	9-14-26 (273)
	Throw, Side B	3-3-6 (59)	4-6-10 (117)	6-8-15 (176)	7-10-20 (234)	9-13-24 (293)	10-15-29 (352)	12-17-34 (410)
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw, Side A	3-3-6 (56)	4-6-10 (113)	6-8-15 (169)	7-10-19 (225)	9-12-24 (281)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	3-4-6 (84)	5-6-12 (169)	6-9-17 (253)	8-12-22 (338)	10-14-28 (422)	12-17-33 (506)	13-20-38 (591)
	Noise Criteria	—	—	—	16	23	30	35

Core Style 2S • 2-way opposite blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-4-7	4-5-10	5-6-12	5-7-14	6-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-18	9-13-24	11-15-30	13-18-36	15-21-42
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-13	7-10-20	9-13-26	11-16-32	13-20-38	15-23-44
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

PERFORMANCE DATA:

MODEL 6400IV • SQUARE NECK

Core Style 2G • 2-way corner blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-5-7	4-5-10	5-6-12	5-7-14	4-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37

Core Style 1S • 1-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-3-4	3-4-7	4-6-10	5-7-13	6-9-18	7-10-20	5-12-23
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-13	7-10-19	8-12-23	10-14-28	11-17-32
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-11	6-8-16	8-11-21	9-13-26	11-16-31	13-18-36
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	5-6-12	6-9-17	8-12-23	10-15-28	12-17-33	14-20-39
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-19	9-13-25	11-16-31	13-19-38	15-22-44
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-14	7-11-20	10-14-27	12-17-33	14-20-40	16-24-46
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

PERFORMANCE DATA:

MODEL 6400IV • RECTANGULAR NECK

Core Style 4B • 4-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.01	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Throw, Side B	1-2-2 (6)	2-2-4 (12)	2-3-5 (18)	3-4-7 (25)	3-5-8 (31)	4-8-10 (37)	4-6-11 (43)
	Noise Criteria	—	—	—	11	22	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-3-4 (19)	2-4-7 (37)	4-5-10 (56)	5-7-12 (75)	6-8-15 (94)	7-10-18 (113)	8-11-21 (131)
	Throw, Side B	1-2-2 (6)	2-2-4 (13)	2-3-5 (18)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Noise Criteria	—	—	—	12	19	25	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (24)	3-4-7 (47)	4-6-11 (70)	5-7-14 (94)	6-9-17 (117)	7-11-20 (141)	8-12-23 (164)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-4 (33)	3-4-8 (65)	4-6-11 (98)	6-8-15 (131)	7-10-18 (165)	8-11-20 (198)	9-13-25 (230)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (48)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	2-3-5 (42)	3-5-8 (85)	5-7-12 (126)	6-8-16 (169)	7-10-19 (211)	8-12-23 (254)	10-14-27 (296)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	15	22	29	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side A	2-3-4 (51)	4-5-9 (103)	5-7-13 (154)	6-9-17 (206)	8-11-21 (258)	9-13-25 (309)	10-15-29 (360)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	16	23	30	34
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (112)	6-9-16 (150)	7-11-20 (187)	9-12-24 (225)	10-14-28 (262)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	5-29-0	10-26-0	3-25-1	8-22-1	1-19-2	6-18-2	11-15-2
	Throw, Side A	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-28 (351)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	3-5-10 (74)	5-7-13 (99)	6-8-16 (124)	7-10-19 (149)	8-11-22 (173)
	Noise Criteria	—	—	—	16	23	30	35
21 x 12	Airflow, CFM	175	350	525	700	875	1050	1225
	Throw, Side A	2-3-5 (53)	4-5-9 (125)	5-7-13 (187)	7-9-18 (250)	8-11-22 (312)	9-13-26 (375)	11-15-30 (437)
	Throw, Side B	2-2-4 (35)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	16	—	16	23	31	36
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side A	3-3-6 (75)	4-6-10 (150)	6-8-15 (225)	7-10-19 (300)	9-12-24 (375)	10-15-28 (450)	12-17-33 (525)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	17	—	17	24	31	36
18 x 15	Airflow, CFM	186	375	563	750	938	1125	1313
	Throw, Side A	2-3-5 (54)	4-5-9 (110)	5-7-12 (164)	6-9-16 (219)	7-10-19 (273)	9-12-24 (328)	10-14-28 (383)
	Throw, Side B	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-11-20 (195)	8-12-22 (234)	9-14-26 (273)
	Noise Criteria	—	16	—	17	24	31	37
21 x 18	Airflow, CFM	263	525	785	1050	1310	1575	1840
	Throw, Side A	3-3-6 (76)	4-6-10 (200)	6-8-15 (225)	7-10-19 (300)	9-12-24 (375)	10-15-28 (450)	12-17-33 (526)
	Throw, Side B	3-3-6 (56)	4-6-10 (112)	6-8-15 (169)	7-10-19 (225)	9-12-24 (280)	10-15-28 (337)	12-17-33 (394)
	Noise Criteria	—	18	13	19	26	33	38
24 x 18	Airflow, CFM	300	600	900	1200	1500	1800	2100
	Throw, Side A	3-4-6 (94)	4-6-11 (187)	6-9-16 (281)	8-11-21 (375)	9-14-26 (469)	11-16-32 (563)	13-19-37 (656)
	Throw, Side B	3-3-6 (56)	4-6-10 (112)	6-8-15 (169)	7-10-19 (225)	9-10-24 (280)	10-15-28 (337)	12-17-33 (394)
	Noise Criteria	—	—	14	20	27	34	39

For performance notes, see page D79.

PERFORMANCE DATA:

MODEL 6400IV • RECTANGULAR NECK

Core Style 3B • 3-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-12-22 (175)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-8-15 (88)
	Noise Criteria	—	—	—	12	19	27	30
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	3-3-6 (57)	3-6-10 (113)	6-8-15 (169)	7-10-19 (225)	9-12-24 (282)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (199)
	Noise Criteria	—	—	—	15	22	29	23
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side A	3-4-6 (100)	4-6-11 (200)	6-9-17 (300)	8-11-22 (400)	10-14-27 (500)	11-17-32 (600)	13-19-37 (700)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-16 (200)	7-11-20 (250)	9-13-24 (300)	10-14-28 (350)
	Noise Criteria	—	—	—	17	24	31	36

Core Style 3A2 • 3-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (15)	2-3-5 (28)	3-4-7 (42)	4-5-10 (56)	5-6-12 (70)	5-7-14 (84)	6-9-16 (98)
	Throw, Side B	2-2-3 (12)	2-3-5 (23)	3-4-7 (35)	4-5-9 (47)	4-6-11 (58)	5-7-13 (70)	6-8-15 (82)
	Noise Criteria	—	—	—	11	22	26	29
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (25)	3-4-6 (50)	4-5-10 (75)	5-7-13 (100)	6-9-16 (125)	7-10-19 (150)	8-12-23 (175)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-6-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-20 (150)	8-11-22 (175)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (196)	8-12-22 (235)	9-14-26 (274)
	Throw, Side B	2-3-4 (27)	3-4-7 (55)	4-6-11 (82)	5-7-14 (109)	6-9-17 (137)	7-11-20 (164)	8-12-23 (191)
	Noise Criteria	—	—	—	14	21	28	32
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-23 (234)	9-14-26 (273)
	Throw, Side B	2-3-5 (43)	3-5-8 (86)	5-6-12 (129)	6-8-15 (172)	7-10-19 (215)	8-12-23 (258)	9-14-26 (301)
	Noise Criteria	—	—	—	15	22	29	34
18 x 15	Airflow, CFM	188	375	563	750	938	1125	1313
	Throw, Side A	3-3-6 (56)	4-6-10 (113)	6-8-15 (168)	7-10-19 (225)	9-12-24 (281)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	4-4-7 (66)	5-7-12 (131)	7-9-17 (197)	8-11-21 (262)	10-13-26 (328)	11-16-30 (394)	13-18-35 (459)
	Noise Criteria	—	—	—	17	24	31	37

Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance.
Correction factors for addition of a neck mounted opposed blade damper (fully open):
Total Pressure: Multiply catalog value by x 1.20.
Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODEL 6400IV • RECTANGULAR NECK

Core Style 3E • 3-way blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
15 x 6	Airflow, CFM	63	125	188	250	313	375	438
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (113)	6-9-16 (150)	7-11-20 (188)	9-12-24 (225)	10-14-28 (263)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	12	19	26	31
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side A	2-3-5 (75)	4-5-9 (150)	5-7-13 (225)	6-9-17 (300)	8-11-21 (375)	9-13-25 (450)	10-15-29 (525)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	16	23	30	34
24 x 9	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (94)	4-5-10 (188)	5-8-14 (281)	7-10-19 (375)	8-12-23 (469)	10-14-28 (563)	11-17-32 (656)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	17	24	31	36

Core Style 3A1 • 3-way blow pattern

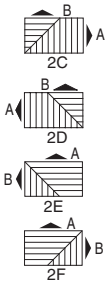
Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (16)	3-3-6 (31)	3-5-8 (47)	4-6-10 (62)	5-7-13 (78)	6-8-15 (93)	7-9-18 (109)
	Throw, Side B	1-2-2 (6)	2-2-4 (12)	2-3-5 (19)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Noise Criteria	—	—	—	11	22	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-2-4 (22)	3-4-6 (44)	4-5-9 (66)	5-6-12 (88)	6-8-15 (109)	6-9-17 (131)	7-11-20 (153)
	Throw, Side B	1-2-2 (6)	2-2-4 (13)	2-3-5 (19)	3-4-7 (25)	3-5-8 (32)	4-5-10 (38)	4-6-11 (44)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (30)	3-4-7 (61)	4-6-11 (91)	5-7-14 (122)	6-9-17 (152)	7-11-20 (183)	8-12-23 (213)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (40)	3-5-8 (80)	5-7-12 (119)	6-8-16 (159)	7-10-19 (199)	8-12-23 (239)	10-14-27 (279)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	14	21	28	32
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-12 (100)	6-8-15 (125)	7-10-18 (150)	8-11-21 (175)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (63)	4-5-9 (125)	5-7-13 (188)	7-9-18 (250)	8-11-22 (313)	9-13-26 (375)	11-15-30 (437)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-12 (100)	6-8-15 (125)	7-10-18 (150)	8-11-21 (175)
	Noise Criteria	—	—	—	16	23	30	35
18 x 15	Airflow, CFM	186	375	563	750	938	1125	1313
	Throw, Side A	3-3-6 (74)	4-6-10 (149)	6-8-15 (223)	8-12-24 (297)	9-12-24 (371)	10-15-28 (445)	12-17-33 (520)
	Throw, Side B	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-22 (234)	9-14-26 (273)
	Noise Criteria	—	—	—	17	24	31	37

For performance notes, see page D79.

PERFORMANCE DATA:

MODEL 6400IV • RECTANGULAR NECK

Core Styles 2C, 2D, 2E and 2F • 2-way corner blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-3-4 (25)	3-4-7 (50)	4-6-10 (75)	5-7-14 (100)	6-9-17 (125)	7-10-20 (150)	8-12-23 (175)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	11	18	25	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (113)	6-9-16 (150)	7-11-20 (188)	9-12-24 (225)	10-14-28 (263)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-5 (47)	4-5-9 (94)	5-7-13 (140)	6-9-17 (188)	8-11-21 (234)	9-13-25 (281)	10-15-29 (328)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (112)	6-9-17 (140)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (66)	4-5-9 (132)	5-7-13 (197)	7-9-18 (262)	8-11-22 (328)	9-13-26 (394)	11-15-30 (459)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	2-3-5 (85)	4-5-10 (169)	5-8-14 (254)	7-10-19 (338)	8-12-23 (421)	10-14-27 (506)	11-16-32 (591)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (85)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	15	22	29	33
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (75)	4-5-9 (150)	5-7-13 (225)	6-9-17 (300)	8-11-21 (375)	9-13-25 (450)	9-15-29 (525)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (100)	4-5-10 (200)	5-8-14 (300)	7-10-19 (400)	8-12-23 (500)	10-14-29 (600)	11-17-32 (700)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-9-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Noise Criteria	—	—	—	18	25	31	36

Core Style 2A • 2-way opposite blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side	2-3-5 (47)	3-5-8 (94)	5-6-12 (141)	6-8-15 (188)	7-10-19 (234)	8-12-23 (282)	9-14-26 (328)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side	2-3-5 (57)	4-5-9 (113)	5-7-12 (169)	6-9-16 (225)	7-11-20 (282)	9-12-24 (338)	10-14-28 (394)
	Noise Criteria	—	—	—	15	22	29	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side	2-3-5 (66)	3-5-9 (132)	5-7-13 (197)	6-9-17 (263)	8-11-21 (328)	9-13-26 (394)	11-15-30 (460)
	Noise Criteria	—	—	—	15	23	30	34
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side	2-3-5 (63)	4-5-10 (125)	5-7-14 (188)	7-10-18 (250)	8-12-23 (313)	10-14-27 (375)	11-16-31 (438)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side	3-3-6 (75)	4-6-10 (150)	6-8-15 (225)	7-10-20 (300)	9-13-24 (375)	10-15-29 (450)	12-17-33 (525)
	Noise Criteria	—	—	—	16	23	30	35
21 x 12	Airflow, CFM	175	350	525	700	875	1050	1225
	Throw, Side	3-3-6 (88)	4-6-11 (175)	6-8-16 (263)	8-11-21 (350)	9-13-25 (438)	11-16-30 (525)	12-18-35 (613)
	Noise Criteria	—	16	—	17	24	31	36
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side	3-4-6 (100)	4-6-11 (200)	6-9-17 (300)	8-11-22 (400)	10-14-27 (500)	11-17-32 (600)	13-19-37 (700)
	Noise Criteria	—	—	—	18	25	31	36

For performance notes, see page D79.

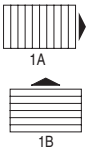
PERFORMANCE DATA:

MODEL 6400IV • RECTANGULAR NECK

Core Style 2B • 2-way opposite blow pattern

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-2-4 (19)	3-4-7 (38)	4-5-10 (57)	5-7-12 (75)	6-8-15 (94)	7-10-18 (113)	8-11-21 (132)
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-4 (25)	3-4-7 (50)	4-6-11 (75)	5-7-14 (100)	6-9-17 (125)	7-11-20 (150)	8-12-23 (175)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-4 (38)	3-4-8 (75)	4-6-11 (113)	6-8-15 (150)	7-10-18 (188)	8-11-21 (225)	9-13-25 (263)
	Noise Criteria	—	—	—	15	23	30	34

Core Styles 1A and 1B • 1-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-3-4	4-5-9	5-7-12	6-9-16	7-11-20	9-12-24	10-14-28
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
15 x 6	Airflow, CFM	63	125	188	250	313	375	438
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	12	19	26	31
18 x 6	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-26	11-15-30
	Noise Criteria	—	—	—	12	20	27	32
21 x 6	Airflow, CFM	88	175	263	350	438	525	613
	Throw	2-3-5	4-5-10	5-7-14	7-10-18	8-12-22	10-14-27	11-16-31
	Noise Criteria	—	—	—	13	21	28	33
24 x 6	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-14	7-10-19	8-12-23	10-14-28	11-20-32
	Noise Criteria	—	—	—	15	22	28	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-25	10-15-29	12-18-34
	Noise Criteria	—	—	—	16	23	30	35
24 x 9	Airflow, CFM	150	300	450	600	750	900	1050
	Throw	3-4-6	4-6-11	6-9-16	8-11-21	9-14-26	11-16-31	13-19-36
	Noise Criteria	—	—	—	17	24	31	36

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance.
   Correction factors for addition of a neck mounted opposed blade damper (fully open):
   Total Pressure: Multiply catalog value by x 1.20.
   Noise Criteria: Add + 4 to catalog value.
4. Correction factor for round inlets, see next page.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA CORRECTIONS:

MODEL 6400IV

Correction Factors For Round Necks (Square to Round Inlet Adaptors).

- Add the NC correction factor from Table 1 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 1 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 1 by the listed throws in the performance tables.

Example:

12" x 12" unit with a 4A core and a 10" round adaptor handling 500 cfm supply air. (Page D72).

- NC = 20 + 7 = 27
- Total Pressure = .072 x 1.65 = 0.119
- Throw = 16 x 1.15 = 18.40 feet @ 50 fpm terminal velocity.

TABLE 1 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15

Recommended Maximum Airflow

Diffuser mounting height and air temperature differential (ΔT) are both to be considered when selecting diffusers. As air travels from a diffuser, room air is entrained into the supply air stream and the delivery pattern thickens.
If the volume or throw requirement is too great, the lower part of the supply air stream can intrude into the occupied zone causing objectionable drafts. Consult Table 2 to verify selection.

TABLE 2 Maximum Recommended Airflow

CEILING HEIGHT (ft.)	MAX. AIRFLOW PER DIFFUSER (CFM)				MAX. REC. COOLING TEMP. DIFFERENTIAL ΔT
	4-way	3-way	2-way (2A, 2B)	1-way & 2S	
7	400	300	200	100	15°F
8	600	450	300	150	20°F
9	1200	900	600	300	25°F
10	1800	1350	900	450	25°F
12	3200	2400	1600	800	30°F
14	4800	3600	2400	1200	30°F
16	6000	4500	3000	1500	30°F

HOW TO ORDER

STEEL PATTERN CEILING DIFFUSERS
MODEL SERIES 6500, 6550 AND 6500IV

EXAMPLE: 6500 - O - 9 x 9 - 24 x 24 - L - AW - 4A - SR08

1. **Model**
   - 6500 Fixed Pattern
   - 6550 Adjustable Pattern
   - 6500IV Induction Vanes
2. **Damper**
   (model suffix)
   - – None
   - O Steel (standard)
3. **Neck Size**
   Width x Height (inches)
4. **Ceiling Module Size**
   Panel Size
   (Types L, SP, M, TL, F and DL only)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - S Surface Mount Flat
   - B Surface Mount Bevelled
   - D Deep Drop
   - L Lay-in T-Bar
   - SP Spline
   - M Metal Pan
   - TL Tegular (Drop Face)
   - F Fineline®
   - DL Drop Face Lay-in
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat Paint
   - MI Mill
   - SP Special Custom Color
7. **Core Style**
   See below

OPTIONS AND ACCESSORIES:

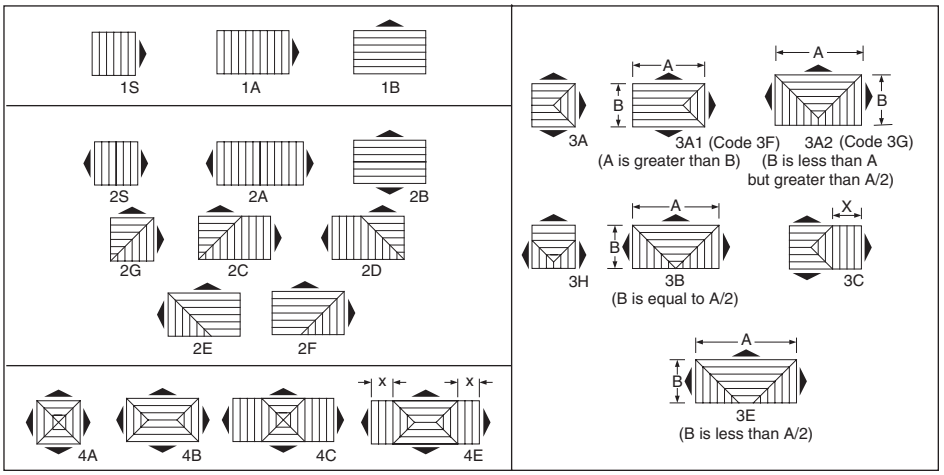
8. **Transition Collar**
   (Square to round)
   SR04 to SR24
   4" to 24" dia.
   *ONA Offset Neck Adaptor
9. **Earthquake Tabs**
   - EQT Earthquake Tabs
10. **External Insulation**
    - EX Foil-back (installed), R-4.2
    - *MIB Molded Insulation Blanket, R-6.0
11. **Air Balancing Devices**
    (order separately)
    Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

    Round Neck:
    - 4250 Radial Sliding Damper
    - 4275 Radial Opposed Blade Damper
    - 4675 Butterfly Damper
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

Notes:

1. Consult submittal pages as to limitations of module, neck size and core style combinations.
2. *ONA Offset Neck Adaptor is for Model Series 6500IV and 6200IV. Not available on models with -O opposed blade damper.
3. *MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 cm only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.

PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)



HOW TO ORDER OR TO SPECIFY

STEEL PATTERN CEILING DIFFUSER WITH FIBERGLASS PLENUM
MODEL SERIES 6500

EXAMPLE: 6500FP - 15 x 15 - 24 x 24 - L - AW - 4A

1. **Model**
   6500FP Fixed Pattern
2. **Core Size**
   Imperial
   inches (mm)
   15" x 15" (381 x 381) (default)
3. **Ceiling Module Size**
   Panel Size
   Imperial
   inches (mm)
   24" x 24" (610 x 610) (default)
   Metric
   mm
   600 mm x 600 mm
4. **Frame Type**
   L Lay-in T-Bar (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   PC Prime Coat Paint
   MI Mill
   SP Special Custom Color
6. **Core Style**
   4A 4-way (default)

HOW TO ORDER

ALUMINUM PATTERN CEILING DIFFUSERS
MODEL SERIES 6200, 6250, 6200IV AND 6200-MRI

EXAMPLE: 6200 - O - 9 x 9 - 24 x 24 - L - AW - 4A - PLS - SR08

1. **Model**
   - 6200 Fixed Pattern
   - 6250 Adjustable Pattern
   - 6200IV Induction Vanes
   - 6200-MRI 100% Aluminum
2. **Damper**
   (model suffix)
   - – None
   - O Steel (standard)
   - OA Aluminum

   (Damper not available on 6200-MRI)
3. **Neck Size**
   Width x Height (inches)
4. **Ceiling Module Size**
   Panel Size
   (Types L, SP, M, TL and F)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - S Surface Mount Flat
   - B Surface Mount Bevelled
   - L Lay-in T-Bar
   - SP Spline
   - M Metal Pan
   - TL Tegular (Drop Face)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared
   - SP Special Custom Color
7. **Core Style**
   See below

   OPTIONS AND ACCESSORIES:
8. **Transition Collar**
   (Square to round)
   SR04 to SR24
   4" to 24" dia.
   (Transition Collar not available on the Model 6200-MRI)
   *ONA Offset Neck Adaptor
9. **Earthquake Tabs**
   EQT Earthquake Tabs
10. **External Insulation**
    - EX Foil-back (installed), R-4.2
    - *MIB Molded Insulation Blanket, R-6.0
11. **Extended Panel***
    - PLS Steel (default)
    - PLA Aluminum
12. **Air Balancing Devices**
    (order separately)
    Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

    Round Neck:
    - 4250 Radial Sliding Damper
    - 4275 Radial Opposed Blade Damper
    - 4675 Butterfly Damper
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

Notes:

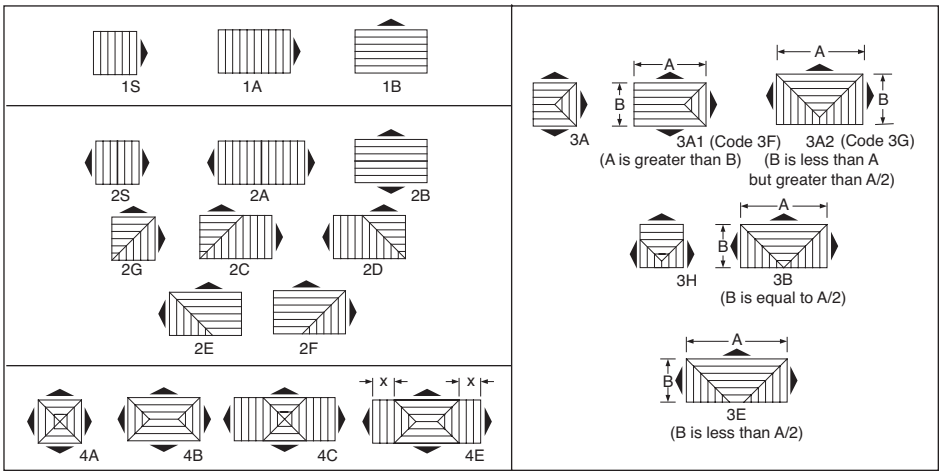
1. Consult price pages as to limitations of module, neck size and core style combinations.

2. *Where required, a steel extended modular panel is standard when the ceiling module is more than 3 larger than the neck in either or both dimensions. Aluminum is available as an option with the exception of Model 6200-MRI which includes as standard, an aluminum extended modular panel. Applicable to Frame Type L, SP, M, TL and F.

3. *ONA Offset Neck Adaptor is for Model Series 6500IV and 6200IV. Not available on models with -O opposed blade damper.

4. *MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 ceiling module only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.

PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)



HOW TO ORDER

ALUMINUM PATTERN CEILING DIFFUSERS
MODEL SERIES 6400 AND 6400IV

EXAMPLE: 6400 - O - 9 x 9 - 24 x 24 - L - AW - 4A - SR08 - PLS

1. **Model**
   - 6400 Fixed Pattern
   - 6400IV Induction Vanes
2. **Damper**
   (model suffix)
   - – None
   - O Steel (standard)
   - OA Aluminum
3. **Neck Size**
   Width x Height (inches)
4. **Ceiling Module Size**
   Panel Size
   (Types L, SP, M, TL, F and DL only)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - S Surface Mount Flat
   - B Surface Mount Bevelled
   - D Deep Drop
   - L Lay-in T-Bar
   - SP Spline
   - M Metal Pan
   - TL Tegular (Drop Face)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared Aluminum
   - SP Special Custom Color
7. **Core Style**
   See below

OPTIONS AND ACCESSORIES:

8. **Transition Collar**
   (Square to round)
   SR04 to SR24
   4" to 24" dia.
9. **Earthquake Tabs**
   - EQT Earthquake Tabs
10. **External Insulation**
    - EX Foil-back (installed), R-4.2
    - *MIB Molded Insulation Blanket, R-6.0
11. **Extended Panel****
    - PLS Steel (default)
    - PLA Aluminum
12. **Air Balancing Devices**
    (order separately)
    Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

    Round Neck:
    - 4250 Radial Sliding Damper
    - 4275 Radial Opposed Blade Damper
    - 4675 Butterfly Damper
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

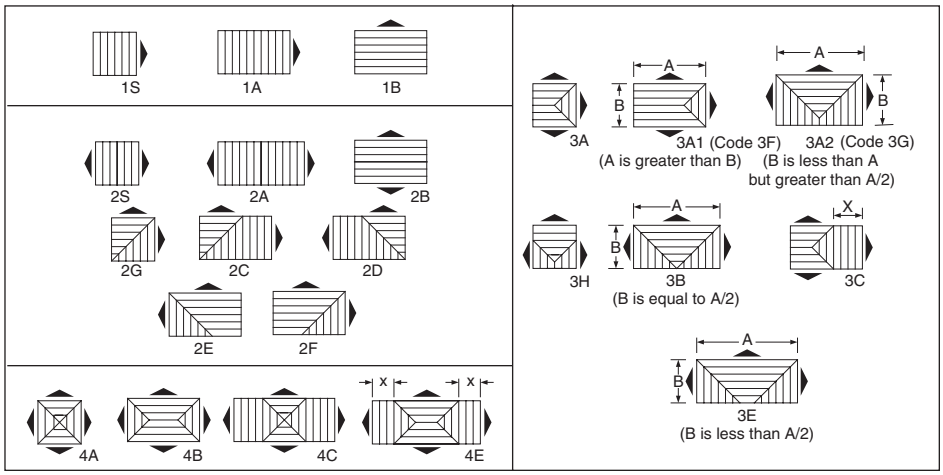
Notes:

1. Consult price pages as to limitations of module, neck size and core style combinations.

2. *MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 ceiling module only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.

3. **Extended modular panels where required are steel construction as standard. Aluminum is available as an option. Applicable to Frame Types L, SP, M, TL, F and DL only.

PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)



HOW TO SPECIFY

SUGGESTED SPECIFICATION:

6500 and 6550 – Steel Construction

Furnish and install **Nailor** (select one) **Model 6500 or 6550** (steel) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6500 shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. Model 6550 shall incorporate fixed pattern discharge louvers and adjustable vanes for a vertical or horizontal throw pattern. The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6500IV – Steel Construction

Furnish and install **Nailor Model 6500IV** (steel) **Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The core assembly shall have a fixed pattern for horizontal throw and shall include induction vanes for rapid mixing of supply air with room air. The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6500FP – Steel Construction Face and Fiberglass Backpan

Furnish and install **Nailor** (select one or more) **Model 6500FP** (steel) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The face of the diffuser and core assembly shall be constructed of corrosion-resistant steel. All units shall include a one piece molded fiberglass backpan with foil back vapor barrier of 6.0 R-value. The ceiling diffuser shall be high capacity with a 4-way discharge pattern that provides a tight horizontal pattern from maximum to minimum airflow. The spring-loaded core shall be fully removable in the field without the use of tools for the purpose of installation or cleaning. The pre-scored diffuser plenum shall accommodate spin-in or tab-lock inlet collars (by others). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6200 and 6250 – Aluminum Construction

Furnish and install **Nailor** (select one) **Model 6200 or 6250** (aluminum) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6200 shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. Model 6250 shall incorporate fixed pattern discharge louvers and adjustable vanes for a vertical or horizontal throw pattern. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6200IV – Aluminum Construction

Furnish and install **Nailor Model 6200IV** (aluminum) **Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The core assembly shall have a fixed pattern for horizontal throw and shall include induction vanes for rapid mixing of supply air with room air. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6200-MRI – 100% Aluminum Construction

Furnish and install **Nailor Model 6200-MRI** (aluminum) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6200-MRI shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. The core assembly shall be fixed and is non-removable. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6400 – Aluminum Construction

Furnish and install **Nailor Model 6400** (aluminum) **High Capacity Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The units shall be constructed from extruded aluminum with miscellaneous steel components. Blades and frame shall have reinforced staked mitered corners for high quality appearance and function. Diffusers shall consist of an outer frame assembly to suit any application shown, which includes an integral collar for connection to the square or rectangular duct size indicated. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). A square to round transition collar shall be supplied where indicated to facilitate attachment of round duct.

An inner core assembly consisting of fixed deflection louvers capable of producing the airflow discharge indicated on the plans shall be securely held in place by a spring loaded mechanism without the need for visible screws. The core shall be fully removable in the field without the use of tools for the purpose of installation, cleaning or damper adjustment.

The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6400IV – Aluminum Construction

Furnish and install **Nailor Model 6400IV** (aluminum) **High Capacity Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Diffusers shall be designed for optimum performance in both heating and cooling applications. The diffusers shall be constructed from extruded aluminum with miscellaneous steel components. Blades and frame shall have reinforced staked mitered corners for high quality appearance and function. Diffusers shall consist of an outer frame assembly to suit any application shown, which includes an integral collar for connection to the square or rectangular duct size indicated. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). A square to round transition collar shall be supplied where indicated to facilitate attachment of round duct.

An inner core assembly consisting of fixed deflection louvers on 1 1/2" (38) centers, capable of producing either a 4, 3, 2 or 1-way horizontal airflow discharge pattern as indicated on the plans shall be securely held in place by a spring loaded mechanism without the need for visible screws. The deflection angle of each louver shall be constant (diffuser designs with a horizontal lip at the point of discharge are not acceptable). Aluminum induction vanes on 1 1/2" (38) centers shall be mounted in extrusion slots and welded to the rear of each louver of the inner core. The vanes shall be orientated at 45° in opposite direction on alternating louvers to promote rapid temperature equalization and ensure high induction and rapid mixing of the primary and room air. The core shall be fully removable in the field without the use of tools for the purpose of installation, cleaning or damper adjustment. Diffuser finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

STAMPED SQUARE CEILING DIFFUSERS

- FIXED AIR PATTERN
- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- 4 CONE

Models:

RNS **Steel**

ARNS **Aluminum**

Model RNS

Model Series RNS Square Ceiling Air Diffusers have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems.

The diffusers are available with various frame/border designs to suit many ceiling systems including surface mount, T-Bar lay-in, and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Spring loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- All 12" x 12" (300 x 300) and 24" x 24" (600 x 600) modules feature four cones in all neck sizes, providing a uniform and balanced appearance. The 20" x 20" (500 x 500) module has three cones.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 15" (127 – 381).

4675 Butterfly Damper 6" – 14" (152 – 356).

QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).

EX External Foil-Back Insulation (installed) – R-4.2.

EXB External Foil-Back Insulation (loose) – R-4.2.

MIB Molded Insulation Blanket – R-6.0.

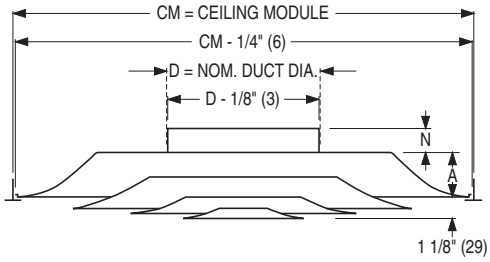
EIC Extended Inlet Collar (2 1/4" [57]) with bead (Model RNS only).

EQT Earthquake Tabs

For more options and accessories, see page D255.

Type L Lay-in, T-Bar Frame

12 x 12 (300 x 300) and
24 x 24 (600 x 600) modules



Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	N	A	B	F	Duct Size D	N	A	B	F
12 x 12	300 x 300	4*	3 1/4	1	11	13	102*	83	25	279	330
		5, 6, 7, 8	1 1/4				127, 152, 178, 203	32			
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	629

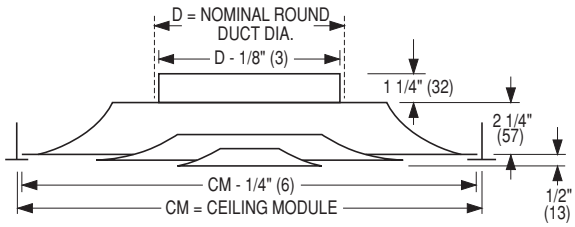
* Supplied with a reducer.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS RNS AND ARNS

Type L Lay-in T-Bar

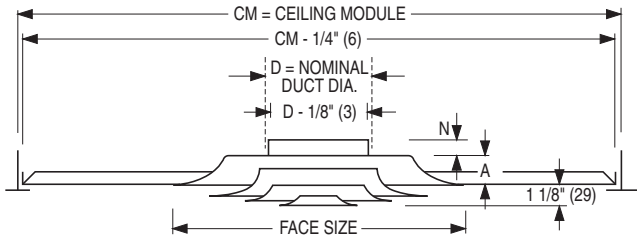
20" x 20" (500 x 500) module



Ceiling Module CM		Imperial Units (inches)		Metric Units (mm)	
Imperial Modules	Metric Modules	Duct Size D	B	Duct Size D	B
20 x 20	500 x 500	6, 8, 10	18 1/2	152, 203, 254	470

The 20 x 20 (500 x 500) module is only available in this frame style.

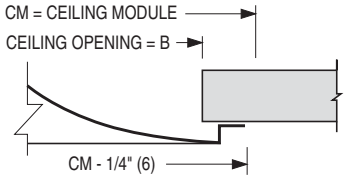
Type PL Panel Mounted Lay-in T-Bar



Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	Face Size	Duct Size D	N	A
24 x 24 24 x 12 20 x 20	600 x 600 600 x 300 500 x 500	12 x 12	4* 5, 6, 7, 8	3 1/4 1 1/4	1	300 x 300	102, 127, 152, 178, 203	83 32	25
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	600 x 600	152, 203, 254, 305, 356, 381	32	59
48 x 24	1200 x 600	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	600 x 600	152, 203, 254, 305, 356, 381	32	59

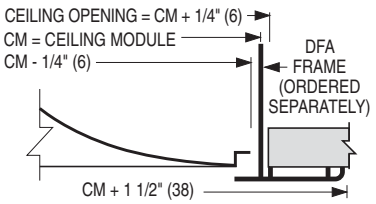
* Supplied with a reducer. Panel mount is available with Model RNS only.

Type L Surface Mount



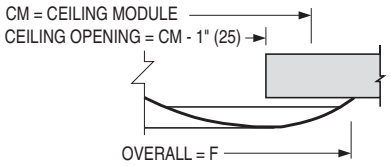
Hard duct connection recommended.

Type L Surface Mount with DFA



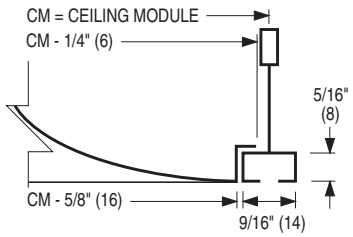
Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type S Surface Mount

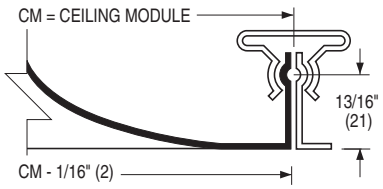


Hard duct connection recommended.

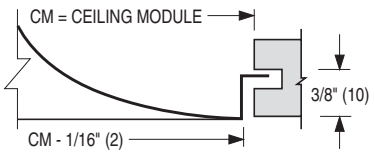
Type F Fineline®



Type M Metal Pan (Snap-in)



Type SP Spline



For one directional exposed T-bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Note: Model ARNS is available only in frame types L and F.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models RNS and ARNS • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
4" Dia.	Total Pressure	.014	.022	.032	.043	.056	.071	.088	.126	.172	.224
	Airflow, CFM	35	44	52	61	70	79	87	105	122	140
	Throw	1-2-4	2-2-5	2-3-5	2-3-6	2-4-7	3-4-7	3-5-7	4-5-8	4-6-9	5-7-9
	Noise Criteria	—	—	—	—	—	11	19	25	30	35
5" Dia.	Total Pressure	.017	.026	.038	.051	.067	.085	.105	.151	.206	.269
	Airflow, CFM	55	68	82	95	109	123	136	164	191	218
	Throw	2-2-5	2-3-6	2-4-6	2-4-7	2-5-8	3-6-9	4-6-9	5-7-10	5-8-11	6-8-11
	Noise Criteria	—	—	—	—	—	14	22	28	33	38
6" Dia.	Total Pressure	.018	.029	.043	.060	.079	.100	.128	.175	.250	.325
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-4	1-2-5	1-3-6	2-3-6	2-4-8	3-4-8	3-4-10	4-5-10	4-6-14	5-8-14
	Noise Criteria	—	—	11	16	20	22	24	31	38	41
7" Dia.	Total Pressure	.022	.035	.050	.068	.089	.112	.138	.199	.271	.354
	Airflow, CFM	107	134	160	187	214	241	267	321	374	428
	Throw	2-4-8	3-5-9	4-6-10	4-7-11	5-8-12	5-9-13	6-10-14	7-10-14	9-11-15	10-12-16
	Noise Criteria	—	—	12	17	20	24	27	33	39	42
8" Dia.	Total Pressure	.031	.047	.065	.087	.110	.140	.168	.235	.310	.395
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	3-5-9	4-5-11	5-7-13	5-8-14	6-9-14	6-10-15	7-11-16	8-12-17	10-13-18	11-14-18
	Noise Criteria	—	—	13	18	22	26	29	35	40	44

Models RNS and ARNS • 20 x 20 (500 x 500) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.015	.023	.033	.045	.058	.074	.091	.130	.176	.230
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-3	1-2-4	1-2-4	1-3-5	2-3-6	2-3-6	2-4-7	3-5-8	3-5-8	4-6-9
	Noise Criteria	—	—	14	18	21	26	29	34	38	41
8" Dia.	Total Pressure	.018	.028	.041	.055	.072	.091	.112	.161	.219	.286
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-2-5	2-3-6	2-4-6	3-4-7	3-5-7	4-5-8	4-6-8	5-6-9	6-7-10	6-8-11
	Noise Criteria	—	11	16	20	23	28	31	36	40	43
10" Dia.	Total Pressure	.023	.036	.052	.071	.092	.117	.144	.207	.281	.367
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	2-4-6	3-4-7	4-5-8	4-6-9	5-6-9	5-7-10	6-7-10	6-8-11	7-9-12	8-9-13
	Noise Criteria	—	13	18	22	25	30	33	38	42	45

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g..
3. The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.
4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.131
8	12 x 12	.202
6	24 x 24	.180
8	24 x 24	.227
10	24 x 24	.331
12	24 x 24	.450
14	24 x 24	.511
15	24 x 24	.625

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19

PERFORMANCE DATA:

Models RNS and ARNS • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	**.010**	**.016**	**.023**	**.031**	**.040**	**.051**	**.063**	**.090**	**.122**	**.160**
6" Dia.	**Total Pressure**	.015	.023	.035	.045	.060	.076	.095	.135	.186	.240
	Airflow, CFM	**80**	**100**	**120**	**140**	**160**	**180**	**200**	**235**	**275**	**315**
	Throw	1-1-4	1-2-5	1-2-6	1-3-7	2-4-9	2-5-9	3-6-11	3-6-12	4-7-14	6-8-15
	Noise Criteria	—	—	—	13	17	21	24	27	32	36
8" Dia.	**Total Pressure**	.021	.033	.047	.063	.082	.105	.128	.183	.245	.325
	Airflow, CFM	**140**	**175**	**210**	**245**	**280**	**315**	**350**	**420**	**490**	**560**
	Throw	1-1-5	1-2-6	1-3-8	2-4-8	3-5-10	3-6-10	4-6-13	5-8-13	6-8-16	7-10-17
	Noise Criteria	—	—	13	17	20	25	28	33	37	40
10" Dia.	**Total Pressure**	.024	.037	.047	.074	.097	.123	.150	.215	.293	.372
	Airflow, CFM	**220**	**270**	**330**	**380**	**435**	**490**	**545**	**655**	**765**	**870**
	Throw	1-3-6	2-4-8	3-5-9	4-6-12	5-6-12	5-7-14	6-9-15	6-10-15	8-13-17	9-13-18
	Noise Criteria	—	11	16	20	23	28	31	36	40	43
12" Dia.	**Total Pressure**	.026	.039	.057	.075	.097	.127	.150	.245	.310	.410
	Airflow, CFM	**315**	**390**	**470**	**550**	**630**	**705**	**785**	**990**	**1100**	**1255**
	Throw	2-3-7	3-4-9	3-5-10	4-6-13	5-7-13	5-8-15	5-8-16	7-9-18	9-11-18	10-12-19
	Noise Criteria	—	13	18	21	24	29	32	37	41	44
14" Dia.	**Total Pressure**	.030	.050	.070	.100	.110	.160	.200	.240	.390	.490
	Airflow, CFM	**425**	**530**	**635**	**745**	**850**	**955**	**1060**	**1270**	**1490**	**1695**
	Throw	3-4-9	4-5-11	4-7-13	5-7-16	6-9-16	7-11-16	7-11-19	9-13-19	11-16-19	11-16-27
	Noise Criteria	—	14	19	22	25	29	32	37	42	45
15" Dia.	**Total Pressure**	.033	.054	.072	.100	.127	.163	.204	.280	.395	.500
	Airflow, CFM	**490**	**615**	**735**	**860**	**985**	**1110**	**1230**	**1470**	**1720**	**1970**
	Throw	5-7-10	6-8-11	7-9-14	8-10-17	8-13-18	10-15-19	11-16-22	12-18-27	13-20-32	15-22-34
	Noise Criteria	—	15	20	23	26	30	33	38	43	46

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g..
3. The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.
4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	0.131
8	12 x 12	0.202
6	24 x 24	0.180
8	24 x 24	0.227
10	24 x 24	0.331
12	24 x 24	0.450
14	24 x 24	0.511
15	24 x 24	0.625

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19

ADJUSTABLE STAMPED SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- HORIZONTAL TO VERTICAL ADJUSTABLE DISCHARGE PATTERN

Models:

RNSA **Steel**
ARNSA **Aluminum**

Model RNSA

Model Series RNSA and ARNSA Adjustable Square Ceiling Air Diffusers have been specially designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. They provide the flexibility of a standard horizontal discharge or near vertical discharge pattern, useful in high ceiling applications where better air penetration or spot heating may be desired. The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

The adjustable diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems. They are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Removable core.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- All 12" x 12" (305 x 305) and 24" x 24" (610 x 610) modules feature four cones in all neck sizes, providing a uniform and balanced appearance. The 20" x 20" (508 x 508) module has three cones.
- Compatible with Model 4275 Radial Opposed Blade Damper (option). Other dampers may need adaptors.
- Screwdriver adjustment of the optional balancing damper through the core.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

ADJUSTMENT:

The unique design permits gradual adjustment of air pattern from horizontal flow with the inner cone assembly extended to vertical flow by retracting the inner cone assembly. Available as Type 1 or 2. (ARNSA is available in Type 1 only).

OPTIONS & ACCESSORIES:

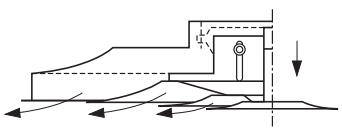
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
QB	Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).
EX	External Foil-Back Insulation (installed) – R-4.2.
EXB	External Foil-Back Insulation (loose) – R-4.2.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

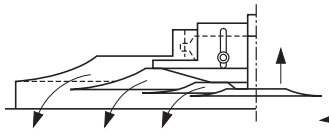
Type 1 'Sliding Type'

Adjusted by sliding the inner cone assembly up or down. Core is securely retained by a spring loaded friction arrangement. Steel or aluminum construction.

Horizontal Air Pattern



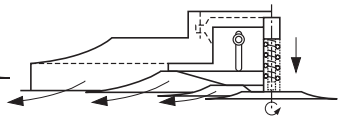
Vertical Air Pattern



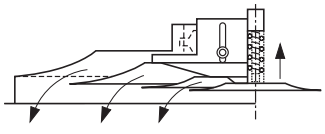
Type 2 'Rotating Type'

A unique 'screw type' arrangement where the angle of discharge is varied by rotating the center cone. Steel construction only.

Horizontal Air Pattern



Vertical Air Pattern

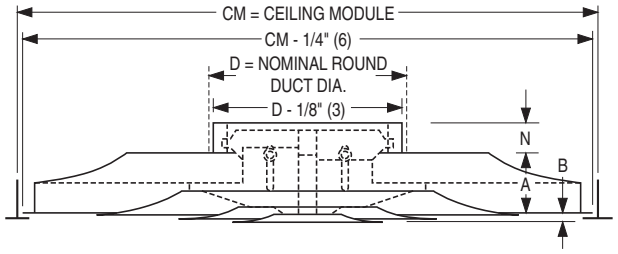


DIMENSIONAL DATA AND FRAME TYPES:

MODELS RNSA AND ARNSA

Type L Lay-in T-Bar

12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules

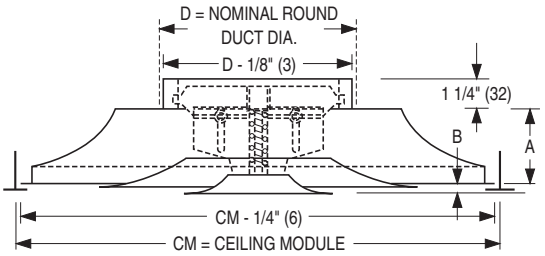


Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Duct Size D	N	A	B	Duct Size D	N	A	B
12 x 12	300 x 300	4*, 5*	3 1/4	2 1/4	0 to 1/2	102*, 127*	83	57	0 to 13
		6, 7, 8	1 1/4			152, 178, 203	32		
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	3 3/4	0 to 3/8	152, 203, 254, 305, 356, 381	32	95	0 to 10

* Supplied with a reducer.

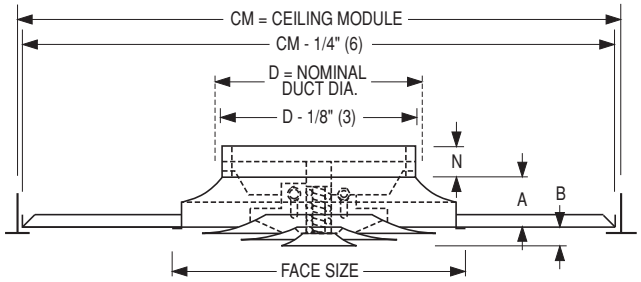
Type L Lay-in T-Bar**

20 x 20 (500 x 500) module



	Imperial Modules				Metric Modules	
	Imperial Units (inches)		SI Units (mm)		SI Units (mm)	
Listed Neck Size	CM = 20 x 20		CM = 508 x 508		CM = 500 x 500	
	A	B	A	B	A	B
6 (152) 8 (203) 10 (254)	3 1/8	o to 3/8	79	0 to 10	79	0 to 10

Type PL Panel Mounted Lay-in T-Bar

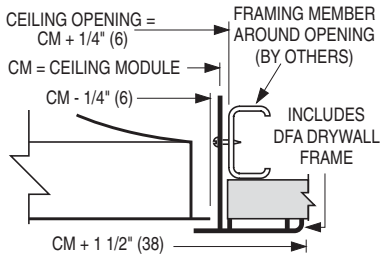


Listed Neck Size	Imperial Modules (inches)				SI Units (mm)			
	Face Size = 12 x 12				Face Size = 305 x 305			
	D	N	A	B	D	N	A	B
4*	4	3 1/4	2 1/4	0 TO 1/2	102	83	57	0 TO 13
5*	5				127			
6	6	1 1/4			152	32		
7	7				178			
8	8				203			
	Face Size = 24 x 24				Face Size = 610 x 610			
6	6	1 1/4	3 3/4	0 TO 3/8	152	32	95	0 TO 10
8	8				203			
10	10				254			
12	12				305			
14	14				356			
15	15				381			

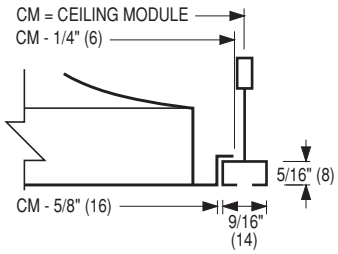
* Supplied with a reducer.

Available Ceiling Modules CM		
Imperial Modules		Metric Modules
Imperial Units (inches)	SI Units (mm)	SI Units (mm)
Face Size 12 x 12 (305 x 305) Listed Neck Sizes 4, 5, 6, 7, 8 (102, 127, 152, 178, 203)		
20 x 20 24 x 12 24 x 24	508 x 508 610 x 305 610 x 610	500 x 500 600 x 300 600 x 600
Face Size 24 x 24 (610 x 610) Listed Neck Sizes 6, 8, 10, 12, 14, 15 (152, 203, 254, 305, 356, 381)		
30 x 30 48 x 24	762 x 762 1219 x 610	750 x 750 1200 x 600

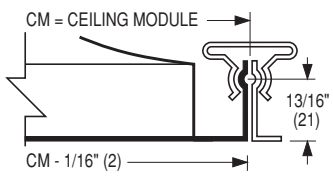
Type S Surface Mount



Type F Fineline®



Type M Metal Pan (Snap-in)



Steel models only

PERFORMANCE DATA:

Models RNSA and ARNSA • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.019	.028	.039	.057	.074	.093	.121	.150	.192	.247
		Vertical	.023	.034	.057	.086	.110	.146	.168	.246	.316	.415
	Airflow, CFM		80	100	120	140	160	180	200	235	275	315
	Throw	Horizontal	1-2-4	2-3-6	2-3-6	3-4-7	3-5-7	4-5-8	4-6-10	6-7-11	6-8-11	6-9-12
		Vertical	1-1-2	2-2-5	2-2-6	2-3-5	2-3-5	3-5-6	3-4-7	4-5-8	5-6-9	5-7-10
	Noise Criteria	Horizontal	—	—	12	17	21	23	24	32	38	41
		Vertical	—	—	16	21	25	27	28	36	42	45
8" Dia.	Total Pressure	Horizontal	.020	.031	.043	.059	.071	.090	.110	.150	.200	.259
		Vertical	.032	.052	.063	.096	.12	.159	.186	.258	.342	.443
	Airflow, CFM		140	175	210	245	280	315	350	420	490	560
	Throw	Horizontal	2-3-6	3-5-8	4-5-8	4-7-10	5-7-12	6-9-14	8-9-15	8-10-16	10-12-18	11-14-20
		Vertical	2-2-3	3-4-7	3-5-6	4-6-9	4-6-9	5-7-10	6-8-11	7-9-12	8-9-13	9-10-14
	Noise Criteria	Horizontal	—	11	17	22	25	27	29	36	44	47
		Vertical	—	—	21	26	29	31	33	40	48	51

Models RNSA and ARNSA • 20 x 20 (500 x 500) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.017	.026	.038	.051	.067	.085	.105	.149	.202	.264
		Vertical	.023	.036	.052	.070	.091	.116	.143	.201	.274	.359
	Airflow, CFM		80	100	120	140	160	180	200	235	275	315
	Throw	Horizontal	1-2-4	2-2-5	2-3-6	2-4-6	3-5-6	4-5-7	4-5-7	4-6-8	5-6-8	5-7-9
		Vertical	1-1-2	2-2-3	2-2-4	2-3-5	2-4-5	3-5-6	3-5-7	4-5-8	4-6-9	5-7-10
	Noise Criteria	Horizontal	—	12	17	22	25	29	32	37	41	45
		Vertical	—	17	22	26	29	32	35	40	44	48
8" Dia.	Total Pressure	Horizontal	.019	.031	.044	.059	.077	.098	.120	.173	.235	.307
		Vertical	.031	.049	.070	.094	.122	.155	.192	.275	.373	.489
	Airflow, CFM		140	175	210	245	280	315	350	420	490	560
	Throw	Horizontal	2-3-5	2-3-7	3-4-8	3-5-8	3-5-9	4-6-9	4-7-10	5-8-11	6-8-12	7-9-12
		Vertical	1-1-4	1-2-5	2-3-6	3-4-6	3-4-8	4-5-8	4-6-9	4-7-10	5-7-10	6-8-12
	Noise Criteria	Horizontal	—	—	15	20	24	28	31	38	43	47
		Vertical	14	19	24	29	32	35	38	44	48	52
10" Dia.	Total Pressure	Horizontal	.024	.039	.056	.076	.098	.125	.153	.220	.299	.391
		Vertical	.041	.065	.094	.127	.165	.209	.258	.370	.502	.657
	Airflow, CFM		220	270	330	380	435	490	545	655	765	875
	Throws	Horizontal	2-4-7	3-5-8	4-6-9	4-7-10	5-7-10	6-8-11	6-8-12	7-9-13	8-10-14	9-11-15
		Vertical	1-2-4	1-3-6	3-5-7	3-5-8	4-5-9	4-6-10	5-6-10	5-7-11	6-8-12	7-9-12
	Noise Criteria	Horizontal	—	—	16	21	26	30	33	39	45	49
		Vertical	—	20	25	29	33	36	39	44	48	52

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Horizontal throws are with ceiling coanda effect. For exposed duct mounting, multiply table values by x 0.7. Vertical throw is a free jet.
4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

Models RNSA and ARNSA • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.016	.024	.034	.047	.061	.078	.098	.129	.182	.240
		Vertical	.020	.031	.052	.080	.097	.124	.151	.218	.289	.390
	Airflow, CFM		80	100	120	140	160	180	200	235	275	315
	Throw	Horizontal	1-2-5	2-3-5	2-3-6	3-4-7	3-5-8	4-5-8	4-6-9	6-8-10	6-10-11	7-10-12
		Vertical	1-1-2	2-2-3	2-2-4	2-3-5	2-4-5	3-5-6	3-5-7	4-5-8	4-6-9	5-7-10
	Noise Criteria	Horizontal	—	—	—	13	17	20	22	28	32	36
		Vertical	—	—	—	15	19	22	24	30	34	38
8" Dia.	Total Pressure	Horizontal	.017	.026	.037	.049	.062	.08	.102	.131	.185	.243
		Vertical	.025	.04	.057	.077	.1	.126	.153	.221	.297	.393
	Airflow, CFM		140	175	210	245	280	315	350	420	490	560
	Throw	Horizontal	1-2-5	2-4-6	3-5-7	3-5-8	4-6-9	4-7-10	4-7-11	5-8-12	6-9-13	7-10-14
		Vertical	1-1-4	1-2-5	2-3-6	3-4-6	3-4-8	4-5-8	4-6-9	5-7-10	5-7-11	6-8-12
	Noise Criteria	Horizontal	—	—	13	18	21	22	26	32	38	42
		Vertical	—	—	17	20	25	26	30	36	42	46
10" Dia.	Total Pressure	Horizontal	.014	.021	.030	.039	.052	.065	.080	.112	.152	.194
		Vertical	.030	.048	.070	.092	.120	.161	.196	.264	.360	.450
	Airflow, CFM		220	270	330	380	435	490	545	655	765	870
	Throw	Horizontal	1-4-6	3-5-9	3-6-9	4-7-10	5-7-11	5-9-13	6-10-14	7-11-15	8-11-16	9-12-17
		Vertical	1-2-4	1-3-6	3-5-7	3-5-8	4-5-9	4-6-10	5-6-10	5-7-11	6-8-12	7-9-12
	Noise Criteria	Horizontal	—	10	15	21	26	30	33	38	43	45
		Vertical	—	14	19	25	31	34	37	42	47	49
12" Dia.	Total Pressure	Horizontal	.016	.025	.032	.043	.056	.072	.085	.129	.163	.216
		Vertical	.045	.069	.088	.120	.155	.204	.240	.360	.455	.585
	Airflow, CFM		315	390	470	550	630	705	785	950	1100	1255
	Throw	Horizontal	2-3-7	3-6-9	4-7-10	5-8-12	6-9-14	6-10-15	7-10-16	8-11-17	9-12-18	10-14-19
		Vertical	2-3-5	2-4-6	3-6-7	5-6-9	5-7-10	5-7-10	6-7-12	7-8-12	8-10-14	8-9-15
	Noise Criteria	Horizontal	—	15	22	25	30	33	36	43	45	48
		Vertical	12	18	25	28	33	36	39	46	48	51
14" Dia.	Total Pressure	Horizontal	.022	.037	.049	.057	.073	.092	.115	.147	.208	.262
		Vertical	.063	.101	.135	.160	.203	.261	.326	.411	.583	.640
	Airflow, CFM		425	530	635	745	855	960	1070	1285	1500	1710
	Throw	Horizontal	2-4-8	4-5-8	5-6-10	6-8-12	7-10-14	8-10-16	9-11-17	10-11-18	11-12-20	12-14-21
		Vertical	2-3-5	4-4-6	4-5-9	5-7-10	6-9-12	7-9-13	8-9-14	9-10-15	10-11-16	10-13-18
	Noise Criteria	Horizontal	—	16	22	25	29	33	36	40	42	48
		Vertical	11	19	25	28	32	36	39	43	45	51
15" Dia.	Total Pressure	Horizontal	.030	.041	.054	.062	.080	.100	.128	.155	.224	.308
		Vertical	.068	.110	.143	.165	.210	.271	.330	.425	.590	.660
	Airflow, CFM		490	615	735	860	985	1110	1230	1470	1720	1965
	Throw	Horizontal	5-6-8	5-8-9	8-9-11	9-10-12	10-10-13	11-12-15	12-12-16	12-14-18	14-15-20	15-17-23
		Vertical	3-4-6	3-4-7	5-6-8	6-7-9	6-8-10	8-9-11	10-11-12	11-12-14	11-14-16	12-16-18
	Noise Criteria	Horizontal	10	18	24	30	34	37	40	42	48	51
		Vertical	13	21	27	33	37	40	43	45	51	54

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Horizontal throws are with ceiling coanda effect. For exposed duct mounting, multiply table values by x 0.7. Vertical throw is a free jet.
4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

STAMPED SQUARE CEILING DIFFUSERS

- FIXED AIR PATTERN
- SQUARE FACE
- ROUND NECK
- 3 CONE

Models:

RNS3 Steel
ARNS3 Aluminum

Model RNS3

Model Series RNS3 and ARNS3 Square Ceiling Air Diffusers have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS3 Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems.

The diffusers are available with a frame/border design to suit a lay-in T-bar ceiling and can also be surface mounted using the optional drywall diffuser frame. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Features 3 cones in all neck sizes, providing a uniform and balanced appearance.
- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Non-removable core.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D266).

EX External Foil-Back Insulation (installed) -R-4.2.

EXB External Foil-Back Insulation (loose) -R-4.2.

MIB Molded Insulation Blanket – R-6.0.

EIC Extended Inlet Collar (2 1/4" [57]) with bead (Model RNS3 only).

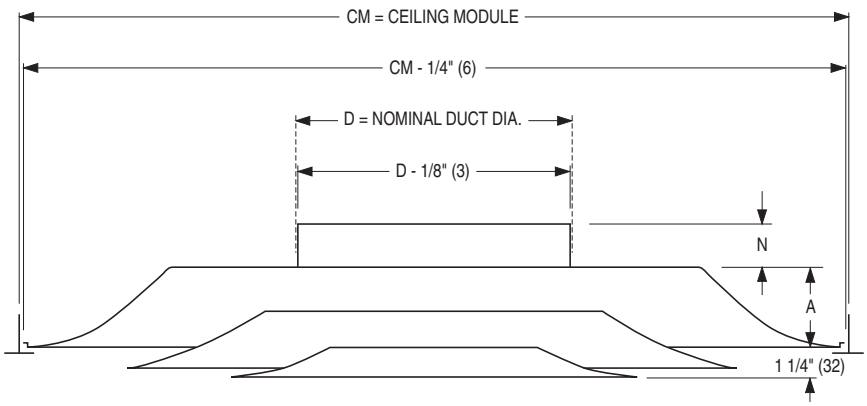
EQT Earthquake Tabs

For additional options and accessories; see page D255.

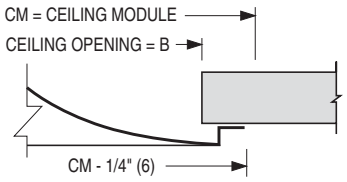
DIMENSIONAL DATA AND FRAME TYPES:

MODELS RNS3 AND ARNS3

Type L Lay-in, T-Bar Frame
24 x 24 (600 x 600) modules

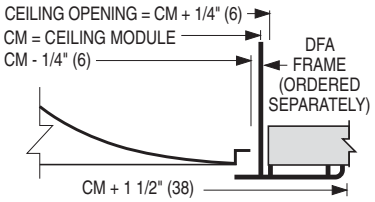


Type L Surface Mount



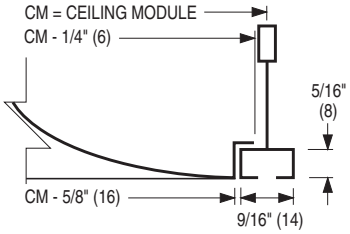
Hard duct connection recommended.

Type L Surface Mount with DFA



Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type F Fineline®



Dimensional Data

Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Duct Size D	N	A	B	Duct Size D	N	A	B
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	152, 203, 254, 305, 356, 381	32	59	559

PERFORMANCE DATA:

Models RNS3 and ARNS3 • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.017	.027	.038	.052	.068	.086	.106	.153	.208	.272
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-4	1-2-5	1-2-6	1-3-7	2-4-9	2-5-9	3-6-11	3-6-12	4-7-14	6-8-15
	Noise Criteria	—	—	—	—	16	19	23	29	34	37
8" Dia.	Total Pressure	.019	.029	.042	.057	.075	.095	.117	.169	.230	.300
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-1-5	1-2-6	1-3-8	2-4-8	3-5-10	3-6-10	4-6-13	5-8-13	6-8-16	7-10-17
	Noise Criteria	—	—	—	15	19	22	26	32	37	40
10" Dia.	Total Pressure	.021	.032	.046	.063	.083	.104	.129	.186	.253	.330
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	1-3-6	2-4-8	3-5-9	4-6-12	5-6-12	5-7-14	6-9-15	6-10-15	8-13-17	9-13-18
	Noise Criteria	—	—	—	17	22	25	29	35	39	43
12" Dia.	Total Pressure	.023	.036	.052	.071	.093	.118	.146	.210	.286	.373
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-3-7	3-4-9	3-5-10	4-6-13	5-7-13	5-8-15	5-8-16	7-9-18	9-11-18	10-12-19
	Noise Criteria	—	—	15	20	25	28	31	37	41	44
14" Dia.	Total Pressure	.027	.042	.060	.082	.107	.136	.168	.241	.328	.429
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	3-4-9	4-5-11	4-7-13	5-7-16	6-9-16	7-11-16	7-11-19	9-13-19	11-16-19	11-16-27
	Noise Criteria	—	—	19	24	27	31	34	39	43	47
15" Dia.	Total Pressure	.029	.045	.065	.089	.116	.147	.182	.262	.356	.465
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	5-7-10	6-8-11	7-9-14	8-10-17	8-13-18	10-15-19	11-16-22	12-18-27	13-20-32	15-22-34
	Noise Criteria	—	15	21	25	28	32	35	40	44	48

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. If the diffuser is mounted on an exposed duct, multiply throw values by x 0.70.

3. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

4. The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.16
8	24 x 24	0.26
10	24 x 24	0.37
12	24 x 24	0.49
14	24 x 24	0.62
15	24 x 24	0.68

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19

STAMPED SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- STEEL

Models:

RNS2 Steel

Model RNS2

Model Series RNS2 Square Ceiling Air Diffuser has been specially designed to provide the mechanical engineer with the most cost effective engineered diffuser currently available in the industry. It combines the high performance expected from a louvered face type ceiling diffuser with a cost as low as any lesser performing commercial diffuser currently available. The RNS2 has a 360° diffusion pattern at minimum NC levels required for high engineering performance. The diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is eminently suitable for variable air volume systems. It can accommodate a turn down of 80% without losing the ceiling coanda effect and dumping. The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

Model RNS2 diffusers are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality, baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- With 2 cones in all sizes, the diffusers provide a uniform appearance.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).

EX External Foil-Back Insulation (installed) – R-4.2.

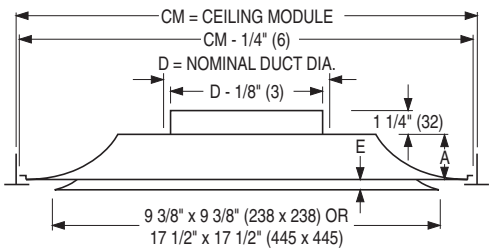
EXB External Foil-Back Insulation (loose) – R-4.2.

MIB Molded Insulation Blanket – R-6.0.

EQT Earthquake Tabs

For additional options and accessories; see page D255.

Type L Lay-in, T-Bar Frame



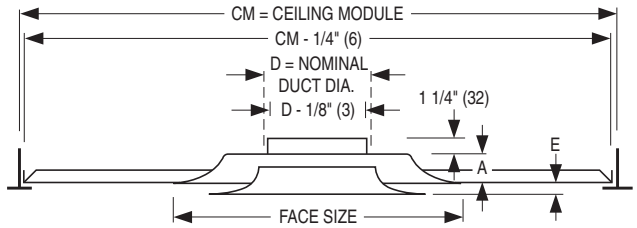
Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	A	B	E	F	Duct Size D	A	B	E	F
12 x 12	300 x 300	6, 8	1	11	1 5/16	13	152, 203	25	279	33	330
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	2 5/16	22	15/16	24 3/4	152, 203, 254, 305, 356, 381	59	559	24	629

DIMENSIONAL DATA AND FRAME TYPES:

MODEL RNS2

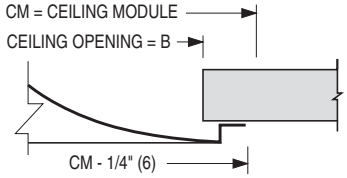
Type PL Panel Mounted Lay-in T-Bar



Dimensional Data

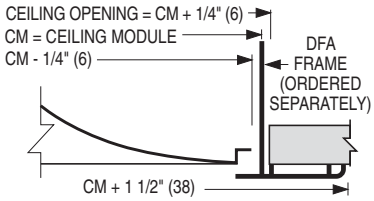
Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Face Size	Duct Size D	A	E	Face Size	Duct Size D	A	E
24 x 24 24 x 12 20 x 20	600 x 600 600 x 300 500 x 500	12 x 12	6, 8	1	1 5/16	300 x 300	152, 203	25	33

Type L Surface Mount



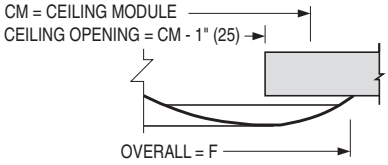
Hard duct connection recommended.

Type L Surface Mount with DFA



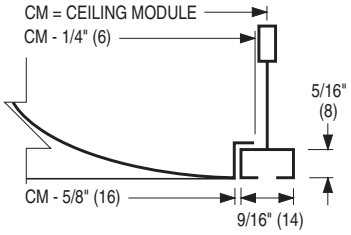
Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type S Surface Mount

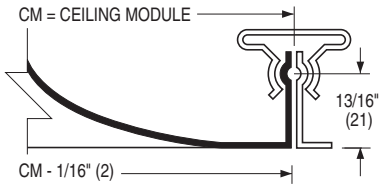


Hard duct connection recommended.

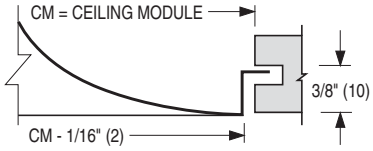
Type F Fineline®



Type M Metal Pan (Snap-in)



Type SP Spline



For one directional exposed T-bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Model RNS2 • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.021	.032	.045	.060	.080	.100	.120	.167	.220	.290
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-6	2-3-8	2-4-10	3-5-11	3-6-12	4-7-13	5-9-14	7-10-15	8-11-17	9-13-18
	Noise Criteria	—	—	—	—	—	—	—	14	24	34
8" Dia.	Total Pressure	.025	.037	.052	.070	.091	.113	.138	.195	.260	.340
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-4-10	3-6-13	4-8-15	5-9-16	7-11-17	8-12-19	9-14-20	11-16-22	13-17-23	15-18-26
	Noise Criteria	—	—	—	—	—	—	10	19	27	34

Model RNS2 • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.026	.040	.058	.080	.104	.131	.190	.262	.350	.500
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-4	1-2-5	2-2-6	2-3-7	2-4-8	2-4-9	3-5-9	4-6-10	5-7-12	6-8-13
	Noise Criteria	—	—	—	11	14	18	21	27	33	38
8" Dia.	Total Pressure	.043	.065	.092	.125	.165	.210	.257	.400	.540	.740
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-3-5	2-3-6	2-4-7	3-4-8	3-5-9	4-5-10	5-6-11	6-7-13	6-8-14	7-9-15
	Noise Criteria	—	11	16	20	23	27	30	37	42	47
10" Dia.	Total Pressure	.045	.069	.098	.137	.176	.225	.274	.421	.568	.774
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	1-3-6	2-3-7	2-4-8	3-4-10	4-5-11	5-6-12	5-7-13	6-8-14	7-9-15	8-10-16
	Noise Criteria	10	15	20	24	28	32	35	40	45	50
12" Dia.	Total Pressure	.046	.070	.100	.140	.180	.230	.280	.430	.580	.790
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Throw	3-4-7	4-5-9	4-6-10	5-7-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-16	10-13-17
	Noise Criteria	11	16	21	25	29	33	36	41	46	51
14" Dia.	Total Pressure	.047	.072	.104	.145	.185	.240	.285	.440	.590	.805
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	3-4-7	4-5-9	4-6-10	5-7-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-16	10-13-17
	Noise Criteria	13	18	23	27	31	34	37	43	53	57
15" Dia.	Total Pressure	.048	.075	.110	.150	.195	.250	.300	.455	.610	.825
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	4-5-8	4-6-10	5-7-11	6-8-12	6-9-13	7-10-14	8-10-15	9-12-16	10-13-17	11-14-18
	Noise Criteria	14	19	24	29	32	36	39	45	56	60

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.157
8	12 x 12	.232
6	24 x 24	.185
8	24 x 24	.226
10	24 x 24	.285
12	24 x 24	.382
14	24 x 24	.505
15	24 x 24	.577

"TWISTER" STAMPED CEILING SWIRL DIFFUSERS

- HIGH PERFORMANCE
- HIGH INDUCTION
- ROUND NECK

Model:

TWR Steel

Model TWR

Model Series TWR "Twister" Stamped Square Ceiling Diffuser is a high performance ceiling diffuser that is ideal for VAV applications. The name "Twister" is given to this diffuser because of its tight horizontal 360° swirl air pattern. The contemporary architectural radial vane design produces an unmatched high induction swirl pattern engineered to optimize occupant comfort by minimizing stratification over a wide range of air volumes. The "Twister's" superior coanda effect air pattern eliminates dumping and is ideal for VAV applications.

The diffuser features the popular 2' x 2' (600 x 600) module size and is available with frame/border styles to suit all ceiling systems. The round neck design includes a full 1 1/4" (32) high collar for an easy, secure connection.

STANDARD FEATURES:

- Constructed from heavy gauge corrosion-resistant steel.
- Stamped face design allows for uniformity of the radial vanes.
- Superior coanda effect air pattern, eliminates dumping and is ideal for VAV applications.
- 24" x 24" (600 x 600) ceiling module size available with frame/border types to suit all ceiling systems.
- Engineered 'swirl' air diffusion pattern.
- Designed for 60 – 750 cfm; available in five neck sizes 6" – 14" (152 – 356).
- High neck collars for solid connection.
- Removable plug for screwdriver adjustment of the optional damper from below the face.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper
6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper
5" – 24" (127 – 610).

4675 Butterfly Damper
6" – 14" (152 – 356).

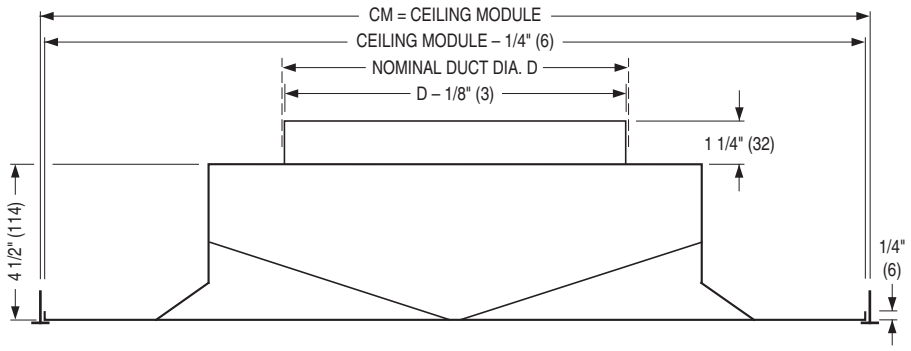
EQT Earthquake Tabs

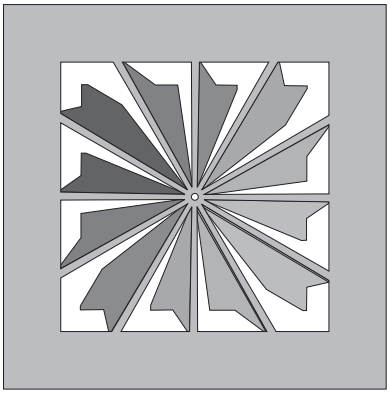
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODEL TWR

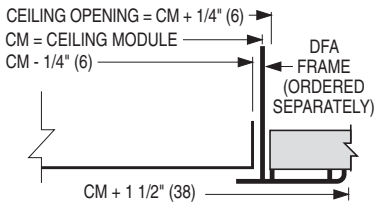
Type L Lay-in T-Bar Frame





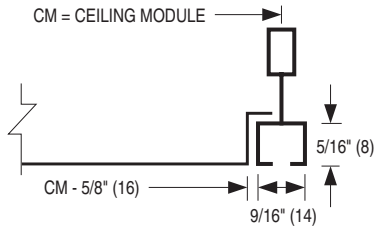
FACE VIEW

Type L Surface Mount with DFA

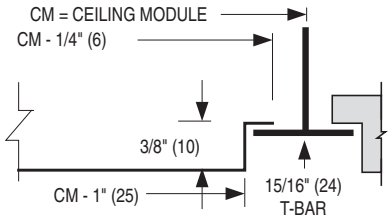


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

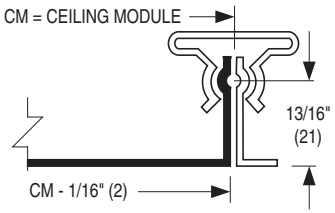
Type F Fineline®



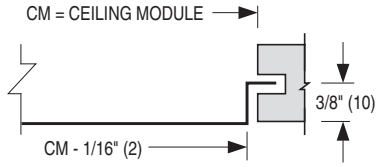
Type TL Tegular Lay-in



Type M Metal Pan (Snap-in)



Type SP Spline



For one directional exposed T-bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Dimensional Data

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules (in.)	Metric Modules (mm)	Imperial Units (in.)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14	152, 203, 254, 305, 356

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Model "TWR" Twister • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.006	.011	.018	.025	.034	.044	.056	.069	.098	.133	.174
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-2	1-1-2	1-2-3	1-2-4	1-2-5	2-3-6	2-3-7	2-3-8	3-4-9	3-6-10	3-7-11
	Noise Criteria	—	—	—	—	—	—	—	15	23	32	34
8" Dia.	Total Pressure	.011	.016	.026	.036	.049	.063	.080	.097	.144	.186	.250
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490	560
	Throw	1-2-3	1-2-4	2-3-5	2-3-7	3-4-8	3-4-9	3-5-9	4-5-10	4-7-11	5-8-12	6-9-12
	Noise Criteria	—	—	—	—	—	—	16	22	28	34	37
10" Dia.	Total Pressure	.013	.023	.035	.050	.067	.087	.108	.132	.197	.244	.309
	Airflow, CFM	165	220	270	330	380	435	490	545	655	765	870
	Throw	2-3-6	2-3-7	3-4-8	3-5-8	4-6-9	4-6-10	5-6-11	5-7-13	6-7-14	7-8-15	8-11-16
	Noise Criteria	—	—	—	—	—	16	20	23	30	38	45
12" Dia.	Total Pressure	.017	.029	.043	.062	.084	.108	.134	.163	.251	.300	.377
	Airflow, CFM	235	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-4-7	3-4-9	3-5-10	4-6-11	5-7-13	5-8-13	6-8-14	7-9-14	8-11-16	10-13-18	12-15-19
	Noise Criteria	—	—	—	—	16	20	24	27	34	40	47
14" Dia.	Total Pressure	.022	.033	.053	.073	.099	.125	.158	.192	.272	.367	.472
	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	2-3-9	3-6-11	5-7-13	6-9-14	7-10-15	8-11-16	9-12-17	10-13-17	11-14-19	12-15-21	13-16-21
	Noise Criteria	—	—	16	22	25	27	32	34	39	44	47

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.181
8	24 x 24	0.264
10	24 x 24	0.330
12	24 x 24	0.458
14	24 x 24	0.521

ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK

Models:

UNI **Steel**
AUNI **Aluminum**

Model UNI

Model Series 'UNI' Square Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI diffuser complements any decor, blending beautifully with virtually any architectural style or requirement. The UNI diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI diffusers are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Unique neck bracketry is virtually invisible from most angles.
- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

FINISH OPTIONS:

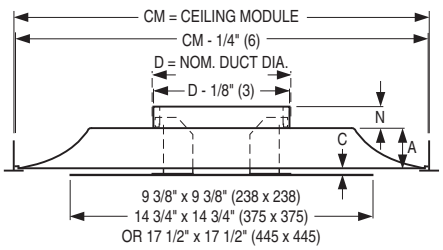
AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675 Butterfly Damper 6" – 14" (152 – 356).
QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D264).
EX External Foil-Back Insulation (installed) -R-4.2.
EXB External Foil-Back Insulation (loose) -R-4.2.
MIB Molded Insulation Blanket R-6.0.
EIC Extended Inlet Collar (2 1/4" [57] with bead (Model UNI only).
EQT Earthquake Tabs
RC Retaining Channel only
RCCF Retaining Channel with Tile Cut and Fitted (see page D106).

For additional options and accessories; see page D255.

Type L Lay-in, T-Bar Frame



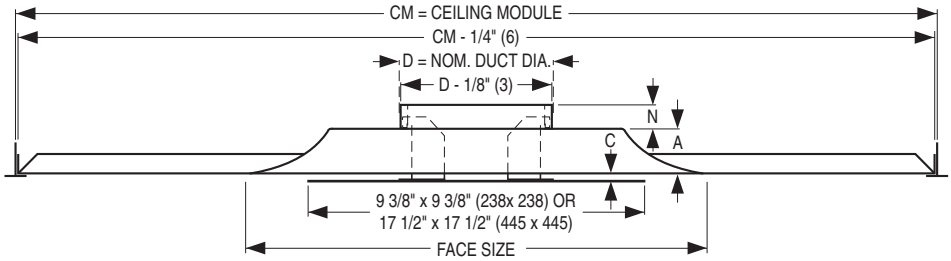
Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
20 x 20	500 x 500	6, 8, 10	1 1/4	2 1/4	18 1/2	7/16	N/A	152, 203, 254	32	57	470	11	N/A
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

* Supplied with a reducer.

DIMENSIONAL DATA AND FRAME TYPES: MODELS UNI AND AUNI

Type PL
Panel Mounted
Lay-in T-Bar

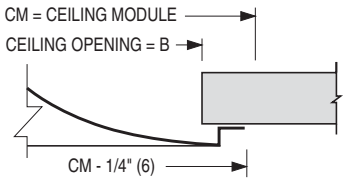


Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	5/8	300 x 300	102*	83	25	16
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 12	600 x 300		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 24	600 x 600		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	3/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	10
48 x 24	1200 x 600		6, 8, 10, 12, 14, 15					152, 203, 254, 305, 356, 381			

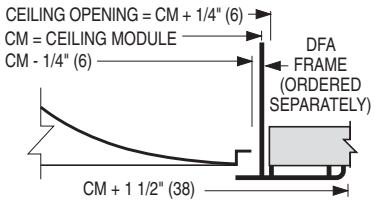
* Supplied with a reducer.

Type L Surface Mount



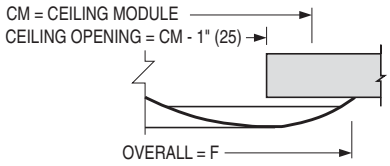
Hard duct connection recommended.

Type L Surface Mount with DFA



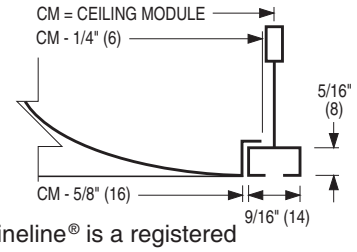
Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type S Surface Mount



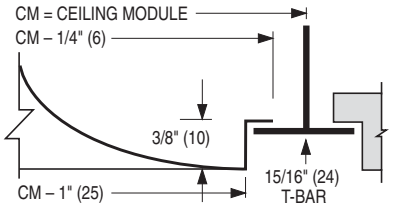
Aluminum model (AUNI) is only available in 12 x 12 (300 x 300) module for Type S. Hard duct connection recommended.

Type F Fineline®

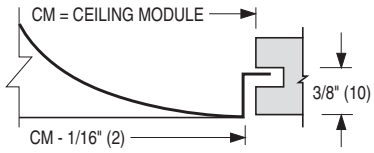


Fineline® is a registered trademark of USG Interiors Inc.

Type TL Tegular Lay-in



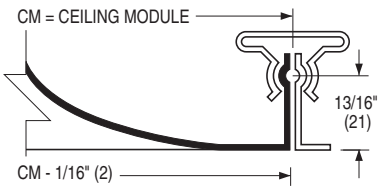
Type SP Spline



Steel models only. For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Type M Metal Pan (Snap-in)

Steel models only



Directional Blow Option • QB Quadrant Blanks

- Converts **UNI** from standard 4-way (360°) blow pattern to 1, 2 or 3-way.
- Supplied factory installed when specified or available loose for simple field installation.
- Installs between outer cone and face panel and locates between neck bracketry.
- Positive full depth blank-off follows neck circumference; see page D264.

Blow Patterns

ARCHITECTURAL OPTION

Model:
UNI with optional
RC (retaining angle)

Model UNI-RC

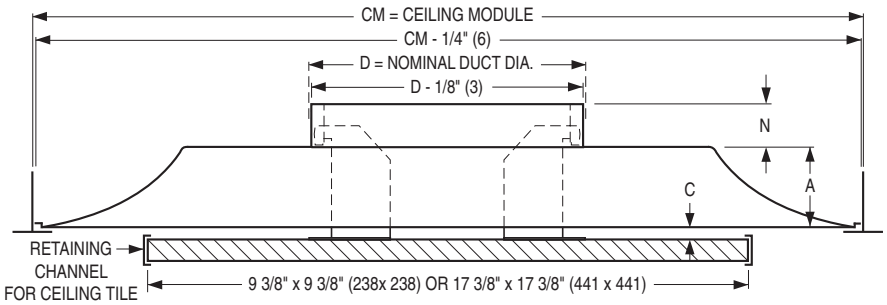
For a unique 'custom' appearance, specify the UNI diffuser with the optional RC Retaining Channel. The retaining channel is shipped separately for field installation of a ceiling tile. Simply cut the tile to size and install it directly on the face panel assembly.

The RC Retaining Channel is supplied in two pieces with pop rivets for field assembly as standard.

The result is a high performance diffuser that blends harmoniously with the specified architectural ceiling design.

Tiles (supplied by others) can also be factory installed at additional cost.

***Type L Lay-in T-Bar Frame**



Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

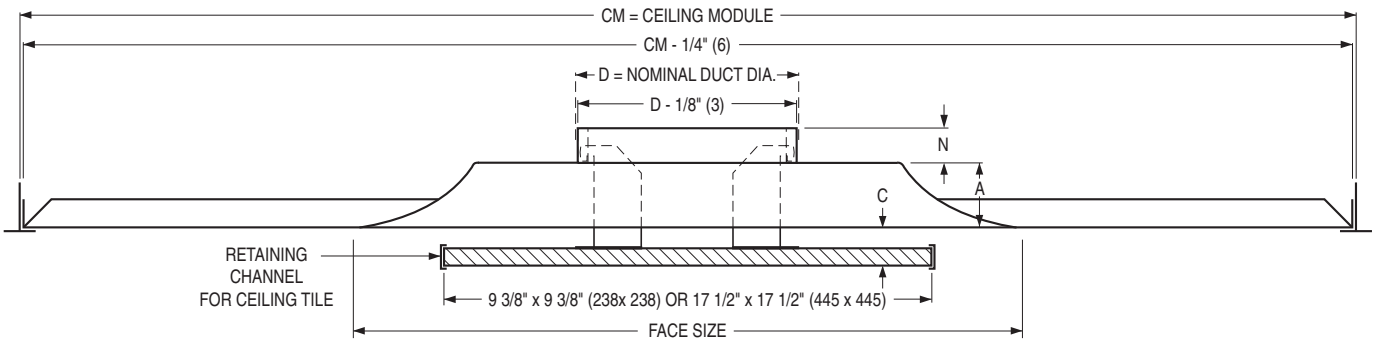
* Supplied with a reducer.

* Refer to previous page for other frame types and installations.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI WITH OPTIONAL RC & UNI TYPE PL

***Type PL Panel Mounted, Lay-in T-Bar with RC Retaining Channel for Ceiling Tile**



Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	1 3/8	300 x 300	102*	83	25	35
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 12	600 x 300		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 24	600 x 600		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	1 1/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	29
48 x 24	1200 x 600		6, 8, 10, 12, 14, 15					152, 203, 254, 305, 356, 381			

* Supplied with a reducer.

PERFORMANCE DATA:

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
4" Dia.	Total Pressure	.023	.036	.051	.070	.091	.115	.142	.205	.279	.364
	Airflow, CFM	35	45	50	60	70	80	85	105	120	140
	Throw	1-2-3	1-2-4	2-2-5	2-3-6	2-3-6	2-4-7	3-4-7	3-5-7	4-6-7	5-7-8
	Noise Criteria	—	—	—	13	17	21	24	30	35	40
5" Dia.	Total Pressure	.027	.043	.061	.083	.109	.138	.170	.245	.334	.436
	Airflow, CFM	55	70	80	95	110	125	135	165	190	220
	Throw	2-2-4	2-3-5	2-3-6	3-4-7	3-5-8	4-6-9	4-7-9	4-8-10	5-8-10	6-9-11
	Noise Criteria	—	—	—	14	18	22	25	31	36	41
6" Dia.	Total Pressure	.033	.052	.074	.101	.131	.166	.205	.295	.402	.525
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	2-3-5	3-4-6	3-5-7	4-5-8	5-6-9	5-7-10	5-8-10	6-9-11	7-10-12	7-10-13
	Noise Criteria	—	—	10	15	19	23	26	32	37	42
7" Dia.	Total Pressure	.056	.089	.127	.172	.225	.285	.352	.506	.689	.900
	Airflow, CFM	105	135	160	190	215	240	265	320	375	430
	Throw	3-4-6	3-5-7	4-6-9	4-7-10	5-8-10	6-8-11	6-9-12	7-10-13	8-11-14	9-12-15
	Noise Criteria	—	—	11	16	20	24	27	33	38	43
8" Dia.	Total Pressure	.067	.105	.160	.205	.268	.340	.418	.600	.821	1.070
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	3-5-7	4-6-9	5-7-10	6-8-11	6-9-12	7-9-13	7-10-14	8-11-15	9-12-16	9-12-17
	Noise Criteria	—	—	12	17	21	25	28	34	39	44

Models UNI and AUNI • 20 x 20 (500 x 500) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.014	.021	.031	.042	.055	.070	.086	.124	.168	.220
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-5	2-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.019	.029	.042	.057	.074	.094	.116	.167	.227	.296
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	. 031	.049	.071	.096	.126	.159	.196	.283	.385	.503
	Airflow, CFM	220	270	330	380	435	490	545	655	765	875
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	6-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Return Applications:

Use the following correction factors with the supply data.

Noise Criteria = + 3 Noise Criteria (NC)

Negative Static Pressure = Total Pressure x .45

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

PERFORMANCE DATA:

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
3. Return Applications:

Use the following correction factors with the supply data.

Noise Criteria = + 3 Noise Criteria (NC)

Negative Static Pressure = Total Pressure x .45

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

PERFORMANCE DATA:

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 3-way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.035	.061	.096	.138	.188	.245	.311	.383	.529	.725
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
	Throw	2-4-6	3-6-9	5-7-9	5-8-10	6-9-12	7-9-13	7-10-14	8-11-15	8-12-16	9-13-17
	Noise Criteria	—	—	12	18	23	27	31	34	40	45
8" Dia.	Total Pressure	.076	.135	.211	.304	.414	.540	.684	.844	1.215	1.654
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	3-5-7	5-7-10	5-8-11	6-9-12	7-10-13	7-10-14	8-11-15	9-12-16	9-12-17	10-13-18
	Noise Criteria	—	—	14	20	25	29	33	36	42	47

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 3-Way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.010	.018	.028	.041	.055	.072	.091	.113	.155	.213
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
	Throw	1-3-4	1-3-4	2-4-5	2-5-6	3-4-7	4-5-8	4-6-9	4-6-10	5-6-10	6-7-11
	Noise Criteria	—	—	—	11	17	22	26	30	36	42
8" Dia.	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173	.249	.339
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	2-2-4	2-3-6	3-4-8	3-5-8	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13	9-11-14
	Noise Criteria	—	—	—	15	21	26	30	34	40	46
10" Dia.	Total Pressure	.032	.057	.085	.127	.169	.221	.281	.347	.501	.684
	Airflow, CFM	165	220	270	330	380	435	490	545	655	765
	Throw	3-4-7	3-5-9	4-6-10	5-7-11	5-8-12	7-10-13	8-11-15	9-12-16	11-13-18	12-14-19
	Noise Criteria	—	—	—	18	24	29	33	37	43	49
12" Dia.	Total Pressure	.043	.077	.118	.171	.235	.308	.386	.478	.686	.939
	Airflow, CFM	235	315	390	470	550	630	705	785	940	1100
	Throw	4-5-10	5-7-13	6-9-15	8-11-17	9-13-18	10-14-19	11-15-20	13-16-22	16-18-25	18-21-28
	Noise Criteria	—	—	12	21	27	32	36	40	46	52
14" Dia.	Total Pressure	.060	.106	.165	.237	.326	.425	.536	.661	.949	1.306
	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490
	Throw	5-7-14	6-9-16	9-12-19	11-15-23	12-18-24	14-19-26	16-21-28	19-21-30	20-24-33	21-26-35
	Noise Criteria	—	—	14	23	29	34	38	42	48	54
15" Dia.	Total Pressure	.074	.130	.205	.293	.401	.526	.668	.820	1.172	1.604
	Airflow, CFM	370	490	615	735	860	985	1110	1230	1470	1720
	Throw	6-9-17	8-12-20	11-16-24	14-19-26	14-20-27	17-22-31	19-24-33	22-25-35	23-27-38	24-29-40
	Noise Criteria	—	—	15	24	30	35	39	43	49	55

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.079
8	12 x 12	.098
6	24 x 24	.155
8	24 x 24	.186
10	24 x 24	.236
12	24 x 24	.288
14	24 x 24	.328
15	24 x 24	.364

PERFORMANCE DATA:

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 2-way Blow

Nominal Neck Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	1200
	Velocity Pressure	.003	.006	.010	.016	.023	.031	.040	.051	.063	.090
6" Dia.	Total Pressure	.032	.071	.126	.198	.284	.387	.506	.640	.790	1.091
	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
	Throw	2-4-6	4-6-9	5-8-10	6-9-12	7-9-13	8-11-15	8-12-16	9-12-17	9-13-18	10-13-19
	Noise Criteria	—	—	16	22	25	30	34	38	41	47
8" Dia.	Total Pressure	.074	.166	.294	.460	.662	.902	1.178	1.491	1.840	2.650
	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
	Throw	3-5-7	5-7-10	6-9-12	7-10-14	8-11-15	9-12-16	9-12-17	10-12-18	10-13-19	11-14-20
	Noise Criteria	—	11	18	24	27	32	36	40	43	49

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 2-Way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.007	.016	.028	.043	.063	.085	.111	.141	.174	.240
	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
	Throw	1-3-4	2-4-5	2-5-6	3-4-7	4-6-9	4-6-10	5-6-10	6-7-11	6-8-12	7-9-13
	Noise Criteria	—	—	—	12	18	24	29	33	37	43
8" Dia.	Total Pressure	.013	.028	.050	.078	.113	.153	.200	.253	.313	.450
	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
	Throw	2-2-4	2-3-7	3-5-9	5-7-9	6-8-11	7-9-12	8-10-13	9-11-14	10-12-15	11-13-17
	Noise Criteria	—	—	—	16	22	28	33	37	41	47
10" Dia.	Total Pressure	.029	.065	.115	.174	.259	.344	.451	.572	.707	1.022
	Airflow, CFM	110	165	220	270	330	380	435	490	545	655
	Throw	3-4-7	3-5-10	5-7-13	7-9-14	8-11-15	10-12-17	11-13-18	11-14-18	12-15-19	13-17-22
	Noise Criteria	—	—	12	19	25	31	36	41	44	50
12" Dia.	Total Pressure	.042	.09	.162	.248	.36	.493	.647	.811	1.005	1.441
	Airflow, CFM	160	235	315	390	470	550	630	705	785	940
	Throw	4-5-10	5-8-14	8-11-17	10-14-19	11-15-20	14-17-23	16-18-25	16-19-25	18-21-27	19-22-29
	Noise Criteria	—	—	15	22	28	34	39	43	47	53
14" Dia.	Total Pressure	.056	.130	.229	.356	.511	.704	.916	1.156	1.425	2.045
	Airflow, CFM	210	320	425	530	635	745	850	955	1060	1270
	Throw	5-7-14	7-11-18	11-15-23	14-19-26	16-21-28	19-22-31	20-24-33	20-26-33	23-28-36	25-30-38
	Noise Criteria	—	—	17	24	30	36	41	45	49	55
15" Dia.	Total Pressure	.071	.161	.283	.446	.637	.872	1.144	1.453	1.784	2.548
	Airflow, CFM	245	370	490	615	735	860	985	1110	1230	1470
	Throw	6-9-17	9-13-21	14-19-26	16-21-30	19-24-33	23-26-35	23-27-38	23-28-39	25-29-42	28-31-42
	Noise Criteria	—	10	18	25	31	37	42	46	50	56

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.053
8	12 x 12	.065
6	24 x 24	.103
8	24 x 24	.124
10	24 x 24	.158
12	24 x 24	.192
14	24 x 24	.219
15	24 x 24	.243

ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- CORNER POSTS

Model:

UNI2 Steel

AUNI2 Aluminum

Model UNI2

Model 'UNI2' Square Plaque Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and engineering performance. The diffuser delivers a tight 360° radial horizontal pattern allowing high turn down ratios with no dumping. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI2 diffusers complements any decor, blending beautifully with virtually any architectural style or requirement. The diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI2 diffusers are available to suit multiple applications such as Lay-in T-Bar as well as surface mount where hard duct connection is required and Drywall/Plaster frame recommended for flexible duct connection and ceiling access. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Hemmed edge mechanically captures the hanger brackets and the design eliminates welding, ensuring a clean, smooth and blemish free painted finish.
- Face panel is held in place by four hook corner posts that positively engage into slots in the back pan.
- Panel is removable from the backpan for diffuser installation and access to provide optional inlet damper.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

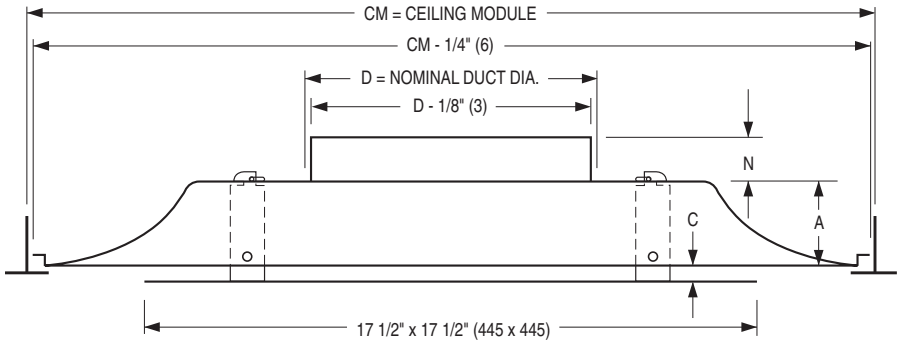
4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
QB	Quadrant Blanks for 1, 2 and 3-way blow. (See page D265).
EX	External Foil-Back Insulation (installed) – R-4.2.
EXB	External Foil-Back Insulation (loose) – R-4.2.
MIB	Molded Insulation Blanket R-6.0.
EIC	Extended Inlet Collar (2 1/4" [57] with bead (Model UNI2 only).
MRI	100% Aluminum Construction (MRI room compatible) (Model AUNI2 only).
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI2 AND AUNI2

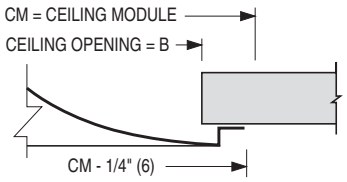
Type L
Lay-in T-Bar



Dimensional Data

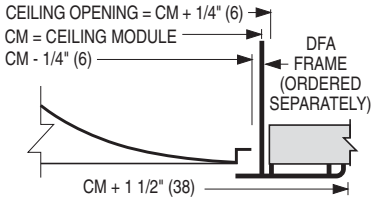
CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	Duct Size D	N	A	B	C
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	152, 203, 254, 305, 356, 381	32	59	559	10

Type L Surface Mount



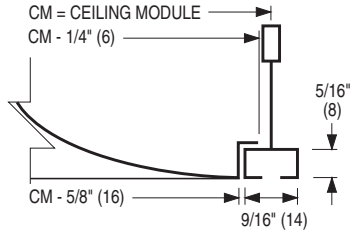
Hard duct connection recommended.

Type L Surface Mount with DFA



Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type F Fineline®



Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models UNI2 and AUNI2 • 24 x 24 (600 x 600) Face Size • 4-Way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	**.010**	**.016**	**.023**	**.031**	**.040**	**.051**	**.063**	**.090**	**.122**	**.160**
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	**80**	**100**	**120**	**140**	**160**	**180**	**200**	**235**	**275**	**315**
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	**140**	**175**	**210**	**245**	**280**	**315**	**350**	**420**	**490**	**560**
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	**220**	**270**	**330**	**380**	**435**	**490**	**545**	**655**	**765**	**870**
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-13	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	**315**	**390**	**470**	**550**	**630**	**705**	**785**	**940**	**1100**	**1255**
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	**425**	**530**	**635**	**745**	**850**	**955**	**1060**	**1270**	**1490**	**1695**
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	**490**	**615**	**735**	**860**	**985**	**1110**	**1230**	**1470**	**1720**	**1970**
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

FIXED PERFORATED DOWNBLAST DIFFUSER

- ARCHITECTURAL
- HIGH PERFORMANCE
- THEATER APPLICATIONS
- SQUARE FACE
- ROUND NECK

Models:

UNI-PD Steel

Model UNI-PD

Model 'UNI-PD' Fixed Perforated Downblast Square Ceiling Diffuser has been specially designed to provide both the unobtrusive appearance for architectural excellence and the high airflow at minimum NC levels needed in theater, auditorium and other high ceiling applications. A circular perforated aperture in the diffuser face provides both a horizontal and vertical apportion of the airflow. The horizontal portion provides a tight 360° ceiling diffusion pattern and the vertical portion provides a true and long downward projection.

Model UNI-PD heavy duty ceiling diffusers are designed for effective heating and spot cooling applications where conditions and floor to ceiling heights are variable.

Designed to integrate with the popular lay-in type ceiling grid system, this diffuser offers simple installation and a highly economical alternative to the more expensive round spun downblast diffuser design.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Fixed inner core.
- Suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other high ceiling applications.
- 360° horizontal discharge pattern.
- Heavy gauge face plate features a hemmed edge for a professional, clean finish. Perforated face has 3/8" (10) diameter holes on 5/8" (16) staggered centers.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

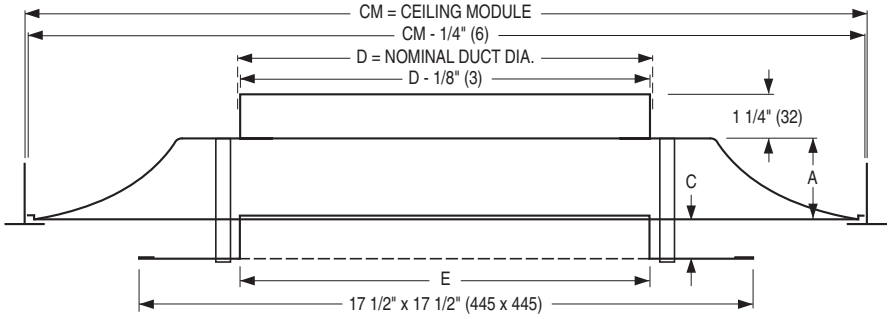
EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
MIB	Molded Insulation Blanket – R-6.0.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODEL UNI-PD

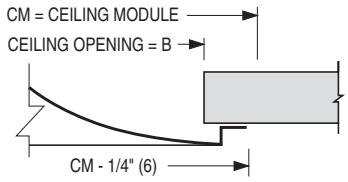
Type L Lay-in, T-Bar Frame



Dimensional Data

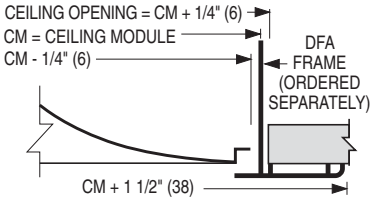
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	E	A	B	C	F	Duct Size D	E	A	B	C	F
24 x 24	600 x 600	12, 14	11 1/4	2 5/16	22	1 3/16	24 3/4	305, 356	285	59	559	30	629

Type L Surface Mount



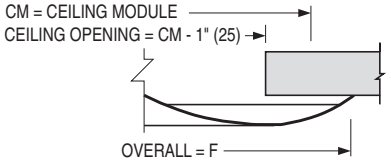
Hard duct connection recommended.

Type L Surface Mount with DFA

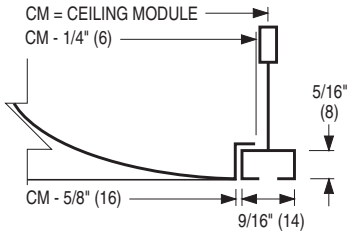


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

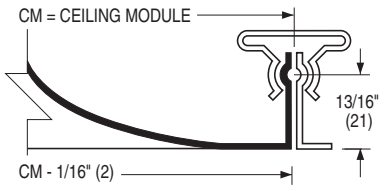
Type S Surface Mount



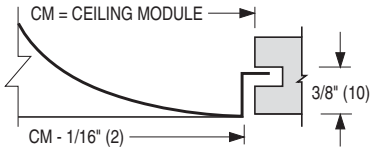
Type F Fineline®



Type M Metal Pan (Snap-in)



Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models UNI-PD • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
12" Dia.	Total Pressure	.018	.028	.041	.055	.072	.092	.113	.163	.221	.289
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Horizontal Throws, Ft. H	2-3-4	3-5-7	3-5-8	4-6-8	5-6-10	5-7-11	6-8-10	6-9-12	8-11-13	9-12-16
	Vertical Projections, Ft. V	6-9	8-10	8-10	9-12	10-13	12-14	15-17	16-18	17-19	20-21
	Noise Criteria	—	—	—	13	18	22	26	34	38	42
14" Dia.	Total Pressure	.023	.036	.051	.070	.092	.116	.143	.206	.280	.366
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Horizontal Throws, Ft. H	2-4-5	3-5-6	4-5-7	5-6-7	5-6-8	6-7-8	6-7-9	7-9-11	8-10-13	9-11-14
	Vertical Projections, Ft. V	8-11	9-12	9-13	10-14	11-15	12-16	13-17	15-19	17-21	19-23
	Noise Criteria	—	—	—	15	20	24	28	36	40	44

Performance Notes:

1. Horizontal throws are given at a terminal velocity of 150, 100 and 50 fpm under isothermal conditions.

Horizontal throws for non-isothermal air are determined by applying the following correction factors to the cataloged values:

ΔT	Factor
- 20°F clg. + 20°F htg.	x 1.20 x 0.85

Vertical projections are given at a terminal velocity of 50 fpm. Minimum projections are for a 20°F heating temperature differential and maximum projections are for a 20°F cooling differential.

2. Horizontal/Vertical apportion of the airflow:

12" neck approximately 60/40%.

14" neck approximately 65/35%.

3. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

ADJUSTABLE DOWNBLAST DIFFUSER

- HIGH PERFORMANCE
- THEATER APPLICATIONS
- VERTICAL-TO-HORIZONTAL DISCHARGE PATTERNS
- SQUARE FACE
- ROUND NECK

Models:

UNI-AD Steel

Model UNI-AD

Model 'UNI-AD' Adjustable Downblast Square Ceiling Diffuser has been specially designed to provide both the unobtrusive appearance for architectural excellence and the high airflow at minimum NC levels needed in theater, auditorium and other high ceiling applications. Radial vanes in the adjustable face damper permit air pattern adjustment from full horizontal to approximately 50/50 horizontal/vertical. Full adjustment requires only a half turn and is easily accomplished from the floor using the ring operator and a pole (by others).

Model UNI-AD heavy duty ceiling diffusers are designed for effective heating and spot cooling applications where conditions and floor to ceiling heights are variable. At the full vertical setting, they provide a true and long downward projection. At full horizontal setting, they produce the tight ceiling pattern that is required for excellent VAV performance.

Designed to integrate with the popular lay-in type ceiling grid system, this diffuser offers simple installation and a highly economical alternative to the more expensive round spun downblast diffuser design.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Fixed inner core.
- Suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other high ceiling applications.
- 360° horizontal discharge pattern.
- 0 – 50% airflow vertical projection capability.
- Ring operator can be adjusted using a pole.
- Heavy gauge face plate features a hemmed edge for a professional, clean finish.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

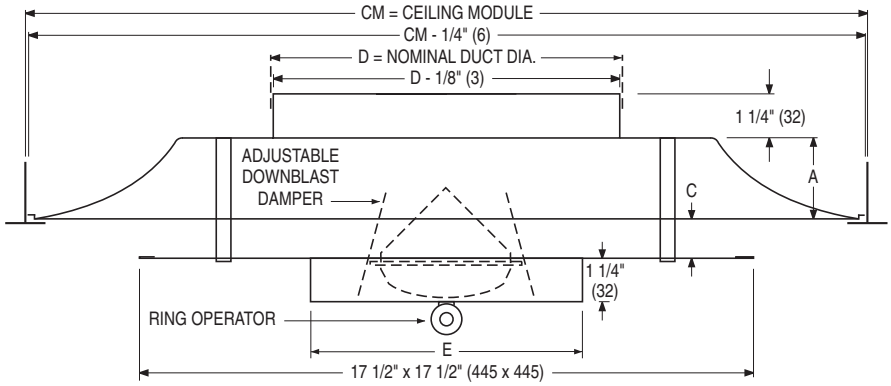
EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
MIB	Molded Insulation Blanket R-6.0.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODEL UNI-AD

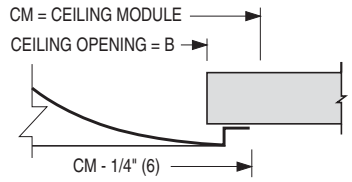
Type L Lay-in, T-Bar Frame



Dimensional Data

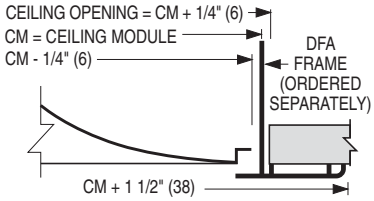
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	E	A	B	C	F	Duct Size D	E	A	B	C	F
24 x 24	600 x 600	12, 14	8, 10	2 5/16	22	1 3/16	24 3/4	305, 356	203, 254	59	559	30	629

Type L Surface Mount



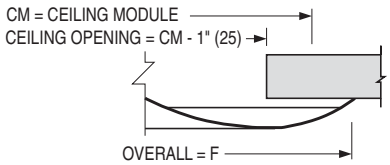
Hard duct connection recommended.

Type L Surface Mount with DFA

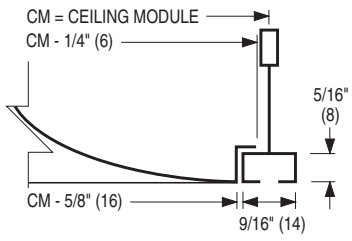


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type S Surface Mount

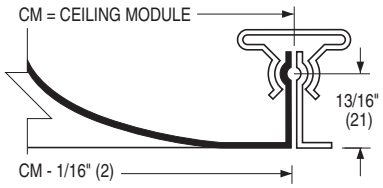


Type F Fineline®

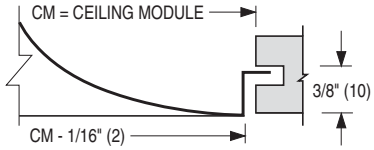


Type M Metal Pan (Snap-in)

Steel models only



Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models UNI-AD • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Horizontal Throws, Ft. H	5	7	8	9	11	12	14	15	17	18
	Vertical Projections, Ft. V	3-13	4-16	5-20	7-22	8-28	8-32	9-34	10-36	15-59	19-62
	Noise Criteria	—	—	13	16	21	25	29	35	41	46
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Horizontal Throws, Ft. H	7	9	11	13	15	17	19	21	22	24
	Vertical Projections, Ft. V	5-14	5-16	6-20	6-24	8-30	9-32	10-34	14-57	20-65	25-75
	Noise Criteria	—	—	14	18	23	27	30	37	43	48

Performance Notes:

1. Horizontal throws are given at a terminal velocity of 50 fpm and a 20°F cooling temperature differential.

Vertical projections are given at a terminal velocity of 50 fpm. Minimum projections are for a 40°F heating temperature differential and maximum projections are for a 20°F cooling differential.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Noise Criteria values shown are for the horizontal discharge pattern. For downblast (damper open), deduct 5. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

ARCHITECTURAL SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- ROUND PLAQUE FACE
- ROUND NECK

Models:

UNI-RP Steel

Model UNI-RP

Model Series 'UNI-RP' Architectural Square Ceiling Diffusers have been designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the round inner face panel provide a clean appearance.

Model 'UNI-RP' diffusers offer an aesthetically pleasing design that suits virtually any architectural style or requirement. The 'UNI-RP' diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

'UNI-RP' diffusers are available to suit many applications including surface mount, lay-in T-Bar and panel types. A variety of neck sizes are available to suit various system designs. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- Round Plaque Face.
- High neck collars for solid connection.
- Round Neck.
- Removable inner core.
- Unique neck bracketry is virtually invisible from a normal viewing position.
- No visible corner posts for aesthetics.
- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

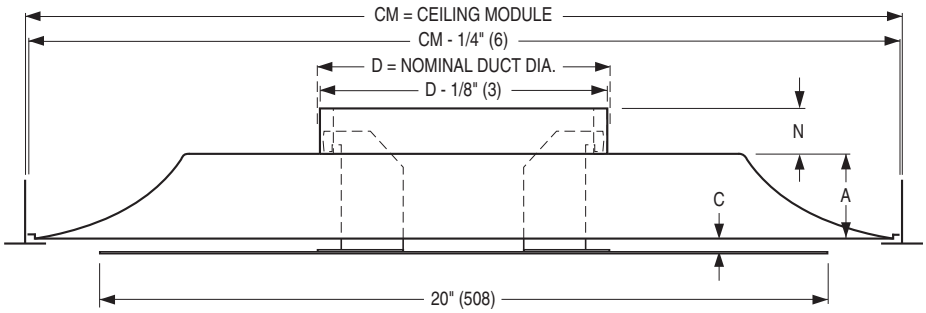
4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
MIB	Molded Insulation Blanket - R-6.0.
EQT	Earthquake Tabs

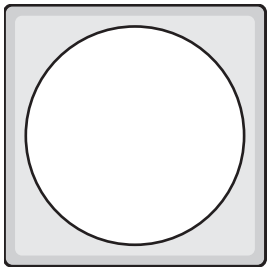
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI-RP

Type L Lay-in, T-Bar Frame



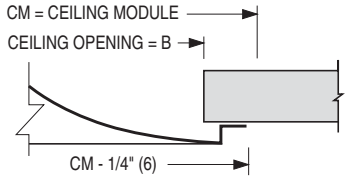


FACE VIEW

Dimensional Data

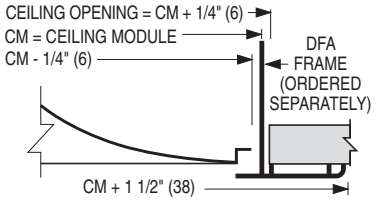
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

Type L Surface Mount



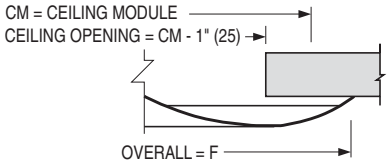
Hard duct connection recommended.

Type L Surface Mount with DFA

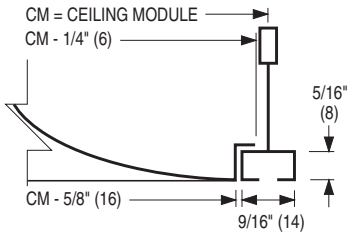


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

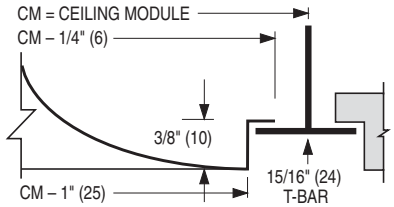
Type S Surface Mount



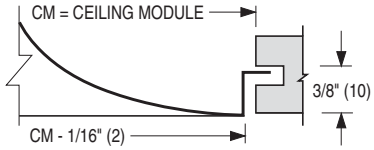
Type F Fineline®



Type TL Tegular Lay-in



Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models UNI-RP • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure	.019	.028	.040	.052	.067	.084	.102	.122	.147	.193
	Airflow, CFM	80	100	120	135	155	175	195	215	235	275
	Throw	1-1-4	1-2-5	2-2-5	2-3-5	2-3-6	2-3-7	2-4-7	3-4-7	3-5-8	4-6-8
	Noise Criteria	—	—	—	15	20	24	28	31	34	37
8" Dia.	Total Pressure	.023	.035	.047	.066	.085	.106	.132	.161	.190	.258
	Airflow, CFM	140	175	210	245	280	315	350	385	420	490
	Throw	2-3-7	2-4-7	3-4-8	3-5-9	4-6-9	4-6-10	5-7-11	5-8-11	6-8-12	7-10-13
	Noise Criteria	—	—	—	16	20	25	29	32	35	39
10" Dia.	Total Pressure	.030	.047	.066	.092	.120	.152	.186	.225	.267	.365
	Airflow, CFM	220	275	325	380	435	490	545	600	655	765
	Throw	3-4-9	3-5-10	4-6-11	5-7-12	5-8-13	6-8-14	6-9-15	7-10-15	8-11-16	9-13-17
	Noise Criteria	—	—	15	20	22	26	31	35	38	43
12" Dia.	Total Pressure	.045	.075	.103	.140	.184	.233	.283	.339	.411	.552
	Airflow, CFM	315	395	470	550	630	705	785	865	940	1100
	Throw	3-5-11	4-6-13	5-7-14	5-8-15	6-9-16	7-10-17	8-11-18	8-12-19	9-13-20	10-16-21
	Noise Criteria	—	19.000	22	25	30	35	38	42	45	51
14" Dia.	Total Pressure	.069	.111	.159	.211	.278	.352	.426	.516	.616	.842
	Airflow, CFM	430	535	640	750	855	960	1070	1175	1285	1495
	Throw	4-6-12	5-8-14	6-9-15	7-11-16	8-12-17	9-13-18	10-14-19	11-15-20	12-16-21	14-18-23
	Noise Criteria	15	21	24	30	35	39	42	46	49	56
15" Dia.	Total Pressure	.077	.134	.186	.260	.343	.436	.532	.646	.773	1.075
	Airflow, CFM	490	615	735	860	980	1105	1225	1350	1475	1720
	Throw	5-7-13	6-9-15	7-10-16	8-11-18	9-12-19	11-15-20	12-16-21	13-17-22	14-18-23	16-20-26
	Noise Criteria	17	23	26	32	38	41	45	48	51	60

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

STAMPED SQUARE CEILING DIFFUSERS
MODEL SERIES RNS, ARNS, UNI, AUNI AND TWR

EXAMPLE: RNS - 08 - 24 x 24 - L - AW - –

1. **Models**

Louvered Face

RNS	Steel, Fixed, 4 Cone
RNS3	Steel, Fixed, 3 Cone
RNS2	Steel, Fixed, 2 Cone
RNSA1	Steel, Adjustable, Sliding Type
RNSA2	Steel, Adjustable, Rotating Type
ARNS	Aluminum, Fixed
ARNS3	Aluminum, Fixed, 3 Cone, Non-removable
ARNSA	Aluminum, Adjustable

Architectural

UNI	Steel, Concealed Bracketry
UNI2	Steel, Corner Posts
UNI-RP	Steel, Round Plaque
AUNI	Aluminum, Concealed Bracketry
AUNI2	Aluminum, Four Corner Posts

Downblast

UNI-AD	Adjustable
UNI-PD	Fixed, Perforated

High Induction

TWR	Twister

2. **Neck Size** (inches)
04, 05, 06, 07, 08, 10, 12, 14, 15

3. **Ceiling Module Size**
Imperial (inches)
12 x 12, 20 x 20, 24 x 12, 24 x 24 (default), 30 x 30, 48 x 24
Metric (mm)
300 x 300, 500 x 500, 600 x 300, 600 x 600, 750 x 750, 1200 x 600

4. **Frame Type**

L	Lay-in T-Bar/Surface Mount
S	Surface Mount
PL	Panel Lay-in T-Bar
SP	Spline
M	Metal Pan
F	Fineline®
TL	Tegular Lay-in

5. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
PPA	Paint Prepaired Aluminum
SP	Special Custom Color

OPTIONS & ACCESSORIES:
(Default is none unless noted otherwise)

6. **MRI Option (AUNI2 only)***

MRI	MRI Compatible (100% Aluminum)

7. **Damper**
4250 Radial Sliding, 6" - 14"
4275 Radial Opposed Blade, 5" - 24"
4675 Butterfly, 6" - 14"

8. **Quadrant Blanks**

QB3	3-way blow
QB2	2-way opposite blow
QC2	2-way corner blow
QB1	1-way blow

9. **External Insulation**

EX	Foil-back (installed), R-4.2
EXB	Foil-back (loose), R-4.2
MIB	Molded Insulation Blanket R-6.0

10. **Extended Inlet Collar** **

EIC	Extended Inlet Collar (2.25") with bead

11. **Earthquake Tabs**

EQT	Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Ceiling Tile Option:
(UNI, AUNI only)

RC	Retaining Channel only
RCCF	Retaining Channel + Tile Cut & Fitted

Air Balancing Devices
(order separately)

EGR	Equalizing Grid
DEGR	Damper/Equalizing Grid

Notes:

1. Consult price pages as to limitations of module, frame type, neck size and accessories combinations.

2. Face size 20" x 20" (500 x 500) is available only in Frame Type L.

3. MIB Molded Insulation Blanket is not available on Models RNSA1, RNSA2, and ARNSA.

4. Butterfly damper (4675) is not compatible with Model RNSA.

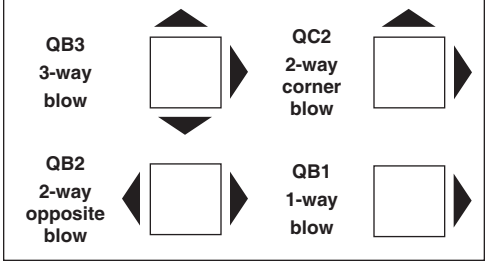
5. PPA Finish is available on Aluminum models only.

6. *Dampers are not available on Model AUNI2 when MRI option is selected.

7. **Extended Inlet Collar is available for steel models RNS, RNS3, UNI and UNI2 only.

NOMINAL ROUND NECK (DUCT) SIZE	FACE SIZE	CEILING MODULE
4, 5, 6, 7, 8	12 x 12	12 x 12 20 x 20 24 x 12 24 x 24
6, 8, 10	20 x 20	20 x 20
6, 8, 10, 12, 14, 15	24 x 24	24 x 24 30 x 30 48 x 24

BLOW PATTERNS WITH OPTIONAL FACTORY INSTALLED QUADRANT BLANKS.



HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNS – Steel Construction

Furnish and install **Nailor Model RNS Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ARNS – Aluminum Construction

Furnish and install **Nailor Model ARNS Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have four die-formed aluminum concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

RNSA1, RNSA2 – Steel Construction

Furnish and install **Nailor Model** (select one) **RNSA1** or **RNSA2 Adjustable Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. Model RNSA1 shall have an adjustable sliding type inner cone assembly that is securely retained by a spring loaded friction arrangement. Model RNSA2 shall have an adjustable rotating type inner cone assembly that is adjusted by rotating the center cone. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ARNSA – Aluminum Construction

Furnish and install **Nailor Model ARNSA Adjustable Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have four die-formed aluminum concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The diffuser shall have an adjustable sliding type inner cone assembly that is securely retained by a spring loaded friction arrangement. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNS3 and ARNS3 – Steel or Aluminum Construction

Furnish and install **Nailor Model** (select one) **RNS3** (steel) or **ARNS3** (aluminum) **Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RNS3 shall be manufactured from corrosion-resistant steel and have three die-formed concentric cones in all sizes. Model ARNS3 shall be manufactured from aluminum with corrosion-resistant steel bracketry. The inner cone assembly is to be non-removable. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

RNS2 – Steel Construction

Furnish and install **Nailor Model RNS2 Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and incorporate two die-formed concentric cones. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

TWR 'Twister' – Steel Construction

Furnish and install **Nailor Model TWR 'Twister' Ceiling Swirl Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from heavy gauge corrosion-resistant steel. Radial induction vanes shall be one-piece stamped construction. The diffuser is to be sizes to suit a 24" x 24" (600 x 600) ceiling suspension system. The round duct connection collar shall be an integral part of the diffuser assembly and be not less than 1 1/4" (32) high. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

UNI – Steel Construction

Furnish and install **Nailor Model UNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

AUNI – Aluminum Construction

Furnish and install **Nailor Model AUNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge aluminum, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

UNI2 – Steel Construction

Furnish and install **Nailor Model UNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of corrosion-resistant steel and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

AUNI2 – Aluminum Construction

Furnish and install **Nailor Model AUNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of aluminum with corrosion-resistant steel bracketry and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

UNI-PD – Perforated Downblast

Furnish and install **Nailor Model UNI-PD Square Perforated Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate that includes perforated holes in a spherical pattern. The perforations shall be 3/8" (10) diameter holes on 5/8" (16) centers. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

UNI-AD – Adjustable Downblast

Furnish and install **Nailor Model UNI-AD Square Adjustable Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate and includes a round, easily adjustable radial vane in the center. The radial vane shall have a ring operator that allows for pole operation. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

UNI-RP – Steel Construction

Furnish and install **Nailor Model UNI-RP Square Ceiling Diffuser with Round Plaque Face Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece outer cone. The inner core shall have a round plaque style face. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ARCHITECTURAL CEILING TILE SLOT DIFFUSER

- 'ICE TONG' PATTERN CONTROLLERS
- SQUARE FACE
- ROUND NECK (SUPPLY)

Model 5075CTD

Models:

Supply

5075CTD	3/4" (19) Slot
5010CTD	1" (25) Slot
5075CTD-F	3/4" (19) Slot
5010CTD-F	1" (25) Slot

Return

5075RCTD	3/4" (19) Slot
5010RCTD	1" (25) Slot
5075RCTD-F	3/4" (19) Slot
5010RCTD-F	1" (25) Slot

Model Series 5000CTD(-F) Series Diffusers have been designed with the architect in mind to provide an unobtrusive high performance ceiling diffuser that incorporates a center ceiling tile (by others) that matches the surrounding ceiling system. This product is available in a nominal size of 24" x 24" (600 x 600) to suit both imperial and metric exposed grid suspended ceiling systems. The 4-way blow linear slot design utilizes the 'ice-tong' premium quality pattern controller, providing a tight horizontal air pattern, which can accommodate high turn down ratios and is therefore eminently suitable for variable air volume systems.

STANDARD FEATURES:

- Factory precision welding on all mitered corners.
- Pattern controllers are individually adjustable for each slot with 180° air pattern adjustment from horizontal to vertical providing volume control.
- Discharge patterns are fully field adjustable for 1-way, 2-way corner, 2-way opposite, 3-way or 4-way patterns.
- Designed for use with standard 15/16" (24) T-Bar and narrow 9/16" (14) flat T-Bar ceiling systems.
- Available in 1, 2, 3 or 4 slots.
- Choice of 3/4" (19) or 1" (25) slot width.
- Supply diffuser has a round neck for flexible duct connection.
- Matching return air unit is similar in design, but minus pattern controllers. For ductless plenum return applications, the 5000RCTD incorporates a light shield to block out light and prevent see-through.
- Plenum is secured with steel S-clips and is easily removable for installation of a field cut ceiling tile (by others) into the face of the diffuser.

CONSTRUCTION MATERIAL:

Extruded aluminum frame, roll-formed steel pattern controllers and corrosion-resistant steel plenum.

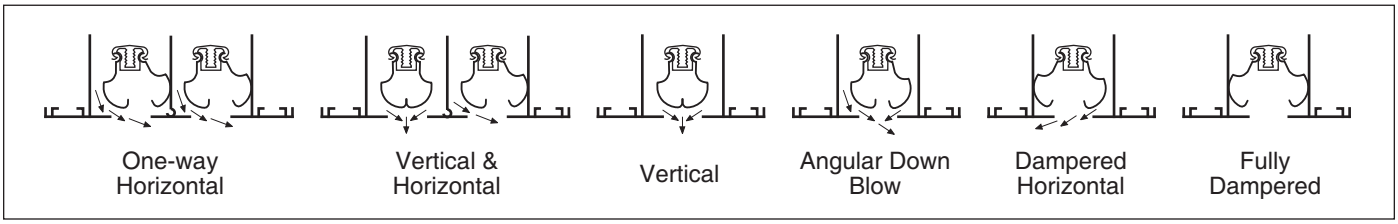
FINISH OPTIONS:

AW Appliance White face with black pattern controllers. Other finishes are available.

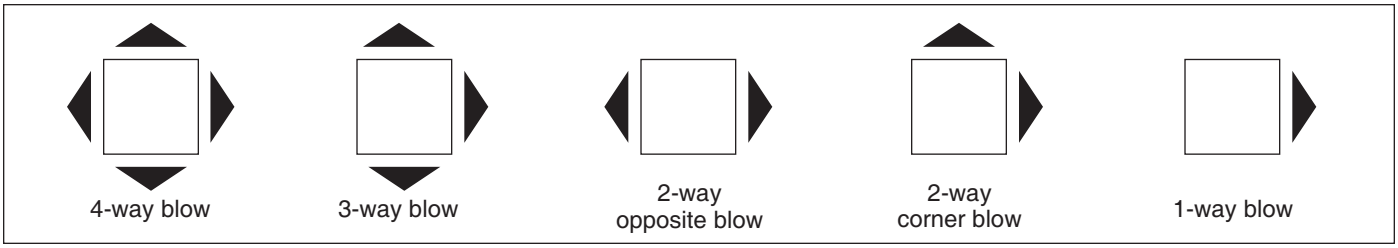
OPTIONS & ACCESSORIES:

IN Internal Insulation (available with supply models only)

'Ice Tong' Pattern Controller Adjustment



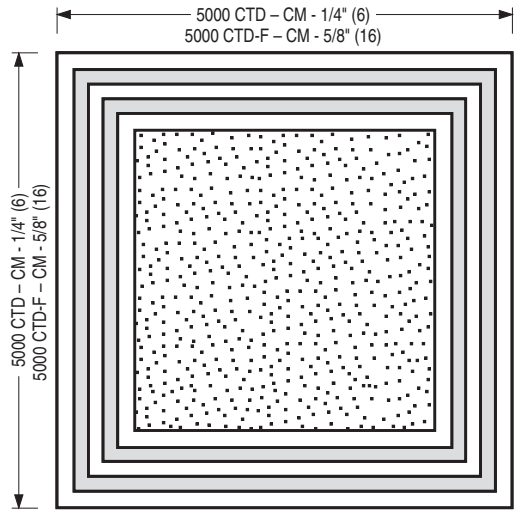
Field Adjustable Discharge Pattern Options



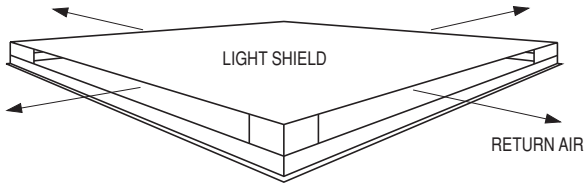
DIMENSIONAL DATA:

Model Series 5000CTD, 5000RCTD, 5000CTD-F and 5000RCTD-F

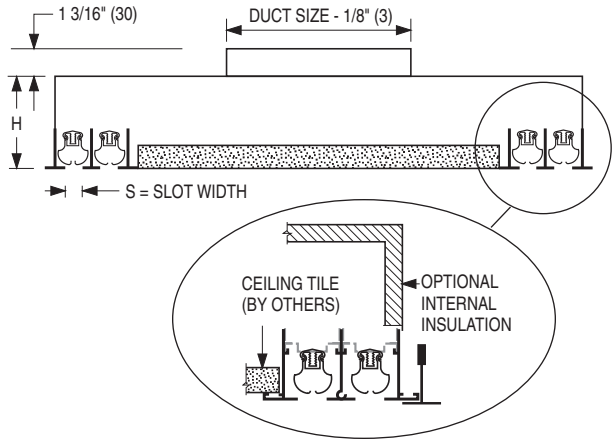
Standard Ceiling Module Sizes:
Imperial: 24" x 24" / Metric: 600 x 600 mm



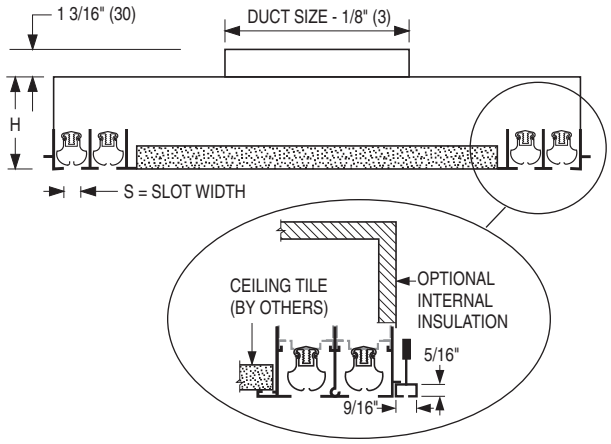
Standard Round Inlet Sizes:
Imperial: 6", 8", 10", 12" and 14" dia.
Metric: 152, 203, 254, 305 and 356 mm dia.



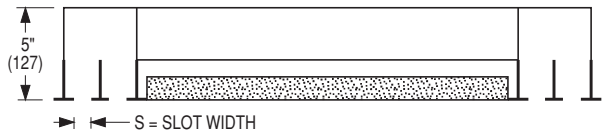
Supply – Model Series 5000CTD



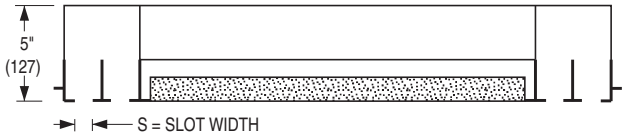
Supply – Model Series 5000CTD-F



Return – Model Series 5000RCTD



Return – Model Series 5000RCTD-F



5000CTD Ceiling Tile Cutting Dimensions

No. of Slots	Imperial Units (inches)			Metric Units (mm)		
	Slot Width(s)		H	Slot Width(s)		H
	S = 3/4	S = 1		S = 19	S = 25	
1	19 1/2 x 19 1/2	19 x 19	5	495 x 495	483 x 483	127
2	16 1/2 x 16 1/2	15 1/2 x 15 1/2	5	419 x 419	394 x 394	127
3	13 1/2 x 13 1/2	12 x 12	6 3/4	343 x 343	305 x 305	171
4	10 1/2 x 10 1/2	8 1/2 x 8 1/2	6 3/4	267 x 267	216 x 216	171

5000CTD-F Ceiling Tile Cutting Dimensions

No. of Slots	Imperial Units (inches)			Metric Units (mm)		
	Slot Width(s)		H	Slot Width(s)		H
	S = 3/4	S = 1		S = 19	S = 25	
1	20 1/8 x 20 1/8	19 5/8 x 19 5/8	5	511 x 511	498 x 498	127
2	17 1/8 x 17 1/8	16 1/8 x 16 1/8	5	435 x 435	410 x 410	127
3	14 1/8 x 14 1/8	12 5/8 x 12 5/8	6 3/4	359 x 359	321 x 321	171
4	11 1/8 x 11 1/8	9 1/8 x 9 1/8	6 3/4	283 x 283	232 x 232	171

PERFORMANCE DATA:

Models 5075CTD, 5075CTD-F • 3/4" (19) Slot • Supply

	Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900
		Velocity Pressure	.002	.006	.010	.016	.022	.031	.040	.050
1 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.017	.039	.070	.109	.156	.213	.278	.351
		Throw	2-3-6	3-5-10	4-7-12	5-9-14	7-11-16	8-12-17	9-13-18	10-14-19
		Noise Criteria	—	12	22	28	32	36	40	43
2 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.008	.019	.033	.052	.075	.102	.134	.169
		Throw	1-2-5	2-3-7	3-5-10	4-6-13	5-7-14	6-9-15	7-11-17	8-12-18
		Noise Criteria	—	—	12	18	22	26	30	33
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.017	.036	.068	.102	.153	.203	.266	.337
		Throw	2-4-8	3-6-11	5-8-14	6-10-16	8-13-18	9-15-20	10-16-21	11-17-22
		Noise Criteria	—	14	20	26	30	34	38	41
3 Slot	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.011	.024	.045	.068	.101	.136	.176	.224
		Throw	2-4-7	3-5-9	4-6-12	5-8-15	7-11-19	8-12-21	9-14-23	10-16-25
		Noise Criteria	—	11	17	23	27	31	35	38
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.020	.045	.081	.125	.181	.248	.326	.408
		Throw	3-5-10	5-8-14	6-10-18	8-12-21	10-16-25	12-18-26	14-19-27	15-20-28
		Noise Criteria	13	20	26	32	36	40	44	47
4 Slot	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.015	.034	.062	.092	.138	.189	.248	.310
		Throw	3-4-9	4-6-13	6-9-17	8-11-20	8-13-22	9-16-23	12-18-25	13-19-26
		Noise Criteria	10	17	23	29	33	37	41	44
	14" Neck Dia.	Airflow, CFM	215	320	430	535	640	750	855	960
		Total Pressure	.027	.059	.106	.165	.236	.324	.420	.530
		Throw	4-6-12	6-9-18	8-12-21	10-15-23	12-18-25	14-20-27	16-21-29	17-22-31
		Noise Criteria	17	24	30	36	40	44	48	51

Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions, using a 4-way pattern.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

Models 5010CTD, 5010CTD-F • 1" (25) Slot • Supply

	Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900
		Velocity Pressure	.002	.006	.010	.016	.022	.031	.040	.050
1 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.014	.031	.055	.087	.125	.170	.221	.280
		Throw	2-3-6	3-5-10	4-6-12	5-8-14	6-9-15	7-11-17	8-12-18	9-14-19
		Noise Criteria	—	11	18	24	28	32	36	39
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.030	.064	.122	.184	.274	.364	.477	.605
		Throw	3-5-10	5-8-14	6-9-15	7-11-17	9-14-19	11-15-21	12-16-22	13-17-23
		Noise Criteria	—	21	28	34	38	42	46	49
2 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.007	.015	.027	.042	.060	.082	.106	.135
		Throw	1-2-4	2-3-6	3-4-9	3-5-11	4-6-13	4-7-15	5-9-16	7-11-19
		Noise Criteria	—	—	—	14	18	22	26	29
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.013	.027	.051	.077	.115	.153	.200	.254
		Throw	2-3-7	3-5-11	4-7-13	5-9-16	7-11-19	8-14-22	9-15-23	10-16-25
		Noise Criteria	—	11	18	24	28	32	36	39
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.023	.052	.094	.144	.210	.287	.377	.472
		Throw	3-5-11	5-8-15	7-11-19	8-14-21	10-16-23	12-18-25	14-18-26	15-19-28
		Noise Criteria	—	17	24	30	34	38	42	45
3 Slot	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.008	.018	.033	.050	.075	.099	.130	.165
		Throw	2-3-6	3-4-9	4-6-12	5-7-15	6-9-18	8-11-20	9-12-22	10-14-24
		Noise Criteria	—	—	14	20	24	28	32	35
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.020	.032	.057	.088	.128	.175	.229	.287
		Throw	3-4-9	4-6-13	6-9-18	8-11-20	9-13-23	10-15-25	12-18-27	13-19-28
		Noise Criteria	—	15	21	27	31	35	39	42
4 Slot	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.010	.024	.042	.065	.094	.129	.170	.210
		Throw	2-4-8	4-5-11	5-8-15	7-10-20	8-12-21	9-14-23	11-15-25	12-17-27
		Noise Criteria	—	13	19	25	29	33	37	40
	14" Neck Dia.	Airflow, CFM	215	320	430	535	640	750	855	960
		Total Pressure	.017	.039	.070	.108	.154	.212	.275	.347
		Throw	3-5-10	5-8-15	7-10-21	9-14-23	11-16-25	13-18-28	15-19-30	17-20-32
		Noise Criteria	13	20	26	32	36	40	44	47

Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions, using a 4-way pattern.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

Models 5075RCTD, 5075RCTD-F • 3/4" (19) Slot • Return

No. of Slots	Negative Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	CFM	70	140	210	280	350	420	490	560
	Noise Criteria	—	—	16	24	30	35	39	43
2	CFM	130	260	390	520	650	780	910	1040
	Noise Criteria	—	—	19	27	33	38	42	46
3	CFM	180	360	540	720	900	1080	1260	1440
	Noise Criteria	—	10	21	29	35	40	44	48
4	CFM	220	440	660	880	1100	1320	1540	1760
	Noise Criteria	—	10	21	29	35	40	44	48

Models 5010RCTD, 5010RCTD-F • 1" (25) Slot • Return

No. of Slots	Negative Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	CFM	140	210	280	350	420	490	560	700
	Noise Criteria	—	—	17	23	28	32	36	42
2	CFM	253	380	507	633	760	887	1013	1267
	Noise Criteria	—	12	20	26	31	35	39	45
3	CFM	340	510	680	850	1020	1190	1360	1700
	Noise Criteria	—	13	21	27	32	36	40	46
4	CFM	400	600	800	1000	1200	1400	1600	2000
	Noise Criteria	—	14	22	28	33	37	41	47

Performance Notes:

1. All pressures are in inches w.g..

2. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

ARCHITECTURAL CEILING TILE SLOT DIFFUSERS – MODEL SERIES 5000CTD

EXAMPLE: 5075CTD-F - 1 - 24 x 24 - AW - 08 - –

1. **Models**

Supply	
5075CTD	3/4" (19)
5010CTD	1" (25)
5075CTD-F	3/4" (19) Fineline®
5010CTD-F	1" (25) Fineline®
Return	
5075RCTD	3/4" (19)
5010RCTD	1" (25)
5075RCTD-F	3/4" (19) Fineline®
5010RCTD-F	1" (25) Fineline®

2. **Slots**
   1 thru 4
3. **Ceiling Module Size**
   Imperial (inches)
   24 x 24
   Metric (mm)
   600 x 600
4. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
PC	Prime Coat Paint
SP	Special Custom Color

5. **Inlet Size**

06	6" (152)
08	8" (203)
10	10" (254)
12	12" (305)
14	14" (356)

OPTIONS & ACCESSORIES:

6. **Internal Insulation**

–	None (default)
IN	Internal Insulation (available with supply models only)

Notes:

1. Inlet size specified on supply models only.

SUGGESTED SPECIFICATION:

5075CTD, 5010CTD – Supply Air, Standard T-Bar

Furnish and install **Nailor Model** (select one) **5075CTD** (3/4" (19) slot) or **Model 5010CTD** (1" (25) slot) **Ceiling Tile Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, roll-formed steel pattern controllers, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) discharge air slots which integrate 'ice-tong' shaped adjustable pattern controllers. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The steel plenum shall be easily removable and include a round inlet collar that is not less than 1 3/16" (30) high. The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 standard T-Bar ceiling system. (Optional) The diffuser shall have internal insulation. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

5075RCTD, 5010RCTD – Return Air, Standard T-Bar

Furnish and install **Nailor Model** (select one) **5075RCTD** (3/4" (19) slot) or **Model 5010RCTD** (1" (25) slot) **Ceiling Tile Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) return air slots to match the supply air diffuser of the same model. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 standard T-Bar ceiling system. A removable light shield shall be factory installed on the rear of the diffuser. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

5075CTD-F, 5010CTD-F – Supply Air, Narrow Regressed T-Bar

Furnish and install **Nailor Model** (select one) **5075CTD-F** (3/4" (19) slot) or **Model 5010CTD-F** (1" (25) slot) **Ceiling Tile Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, roll-formed steel pattern controllers, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) discharge air slots which integrate 'ice-tong' shaped adjustable pattern controllers. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The steel plenum shall be easily removable and include a round inlet collar that is not less than 1 3/16" (30) high. The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 Narrow Regressed T-Bar ceiling system. (Optional) The diffuser shall have internal insulation. The finish shall be AW Appliance White inish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

5075RCTD-F, 5010RCTD-F – Return Air, Narrow Regressed T-Bar

Furnish and install **Nailor Model** (select one) **5075RCTD-F** (3/4" (19) slot) or **Model 5010RCTD-F** (1" (25) slot) **Ceiling Tile Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) return air slots to match the supply air diffuser of the same model. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 Narrow Regressed T-Bar ceiling system. A removable light shield shall be factory installed on the rear of the diffuser. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ARCHITECTURAL PLAQUE DIFFUSERS

- ADJUSTABLE OPENING
- SQUARE FACE
- SQUARE NECK

Model:

6600 Steel

- **Suffix '-O' adds a steel opposed blade damper**

Model 6600

Model Series 6600 Ceiling Diffusers have been designed to satisfy both architectural and engineering criteria. The clean uncluttered face panel design complements any decor, blending beautifully with virtually any architectural style or requirement.

The face panel, which is located below the ceiling line, provides a horizontal discharge and a 360° diffusion pattern at minimum NC levels required for high engineering performance. This makes the 6600 Series ideally suitable for VAV systems. The face panel is adjustable by means of four spring-loaded countersunk screws located at the four corners of the panel which can be positioned to provide a 1/2" (13) to 1 1/4" (32) variable opening. This provides great flexibility, as the diffusers length of throw at any given air volume may be increased or decreased in order to adapt to field conditions.

The 6600 Series are designed for both surface mount and lay-in T-Bar applications with the addition of a ceiling module sized panel. The collar is a full 1 1/2" (38) in height for easy, secure duct connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Square duct sizes are available in 3" (76) increments.

Minimum Size: 6" x 6" (152 x 152).

Maximum Size: 18" x 18" (457 x 457).

- High neck collar for secure connection.
- Face panel features a hemmed finish providing both strength and a professional, clean, safety edge.
- Roll-formed steel opposed blade damper available with a lever operator that permits volume control without removing face panel.
- Optional factory installed hinged air deflectors are available for 1, 2 or 3-way directional control.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

EQT Earthquake Tab

SR Square to Round Transition Collars are available for round flexible duct connection. See page D257.

For additional options and accessories; see page D255.

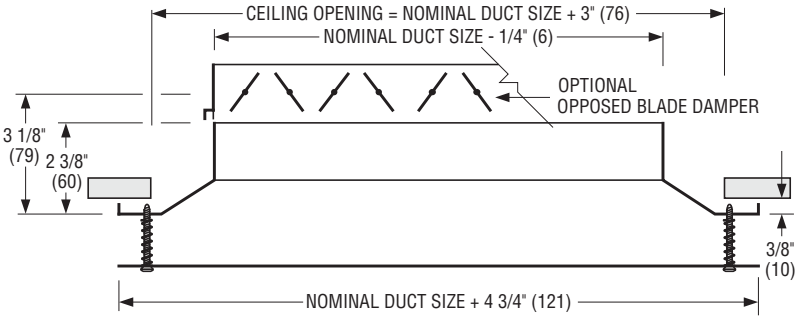
DIMENSIONAL DATA AND FRAME TYPES:

MODEL 6600

Type S Surface Mount

Available Duct Sizes

Inches	mm
6 x 6	152 x 152
9 x 9	229 x 229
12 x 12	305 x 305
15 x 15	381 x 381
18 x 18	457 x 457

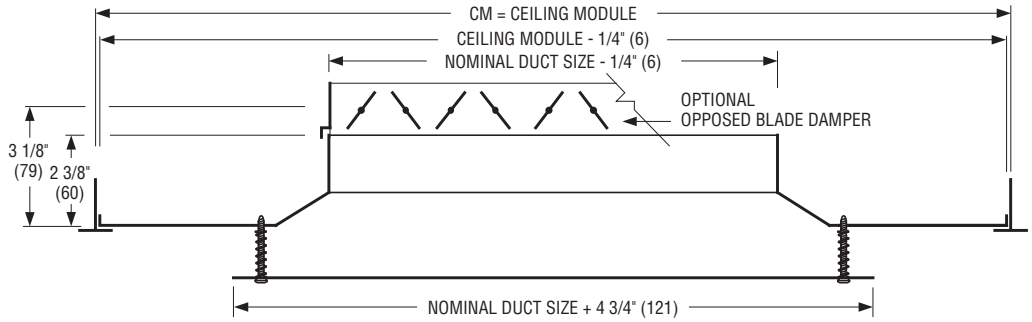


Type PL Panel Mounted Lay-in T-Bar

Available Sizes

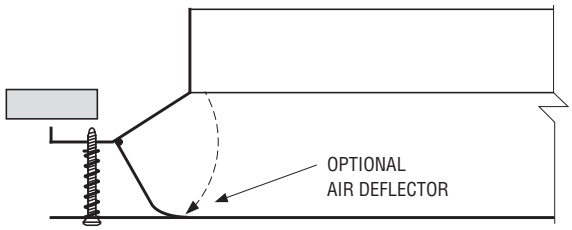
Ceiling Module Size		Duct Size			
		Minimum		Maximum	
Imperial (inches)	Metric (mm)	inches	mm	inches	mm
20 x 20	500 x 500	6 x 6	152 x 152	12 x 12	305 x 305
24 x 24	600 x 600	6 x 6	152 x 152	18 x 18	457 x 457

Duct sizes are available in 3" (76) increments.

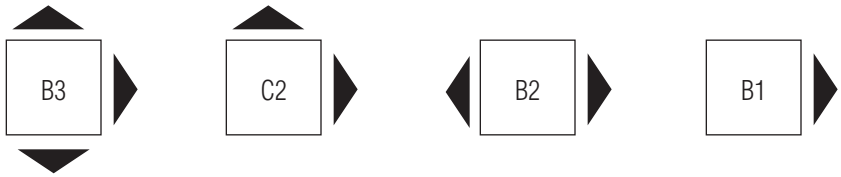


Directional Blow Option

- Factory installed.
- Hinged air deflector(s) for 1, 2 or 3-way blow pattern.
- Simple adjustment from face of diffuser provides field location flexibility.
- Deflector swings up or down from outer cone providing a full length blank-off.
- Finish to match diffuser.
- One, two or three deflectors are supplied and installed dependent upon blow pattern specified.



Blow Patterns



3-way | 2-way corner | 2-way opposite | 1-way

PERFORMANCE DATA:

MODEL 6600 • SQUARE NECK

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	160 .002 40	240 .004 60	320 .006 80	400 .010 100	600 .023 150	800 .040 200	1000 .063 250	1200 .090 300	1400 .122 350
6 x 6	1 1/4"	Total Pressure				.03	.06	.10	.16	.23	.31
		Throw				1	3	5	6	7	9
		Noise Criteria				13	18	21	25	30	36
	1"	Total Pressure			.02	.03	.07	.11	.17	.26	.34
		Throw			2	2	4	6	7	8	10
		Noise Criteria			—	13	18	21	25	31	37
	3/4"	Total Pressure	.01	.01	.02	.03	.08	.13	.21	.30	.41
		Throw	2	2	3	3	5	7	8	9	10
		Noise Criteris	—	—	—	14	19	22	26	32	38
	1/2"	Total Pressure	.01	.02	.03	.05	.10	.18	.28	.41	.56
		Throw	3	3	4	4	6	8	9	10	11
		Noise Criteria	—	—	—	15	20	23	26	35	40

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	89 .001 50	133 .001 75	178 .002 100	267 .004 150	356 .008 200	444 .012 250	533 .018 300	711 .031 400	800 .040 450
9 x 9	1 1/4"	Total Pressure				.01	.02	.04	.06	.10	.12
		Throw				2	3	5	6	8	9
		Noise Criteria				12	17	20	23	32	37
	1"	Total Pressure			.01	.02	.03	.05	.07	.12	.15
		Throw			2	4	5	6	7	10	11
		Noise Criteria			—	13	18	21	24	33	39
	3/4"	Total Pressure		.01	.01	.03	.04	.07	.10	.17	.21
		Throw		2	3	5	6	7	9	11	13
		Noise Criteria		—	—	14	19	22	25	35	40
	1/2"	Total Pressure	.01	.01	.02	.04	.07	.12	.17	.29	.37
		Throw	2	3	4	6	7	9	10	13	14
		Noise Criteria	—	—	—	15	20	23	26	37	42

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	50 .001 50	100 .001 100	150 .002 150	200 .003 200	250 .004 250	300 .006 300	400 .010 400	500 .016 500	600 .023 550
12 x 12	1 1/4"	Total Pressure			.01	.01	.02	.03	.04	.07	.09
		Throw			3	4	6	7	9	12	13
		Noise Criteria			—	13	17	21	26	33	38
	1"	Total Pressure		.01	.01	.02	.03	.04	.06	.09	.12
		Throw		2	4	5	7	8	10	13	14
		Noise Criteria		—	—	13	17	21	26	34	38
	3/4"	Total Pressure		.01	.01	.03	.04	.06	.09	.15	.18
		Throw		3	5	6	7	9	11	14	15
		Noise Criteria		—	—	14	18	22	27	35	40
	1/2"	Total Pressure	.01	.01	.03	.05	.07	.10	.18	.28	.34
		Throw	2	4	6	7	8	10	12	15	17
		Noise Criteria	—	—	—	15	20	23	30	39	45

For performance notes, see D137.

PERFORMANCE DATA:

MODEL 6600 • SQUARE NECK

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	32 .001 50	64 .001 100	96 .001 150	128 .001 200	192 .002 300	256 .004 400	320 .006 500	384 .009 600	448 .013 700
15 x 15	1 1/4"	Total Pressure				.01	.01	.03	.05	.06	.09
		Throw				3	5	6	9	10	12
		Noise Criteria				—	18	22	27	33	39
	1"	Total Pressure			.01	.01	.02	.04	.06	.09	.12
		Throw			2	4	6	8	11	13	14
		Noise Criteria			—	13	19	23	28	35	42
	3/4"	Total Pressure		.01	.01	.02	.03	.07	.10	.14	.19
		Throw		2	4	5	8	10	13	15	17
		Noise Criteria		—	—	—	15	21	26	32	40
	1/2"	Total Pressure	.01	.01	.02	.03	.07	.13	.20	.28	.38
		Throw	2	3	5	6	9	12	15	18	21
		Noise Criteria	—	—	—	15	21	26	32	40	49

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	22 .001 50	44 .001 100	89 .001 200	133 .001 300	178 .002 400	222 .003 500	267 .005 600	311 .006 700	356 .008 800
18 x 18	1 1/4"	Total Pressure			.01	.01	.02	.03	.05	.07	.08
		Throw			2	4	6	6	9	11	13
		Noise Criteria			—	14	20	23	28	33	40
	1"	Total Pressure			.01	.02	.03	.05	.07	.10	.13
		Throw			3	5	8	8	10	14	15
		Noise Criteria			—	14	20	24	29	35	43
	3/4"	Total Pressure	.01	.01	.01	.03	.05	.07	.12	.15	.20
		Throw	2	3	5	7	9	10	14	16	18
		Noise Criteria	—	—	—	15	21	25	31	37	46
	1/2"	Total Pressure	.01	.01	.02	.05	.10	.14	.22	.29	.38
		Throw	2	4	6	9	12	14	17	19	21
		Noise Criteria	—	—	10	16	22	27	33	40	50

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given for a terminal velocity of 50 fpm under isothermal conditions.
3. The addition of direction blow blank-offs reduces the effective area and for a given air volume, increases the discharge velocity with a resultant increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine diffuser airflow selection to determine throw.

Corrections to pressure drop and Noise Criteria level may be approximated by using correction factors as shown and applying them to the 4-way blow value listed in the performance tables.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Blow Pattern	% Increase in Air Volume for Throw Determination	TP Increase Correction Factor	NC Sound Level Add
3-way	35	x 1.5	+ 10
2-way	100	x 4.0	+ 15
1-way	400	x 8.0	+30

HOW TO ORDER OR TO SPECIFY

PLAQUE FACE DIFFUSERS – MODEL SERIES 6600

EXAMPLE: 6600 - O - 0909 - 24 x 24 - PL - AW - B4 - SR08 - –

1a. **Model**
6600

1b. **Damper**
(model suffix)
– None
–O Steel Opposed Blade Damper

2. **Neck Size**
0606 6" x 6" (152 x 152)
0909 9" x 9" (229 x 229)
1212 12" x 12" (305 x 305)
1515 15" x 15" (381 x 381)
1818 18" x 18" (457 x 457)

3. **Ceiling Module Size**
(Type PL only)
Imperial (inches)
20 x 20, 24 x 24
Metric (mm)
500 x 500, 600 x 600

4. **Frame Type**
S Surface Mount Flat
PL Panel Lay-in T-Bar

5. **Finish**
AW Appliance White (default)
AL Aluminum
BK Black
BW British White
MI Mill
PC Prime Coat Paint
SP Special Custom Color

6. **Blow Pattern**
B4 4-way (default)
B3 3-way
B2 2-way opposite
C2 2-way corner
B1 1-way

7. **Transition Collar**
(Square to round)
SR04 to SR18
4" to 18" diameter

8. **Earthquake Tabs**
– None (default)
EQT Earthquake Tabs

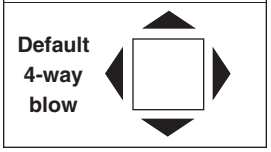
OTHER OPTIONS & ACCESSORIES:

11. **Air Balancing Devices**
(order separately)
Rectangular Neck:
EGL Equalizing Grid (long)
DEGL Damper/Equalizing Grid (long)
Round Neck:
4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675 Butterfly Damper 6" – 14" (152 – 356).
EGR Equalizing Grid
DEGR Damper/Equalizing Grid

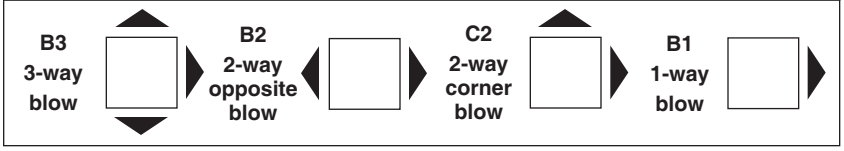
Notes:

1. Consult price pages as to limitations of module, frame type, neck size and accessories combinations.

STANDARD AIR PATTERN



BLOW PATTERNS WITH OPTIONAL HINGED DEFLECTOR



SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 6600 Plaque Face Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a flat square face panel that can be positioned to provide an opening that is adjustable from 1/2" (13) to 1 1/4" (32). A high neck square duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

(Optional) The diffuser shall incorporate factory installed hinged air deflector(s) that will provide a 1-way, 2-way corner, 2-way opposite or 3-way throw pattern (specifier to select a pattern).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ARCHITECTURAL SLOT PLAQUE DIFFUSER

- PERIMETER SLOT
- PLAQUE CENTER
- ROUND NECK

Model:

66UNI Steel

Model 66UNI

Model Series 66UNI Plaque Diffuser with Perimeter Slots has been specially designed to provide an unobtrusive appearance required for architectural excellence. A plaque face that sits flush in the center of the diffuser is surrounded by a choice of 1, 2 or 3 perimeter slots. This diffuser is designed specifically to integrate with 2' x 2' (610 x 610) ceiling module suspension systems.

The 66UNI provides a tight horizontal air pattern from maximum to minimum airflow and is ideal for VAV applications. The diffuser is provided with a deep plenum backpan to provide optimum performance by minimizing pressure drop and noise.

STANDARD FEATURES:

- Clean lines with no unsightly visible screws.
- 24" x 24" (610 x 610) ceiling module size.
- Available with a choice of 1, 2, or 3 perimeter slots.
- Deep plenum backpan for premium performance.
- Spring loaded core. Removable without the use of tools.
- High neck collar for secure connection.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

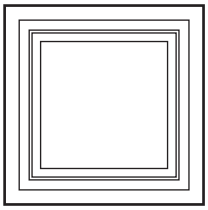
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

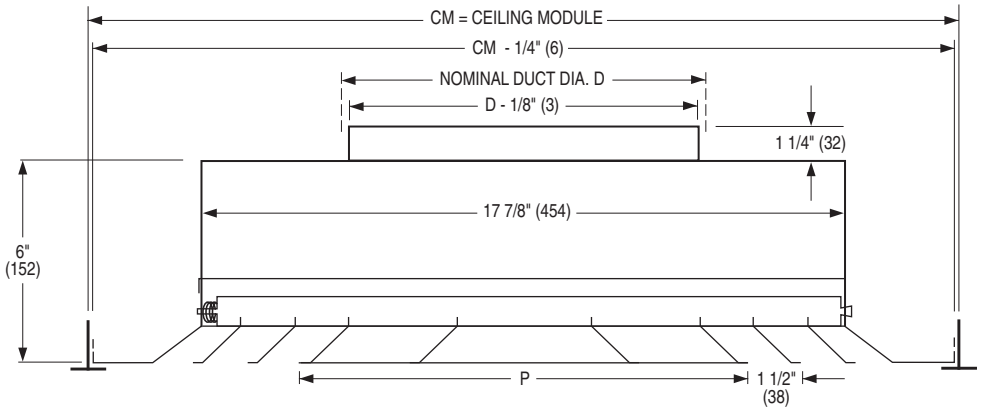
EQT Earthquake Tabs

For additional options and accessories; see page D255.

Type L Lay-in T-Bar



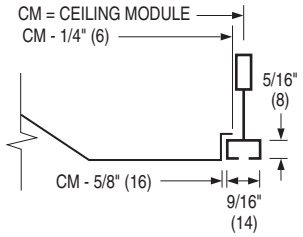
FACE VIEW ILLUSTRATION OF 2 SLOT UNIT.



Dimensional Data

CM Imperial Modules	No. of Slots	Nominal Round Duct Size D	Plaque Face P
24 x 24	1	6, 8, 10 (152, 203, 254)	18 5/16 (465)
	2	6, 8, 10, 12 (152, 203, 254, 305)	15 5/16 (389)
	3	8, 10, 12, 14 (203, 254, 305, 356)	12 5/16 (313)

Type F Fineline®



PERFORMANCE DATA:

MODEL 66UNI • 24 x 24 (610 x 610) CEILING MODULE • IMPERIAL UNITS

1 Slot

6" Dia. Neck	**Airflow, CFM**	**80**	**100**	**120**	**140**	**160**	**175**	**195**	**235**	**275**
	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400
	Total Pressure	.021	.033	.048	.066	.086	.108	.133	.192	.261
	Static Pressure	.011	.017	.026	.035	.046	.058	.071	.102	.139
	Throw, ft.	2-3-5	2-3-7	3-4-7	3-5-8	4-5-10	4-6-12	4-7-13	5-8-14	6-8-14
	Noise Criteria	—	—	17	21	25	28	31	35	40
8" Dia. Neck	**Airflow, CFM**	**140**	**165**	**190**	**220**	**245**	**270**	**295**	**325**	**350**
	Neck Velocity, FPM	400	475	550	625	700	775	850	925	1000
	Total Pressure	.026	.036	.048	.063	.079	.097	.117	.139	.162
	Static Pressure	.016	.022	.029	.039	.048	.060	.072	.086	.100
	Throw, ft.	3-5-8	4-5-10	4-6-12	5-6-13	5-7-13	5-8-14	6-9-14	6-10-15	7-11-15
	Noise Criteria	—	18	22	25	28	31	33	36	38
10" Dia. Neck	**Airflow, CFM**	**110**	**150**	**190**	**230**	**275**	**315**	**355**	**395**	**455**
	Neck Velocity, FPM	200	275	350	425	500	575	650	725	800
	Total Pressure	.008	.014	.023	.034	.047	.062	.080	.099	.121
	Static Pressure	.006	.009	.015	.023	.031	.041	.054	.066	.081
	Throw, ft.	2-4-6	3-5-9	4-5-12	5-7-13	5-8-14	6-10-14	7-11-15	8-12-16	9-13-17
	Noise Criteria	—	—	16	21	25	29	32	35	37

2 Slot

6" Dia. Neck	**Airflow, CFM**	**60**	**95**	**130**	**165**	**195**	**230**	**265**	**300**	**335**
	Neck Velocity, FPM	300	475	650	825	1000	1175	1350	1525	1700
	Total Pressure	.010	.024	.045	.072	.105	.146	.193	.246	.305
	Static Pressure	.004	.010	.019	.030	.043	.060	.079	.101	.125
	Throw, ft.	0-1-3	1-2-4	2-3-5	2-4-7	3-5-8	4-5-10	4-5-12	5-6-13	5-7-14
	Noise Criteria	—	—	—	17	22	26	30	33	36
8" Dia. Neck	**Airflow, CFM**	**140**	**190**	**245**	**295**	**350**	**400**	**455**	**505**	**560**
	Neck Velocity, FPM	400	550	700	850	1000	1150	1300	1450	1600
	Total Pressure	.021	.039	.063	.092	.128	.169	.217	.269	.328
	Static Pressure	.011	.020	.032	.047	.066	.087	.112	.138	.168
	Throw, ft.	2-3-6	3-5-8	4-5-11	5-6-13	5-7-15	5-9-16	6-10-18	7-11-19	8-12-20
	Noise Criteria	—	—	20	25	29	33	36	39	42
10" Dia. Neck	**Airflow, CFM**	**220**	**275**	**325**	**380**	**435**	**490**	**545**	**600**	**655**
	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Total Pressure	.024	.037	.053	.073	.095	.121	.149	.180	.214
	Static Pressure	.014	.021	.031	.042	.055	.071	.087	.105	.124
	Throw, ft.	3-5-9	4-6-12	5-7-14	5-8-16	6-9-17	7-11-18	8-12-19	9-13-21	9-14-22
	Noise Criteria	—	16	21	25	29	32	35	37	40
12" Dia. Neck	**Airflow, CFM**	**235**	**315**	**395**	**470**	**550**	**630**	**705**	**785**	**865**
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.015	.027	.042	.061	.083	.107	.136	.168	.203
	Static Pressure	.009	.017	.026	.039	.052	.067	.086	.106	.128
	Throw, ft.	4-5-10	5-7-14	5-8-16	7-10-18	8-12-20	9-14-21	10-15-22	12-16-23	13-17-24
	Noise Criteria	—	15	21	26	30	33	36	39	42

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORMANCE DATA:

MODEL 66UNI • 24 x 24 (610 x 610) CEILING MODULE • IMPERIAL UNITS

3 Slot

8" Dia. Neck	**Airflow, CFM**	**105**	**165**	**225**	**290**	**350**	**410**	**470**	**530**	**595**
	Neck Velocity, FPM	300	475	650	825	1000	1175	1350	1525	1700
	Total Pressure	.010	.024	.045	.072	.106	.146	.192	.245	.304
	Static Pressure	.004	.010	.018	.030	.043	.060	.078	.100	.124
	Throw, ft.	2-3-4	3-4-6	3-6-9	4-8-11	5-9-13	6-11-16	7-13-18	8-14-20	9-16-23
	Noise Criteria	—	—	18	22	25	28	32	35	38
10" Dia. Neck	**Airflow, CFM**	**165**	**230**	**300**	**370**	**435**	**505**	**575**	**640**	**710**
	Neck Velocity, FPM	300	425	550	675	800	925	1050	1175	1300
	Total Pressure	.010	.021	.035	.052	.074	.099	.127	.159	.195
	Static Pressure	.005	.010	.016	.024	.034	.045	.058	.073	.090
	Throw, ft.	3-5-7	4-7-10	5-8-12	6-10-14	6-11-16	7-13-18	8-14-20	9-15-22	9-16-24
	Noise Criteria	—	—	18	24	27	30	33	36	39
12" Dia. Neck	**Airflow, CFM**	**235**	**315**	**395**	**470**	**550**	**630**	**705**	**785**	**865**
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.012	.021	.034	.048	.066	.086	.110	.136	.164
	Static Pressure	.006	.011	.018	.026	.036	.047	.059	.073	.089
	Throw, ft.	4-7-10	5-9-12	6-10-15	7-12-17	8-13-19	8-15-21	9-16-23	10-17-25	11-19-27
	Noise Criteria	—	16	20	25	28	30	33	35	37
14" Dia. Neck	**Airflow, CFM**	**320**	**430**	**535**	**640**	**750**	**855**	**960**	**1070**	**1175**
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.013	.023	.037	.053	.072	.094	.119	.148	.179
	Static Pressure	.007	.013	.021	.030	.041	.054	.069	.085	.104
	Throw, ft.	5-8-12	6-10-15	7-12-17	8-14-20	9-16-23	10-17-25	11-19-27	12-21-30	13-22-32
	Noise Criteria	—	—	20	28	31	33	36	39	41

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER OR TO SPECIFY

ARCHITECTURAL SLOT PLAQUE DIFFUSERS – MODEL SERIES 66UNI

EXAMPLE: 66UNI - 10 - 2 - 24 x 24 - L - AW - —

1. **Model**
   66UNI
2. **Neck Size**
   06 6" (152)
   08 8" (203)
   10 10" (254)
   12 12" (305)
   14 14" (356)
3. **No. of Slots**
   1 1 Slot
   2 2 Slot
   3 3 Slot
4. **Ceiling Module Size**
   Imperial (inches)
   24 x 24
5. **Frame Type**
   L Lay-in T-Bar
   F Fineline®
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime Coat Paint
   SP Special Custom Color

OPTIONS & ACCESSORIES:

7. **Damper**
   – None
   4250 Radial Sliding Blade
   6" – 14" (152 – 356).
   4275 Radial Opposed Blade
   5" – 24" (127 – 610).
   4675 Butterfly
   6" – 14" (152 – 356).
8. **Earthquake Tabs**
   – None (default)
   EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

– None

9. **Air Balancing Devices**
   (order separately)
   Round Neck:
   EGR Equalizing Grid
   DEGR Damper/Equalizing Grid

Notes:

1. Consult text for availability of neck sizes with "No. of Slots" selection.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 66UNI Slot Plaque Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a deep plenum backpan that has a round duct connection collar. The diffuser is to be sized to suit a 24" x 24" (610 x 610) ceiling suspension system. The center of the diffuser shall have a smooth flat plaque face in which 1, 2, or 3 (select one) perimeter slot(s) surround it. The core shall be spring loaded and removable without the use of tools. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

Models:

RNR Steel
ARNR Aluminum

Model RNR

Model Series RNR Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° radial horizontal pattern and produce excellent performance in variable air volume systems.
Models RNR and ARNR feature infinite horizontal discharge patterns that allow the diffusers to accommodate different flow rate conditions. Position A (cones down) provides maximum capacity at minimum NC levels while Position B (cones up) provides higher induction and more air movement.

STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.
- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

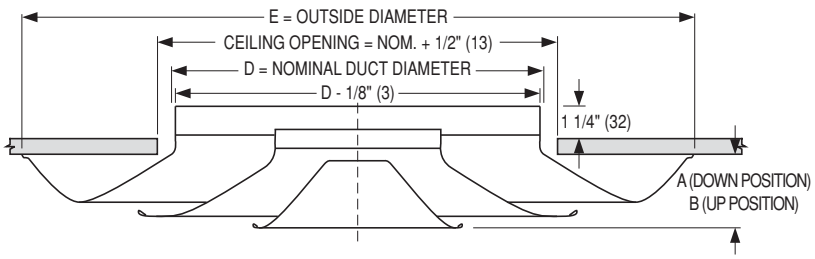
FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
SC Safety Chain
GK Foam Gasket
EQT Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

	Imperial Units (inches)			Metric Units (mm)		
Listed Size	A	B	E	A	B	E
6	1 3/4	1 1/8	11 5/8	44	29	295
8	2 1/8	1 1/2	14 3/8	54	38	365
10	2 7/8	2 1/8	17 15/16	73	54	456
12	3 1/8	2 3/8	21 5/8	79	60	549
14	3 3/8	2 5/8	25 1/4	86	67	641
16	4	3 1/4	29	102	83	737
18	4 3/4	3 7/8	33 1/2	121	98	851
20	5 7/8	4 7/8	37 1/4	149	124	946
24	7 3/4	6 5/8	43 7/8	197	168	1114

PERFORMANCE DATA:

MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Velocity Pressure	**.010**	**.016**	**.022**	**.031**	**.040**	**.050**	**.062**	**.075**	**.090**
6" Dia.	Total Pressure, Position A	.024	.038	.055	.074	.097	.123	.152	.184	.219
	Total Pressure, Position B	.039	.061	.088	.119	.156	.197	.243	.294	.350
	Airflow, CFM	**79**	**98**	**118**	**137**	**157**	**177**	**196**	**216**	**236**
	Noise Criteria, Position A	—	—	15	20	24	28	31	34	37
	Noise Criteria, Position B	—	16	21	26	30	34	37	40	43
	Throw, Position A	2-2-4	2-3-5	2-4-5	3-4-6	3-4-7	3-5-8	4-5-8	4-6-9	4-6-10
	Throw, Position B	3-3-5	3-4-6	3-5-6	4-5-7	4-5-8	4-6-9	5-6-9	5-7-10	5-7-12
8" Dia.	Total Pressure, Position A	.031	.048	.069	.094	.123	.156	.193	.233	.278
	Total Pressure, Position B	.049	.077	.111	.151	.198	.250	.309	.374	.445
	Airflow, CFM	**140**	**175**	**209**	**244**	**279**	**314**	**349**	**384**	**419**
	Noise Criteria, Position A	—	—	18	23	27	31	34	37	40
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	2-3-6	3-4-7	3-5-8	3-5-9	4-6-10	4-7-11	5-8-12	5-9-13	6-9-14
	Throw, Position B	3-4-7	4-5-8	4-6-9	4-6-10	5-7-12	5-8-13	6-9-14	6-10-15	7-10-16
10" Dia.	Total Pressure, Position A	.026	.040	.058	.079	.103	.130	.161	.194	.231
	Total Pressure, Position B	.041	.064	.093	.126	.165	.209	.257	.311	.371
	Airflow, CFM	**218**	**273**	**327**	**382**	**436**	**491**	**545**	**600**	**654**
	Noise Criteria, Position A	—	—	17	22	26	30	33	36	39
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	3-4-7	3-5-8	4-5-9	4-6-10	4-7-12	5-8-13	5-9-14	6-10-16	7-11-17
	Throw, Position B	4-5-9	4-6-10	5-6-11	5-7-12	5-9-14	6-10-15	6-11-16	7-12-18	8-13-19
12" Dia.	Total Pressure, Position A	.025	.039	.056	.076	.100	.126	.156	.189	.225
	Total Pressure, Position B	.040	.063	.090	.123	.160	.203	.250	.303	.360
	Airflow, CFM	**314**	**393**	**471**	**550**	**628**	**707**	**785**	**864**	**942**
	Noise Criteria, Position A	—	—	16	21	25	29	32	35	38
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	3-5-9	4-6-10	4-7-11	5-8-13	5-8-14	6-10-16	7-11-18	8-12-19	9-13-21
	Throw, Position B	4-6-10	5-7-12	5-8-13	6-9-15	6-10-17	7-12-18	8-13-21	9-14-22	10-15-24
14" Dia.	Total Pressure, Position A	.034	.053	.077	.105	.137	.173	.214	.259	.308
	Total Pressure, Position B	.055	.086	.123	.168	.219	.278	.343	.415	.494
	Airflow, CFM	**428**	**535**	**641**	**748**	**855**	**962**	**1069**	**1176**	**1283**
	Noise Criteria, Position A	—	16	22	27	31	35	38	41	44
	Noise Criteria, Position B	—	22	27	32	36	40	43	46	49
	Throw, Position A	4-6-10	4-7-12	5-8-14	6-9-16	7-10-18	8-12-20	9-13-22	10-15-24	10-16-26
	Throw, Position B	5-7-11	5-8-14	6-9-16	7-10-18	8-11-20	9-13-22	10-15-25	11-17-27	12-18-30
16" Dia.	Total Pressure, Position A	.031	.049	.071	.096	.125	.159	.196	.237	.282
	Total Pressure, Position B	.050	.079	.113	.154	.201	.254	.314	.380	.452
	Airflow, CFM	**559**	**698**	**838**	**977**	**1117**	**1257**	**1396**	**1536**	**1676**
	Noise Criteria, Position A	—	15	21	25	29	33	36	39	42
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	4-7-12	5-8-14	6-9-16	7-11-18	8-12-20	9-13-22	10-14-24	11-16-26	12-17-28
	Throw, Position B	5-7-13	6-9-16	7-10-18	8-12-20	9-13-22	10-14-24	11-15-26	12-18-29	13-19-31
18" Dia.	Total Pressure, Position A	.028	.045	.064	.087	.114	.144	.178	.215	.256
	Total Pressure, Position B	.046	.071	.103	.140	.183	.231	.286	.346	.411
	Airflow, CFM	**707**	**884**	**1060**	**1237**	**1414**	**1590**	**1767**	**1944**	**2121**
	Noise Criteria, Position A	—	—	19	24	28	32	35	38	41
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	5-7-13	6-9-16	7-11-18	8-12-20	9-14-23	10-15-25	12-17-27	13-18-29	14-20-31
	Throw, Position B	6-8-15	7-10-18	8-12-20	9-13-22	10-15-25	11-17-29	13-19-30	14-20-32	15-21-34
20" Dia.	Total Pressure, Position A	.028	.044	.063	.086	.112	.142	.175	.212	.252
	Total Pressure, Position B	.045	.070	.101	.138	.180	.228	.281	.340	.405
	Airflow, CFM	**873**	**1091**	**1309**	**1527**	**1745**	**1963**	**2182**	**2400**	**2618**
	Noise Criteria, Position A	—	—	20	25	29	33	36	39	42
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	5-9-15	7-10-18	8-12-20	9-14-23	10-15-26	12-17-28	13-19-30	14-21-33	15-23-35
	Throw, Position B	6-10-17	8-11-20	9-13-22	10-15-25	11-16-28	13-18-30	14-20-32	15-22-35	16-25-38

For performance notes, see D145.

PERFORMANCE DATA:

MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090
24" Dia.	Total Pressure, Position A	.025	.039	.056	.076	.099	.125	.154	.187	.222
	Total Pressure, Position B	.040	.062	.089	.121	.158	.200	.247	.299	.356
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3456	3770
	Noise Criteria, Position A	—	15	21	26	30	34	37	40	43
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	6-10-18	8-12-20	9-14-24	10-16-27	11-17-29	13-20-33	15-22-36	17-25-39	18-27-42
	Throw, Position B	7-11-19	9-13-22	10-16-26	11-18-29	12-19-31	14-22-35	16-24-39	18-27-42	20-30-46

Performance Notes:

1. All pressures are in inches w.g..
2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Performance data as shown is for ceiling mounted diffusers. For exposed duct mounting, multiply the throw values by 0.70.
4. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Down)
6	0.114	0.097
8	0.163	0.126
10	0.316	0.245
12	0.478	0.323
14	0.536	0.420
16	0.758	0.594
18	0.998	0.761
20	1.254	0.987
24	2.058	1.625

ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

Models:

RNRA1 **Steel**
ARNRA1 **Aluminum**

Model RNRA1

Model Series RNRA1 and ARNRA1 Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° air diffusion pattern and produce excellent performance in variable air volume systems.
Models RNRA1 and ARNRA1 are designed for both heating and cooling applications. The air discharge pattern is fully adjustable between horizontal and vertical. The discharge pattern is adjusted by sliding the core up or down. In the "down" setting, capacity is maximized and throw is horizontal. In the "up" setting, air projects vertically down from the diffuser.

STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.
- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

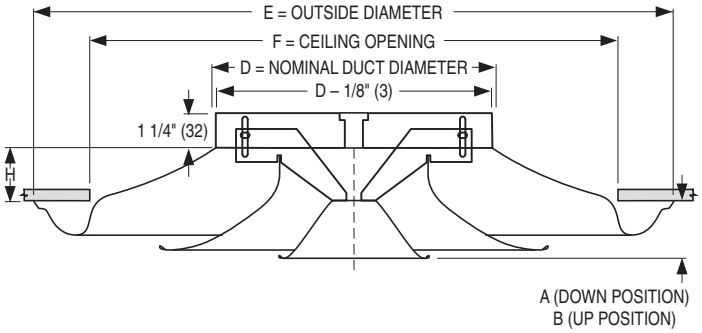
FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
SC Safety Chain
GK Foam Gasket
EQT Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

	Imperial Units (inches)					Metric Units (mm)				
Listed Size	A	B	E	F	H	A	B	E	F	H
6	1 3/4	3/4	14 1/8	12	7/8	44	19	359	305	22
8	2	1	18 3/4	16	1 1/4	51	25	476	406	32
10	2 1/2	1 1/4	22 7/8	20	1 1/2	64	32	581	508	38
12	3 1/4	1 3/4	27 3/8	24	1 7/8	83	44	695	610	48
14	3 3/4	1 3/4	32	28	1 7/8	95	44	813	711	48
16	4	2	36 1/4	32	2 1/8	102	51	921	813	54

PERFORMANCE DATA:

MODELS RNRA1 AND ARNRA1 • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure, Horizontal	.017	.030	.041	.058	.076	.096	.125	.149	.181	.246
	Total Pressure, Vertical	.025	.044	.064	.089	.123	.158	.200	.245	.294	.400
	Airflow, CFM	79	98	118	137	157	177	196	216	236	275
	Noise Criteria, Horizontal	—	—	—	—	15	22	31	35	39	44
	Noise Criteria, Vertical	—	—	—	15	26	33	38	42	44	49
	Throw, Horizontal	2-4-9	3-5-10	3-6-11	4-6-12	5-7-14	5-8-14	6-9-15	7-10-16	8-11-17	9-13-19
	Throw, Vertical	1-1-1	1-1-2	1-2-3	2-3-4	2-3-5	3-4-6	3-5-7	4-6-9	5-8-11	5-9-12
8" Dia.	Total Pressure, Horizontal	.016	.026	.038	.053	.070	.090	.112	.136	.162	.225
	Total Pressure, Vertical	.034	.057	.081	.116	.150	.194	.242	.291	.347	.472
	Airflow, CFM	140	175	209	244	279	314	349	384	419	489
	Noise Criteria, Horizontal	—	—	15	18	23	30	35	39	41	46
	Noise Criteria, Vertical	—	—	18	24	29	33	36	39	42	47
	Throw, Horizontal	2-5-10	3-6-11	4-7-12	4-8-13	5-9-14	6-9-15	7-10-16	8-11-16	9-12-17	11-14-18
	Throw, Vertical	10-17-24	12-19-27	14-20-29	16-22-32	17-24-34	19-25-36	21-27-38	22-28-40	24-29-42	27-32-45
10" Dia.	Total Pressure, Horizontal	.016	.027	.041	.056	.073	.093	.117	.142	.237	.272
	Total Pressure, Vertical	.029	.049	.075	.126	.145	.168	.210	.276	.330	.449
	Airflow, CFM	218	273	327	382	436	491	545	600	654	764
	Noise Criteria, Horizontal	—	—	15	18	23	29	33	37	41	46
	Noise Criteria, Vertical	—	—	16	23	26	31	35	38	40	45
	Throw, Horizontal	3-5-11	4-16-13	5-7-14	5-9-16	6-10-17	7-11-18	8-12-19	9-13-20	10-14-22	11-16-24
	Throw, Vertical	18-21-30	20-24-34	21-26-37	23-28-40	25-30-43	26-32-45	28-34-48	29-35-50	30-37-52	33-40-56
12" Dia.	Total Pressure, Horizontal	.015	.025	.037	.053	.069	.089	.109	.138	.163	.232
	Total Pressure, Vertical	.029	.048	.071	.101	.127	.162	.206	.254	.306	.417
	Airflow, CFM	314	393	471	550	628	707	785	864	942	1100
	Noise Criteria, Horizontal	—	—	—	15	20	24	28	33	36	42
	Noise Criteria, Vertical	—	—	15	20	25	30	34	38	40	46
	Throw, Horizontal	3-7-13	4-8-15	6-9-16	7-10-17	8-12-19	9-13-20	10-14-21	11-15-22	12-16-23	14-18-25
	Throw, Vertical	18-23-32	21-25-35	23-27-38	24-30-41	26-32-44	27-33-47	29-35-49	30-37-51	32-38-54	34-41-58
14" Dia.	Total Pressure, Horizontal	.019	.031	.044	.061	.077	.104	.129	.156	.190	.259
	Total Pressure, Vertical	.038	.058	.086	.116	.156	.193	.237	.279	.342	.465
	Airflow, CFM	428	535	641	748	855	962	1069	1176	1283	1497
	Noise Criteria, Horizontal	—	—	—	15	21	25	30	33	36	42
	Noise Criteria, Vertical	—	—	—	17	25	30	34	37	40	46
	Throw, Horizontal	4-8-15	5-10-16	7-11-18	8-12-19	9-13-20	10-15-21	11-16-22	13-17-23	14-18-24	16-20-26
	Throw, Vertical	20-25-35	23-28-39	25-30-43	27-33-46	29-35-49	30-37-52	32-39-55	34-41-58	35-43-60	38-46-65
16" Dia.	Total Pressure, Horizontal	.023	.040	.057	.079	.109	.137	.173	.212	.251	.358
	Total Pressure, Vertical	.047	.078	.103	.149	.195	.246	.308	.370	.450	.612
	Airflow, CFM	559	698	838	977	1117	1257	1396	1536	1676	1955
	Noise Criteria, Horizontal	—	—	—	16	23	28	32	35	38	44
	Noise Criteria, Vertical	—	—	19	25	30	34	38	41	44	50
	Throw, Horizontal	7-10-15	8-12-17	9-13-18	10-14-20	11-15-21	12-16-22	13-17-23	14-17-25	15-18-26	17-20-28
	Throw, Vertical	26-32-44	29-35-49	32-38-54	34-41-58	36-44-62	38-47-65	40-49-69	42-52-72	44-54-75	48-58-81

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner cones in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.

3. Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner cones in fully up position B). For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Up)
6	0.14	0.11
8	0.25	0.19
10	0.45	0.29
12	0.61	0.59
14	0.85	0.57
16	0.89	0.68

ROUND CEILING DIFFUSERS

- ADJUSTABLE HORIZONTAL / VERTICAL AIRFLOW PATTERN
- ROUND NECK
- ALUMINUM

Model:

6300R Continuous Rotary Adjustment

Model 6300R

Model Series 6300 Round Ceiling Diffusers are available in a comprehensive range of sizes with a capacity ranging from 50 to 5000 cfm (24 – 2360 l/s). They are suitable for both cooling and heating applications. With three concentric cones in all sizes they offer the same balanced appearance when different sizes are used in the same zone. They feature a 360° air diffusion pattern and provide excellent performance in variable air volume systems.

Model 6300R provides 3/4" (19) adjustability through utilization of a threaded mechanism. The "UP" position of the core provides vertical throw, and the "DOWN" position provides horizontal throw. The core is easily adjusted by rotating the center cone. An optional round opposed blade damper is screwdriver-operated through the face of the unit. Model 6300R has a fully adjustable core to guide vertical or horizontal projection of the air.

CONSTRUCTION MATERIAL:

Spun aluminum.

FINISH OPTIONS:

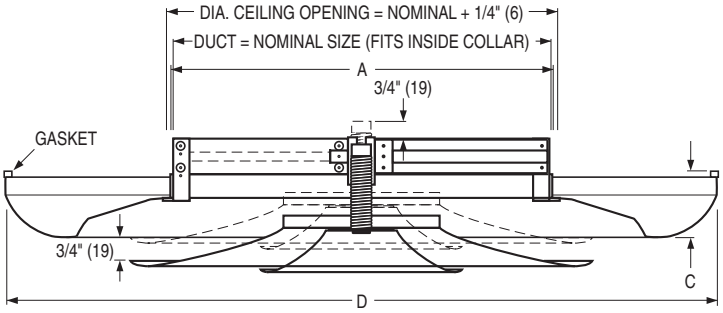
AW Appliance White finish is standard. AL Aluminum is optional. Special finishes are available.

OPTIONS & ACCESSORIES:

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

SC Safety Chain

For additional options and accessories; see page D255.



6300R

Notes:

1/4" (6) oversize duct fits outside collar, if desired.

A = Inside diameter of diffuser neck.

C = Projection of diffuser outer cone below ceiling.

D = Overall diameter of diffuser.

Dimensional Data

	Imperial Units (inches)			Metric Units (mm)		
Listed Size	A	C	D	A	C	D
6	6 1/8	3/4	12 1/8	156	19	308
8	8 1/8	1	15 1/2	206	25	394
10	10 1/8	1 1/4	18 7/8	257	32	479
12	12 1/8	1 3/8	22 1/4	308	35	565
14	14 1/8	1 9/16	25 5/8	359	40	651
16	16 1/8	1 3/4	29	410	44	737
18	18 1/8	1 15/16	32 3/8	460	49	822
20	20 1/8	2 1/8	35 3/4	511	54	908
24	24 1/8	2 1/2	42 1/2	613	64	1080

PERFORMANCE DATA:

MODEL 6300R • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.024	.037	.056	.071	.092	.112	.138	.197	.272	.345
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Radius of Diffusion, ft.	2-5	3-5	4-6	4-7	5-7	6-8	6-9	6-9	7-10	7-10
	Noise Criteria	—	—	12	17	21	25	28	34	39	41
8" Dia.	Total Pressure	.033	.049	.068	.095	.122	.155	.192	.270	.362	.470
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Radius of Diffusion, ft.	3-7	4-8	5-8	6-9	7-10	8-10	9-11	8-12	9-13	10-14
	Noise Criteria	—	—	14	19	23	27	30	36	41	44
10" Dia.	Total Pressure	.041	.062	.098	.121	.157	.200	.245	.350	.477	.610
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Radius of Diffusion, ft.	4-9	5-10	7-11	8-11	9-12	9-13	10-14	11-15	11-16	12-17
	Noise Criteria	—	10	16	21	25	29	32	38	43	46
12" Dia.	Total Pressure	.043	.066	.093	.127	.165	.206	.249	.355	.482	.620
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Radius of Diffusion, ft.	5-10	7-12	8-13	9-14	10-15	11-16	12-16	13-18	14-19	15-21
	Noise Criteria	—	12	18	23	27	31	34	40	45	48
16" Dia.	Total Pressure	.043	.060	.093	.127	.153	.206	.252	.350	.482	.580
	Airflow, CFM	560	700	840	980	1120	1260	1400	1680	1960	2240
	Radius of Diffusion, ft.	6-12	7-13	9-15	10-16	12-17	13-18	13-18	14-20	16-22	18-24
	Noise Criteria	—	16	22	27	31	35	38	44	49	52
18" Dia.	Total Pressure	.044	.068	.097	.130	.167	.214	.253	.370	.492	.630
	Airflow, CFM	710	885	1060	1240	1420	1590	1770	2120	2480	2830
	Radius of Diffusion, ft.	7-16	10-18	12-19	14-21	16-22	17-23	18-24	19-27	21-29	22-31
	Noise Criteria	—	17	23	28	32	36	39	45	50	53
20" Dia.	Total Pressure	.045	.069	.099	.135	.170	.215	.262	.375	.512	.645
	Airflow, CFM	875	1100	1310	1530	1750	1970	2190	2610	3060	3500
	Radius of Diffusion, ft.	8-18	11-19	14-21	15-23	17-24	18-26	19-27	21-30	23-32	24-34
	Noise Criteria	10	18	24	29	33	37	40	46	51	54
24" Dia.	Total Pressure	.043	.066	.095	.131	.170	.215	.267	.360	.407	.660
	Airflow, CFM	1260	1570	1880	2200	2510	2820	3140	3770	4400	5020
	Radius of Diffusion, ft.	10-21	13-23	16-25	18-28	21-29	22-31	25-36	25-36	28-39	29-42
	Noise Criteria	12	19	25	30	34	38	41	47	52	55

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

2. Radius of diffusion values are given at 100 and 50 fpm terminal velocities under isothermal conditions.

3. Performance data as shown is for the diffuser only, with the cones in the "down" position. Performance for the cones in the "up" position can be approximated by multiplying the total pressures by 1.6, adding 5 Noise Criteria to the sound levels, and multiplying the radius of diffusion by .90.

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Dia. in Inches	Ak Factor
6	0.120
8	0.200
10	0.310
12	0.440
14	0.570
16	0.785
18	0.990
20	1.220
24	1.770

ROUND CEILING DIFFUSERS

- ARCHITECTURAL PLAQUE FACE
- ADJUSTABLE HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- ALUMINUM FACE
- ROUND NECK

Models:

RUNI Steel
ARUNI Aluminum

Model RUNI

Model Series RUNI and ARUNI Round Plaque Ceiling Air Diffuser has been designed to provide both the appearance required for architectural excellence as well as high engineering performance. These diffusers are suitable for both architectural ceilings and exposed duct applications.

The diffusers deliver the air in a true 360° air pattern and provide excellent performance in variable air volume systems. The discharge setting is simply adjusted by sliding the inner face plaque assembly up or down. The diffuser provides higher induction and more air movement in the higher position while maximum capacity at minimum NC levels can be obtained in the lower position.

STANDARD FEATURES:

- Smooth heavy duty face plaque is 1/8" (0.125) thick aluminum for strength and lightness.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- The core is retained by a spring loaded friction arrangement. There are no screws to reposition.
- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.
- Available for duct sizes 6" – 16" (152 – 406) diameter.
- High neck collars for solid connection.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel outer cone and bracketry with an aluminum face or aluminum outer cone with corrosion-resistant steel neck bracketry and aluminum face.

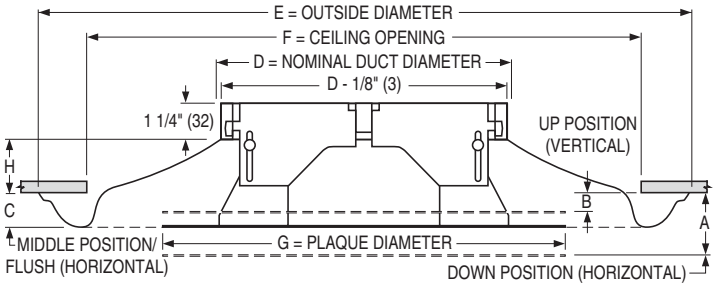
FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
SC	Safety Chain
GK	Foam Gasket
EQT	Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

	Imperial Units (inches)							Metric Units (mm)						
Listed Size	A	B	C	E	F	G	H	A	B	C	E	F	G	H
6	1 3/4	1/4	3/4	14 1/8	12	9	7/8	44	6	19	359	305	229	22
8	2	1/2	1	18 3/4	16	12	1 1/4	51	13	25	476	406	305	32
10	2 1/4	11/16	1 3/16	22 3/4	20	15	1 1/2	57	17	30	578	508	381	38
12	2 3/4	15/16	1 11/16	27 3/8	24	18	1 7/8	70	24	43	695	610	457	48
14	3	1	1 3/4	32	28	21	1 7/8	76	25	44	813	711	533	48
16	3 3/8	1	2	36 1/4	32	24	2 1/8	86	25	51	921	813	610	54

PERFORMANCE DATA:

MODELS RUNI AND ARUNI

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
6" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.034	0.053	0.076	0.104	0.135	0.171	0.211	0.304	0.414	0.541
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Noise Criteria, Horizontal	—	—	—	—	—	16	18	26	31	34
	Noise Criteria, Vertical	—	—	—	—	—	19	22	29	34	37
	Throw, Horizontal	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-12	5-8-13	6-10-14	7-11-15
	Throw, Vertical	8-12-23	10-15-25	12-18-26	14-21-27	16-23-28	18-24-29	20-25-30	23-26-31	24-27-32	25-28-33
8" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.038	0.059	0.085	0.116	0.151	0.191	0.236	0.340	0.463	0.605
	Airflow, CFM	140	175	209	244	279	314	349	419	489	558
	Noise Criteria, Horizontal	—	—	—	—	—	16	20	28	32	35
	Noise Criteria, Vertical	—	—	—	—	15	21	28	31	36	42
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-19	9-14-22	11-16-24	12-18-26
	Throw, Vertical	15-22-31	18-24-34	20-27-37	22-29-40	24-31-43	26-32-46	28-34-48	31-37-53	34-40-57	38-43-61
10" Dia.	Total Pressure, Horizontal	0.017	0.027	0.039	0.053	0.070	0.088	0.109	0.157	0.214	0.279
	Total Pressure, Vertical	0.033	0.051	0.073	0.100	0.131	0.165	0.204	0.294	0.400	0.522
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	—	16	21	28	32	35
	Noise Criteria, Vertical	—	—	—	—	19	23	28	32	38	43
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-20	9-14-22	11-16-24	12-19-27
	Throw, Vertical	15-22-31	18-25-35	20-27-38	22-29-41	24-31-44	26-33-47	28-35-49	32-38-54	36-41-58	39-44-62
12" Dia.	Total Pressure, Horizontal	0.019	0.030	0.044	0.059	0.078	0.098	0.121	0.175	0.238	0.311
	Total Pressure, Vertical	0.042	0.065	0.094	0.128	0.167	0.211	0.261	0.375	0.511	0.667
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	—	15	18	21	29	34	39
	Noise Criteria, Vertical	—	—	—	—	18	24	29	29	40	45
	Throw, Horizontal	4-6-14	5-7-16	6-9-17	7-10-19	8-12-20	9-13-21	10-15-22	12-17-24	14-20-26	16-23-28
	Throw, Vertical	23-28-39	25-31-43	28-34-47	30-36-51	32-39-55	34-41-58	36-43-61	39-47-67	42-51-72	45-55-77
14" Dia.	Total Pressure, Horizontal	0.021	0.033	0.047	0.064	0.084	0.106	0.131	0.189	0.257	0.336
	Total Pressure, Vertical	0.042	0.066	0.095	0.129	0.168	0.213	0.263	0.378	0.515	0.673
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	—	19	22	31	35	41
	Noise Criteria, Vertical	—	—	—	19	21	28	31	39	44	49
	Throw, Horizontal	4-7-16	5-8-19	7-10-20	8-11-22	9-13-24	10-15-26	11-16-27	13-20-30	15-23-33	17-26-35
	Throw, Vertical	24-29-41	26-32-45	29-35-50	31-38-54	33-41-57	35-43-61	37-45-64	41-50-70	44-54-75	47-57-81
16" Dia.	Total Pressure, Horizontal	0.021	0.033	0.048	0.065	0.085	0.107	0.132	0.191	0.259	0.339
	Total Pressure, Vertical	0.045	0.071	0.102	0.139	0.181	0.229	0.283	0.408	0.555	0.725
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	—	18	22	25	33	37	41
	Noise Criteria, Vertical	—	—	19	21	24	30	33	40	45	50
	Throw, Horizontal	5-7-16	6-9-19	7-11-22	8-12-25	9-14-27	11-16-30	12-18-32	14-21-36	17-25-41	19-28-45
	Throw, Vertical	25-31-43	28-34-48	31-38-53	33-40-57	35-43-61	38-46-64	40-48-68	43-53-74	47-57-80	50-61-86

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner plaque in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.

3. Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner plaque in fully up position B). For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Dia. in Inches	Ak Factor Position A (Cone Down)
6	0.12
8	0.21
10	0.33
12	0.51
14	0.70
16	0.88

ROUND DOWNBLAST DIFFUSER

- HEAVY DUTY
- ADJUSTABLE VERTICAL TO HORIZONTAL DISCHARGE PATTERN
- "FIBONACCI" SPIRAL
- ROUND NECK

Models:

RDB Steel

Model RDB

Model Series RDB Round Downblast Diffusers have been designed for industrial and commercial applications. The unique contemporary design features a "Fibonacci spiral" adjustable aperture. The discharge pattern can be adjusted from full horizontal to full vertical. At the full vertical setting, the diffuser forces approximately 75% of the air in a long downward projection. This results in effective spot cooling or heating from high mounting locations.

This style of diffuser is suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other applications where ceilings are high and conditions are variable.

STANDARD FEATURES:

- Unique "Fibonacci spiral" adjustable aperture damper.
- Horizontal mode provides a uniform 360° discharge pattern.
- Vertical setting provides effective spot cooling or heating in high mounting locations.
- Included is an easily adjustable ring operator that allows for pole adjustment.
- High neck collars for solid connection.
- Optional round opposed blade damper is screwdriver operated and adjusted through the aperture.

CONSTRUCTION MATERIAL:

Heavy gauge corrosion-resistant steel.

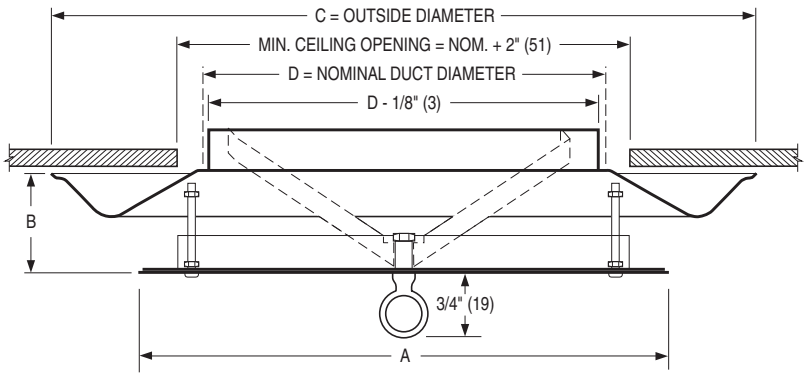
FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

SC Safety Chain
GK Foam Gasket
EQT Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

Listed Size	Imperial Units (inches) A	C	D	Metric Units (mm) A	C	D
8	11 11/16	2 1/4	14 3/8	297	57	365
10	14	2 9/16	17 15/16	356	65	456
12	16 1/4	3	21 5/8	413	76	549
14	18 5/8	3 3/8	25 1/4	473	86	641
16	20 7/8	4	29	530	102	737
18	23 1/4	4 1/2	33 1/2	591	114	851
20	25 1/2	5 7/16	37 1/4	648	138	946
24	30 3/16	6 1/2	43 7/8	767	165	1114

PERFORMANCE DATA:

MODEL RDB • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	**.010**	**.016**	**.022**	**.031**	**.040**	**.050**	**.062**	**.090**	**.122**	**.160**
8" Dia.	Total Pressure, Horizontal	.027	.042	.062	.073	.115	.140	.175	.258	.335	.421
	Total Pressure, Vertical	.014	.024	.035	.049	.053	.071	.088	.122	.176	.235
	Airflow, CFM	**140**	**175**	**209**	**244**	**279**	**314**	**349**	**419**	**489**	**559**
	Noise Criteria, Horizontal	—	—	—	21	23	25	31	33	37	39
	Noise Criteria, Vertical	—	—	—	—	—	—	20	22	28	31
	Throw, Horizontal	0-1-2	1-2-4	1-2-5	1-2-7	1-3-9	2-4-10	2-4-11	3-5-12	4-6-13	6-7-15
	Throw, Vertical	8	10	16	19	24	31	34	37	43	48
10" Dia.	Total Pressure, Horizontal	.036	.056	.082	.111	.145	.185	.230	.335	.462	.570
	Total Pressure, Vertical	.016	.026	.037	.051	.066	.083	.103	.149	.204	.265
	Airflow, CFM	**218**	**273**	**327**	**382**	**436**	**491**	**545**	**654**	**764**	**873**
	Noise Criteria, Horizontal	—	—	—	—	21	23	27	33	39	41
	Noise Criteria, Vertical	—	—	—	—	—	—	20	25	32	35
	Throw, Horizontal	0-1-3	1-2-5	1-2-7	1-3-8	2-4-10	2-4-11	3-5-12	4-7-13	6-8-15	7-10-16
	Throw, Vertical	12	13	22	26	29	34	37	40	48	50
12" Dia.	Total Pressure, Horizontal	.047	.073	.107	.149	.195	.245	.307	.445	.612	.800
	Total Pressure, Vertical	.018	.029	.042	.058	.076	.095	.118	.170	.232	.305
	Airflow, CFM	**314**	**393**	**471**	**550**	**628**	**707**	**785**	**942**	**1100**	**1257**
	Noise Criteria, Horizontal	—	—	—	33	27	31	35	39	43	46
	Noise Criteria, Vertical	—	—	—	—	—	22	25	28	33	37
	Throw, Horizontal	3-6-	4-7-13	5-8-15	6-10-17	7-11-18	8-12-19	9-13-20	12-16-22	15-18-23	18-20-25
	Throw, Vertical	15	17	28	36	46	50	55	60	67	75
14" Dia.	Total Pressure, Horizontal	.039	.062	.090	.127	.165	.209	.262	.380	.542	.700
	Total Pressure, Vertical	.016	.027	.038	.054	.070	.088	.111	.162	.224	.295
	Airflow, CFM	**428**	**535**	**641**	**748**	**855**	**962**	**1069**	**1283**	**1497**	**1710**
	Noise Criteria, Horizontal	—	—	—	—	22	25	29	37	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	29	35	38
	Throw, Horizontal	1-6-12	2-7-14	3-8-16	4-10-17	5-11-18	7-12-19	8-13-20	11-16-22	15-18-23	19-21-25
	Throw, Vertical	21	25	31	39	48	53	57	63	70	89
16" Dia.	Total Pressure, Horizontal	.053	.069	.110	.181	.232	.292	.367	.535	.737	.965
	Total Pressure, Vertical	.020	.032	.045	.061	.083	.104	.132	.189	.261	.342
	Airflow, CFM	**559**	**698**	**838**	**977**	**1117**	**1257**	**1396**	**1676**	**1955**	**2234**
	Noise Criteria, Horizontal	—	—	—	22	25	31	37	42	46	52
	Noise Criteria, Vertical	—	—	—	—	—	22	27	35	39	41
	Throw, Horizontal	6-10-18	7-11-20	7-13-21	8-16-22	9-17-24	11-19-25	13-20-26	14-21-27	15-22-28	16-23-29
	Throw, Vertical	25	27	34	41	50	55	59	67	85	94
18" Dia.	Total Pressure, Horizontal	.071	.114	.162	.226	.300	.375	.472	.690	.942	1.230
	Total Pressure, Vertical	.023	.037	.053	.073	.096	.120	.150	.217	.298	.390
	Airflow, CFM	**707**	**884**	**1060**	**1237**	**1414**	**1590**	**1767**	**2121**	**2474**	**2827**
	Noise Criteria, Horizontal	—	—	22	34	37	41	44	52	57	62
	Noise Criteria, Vertical	—	—	—	—	—	24	27	33	37	41
	Throw, Horizontal	8-13-21	10-14-22	11-16-23	12-17-24	14-18-25	15-19-26	16-20-27	18-22-28	21-23-29	23-25-30
	Throw, Vertical	29	34	39	44	55	57	63	74	85	100
20" Dia.	Total Pressure, Horizontal	.074	.116	.162	.221	.289	.365	.442	.630	.862	1.12
	Total Pressure, Vertical	.022	.035	.05	.069	.09	.115	.142	.206	.284	.373
	Airflow, CFM	**873**	**1091**	**1309**	**1527**	**1745**	**1963**	**2182**	**2618**	**3054**	**3491**
	Noise Criteria, Horizontal	—	25	31	34	38	42	45	53	58	62
	Noise Criteria, Vertical	—	—	—	—	23	27	31	36	42	46
	Throw, Horizontal	10-14-20	12-16-23	14-19-26	16-21-29	18-23-31	20-25-32	22-27-34	25-30-37	29-34-39	32-37-41
	Throw, Vertical	36	42	48	53	58	63	69	81	90	105
24" Dia.	Total Pressure, Horizontal	.047	.073	.104	.141	.182	.229	.281	.400	.540	.700
	Total Pressure, Vertical	.010	.016	.022	.030	.040	.050	.062	.090	.122	.159
	Airflow, CFM	**1257**	**1571**	**1885**	**2199**	**2513**	**2827**	**3142**	**3770**	**4398**	**5027**
	Noise Criteria, Horizontal	25	30	34	36	42	47	53	62	70	73
	Noise Criteria, Vertical	—	—	—	24	27	33	38	44	47	51
	Throw, Horizontal	12-16-22	14-19-26	17-21-30	18-23-32	20-25-33	23-27-36	25-31-37	29-35-40	33-38-42	34-40-47
	Throw, Vertical	43	47	50	58	64	69	87	95	99	113

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions with the face fully closed.
3. Vertical throw (projection) is given at 50 fpm terminal velocity under isothermal conditions with the face fully open. For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 20. Values shown are for the horizontal discharge pattern (center closed) and vertical discharge pattern (center fully open).
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Nominal Neck Size Dia. in Inches	Ak Factor
6	0.13
8	0.25
10	0.51
12	0.56
14	1.08
18	1.36
20	1.60

HOW TO ORDER

ROUND CEILING DIFFUSERS
MODEL SERIES RNR, RNRA1, RUNI, RDB, ARNR, ARNRA1, ARUNI AND 6300R

EXAMPLE: RNR - 12 - AW - –

1. **Models**
   Steel
   - RNR Adjustable (Horizontal)
   - RNRA1 Adjustable (Horizontal/Vertical)
   - RUNI Plaque, Adjustable (Horizontal/Vertical)
   - RDB Downblast, Adjustable

   Aluminum
   - ARNR Adjustable (Horizontal)
   - ARNRA1 Adjustable (Horizontal/Vertical)
   - ARUNI Plaque, Adjustable (Horizontal/Vertical)
   - 6300R Rotating Fully Adjustable (Horizontal to Vertical)
2. **Neck Size** (inches)
   06, 08, 10, 12, 14, 16, 18, 20, 24
   (RNRA1, RUNI, ARNRA1 and ARUNI available 06 to 16 only)
   (RDB available 08 to 24 only)
3. **Finish ***
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - SP Special Custom Color

OPTIONS & ACCESSORIES:

4. **Damper ****
   - – None (default)
   - 4250 Radial Sliding, 6" - 14"
   - 4275 Radial Opposed Blade, 5" - 24"
5. **Safety Chain**
   - – None (default)
   - SC Safety Chain
6. **Gasket**
   - GK Foam Gasket (Not applicable on 6300R)
7. **Earthquake Tabs**
   - – None (default)
   - EQT Earthquake Tabs (Not applicable on 6300R)

OTHER OPTIONS & ACCESSORIES:

- – None

8. **Air Balancing Devices** (order separately)
   - EGR Equalizing Grid
   - DEGR Damper/Equalizing Grid

Notes:

1. *Model 6300R is available as standard only in AW (default) or AL finish. For availability of custom colors, contact factory.
2. **Model 4250 is not compatible with RUNI, ARUNI or 6300R diffusers.
3. Vinyl bulb gasket standard on 6300R.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNR and ARNR – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNR** (steel) or **ARNR** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have three round spun cones. The inner core assembly shall be removable and slide up or down to attain infinite horizontal discharge pattern adjustment. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper, without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

RNRA1 and ARNRA1 – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNRA1** (steel) or **ARNRA1** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel or aluminum and have three round spun cones. The inner cones shall be removable. The core shall be adjustable to achieve a horizontal or vertical discharge pattern. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

6300R – Rotating Fully Adjustable

Furnish and install **Nailor Model 6300R Aluminum Adjustable Round Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be all aluminum construction and incorporate three round cones that have been spun. The diffuser shall be easily adjusted by rotating the inner core either in an up or down position. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

RUNI and ARUNI – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RUNI** (steel) or **ARUNI** (aluminum) **Round Architectural Plaque Face Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RUNI shall have a round outer cone that is spun from corrosion-resistant steel. Model ARUNI shall have a round, aluminum outer cone with corrosion-resistant steel neck bracketry. The inner core shall have a round plaque face that is heavy gauge aluminum, and shall be smooth and flat in appearance. A removable inner core assembly shall slide up or down to attain infinite horizontal discharge patterns. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

RBD – Steel

Furnish and install **Nailor Model RDB Round Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of heavy gauge corrosion-resistant spun steel and incorporate a round outer cone. A removable flat inner cone assembly shall have a "Fibonacci spiral" aperture damper that is adjusted by a ring (pole) operator, which extends below the face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED CEILING DIFFUSERS

- SUPPLY
- FACE MOUNTED PATTERN CONTROLLERS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Steel Models:

4320 Flush Face
4325 Drop Face

Aluminum Face Models:

4320A Flush Face
4325A Drop Face

Aluminum Models:

4320AA Flush Face
4325AA Drop Face

Model 4320

Model Series 4320 and 4325 Perforated Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and the high engineering performance required for use in heating and cooling applications. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model Series 4320 features four individual stamped pattern controllers mounted on the rear of the diffuser face. They are easily field adjustable to suit the desired air pattern. Model Series 4325 features a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so the panel remains flush with the ceiling line. In non-tegular ceilings the throw is reduced slightly and the airflow projection protects the ceiling against smudging.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match the appearance.

CONSTRUCTION MATERIAL:

Models 4320/4325 have a corrosion-resistant steel perforated face and backpan. Models 4320A/4325A have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4320AA/4325AA have an aluminum perforated face and backpan.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675 Butterfly Damper 6" – 14" (152 – 356).
MIB Molded Insulation Blanket, R-6.0.

Square Neck:

OBD Opposed Blade Damper (Steel)
OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) -R-4.2.
EXB External Foil-Back Insulation (loose) -R-4.2.
EQT Earthquake Tabs

For additional options and accessories; see page D255.

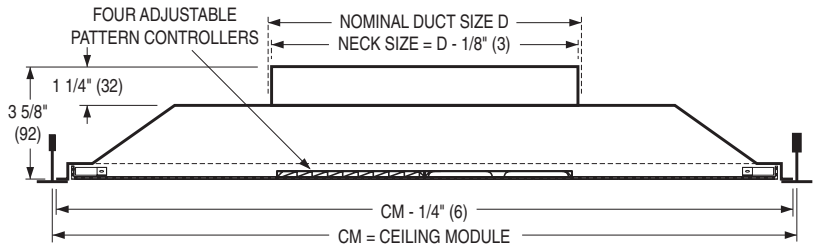
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10	152 x 152, 203 x 203, 254 x 254
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356
48 x 24	1200 x 600				

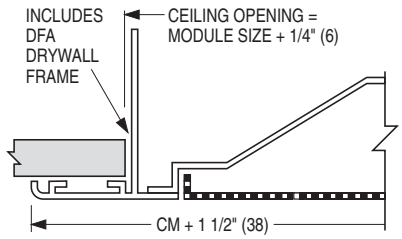
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320, 4320A, 4320AA • Supply • Flush Face

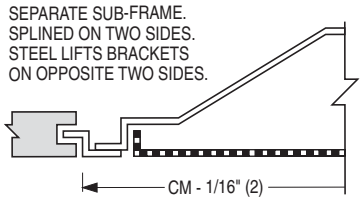
Type L Lay-in T-Bar



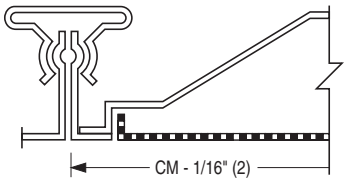
Type S Surface Mount



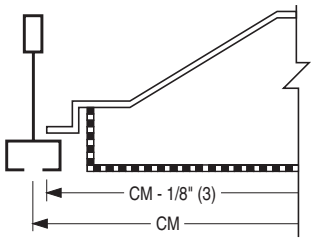
Type SP Spline



Type M Metal Pan (Snap-in)

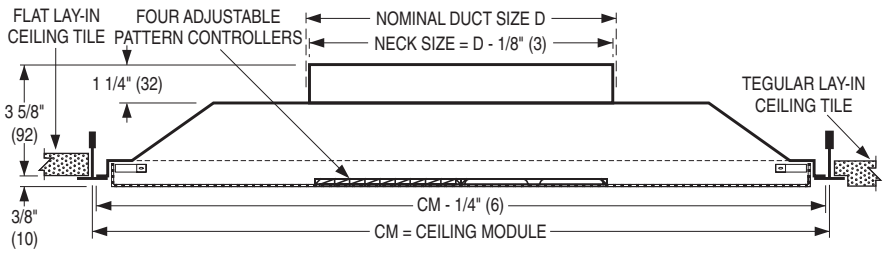


Type F Fineline®

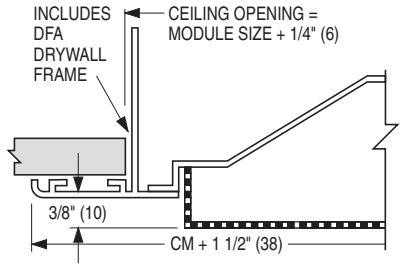


Models 4325, 4325A, 4325AA • Supply • Drop Face

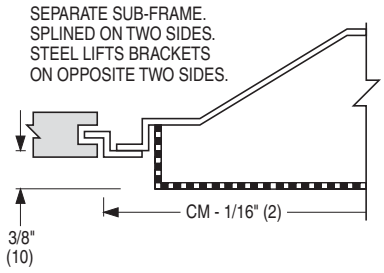
Type L Lay-in T-Bar or Tegular



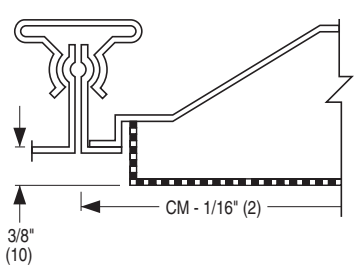
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)



Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.012	.020	.032	.046	.063	.082	.128	.185
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	—	19	24	28	35	41
8" Dia.	Total Pressure		.014	.022	.035	.049	.065	.086	.132	.194
	Flow Rate, CFM		105	140	175	210	245	280	350	420
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	16	22	27	31	38	44
6 x 6	Total Pressure		.013	.022	.036	.052	.074	.092	.143	.206
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	—	16	22	27	31	38	44
8 x 8	Total Pressure		.015	.026	.041	.059	.080	.104	.162	.234
	Flow Rate, CFM		135	175	220	265	310	355	440	530
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	12	19	25	30	34	41	47

Models 4320, 4320A, 4320AA • Flush Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.012	.020	.032	.046	.063	.082	.128	.185
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	—	19	24	28	35	41
8" Dia.	Total Pressure		.014	.022	.035	.049	.065	.086	.132	.194
	Flow Rate, CFM		105	140	175	210	245	280	350	420
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	16	22	27	31	38	44
6 x 6	Total Pressure		.013	.022	.036	.052	.074	.092	.143	.206
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	—	16	22	27	31	38	44
8 x 8	Total Pressure		.015	.026	.041	.059	.080	.104	.162	.234
	Flow Rate, CFM		135	175	220	265	310	355	440	530
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	12	19	25	30	34	41	47

For performance notes, see page D160.

PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.012	.020	.032	.046	.062	.082	.128	.185
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	10	18	21	25	32	38
8" Dia.	Total Pressure		.015	.026	.042	.060	.082	.107	.167	.241
	Flow Rate, CFM		104	139	174	209	244	279	349	418
	Throw	4-Way	1-1-2	1-1-3	1-1-5	1-2-6	1-2-7	1-3-8	2-5-10	3-6-12
		3-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-17	6-10-20
		2-Way	1-1-6	1-3-9	2-4-11	3-6-13	4-8-16	5-9-18	7-11-22	9-13-24
		1-Way	1-2-8	1-4-11	2-6-14	4-8-16	5-9-19	7-11-22	9-14-26	11-16-29
	Noise Criteria		—	11	16	22	27	31	38	44
10" Dia.	Total Pressure		.019	.033	.053	.075	.102	.135	.210	.302
	Flow Rate, CFM		163	218	272	327	381	436	545	654
	Throw	4-Way	1-1-3	1-1-5	1-2-7	1-3-8	2-4-10	2-5-11	4-7-14	5-8-17
		3-Way	1-1-7	1-3-9	2-5-11	3-7-14	4-8-16	5-9-18	7-11-23	9-14-27
		2-Way	1-2-9	2-5-12	3-7-15	5-9-19	7-11-22	8-12-26	10-15-32	12-19-34
		1-Way	1-3-11	3-7-15	4-9-19	7-11-23	9-13-28	10-15-31	12-19-36	15-23-39
	Noise Criteria		—	16	21	27	32	36	43	49
12" Dia.	Total Pressure		.022	.040	.063	.091	.124	.162	.253	.364
	Flow Rate, CFM		235	314	392	471	549	628	785	942
	Throw	4-Way	1-1-5	1-2-7	1-3-9	2-5-11	3-6-13	4-7-14	6-9-18	7-11-22
		3-Way	1-2-9	2-5-12	3-7-15	5-9-18	6-10-21	8-12-24	10-15-31	12-18-36
		2-Way	1-4-12	3-7-16	5-10-20	7-12-24	9-14-29	10-16-33	13-20-41	16-24-44
		1-Way	2-6-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-46	19-30-50
	Noise Criteria		—	19	25	31	36	40	47	53
14" Dia.	Total Pressure		.026	.047	.073	.105	.143	.187	.292	.420
	Flow Rate, CFM		318	424	530	636	742	848	1060	1272
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
		1-Way	3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62
	Noise Criteria		13	23	29	35	40	44	51	57
15" Dia.	Total Pressure		.029	.052	.081	.117	.159	.208	.324	.467
	Flow Rate, CFM		370	490	615	740	860	985	1225	1475
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
		1-Way	3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62
	Noise Criteria		15	25	31	37	42	46	53	59
16" Dia.	Total Pressure		.032	.058	.090	.129	.175	.229	.359	.517
	Flow Rate, CFM		418	558	698	837	977	1116	1396	1675
	Throw	4-Way	1-3-10	2-5-13	3-8-15	5-10-16	7-12-77	9-13-19	12-15-21	13-16-23
		3-Way	3-5-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-16	10-12-18
		2-Way	2-5-11	4-8-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22
		1-Way	7-12-21	11-17-24	14-29-28	17-21-31	18-23-33	20-24-36	22-28-40	24-31-43
	Noise Criteria		16	26	32	38	43	47	54	60

For performance notes, see page D160.

PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6 x 6	Total Pressure		.013	.022	.036	.052	.070	.092	.143	.206
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	—	12	20	23	27	34	40
8 x 8	Total Pressure		.018	.030	.048	.069	.094	.123	.191	.276
	Flow Rate, CFM		133	177	222	266	310	355	444	532
	Throw	4-Way	1-1-2	1-1-4	1-1-6	1-2-7	1-3-8	2-4-9	3-6-12	4-7-14
		3-Way	1-1-5	1-2-8	1-4-10	2-5-12	3-7-14	4-8-16	6-10-20	8-12-24
		2-Way	1-2-8	1-4-10	2-6-13	4-8-16	5-9-19	7-10-21	9-13-27	10-16-30
		1-Way	1-3-9	2-5-13	3-8-16	5-9-19	7-11-23	8-13-27	11-16-31	13-19-34
	Noise Criteria		—	14	19	25	30	34	41	47
10 x 10	Total Pressure		.021	.038	.059	.086	.116	.152	.237	.341
	Flow Rate, CFM		208	277	347	416	485	555	694	832
	Throw	4-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-16	6-10-20
		3-Way	1-2-8	1-4-11	3-6-13	4-8-16	5-9-19	7-11-22	9-13-28	11-16-33
		2-Way	1-3-11	3-6-14	4-9-18	6-11-22	8-13-27	9-14-30	12-18-37	14-22-40
		1-Way	2-5-13	4-9-18	6-11-22	9-13-28	10-16-33	12-18-37	15-22-42	18-28-46
	Noise Criteria		—	17	24	30	35	39	45	52
12 x 12	Total Pressure		.025	.046	.071	.103	.140	.183	.286	.411
	Flow Rate, CFM		300	400	500	600	700	800	1000	1200
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59
	Noise Criteria		12	21	28	34	39	43	49	56
14 x 14	Total Pressure		.031	.055	.086	.124	.169	.221	.345	.497
	Flow Rate, CFM		410	545	680	815	955	1090	1360	1635
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59
	Noise Criteria		15	24	31	37	42	46	52	59

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Square in Inches	Nominal Overall Face Size	Ak Factor
6 x 6	12 x 12	.2345
8 x 8	12 x 12	.3461
6 x 6	24 x 24	.6932
8 x 8	24 x 24	.7620
10 x 10	24 x 24	.7995
12 x 12	24 x 24	.8465
14 x 14	24 x 24	.8993

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.2289
8	12 x 12	.3461
6	24 x 24	.6010
8	24 x 24	.6854
10	24 x 24	.7283
12	24 x 24	.7651
14	24 x 24	.8102
15	24 x 24	.8389

PERFORMANCE DATA:

Models 4325, 4325A, 4325AA • Drop Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.009	.016	.025	.036	.049	.063	.099	.143
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
		1-Way	1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16
	Noise Criteria		—	—	—	16	21	25	32	38
8" Dia.	Total Pressure		.010	.017	.026	.037	.051	.067	.104	.150
	Flow Rate, CFM		105	140	175	210	245	280	350	420
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	14	20	25	29	36	42
6 x 6	Total Pressure		.010	.019	.028	.041	.056	.072	.113	.163
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-2	1-1-3	1-1-3	1-2-4	1-2-5	2-3-6	2-3-7	3-4-7
		3-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-4-8	3-4-9	3-5-10	4-6-11
		2-Way	1-1-4	1-2-5	1-3-7	2-4-8	3-4-9	3-5-11	4-7-13	5-8-14
		1-Way	1-1-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19
	Noise Criteria		—	—	13	19	24	28	35	41
8 x 8	Total Pressure		.012	.021	.032	.046	.063	.082	.128	.185
	Flow Rate, CFM		135	175	220	265	310	355	440	530
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	10	17	23	28	32	39	45

Models 4325, 4325A, 4325AA • Drop Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.009	.016	.025	.036	.049	.063	.099	.143
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
		1-Way	1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16
	Noise Criteria		—	—	—	16	21	25	32	38
8" Dia.	Total Pressure		.010	.017	.026	.037	.051	.067	.104	.150
	Flow Rate, CFM		105	140	175	210	245	280	350	420
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
	Noise Criteria		—	—	14	20	25	29	36	42
6 x 6	Total Pressure		.013	.022	.036	.052	.074	.092	.143	.206
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	—	13	19	24	28	35	41
8 x 8	Total Pressure		.012	.021	.032	.046	.063	.082	.128	.185
	Flow Rate, CFM		135	175	220	265	310	355	440	530
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
	Noise Criteria		—	10	17	23	28	32	39	45

For performance notes, see page D163.

PERFORMANCE DATA:

Models 4325, 4325A, 4325AA • Drop Face • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.009	.016	.025	.036	.049	.063	.099	.143
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
		1-Way	1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16
	Noise Criteria		—	—	—	15	18	22	29	35
8" Dia.	Total Pressure		.013	.021	.034	.049	.066	.087	.136	.195
	Flow Rate, CFM		104	139	174	209	244	279	349	418
	Throw	4-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-8	4-6-9
		3-Way	1-1-4	1-2-6	2-3-7	2-4-9	3-5-11	4-6-12	5-7-13	6-9-14
		2-Way	1-2-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-16	7-11-18
		1-Way	1-2-7	2-4-10	3-6-12	4-7-15	6-9-18	6-10-19	8-12-21	10-15-23
	Noise Criteria		—	—	13	18	24	28	35	41
10" Dia.	Total Pressure		.016	.027	.043	.061	.084	.109	.171	.245
	Flow Rate, CFM		163	218	272	327	381	436	545	654
	Throw	4-Way	1-1-4	1-3-6	2-3-7	3-4-9	3-5-10	4-6-10	5-7-12	6-9-13
		3-Way	1-2-7	2-4-9	3-6-12	4-7-14	5-8-15	6-9-16	8-12-18	9-14-20
		2-Way	1-3-8	2-5-11	4-7-14	5-8-17	6-10-19	7-11-20	9-14-22	11-17-26
		1-Way	2-4-11	3-7-15	6-9-19	7-11-23	9-13-26	10-15-28	13-19-31	15-23-34
	Noise Criteria		—	13	18	24	29	33	40	46
12" Dia.	Total Pressure		.019	.033	.052	.074	.101	.132	.207	.297
	Flow Rate, CFM		235	314	392	471	549	628	785	942
	Throw	4-Way	1-3-6	2-4-9	3-5-11	4-6-12	5-7-13	6-9-14	7-11-15	9-12-17
		3-Way	2-4-10	3-6-13	5-8-16	6-10-18	7-11-19	9-13-20	11-16-23	13-18-26
		2-Way	2-5-12	4-8-16	6-10-20	8-12-22	9-14-24	11-16-22	13-20-30	16-22-33
		1-Way	3-7-16	6-11-22	9-14-28	11-16-30	13-19-33	14-22-35	18-28-39	22-30-43
	Noise Criteria		—	17	23	29	34	38	45	51
14" Dia.	Total Pressure		.021	.038	.059	.086	.117	.153	.239	.344
	Flow Rate, CFM		318	424	530	636	742	848	1060	1272
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	9-13-19	11-14-21
		3-Way	3-6-13	5-9-18	7-11-20	9-13-22	10-15-24	12-18-26	15-20-29	18-23-32
		2-Way	3-8-16	6-11-22	9-13-26	11-16-28	12-19-31	14-22-33	18-27-36	22-28-40
		1-Way	5-11-22	9-14-30	12-18-35	14-22-38	17-27-41	19-30-44	24-35-49	30-38-51
	Noise Criteria		10	20	28	32	37	41	48	54
15" Dia.	Total Pressure		.022	.040	.062	.091	.127	.171	.265	.366
	Flow Rate, CFM		370	490	615	740	860	985	1225	1475
	Throw	4-Way	2-4-7	3-5-10	4-7-12	5-8-14	6-9-15	7-10-17	9-12-19	10-13-21
		3-Way	3-6-13	5-9-19	7-10-19	9-12-22	10-15-23	12-18-26	14-19-29	18-22-32
		2-Way	3-8-15	6-11-21	8-12-26	11-15-28	11-19-30	13-21-32	18-27-35	21-27-40
		1-Way	5-10-21	8-14-29	11-17-34	13-21-36	17-26-40	18-29-42	24-34-47	28-36-50
	Noise Criteria		12	22	28	34	39	43	50	56
16" Dia.	Total Pressure		.025	.045	.070	.100	.137	.179	.280	.403
	Flow Rate, CFM		418	558	698	837	977	1116	1396	1675
	Throw	4-Way	3-5-11	5-7-15	6-9-17	7-11-18	8-13-20	10-15-21	12-17-24	15-18-27
		3-Way	2-6-13	4-9-17	7-11-19	9-13-21	10-16-22	12-17-24	15-19-28	17-21-30
		2-Way	2-6-13	4-9-17	7-11-19	9-13-21	10-16-22	12-17-24	15-19-28	17-21-30
		1-Way	7-12-23	12-17-27	15-21-31	18-23-34	20-26-36	22-27-39	24-31-43	26-34-47
	Noise Criteria		13	23	29	35	40	44	51	57

For performance notes, see page D163.

PERFORMANCE DATA:

Models 4325, 4325A, 4325AA • Drop Face • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6 x 6	Total Pressure		.010	.019	.028	.041	.056	.072	.113	.163
	Flow Rate, CFM		75	100	125	150	175	200	250	300
	Throw	4-Way	1-1-2	1-1-3	1-1-3	1-2-4	1-2-5	2-3-6	2-3-7	3-4-7
		3-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-4-8	3-4-9	3-5-10	4-6-11
		2-Way	1-1-4	1-2-5	1-3-7	2-4-8	3-4-9	3-5-11	4-7-13	5-8-14
		1-Way	1-1-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19
	Noise Criteria		—	—	—	17	20	24	31	37
8 x 8	Total Pressure		.014	.024	.038	.056	.075	.098	.153	.220
	Flow Rate, CFM		133	177	222	266	310	355	444	532
	Throw	4-Way	1-1-3	1-2-5	1-3-6	2-3-7	3-4-8	3-5-9	4-6-10	5-7-11
		3-Way	1-2-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-14	6-9-15	7-11-17
		2-Way	1-2-7	2-4-9	3-6-12	4-7-14	5-8-16	6-9-17	8-12-19	9-14-21
		1-Way	1-3-9	3-6-13	4-8-16	6-9-19	7-11-21	8-13-23	10-16-27	13-19-29
	Noise Criteria		—	11	16	22	27	31	38	44
10 x 10	Total Pressure		.018	.031	.049	.069	.095	.124	.193	.278
	Flow Rate, CFM		208	277	347	416	485	555	694	832
	Throw	4-Way	1-2-5	2-3-7	3-4-9	3-5-11	4-6-12	5-7-12	6-9-14	7-11-15
		3-Way	1-4-8	3-5-11	4-7-14	5-8-16	6-10-18	7-11-19	9-14-21	11-16-23
		2-Way	2-5-11	4-7-14	6-9-18	7-11-20	8-13-22	9-14-24	12-18-28	14-20-30
		1-Way	3-6-14	5-9-19	8-12-24	9-14-28	11-17-30	13-19-32	16-24-36	19-28-39
	Noise Criteria		—	14	21	27	32	36	42	49
12 x 12	Total Pressure		.02	.037	.058	.084	.114	.149	.233	.335
	Flow Rate, CFM		300	400	500	600	700	800	1000	1200
	Throw	4-Way	1-4-8	3-5-11	4-7-13	5-8-14	6-9-15	7-11-16	9-13-18	11-14-20
		3-Way	2-6-12	5-8-17	7-10-19	8-12-21	10-15-23	11-17-24	14-19-28	17-21-31
		2-Way	3-7-15	6-10-21	8-13-24	10-15-27	12-18-29	14-21-32	17-24-35	21-27-38
		1-Way	4-10-21	8-14-29	11-17-33	14-21-36	16-24-39	18-29-42	23-33-46	28-36-51
	Noise Criteria		—	18	25	31	36	40	46	53
14 x 14	Total Pressure		.025	.046	.071	.103	.140	.183	.286	.411
	Flow Rate, CFM		408	544	681	817	953	1089	1361	1633
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59
	Noise Criteria		12	21	28	34	39	43	49	56

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

PERFORATED SUPPLY CEILING DIFFUSERS, FACE MOUNTED DEFLECTORS
MODEL SERIES 4320

EXAMPLE: 4320 - RND - 08 - 24 x 24 - L - AW - –

1. **Models**
   - 4320 Steel, Flush Face
   - 4325 Steel, Drop Face
   - 4320A Aluminum Face, Flush
   - 4325A Aluminum Face, Drop
   - 4320AA Aluminum Face and Backpan, Flush
   - 4325AA Aluminum Face and Backpan, Drop
2. **Neck Type**
   - RND Round
   - SQR Square/Rectangular
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 18 x 6
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24
   Metric (mm)
   300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - L Lay-in T-Bar (default)
   - S Surface Mount
   - SP Spline
   - M Metal Pan (Snap-in)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color

OPTIONS & ACCESSORIES:

7. **Damper**
   - – None (default)

   Round Neck:
   4250 Radial Sliding, 6" - 14"
   4275 Radial Opposed Blade, 5" - 24"
   4675 Butterfly, 6" - 14"

   Square Neck:
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum (AA models only)
8. **External Insulation**
   - – None (default)
   - EX Foil-back (installed), R-4.2
   - EXB Foil-back (loose), R-4.2
   - MIB Molded Insulation Blanket, R-6.0
9. **Earthquake Tabs**
   - – None (default)
   - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

10. **Air Balancing Devices** (order separately)

    Round Neck:
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

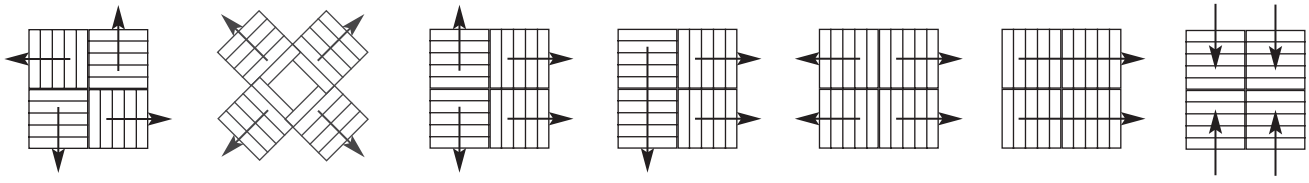
    Square/Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.
2. Dampers are shipped loose for field installation.
3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

Available Air Patterns

All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.



4-way | 4-way corner | 3-way | 2-way corner | 2-way opposite | 1-way | Vertical

Note:

1. Consult individual models as to limitations and availability of ceiling module and neck size combinations.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Models 4320, 4325 – Steel
Furnish and install **Nailor Model** (select one) **4320 Flush Face** or **4325 Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320A, 4325A – Aluminum Face
Furnish and install **Nailor Model** (select one) **4320A Flush Face** or **4325A Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320AA, 4325AA – Aluminum
Furnish and install **Nailor Model** (select one) **4320AA Flush Face** or **4325AA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)

Steel Models:

4320CB Flush Face
4325CB Drop Face

Aluminum Face Models:

4320CBA Flush Face
4325CBA Drop Face

Aluminum Models:

4320CBAA Flush Face
4325CBAA Drop Face

Model 4320CB

Model Series 4320CB Curved Blade Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

4320CB Diffusers features a 4-way adjustable discharge pattern as standard. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. Model Series 4320CB is also available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

Model Series 4325CB features a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so that the panel remains flush with the ceiling line.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

CONSTRUCTION MATERIAL:

Models 4320CB/4325CB have a corrosion-resistant steel perforated face and backpan. Models 4320CBA/4325CBA have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4320BAA/4325CBAA have an aluminum perforated face and backpan.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
MIB	Molded Insulation Blanket, R-6.0.

Square Neck:

OBD	Opposed Blade Damper (Steel)
OBDA	Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

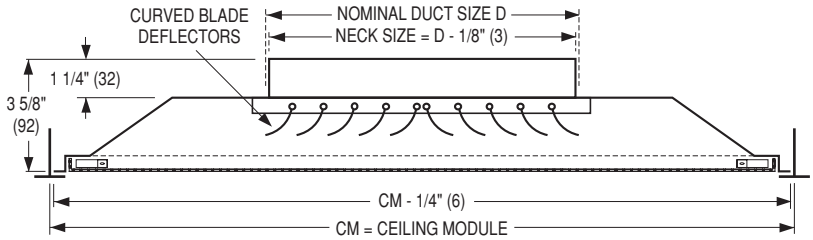
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457
48 x 24	1200 x 600				

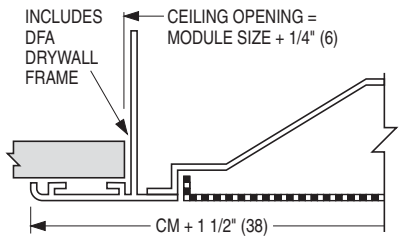
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320CB, 4320CBA, 4320CBAA • Supply • Flush Face

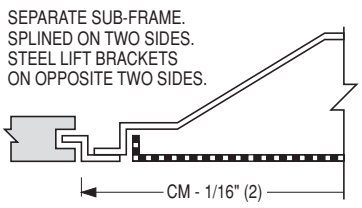
Type L Lay-in T-Bar



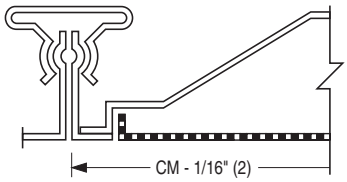
Type S Surface Mount



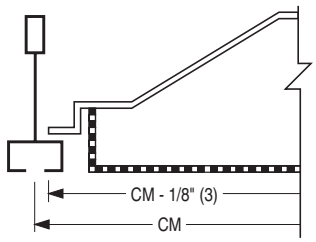
Type SP Spline



Type M Metal Pan (Snap-in)

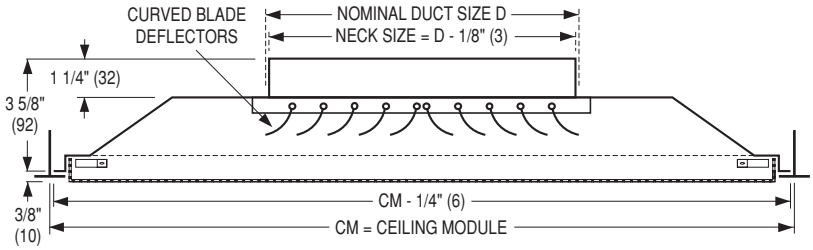


Type F Fineline®

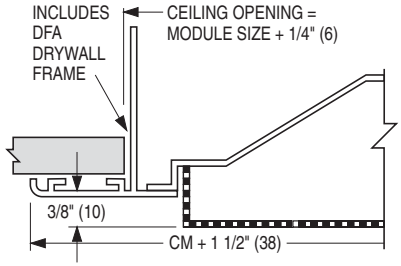


Models 4325CB, 4325CBA, 4325CBAA • Supply • Drop Face

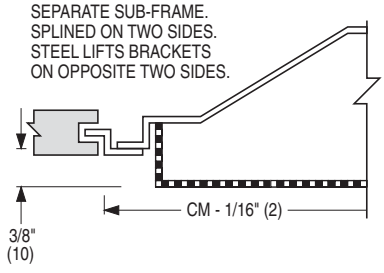
Type L Lay-in T-Bar or Tegular



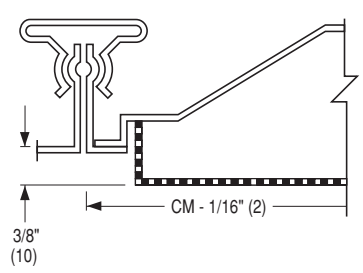
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)



Fineline® is a registered trademark of USG Interiors Inc.

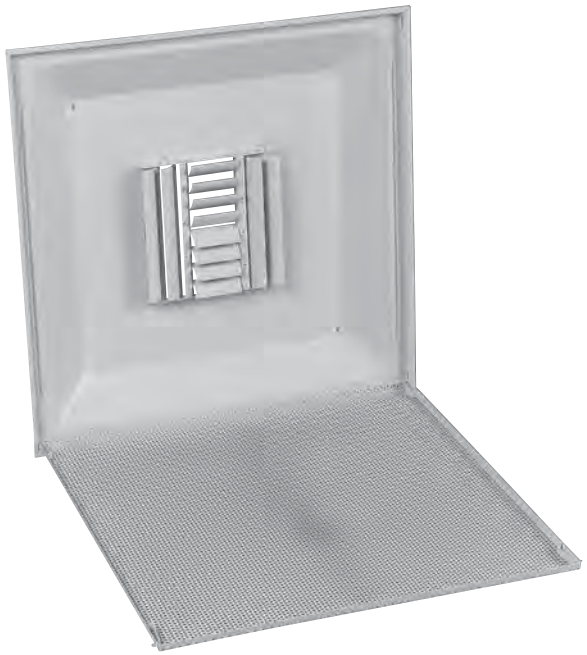
Model Series 4320CB • Adjusting Pattern Controllers

Removing Perforated Face

The **4300 Series** is supplied with a removable face plate that is retained in place by four spring-loaded latches, one located in each corner of the diffuser.

1. Insert a small screwdriver through a perforated hole in the edge of the face plate and push the spring-loaded latch inward from diffuser frame to release face.
2. Repeat procedure on the opposite side.
3. The face plate will now swing down, using the two remaining latches as hinges. The face may be completely removed by depressing in a similar manner, the two remaining latches.
4. To close; lift perforated face, depress spring latches with fingers and snap in place.

The pattern controller in the neck of the diffuser features individually adjustable deflector blades which may be used to vary the discharge pattern from full horizontal to vertical. Each blade is friction pivoted using a tension wire which securely holds its position after adjustment.

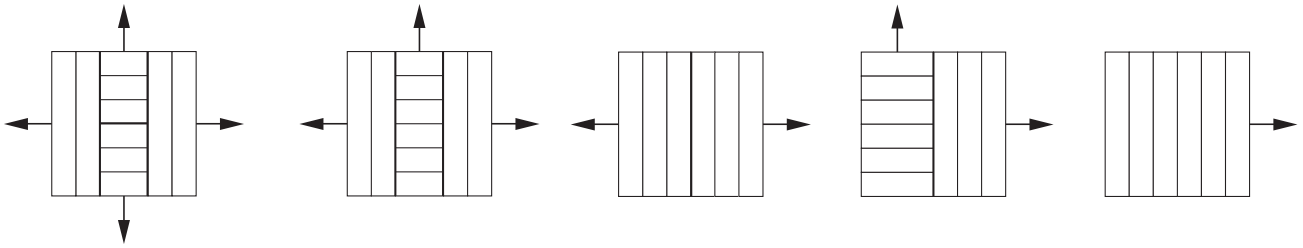


Round or Square Neck • 4-way Pattern

Pattern Controller Options

Standard Model Configuration

Optional Model Configurations



B4, 4-way | **B3, 3-way** | **B2, 2-way opposite** | **C2, 2-way corner** | **B1, 1-way**

The **4320CB Series** is supplied with this style of pattern controller unless specified otherwise.

PERFORMANCE DATA:

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 12 x 12 Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900	1100
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051	.075
6" Dia.	Total Pressure		.023	.042	.037	.039	.052	.159	.204	.307
	Flow Rate, CFM		60	80	95	115	135	155	175	215
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9	6-6-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20	9-13-22
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23	10-16-26
	Noise Criteria		—	—	—	18	23	28	32	40
8" Dia.	Total Pressure		.025	.045	.069	.102	.137	.180	.227	.340
	Flow Rate, CFM		105	140	175	210	245	280	315	385
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29
	Noise Criteria		—	—	15	21	26	31	34	41
6 x 6	Total Pressure		.025	.045	.066	.096	.132	.175	.224	.338
	Flow Rate, CFM		75	100	125	150	175	200	225	275
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-17
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-29
	Noise Criteria		—	—	—	19	24	29	33	41
8 x 8	Total Pressure		.027	.049	.076	.112	.151	.197	.249	.374
	Flow Rate, CFM		135	175	220	265	310	355	400	490
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	14-23-32
	Noise Criteria		—	—	16	22	27	32	35	42

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 12 Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900	1100
	VP		.006	.010	.016	.023	.031	.040	.051	.075
6" Dia.	Total Pressure		.023	.042	.037	.039	.052	.159	.204	.307
	Flow Rate, CFM		60	80	95	115	135	155	175	215
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9	6-6-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20	9-13-22
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23	10-16-26
	Noise Criteria		—	—	—	18	23	28	32	40
8" Dia.	Total Pressure		.025	.045	.069	.102	.137	.180	.227	.340
	Flow Rate, CFM		105	140	175	210	245	280	315	385
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29
	Noise Criteria		—	—	15	21	26	31	34	41
6 x 6	Total Pressure		.025	.045	.066	.096	.132	.175	.224	.338
	Flow Rate, CFM		75	100	125	150	175	200	225	275
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-17
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-24
	Noise Criteria		—	—	—	19	24	29	33	41
8 x 8	Total Pressure		.027	.049	.076	.112	.151	.197	.249	.374
	Flow Rate, CFM		135	175	220	265	310	355	400	490
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	14-23-32
	Noise Criteria		—	—	16	22	27	32	35	42

For performance notes, see page D171.

PERFORMANCE DATA:

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900	1100
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051	.075
6" Dia.	Total Pressure		.014	.025	.036	.052	.071	.094	.120	.181
	Flow Rate, CFM		60	80	95	115	135	155	175	215
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9	5-6-11
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11	6-8-12
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15	8-12-17
		1-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18	9-14-21
	Noise Criteria		—	—	—	17	22	26	28	35
8" Dia.	Total Pressure		.015	.027	.041	.060	.081	.106	.134	.200
	Flow Rate, CFM		105	140	175	210	245	280	315	385
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29
	Noise Criteria		—	—	17	21	26	30	32	37
10" Dia.	Total Pressure		.017	.029	.045	.066	.090	.118	.149	.224
	Flow Rate, CFM		165	215	270	325	380	435	490	600
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16	8-12-19
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18	9-15-21
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27	14-21-31
		1-Way	4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31	16-25-35
	Noise Criteria		—	—	19	23	28	31	34	40
12" Dia.	Total Pressure		.018	.032	.050	.072	.099	.127	.162	.394
	Flow Rate, CFM		235	315	390	470	550	625	705	865
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20	10-15-22
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23	11-17-26
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32	16-26-36
		1-Way	5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37	19-29-42
	Noise Criteria		—	16	21	25	29	33	36	42
14" Dia.	Total Pressure		.019	.034	.054	.078	.107	.139	.175	.230
	Flow Rate, CFM		320	425	535	640	750	855	960	1175
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23	14-19-26
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27	14-21-31
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37	19-29-42
		1-Way	6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43	23-34-49
	Noise Criteria		—	17	22	26	30	34	38	45
15" Dia.	Total Pressure		.011	.036	.056	.081	.110	.144	.180	.271
	Flow Rate, CFM		370	490	615	740	860	985	1100	1350
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24	14-19-26
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28	15-21-32
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38	19-31-43
		1-Way	6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43	19-35-49
	Noise Criteria		—	18	23	27	31	35	39	46
16" Dia.	Total Pressure		.021	.038	.059	.084	.114	.149	.189	.283
	Flow Rate, CFM		420	560	700	835	975	1115	1255	1535
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26	16-22-31
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30	16-25-34
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42	23-34-48
		1-Way	7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50	26-40-57
	Noise Criteria		—	19	24	28	32	36	40	47
18" Dia.	Total Pressure		.022	.039	.061	.087	.118	.155	.196	.293
	Flow Rate, CFM		530	705	885	1060	1235	1415	1590	1945
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29	17-25-33
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34	19-27-39
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50	27-39-57
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56	33-46-64
	Noise Criteria		—	21	26	30	34	38	42	49

For performance notes, see page D171.

PERFORMANCE DATA:

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900	1100
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051	.075
6 x 6	Total Pressure		.015	.027	.039	.057	.078	.103	.132	.199
	Flow Rate, CFM		75	100	125	150	175	200	225	275
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-29
	Noise Criteria		—	—	—	18	23	27	29	35
8 x 8	Total Pressure		.016	.029	.045	.066	.089	.116	.147	.220
	Flow Rate, CFM		135	175	220	265	310	355	400	490
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	15-22-32
	Noise Criteria		—	—	18	22	27	31	33	38
10 x 10	Total Pressure		.018	.031	.049	.072	.099	.129	.163	.246
	Flow Rate, CFM		210	275	345	415	485	555	625	765
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18	9-13-21
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22	10-16-25
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30	15-24-34
		1-Way	5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35	18-29-40
	Noise Criteria		—	—	20	24	29	32	35	41
12 x 12	Total Pressure		.019	.035	.055	.079	.108	.139	.178	.433
	Flow Rate, CFM		300	400	500	600	700	800	900	1100
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22	11-17-25
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26	12-19-29
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36	18-29-41
		1-Way	6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44	25-35-50
	Noise Criteria		—	17	22	26	30	34	37	43
14 x 14	Total Pressure		.020	.037	.059	.085	.117	.152	.192	.253
	Flow Rate, CFM		410	545	680	815	955	1090	1225	1500
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-12-25
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	12-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	18-27-54
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	22-35-64
	Noise Criteria		—	18	23	27	31	35	39	46
15 x 15	Total Pressure		.012	.039	.061	.089	.121	.158	.198	.298
	Flow Rate, CFM		470	625	780	935	1095	1250	1405	1720
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28	13-22-32
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32	16-26-36
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45	24-36-51
		1-Way	8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53	29-42-60
	Noise Criteria		—	19	24	28	32	36	40	47
16 x 16	Total Pressure		.023	.041	.064	.092	.125	.163	.207	.311
	Flow Rate, CFM		530	710	890	1065	1245	1420	1600	1955
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29	15-24-33
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34	19-27-39
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50	27-39-57
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56	33-46-64
	Noise Criteria		—	20	25	29	33	37	41	49
18 x 18	Total Pressure		.024	.042	.067	.095	.129	.170	.215	.322
	Flow Rate, CFM		675	900	1125	1350	1575	1800	2025	2475
	Throw	4-Way	5-7-15	6-10-21	8-12-25	10-15-27	12-18-30	13-21-32	15-24-33	17-27-38
		3-Way	5-8-17	7-11-24	9-14-29	11-17-32	13-22-34	15-24-36	17-27-39	19-31-44
		2-Way	8-12-26	11-16-34	13-21-40	16-26-44	20-30-47	23-34-50	26-38-54	29-43-62
		1-Way	9-14-29	12-20-39	16-25-47	20-29-52	23-34-56	26-39-60	29-44-64	33-50-73
	Noise Criteria		15	22	27	31	35	39	43	51

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

PERFORATED CURVED BLADE SUPPLY CEILING DIFFUSERS
MODEL SERIES 4320CB

EXAMPLE: 4320CB - RND - 08 - 24 x 24 - L - AW - B4 - –

1. **Models**
   - 4320CB Steel, Flush Face
   - 4325CB Steel, Drop Face
   - 4320CBA Aluminum Face, Flush
   - 4325CBA Aluminum Face, Drop
   - 4320CBAA Aluminum Face and Backpan, Flush
   - 4325CBAA Aluminum Face and Backpan, Drop
2. **Neck Type**
   - RND Round
   - SQR Square/Rectangular
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16, 18
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24
   Metric (mm)
   300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - L Lay-in T-Bar (default)
   - S Surface Mount
   - SP Spline
   - M Metal Pan (Snap-in)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color
7. **Blow Pattern**
   - B4 4-way (default)
   - B1 1-way
   - B2 2-way opposite
   - B3 3-way
   - C2 2-way corner

OPTIONS & ACCESSORIES:

8. **Damper**
   - – None (default)

   Round Neck:
   - 4250 Radial Sliding, 6" - 14"
   - 4275 Radial Opposed Blade, 5" - 24"
   - 4675 Butterfly, 6" - 14"

   Square Neck:
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum (AA models only)
9. **External Insulation**
   - – None (default)
   - EX Foil-back (installed), R-4.2
   - EXB Foil-back (loose), R-4.2
   - MIB Molded Insulation Blanket, R-6.0
10. **Earthquake Tabs**
    - – None (default)
    - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

11. **Air Balancing Devices** (order separately)

    Round Neck:
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

    Square/Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Models 4320CB, 4325CB – Steel
Furnish and install **Nailor Model** (select one) **4320CB Flush Face** or **4325CB Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320CBA, 4325CBA – Aluminum Face
Furnish and install **Nailor Model** (select one) **4320CBA Flush Face** or **4325CBA Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320CBAA, 4325CBAA – Aluminum
Furnish and install **Nailor Model** (select one) **4320CBAA Flush Face** or **4325CBAA Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- SURFACE MOUNT
- FULL FACE SQUARE NECK
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)

Steel Face Model:

4340CB

Aluminum Model:

4340CBA

- **Suffix '-O' adds a steel opposed blade damper**

Model 4340CB

Model Series 4340CB Curved Blade Diffusers are designed to complement the Nailor 4320CB curved blade ceiling diffusers and feature the same individually adjustable, friction pivoted curved blade pattern controllers. Designed to maximize throw, they project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in VAV systems.

Model 4340CB is a square neck grille frame style design, featuring full face pattern controllers, for surface mount installation in hard ceilings. A 4-way adjustable discharge pattern is standard. The pattern controllers may also be used to damper the air volume and by closing them off in one or more directions, directional control can also be achieved. Also available with a factory supplied optional 1, 2 or 3-way adjustable discharge pattern controller.

STANDARD FEATURES:

- Available in nominal duct sizes from 6" x 6" (152 x 152) to 24" x 24" (610 x 610) in 2" (51) increments.
- Curved blades on 1" (25) centers are individually adjustable and regulate angle of discharge.
- Frame is mechanically interlocked for strength with hairline mitered corners. Standard diffuser has a 4-way (B4) discharge pattern.
- Removable face has concealed latches for easy access to core.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.
- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screwholes on face of outer frame.
- Dropping the perforated face gives access to the optional opposed blade damper.
- Return models (4340R Series) have the same face and frame construction as the supply models to match the appearance.

CONSTRUCTION MATERIAL:

Extruded aluminum blades and frame. Corrosion-resistant steel perforated face (Model 4340CB) or aluminum perforated face (Model 4340CBA).

FINISH OPTIONS:

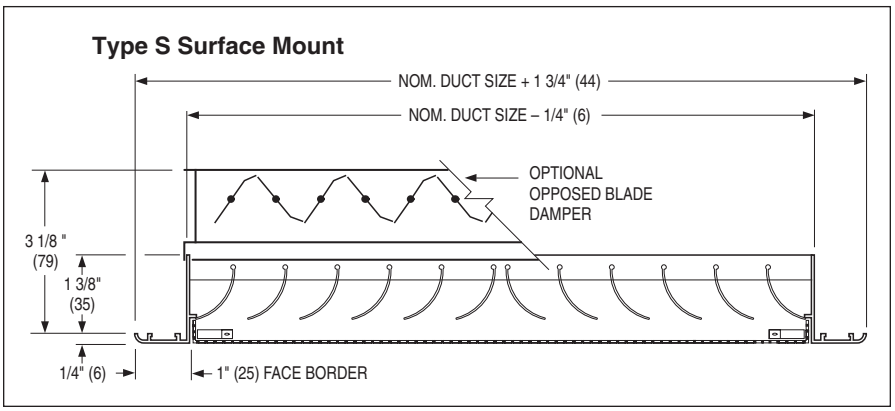
AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

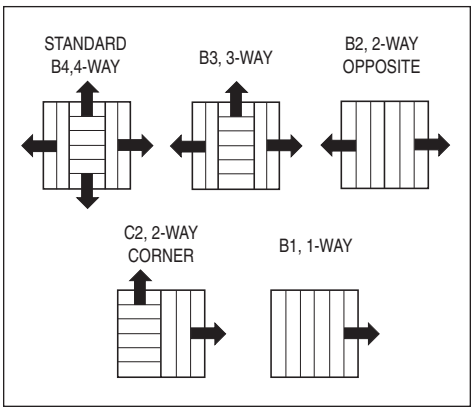
GK	Foam Gasket
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

Dimensional Data



Pattern Controller Options



PERFORMANCE DATA:

Models 4340CB, 4340CBA • Surface Mount • Square Neck

Nominal Neck Size	Neck Velocity, FPM		200	300	400	500	600	700	800	900
	Velocity Pressure		.003	.006	.010	.016	.022	.031	.040	.050
	Total Pressure		.014	.032	.057	.089	.129	.175	.229	.290
6 x 6	Flow Rate, CFM		50	75	100	125	150	175	200	225
	Throw	4-Way	1-1-3	2-3-4	3-4-5	3-5-6	4-5-7	4-6-8	5-7-9	6-8-10
		3-Way	1-2-3	2-3-4	3-5-6	4-5-7	5-7-9	6-8-10	6-9-12	7-10-13
		2-Way	2-3-4	3-4-5	4-5-7	5-7-9	6-9-12	7-10-13	8-12-15	8-12-16
		1-Way	3-4-5	4-5-7	5-7-9	6-8-11	7-11-14	8-12-16	9-14-18	11-16-21
	Noise Criteria		—	21	25	28	31	34	36	38
8 x 8	Flow Rate, CFM		89	133	176	222	267	311	356	400
	Throw	4-Way	2-3-4	3-4-5	3-5-6	4-5-7	4-6-8	5-7-9	5-7-10	6-9-12
		3-Way	2-3-4	3-4-5	4-5-7	4-6-8	5-7-10	6-9-12	7-10-13	7-11-14
		2-Way	3-4-5	3-5-6	4-6-8	5-7-10	7-10-13	7-11-14	8-12-16	9-14-18
		1-Way	3-5-6	4-6-8	5-7-10	6-9-12	8-12-15	9-13-17	10-15-19	11-16-22
	Noise Criteria		—	23	27	30	33	35	37	39
10 x 10	Flow Rate, CFM		139	208	278	347	417	486	556	625
	Throw	4-Way	2-3-4	3-5-6	4-6-8	6-8-11	6-9-12	7-11-14	8-12-16	9-14-18
		3-Way	3-5-6	4-6-8	5-7-10	7-10-13	8-12-15	9-14-18	10-15-20	11-16-22
		2-Way	4-6-8	6-8-11	7-10-13	8-12-16	10-15-20	12-17-23	13-19-26	15-20-23
		1-Way	5-7-9	6-9-12	8-12-16	10-15-20	12-18-24	14-21-28	16-24-32	18-27-36
	Noise Criteria		—	23	28	31	34	36	38	40
12 x 12	Flow Rate, CFM		200	300	400	500	600	700	800	900
	Throw	4-Way	3-5-6	4-6-8	5-7-10	6-9-12	8-12-15	9-13-17	10-15-20	12-17-23
		3-Way	3-5-6	5-7-9	6-9-12	8-12-15	9-14-18	11-16-22	13-19-25	14-20-27
		2-Way	5-7-9	6-9-12	8-12-16	11-16-21	12-18-24	15-22-29	17-25-33	18-27-36
		1-Way	6-9-12	8-12-16	10-15-20	12-18-24	15-22-29	17-25-33	18-27-36	21-31-42
	Noise Criteria		—	23	27	31	34	36	39	41
14 x 14	Flow Rate, CFM		272	408	544	681	817	953	1089	1225
	Throw	4-Way	4-5-7	4-6-9	6-9-12	7-11-14	9-14-18	10-15-20	12-18-24	14-21-28
		3-Way	4-5-9	5-8-11	6-10-13	8-13-16	10-15-20	11-17-23	13-19-27	16-23-31
		2-Way	5-7-10	6-9-13	8-12-18	11-17-22	12-19-26	16-23-31	18-26-36	19-29-39
		1-Way	6-9-12	8-12-18	10-15-22	13-19-26	15-23-30	17-25-35	19-28-39	21-31-43
	Noise Criteria		—	24	28	32	35	37	40	42
16 x 16	Flow Rate, CFM		355	533	711	889	1067	1244	1422	1600
	Throw	4-Way	5-7-9	6-8-11	8-10-14	9-13-18	10-15-21	13-18-27	14-20-28	16-22-31
		3-Way	5-7-11	6-9-13	8-13-17	10-15-22	13-19-26	15-22-30	18-25-36	19-29-39
		2-Way	6-10-12	9-14-16	11-17-24	14-21-28	17-25-32	19-26-34	21-34-40	24-34-44
		1-Way	7-10-16	9-15-18	12-18-26	15-22-32	18-27-36	19-28-37	24-35-42	26-36-46
	Noise Criteria		—	27	31	35	37	40	42	44
18 x 18	Flow Rate, CFM		450	675	900	1125	1350	1575	1800	2025
	Throw	4-Way	5-7-10	6-9-12	8-12-16	10-15-20	12-18-24	14-21-28	16-24-32	18-27-36
		3-Way	5-7-12	7-11-14	9-14-18	11-16-22	13-19-26	16-24-31	18-27-36	21-31-41
		2-Way	8-12-18	10-15-20	13-19-26	16-24-32	20-29-39	23-34-45	26-39-52	29-43-58
		1-Way	9-14-22	11-16-24	15-23-30	18-27-36	22-32-43	25-37-49	28-42-56	30-45-60
	Noise Criteria		—	28	32	36	38	41	43	45

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 20.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORATED MODULAR CORE DIFFUSERS

- SUPPLY
- SURFACE MOUNT
- FULL FACE SQUARE NECK
- 1, 2, 3 OR 4-WAY DISCHARGE PATTERN

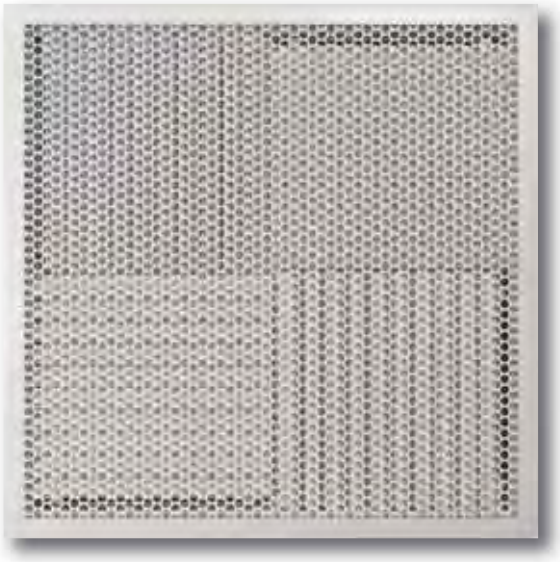
Steel Face Model:

4340M

Aluminum Face Model:

4340MA

- **Suffix '-O' adds a steel opposed blade damper**



Model 4340M

Model Series 4340M Modular Core Diffusers are designed to complement the Nailor 4320M and 4320MR modular ceiling diffusers and feature the same flexible high performance modular core design. The four individual, spring-loaded modular pattern controllers are mounted in the diffuser frame and position the leading edge of the pattern controllers near the perforated face and flush with the ceiling for optimum performance. The engineered design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes, providing excellent performance in VAV systems.

Model 4340M is a square neck grille frame design, featuring full face pattern controllers, for surface mount installation in hard ceilings. Discharge pattern can adjust to 1, 2, 3 or 4-way horizontal, before or after installation. Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors. Diffusers are shipped from the factory with a 4-way discharge pattern.

STANDARD FEATURES:

- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Frame is mechanically interlocked for strength with hairline mitered corners.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.
- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screwholes on face of outer frame.
- Dropping the perforated face and removing a modular core gives access to the optional opposed blade damper.
- Return models 4340R Series have the same face and frame construction as the supply models to match the appearance.

CONSTRUCTION MATERIAL:

Extruded aluminum frame. Corrosion-resistant steel modular core. Corrosion-resistant steel perforated face (Model 4340M) or aluminum perforated face (Model 4340MA).

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

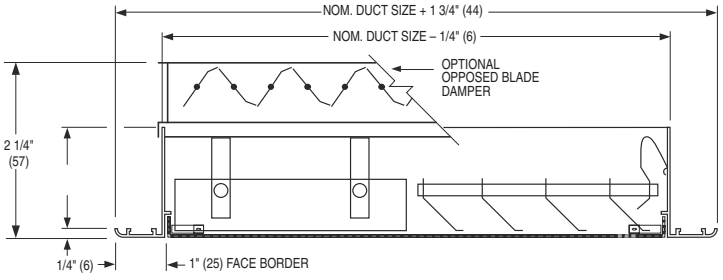
OPTIONS & ACCESSORIES:

GK	Foam Gasket
EQT	Earthquake Tabs

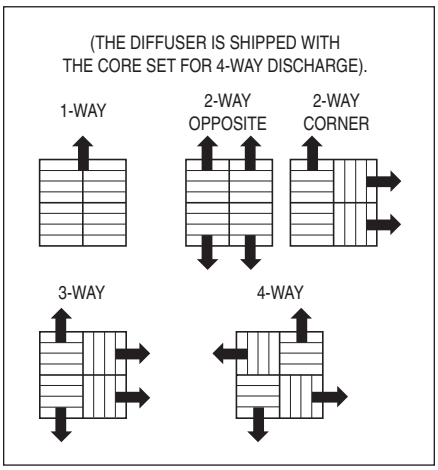
For additional options and accessories; see page D255.

Dimensional Data

Type S Surface Mount



Modular Core Adjustments



Available Duct Sizes

6 x 6 (152 x 152)	10 x 10 (254 x 254)	14 x 14 (356 x 356)	18 x 18 (457 x 457)	22 x 22 (559 x 559)
8 x 8 (203 x 203)	12 x 12 (305 x 305)	16 x 16 (406 x 406)	20 x 20 (508 x 508)	24 x 24 (610 x 610)

PERFORMANCE DATA:

Models 4340M, 4340MA • Surface Mount • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800
	Velocity Pressure		.006	.010	.016	.023	.031	.040
	Total Pressure		.028	.047	.075	.103	.146	.188
6 x 6	Flow Rate, CFM		75	100	125	150	175	200
	Throw	4-Way	2-3-7	3-4-8	4-5-8	4-7-9	5-7-10	6-8-11
		3-Way	3-4-8	4-5-9	4-7-10	5-8-11	6-8-12	7-9-13
		2-Way	4-5-10	5-7-12	6-9-13	7-10-15	8-11-16	9-12-17
		1-Way	4-7-13	6-9-15	7-11-17	9-13-18	10-14-20	12-15-21
	Noise Criteria		—	—	19	25	31	35
8 x 8	Flow Rate, CFM		133	176	222	267	311	356
	Throw	4-Way	2-4-8	3-5-10	4-6-11	5-8-12	6-9-13	7-10-14
		3-Way	2-5-9	4-6-12	5-8-13	6-9-15	7-11-18	8-12-17
		2-Way	3-6-12	5-8-16	7-10-18	8-12-20	10-14-25	11-16-23
		1-Way	4-8-15	7-10-20	8-13-22	10-15-25	12-18-31	14-20-28
	Noise Criteria		—	—	22	28	34	38
10 x 10	Flow Rate, CFM		208	278	347	417	486	556
	Throw	4-Way	2-5-9	4-6-12	5-8-14	6-9-15	7-11-17	8-12-18
		3-Way	3-5-11	5-7-14	6-9-17	7-11-18	8-13-20	10-14-21
		2-Way	3-7-14	6-10-19	8-12-22	10-14-25	11-17-27	13-19-28
		1-Way	4-9-18	8-12-24	10-15-28	12-18-31	14-21-33	16-24-35
	Noise Criteria		—	16	24	30	36	41
12 x 12	Flow Rate, CFM		300	400	500	600	700	800
	Throw	4-Way	2-5-11	4-7-14	6-9-17	7-11-18	8-12-20	9-14-21
		3-Way	3-6-13	5-8-17	7-11-20	8-13-22	10-15-24	11-17-26
		2-Way	4-8-17	7-11-22	9-14-27	11-17-29	13-20-32	15-22-34
		1-Way	5-11-21	9-14-28	12-18-34	14-21-37	16-25-40	19-28-43
	Noise Criteria		—	18	26	32	38	43
14 x 14	Flow Rate, CFM		408	544	681	817	953	1089
	Throw	4-Way	3-6-12	5-8-16	7-10-20	8-12-21	9-14-23	11-16-25
		3-Way	3-7-15	6-10-19	8-12-24	10-15-26	11-17-28	13-19-30
		2-Way	4-10-19	8-13-26	11-16-31	13-19-34	15-23-37	17-26-40
		1-Way	5-12-24	10-16-32	13-20-39	16-24-43	19-28-46	22-32-50
	Noise Criteria		-—	19	27	34	39	44
15 x 15	Flow Rate, CFM		469	625	781	938	1094	1250
	Throw	4-Way	3-6-13	5-9-17	7-11-21	9-13-23	10-15-25	11-17-27
		3-Way	3-8-15	6-10-21	9-13-25	10-15-28	12-18-30	14-21-32
		2-Way	5-10-21	8-14-28	11-17-34	14-21-37	16-24-40	18-28-43
		1-Way	6-13-26	10-17-34	14-22-42	17-26-46	20-30-50	23-34-53
	Noise Criteria		—	20	28	35	40	45
16 x 16	Flow Rate, CFM		533	711	889	1067	1244	1422
	Throw	4-Way	3-7-14	5-9-18	8-11-22	9-14-25	11-16-27	12-18-28
		3-Way	4-8-16	6-11-22	9-14-27	11-16-29	13-19-32	15-22-34
		2-Way	5-11-22	8-15-29	12-18-36	15-22-39	17-26-42	20-29-45
		1-Way	6-13-27	11-18-37	15-23-45	18-27-49	21-32-53	24-37-57
	Noise Criteria		—	21	29	35	41	46
18 x 18	Flow Rate, CFM		675	900	1125	1350	1575	1800
	Throw	4-Way	3-7-15	6-10-20	9-13-25	10-15-28	12-18-30	14-20-32
		3-Way	4-9-18	7-12-25	10-15-30	12-18-33	14-21-36	16-25-38
		2-Way	5-12-25	9-16-33	14-20-40	16-25-44	19-29-48	22-33-51
		1-Way	7-15-31	12-20-41	17-26-50	20-31-55	24-36-60	27-41-64
	Noise Criteria		—	22	30	37	42	47

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORATED RETURN AIR DIFFUSERS

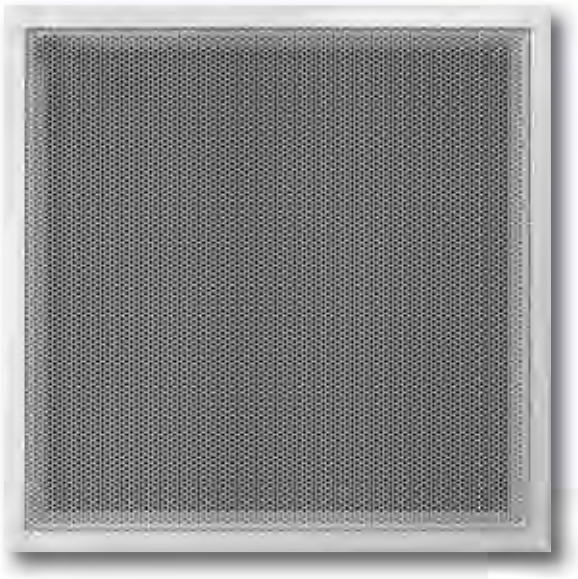
- SURFACE MOUNT
- SQUARE NECK
- MATCH AND COMPLEMENT 4340CB AND 4340M SUPPLY MODELS

Steel Face Model:

4340R

Aluminum Model:

4340RA



Model 4340R

Model Series 4340R Perforated Face Return Air Diffusers are designed to match supply air Models 4340CB and 4340M in appearance, except that the air pattern controllers are omitted.

Model 4340R is a square neck grille frame style design, for surface mount installation in hard ceilings. It is suitable for both ducted and ductless return air applications.

STANDARD FEATURES:

- Square neck.
- Available in nominal duct sizes from 6" x 6" (152 x 152) to 24" x 24" (610 x 610) in 2" (51) increments.
- Frame is mechanically interlocked for strength with hairline mitered corners.
- Hinged, removable face plate with concealed quick release spring latches.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.
- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screwholes on face of outer frame.
- Dropping the perforated face gives access to the optional opposed blade damper.

CONSTRUCTION MATERIAL:

Extruded aluminum frame. Corrosion-resistant steel perforated face (Model 4340R) or aluminum perforated face (Model 4340RA).

FINISH OPTIONS:

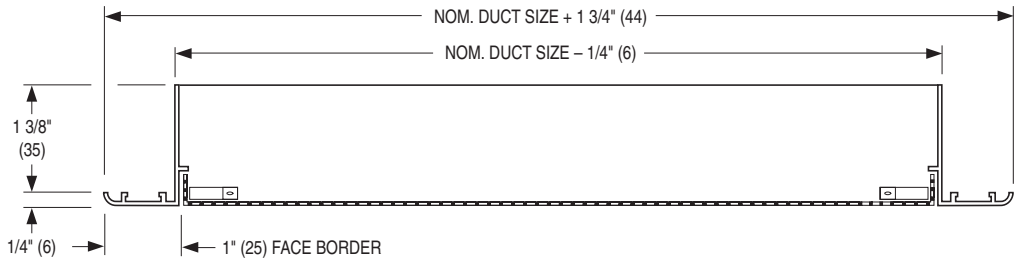
AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

GK	Foam Gasket
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

Type S Surface Mount



PERFORMANCE DATA:

Models 4340R, 4340RA • Surface Mount • Square Neck

Listed Duct SIze	Core Area (sq. ft.)	Ak Factor	Core Velocity	300	400	500	600	700	800	900	1000	1200
			Velocity Pressure	.006	.010	.016	.022	.031	.040	.051	.062	.090
			Neg. Static Pressure	.024	.042	.067	.095	.130	.170	.215	.265	.382
6 x 6	0.20	0.20	CFM	60	80	100	120	140	160	180	200	240
			Noise Criteria	—	—	—	15	21	26	32	37	44
8 x 8	0.38	0.36	CFM	114	152	190	228	266	304	342	380	456
			Noise Criteria	—	—	11	18	25	29	35	40	47
10 x 10	0.61	0.56	CFM	183	244	305	366	427	488	549	610	732
			Noise Criteria	—	—	13	20	27	31	37	42	49
12 x 12	0.90	0.80	CFM	270	360	450	540	630	720	810	900	1080
			Noise Criteria	—	—	15	22	28	33	38	44	51
14 x 14	1.24	1.09	CFM	372	496	620	744	868	992	1116	1240	1488
			Noise Criteria	—	—	16	23	29	34	39	45	52
16 x 16	1.64	1.42	CFM	492	656	820	984	1148	1312	1476	1640	1968
			Noise Criteria	—	—	17	24	30	35	40	46	53
18 x 18	2.10	1.80	CFM	630	840	1050	1260	1470	1680	1890	2100	2520
			Noise Criteria	—	—	17	24	30	36	40	46	53
20 x 20	2.61	2.22	CFM	783	1044	1305	1566	1827	2088	2349	2610	3132
			Noise Criteria	—	11	18	25	30	37	41	47	54
22 x 22	3.17	2.69	CFM	951	1268	1585	1902	2219	2536	2853	3170	3804
			Noise Criteria	—	11	18	26	31	37	42	48	55
24 x 24	3.79	3.20	CFM	1137	1516	1895	2274	2653	3032	3411	3790	4548
			Noise Criteria	—	12	19	27	33	38	43	49	56

Performance Notes:

1. All pressures are in inches w.g..
2. Diffuser tested without damper. Apply the following corrections for addition of opposed blade damper to diffuser:

Neg. Static Pressure Listed Value x 1.10.

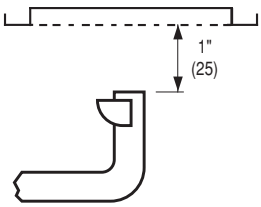
Noise Criteria Add 5 dB to listed value.

3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.
5. Core Velocity is in feet per minute.

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into diffuser.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

HOW TO ORDER

PERFORATED RETURN CEILING DIFFUSERS, GRILLE TYPE
MODEL SERIES 4340CB, 4340M AND 4340R

EXAMPLE: 4340CB - O - 0808 - S - AW - B4 - A - –

1a. **Models**

Supply:

4340CB	Steel, Curved Blade Controllers
4340CBA	Aluminum, Curved Blade Controllers
4340M	Steel, Modular Core
4340MA	Aluminum, Modular Core

Return:

4340R	Steel
4340RA	Aluminum

1b. **Damper**
(model suffix)

–	None (default)
-O	OBD Opposed Blade, Steel

2. **Neck Size** (inches – all models)

0606	6 x 6
0808	8 x 8
1010	10 x 10
1212	12 x 12
1414	14 x 14
1616	16 x 16
1818	18 x 18
2020	20 x 20
2222	22 x 22
2424	24 x 24

Return only:

3030	30 x 30
4824	48 x 24

3. **Frame Type**

S	Surface Mount (default)

4. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
SP	Special Custom Color

5. **Blow Pattern**
(CB only)

B4	4-way (default)
B1	1-way
B2	2-way opposite
B3	3-way
C2	2-way corner

6. **Fastening**

N	None (default)
A	Screw Holes

7. **Gasket**

–	None (default)
GK	Foam Gasket

8. **Earthquake Tabs**

–	None (default)
EQT	Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

9. **Air Balancing Devices**
(order separately)

Square/Rectangular Neck:

EGL	Equalizing Grid (long)
DEGL	Damper/Equalizing Grid (long)

Note:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4340CB** (aluminum with corrosion-resistant steel face) or **4340CBA** (aluminum) **Perforated Full Face Curved Blade Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. An extruded aluminum blade pack with individually adjustable curved blades on 1" (25) centers shall be sized according to the square neck size as specified. The diffuser shall have a 4-way (standard), 3-way, 2-way, 1-way (select one) discharge pattern. A perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The diffuser shall be fastened through the neck with sheet metal screws. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4340M** (corrosion-resistant steel with aluminum frame) or **4340MA** (aluminum frame and face) **Full Face Square Neck Perforated Supply Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. Mounted in the diffuser shall be four, corrosion-resistant steel, square modular pattern deflectors installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The modular core shall be sized according to the square neck size as specified. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The diffuser shall be fastened through the neck with sheet metal screws (supplied by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4340R** (corrosion-resistant steel face with aluminum frame) or **4340RA** (aluminum) **Full Face Square Neck Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall also be removable, hinged and include quick-release spring latches allowing easy access for cleaning. The diffuser shall be surface mounted and fastened through the neck with sheet metal screws. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED CEILING DIFFUSERS

- SUPPLY
- NECK MOUNTED PATTERN CONTROLLERS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Model 4320F

Steel Face/Steel Backpan Models:

4320F Flush Face
4325F Drop Face

Aluminum Face/Steel Backpan Models:

4320FA Flush Face
4325FA Drop Face

Aluminum Face/Aluminum Backpan Models:

4320FAA Flush Face
4325FAA Drop Face

Model Series 4320F Perforated Diffusers combine smooth, unobtrusive architectural appearance with the superior performance characteristics required by engineers. Designed to maximize throw, these models feature four heavy gauge stamped pattern controllers that are mounted directly under the neck. The formed louver air pattern controller has curved vanes that optimize airflow projection and provide a superior horizontal air pattern with a strong ceiling coanda effect. An excellent choice for variable air volume systems.

A main benefit of the 4320F Series design is that the factory set 4-way discharge pattern controllers can be field adjusted to a 1, 2, or 3-way pattern. You can be assured that once installed, be it long or short term, the air pattern projection and performance will remain constant.

Model 4325F features a drop (extended) face panel that is available to complement tegular tile ceiling systems. This ensures the panel remains flush with the ceiling line.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Factory set 4-way discharge pattern can be field adjusted to a 1, 2, or 3 way deflection.
- Rugged curved vane air pattern controllers ensure performance is always optimized.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

CONSTRUCTION MATERIAL:

Models 4320F/4325F have a corrosion-resistant steel perforated face and backpan. Models 4320FA/4325FA have an aluminum perforated face and corrosion-resistant steel backpan. Models 4320FAA/4325FAA have an aluminum perforated face and backpan.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675 Butterfly Damper 6" – 14" (152 – 356).
MIB Molded Insulation Blanket, R-6.0.

Square Neck:

OBD Opposed Blade Damper (Steel)
OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) -R-4.2.
EXB External Foil-Back Insulation (loose) -R-4.2.
EQT Earthquake Tabs

For additional options and accessories; see page D255.

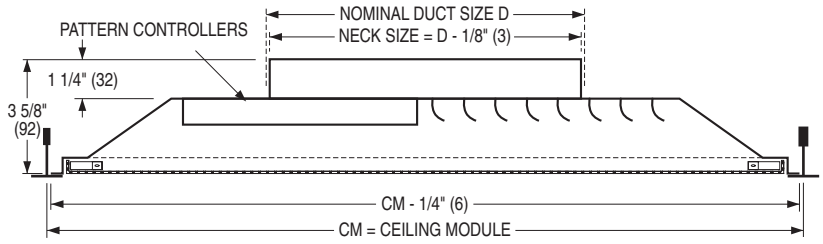
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406

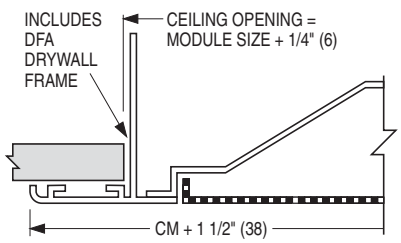
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320F, 4320FA, 4320FAA • Supply • Flush Face

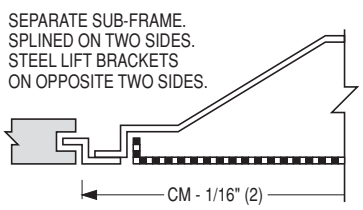
Type L Lay-in T-Bar



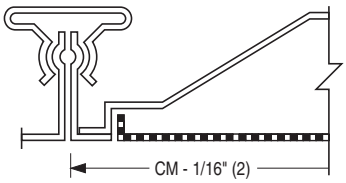
Type S Surface Mount



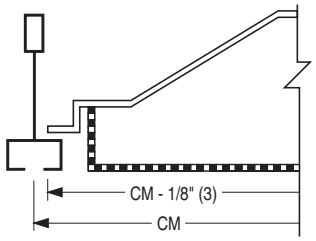
Type SP Spline



Type M Metal Pan (Snap-in)

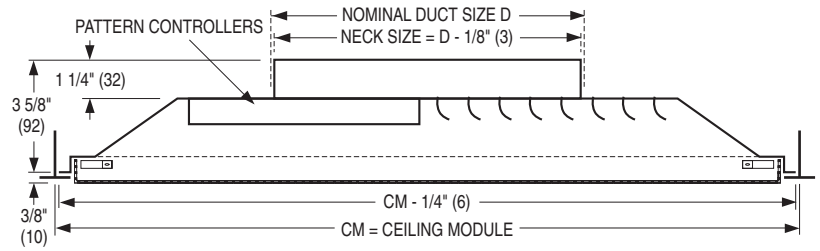


Type F Fineline®

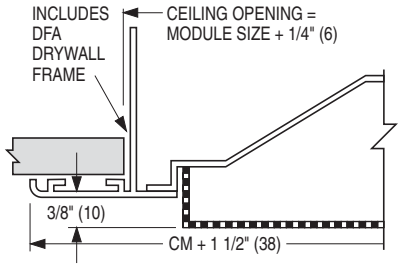


Models 4325F, 4325FA, 4325FAA • Supply • Drop Face

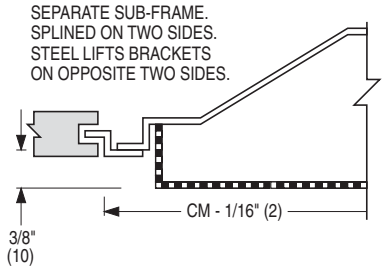
Type L Lay-in T-Bar



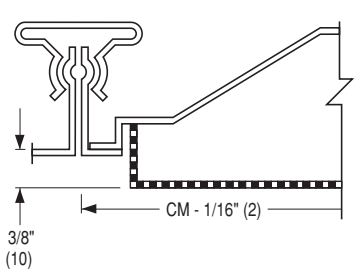
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)



Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 4320F, 4320FA, 4320FAA, 4325F, 4325FA, 4325FAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.026	.047	.073	.105	.143	.186	.236
6" Dia.	Flow Rate, CFM		60	80	95	115	135	155	175
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15
		1-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18
	Noise Criteria		—	—	17	23	28	33	36
8" Dia.	Flow Rate, CFM		105	140	175	210	245	280	315
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
	Noise Criteria		—	—	20	26	31	36	39
10" Dia.	Flow Rate, CFM		165	215	270	325	380	435	490
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27
		1-Way	4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31
	Noise Criteria		—	15	23	29	34	38	40
12" Dia.	Flow Rate, CFM		235	315	390	470	550	625	705
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		1-Way	5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37
	Noise Criteria		—	16	24	30	35	39	41
14" Dia.	Flow Rate, CFM		320	425	535	640	750	855	960
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37
		1-Way	6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43
	Noise Criteria		—	18	26	32	37	41	43
15" Dia.	Flow Rate, CFM		370	490	615	740	860	985	1100
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38
		1-Way	6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43
	Noise Criteria		—	19	27	33	38	42	44
16" Dia.	Flow Rate, CFM		420	560	700	835	975	1115	1255
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42
		1-Way	7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50
	Noise Criteria		—	21	28	34	39	43	45

For performance notes, see page D185.

PERFORMANCE DATA:

Models 4320F, 4320FA, 4320FAA, 4325F, 4325FA, 4325FAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.025	.045	.070	.100	.137	.179	.226
6 x 6	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
	Noise Criteria		—	—	18	24	29	34	37
8 x 8	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
	Noise Criteria		—	—	21	27	32	37	40
10 x 10	Flow Rate, CFM		210	275	345	415	485	555	625
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30
		1-Way	5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35
	Noise Criteria		—	16	24	30	35	39	41
12 x 12	Flow Rate, CFM		300	400	500	600	700	800	900
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36
		1-Way	6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44
	Noise Criteria		—	17	25	31	36	40	42
14 x 14	Flow Rate, CFM		410	545	680	815	955	1090	1360
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-372
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47
		1-Way	3-8-17	6-11-23	9-14-30	11-17-1936	13-20-42	15-23-48	19-30-54
	Noise Criteria		—	19	27	33	38	42	44
15 x 15	Flow Rate, CFM		470	625	780	935	1095	1250	1405
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45
		1-Way	8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53
	Noise Criteria		—	20	28	33	39	43	45
16 x 16	Flow Rate, CFM		530	710	890	1065	1245	1420	1600
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
	Noise Criteria		—	22	29	35	40	44	45

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

PERFORATED SUPPLY CEILING DIFFUSERS, NECK MOUNTED DEFLECTORS
MODEL SERIES 4320F

EXAMPLE: 4320F - RND - 08 - 24 x 24 - L - AW - –

1. **Models**
   Louvered Face
   4320F Steel, Flush Face
   4325F Steel, Drop Face
   4320FA Aluminum Face, Flush
   4325FA Aluminum Face, Drop
   4320FAA Aluminum Face and Backpan, Flush
   4325FAA Aluminum Face and Backpan, Drop
2. **Neck Type**
   RND Round
   SQR Square/Rectangular
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16
4. **Ceiling Module Size**
   Imperial (inches)
   24 x 24 (default)
   Metric (mm)
   600 x 600
5. **Frame Type**
   L Lay-in T-Bar (default)
   S Surface Mount
   SP Spline
   M Metal Pan (Snap-in)
   F Fineline®
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime Coat Paint
   BA AW Face/Black Backpan
   SP Special Custom Color
7. **Damper**
   – None (default)
   Round Neck:
   4250 Radial Sliding, 6" - 14"
   4275 Radial Opposed Blade, 5" - 24"
   4675 Butterfly, 6" - 14"
   Square Neck:
   OBD Opposed Blade, Steel
   OBDA Opposed Blade, Aluminum (AA models only)
8. **External Insulation**
   – None (default)
   EX Foil-back (installed), R-4.2
   EXB Foil-back (loose), R-4.2
   MIB Molded Insulation Blanket, R-6.0
9. **Earthquake Tabs**
   – None (default)
   EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

10. **Air Balancing Devices** (order separately)
    Round Neck:
    EGR Equalizing Grid
    DEGR Damper/Equalizing Grid
    Square/Rectangular Neck:
    EGL Equalizing Grid (long)
    EGS Equalizing Grid (short)
    DEGL Damper/Equalizing Grid (long)
    DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Models 4320F, 4325F - Steel

Furnish and install **Nailor Model** (select one) **4320F Flush Face** or **4325F Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a high neck collar that is round or square as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Models 4320FA, 4325FA – Aluminum Face

Furnish and install **Nailor Model** (select one) **4320FA Flush Face** or **4325FA Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a high neck collar that is round or square as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Models 4320FAA, 4325FAA – Aluminum Face and Backpan

Furnish and install **Nailor Model** (select one) **4320FAA Flush Face** or **4325FAA Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an aluminum backpan with a high neck collar that is round or square as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED MODULAR CORE DIFFUSERS

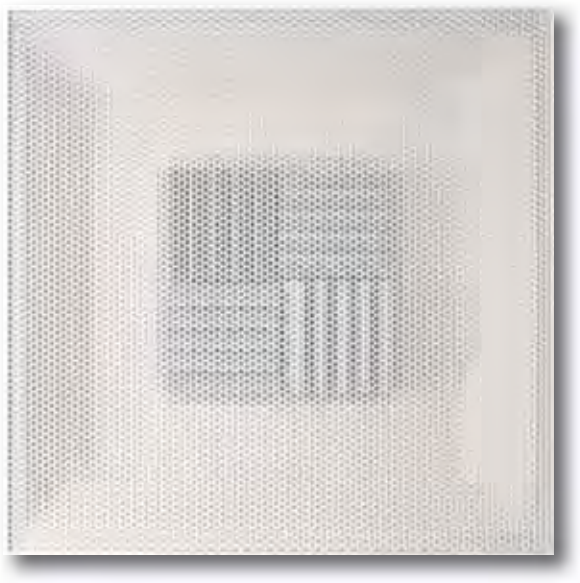
- SUPPLY
- SQUARE NECK
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Steel Models:

4320M Flush Face
4325M Drop Face

Aluminum Face Models:

4320MA Flush Face
4325MA Drop Face



Model 4320M

Model Series 4320M Perforated Modular Core Diffusers provide the unobtrusive, smooth appearance preferred by many architects and combines this with the flexible features of a high performance modular core design. This model features four individual, spring-loaded modular pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern by simply dropping the perforated face and rotating one or more of the pattern controllers.

The engineered modular core design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes. It therefore provides excellent performance in variable air volume systems. The diffuser is shipped from the factory with the modular core set for a 4-way discharge pattern.

Model 4325M features a dropped (extended) face panel that is designed to complement tegular tile ceiling systems. The face panel is suspended flush with the ceiling line, providing both an aesthetically pleasing appearance and ensuring optimal performance is maintained.

STANDARD FEATURES:

- Square neck is standard.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Inlet collar has approximately 1 1/2" (38) depth for easy duct connection.
- Dropping the perforated face and removing a core module gives access to the optional opposed blade damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 24	600 x 600	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457, 508 x 508

CONSTRUCTION MATERIAL:

Models 4320M/4325M have a corrosion-resistant steel backpan, modular core and perforated face. Models 4320MA/4325MA have a corrosion-resistant steel backpan and modular core with an aluminum perforated face.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

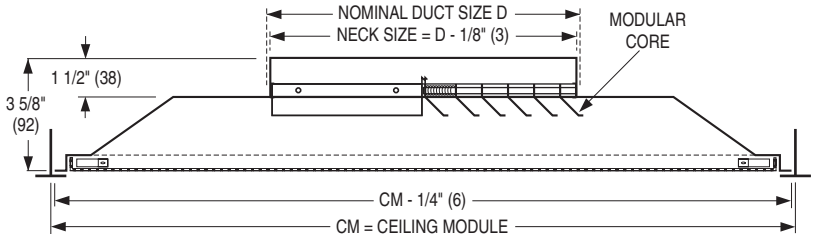
OBD	Opposed Blade Damper (steel)
EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

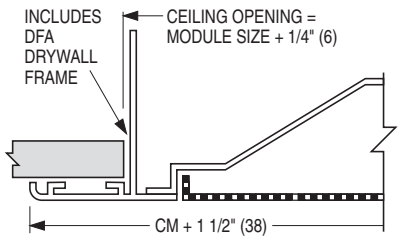
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320M, 4320MA • Flush Face • Square Neck

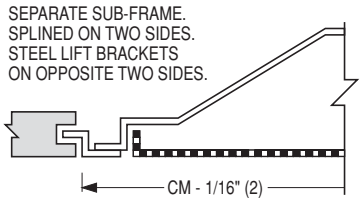
Type L Lay-in T-Bar



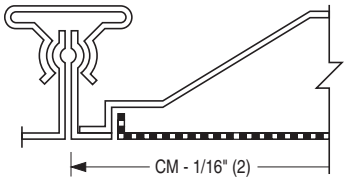
Type S Surface Mount



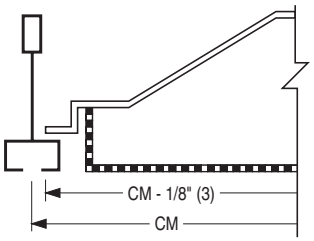
Type SP Spline



Type M Metal Pan (Snap-in)

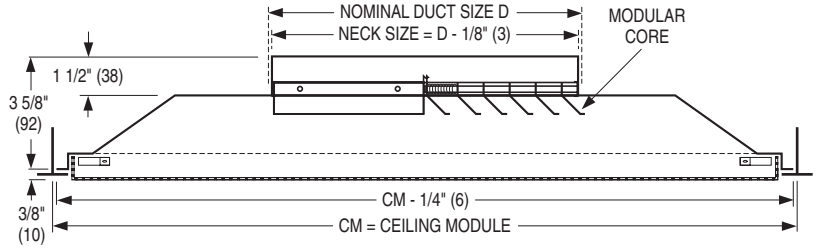


Type F Fineline®



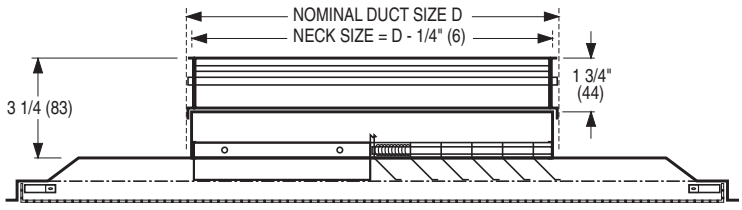
Models 4325M, 4325MA • Drop Face • Square Neck

Type L Lay-in T-Bar or Tegular



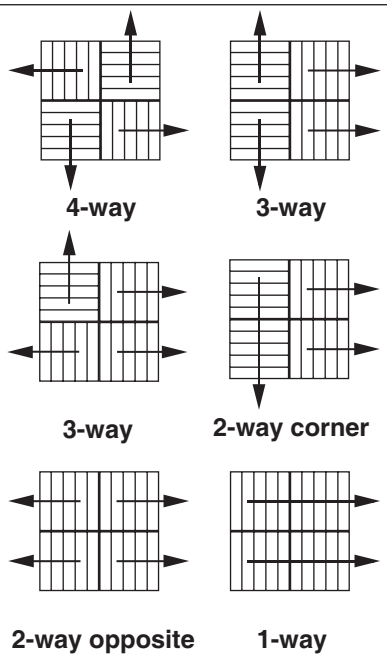
Drop face models are also available with Type S, SP and M frames.

Optional Opposed Blade Damper • Model OBD



Heavy gauge roll-formed steel damper is supplied with a screwdriver slot operator.

Modular Core Adjustments



All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 4320M, 4320MA, 4325M, 4325MA • 12 x 12 (300 x 300) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
6 x 6	Total Pressure		.030	.048	.071	.119	.155	.196	.244
	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-1-2	1-1-3	1-2-4	1-2-5	2-3-6	2-3-6	2-4-7
		3-Way	1-2-4	2-3-6	2-4-8	3-4-9	3-5-10	4-6-11	4-7-11
		2-Way	2-3-6	2-4-8	3-5-10	4-6-12	4-7-13	5-8-14	6-9-15
		1-Way	3-4-9	4-6-12	5-8-16	6-9-19	7-11-20	8-12-22	9-14-22
	Noise Criteria		—	—	19	24	30	34	39
8 x 8	Total Pressure		.028	.042	.064	.110	.141	.186	.240
	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	1-1-3	1-2-5	2-3-6	2-3-7	2-4-8	3-5-8	3-5-9
		3-Way	2-3-6	2-4-8	3-5-10	4-6-13	5-7-14	5-8-15	6-9-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20
		1-Way	4-6-12	5-8-17	7-10-21	8-12-25	10-15-27	11-17-29	12-19-31
	Noise Criteria		—	16	23	28	34	38	43

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORMANCE DATA:

Models 4320M, 4320MA, 4325M, 4325MA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	VP		.006	.010	.016	.023	.031	.040	.051
6 x 6	Total Pressure		.024	.042	.065	.098	.130	.169	.202
	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-1-2	1-1-3	1-2-4	1-2-5	2-3-6	2-3-6	2-4-7
		3-Way	1-2-4	2-3-6	2-4-8	3-4-9	3-5-10	4-6-11	4-7-11
		2-Way	2-3-6	2-4-8	3-5-10	4-6-12	4-7-13	5-8-14	6-9-15
		1-Way	3-4-9	4-6-12	5-8-16	6-9-19	7-11-20	8-12-22	9-14-22
	Noise Criteria		—	—	15	19	23	29	31
8 x 8	Total Pressure		.024	.042	.065	.098	.130	.169	.202
	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	1-1-3	1-2-5	2-3-6	2-3-7	2-4-8	3-5-8	3-5-9
		3-Way	2-3-6	2-4-8	3-5-10	4-6-13	5-7-14	5-8-15	6-9-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20
		1-Way	4-6-12	5-8-17	7-10-21	8-12-25	10-15-27	11-17-29	12-19-31
	Noise Criteria		—	—	18	23	27	33	35
10 x 10	Total Pressure		.034	.050	.073	.124	.160	.226	.263
	Flow Rate, CFM		210	275	345	415	485	555	625
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-7-11
		3-Way	2-4-8	3-5-10	4-6-13	5-8-16	6-9-17	7-10-18	8-12-19
		2-Way	3-5-10	4-6-13	5-8-17	6-10-20	8-12-22	9-13-24	10-15-25
		1-Way	5-8-16	7-10-21	8-13-26	10-16-32	12-18-34	14-21-37	16-24-39
	Noise Criteria		—	—	21	26	30	36	38
12 x 12	Total Pressure		.036	.052	.085	.127	.169	.230	.276
	Flow Rate, CFM		300	400	500	600	700	800	900
	Throw	4-Way	1-2-5	2-3-7	3-4-9	3-5-11	4-6-12	5-7-13	5-8-14
		3-Way	3-4-9	4-6-13	5-8-16	6-9-19	7-11-21	8-13-22	9-14-23
		2-Way	4-6-12	5-8-16	6-10-20	8-12-25	9-14-27	11-16-28	12-18-30
		1-Way	6-9-19	8-12-25	10-16-32	12-19-38	15-22-41	17-25-44	19-29-47
	Noise Criteria		—	—	25	30	34	39	42
15 x 15	Total Pressure		.039	.058	.096	.129	.177	.236	.291
	Flow Rate, CFM		470	625	780	935	1095	1250	1405
	Throw	4-Way	2-3-7	3-4-9	4-6-12	4-7-14	5-8-15	6-9-16	7-10-17
		3-Way	4-6-12	5-8-16	6-10-20	8-12-24	9-14-26	10-16-28	12-18-29
		2-Way	5-7-15	6-10-20	8-13-26	10-15-31	12-18-33	13-20-36	15-23-38
		1-Way	8-12-24	10-16-32	13-20-40	16-24-48	18-28-52	21-32-56	24-36-59
	Noise Criteria		—	19	28	33	37	42	45
18 x 18	Total Pressure		.041	.062	.110	.135	.186	.240	.301
	Flow Rate, CFM		675	900	1125	1350	1575	1800	2025
	Throw	4-Way	2-4-8	3-5-11	4-7-14	5-8-17	6-10-18	7-11-19	8-12-21
		3-Way	4-7-14	6-9-19	8-12-24	9-14-29	11-17-31	13-19-33	14-22-35
		2-Way	6-9-18	8-12-25	10-15-31	12-18-37	14-21-40	16-25-43	18-28-46
		1-Way	9-14-29	12-19-38	16-24-48	19-29-58	24-34-62	25-38-67	29-43-71
	Noise Criteria		—	22	31	36	41	46	49

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORATED MODULAR CORE DIFFUSERS

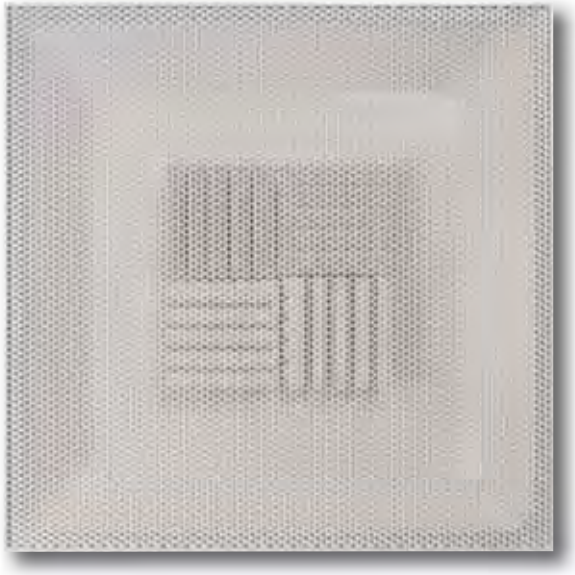
- SUPPLY
- INTEGRAL ROUND NECK
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Steel Models:

4320MR Flush Face
4325MR Drop Face

Aluminum Face Models:

4320MRA Flush Face
4325MRA Drop Face



Model 4320MR

Model Series 4320MR Perforated Modular Core Diffusers provide the unobtrusive, smooth appearance preferred by many architects and combines this with the flexible features of a high performance modular core design. The low profile backpan features an integral round neck which eliminates the need for adapters. Four individual spring-loaded adjustable modular pattern controllers are mounted inside the backpan. This positions the leading edge of the pattern controllers near the perforated face and flush with ceiling for optimum performance. The engineered design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes and therefore provides excellent performance in VAV systems.

Discharge pattern can adjust to 1, 2, 3 or 4-way horizontal, before or after installation.

Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors. Diffusers are shipped from the factory with a 4-way discharge pattern.

Model Series 4325MR features a dropped (extended) face panel that is designed to complement tegular tile ceiling systems. The face panel is suspended flush with the ceiling line, providing both an aesthetically pleasing appearance and ensuring optimal performance is maintained.

STANDARD FEATURES:

- Designed for suspended ceiling systems.
- Round neck is standard.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Inlet collar has approximately 1 1/4" (32) depth for easy duct connection.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Dropping the perforated face and removing a modular core module gives access to the optional balancing damper.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

CONSTRUCTION MATERIAL:

Models 4320MR/4325MR have a corrosion-resistant steel backpan, modular core and perforated face.

Models 4320MRA/4325MRA have a corrosion-resistant steel backpan and modular core with an aluminum perforated face.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
EX	External Foil-Back Insulation (installed) -R-4.2.
EXB	External Foil-Back Insulation (loose) -R-4.2.
MIB	Molded Insulation Blanket R-6.0.
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

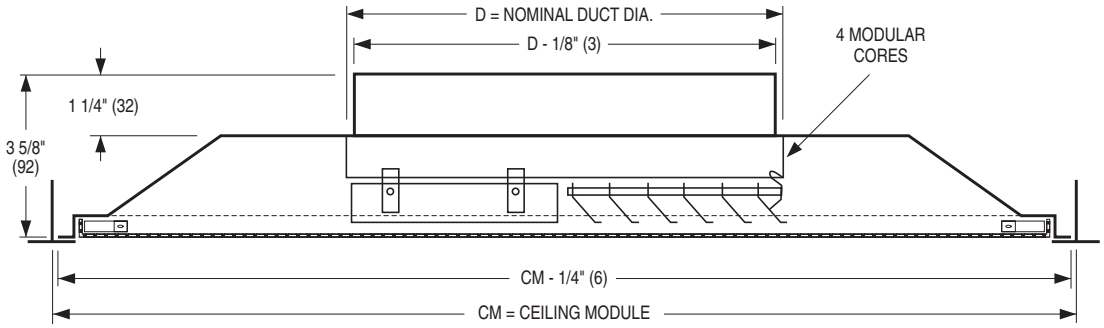
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406

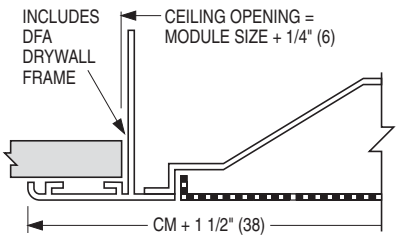
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320MR, 4320MRA • Flush Face • Round Neck

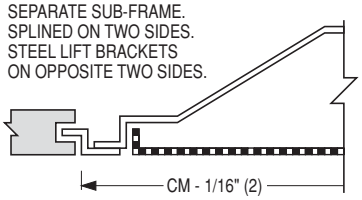
Type L Lay-in T-Bar



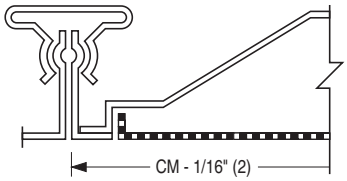
Type S Surface Mount



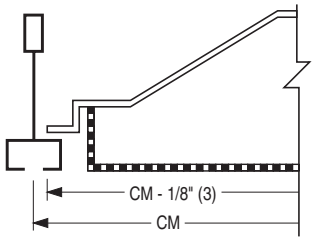
Type SP Spline



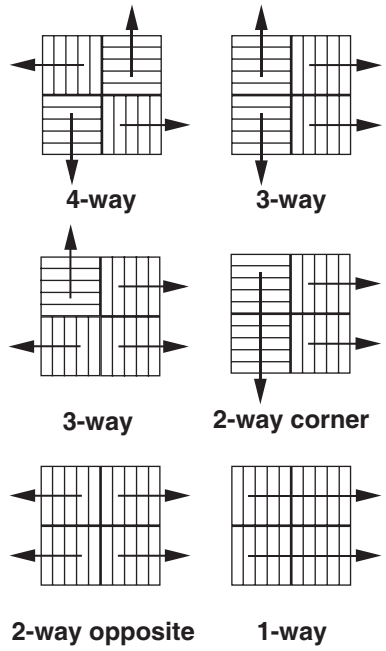
Type M Metal Pan (Snap-in)



Type F Fineline®



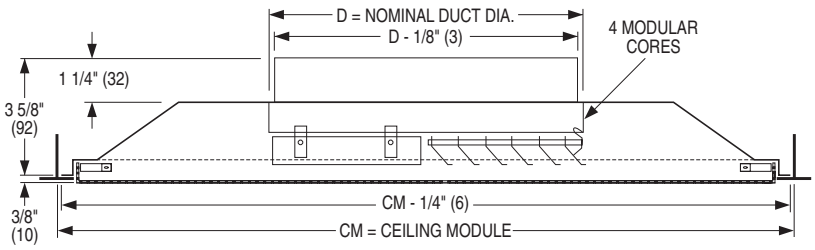
Modular Core Adjustments



All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.

Models 4325MR, 4325MRA • Drop Face • Round Neck

Type L Lay-in T-Bar or Tegular



Drop face models are also available with Type S, SP and M frames.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 4320MR, 4320MRA, 4325MR, 4325MRA • 12 x 12 (300 x 300) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063
6" Dia.	Total Pressure		.016	.031	.041	.065	.092	.124	.163
	Flow Rate, CFM		60	80	100	115	135	155	195
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-2-5	1-2-5	2-3-7
		3-Way	1-1-3	1-2-5	2-3-6	2-3-7	3-4-8	3-5-9	4-6-12
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	1-4-8	2-4-9	3-5-11
		1-Way	1-1-4	1-1-7	1-2-8	1-4-9	2-5-10	3-7-13	5-8-15
	Noise Criteria		—	—	18	23	29	33	38
8" Dia.	Total Pressure		.015	.027	.043	.062	.084	.110	.171
	Flow Rate, CFM		105	140	175	210	245	280	350
	Throw	4-Way	1-1-2	1-1-4	1-2-5	1-2-6	1-3-7	2-4-8	3-5-10
		3-Way	1-2-5	1-3-7	2-4-8	3-5-9	4-6-11	4-7-13	5-9-16
		2-Way	1-1-4	1-2-6	1-3-9	2-4-9	3-5-11	3-6-13	5-8-16
		1-Way	1-2-7	1-4-9	2-6-12	4-7-14	5-9-17	6-10-19	8-13-21
	Noise Criteria		—	15	24	27	33	37	42

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORMANCE DATA:

Models 4320MR, 4320MRA, 4325MR, 4325MRA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063
6" Dia.	Total Pressure		.016	.031	.041	.065	.092	.124	.163
	Flow Rate, CFM		60	80	100	115	135	155	195
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-2-5	1-2-5	2-3-7
		3-Way	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-13
		2-Way	1-1-3	1-1-4	1-2-5	1-3-7	1-4-8	2-4-9	3-5-11
		1-Way	1-1-4	1-1-7	1-2-8	1-4-10	2-5-12	3-7-14	5-8-16
	Noise Criteria		—	—	16	21	26	30	37
8" Dia.	Total Pressure		.015	.027	.043	.062	.084	.110	.171
	Flow Rate, CFM		105	140	175	210	245	280	350
	Throw	4-Way	1-1-2	1-1-4	1-2-5	1-2-6	1-3-7	2-4-8	3-5-10
		3-Way	1-2-5	1-3-7	2-4-8	3-5-10	4-6-12	4-7-14	5-9-17
		2-Way	1-1-4	1-2-6	1-3-8	2-4-9	3-5-11	3-6-13	5-8-16
		1-Way	1-2-7	1-4-10	2-6-13	4-7-15	5-9-17	6-10-19	8-13-21
	Noise Criteria		—	13	20	25	30	34	41
10" Dia.	Total Pressure		.019	.033	.052	.075	.102	.133	.208
	Flow Rate, CFM		165	220	270	325	380	435	545
	Throw	4-Way	1-1-4	1-1-6	1-3-7	1-4-9	2-5-10	3-6-12	5-7-13
		3-Way	1-3-6	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19
		2-Way	1-1-6	1-3-8	2-5-10	3-6-13	4-7-15	5-8-17	7-10-19
		1-Way	1-4-10	3-7-14	5-9-18	7-10-20	8-12-21	9-14-23	12-18-26
	Noise Criteria		—	16	23	28	33	37	44
12" Dia.	Total Pressure		.023	.040	.063	.091	.124	.162	.253
	Flow Rate, CFM		235	315	390	470	550	630	785
	Throw	4-Way	1-1-6	1-2-8	2-4-10	2-6-12	3-7-13	5-8-14	6-10-16
		3-Way	1-3-8	3-5-11	4-6-13	5-8-15	6-9-17	7-11-18	9-13-20
		2-Way	1-2-8	2-5-11	3-6-13	5-8-16	6-9-17	7-11-18	9-13-20
		1-Way	3-7-14	5-9-19	8-12-21	9-14-23	11-17-25	13-19-27	16-21-30
	Noise Criteria		—	19	26	31	36	40	47
14" Dia.	Total Pressure		.027	.049	.076	.110	.149	.195	.304
	Flow Rate, CFM		320	425	535	640	750	855	1070
	Throw	4-Way	1-2-8	1-4-11	2-6-13	4-8-14	5-9-15	7-11-16	9-13-18
		3-Way	2-4-10	3-6-12	5-8-13	6-10-15	7-11-16	8-12-17	11-13-19
		2-Way	1-4-10	3-6-13	5-8-15	6-10-16	7-11-18	9-13-19	11-15-21
		1-Way	4-9-19	8-13-22	10-16-24	13-19-27	15-20-29	17-22-31	20-24-35
	Noise Criteria		14	23	30	35	40	44	51
16" Dia.	Total Pressure		.033	.059	.092	.132	.180	.235	.368
	Flow Rate, CFM		420	560	700	835	975	1115	1295
	Throw	4-Way	1-3-10	2-5-13	3-8-15	5-10-16	7-12-17	9-13-19	12-15-21
		3-Way	3-5-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-16
		2-Way	2-5-11	4-8-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20
		1-Way	7-12-21	11-17-24	14-19-27	17-21-30	18-23-32	20-24-35	22-27-39
	Noise Criteria		15	24	31	36	41	45	52

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

PERFORATED MODULAR CORE SUPPLY CEILING DIFFUSERS – MODEL SERIES 4320M

EXAMPLE: 4320M - 8 x 8 - 24 x 24 - L - AW - –

1. **Models**
   Square Neck:
   4320M Steel, Flush Face
   4325M Steel, Drop Face
   4320MA Aluminum Face, Flush
   4325MA Aluminum Face, Drop
   Round Neck:
   4320MR Steel, Flush Face
   4325MR Steel, Drop Face
   4320MRA Aluminum Face, Flush
   4325MRA Aluminum Face, Drop
2. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16
   Square:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20
3. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 24 x 24 (default)
   Metric (mm)
   300 x 300, 600 x 600
4. **Frame Type**
   L Lay-in T-Bar (default)
   S Surface Mount
   SP Spline
   M Metal Pan (Snap-in)
   F Fineline®
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime Coat Paint
   BA AW Face/Black Backpan
   SP Special Custom Color
6. **Damper**
   – None (default)
   Round Neck:
   4250 Radial Sliding, 6" - 14"
   4275 Radial Opposed Blade, 5" - 24"
   4675 Butterfly, 6" - 14"
   Square Neck:
   OBD Opposed Blade, Steel
7. **External Insulation**
   – None (default)
   EX Foil-back (installed), R-4.2
   EXB Foil-back (loose), R-4.2
   MIB Molded Insulation Blanket, R-6.0
8. **Earthquake Tabs**
   – None (default)
   EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:
EGR Equalizing Grid
DEGR Damper/Equalizing Grid

Square/Rectangular Neck:
EGL Equalizing Grid (long)
EGS Equalizing Grid (short)
DEGL Damper/Equalizing Grid (long)
DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Models 4320M, 4325M – Steel
Furnish and install **Nailor Model** (select one) **4320M Flush Face** or **4325M Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with an integral square neck collar. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted in the neck of the diffuser shall be four square modular pattern deflectors factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320MA, 4325MA – Aluminum Face
Furnish and install **Nailor Model** (select one) **4320MA Flush Face** or **4325MA Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with an integral square neck collar. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted in the neck of the diffuser shall be four square modular pattern deflectors factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Models 4320MR, 4325MR – Steel
Furnish and install **Nailor Model** (select one) **4320MR Flush Face** or **4325MR Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped, corrosion-resistant steel, low profile backpan with an integral round neck. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted below the neck of the diffuser shall be four square modular pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320MRA, 4325MRA – Aluminum Face
Furnish and install **Nailor Model** (select one) **4320MRA Flush Face** or **4325MRA Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped, corrosion-resistant steel, low profile backpan with an integral round neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted below the neck of the diffuser shall be four square modular pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED ADJUSTABLE STAR PATTERN DIFFUSERS

- SUPPLY
- FLUSH FACE OR DROP FACE
- ROUND OR SQUARE NECK

Steel Models:

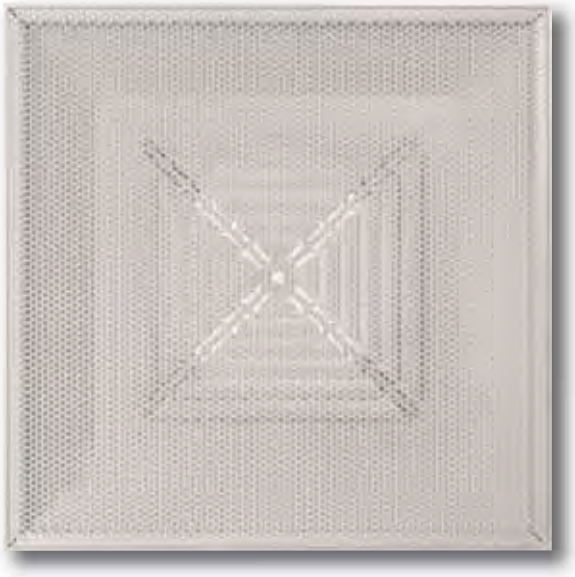
4320S Flush Face
4325S Drop Face

Aluminum Face Models:

4320SA Flush Face
4325SA Drop Face

Aluminum Models:

4320SAA Flush Face
4325SAA Drop Face



Model 4320S

Model Series 4320S and 4325S Perforated Adjustable Star Pattern Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and high engineering performance required for use in heating and cooling applications. The diffusers project a tight, uniform horizontal or vertical blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model Series 4320S Diffusers feature a stamped pattern conroller mounted directly under the neck that produces a long throw 4-way 'star pattern'. The factory set pattern controller is easily rotated from side throw to corner throw in the field. Individual vanes can be field adjusted to suit the desired air pattern.

Model Series 4325S features a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so that the panel remains flush with the ceiling line. In non-tegular ceilings the throw is reduced slightly and the airflow projection protects the ceiling against smudging.

STANDARD FEATURES:

- 4-way 'Star Pattern' Controller.
- Round or square necks available.
- Removable face has concealed latches for easy access to the optional damper.
- Discharge pattern can adjust from side throw to corner throw in the field.
- Individual vanes can be adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of blades in the opposite direction.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

CONSTRUCTION MATERIAL:

Models 4320S/4325S have a corrosion-resistant steel perforated face and backpan. Models 4320SA/4325SA have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4320SAA/4325SAA have an aluminum perforated face and backpan.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675 Butterfly Damper 6" – 14" (152 – 356).
MIB Molded Insulation Blanket, R-6.0.

Square Neck:

OBD Opposed Blade Damper (Steel)
OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) -R-4.2.
EXB External Foil-Back Insulation (loose) -R-4.2.
EQT Earthquake Tabs

For additional options and accessories; see page D255.

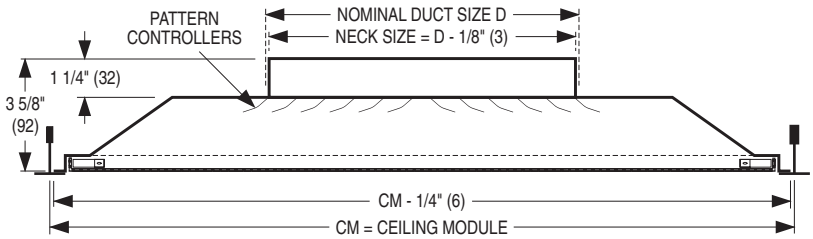
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6	152	6 x 6	152 x 152
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305

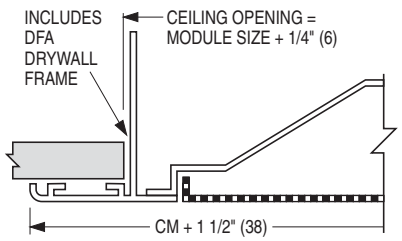
DIMENSIONAL DATA AND FRAME TYPES:

Models 4320S, 4320SA, 4320SAA • Supply • Flush Face

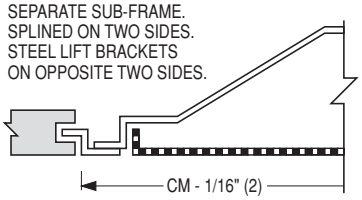
Type L Lay-in T-Bar



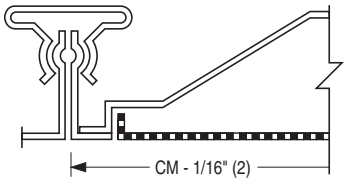
Type S Surface Mount



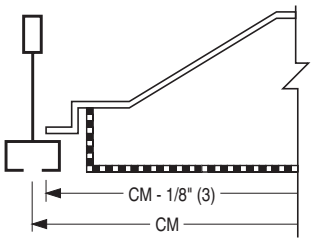
Type SP Spline



Type M Metal Pan (Snap-in)

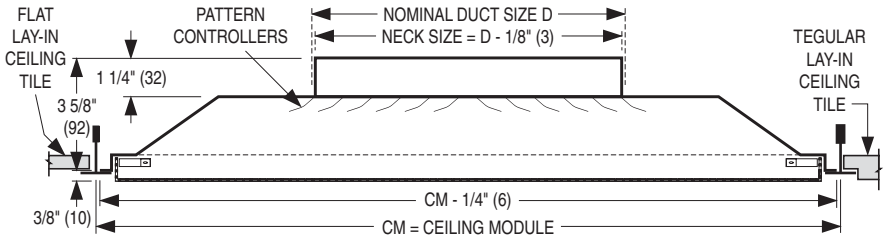


Type F Fineline®

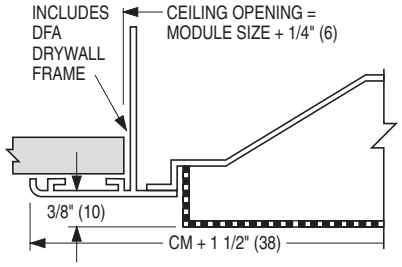


Models 4325S, 4325SA, 4325SAA • Supply • Drop Face

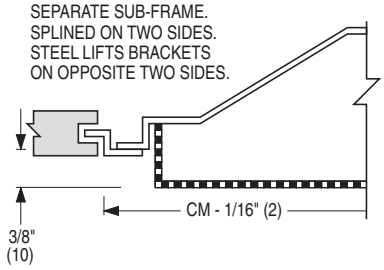
Type L Lay-in T-Bar or Tegular



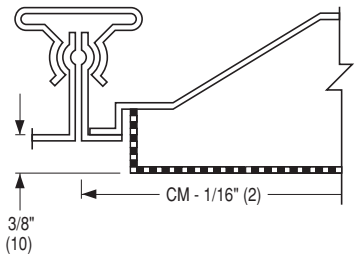
Type S Surface Mount



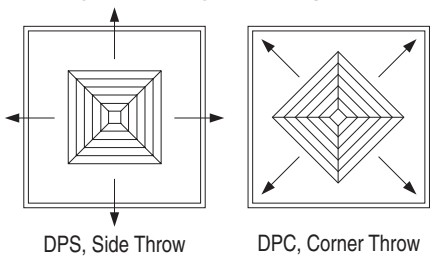
Type SP Spline



Type M Metal Pan (Snap-in)



Factory Set 4-Way Discharge Pattern:



Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA,4325SAA • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6" Dia.	Total Pressure	.020	.036	.056	.080	.109	.142	.180	.222	.320	.436
	Airflow, CFM	60	80	100	120	135	155	175	195	235	275
	Throw	1-1-3	1-2-4	1-2-5	2-3-7	2-4-8	3-4-9	3-5-10	3-5-11	4-7-12	5-8-13
	Noise Criteria	—	—	15	21	26	31	34	38	44	49
6 x 6	Total Pressure	.022	.039	.060	.087	.118	.154	.195	.241	.347	.472
	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Throw	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-14	6-9-15
	Noise Criteria	—	—	17	23	28	32	36	40	46	51

Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA,4325SAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6 x 6	Total Pressure	.018	.032	.050	.072	.098	.128	.163	.201	.289	.393
	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Throw	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-14	6-9-15
	Noise Criteria	—	—	17	23	28	32	36	40	46	51
8 x 8	Total Pressure	.020	.036	.056	.081	.110	.144	.182	.224	.323	.440
	Airflow,CFM	135	180	220	265	310	355	400	445	535	620
	Throw	1-2-5	2-3-7	3-4-9	3-5-11	4-6-13	5-7-15	6-8-16	6-8-17	7-11-19	9-13-20
	Noise Criteria	—	—	19	25	30	35	39	42	48	53
10 x 10	Total Pressure	.023	.040	.063	.091	.123	.161	.204	.251	.362	.493
	Airflow, CFM	210	280	345	415	485	555	625	695	835	970
	Throw	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20	9-14-22	11-16-24	13-18-26
	Noise Criteria	—	—	21	27	32	36	40	44	50	55
12 x 12	Total Pressure	.024	.043	.067	.097	.132	.172	.218	.269	.388	.528
	Airflow, CFM	300	400	500	600	700	800	900	1000	1200	1400
	Throw	3-5-11	4-7-14	6-9-18	7-11-21	8-12-23	9-14-24	11-16-26	12-18-27	14-21-30	17-23-32
	Noise Criteria	—	15	22	28	34	38	42	45	51	57

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORMANCE DATA:

Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA,4325SAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6" Dia.	Total Pressure	.017	.031	.048	.069	.094	.123	.155	.192	.276	.376
	Airflow, CFM	60	80	100	120	135	155	175	195	235	275
	Throw	1-1-3	1-2-4	1-2-5	2-3-7	2-4-8	3-4-9	3-5-10	3-5-11	4-7-12	5-8-13
	Noise Criteria	—	—	15	21	26	31	35	38	44	49
8" Dia.	Total Pressure	.018	.032	.051	.073	.099	.129	.164	.202	.291	.396
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	1-2-4	2-3-6	2-4-8	3-5-9	3-5-11	4-6-13	5-7-14	5-8-15	6-9-16	7-11-18
	Noise Criteria	—	—	18	24	29	34	38	41	47	52
10" Dia.	Total Pressure	.021	.038	.059	.085	.115	.151	.191	.235	.339	.461
	Airflow, CFM	165	220	275	325	380	435	490	545	655	765
	Throw	2-3-6	2-4-9	3-5-11	4-6-13	5-7-15	6-8-17	7-9-18	7-11-19	8-13-21	10-15-23
	Noise Criteria	—	—	21	26	31	35	40	43	49	54
12" Dia.	Total Pressure	.023	.042	.065	.094	.128	.167	.211	.260	.375	.510
	Airflow, CFM	235	315	395	470	550	630	705	785	940	1100
	Throw	3-4-9	4-6-12	5-7-14	6-9-18	7-10-20	8-12-21	9-14-22	10-15-23	12-18-26	14-20-28
	Noise Criteria	—	15	23	29	34	38	43	46	52	57
14" Dia.	Total Pressure	.024	.043	.068	.098	.133	.174	.220	.272	.391	.532
	Airflow, CFM	320	430	535	640	750	855	960	1070	1285	1495
	Throw	3-5-11	5-7-15	6-9-19	7-11-22	8-13-23	10-15-25	11-17-26	12-19-28	15-22-31	18-23-33
	Noise Criteria	—	17	25	31	36	40	45	48	54	59
15" Dia.	Total Pressure	.025	.045	.070	.101	.137	.179	.227	.280	.403	.549
	Airflow, CFM	370	490	615	735	860	980	1105	1225	1475	1720
	Throw	4-6-13	6-8-17	7-10-21	8-13-24	9-15-26	12-17-28	13-19-29	15-21-30	17-23-33	20-25-36
	Noise Criteria	—	18	26	32	37	41	46	49	55	61
16" Dia.	Total Pressure	.026	.046	.072	.104	.141	.184	.233	.288	.415	.565
	Airflow, CFM	420	560	700	840	975	1115	1255	1395	1675	1955
	Throw	4-7-14	6-9-19	8-12-23	9-14-25	11-17-28	13-19-29	15-21-31	16-23-33	19-25-36	22-28-39
	Noise Criteria	—	19	27	33	38	42	47	50	56	62

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

PERFORATED STAR PATTERN SUPPLY CEILING DIFFUSERS – MODEL SERIES 4320S

EXAMPLE: 4320S - RND - 08 - 24 x 24 - L - AW - DPS - –

1. **Models**
   - 4320S Steel, Flush Face
   - 4325S Steel, Drop Face
   - 4320SA Aluminum Face, Flush
   - 4325SA Aluminum Face, Drop
   - 4320SAA Aluminum Face and Backpan, Flush
   - 4325SAA Aluminum Face and Backpan, Drop
2. **Neck Type**
   - RND Round
   - SQR Square
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16
   Square/Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 24 x 24 (default)
   Metric (mm)
   300 x 300, 600 x 600
5. **Frame Type**
   - L Lay-in T-Bar (default)
   - S Surface Mount
   - SP Spline
   - M Metal Pan (Snap-in)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color
7. **Discharge Pattern**
   - DPS Side Throw (default)
   - DPC Corner Throw
8. **Damper**
   - – None (default)

   Round Neck:
   - 4250 Radial Sliding, 6" - 14"
   - 4275 Radial Opposed Blade, 5" - 24"
   - 4675 Butterfly, 6" - 14"

   Square Neck:
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum (AA models only)
9. **External Insulation**
   - – None (default)
   - EX Foil-back (installed), R-4.2
   - EXB Foil-back (loose), R-4.2
   - MIB Molded Insulation Blanket, R-6.0
10. **Earthquake Tabs**
    - – None (default)
    - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

11. **Air Balancing Devices**
    (order separately)

    Round Neck:
    - EGR Equalizing Grid
    - DEGR Damper/Equalizing Grid

    Square/Rectangular Neck:
    - EGL Equalizing Grid (long)
    - EGS Equalizing Grid (short)
    - DEGL Damper/Equalizing Grid (long)
    - DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Models 4320S, 4325S – Steel

Furnish and install **Nailor Model** (select one) **4320S Flush Face** or **4325S Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320SA, 4325SA – Aluminum Face

Furnish and install **Nailor Model** (select one) **4320SA Flush Face** or **4325SA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4320SAA, 4325SAA – Aluminum

Furnish and install **Nailor Model** (select one) **4320SAA Flush Face** or **4325SAA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED CEILING DIFFUSERS

- SUPPLY
- PREMIUM ARCHITECTURAL QUALITY
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Steel Face Model:

4330 Flush Face

Aluminum Face Model:

4330A Flush Face

Aluminum Model:

4330AA Flush Face

Model 4330

Model Series 4330 Perforated Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and the high engineering performance required for use in heating and cooling applications. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

The 4330 Series features an extruded aluminum frame with hairline mitered corners that encapsulates the perforated face providing a narrow, visible border within the T-Bar module. Four individual stamped pattern controllers mounted on the rear of the diffuser face are easily field adjustable to suit the desired air pattern.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face has 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4330R Series) are available with the same face and frame construction as the supply models to match their appearance.

CONSTRUCTION MATERIAL:

Model 4330 has a corrosion-resistant steel perforated face and backpan. Model 4330A has an aluminum perforated face and corrosion-resistant steel backpan. Model 4330AA has an aluminum perforated face and backpan. All models have an extruded aluminum border and frame.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

Square Neck:

OBD Opposed Blade Damper (Steel)

OBDA Opposed Blade Damper (Aluminum) (-AA models only)

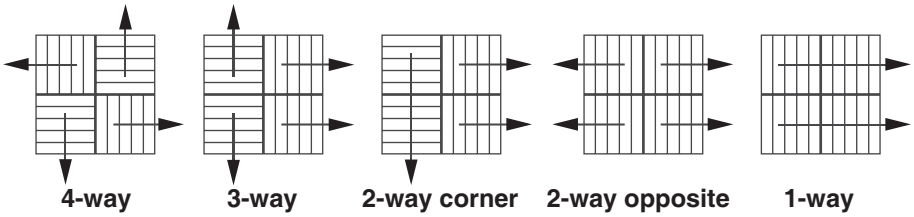
OTHER OPTIONS & ACCESSORIES:

EQT Earthquake Tabs

For additional options and accessories; see page D255.

Available Air Patterns

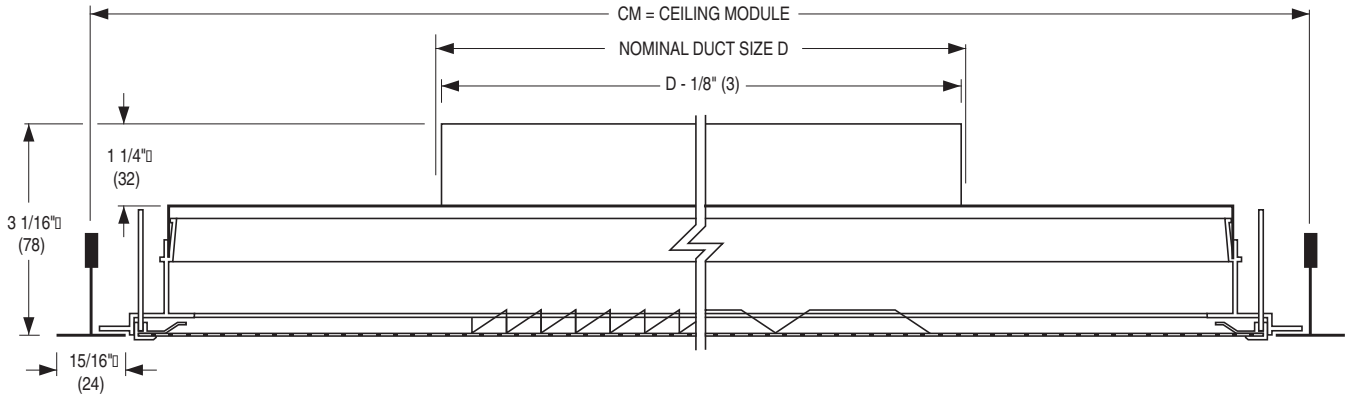
All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.



DIMENSIONAL DATA AND FRAME TYPES:

Models 4330, 4330A, 4330AA • Supply • Flush Face

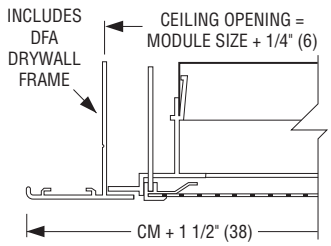
Type L Lay-in T-Bar



Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 12	600 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
16 x 16	400 x 400	5, 6, 7, 8, 10, 12	127, 152, 178, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
20 x 20	500 x 500	5, 6, 7, 8, 10, 12, 14	127, 152, 178, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 24	600 x 600	5, 6, 7, 8, 10, 12, 14, 15, 16	127, 152, 178, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406
48 x 24	1200 x 600				

Type S Surface Mount



PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
5" Dia.	Total Pressure		.011	.019	.030	.044	.059	.076	.120	.171	.234
	Flow Rate, CFM		40	55	70	80	95	110	135	165	190
	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
		1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria		—	—	15	20	24	28	34	39	43
6" Dia.	Total Pressure		.015	.025	.040	.058	.078	.100	.158	.225	.308
	Flow Rate, CFM		60	80	100	120	140	160	195	235	275
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
7" Dia.	Total Pressure		.016	.028	.040	.066	.092	.118	.187	.262	.36
	Flow Rate, CFM		80	105	135	160	190	215	270	320	375
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	15	21	26	30	34	40	45	49
8" Dia.	Total Pressure		.019	.034	.053	.077	.104	.136	.213	.306	.417
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	17	23	28	32	36	42	47	51
6" x 6"	Total Pressure		.018	.032	.051	.073	.099	.130	.200	.292	.395
	Flow Rate, CFM		75	100	125	150	175	200	250	300	350
	Throw	4-Way	1-2-5	2-3-6	3-4-8	3-5-9	4-6-9	4-7-10	6-8-11	7-9-12	8-9-13
		3-Way	1-2-5	2-4-7	3-4-9	3-5-10	4-6-11	5-7-12	6-9-13	7-10-15	8-11-16
		2-Way	1-2-6	2-4-8	3-5-10	4-6-12	5-7-13	5-8-14	7-10-16	8-12-17	9-13-19
		1-Way	2-4-7	3-5-10	4-6-11	5-7-12	6-9-13	7-10-14	8-11-16	10-12-17	11-13-19
	Noise Criteria		—	13	19	24	28	32	38	43	47

For performance notes, see page D211.

PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
5" Dia.	Total Pressure		.010	.018	.028	.040	.054	.070	.110	.157	.215
	Flow Rate, CFM		40	55	70	80	95	110	135	165	190
	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
		1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria		—	—	14	19	23	27	33	38	42
6" Dia.	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		60	80	100	120	140	160	195	235	275
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
7" Dia.	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		80	105	135	160	190	215	270	320	375
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	14	20	25	29	33	39	44	48
8" Dia.	Total Pressure		.014	.026	.04	.058	.079	.103	.16	.231	.314
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	16	22	27	31	35	41	46	50
6" x 6"	Total Pressure		.017	.030	.048	.069	.094	.122	.189	.274	.374
	Flow Rate, CFM		75	100	125	150	175	200	250	300	350
	Throw	4-Way	1-2-5	2-3-6	3-4-8	3-5-9	4-6-9	4-7-10	6-8-11	7-9-12	8-9-13
		3-Way	1-2-5	2-4-7	3-4-9	3-5-10	4-6-11	5-7-12	6-9-13	7-10-15	8-11-16
		2-Way	1-2-6	2-4-8	3-5-10	4-6-12	5-7-13	5-8-14	7-10-16	8-12-17	9-13-19
		1-Way	2-4-7	3-5-10	4-6-11	5-7-12	6-9-13	7-10-14	8-11-16	10-12-17	11-13-19
	Noise Criteria		—	13	19	24	28	32	38	43	47
18" x 6"	Total Pressure		.041	.068	.109	.157	.211	.273	.430	.613	.84
	Flow Rate, CFM		225	300	375	450	525	600	750	900	1050
	Throw	4-Way	5-7-15	6-10-17	8-12-19	10-15-21	11-16-22	13-17-24	16-19-27	17-21-30	19-23-32
		3-Way	5-7-15	7-10-17	8-13-19	10-15-21	12-16-22	13-17-24	16-19-27	17-21-30	19-23-32
		2-Way	5-8-15	7-11-17	9-13-19	11-15-21	13-16-22	14-17-24	16-19-27	17-21-30	19-23-32
		1-Way	8-12-21	10-15-24	13-19-27	15-21-30	18-23-32	20-24-34	22-28-39	24-30-42	27-32-46
	Noise Criteria		17	25	31	36	40	44	50	55	59

For performance notes, see page D211.

PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 16 x 16 (400 x 400) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
5" Dia.	Total Pressure		.010	.018	.028	.040	.054	.070	.110	.157	.215
	Flow Rate, CFM		40	55	70	80	95	110	135	165	190
	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
		1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria		—	—	14	19	23	27	33	38	42
6" Dia.	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		60	80	100	120	140	160	200	235	275
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
7" Dia.	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		80	105	135	160	190	215	270	320	375
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	14	20	25	29	33	39	44	48
8" Dia.	Total Pressure		.017	.028	.045	.065	.088	.113	.179	.255	.35
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	16	22	27	31	35	41	46	50
10" Dia.	Total Pressure		.023	.039	.062	.089	.120	.154	.243	.348	.475
	Flow Rate, CFM		165	220	270	325	380	435	545	655	760
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
		1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria		11	19	25	30	34	38	44	49	53
6" x 6"	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		75	100	125	150	175	200	250	300	350
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	14	20	25	29	33	39	44	48
8" x 8"	Total Pressure		.020	.034	.054	.078	.105	.135	.213	.304	.415
	Flow Rate, CFM		135	180	220	265	310	355	445	535	625
	Throw	4-Way	1-3-7	2-5-9	4-5-11	4-7-12	5-8-13	6-9-13	7-11-15	9-12-16	10-13-18
		3-Way	1-3-7	2-5-9	4-6-12	5-7-14	6-8-15	6-10-16	8-12-18	10-14-20	11-15-21
		2-Way	1-3-8	2-6-11	4-7-13	5-8-16	6-9-17	7-11-19	9-13-21	11-16-23	13-18-25
		1-Way	3-5-10	4-7-13	6-8-15	7-10-16	8-11-17	9-13-19	11-15-21	14-16-23	14-18-25
	Noise Criteria		9	17	23	28	32	36	42	47	51

For performance notes, see page D211.

PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 20 x 20 (500 x 500) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	.123
5" Dia.	Total Pressure	.010	.018	.028	.040	.054	.070	.110	.157	.215
	Flow Rate, CFM	40	55	70	80	95	110	135	165	190
	Throw 4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
	Throw 3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
	Throw 2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
	Throw 1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria	—	—	14	19	23	27	33	38	42
6" Dia.	Total Pressure	.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM	60	80	100	120	140	160	200	235	275
	Throw 4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
	Throw 3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
	Throw 2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
	Throw 1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria	—	—	17	22	26	30	36	41	45
7" Dia.	Total Pressure	.014	.023	.037	.053	.071	.092	.145	.207	.283
	Flow Rate, CFM	80	105	135	160	190	215	270	320	375
	Throw 4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
	Throw 3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
	Throw 2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
	Throw 1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria	—	13	19	24	28	32	38	43	47
8" Dia.	Total Pressure	.014	.024	.038	.055	.075	.096	.151	.216	.295
	Flow Rate, CFM	105	140	175	210	245	280	350	420	490
	Throw 4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
	Throw 3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
	Throw 2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
	Throw 1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria	—	16	22	27	31	35	41	46	50
10" Dia.	Total Pressure	.019	.031	.050	.071	.096	.124	.195	.279	.381
	Flow Rate, CFM	165	220	270	325	380	435	545	655	760
	Throw 4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
	Throw 3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
	Throw 2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
	Throw 1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria	11	19	25	30	34	38	44	49	53
12" Dia.	Total Pressure	.023	.038	.060	.087	.117	.150	.237	.338	.462
	Flow Rate, CFM	235	315	390	470	550	630	785	945	1100
	Throw 4-Way	2-4-8	3-5-12	5-7-14	5-8-16	6-9-17	7-12-18	9-14-20	12-16-21	14-17-23
	Throw 3-Way	2-4-10	3-6-13	5-7-16	6-9-18	7-11-20	8-13-21	11-16-23	13-18-27	15-20-28
	Throw 2-Way	2-4-11	3-7-15	5-8-18	7-11-20	8-13-23	9-15-25	12-18-28	15-21-31	17-23-33
	Throw 1-Way	3-6-14	5-8-18	7-11-20	8-13-21	11-16-23	12-18-25	15-20-28	18-21-31	19-23-33
	Noise Criteria	14	22	28	33	37	41	47	52	56
14" Dia.	Total Pressure	.029	.049	.079	.113	.152	.196	.309	.440	.603
	Flow Rate, CFM	320	425	530	635	740	850	1060	1270	1480
	Throw 4-Way	2-5-10	4-6-13	6-8-16	6-10-18	7-11-19	8-13-20	11-16-23	13-18-24	16-19-26
	Throw 3-Way	2-3-11	4-7-14	6-8-18	7-11-20	8-12-23	10-14-24	12-18-26	14-20-30	17-23-31
	Throw 2-Way	3-5-12	4-8-17	6-10-20	8-12-23	10-14-26	11-17-29	13-20-31	17-24-35	19-26-37
	Throw 1-Way	4-7-16	6-10-20	8-12-23	10-14-24	12-18-26	13-20-29	17-23-31	20-24-35	22-26-37
	Noise Criteria	19	27	33	38	42	46	52	57	61
6" x 6"	Total Pressure	.014	.023	.037	.053	.071	.092	.145	.207	.283
	Flow Rate, CFM	75	100	125	150	175	200	250	300	350
	Throw 4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
	Throw 3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
	Throw 2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
	Throw 1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria	—	13	19	24	28	32	38	43	47
8" x 8"	Total Pressure	.019	.031	.050	.071	.096	.124	.195	.279	.381
	Flow Rate, CFM	135	180	220	265	310	355	445	535	625
	Throw 4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
	Throw 3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
	Throw 2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
	Throw 1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria	11	19	25	30	34	38	44	49	53
10" x 10"	Total Pressure	.021	.035	.057	.082	.110	.142	.223	.318	.435
	Flow Rate, CFM	210	280	350	415	485	555	695	835	975
	Throw 4-Way	2-4-8	3-5-11	5-7-13	5-8-15	6-9-16	7-11-17	9-13-19	11-15-20	13-16-22
	Throw 3-Way	2-4-9	3-6-12	5-7-15	6-9-17	7-10-19	8-12-20	10-15-22	12-17-22	14-19-26
	Throw 2-Way	2-4-10	3-7-14	5-8-17	7-10-19	8-12-22	9-14-24	11-17-26	14-20-29	16-22-31
	Throw 1-Way	3-6-13	5-8-17	7-10-19	8-12-20	10-15-22	11-17-24	14-19-26	17-20-29	18-22-31
	Noise Criteria	13	21	27	32	36	40	46	51	55

For performance notes, see page D211.

PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	VP		.006	.010	.016	.023	.031	.040	.063	.090	.123
6" Dia.	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		60	80	100	120	140	160	195	235	275
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
8" Dia.	Total Pressure		.014	.024	.038	.055	.075	.096	.151	.216	.295
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	16	22	27	31	35	41	46	50
10" Dia.	Total Pressure		.016	.027	.043	.062	.084	.109	.171	.244	.333
	Flow Rate, CFM		165	220	270	325	380	435	545	655	760
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
		1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria		11	19	25	30	34	38	44	49	53
12" Dia.	Total Pressure		.020	.033	.053	.076	.103	.132	.208	.298	.407
	Flow Rate, CFM		235	315	390	470	550	630	785	945	1100
	Throw	4-Way	2-4-8	3-5-12	5-7-14	5-8-16	6-9-17	7-12-18	9-14-20	12-16-21	14-17-23
		3-Way	2-4-10	3-6-13	5-7-16	6-9-18	7-11-20	8-13-21	11-16-23	13-18-27	15-20-28
		2-Way	2-4-11	3-7-15	5-8-18	7-11-20	8-13-23	9-15-25	12-18-28	15-21-31	17-23-33
		1-Way	3-6-14	5-8-18	7-11-20	8-13-21	11-16-23	12-18-25	15-20-28	18-21-31	19-23-33
	Noise Criteria		14	22	28	33	37	41	47	52	56
14" Dia.	Total Pressure		.023	.038	.061	.088	.119	.153	.241	.345	.47
	Flow Rate, CFM		320	425	530	635	740	850	1060	1270	1480
	Throw	4-Way	2-5-10	4-6-13	6-8-16	6-10-18	7-11-19	8-13-20	11-16-23	13-18-24	16-19-26
		3-Way	2-5-11	4-7-14	6-8-18	7-11-20	8-12-23	10-14-24	12-18-26	14-20-30	17-23-31
		2-Way	3-5-12	4-8-17	6-10-20	8-12-23	10-14-26	11-17-29	13-20-31	17-24-35	19-26-37
		1-Way	4-8-16	6-10-20	8-12-23	10-14-24	12-18-26	13-20-29	17-23-31	20-24-35	22-26-37
	Noise Criteria		16	24	30	35	39	43	49	54	58
16" Dia.	Total Pressure		.029	.048	.076	.110	.148	.191	.300	.430	.587
	Flow Rate, CFM		420	560	700	840	980	1120	1400	1680	1960
	Throw	4-Way	2-5-12	5-8-15	6-9-19	8-12-20	9-13-21	11-15-24	13-19-26	15-20-28	18-22-31
		3-Way	3-5-12	5-8-17	6-11-20	8-12-25	9-14-26	11-17-28	14-20-32	17-25-34	19-26-38
		2-Way	4-5-14	5-9-19	6-12-24	9-14-28	11-17-31	13-19-33	15-24-37	19-28-40	21-31-44
		1-Way	5-8-18	8-12-24	9-14-26	12-18-28	13-20-31	15-24-33	19-26-37	24-28-40	25-31-44
	Noise Criteria		19	27	33	38	42	46	52	57	61

For performance notes, see page D211.

PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
6" x 6"	Total Pressure		.014	.023	.037	.053	.071	.092	.145	.207	.283
	Flow Rate, CFM		75	100	125	150	175	200	250	300	350
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	13	19	24	28	32	38	43	47
8" x 8"	Total Pressure		.016	.027	.043	.062	.084	.109	.171	.244	.333
	Flow Rate, CFM		135	180	220	265	310	355	445	535	625
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
		1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria		11	19	25	30	34	38	44	49	53
10" x 10"	Total Pressure		.020	.033	.053	.076	.103	.132	.208	.298	.407
	Flow Rate, CFM		235	315	390	470	550	630	785	945	1100
	Throw	4-Way	2-4-8	3-5-11	5-7-13	5-8-15	6-9-16	7-11-17	9-13-19	11-15-20	13-16-22
		3-Way	2-4-9	3-6-12	5-7-15	6-9-17	7-10-19	8-12-20	10-15-22	12-17-22	14-19-26
		2-Way	2-4-10	3-7-14	5-8-17	7-10-19	8-12-22	9-14-24	11-17-26	14-20-29	16-22-31
		1-Way	3-6-13	5-8-17	7-10-19	8-12-20	10-15-22	11-17-24	14-19-26	17-20-29	18-22-31
	Noise Criteria		14	22	28	33	37	41	47	52	56
12" x 12"	Total Pressure		.021	.037	.058	.083	.115	.148	.230	.333	.450
	Flow Rate, CFM		300	400	500	600	700	800	1000	1200	1400
	Throw	4-Way	2-4-10	4-7-13	5-8-16	7-10-17	8-11-18	9-13-20	11-16-22	13-17-24	15-19-26
		3-Way	2-4-10	4-7-14	5-9-17	7-10-21	8-12-22	9-14-24	12-17-27	14-21-29	16-22-32
		2-Way	2-4-12	4-8-16	5-10-20	8-12-24	9-14-26	11-16-28	13-20-31	16-24-34	18-26-37
		1-Way	4-7-15	7-10-20	8-12-22	10-15-24	11-17-26	13-20-28	16-22-31	20-24-34	21-26-37
	Noise Criteria		16	24	30	35	39	43	49	54	58

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

Listed throws for the 18" x 6" neck/24" x 12" module are for the long side of the diffuser. Throws for the narrow side are approximately x 0.6 listed values.

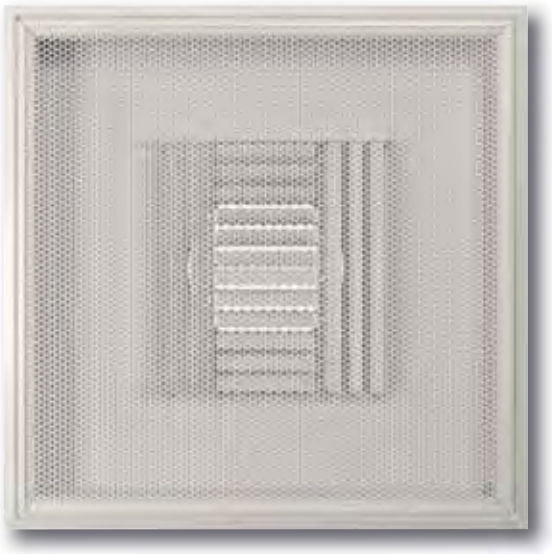
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- PREMIUM ARCHITECTURAL QUALITY
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)
- ROUND OR SQUARE NECK



Model 4330CB

Steel Face Model:

4330CB Flush Face

Aluminum Face Model:

4330CBA Flush Face

Aluminum Model:

4330CBAA Flush Face

Model Series 4330CB Curved Blade Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model 4330CB Diffuser features an extruded aluminum frame with hairline mitered corners that encapsulates the perforated face providing a narrow, visible border within the T-Bar module. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. The 4330CB is supplied with a 4-way adjustable discharge pattern as standard but is also available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.
- Dropping the perforated face gives access to the optional damper.
- Return models (4330R Series) are available with the same face and frame construction as the supply models to match their appearance.

Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
		Round Neck		Square Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 381 x 381
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457
48 x 24	1200 x 600				

CONSTRUCTION MATERIAL:

Model 4330CB has a corrosion-resistant steel perforated face and backpan. Model 4330CBA has an aluminum perforated face and corrosion-resistant steel backpan. Model 4330CBAA has an aluminum perforated face and backpan. All models have an aluminum border and frame.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

Square Neck:

OBD Opposed Blade Damper (Steel)

OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

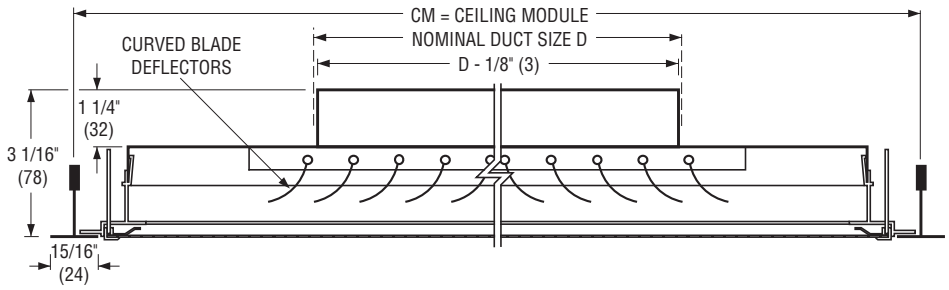
EQT Earthquake Tabs

For additional options and accessories; see page D255.

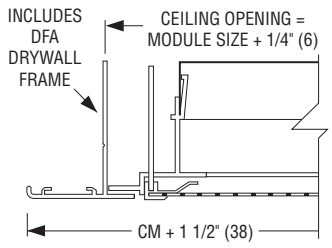
DIMENSIONAL DATA AND FRAME TYPES:

Models 4330CB, 4330CBA, 4330CBAA • Supply • Flush Face

Type L Lay-in T-Bar



Type S Surface Mount



Model Series 4330CB • Adjusting Pattern Controllers

Removing Perforated Face

The **4330 Series** is supplied with a removable face plate that is retained in place with quick-release spring latches, located on the edge of the perforated face border.

1. Carefully insert a small screwdriver or similar object through a perforated hole in the edge of the face plate and pull the diffuser face down slightly. Grasp the face plate by hand and pull down to the extent of the spring latches on all sides.
2. The face plate will now hang by the extended spring latches. Compress the spring latches by hand and remove from the backpan.
3. When the latches are removed from three sides, the face will hinge down from the remaining latches for access to the pattern deflectors. The face can be completely removed by depressing the remaining latches.
4. To close; lift perforated face, depress the spring latches and snap in place.

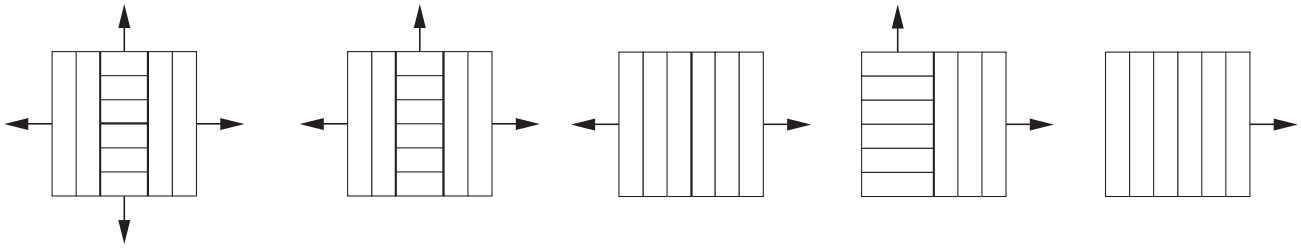
The pattern controller in the neck of the diffuser features individually adjustable deflector blades which may be used to vary the discharge pattern from full horizontal to vertical. Each blade is friction pivoted using a tension wire which securely holds its position after adjustment.

Round or Square Neck • 4-way Pattern

Pattern Controller Options

Standard Model Configuration

Optional Model Configurations



B4, 4-way | **B3, 3-way** | **B2, 2-way opposite** | **C2, 2-way corner** | **B1, 1-way**

The **4330CB Series** is supplied with this style of pattern controller unless specified otherwise.

PERFORMANCE DATA:

Models 4330CB, 4330CBA, 4330CBAA • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.030	.052	.082	.118	.162	.211	.267
6" Dia.	Flow Rate, CFM		60	80	95	115	135	155	175
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23
	Noise Criteria		16	22	27	32	37	41	44
8" Dia.	Flow Rate, CFM		105	140	175	210	245	280	315
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
	Noise Criteria		17	23	29	35	39	43	46
6 x 6	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
	Noise Criteria		16	22	27	32	36	40	43
8 x 8	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
	Noise Criteria		17	23	30	36	40	44	47

Models 4330CB, 4330CBA, 4330CBAA • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.030	.052	.082	.118	.162	.211	.267
6" Dia.	Flow Rate, CFM		60	80	95	115	135	155	175
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23
	Noise Criteria		16	22	27	32	37	41	44
8" Dia.	Flow Rate, CFM		105	140	175	210	245	280	315
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
	Noise Criteria		17	23	29	35	39	43	46
6 x 6	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
	Noise Criteria		16	22	27	32	36	40	43
8 x 8	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
	Noise Criteria		17	23	30	36	40	44	47

For performance notes, see page D216.

PERFORMANCE DATA:

Models 4330CB, 4330CBA, 4330CBAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.030	.052	.082	.118	.162	.211	.267
6" Dia.	Flow Rate, CFM		60	80	95	115	135	155	175
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15
		1-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18
	Noise Criteria		—	19	25	30	34	38	41
8" Dia.	Flow Rate, CFM		105	140	175	210	245	280	315
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
	Noise Criteria		14	22	28	33	37	41	44
10" Dia.	Flow Rate, CFM		165	215	270	325	380	435	490
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27
		1-Way	4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31
	Noise Criteria		16	24	30	35	39	43	46
12" Dia.	Flow Rate, CFM		235	315	390	470	550	625	705
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		1-Way	5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37
	Noise Criteria		18	26	32	37	41	45	48
14" Dia.	Flow Rate, CFM		320	425	535	640	750	855	960
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37
		1-Way	6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43
	Noise Criteria		21	29	35	39	44	48	51
15" Dia.	Flow Rate, CFM		370	490	615	740	860	985	1100
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38
		1-Way	6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43
	Noise Criteria		22	30	36	40	45	49	52
16" Dia.	Flow Rate, CFM		420	560	700	835	975	1115	1255
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42
		1-Way	7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50
	Noise Criteria		23	31	37	41	46	50	53
18" Dia.	Flow Rate, CFM		530	705	885	1060	1235	1415	1590
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
	Noise Criteria		25	33	39	43	48	52	55

For performance notes, see page D216.

PERFORMANCE DATA:

Models 4330CB, 4330CBA, 4330CBAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.028	.050	.079	.113	.155	.202	.256
6 x 6	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
	Noise Criteria		—	20	26	31	35	39	42
8 x 8	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
	Noise Criteria		15	23	29	34	38	42	45
10 x 10	Flow Rate, CFM		210	275	345	415	485	555	625
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30
		1-Way	5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35
	Noise Criteria		17	25	31	36	40	44	47
12 x 12	Flow Rate, CFM		300	400	500	600	700	800	900
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36
		1-Way	6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44
	Noise Criteria		19	25	33	38	42	46	49
14 x 14	Flow Rate, CFM		410	545	680	815	955	1090	1360
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-32
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54
	Noise Criteria		22	30	36	40	45	49	52
15 x 15	Flow Rate, CFM		470	625	780	935	1095	1250	1405
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45
		1-Way	8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53
	Noise Criteria		23	31	37	41	46	50	53
16 x 16	Flow Rate, CFM		530	710	890	1065	1245	1420	1600
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
	Noise Criteria		24	32	38	42	47	51	54
18 x 18	Flow Rate, CFM		675	900	1125	1350	1575	1800	2025
	Throw	4-Way	5-7-15	6-10-21	8-12-25	10-15-27	12-18-30	13-21-32	15-24-33
		3-Way	5-8-17	7-11-24	9-14-29	11-17-32	13-22-34	15-24-36	17-27-39
		2-Way	8-12-26	11-16-34	13-21-40	16-26-44	20-30-47	23-34-50	26-38-54
		1-Way	9-14-29	12-20-39	16-25-47	20-29-52	23-34-56	26-39-60	29-44-64
	Noise Criteria		26	34	40	44	49	53	56

Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 20.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

PERFORATED RETURN AIR DIFFUSERS

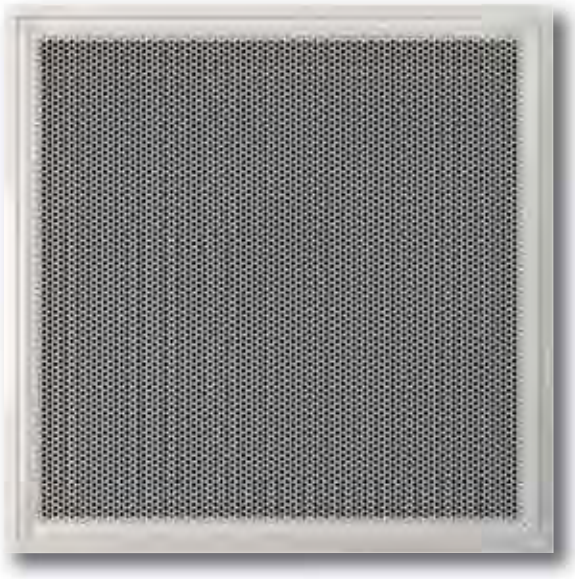
- RETURN
- MATCH AND COMPLEMENT SUPPLY MODELS
- PREMIUM ARCHITECTURAL QUALITY

Steel Model:

4330R Flush Face

Aluminum Face Model:

4330RA Flush Face



Model 4330R

Model Series 4330R Series Perforated Face return air models are designed to match supply air models 4330 and 4330CB in appearance and construction detail, except that the air pattern controllers are not required and are omitted.

The 4330R Series is offered in two versions. One for ducted return applications which features the same backpan as the supply air models with a neck for connection to flexible or rigid round duct or square duct. The other version features a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

CONSTRUCTION MATERIAL:

Model 4330R has a corrosion-resistant steel perforated face and backpan. Model 4330RA has an aluminum perforated face and corrosion-resistant steel backpan. Both models have an aluminum border and frame.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

Square or Rectangular Neck:

OBD Opposed Blade Damper (Steel)

OTHER OPTIONS & ACCESSORIES:

EQT Earthquake Tabs

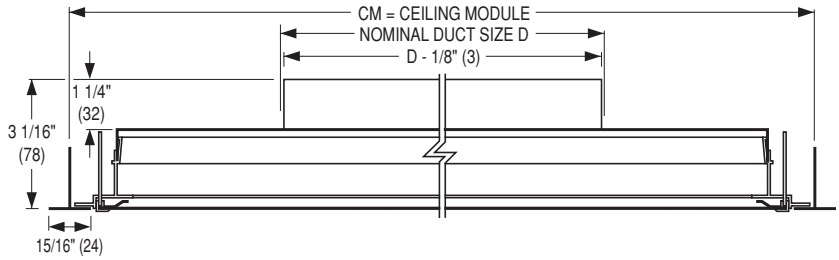
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

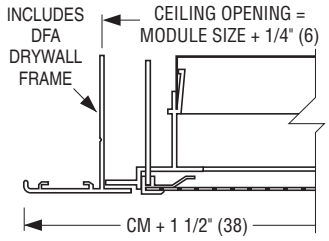
Models 4330R, 4330RA • Return • Flush Face • Round or Square Neck

All round ducts and square ducts when duct size is less than CM - 2" (51).

Type L Lay-in T-Bar



Type S Surface Mount



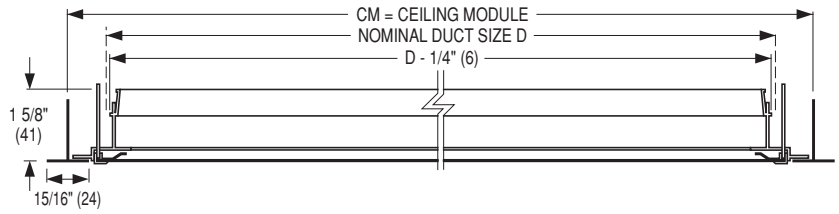
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square or Rectangular Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	5, 6, 7, 8, 10, 12	127, 152, 178, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	5, 6, 7, 8, 10, 12, 14	127, 152, 178, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406
24 x 24	600 x 600	5, 6, 7, 8, 10, 12, 14, 15, 16	127, 152, 178, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20, 22 x 22	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457, 508 x 508, 559 x 559
48 x 24	1200 x 600				

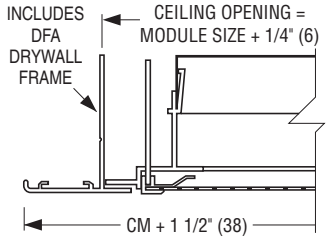
Models 4330R, 4330RA • Return • Flush Face • Square Neck • Full Size

When duct size = CM - 2" (51).

Type L Lay-in T-Bar



Type S Surface Mount



Imperial Module & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square or Rectangular Neck	
		Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
16 x 16	400 x 400	14 x 14	350 x 350
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

PERFORMANCE DATA:

Models 4330R, 4330RA • Flush Face • Return Model

Ceiling Module	Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400
		Negative Static Pressure	.024	.042	.067	.096	.13	.17	.266	.383	.522
		Velocity Pressure	.006	.01	.016	.023	.031	.04	.063	.09	.123
12 x 12	10 x 10	Airflow, CFM	208	277	347	416	485	555	694	832	971
		Noise Criteria	—	15	22	28	33	37	44	51	57
20 x 20	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
		Noise Criteria	—	17	24	30	35	39	46	53	58
24 x 12	22 x 10	Airflow, CFM	459	612	765	918	1071	1224	1530	1836	2142
		Noise Criteria	—	17	23	29	34	39	46	53	58
24 x 24	6" Dia.	Airflow, CFM	59	78	98	118	137	157	196	235	275
		Noise Criteria	—	—	—	10	15	19	26	33	38
	6 x 6	Airflow, CFM	75	100	125	150	175	200	250	300	350
		Noise Criteria	—	—	—	12	17	21	28	35	40
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489
		Noise Criteria	—	—	—	14	19	23	30	37	42
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622
		Noise Criteria	—	—	—	15	20	24	31	38	43
	10" Dia.	Airflow, CFM	164	218	273	327	382	436	545	654	764
		Noise Criteria	—	—	10	16	21	25	32	39	44
	10 x 10	Airflow, CFM	208	278	347	417	486	556	694	833	972
		Noise Criteria	—	—	11	17	22	26	33	40	45
	12" Dia.	Airflow, CFM	236	314	393	471	550	628	785	942	1100
		Noise Criteria	—	—	13	19	24	28	35	42	47
	12 x 12	Airflow, CFM	300	400	500	600	700	800	900	1200	1400
		Noise Criteria	—	—	14	20	25	29	36	43	48
	14" Dia.	Airflow, CFM	321	428	535	641	748	855	1069	1283	1497
		Noise Criteria	—	—	15	21	26	30	37	44	49
	14 x 14	Airflow, CFM	408	544	681	817	953	1089	1361	1633	1906
		Noise Criteria	—	10	17	23	28	32	39	46	51
	15 x 15	Airflow, CFM	469	625	781	938	1094	1250	1563	1875	2188
		Noise Criteria	—	12	19	25	30	34	41	48	53
	16" Dia.	Airflow, CFM	419	559	698	838	977	1117	1396	1676	1955
		Noise Criteria	—	10	17	23	28	32	39	46	51
	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
		Noise Criteria	—	16	23	29	34	38	45	52	57
	22 x 22	Airflow, CFM	1007	1344	1679	2015	2352	2688	3359	4031	4704
		Noise Criteria	—	18	25	31	36	40	47	54	59
48 x 24	46 x 22	Airflow, CFM	2108	2811	3514	4217	4919	5622	7028	8433	9839
		Noise Criteria	11	20	27	34	38	43	50	57	62

Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 20.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

PERFORATED PREMIUM CEILING DIFFUSERS – ARCHITECTURAL QUALITY – MODEL SERIES 4330 AND 4330CB

EXAMPLE: 4330 - RND - 08 - 24 x 24 - L - AW - –

1. **Models**

Supply:

Face Mounted Deflectors

4330	Steel Face
4330A	Aluminum Face
4330AA	Aluminum Face and Backpan

Curved Blade Pattern Controllers

4330CB	Steel Face
4330CBA	Aluminum Face
4330CBAA	Aluminum Face and Backpan

Return:

4330R	Steel Face
4330RA	Aluminum Face

2. **Neck Type**

RND	Round
SQR	Square/Rectangular

3. **Neck Size** (inches)

Round:

05, 06, 07, 08, 10, 12, 14, 15, 16, 18 (CB and R only)

Square or Rectangular:

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 6
18 x 18 (CB and R only)
20 x 20, 22 x 22, 46 x 22 (R only)

4. **Ceiling Module Size**

Imperial (inches)

12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24

Metric (mm)

300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600

5. **Frame Type**

L	Lay-in T-Bar (default)
S	Surface Mount

6. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
BA	AW Face/Black Backpan
SP	Special Custom Color

7. **Blow Pattern**

(CB only)

B4	4-way (default)
B1	1-way
B2	2-way opposite
B3	3-way
C2	2-way corner

OPTIONS & ACCESSORIES:

8. **Damper**

– None (default)

Round Neck:

4250 Radial Sliding, 6" - 14"
4275 Radial Opposed Blade, 5" - 24"
4675 Butterfly, 6" - 14"

Square Neck:

OBD	Opposed Blade, Steel
OBDA	Opposed Blade, Aluminum (AA models only)

9. **Earthquake Tabs**

–	None (default)
EQT	Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices

(order separately)

Round Neck:

EGR	Equalizing Grid
DEGR	Damper/Equalizing Grid

Square/Rectangular Neck:

EGL	Equalizing Grid (long)
EGS	Equalizing Grid (short)
DEGL	Damper/Equalizing Grid (long)
DEGS	Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4330** (corrosion-resistant steel face/backpan) or **4330A** (aluminum face/steel backpan) or **4330AA** (aluminum face and backpan) **Premium Architectural Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 4330 shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. Model 4330A shall have an aluminum perforated face and corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame. Model 4330AA shall have an aluminum perforated face and backpan with a round or square neck as specified, and an extruded aluminum border/frame. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field rotated to provide throws in 1, 2, 3 or 4-way patterns. The face shall be removable and include spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4330CB** (corrosion-resistant steel face/backpan) or **4330CBA** (aluminum face/steel backpan) or **4330CBAA** (aluminum face and backpan) **Premium Architectural Perforated Curved Blade Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 4330CB shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. Model 4330CBA shall have an aluminum perforated face and corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame. Model 4330CBAA shall have an aluminum perforated face and backpan with a round or square neck as specified, and an extruded aluminum border/frame. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2, or 1-way (select one) pattern to be supplied. The face shall be removable and include spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4330R** (corrosion-resistant steel face) or **4330RA** (aluminum face) **Premium Architectural Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable and include spring latches allowing easy access for cleaning. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

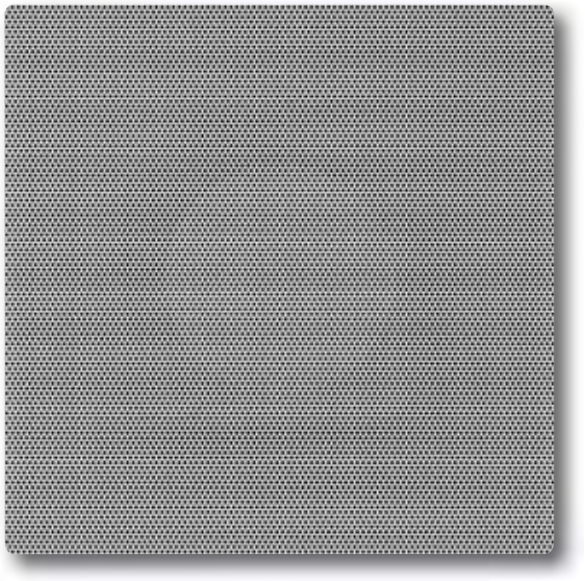
ALL ALUMINUM PERFORATED CEILING DIFFUSERS

- 100 % ALUMINUM CONSTRUCTION
- SUITABLE FOR MRI ROOMS
- SUPPLY AND RETURN

Models:

4310A Supply

4310AR Return



Model 4310A

Model 4310A Perforated Supply Diffusers have an all aluminum constructed design that combines a smooth unobtrusive architectural appearance with the superior performance characteristics required by engineers. This diffuser is suitable for MRI rooms.

Model 4310A features a smoothly contoured die-formed backpan and wrap-around fixed perforated face. The round disc pattern deflector provides a true 360° radial horizontal air pattern. A tight air pattern protects the ceiling against smudging, providing excellent performance in VAV systems.

Model 4310AR Perforated Return Diffuser is designed to match the supply model but omits the pattern deflector. It is suitable for ducted return applications.

STANDARD FEATURES:

- Specially designed for MRI Rooms.
- 24" x 24" (600 x 600) module design for suspended ceiling systems.
- Integral round neck is standard.
- Inlet collar has approximately 1 1/4" (32) depth for easy duct connection.
- Supply models incorporate an aluminum fixed round disc pattern deflector that provides a tight air pattern.
- Aluminum perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4310AR Series) have the same face and frame construction as the supply models without the deflector.

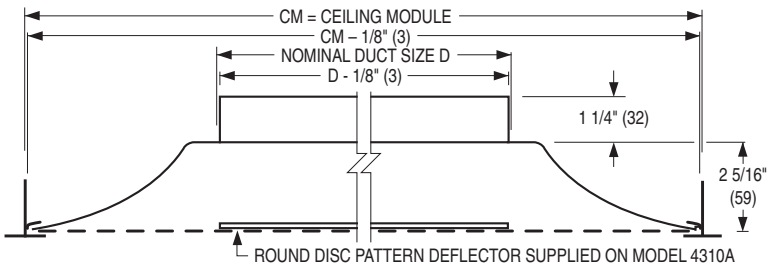
CONSTRUCTION MATERIAL:

100% all aluminum construction.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

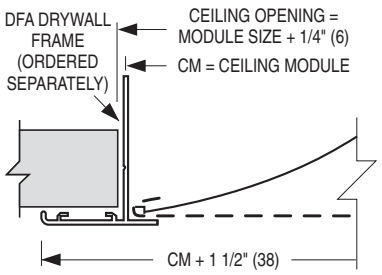
Type L Lay-in T-Bar



Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
		Round Neck	
Imperial Modules	Metric Modules	Imperial Modules (inches)	Metric Modules (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	152, 203, 254, 305, 356, 381

Type L Surface Mount w/DFA



PERFORMANCE DATA:

Model 4310A • 24 x 24 (600 x 600) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.005	.008	.013	.016	.025	.032	.041	.050	.072	.098
	Airflow, CFM	60	80	100	120	140	160	180	195	235	275
	Throw	1-1-2	1-1-2	1-1-3	1-2-3	1-2-4	1-2-4	2-3-5	2-3-6	2-3-7	3-4-8
	Noise Criteria	—	—	16	18	20	22	24	26	31	37
8" Dia.	Total Pressure	.009	.015	.024	.034	.046	.061	.077	.095	.136	.185
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	1-1-3	1-2-3	1-2-4	2-3-5	2-3-6	2-3-7	3-4-8	3-4-9	3-5-10	4-6-12
	Noise Criteria	—	—	18	21	24	27	31	34	39	46
10" Dia.	Total Pressure	.013	.023	.037	.053	.072	.094	.119	.147	.211	.288
	Airflow, CFM	165	220	270	325	380	435	490	585	655	765
	Throw	1-2-4	2-2-5	2-3-6	2-4-7	3-4-8	3-5-10	4-5-11	4-6-12	5-7-14	6-8-17
	Noise Criteria	—	—	19	22	25	28	33	36	41	48
12" Dia.	Total Pressure	.016	.031	.049	.070	.095	.125	.158	.195	.260	.382
	Airflow, CFM	235	315	390	470	550	630	705	785	940	1100
	Throw	2-2-5	2-3-6	3-4-8	3-5-9	4-5-11	4-6-12	5-7-14	6-8-15	6-9-18	7-11-21
	Noise Criteria	—	16	21	25	29	32	35	38	44	50
14" Dia.	Total Pressure	.021	.038	.059	.085	.115	.151	.191	.235	.339	.461
	Airflow, CFM	320	430	535	640	750	855	960	1070	1285	1495
	Throw	2-3-5	2-4-7	3-5-9	4-5-11	4-6-13	5-7-14	5-8-16	6-9-18	7-11-22	8-13-25
	Noise Criteria	—	16	22	27	32	35	39	43	49	53
15" Dia.	Total Pressure	.022	.040	.062	.090	.122	.160	.202	.250	.359	.489
	Airflow, CFM	370	490	615	735	860	980	1105	1230	1475	1720
	Throw	2-3-5	3-4-7	3-5-10	4-6-11	5-7-13	5-8-15	6-9-17	7-10-19	8-12-23	9-14-27
	Noise Criteria	—	17	23	29	34	37	41	45	51	55

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO SPECIFY OR TO ORDER

PERFORATED ALL ALUMINUM CEILING DIFFUSERS, MRI – MODEL SERIES 4310A

EXAMPLE: 4310A - 08 - 24 x 24 - L - AW

1. **Models**
   Supply:
   4310A
   Return:
   4310AR
2. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15
3. **Ceiling Module Size**
   Imperial (inches)
   24 x 24 (default)
   Metric (mm)
   600 x 600
4. **Frame Type**
   L Lay-in T-Bar (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

SUGGESTED SPECIFICATION:

Model 4310A
Furnish and install **Nailor Model 4310A All Aluminum Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a die-formed aluminum backpan with an integral round neck. An aluminum perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area, shall wrap around the backpan. A round stamped aluminum disc deflector shall be mounted on the perforated face. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Model 4310AR
Furnish and install **Nailor Model 4310AR All Aluminum Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a die-formed aluminum backpan with an integral round neck. An aluminum perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area, shall wrap around the backpan. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED RETURN AIR DIFFUSERS

- FIBERGLASS PLENUM
- PRE-SCORED PLENUM
- 4-WAY DISCHARGE PATTERN
- SUPPLY AND RETURN

Models:

4350 Supply

4350R Return

Model 4350

Models 4350 and 4350R Perforated Ceiling Diffusers feature a corrosion-resistant steel diffuser face with a one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value. The vapor barrier created by the fiberglass backpan makes an excellent choice for ducted return air systems and high humidity environments. Available in supply (Model 4350) or return (Model 4350R), the diffusers feature a smoothly contoured backpan, wrap-around fixed perforated face and four stamped pattern controllers mounted on the back of the perforated face, providing excellent performance in VAV systems. The pre-scored plenum identifies round duct sizes to be cut in the field (by others) and will accommodate spin-in or tab-lock inlet collars. The diffusers are available for use with Lay-in T-Bar or hard ceiling applications.

STANDARD FEATURES:

- Pre-scored plenum for 6", 8", 10", 12", 14" or 15" (152, 203, 254, 305, 356 or 381) round spin-in or tab-lock inlet collars (by others).
- Four stamped pattern controllers mounted on the back of the perforated face, providing 4-way discharge pattern.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Center access hole with plug for screwdriver adjustment.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel diffuser face with one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value.

FINISH OPTIONS:

BA - AW Appliance White face and Black interior.

OPTIONS & ACCESSORIES:

(order separately)

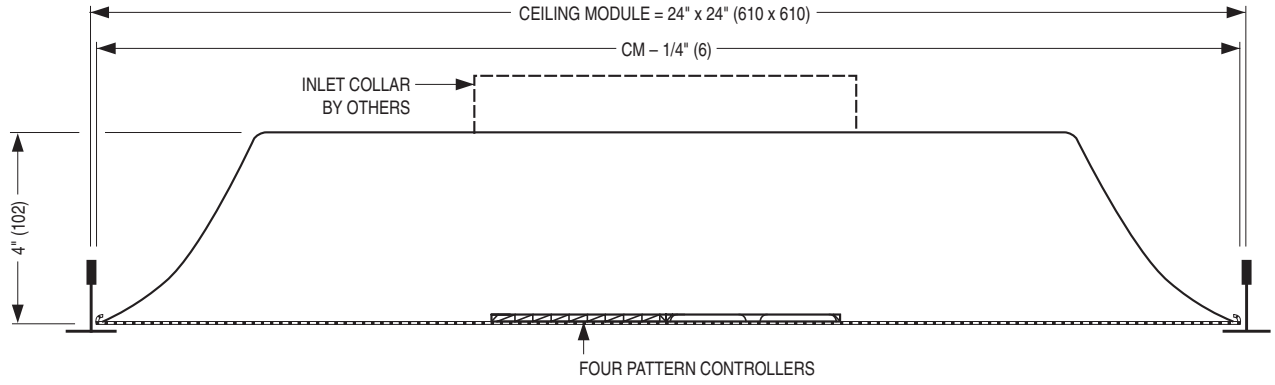
4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
EGR	Equalizing Grid
DEGR	Damper/Equalizing Grid

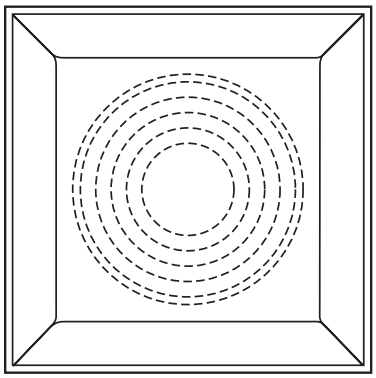
For additional options and accessories; see page D255.

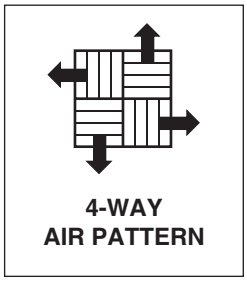
DIMENSIONAL DATA AND FRAME TYPES:

Model 4350 • Supply

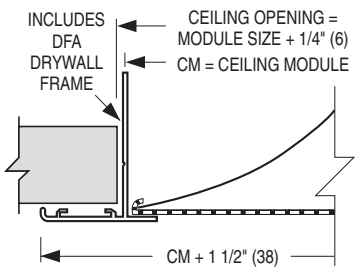
Type L Lay-in T-Bar





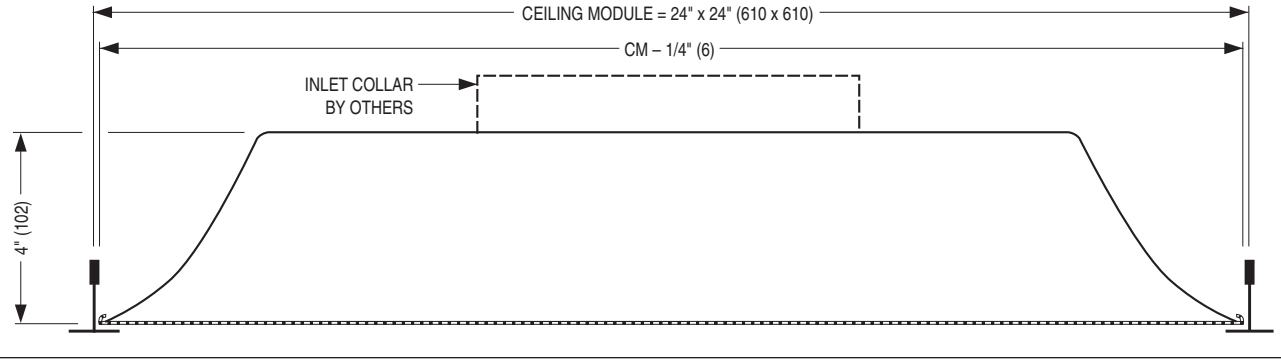


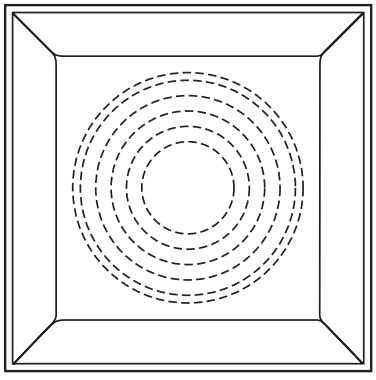
Type S Surface Mount



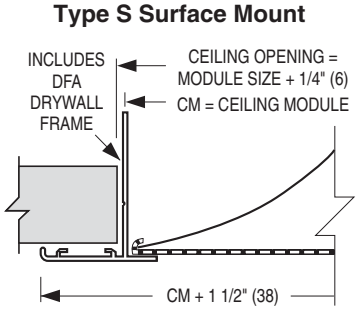
Model 4350R • Return

Type L Lay-in T-Bar





Type S Surface Mount



HOW TO SPECIFY OR TO ORDER

PERFORATED CEILING DIFFUSERS, FIBERGLASS PLENUM – MODEL SERIES 4350

EXAMPLE: 4350 - 24 x 24 - L - AW

1. **Models**
   Supply:
   4350
   Return:
   4350R
2. **Ceiling Module Size**
   Imperial (inches)
   24 x 24 (default)
   Metric (mm)
   600 x 600
3. **Frame Type**
   L Lay-in T-Bar (default)
4. **Finish**
   BA AW Face/Black Backpan (default)

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:
4250 Radial Sliding Damper, 6" - 14"
4275 Radial Opposed Blade Damper, 5" - 24"
4675 Butterfly Damper, 6" - 14"
EGR Equalizing Grid
DEGR Damper/Equalizing Grid

Notes:

1. Pre-scored plenum accommodates a 6" to 15" spin-in or tab-lock inlet collar (by others).

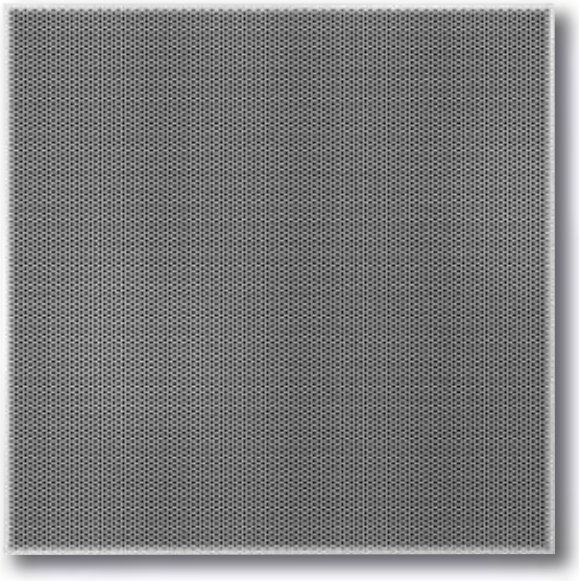
SUGGESTED SPECIFICATION:

Models 4350 and 4350R
Furnish and install **Nailor Model** (select one) **4350 (supply)** or **4350R (return) Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The wrap-around fixed perforated face of the diffuser shall be constructed from corrosion-resistant steel with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Four stamped pattern controllers shall be mounted on the back of the perforated face, to provide a 4-way discharge pattern. A center access hole with plug shall be included to allow for screwdriver adjustment of the optional damper. A one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value shall be included with all units. A pre-scored plenum with cutouts shall be provided with all units, to accommodate spin-in or tab-lock inlet collars (by others). The finish shall be BA - AW Appliance White face and Black interior.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED RETURN AIR DIFFUSERS

- MATCH AND COMPLEMENT SUPPLY MODELS
- SUITABLE FOR DUCTED RETURN APPLICATIONS



Model 4360

Steel Models:

4360 Flush Face

4365 Drop Face

Aluminum Face Models:

4360A Flush Face

4365A Drop Face

Aluminum Models:

4360AA Flush Face

4365AA Drop Face

Model Series 4360 Perforated Face return air models are designed to match supply air models 4320, 4320CB, 4320F, 4320MR and 4320M in appearance and construction detail, less the air pattern controllers which are not required.

Model Series 4360 is offered in two versions. One for ducted return applications which features the same backpan as the supply air models with a neck for connection to flexible or rigid round duct or square duct. The other version features a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

Model Series 4365 features a drop (extended) face panel that both matches in appearance the drop face supply models and complements tegular tile ceiling systems, allowing the perforated face panel to remain flush with the ceiling line.

STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

CONSTRUCTION MATERIAL:

Models 4360/4365 have a corrosion-resistant steel perforated face and backpan. Models 4360A/4365A have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4360AA/4365AA have an aluminum perforated face and backpan.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

MIB Molded Insulation Blanket, R-6.0.

Square Neck:

OBD Opposed Blade Damper (Steel)

OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) -R-4.2.

EXB External Foil-Back Insulation (loose) -R-4.2.

EQT Earthquake Tabs

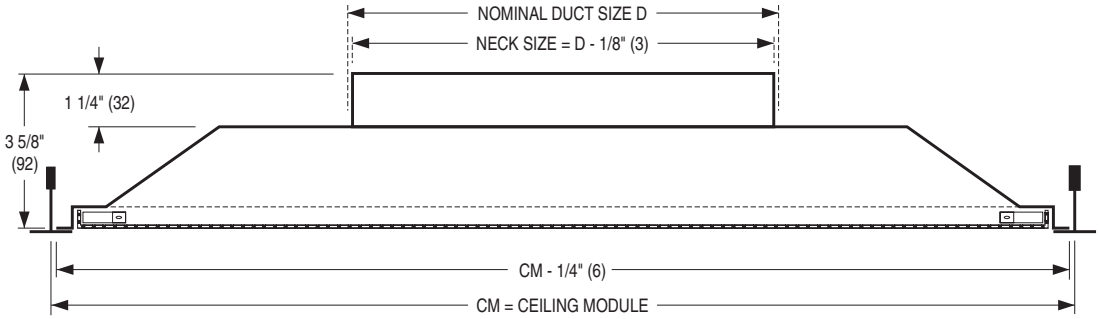
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

Models 4360, 4360A, 4360AA • Return • Flush Face • Round Neck

All round ducts and square ducts when duct size is less than CM – 2" (51).

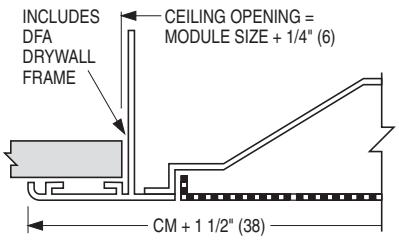
Type L Lay-in T-Bar



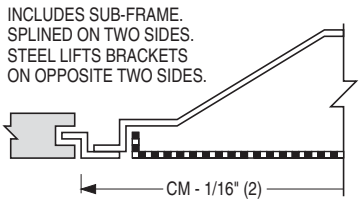
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Round Neck	
		Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305
24 x 12	600 x 300	6, 8	152, 203
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457
48 x 24	1200 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457

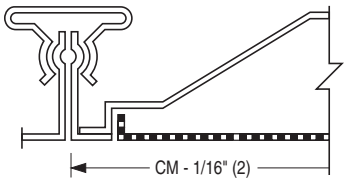
Type S Surface Mount



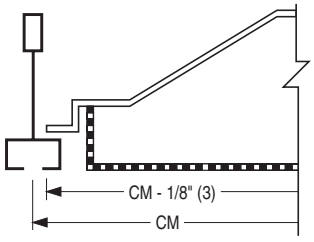
Type SP Spline



Type M Metal Pan (Snap-in)



Type F Fineline® T-Bar



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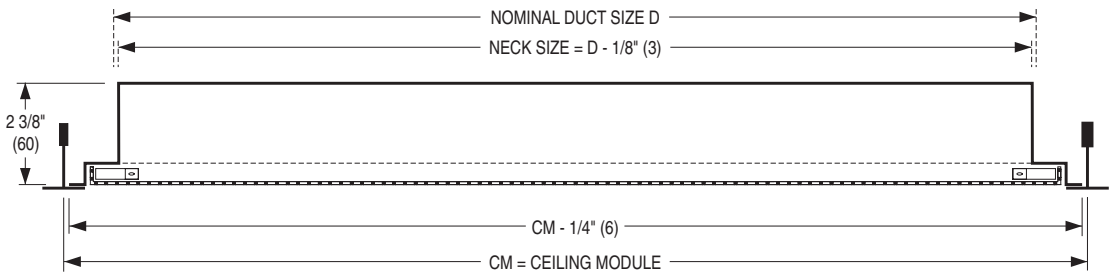
DIMENSIONAL DATA AND FRAME TYPES:

Models 4360, 4360A, 4360AA • Return • Flush Face • Square or Rectangular Neck

When duct size is = CM – 2" (51).

Type L Lay-in T-Bar



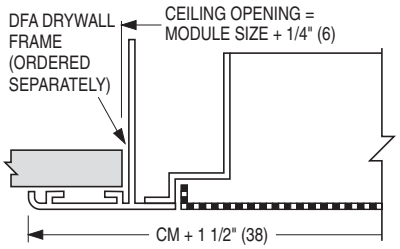
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
		Square/Rectangular Neck	
Imperial Modules	Metric Modules	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356
24 x 24	600 x 600	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457
48 x 24	1200 x 600		

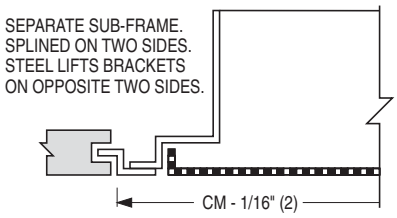
Imperial & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
		Square Neck	
Imperial Modules	Metric Modules	Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

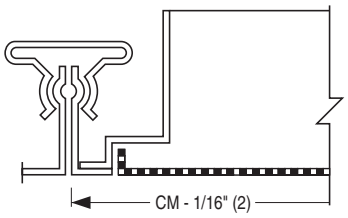
Type S Surface Mount



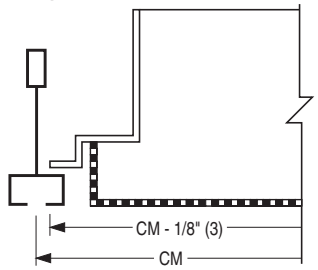
Type SP Spline



Type M Metal Pan (Snap-in)



Type F Fineline® T-Bar



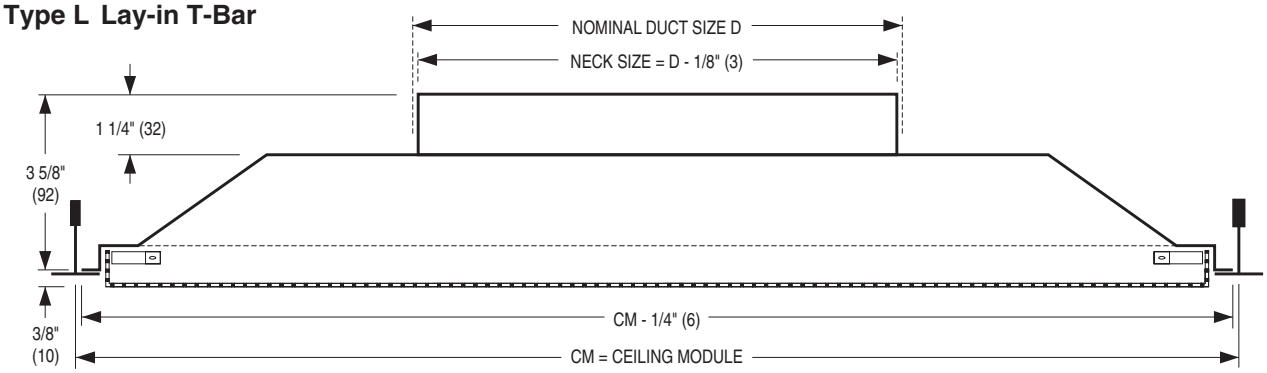
Fineline® is a registered trademark of USG Interiors Inc.

DIMENSIONAL DATA AND FRAME TYPES:

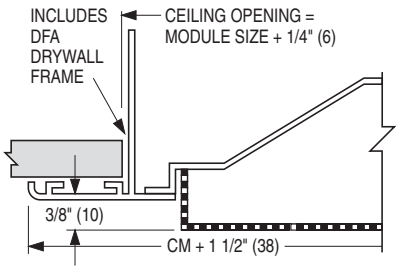
Models 4365, 4365A, 4365AA • Return • Drop Face • Round, Square or Rectangular Neck

All round ducts and square ducts when duct size is less than CM – 2" (51).

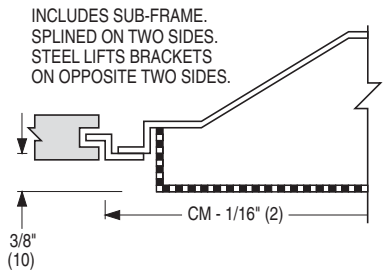
Type L Lay-in T-Bar



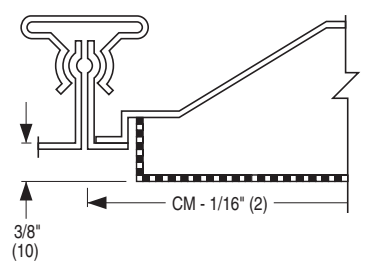
Type S Surface Mount



Type SP Spline



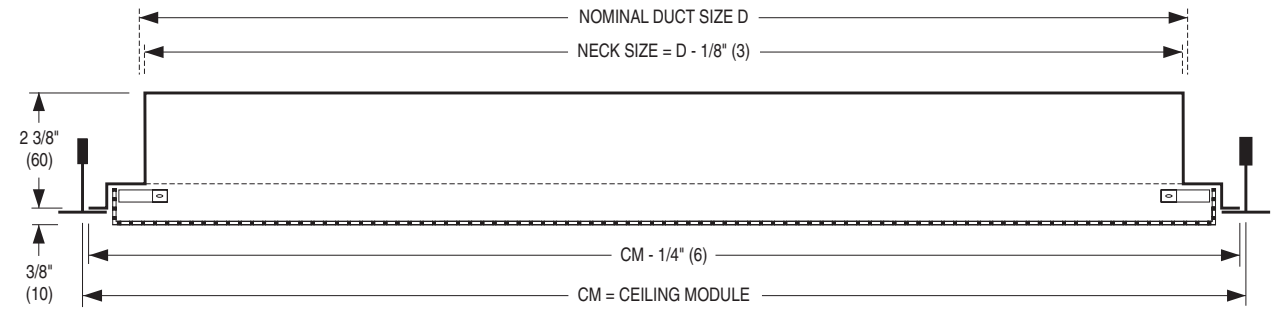
Type M Metal Pan (Snap-in)



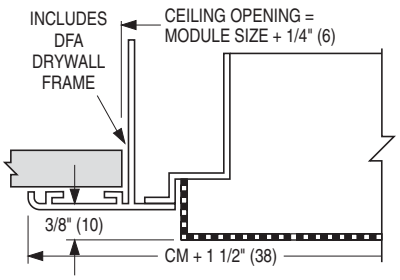
Models 4365, 4365A, 4365AA • Return • Drop Face

When duct size is = CM – 2" (51).

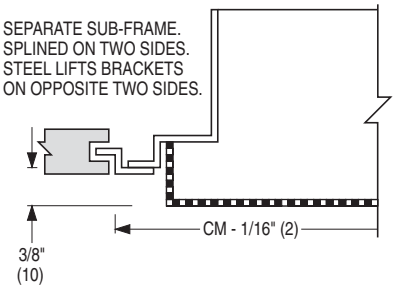
Type L Lay-in T-Bar



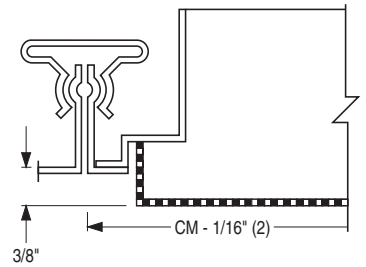
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)



PERFORMANCE DATA:

Models 4360, 4360A, 4360AA • Flush Face • Return Module
4365, 4365A, 4365AA • Drop Face • Return Module

Ceiling Module	Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400
		Negative Static Pressure	.024	.042	.067	.096	.130	.170	.266	.383	.522
		Velocity Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
12 x 12	6" Dia.	Airflow, CFM	59	78	98	118	137	157	196	236	275
		Noise Criteria	—	—	—	10	14	18	27	32	38
	8 x 8	Airflow, CFM	75	100	125	150	175	200	250	300	350
		Noise Criteria	—	—	—	12	17	21	30	35	41
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489
		Noise Criteria	—	—	10	16	21	25	32	39	44
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622
		Noise Criteria	—	—	11	17	22	26	33	40	45
	10 x 10	Airflow, CFM	208	278	347	416	486	556	694	833	972
		Noise Criteria	—	—	18	24	29	33	40	47	52
20 x 20	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
		Noise Criteria	—	17	24	30	35	39	46	53	58
24 x 12	6" Dia.	Airflow, CFM	75	100	125	150	175	200	250	300	350
		Noise Criteria	—	—	—	13	18	22	29	36	41
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489
		Noise Criteria	—	—	—	15	20	24	31	38	43
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622
		Noise Criteria	—	—	10	16	21	25	32	39	44
	18 x 6	Airflow, CFM	225	300	375	450	525	600	750	900	1050
		Noise Criteria	—	—	14	20	25	28	35	42	47
	22 x 10	Airflow, CFM	458	611	764	917	1069	1222	1528	1833	2139
		Noise Criteria	—	15	21	27	34	37	44	51	56
24 x 24	6" Dia.	Airflow, CFM	59	79	98	118	137	157	196	236	275
		Noise Criteria	—	—	—	10	15	19	26	33	38
	6 x 6	Airflow, CFM	75	100	125	150	175	200	250	300	350
		Noise Criteria	—	—	—	12	17	21	28	35	41
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489
		Noise Criteria	—	—	—	14	19	23	30	37	42
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622
		Noise Criteria	—	—	—	15	20	24	31	38	43
	10" Dia.	Airflow, CFM	164	218	273	327	382	436	545	655	764
		Noise Criteria	—	—	10	16	21	25	32	39	44
	10 x 10	Airflow, CFM	208	278	347	417	486	556	694	833	972
		Noise Criteria	—	—	11	17	22	26	33	40	45
	12" Dia.	Airflow, CFM	236	314	393	471	550	628	785	942	1100
		Noise Criteria	—	—	13	19	24	28	35	42	47
	12 x 12	Airflow, CFM	300	400	500	600	700	800	1000	1200	1400
		Noise Criteria	—	—	14	20	25	29	36	43	48
	14" Dia.	Airflow, CFM	321	428	535	641	748	855	1069	1283	1497
		Noise Criteria	—	—	15	21	26	30	37	44	49
	14 x 14	Airflow, CFM	408	544	681	817	953	1089	1361	1633	1906
		Noise Criteria	—	10	17	23	28	32	39	46	51
	15 x 15	Airflow, CFM	469	625	781	938	1094	1250	1563	1875	2188
		Noise Criteria	—	12	19	25	30	34	41	48	53
	16" Dia.	Airflow, CFM	419	559	698	838	977	1117	1396	1676	1955
		Noise Criteria	—	10	17	23	28	32	39	46	51
	18" Dia.	Airflow, CFM	530	707	884	1060	1237	1414	1767	2121	2474
		Noise Criteria	—	12	19	25	30	32	39	46	51
	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
		Noise Criteria	—	16	23	29	34	38	45	52	57
	22 x 22	Airflow, CFM	1008	1344	1681	2017	2353	2689	3361	4033	4706
		Noise Criteria	—	18	25	31	36	40	47	51	59
48 x 24	46 x 22	Airflow, CFM	2108	2811	3514	4217	4919	5622	7028	8433	9839
		Noise Criteria	11	20	27	34	38	43	50	57	62

Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 10.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

PERFORATED RETURN CEILING DIFFUSERS – MODEL SERIES 4360

EXAMPLE: 4360 - RND - 08 - 24 x 24 - L - AW - –

1. **Models**
   - 4360 Steel, Flush Face
   - 4365 Steel, Drop Face
   - 4360A Aluminum Face, Flush
   - 4365A Aluminum Face, Drop
   - 4360AA Aluminum Face and Backpan, Flush
   - 4365AA Aluminum Face and Backpan, Drop
2. **Neck Type**
   - RND Round
   - SQR Square/Rectangular
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16, 18
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 6, 18 x 18 22 x 10, 22 x 22, 46 x 22
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24
   Metric (mm)
   300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - L Lay-in T-Bar (default)
   - S Surface Mount
   - SP Spline
   - M Metal Pan (Snap-in)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color

OPTIONS & ACCESSORIES:

7. **Damper**
   - – None (default)

   Round Neck:
   4250 Radial Sliding, 6" - 14"
   4275 Radial Opposed Blade, 5" - 24"
   4675 Butterfly, 6" - 14"

   Square Neck:
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum (AA models only)
8. **External Insulation**
   - – None (default)
   - EX Foil-back (installed), R-4.2
   - EXB Foil-back (loose), R-4.2
   - MIB Molded Insulation Blanket, R-6.0
9. **Earthquake Tabs**
   - – None (default)
   - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Square/Rectangular Neck:
- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB is (Ceiling Module - 2"). Maximum size 24" x 24" (600 x 600). MIB available on 24" x 24" (600 x 600) round neck only.

HOW TO SPECIFY OR TO ORDER

SUGGESTED SPECIFICATION:

Models 4360, 4365 – Steel
Furnish and install **Nailor Model** (select one) **4360 Flush Face** or **4365 Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck. A steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4360A, 4365A – Aluminum Face
Furnish and install **Nailor Model** (select one) **4360A Flush Face** or **4365A Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Models 4360AA, 4365AA – Aluminum
Furnish and install **Nailor Model** (select one) **4360AA Flush Face** or **4365AA Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an aluminum backpan with a round or square neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED RETURN AIR PANELS

- SUITABLE FOR DUCTLESS (PLENUM) RETURN AIR APPLICATIONS

Steel Models:

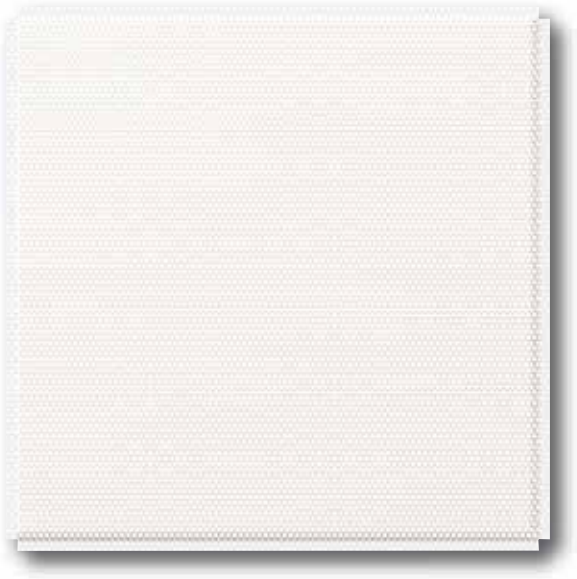
4302 Flush Face

4302-DF Drop Face

4302-F Fineline®

Aluminum Model:

4302A Flush Face



Model 4302-DF

Model Series 4302 Perforated Return Panels are for use as an economical ductless return or exhaust grille in exposed grid T-Bar ceiling systems. Once installed, the appearance matches that of the 4320/4325 (CB, F and M) Series Supply Diffusers.

STANDARD FEATURES:

- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Edges of panel are turned up for strength.

CONSTRUCTION MATERIAL:

Heavy gauge corrosion-resistant steel or aluminum.

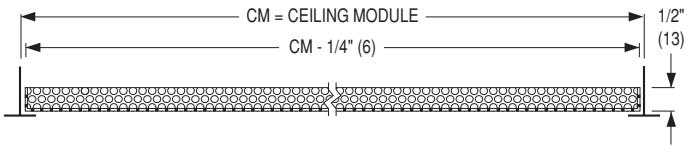
FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

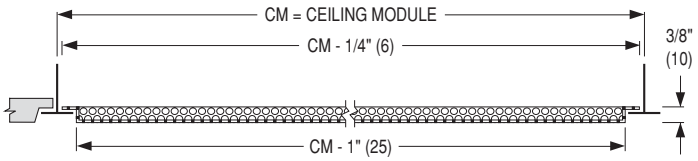
Available Ceiling Module Sizes

Ceiling Module CM	
Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300
16 x 16	400 x 400
20 x 20	500 x 500
24 x 12	600 x 300
24 x 24	600 x 600
48 x 24	1200 x 600

Model 4302 and 4302A Lay-in T-Bar



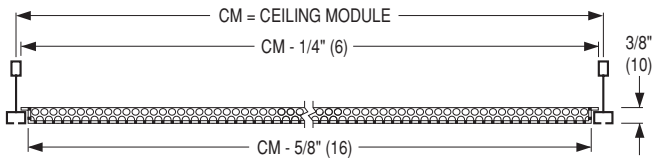
Model 4302-DF Drop Face Lay-in T-Bar



Available Ceiling Module Sizes

Ceiling Module CM	
Imperial Modules (inches)	Metric Modules (mm)
20 x 20	500 x 500
24 x 24	600 x 600

Model 4302-F Fineline® Type Ceilings



PERFORMANCE DATA:

Models 4302, 4302-DF, 4302-F, 4302A • Return Panel

Ceiling Module	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000
	Negative Static Pressure	.013	.029	.051	.080	.115	.157	.205	.259	.320
	Velocity Pressure	.002	.006	.010	.016	.023	.031	.040	.050	.063
12 x 12	Airflow, CFM	200	300	400	500	600	700	800	900	1000
	Noise Criteria	—	—	27	34	40	45	49	52	57
20 x 20	Airflow, CFM	556	833	1111	1389	1667	1944	2222	2500	2778
	Noise Criteria	—	—	24	30	37	42	46	49	54
24 x 12	Airflow, CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	—	17	27	32	39	44	48	52	56
24 x 24	Airflow, CFM	800	1200	1600	2000	2400	2800	3200	3600	4000
	Noise Criteria	—	16	24	31	37	41	45	48	53
48 x 24	Airflow, CFM	1600	2400	3200	4000	4800	5600	6400	7200	8000
	Noise Criteria	—	18	27	33	39	44	48	51	56

Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY OR TO ORDER

PERFORATED RETURN CEILING DIFFUSERS, PANELS, DUCTLESS – MODEL SERIES 4302

EXAMPLE: 4302 - 24 x 24 - L - AW

1. **Models**
   - 4302 Steel
   - 4302A Aluminum
   - 4302-DF Steel, Drop Face
   - 4302-F Steel, Fineline® Type
2. **Ceiling Module Size**

   Imperial (inches)

   12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24

   Metric (mm)

   300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
3. **Frame Type**
   - L Lay-in T-Bar (default)
   - F Fineline®
4. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - SP Special Custom Color

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

SUGGESTED SPECIFICATION:

Model 4302, 4302A – Flush Face

Furnish and install **Nailor Model** (select one) **4302** (corrosion-resistant steel) or **4302A** (aluminum) **Perforated Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The edge of the panel shall be turned up a 1/2" (13) for strength. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Model 4302-DF – Drop Face

Furnish and install **Nailor Model 4302-DF Perforated Drop Face Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The corrosion-resistant steel perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face of the panel shall extend below the ceiling line. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

Model 4302-F – Fineline®

Furnish and install **Nailor Model 4302-F Perforated Fineline® Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The corrosion-resistant steel perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The panel shall incorporate a corrosion-resistant steel frame to suit Fineline® type ceilings. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

EGGCRATE CEILING RETURN DIFFUSERS

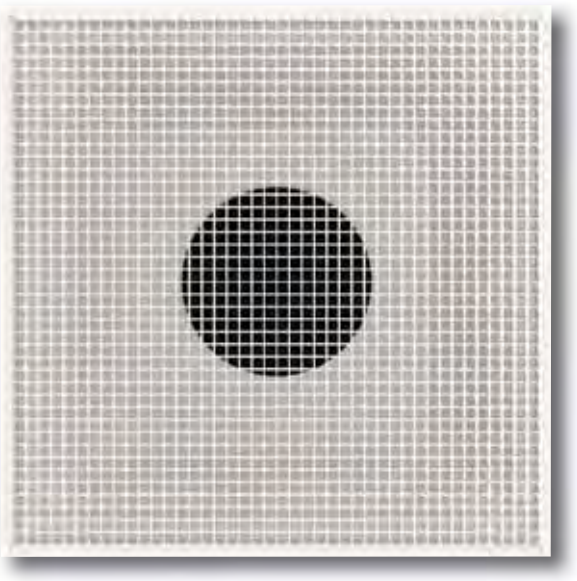
- HIGH CAPACITY
- SUITABLE FOR FLEXIBLE DUCT CONNECTIONS
- 1/2" x 1/2" x 1/2" (13 x 13 x 13) ALUMINUM GRID CORE

Steel Model:

4260 Steel Frame/Backpan

Aluminum Model:

4260AA Aluminum Frame



Model 4260

Model Series 4260 Eggcrate Return Ceiling Diffuser has a high free area for high volume capacity with low sound levels and pressure drops. It has an architecturally pleasing design that matches in appearance the grid louvers on parabolic light fixtures.

Model Series 4260 is offered in two versions. One for ducted return applications, for connection to flexible or rigid round duct or square duct. The other version has a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

STANDARD FEATURES:

- Full face design for ducted return air applications.
- 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum eggcrate.
- Removable core.
- Round or square necks available.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

CONSTRUCTION MATERIAL:

Model 4260 has a corrosion-resistant steel frame and backpan with an aluminum grid core. Model 4260AA has an aluminum frame, backpan and grid core.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

Round Neck:

4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).

4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).

4675 Butterfly Damper 6" – 14" (152 – 356).

MIB Molded Insulation Blanket, R-6.0.

Square Neck:

OBD Opposed Blade Damper (Steel)

OBDA Opposed Blade Damper (Aluminum) (-AA models only)

OTHER OPTIONS & ACCESSORIES:

EQT Earthquake Tabs

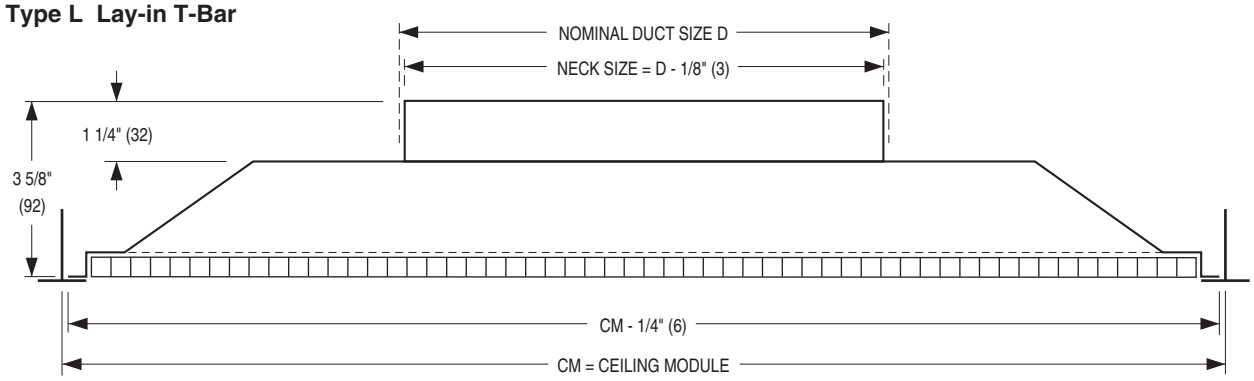
For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

Models 4260, 4260AA • Round or Square Neck

All round ducts and square ducts when duct size is less than CM - 2" (51).

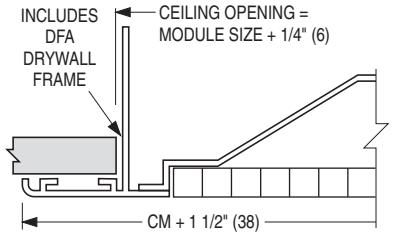
Type L Lay-in T-Bar



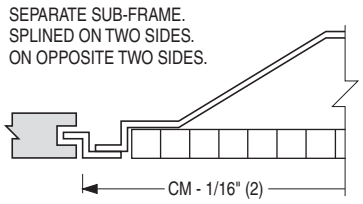
Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Imperial Units (inches)		Nominal Duct Size D	
Imperial Modules	Metric Modules	Round Neck		Square or Rectangular Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457

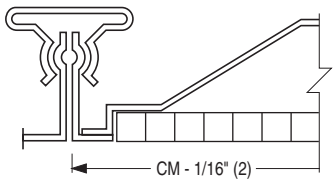
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)

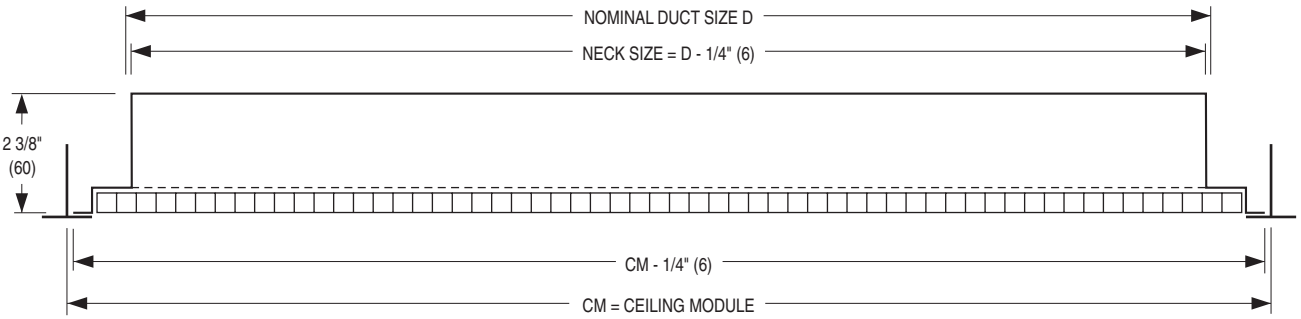


DIMENSIONAL DATA AND FRAME TYPES:

Models 4260, 4260AA • Full Face

When duct size = CM - 2" (51).

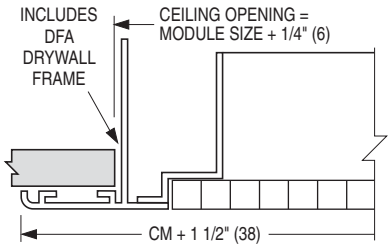
Type L Lay-in T-Bar or Tegular



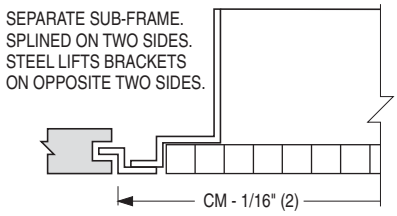
Imperial & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
		Square Neck	
Imperial Modules	Metric Modules	Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

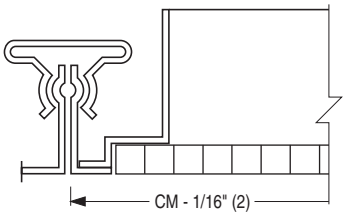
Type S Surface Mount



Type SP Spline



Type M Metal Pan (Snap-in)



PERFORMANCE DATA:

Models 4260, 4260AA • Full Face • Round or Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Airflow, CFM	59	78	98	118	137	157	176	196	235	274
	Neg. Static Pressure	.011	.019	.029	.042	.056	.073	.092	.113	.162	.218
	Noise Criteria	—	—	—	—	—	—	—	16	20	29
6 x 6	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Neg. Static Pressure	.011	.018	.029	.041	.055	.072	.091	.111	.160	.217
	Noise Criteria	—	—	—	—	—	—	16	19	23	32
8" Dia.	Airflow, CFM	105	140	175	209	244	279	314	349	419	489
	Neg. Static Pressure	.011	.019	.030	.042	.057	.074	.092	.113	.163	.218
	Noise Criteria	—	—	—	—	—	15	18	21	25	34
8 x 8	Airflow, CFM	133	178	222	267	311	356	400	444	533	622
	Neg. Static Pressure	.011	.018	.029	.042	.057	.074	.093	.115	.164	.223
	Noise Criteria	—	—	—	—	—	16	19	22	26	35
10" Dia.	Airflow, CFM	164	218	273	327	382	436	491	545	654	763
	Neg. Static Pressure	.011	.020	.031	.044	.058	.076	.095	.118	.165	.226
	Noise Criteria	—	—	—	—	15	19	22	26	32	38
10 x 10	Airflow, CFM	208	278	347	416	486	555	625	694	833	972
	Neg. Static Pressure	.011	.019	.03	.043	.058	.076	.094	.119	.169	.228
	Noise Criteria	—	—	—	—	16	20	23	27	33	39
12" Dia.	Airflow, CFM	236	314	393	471	550	628	707	785	942	1100
	Neg. Static Pressure	.011	.019	.030	.043	.058	.076	.096	.118	.170	.232
	Noise Criteria	—	—	—	—	18	22	25	28	34	41
12 x 12	Airflow, CFM	300	400	500	600	700	800	900	1000	1200	1400
	Neg. Static Pressure	.011	.020	.031	.045	.062	.08	.100	.124	.174	.239
	Noise Criteria	—	—	—	15	19	23	26	29	35	42
14" Dia.	Airflow, CFM	321	428	535	641	748	855	962	1069	1282	1497
	Neg. Static Pressure	.011	.020	.031	.044	.06	.079	.100	.123	.177	.241
	Noise Criteria	—	—	—	16	20	24	27	30	36	43
14 x 14	Airflow, CFM	408	544	681	817	953	1089	1225	1361	1633	1905
	Neg. Static Pressure	.011	.020	.032	.046	.063	.082	.103	.128	.184	.250
	Noise Criteria	—	—	—	17	21	26	29	32	38	45
16" Dia.	Airflow, CFM	419	558	698	838	977	1117	1256	1396	1675	1954
	Neg. Static Pressure	.012	.021	.032	.046	.063	.082	.104	.129	.185	.252
	Noise Criteria	—	—	—	17	21	25	29	32	38	45
16 x 16	Airflow, CFM	533	711	889	1067	1245	1422	1600	1778	2134	2489
	Neg. Static Pressure	.012	.021	.034	.048	.066	.086	.109	.134	.193	.263
	Noise Criteria	—	—	15	20	24	28	31	34	40	47
18" Dia.	Airflow, CFM	530	707	884	1060	1237	1414	1590	1767	2120	2474
	Neg. Static Pressure	.012	.021	.033	.048	.066	.086	.108	.134	.193	.262
	Noise Criteria	—	—	15	20	24	28	31	34	40	47
18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2025	2250	2700	3150
	Neg. Static Pressure	.013	.023	.035	.051	.070	.091	.115	.142	.204	.278
	Noise Criteria	—	—	17	22	27	32	35	38	45	51
22 x 22	Airflow, CFM	1008	1344	1681	2017	2353	2689	3025	3361	4033	4706
	Neg. Static Pressure	.014	.025	.040	.057	.078	.102	.129	.159	.229	.312
	Noise Criteria	—	—	19	24	29	34	37	40	47	53

Performance Notes:

1. All pressures are in inches w.g..

2. Neck Velocity is given in feet per minute (fpm). Airflow is given in cubic feet per minute (cfm).

3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10^{-12} watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY OR TO ORDER

EGGCRATE RETURN CEILING DIFFUSERS – MODEL SERIES 4260 AND 4260AA

EXAMPLE: 4260 - RND - 08 - 24 x 24 - L - AW - –

1. **Models**
   - 4260 Steel Backpan
   - 4260AA Aluminum Backpan
2. **Neck Type**
   - RND Round
   - SQR Square/Rectangular
3. **Neck Size** (inches)
   Round:
   06, 08, 10, 12, 14, 15, 16, 18
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 6, 18 x 18 22 x 10, 22 x 22, 46 x 22
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 1200 x 600
5. **Frame Type**
   - L Lay-in T-Bar (default)
   - S Surface Mount
   - SP Spline
   - M Metal Pan (Snap-in)
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - BA AW Face/Black Backpan
   - SP Special Custom Color

OPTIONS & ACCESSORIES:

7. **Damper**
   - – None (default)

   Round Neck:
   - 4250 Radial Sliding Damper, 6" - 14"
   - 4275 Radial Opposed Blade Damper, 5" - 24"
   - 4675 Butterfly Damper, 6" - 14"

   Square Neck:
   - OBD Opposed Blade, Steel
   - OBDA Opposed Blade, Aluminum (AA models only)
8. **Earthquake Tabs**
   - – None (default)
   - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Square/Rectangular Neck:
- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

Notes:

1. Consult individual models as to limitations of module and neck size combinations.
2. Dampers are shipped loose for field installation.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4260** (corrosion-resistant steel frame/backpan) or **4260AA** (aluminum frame/backpan) **Eggcrate Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a removable aluminum grid core that is 1/2" x 1/2" x 1/2" (13 x 13 x 13) and extends the full face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

SQUARE MODULAR CORE DIFFUSERS

- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

Steel Model:

7500

Aluminum Model:

7200

- **Suffix '-O' adds a steel opposed blade damper**

Model 7500

Model Series 7500 and 7200 Diffusers have been specially designed to provide a versatile 'modular core' product which is available in a comprehensive range of sizes and air capacities, providing optimum simplicity and flexibility for field adjustment of the discharge air pattern. They maintain a horizontal ceiling pattern from maximum to minimum flow and make an excellent choice for use in variable air volume systems.

The 7500 and 7200 Series features four individual spring-loaded 'modular' pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern by simply rotating one or more of the pattern controllers which takes only a few seconds.

STANDARD FEATURES:

- Square neck is standard.
- Each diffuser features four individually adjustable 'spring-loaded' modular cores.
- Simple adjustment for a 1, 2, 3 or 4-way horizontal discharge pattern without the use of tools.
- Inlet collar has minimum 1 1/2" (38) depth for easy duct connection.
- A wide variety of frame styles to suit most ceiling applications.
- Optional extended panels to suit modular T-Bar ceiling systems.
- Optional opposed blade damper with screwdriver slot operator is adjustable from the diffuser face by removing a modular core.

CONSTRUCTION MATERIAL:

7500 - Corrosion-resistant steel.

7200 - Aluminum with miscellaneous steel components.

FINISH OPTIONS:

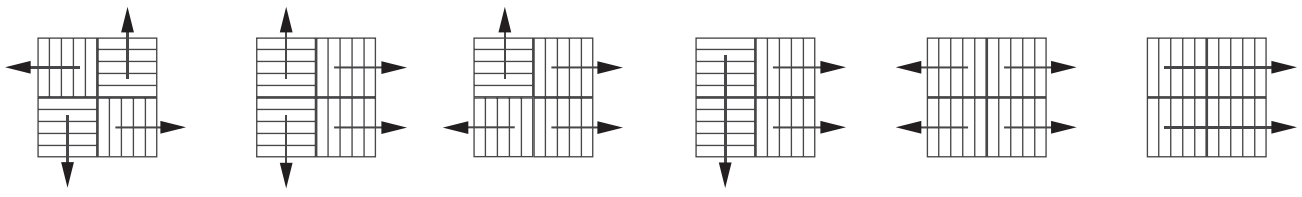
AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

SR	Square to Round Transition Collar (4" – 24" specify SR04 – SR24).
EQT	Earthquake Tabs

For additional options and accessories; see page D255.

Modular Core Adjustments

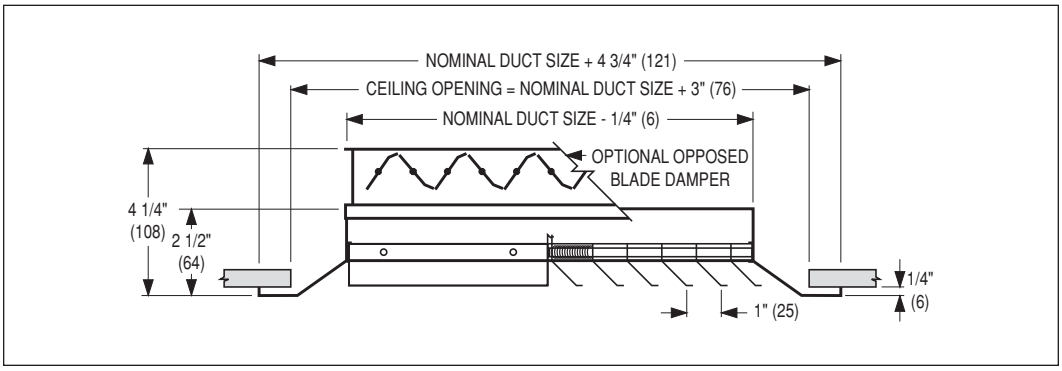


4-way **3-way** **3-way** **2-way corner** **2-way opposite** **1-way**

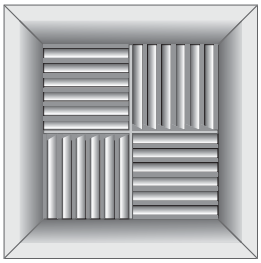
All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by rotating the spring loaded pattern controllers.

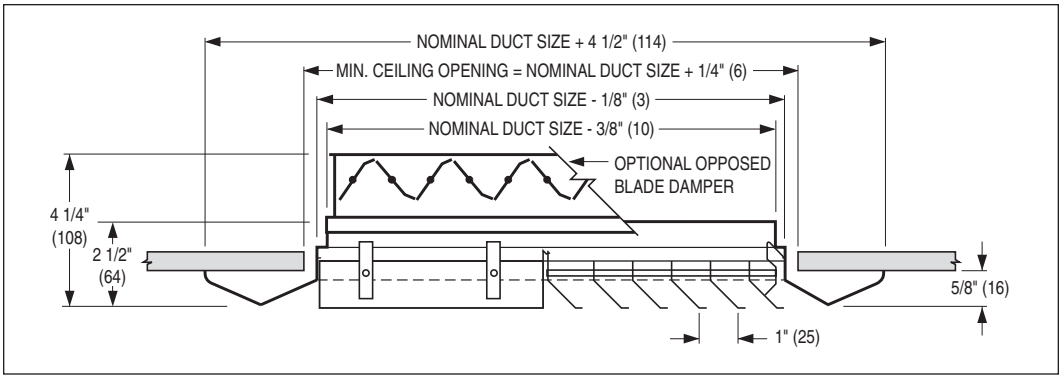
DIMENSIONAL DATA AND FRAME TYPES:

Model Series 7500 and 7200

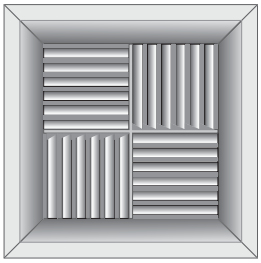


Type S - Surface Mount Frame





Type BS - Beveled Surface Mount Frame (Low Profile)



Model Series 7500 Available Duct Sizes

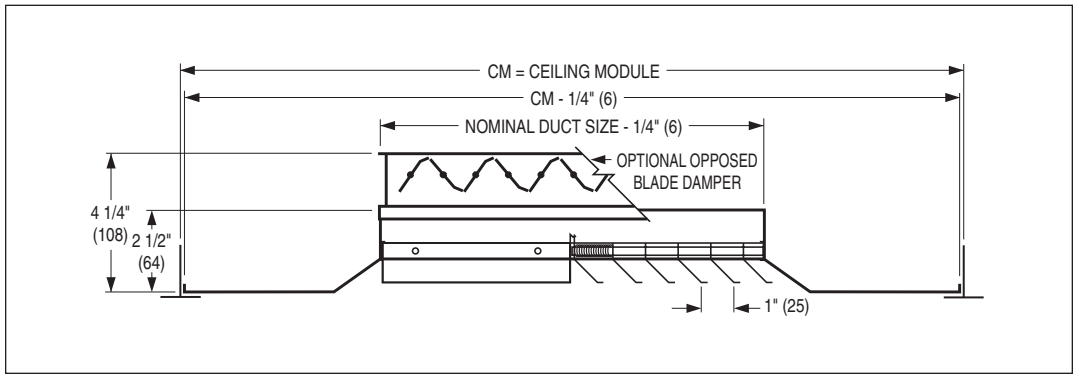
Frame Types S and BS		
6 x 6 (152 x 152)	12 x 12 (305 x 305)	18 x 18 (457 x 457)
8 x 8 (203 x 203)	14 x 14 (356 x 356)	20 x 20 (508 x 508)
9 x 9 (229 x 229)	15 x 15 (381 x 381)	22 x 22 (559 x 559)
10 x 10 (254 x 254)	16 x 16 (406 x 406)	24 x 24 (610 x 610)

Model Series 7200 Available Duct Sizes

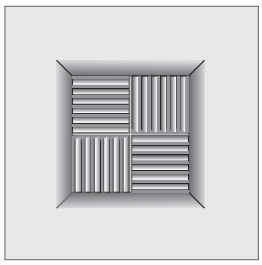
Frame Types S and BS		
6 x 6 (152 x 152)	14 x 14 (356 x 356)	20 x 20 (508 x 508)
8 x 8 (203 x 203)	16 x 16 (406 x 406)	22 x 22 (559 x 559)
10 x 10 (254 x 254)	18 x 18 (457 x 457)	24 x 24 (610 x 610)
12 x 12 (305 x 305)		

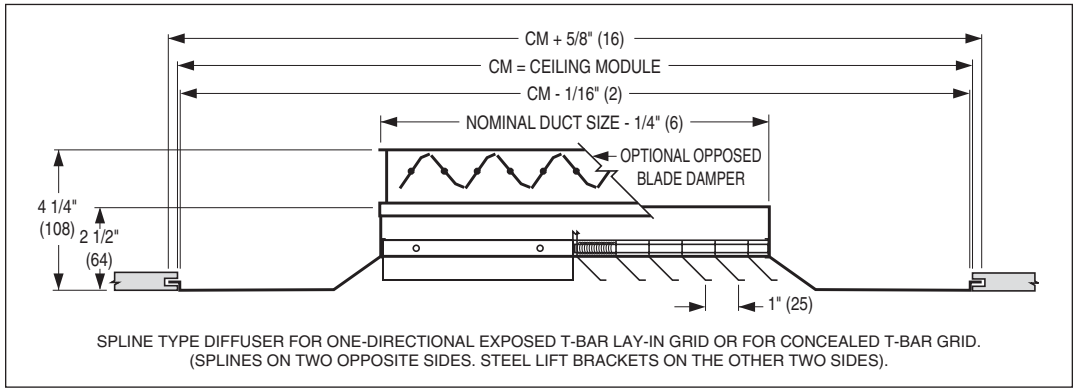
DIMENSIONAL DATA AND FRAME TYPES:

Model Series 7500 and 7200



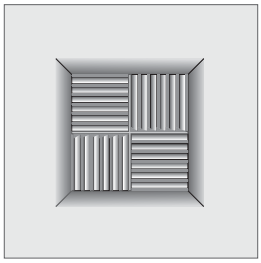
Type L - Lay-In T-Bar Frame



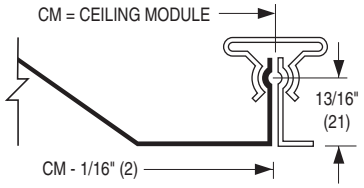


SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.
(SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

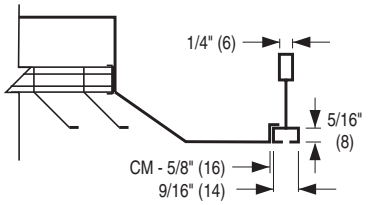
Type SP - Spline Frame



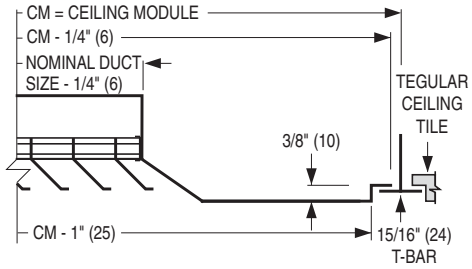
Type M Metal Pan (Snap-in)



Type F Fineline®



Type TL Tegular



Extended Panel Diffusers
Frame Types L, SP, TL, F and M

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module-sized extended panel will be added.

See the table (below) for the maximum duct size for each module size.

Ceiling Module Size CM – Frame Types L, SP, M, TL and F							
Imperial Modules (inches)	Metric Modules (mm)	Model 7500 Available Duct Sizes			Model 7200 Available Duct Sizes		
12 x 12, 24 x 12	300 x 300, 600 x 300	6 x 6 (152 x 152)	8 x 8 (203 x 203)	9 x 9 (229 x 229)	6 x 6 (152 x 152)	8 x 8 (203 x 203)	
20 x 20	500 x 500	6 x 6 (152 x 152) 8 x 8 (203 x 203) 9 x 9 (229 x 229)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	15 x 15 (381 x 381)	6 x 6 (152 x 152) 8 x 8 (203 x 203)	10 x 10 (254 x 254) 12 x 12 (305 x 305)	14 x 14 (356 x 356)
24 x 24	600 x 600	6 x 6 (152 x 152) 8 x 8 (203 x 203) 9 x 9 (229 x 229)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	15 x 15 (381 x 381) 16 x 16 (406 x 406) 18 x 18 (457 x 457)	6 x 6 (152 x 152) 8 x 8 (203 x 203)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	16 x 16 (406 x 406) 18 x 18 (457 x 457)

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 7500 and 7200 • Square Neck

Nominal Neck Size (inches)	Neck Velocity, FPM		200	300	400	500	600	700	800	900	1000
	Velocity Pressure		.003	.006	.010	.016	.022	.031	.040	.051	.062
6 x 6	Total Pressure		.008	.018	.033	.051	.073	.100	.131	.165	.204
	Airflow, CFM		50	75	100	125	150	175	200	225	250
	Throw	4-Way (1 core)	1-2-3	2-2-5	2-3-6	2-4-7	3-4-8	3-5-8	4-6-8	5-6-9	5-6-10
		3-Way (2 cores)	2-2-5	3-4-8	4-6-9	4-7-10	5-8-11	6-9-12	7-10-13	8-11-14	9-11-15
		2-Way (3 cores)	2-3-6	3-5-10	4-7-11	5-8-12	6-9-13	7-10-14	8-11-16	9-12-17	11-13-18
		1-Way (4 cores)	2-4-8	4-6-11	5-8-13	7-10-15	8-11-16	9-12-18	10-13-19	11-14-20	12-15-22
	Noise Criteria		—	—	—	16	22	26	29	32	35
8 x 8	Total Pressure		.006	.013	.022	.035	.050	.069	.090	.113	.140
	Airflow, CFM		88	133	177	222	266	310	355	399	444
	Throw	4-Way (1 core)	1-2-4	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	5-8-11	6-8-12	6-9-13
		3-Way (2 cores)	2-3-7	3-5-11	5-7-13	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	12-14-20
		2-Way (3 cores)	3-4-9	4-7-13	6-9-16	8-11-17	9-13-19	10-14-21	12-16-22	13-17-23	14-17-25
		1-Way (4 cores)	3-5-11	5-8-15	7-11-18	9-13-20	11-15-22	12-16-24	14-18-26	15-19-27	16-20-29
	Noise Criteria		—	—	—	17	25	29	32	35	38
10 x 10	Total Pressure		.007	.015	.027	.042	.060	.082	.108	.136	.168
	Airflow, CFM		138	208	277	347	416	485	555	624	694
	Throw	4-Way (1 core)	2-3-7	3-5-9	4-7-10	6-8-11	7-9-12	8-9-14	8-10-14	9-11-14	9-11-17
		3-Way (2 cores)	4-6-12	6-10-14	9-12-16	11-13-18	12-14-20	13-15-22	14-16-23	14-19-25	14-20-26
		2-Way (3 cores)	5-8-14	8-12-17	11-14-20	13-16-22	14-17-24	15-18-27	16-20-28	17-22-30	18-23-32
		1-Way (4 cores)	6-9-16	9-14-20	13-16-23	14-18-26	16-20-28	17-21-31	18-23-33	20-24-35	21-26-37
	Noise Criteria		—	—	15	18	24	30	34	37	40
12 x 12	Total Pressure		.007	.016	.029	.046	.066	.089	.116	.147	.182
	Airflow, CFM		200	300	400	500	600	700	800	900	1000
	Throw	4-Way (1 core)	2-4-8	4-6-11	5-8-12	7-10-14	8-11-14	9-11-15	10-12-17	11-13-18	11-14-19
		3-Way (2 cores)	5-8-14	8-12-17	10-14-20	13-15-22	14-17-24	15-18-26	16-20-28	17-21-30	18-22-32
		2-Way (3 cores)	6-10-17	10-14-21	12-17-24	15-19-27	17-21-29	18-22-32	19-24-34	21-26-36	22-27-39
		1-Way (4 cores)	7-11-19	11-16-24	14-19-28	17-22-31	19-24-34	21-26-37	22-28-40	24-30-42	25-31-45
	Noise Criteria		—	—	17	21	27	32	36	40	43
14 x 14	Total Pressure		.009	.020	.035	.055	.080	.108	.141	.179	.221
	Airflow, CFM		272	408	544	680	816	952	1088	1224	1361
	Throw	4-Way (1 core)	3-5-10	5-7-12	6-10-14	8-11-15	10-12-19	11-13-18	12-14-19	12-14-21	13-15-22
		3-Way (2 cores)	6-9-16	9-14-20	12-16-23	14-18-26	16-20-29	17-21-31	19-23-33	20-25-35	21-26-37
		2-Way (3 cores)	8-11-20	11-17-24	15-20-28	18-22-32	20-24-35	21-26-38	23-28-40	24-30-42	26-32-44
		1-Way (4 cores)	9-13-23	13-19-28	17-23-33	21-25-37	23-28-40	25-30-44	26-33-47	28-35-49	30-37-51
	Noise Criteria		—	—	19	23	29	34	38	42	45
16 x 16	Total Pressure		.011	.024	.043	.067	.096	.131	.172	.217	.268
	Airflow, CFM		355	533	711	889	1066	1244	1422	1600	1778
	Throw	4-Way (1 core)	3-5-11	5-8-14	7-11-15	9-13-17	11-14-19	12-14-21	13-15-23	14-17-24	14-17-25
		3-Way (2 cores)	7-10-18	10-15-23	14-18-27	17-21-30	18-23-33	20-25-36	21-27-38	23-28-41	24-30-43
		2-Way (3 cores)	9-12-22	12-19-29	17-22-33	21-25-36	22-28-40	24-30-43	26-33-46	28-34-49	29-36-51
		1-Way (4 cores)	10-14-26	14-22-32	20-26-38	24-29-42	26-32-46	28-35-49	30-38-53	32-40-56	34-42-59
	Noise Criteria		—	—	21	25	31	36	40	44	47

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Square in Inches	Ak Factor
6 x 6	.1134
8 x 8	.1932
9 x 9	.2551
10 x 10	.3024
12 x 12	.4526
14 x 14	.5883
15 x 15	.6804
16 x 16	.7728

PERFORMANCE DATA:

Models 7500 and 7200 • Square Neck

Nominal Neck Size (inches)	Neck Velocity, FPM		200	300	400	500	600	700	800	900	1000
	Velocity Pressure		.003	.006	.010	.016	.022	.031	.040	.051	.062
18 x 18	Total Pressure		.013	.029	.051	.080	.115	.157	.205	.259	.320
	Airflow, CFM		450	675	900	1125	1350	1575	1800	2025	2250
	Throw	4-Way (1 core)	4-6-13	6-10-15	8-13-18	11-14-20	13-15-22	14-16-24	14-18-26	15-19-27	16-20-29
		3-Way (2 cores)	8-12-21	12-17-26	15-21-30	19-23-34	21-26-37	23-28-40	24-30-43	26-32-46	27-34-48
		2-Way (3 cores)	10-14-26	14-21-32	19-26-36	23-28-41	26-32-44	28-34-48	29-36-52	31-39-55	33-41-58
		1-Way (4 cores)	11-16-30	16-25-37	22-30-42	27-33-48	30-37-51	32-40-56	34-42-60	36-45-63	39-48-67
	Noise Criteria		—	15	22	26	32	37	42	45	48
20 x 20	Total Pressure		.015	.034	.061	.095	.136	.186	.243	.307	.379
	Airflow, CFM		555	835	1110	1390	1665	1945	2220	2500	2775
	Throw	4-Way (1 core)	4-7-14	7-11-17	9-14-20	12-15-22	14-17-24	15-18-27	16-20-29	17-21-30	18-22-32
		3-Way (2 cores)	9-13-23	13-19-29	17-23-34	21-26-38	23-29-41	25-31-45	27-34-48	29-36-50	30-38-53
		2-Way (3 cores)	11-16-28	16-24-36	21-28-41	25-32-45	28-35-49	31-38-54	33-41-58	35-43-61	37-45-64
		1-Way (4 cores)	13-18-33	18-28-43	25-33-47	30-37-52	33-41-57	36-44-62	38-47-67	41-49-71	43-52-75
	Noise Criteria		—	17	24	28	34	39	44	47	50
22 x 22	Total Pressure		.018	.040	.071	.111	.159	.217	.284	.359	.443
	Airflow, CFM		675	1000	1345	1680	2015	2350	2690	3025	3360
	Throw	4-Way (1 core)	5-8-15	8-12-19	10-15-22	13-17-25	15-19-27	16-20-29	18-22-31	19-23-34	20-25-35
		3-Way (2 cores)	10-14-26	14-21-32	19-26-37	23-29-42	26-32-46	28-35-48	30-37-52	32-39-55	34-41-58
		2-Way (3 cores)	12-17-31	17-26-39	24-31-44	28-35-50	31-39-55	34-42-58	36-44-63	39-47-67	41-50-70
		1-Way (4 cores)	14-20-36	20-31-45	28-36-51	33-41-58	36-45-63	39-48-68	41-51-73	45-54-78	47-58-81
	Noise Criteria		—	19	26	30	36	41	46	49	52
24 x 24	Total Pressure		.021	.046	.082	.129	.185	.252	.329	.416	.514
	Airflow, CFM		800	1200	1600	2000	2400	2800	3200	3600	4000
	Throw	4-Way (1 core)	5-8-16	8-13-21	11-16-24	14-19-27	16-21-30	18-22-32	19-24-35	21-26-37	22-27-39
		3-Way (2 cores)	10-15-28	15-23-35	20-28-41	26-32-45	28-35-49	31-38-53	33-41-57	35-43-61	37-45-64
		2-Way (3 cores)	12-19-34	19-29-42	25-34-49	31-39-54	34-42-59	37-45-64	39-49-68	42-52-73	44-54-77
		1-Way (4 cores)	14-22-40	22-34-48	30-40-56	36-45-63	40-48-69	43-52-75	45-56-79	48-60-84	51-63-89
	Noise Criteria		—	21	28	32	34	43	48	51	54

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Neck Size Square in Inches	Ak Factor
18 x 18	0.9541
20 x 20	1.2096
22 x 22	1.4636
24 x 24	1.7304

HOW TO ORDER

MODULAR CORE CEILING DIFFUSERS – MODEL SERIES 7500

EXAMPLE: 7500 - 0 - 9 x 9 - 24 x 24 - L - AW - SR08 - –

1. **Model**
   7500 Steel
2. **Damper**
   – None (default)
   O Opposed Blade (steel)
3. **Neck Size** (inches)
   Square or Rectangular:
   6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20, 22 x 22, 24 x 24
4. **Ceiling Module Size**
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600
5. **Frame Type**
   S Surface Mount
   BS Bevelled Drop Face (Surface Mount)
   L Lay-in T-Bar
   SP Spline
   M Metal Pan (Snap-in)
   TL Tegular (Drop Face)
   F Fineline®
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime Coat Paint
   SP Special Custom Color

OPTIONS & ACCESSORIES:

– None (default)

7. **Transition Collar**
   SR Square to Round Transition Collar (04 through 24 specifiy)
8. **Earthquake Tabs**
   EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:
4250 Radial Sliding Damper, 6" - 14"
4275 Radial Opposed Blade Damper, 5" - 24"
4675 Butterfly Damper, 6" - 14"
EGR Equalizing Grid
DEGR Damper/Equalizing Grid

Square/Rectangular Neck:
DEGL Damper/Equalizing Grid (long)
EGL Equalizing Grid

Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

Available Maximum Sizes for Ceiling Modules

CEILING MODULE		MAXIMUM NECK SIZES BY FRAME TYPES			
Imperial	Metric	L	SP, M	TL	F
12 x 12 24 x 12	300 x 300 600 x 300	9 x 9 (229 x 229)	9 x 9 (229 x 229)	6 x 6 (152 x 152)	6 x 6 (152 x 152)
20 x 20	500 x 500	15 x 15 (381 x 381)	n/a	15 x 15 (381 x 381)	15 x 15 (381 x 381)
24 x 24	600 x 600	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model Series 7500 Steel Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 7500 shall have a heavy gauge, corrosion-resistant steel frame and core. The modular deflectors shall consist of four square, individually adjustable pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in a 1, 2, or 3-way pattern. The diffuser shall have a square duct connection collar that is an integral part of the frame assembly and not be less than 1 1/2" (38) high. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR SPECIFY

ALUMINUM MODULAR CORE CEILING DIFFUSERS – MODEL SERIES 7200

EXAMPLE: 7200 - 0 - 9 x 9 - 24 x 24 - L - AW - PLS - SR08 - –

1. **Model**
   - 7200 Aluminum
2. **Damper**
   - – None (default)
   - O Opposed Blade (steel)
   - OA Opposed Blade (aluminum)
3. **Neck Size** (inches)
   Square or Rectangular:
   6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 16 x 16, 18 x 18, 20 x 20, 22 x 22, 24 x 24
4. **Ceiling Module Size**
   (Type L, SP, M, TL and F only)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600
5. **Frame Type**
   - S Surface Mount
   - BS Bevelled Drop Face (Surface Mount)
   - L Lay-in T-Bar
   - SP Spline
   - M Metal Pan (Snap-in)
   - TL Tegular (Drop Face)
   - F Fineline®
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - SP Special Custom Color
7. **Extended Panel**
   - PLS Steel (default)
   - PLA Aluminum

OPTIONS & ACCESSORIES:

- – None (default)

8. **Transition Collar**
   - SR Square to Round Transition Collar (04 through 24 specifiy)
9. **Earthquake Tabs**
   - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

Round Neck:

- 4250 Radial Sliding Damper, 6" - 14"
- 4275 Radial Opposed Blade Damper, 5" - 24"
- 4675 Butterfly Damper, 6" - 14"
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Square/Rectangular Neck:

- DEGL Damper/Equalizing Grid (long)
- EGL Equalizing Grid

Notes:

1. Consult individual models as to limitations of panel and neck size combinations.
2. Extended modular panels where required are steel construction as standard. Aluminum is available as an option. Applicable to Frame Type L, SP, M, TL and F only.

Available Maximum Sizes for Ceiling Modules

CEILING MODULE		MAXIMUM NECK SIZES BY FRAME TYPES			
Imperial	Metric	L	SP, M	TL	F
12 x 12 24 x 12	300 x 300 600 x 300	8 x 8 (203 x 203)	8 x 8 (203 x 203)	6 x 6 (152 x 152)	6 x 6 (152 x 152)
20 x 20	500 x 500	14 x 14 (356 x 356)	n/a	14 x 14 (356 x 356)	14 x 14 (356 x 356)
24 x 24	600 x 600	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model Series 7200 Aluminum Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 7200 shall have an aluminum frame and core. The modular deflectors shall consist of four square, individually adjustable pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in a 1, 2, or 3-way pattern. The diffuser shall have a square duct connection collar that is an integral part of the frame assembly and not be less than 1 1/2" (38) high. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

CURVED BLADE DIFFUSERS

- **1, 2, 3 OR 4-WAY DISCHARGE PATTERNS AVAILABLE**

Steel Models:

61CC 1, 2, 3 or 4-Way

61CCD 1 or 2-Way with Rear Directional Vanes

Aluminum Models:

51CC 1, 2, 3 or 4-Way

51CCD 1 or 2-Way with Rear Directional Vanes

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper** (available on aluminum models only)

Model 61CC

Model Series 61CC and 51CC Series Curved Blade Diffusers are similar in design and construction to the Nailor 61C and 51C Series Curved Blade Grilles with the addition of a modular sized panel to integrate with various types of ceiling systems. Available with the choice of a 1, 2, 3 or 4-way discharge pattern.

They also feature individually adjustable friction pivoted curved blades on 1" (25) centers that positively control the airflow. Blades are adjustable from the face, regulating the angle of discharge from a horizontal through to a full down-blow vertical pattern as required. Blades can also regulate air volume as they are closed off.

Available in a comprehensive range of square duct sizes to suit a large range of air volumes, these diffusers, when adjusted correctly, produce a tight horizontal ceiling pattern and work extremely well in variable air volume applications.

Nailor 61CCD and 51CCD Series, available in a 1 or 2-way discharge pattern are similar to the above but incorporate a set of rear vanes on 3/4" (19) centers that are individually adjustable, thus providing complete directional control and airflow equalization.

STANDARD FEATURES:

- Blades are formed to an engineered curved and streamlined cross-section. Formed with tenons at each end to fit snugly into side margin, friction loaded to firmly hold deflection setting.
- Adjustable angle of discharge from horizontal to vertical.
- Choice of one, two, three or four-way discharge patterns.
- A variety of frame/border styles to suit most ceiling systems.
- Available in square neck sizes 6" x 6" (152 x 152) through 21" x 21" (533 x 533) for standard 24" x 24" (600 x 600) ceiling modules.
- For non-listed rectangular sizes, see the 61C and 51C Series in this catalog and add a module sized extended panel (PL).

CONSTRUCTION MATERIAL:

- Models 61CC/61CCD have corrosion-resistant steel blades and panel. Models 51CC/51CCD have extruded aluminum blades and a corrosion-resistant steel panel.
- Optional steel or aluminum opposed blade dampers have a screwdriver slot operator accessible through the face of the diffuser.

FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

SR	Square to Round Transition Collar (4" – 24" specify SR04 – SR24).
EQT	Earthquake Tabs

Air Balancing Devices

(order separately)

Rectangular Neck:

EGL	Equalizing Grid (long)
DEGL	Damper/Equalizing Grid (long)

Round Neck:

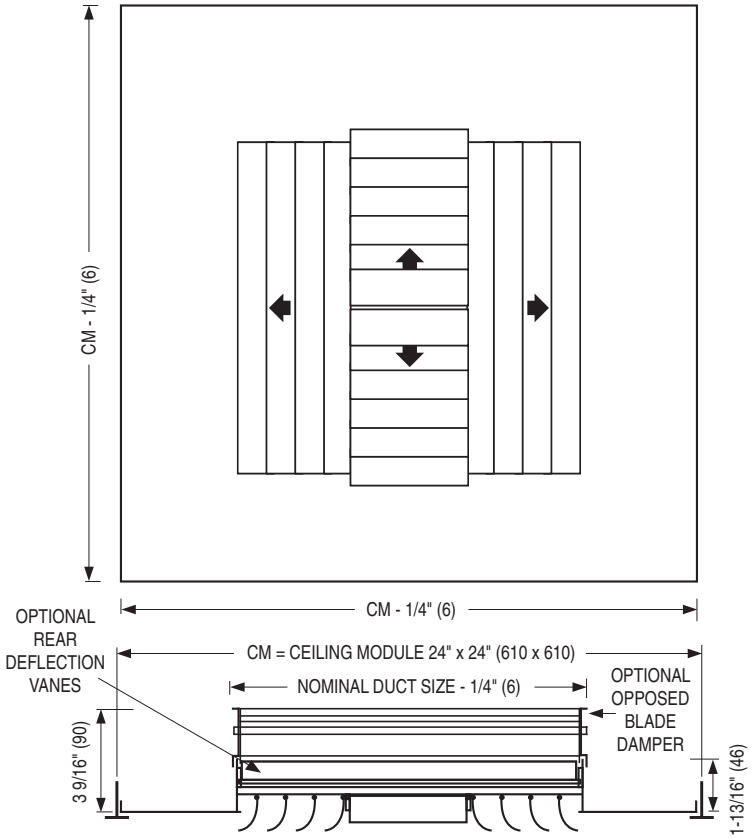
4250	Radial Sliding Blade Damper 6" – 14" (152 – 356).
4275	Radial Opposed Blade Damper 5" – 24" (127 – 610).
4675	Butterfly Damper 6" – 14" (152 – 356).
EGR	Equalizing Grid
DEGR	Damper/Equalizing Grid

For additional options and accessories; see page D257.

DIMENSIONAL DATA AND FRAME TYPES:

Models 61CC and 51CC

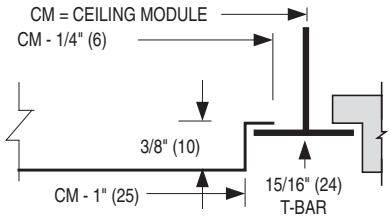
Type PL Panel Lay-in T-Bar



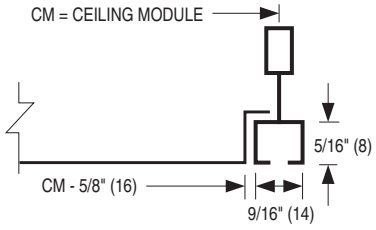
Standard Duct Sizes for 24 x 24 (600 x 600) Ceiling Module

Imperial Units (inches)				Metric Units (mm)			
6 x 6	10 x 10	15 x 15	21 x 21	152 x 152	254 x 254	381 x 381	553 x 553
8 x 8	12 x 12	16 x 16		203 x 203	305 x 305	406 x 406	
9 x 9	14 x 14	18 x 18		229 x 229	356 x 356	457 x 457	

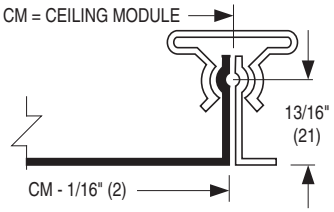
Type TL Tegular Lay-in



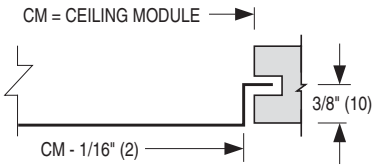
Type F Fineline®



Type M Metal Pan (Snap-in)

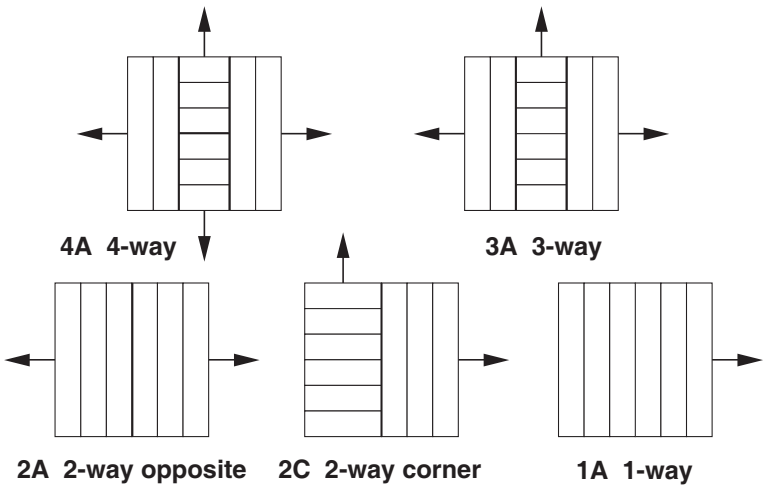


Type SP Spline



For one directional exposed T-Bar or fully concealed grid. I spline on two opposite sides. Steel brackets on other.

Available Discharge Patterns:



61CC and **51CC** Diffusers may be ordered in any of the discharge patterns illustrated above.

Fineline® is a registered trademark of USG Interiors Inc.

PERFORMANCE DATA:

Models 61CC, 61CCD, 51CC, 51CCD

Nom. Neck Size (inches)	Core Area (sq. ft.)	Neck Velocity, FPM		100	200	300	400	500	600	700	800	900	1000
		Total Pressure		.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
6 x 6	.20	CFM				60	80	100	120	140	160	180	200
		Noise Criteria				—	15	21	26	29	32	35	38
		Throw	4-Way			4-6-9	5-8-13	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	12-17-28
			3-Way			4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-28	13-19-31
			2-Way			5-7-11	6-9-15	8-11-17	9-14-21	10-16-24	12-17-28	13-19-31	15-21-39
			1-Way			6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41
8 x 8	.38	CFM			75	115	150	190	230	265	305	340	380
		Noise Criteria			—	—	17	23	28	31	35	37	40
		Throw	4-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-16-24	12-17-27	13-18-30	14-20-33
			3-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	14-18-29	14-20-32	15-22-36
			2-Way		4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	14-20-32	15-22-36	16-25-40
			1-Way		4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
10 x 10	.61	CFM		60	120	185	245	305	365	430	490	550	610
		Noise Criteria		—	—	13	20	26	30	34	37	40	43
		Throw	4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39
			3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42
			2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
			1-Way	2-4-6	5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55
12 x 12	.90	CFM		90	180	270	360	450	540	630	720	800	900
		Noise Criteria		—	—	14	21	27	31	35	38	41	44
		Throw	4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42
			3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46
			2-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51
			1-Way	3-4-7	6-9-14	8-12-19	11-16-25	13-19-30	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62
14 x 14	1.24	CFM		125	250	375	500	620	745	870	995	1120	1240
		Noise Criteria		—	—	15	23	29	33	37	40	43	46
		Throw	4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
			3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49
			2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55
			1-Way	3-5-8	6-9-15	9-14-20	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67
15 x 15	1.44	CFM		145	290	430	575	720	860	1005	1150	1290	1435
		Noise Criteria		—	—	15	23	29	33	37	40	43	46
		Throw	4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
			3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
			1-Way	3-5-8	6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68
16 x 16	1.64	CFM		165	330	490	655	820	985	1150	1315	1480	1640
		Noise Criteria		—	—	16	24	29	34	38	41	44	47
		Throw	4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
			3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
			1-Way	3-5-8	7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-49	26-40-63	29-45-71
18 x 18	2.10	CFM		210	420	630	840	1050	1260	1470	1680	1890	2100
		Noise Criteria		—	—	17	25	30	35	39	42	45	48
		Throw	4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48	22-33-53
			3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
			2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57	27-40-64
			1-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68	32-49-78
21 x 21	2.88	CFM		290	575	865	1155	1440	1730	2020	2305	2595	2885
		Noise Criteria		—	—	19	27	32	37	41	44	47	50
		Throw	4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53	25-38-60
			3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57	27-40-64
			2-Way	3-5-8	7-10-16	10-15-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63	29-45-71
			1-Way	4-6-10	8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77	36-54-86

Performance Notes:

1. Pressures are expressed in inches of water gauge.

2. Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential (ΔT) of 20°F and are based on surface mount units benefiting from the coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, that have the outer blades closest to the frame set with an opening of 1/8" (3) and progressively wider spacing between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).

3. Blades in the full open position
   - reduce the Noise Criteria by 6.
   - multiply the Total Pressure x 0.3.

4. The Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY OR TO ORDER

ALUMINUM CURVED BLADE CEILING DIFFUSERS – MODEL SERIES 51CC

EXAMPLE: 51CC - O - 12 x 12 - 24 x 24 - PL - AW - DMI - 4A - SR08 - –

1. **Model**
   - 51CC Aluminum
   - 51CCD Aluminum with rear vanes
2. **Damper**
   - – None
   - O Opposed Blade (steel)
   - OA Opposed Blade (aluminum)
3. **Neck Size** (inches)
   Square:
   6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 21 x 21
4. **Ceiling Module Size**
   Standard module
   Imperial (inches)
   24 x 24 (default)
   Metric (mm)
   600 x 600
5. **Frame Type**
   - PL Panel Lay-in T-Bar (default)
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - SP Special Custom Color
7. **OBD Finish**
   - DMI Mill (default)
   - DBK Painted Black
8. **Blow Pattern**
   - 4A 4-way (default)
   - 3A 3-way
   - 2C 2-way corner
   - 2A 2-way opposite
   - 1A 1-way

OPTIONS & ACCESSORIES:

9. **Transition Collar**
   - SR Square to Round Transition Collar (04 through 20 specifiy)
10. **Earthquake Tabs**
    - – None (default)
    - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

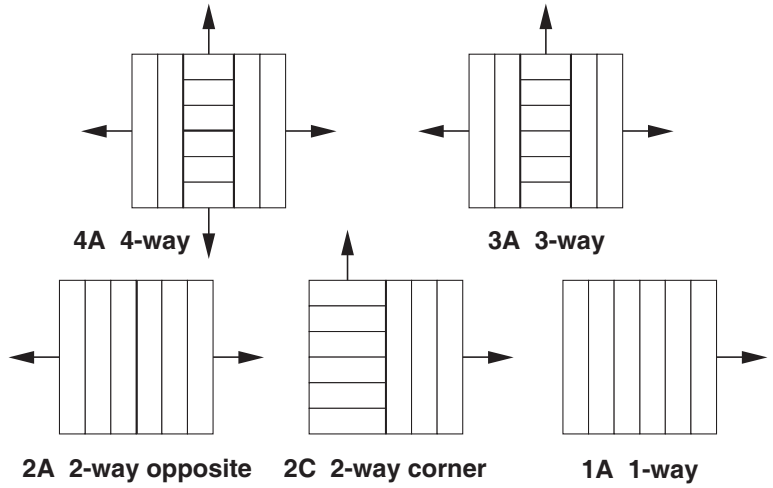
Rectangular Neck:
- EGL Equalizing Grid (long)
- DEGL Damper/Equalizing Grid (long)

Round Neck:
- 4250 Radial Sliding Blade Damper 6" – 14".
- 4275 Radial Opposed Blade Damper 5" – 24".
- 4675 Butterfly Damper 6" – 14").
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Notes:

1. Consult individual models as to limitations of module, panel, neck size, core styles and accessories combinations.

Available Discharge Patterns:



51CC Diffusers may be ordered in any of the discharge patterns illustrated above.

SUGGESTED SPECIFICATION:

Models 51CC, 51CCD – Aluminum
Furnish and install **Nailor Model** (select one) **51CC** or **51CCD** (with deflector vanes) **Aluminum Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a steel panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional), operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY OR TO ORDER

STEEL CURVED BLADE CEILING DIFFUSERS – MODEL SERIES 61CC

EXAMPLE: 61CC - O - 12 x 12 - 24 x 24 - PL - AW - DMI - 4A - SR08 - –

1. **Model**
   - 61CC Steel
   - 61CCD Steel with rear vanes
2. **Damper**
   - – None (default)
   - O Opposed Blade (steel)
3. **Neck Size** (inches)
   Square:
   6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 21 x 21
4. **Ceiling Module Size**
   Standard module
   Imperial (inches)
   24 x 24 (default)
   Metric (mm)
   600 x 600
5. **Frame Type**
   - PL Panel Lay-in T-Bar (default)
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - BW British White
   - MI Mill
   - PC Prime Coat Paint
   - SP Special Custom Color
7. **OBD Finish**
   - DMI Mill (default)
   - DBK Painted Black
8. **Blow Pattern**
   - 4A 4-way (default)
   - 3A 3-way
   - 2C 2-way corner
   - 2A 2-way opposite
   - 1A 1-way

OPTIONS & ACCESSORIES:

9. **Transition Collar**
   - SR Square to Round Transition Collar (04 through 20 specifiy)
10. **Earthquake Tabs**
    - – None (default)
    - EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Air Balancing Devices
(order separately)

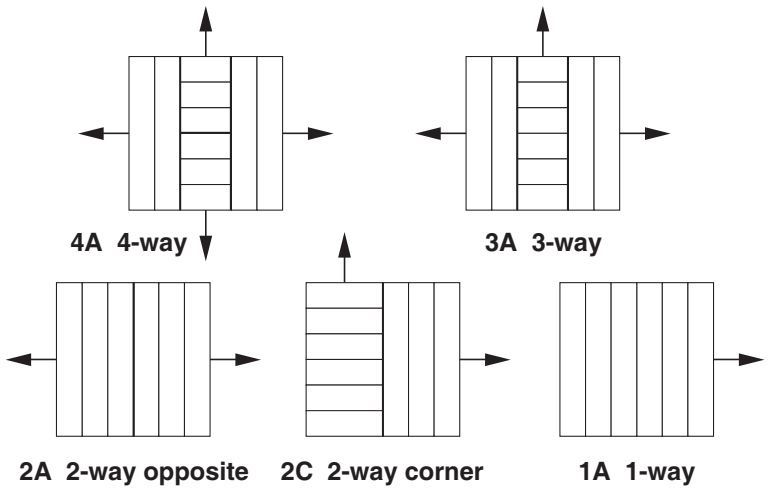
Rectangular Neck:
- EGL Equalizing Grid (long)
- DEGL Damper/Equalizing Grid (long)

Round Neck:
- 4250 Radial Sliding Blade Damper 6" – 14".
- 4275 Radial Opposed Blade Damper 5" – 24".
- 4675 Butterfly Damper 6" – 14".
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Notes:

1. Consult individual models as to limitations of module, panel, neck size, core styles and accessories combinations.

Available Discharge Patterns:



61CC Diffusers may be ordered in any of the discharge patterns illustrated above.

SUGGESTED SPECIFICATION:

Models 61CC, 61CCD – Steel
Furnish and install **Nailor Model** (select one) **61CC** or **61CCD** (with deflector vanes) **Steel Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR CEILING DIFFUSERS

MOUNTING FRAMES

- Surface mount adapter frames for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.

OPTIONS

- A selection of optional items that are available on ceiling diffusers.

FINISHES

- Selection of standard and non-standard finishes to choose from.
- Baked enamel paint in custom colors to suit architect.

AIR BALANCING DEVICES

- Dampers for round and square necks.
- Equalizing grids.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

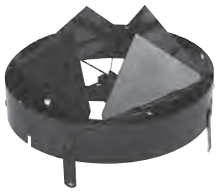
Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be ordered or specified as diffuser accessories.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.

Model DFA
Drywall/Plaster Frame
Surface Mount
Ceiling Adapter

Model 4275
Radial Opposed
Blade Damper

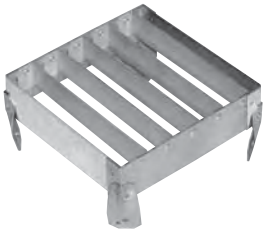


Model 4250
Radial Sliding Blade Damper

Model 4675
Butterfly Damper

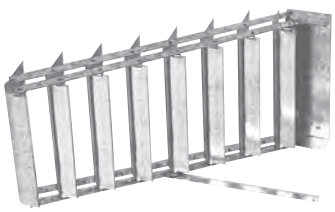
Model OBD
Opposed Blade Damper
Steel, Neck Mount

Model OBDD
Opposed Blade Damper
Steel, Duct Mount



Model EGR
Equalizing Grid

Model DEGR
Damper with Equalizing Grid



Model EX-1
Volume Extractor

Mounting Frames

DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized.

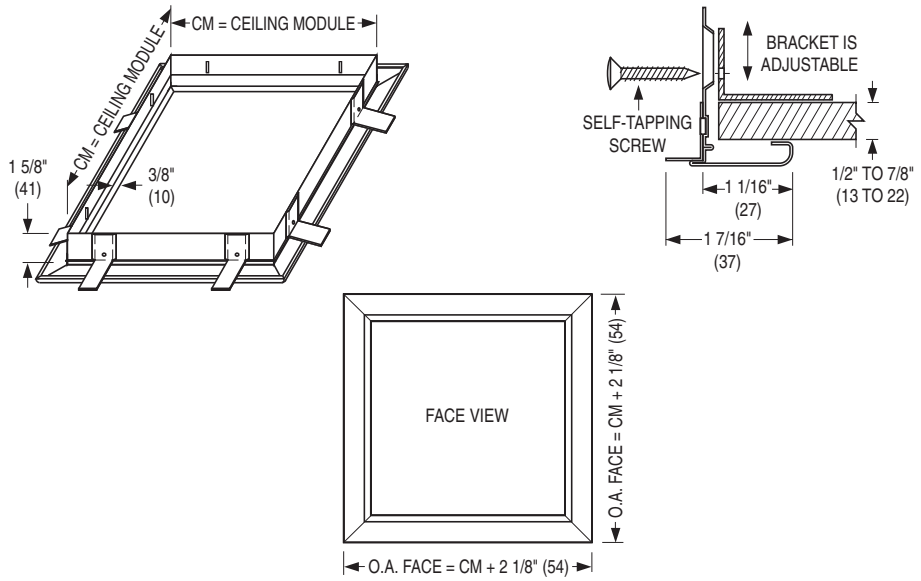
A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

Standard Finish: AW Appliance White. Other finishes are available.

Model DFS is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

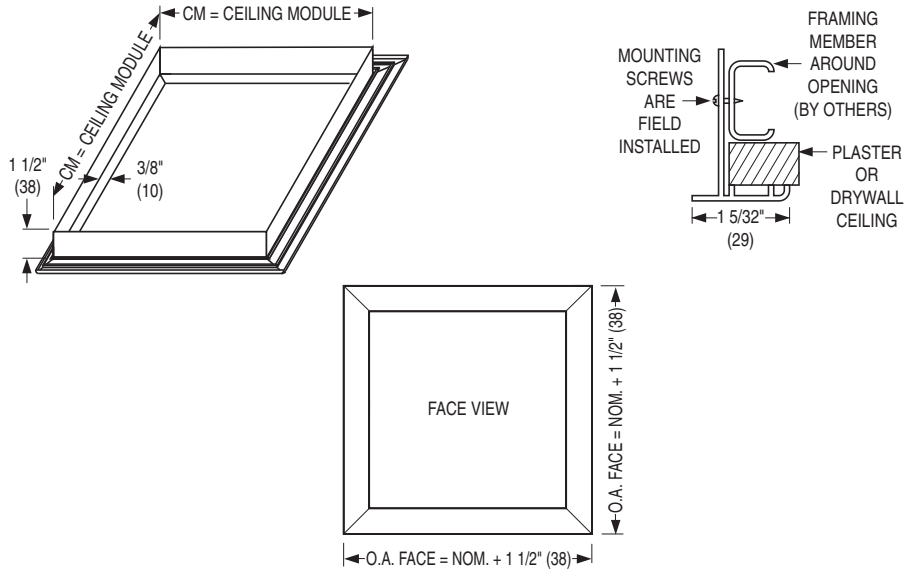


Model DFS

Model DFA requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 1219	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



Model DFA

Options and Finishes

OPTIONS:

EQT Earthquake Tabs

Earthquake (seismic) retaining safety tabs are available; factory installed on diffusers when required by local building code that units be independently restrained and safety wired to supporting structure.

SC Safety Chain

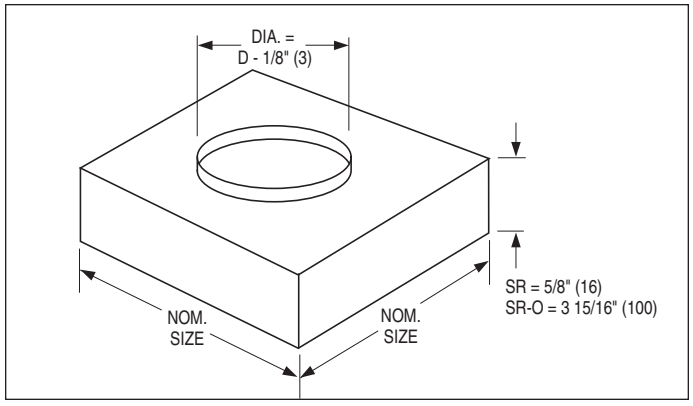
An optional safety chain is available on all of Nailor's round ceiling diffusers.

GK Foam Gaskets

Foam gasket is available on a selection of surface mount diffusers.

SR Square to Round Transition Collar

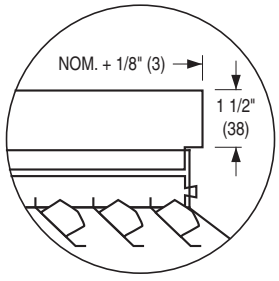
Transition collars are for use on Nailor square neck diffusers where a round duct connection is required. Round necks are sized for flexible or hard duct connection. SR's are shipped loose for field installation and are supplied with barbed S clips.



Square Neck Size (inches)	Round Neck Size D (inches)
6 x 6	4, 5, 6
8 x 8	4, 5, 6, 7, 8
9 x 9	6, 7, 8, 9
10 x 10	6, 7, 8, 9, 10
12 x 12	6, 8, 9, 10, 12
14 x 14	6, 8, 9, 10, 12, 14
15 x 15	6, 8, 10, 12, 14, 15
16 x 16	6, 8, 10, 12, 14, 15, 16
18 x 18	6, 8, 10, 12, 14, 15, 16, 18
20 x 20	6, 8, 10, 12, 14, 15, 16, 18, 20
21 x 21	6, 8, 10, 12, 14, 15, 16, 18, 20
22 x 22	6, 8, 10, 12, 14, 16, 18, 20
24 x 24	6, 8, 10, 12, 14, 15, 16, 18, 20, 24

ONA Offset Neck Adaptor

Fits outside duct (if a damper is required; order separately for remote mount. See Model OBDD).



EXTERNAL FOIL BACK INSULATION

EX External Insulation Blanket - Factory Installed

An optional 1 1/2" thick foil back insulation is available installed on a majority of Nailor ceiling diffusers. The insulation has an R value of 4.2.

EXB External Insulation Blanket - Ships Loose

This insulation is the same as above but is shipped loose for field installation.

MIB Molded Insulation Blanket - Factory Installed

The molded insulation is available as an option on various 24" x 24" square diffusers. The insulation has an R value of 6.0.

FINISHES:

AW Appliance White (standard)

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

AL Aluminum

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

BW British White

Matches most white ceiling tiles. (No additional cost)

BK Black

This black has a matte finish. (Additional cost)

BA Black Interior/Appliance White Face

Optional on perforated diffusers. AW Appliance White is applied on the perforated face and BK Black is applied on the interior of the backpan for a discreet appearance. (No additional cost)

SP Special

The **Nailor** range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

ALSO AVAILABLE:

MI Mill Finish

(No additional cost).

PPA Paint Prepared Aluminum (Washed only)

Aluminum models only. (No additional cost).

PC Prime Coat Paint

(Additional cost).

Air Balancing Devices

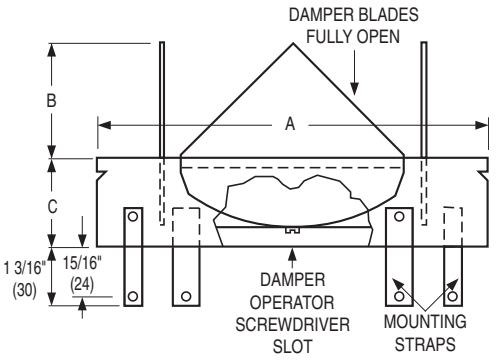
Radial Opposed Blade Damper

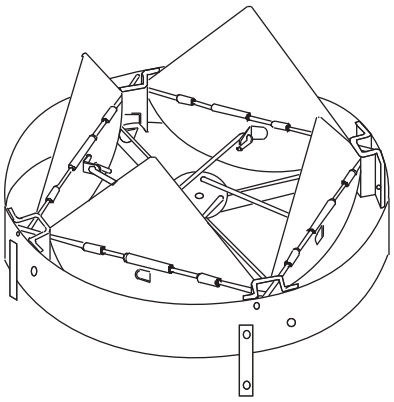
A unique method of controlling volume through a diffuser providing premium design quality and performance. The multi-blade perimeter design offers true radial flow at any setting.

A screwdriver slot, accessible through the diffuser, requires only a half turn to adjust from fully closed to fully open. The damper is designed to fit directly on the neck of the diffuser. Simple, convenient and accurate installation and operation.

Available with an optional operator arm. **Model 4275-OA** allows damper adjustment on the **UNI Diffusers** without removing the inner cone assembly.

Model 4275





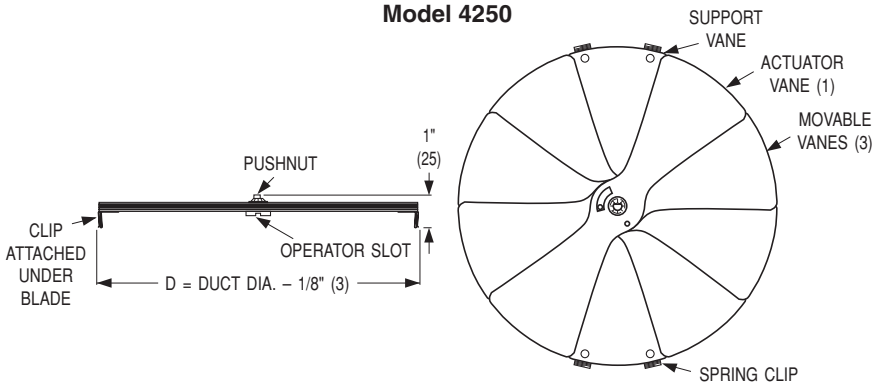
	Nominal size (inches)								Nominal Size (mm)							
	5	6	8	10	12	14	15	16	127	152	203	254	305	356	381	406
A	4 7/8	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	14 7/8	15 7/8	124	149	200	251	302	352	378	403
B	1 1/8	1 5/8	2 1/2	2 1/4	2 7/8	3 3/8	3 3/4	4 3/8	29	41	64	57	73	86	95	111
C	1 5/8				2 1/2				41				64			

Radial Sliding Blade Damper

The **Model 4250** is a neck mounted radial sliding blade damper used in round neck diffuser applications to provide fine volume control. Gang operated radial blades slide at right angles to the duct with minimal protrusion above the diffuser neck; allowing the damper to work effectively in flexible duct applications.

Available in sizes 6", 8", 10", 12" and 14" (152, 203, 254, 305 and 356).

Model 4250

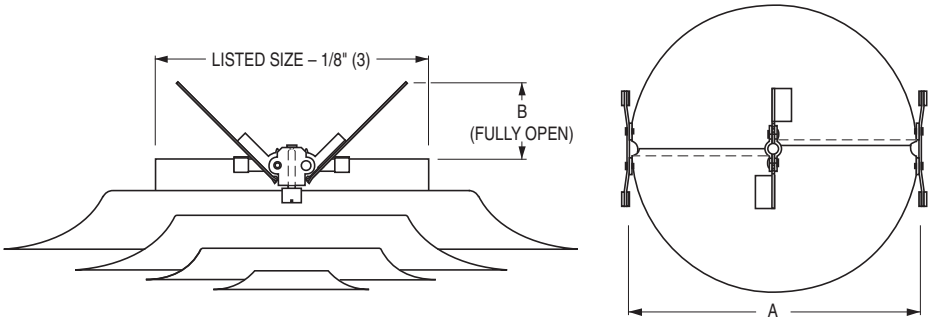


Butterfly Damper

The Model 4675 Butterfly Damper is an economical damper for volume balancing in round neck diffusers. Adjustable friction pivots hold the blades at the required setting. Adjusted from the face of the diffuser.

Not recommended for use with flexible duct.

Model 4675



	Nominal Size (inches)					Nominal size (mm)				
	6	8	10	12	14	152	203	254	305	356
A	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	149	200	251	302	352
B	2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	64	89	114	140	165

Air Balancing Devices

OPPOSED BLADE DAMPERS

Nailor Opposed Blade Dampers feature heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components. Mill finish.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

DIFFUSER MOUNT MODELS:

OBD Steel

OBD-A Aluminum

This style of damper mounts directly on the neck and are sized to suit most **Nailor** diffusers. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL).

Can be specified as an integral part of the diffuser model by adding a - O (steel) or - OA (aluminum) suffix to the diffuser model.

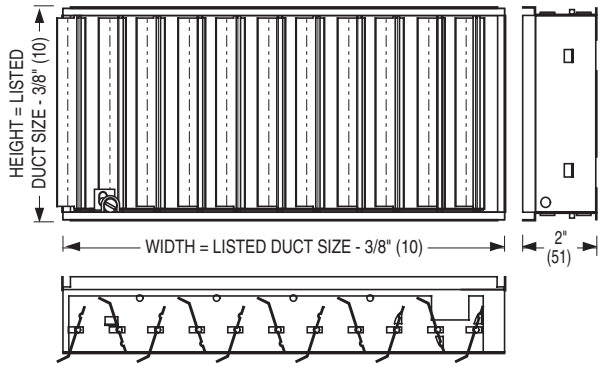
Available with Type DL Lever Operator for use with 6200, 6400 and 6500 Series Pattern Diffusers and 6600 Series Plaque Diffusers. Permits balancing without removing the diffuser inner core assembly.

Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the diffuser. This operator is the standard supplied when ordered separately.

Model OBD Type SL (Screwdriver Slot)

Diffuser Mount – Face Operator

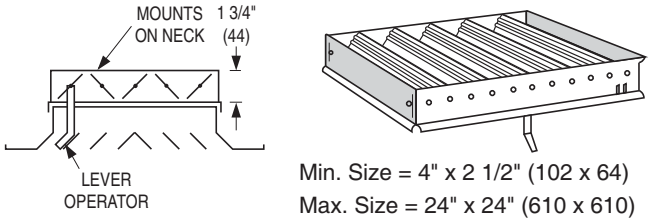


Type DL Operator

The DL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the diffuser face.

Model OBD Type DL (Lever Operator)

Diffuser Mount – Face Operator



Min. Size = 4" x 2 1/2" (102 x 64)

Max. Size = 24" x 24" (610 x 610)

Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

OBDD-A Aluminum

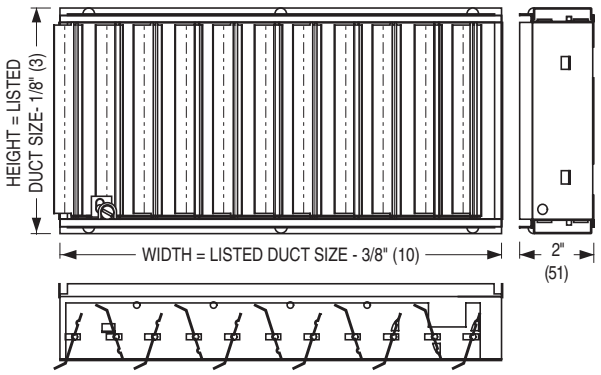
Designed to be field mounted independently in the duct, separate from and behind the diffuser. They are sized to suit and offer a friction fit in nominally sized ducts. They are secured with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Min. Size = 4" x 2 1/2" (102 x 64). Max. Size = 24" x 24" (610 x 610).

Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the diffuser.

Model OBDD Type SL (Screwdriver Slot)

Duct Mount – Face Operator

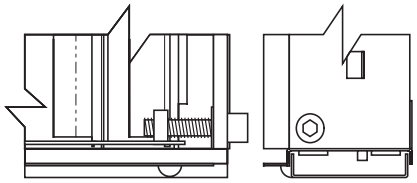


Type EH Operator

These duct mount models feature an external 3/16" (5) hex operator accessible from outside the duct; from the side of the duct when blades run vertically and from underneath the duct when blades run horizontally.

Model OBDD Type EH (Hex.)

Duct Mount – External Operator

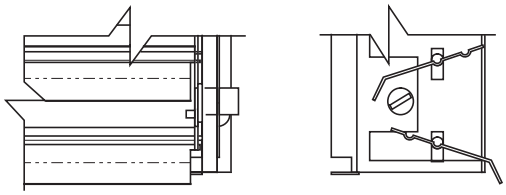


Type EN Operator

These duct mount models feature an external glass-filled nylon screwdriver slot operator accessible from outside the duct; from underneath the duct when blades run vertically, and from the side of the duct when blades run horizontally.

Model OBDD Type EN (Screwdriver Slot)

Duct Mount – External Operator



Type QD Operator *

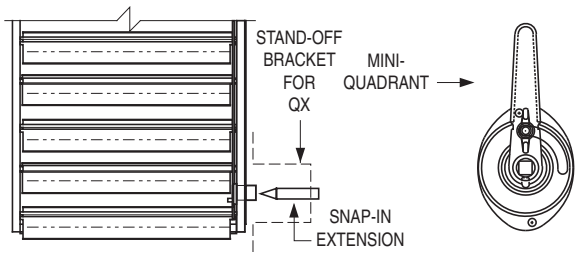
A snap-in shaft extension with 'mini' hand locking quadrant is available as an optional accessory.

Type QX Operator *

A snap-in shaft extension with 'mini' hand locking quadrant and 2" (51) stand-off bracket for externally insulated ducts. Order damper with blades parallel to horizontal duct dimension to ensure quadrant is located on vertical side of the duct.

*Not available on Model OBDD-A

Type QD or Type QX (Hand Quadrant)



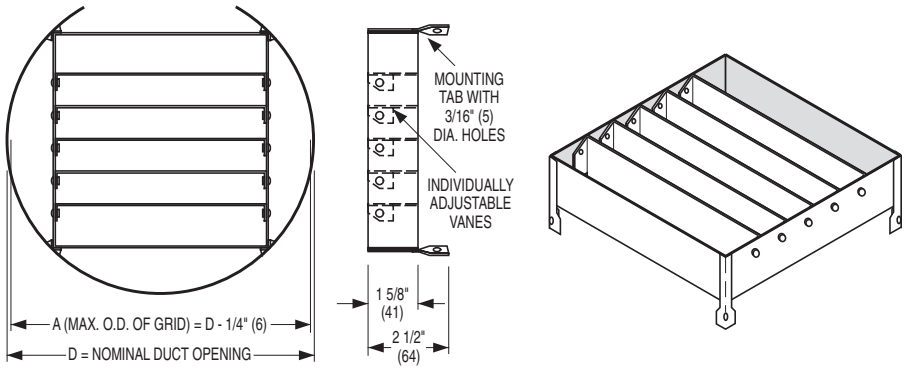
Air Balancing and Directional Control Devices

Equalizing Grid for Round Necks

The **Model EGR** is a duct mounted grid that equalizes the airflow into the branch duct or diffuser neck and provides directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

Model EGR



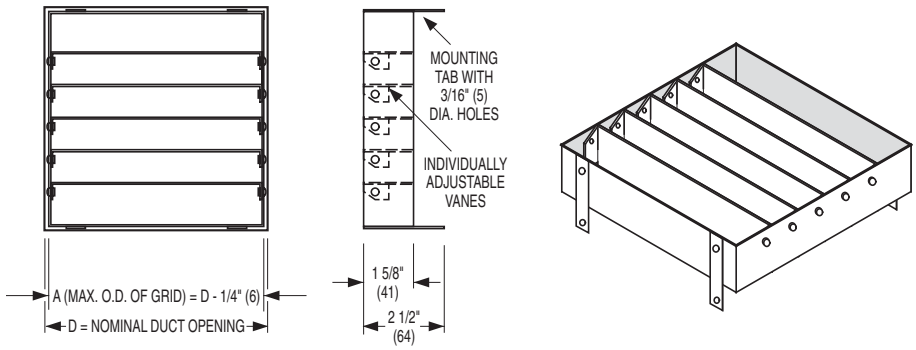
Equalizing Grid for Square and Rectangular Necks

The **Models EGS** and **EGL** are duct mounted grids that equalize the airflow into the branch duct or diffuser neck and provide directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.

Models EGS and EGL



Damper with Equalizing Grid for Round Necks

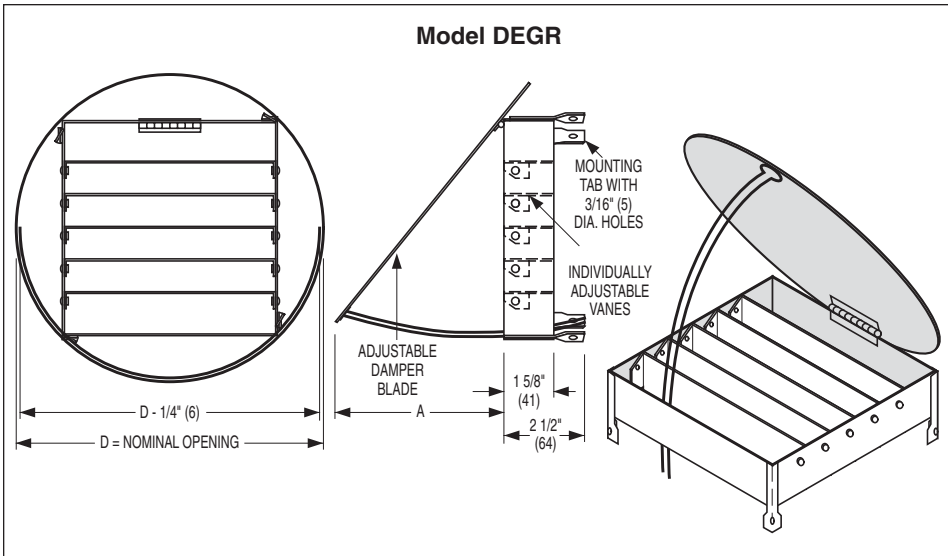
The **Model DEGR** is a duct mounted combination damper with equalizing grid.

It performs as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.

Model DEGR



Air Balancing and Directional Control Devices

Damper with Equalizing Grid for Square and Rectangular Necks

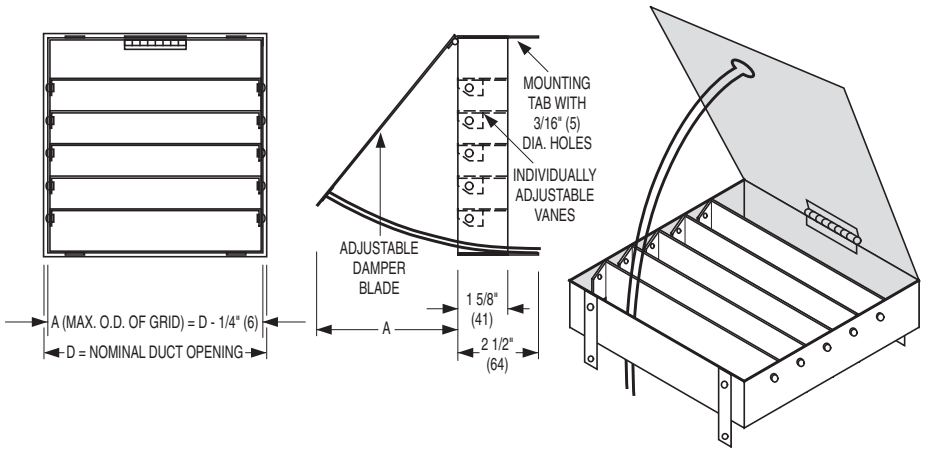
The **Models DEGS** and **DEGL** are duct mounted combination dampers with equalizing grids. They perform as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.

Models DEGS and DEGL



Volume Extractors

MODEL SERIES

EX Blades on 2" centers

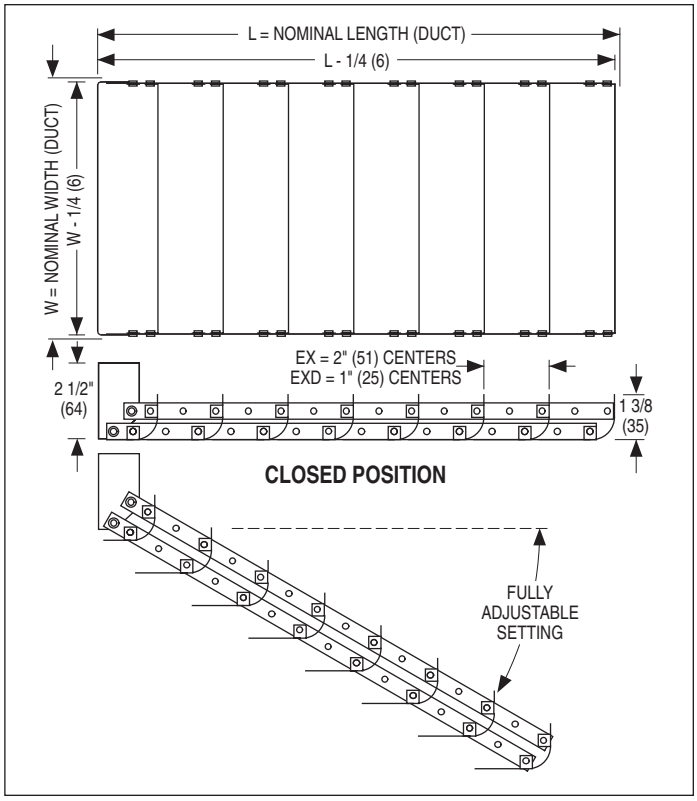
EXD Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

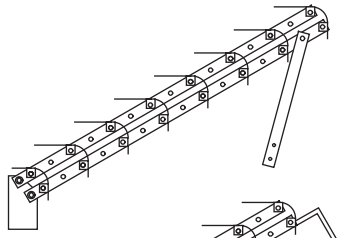
FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

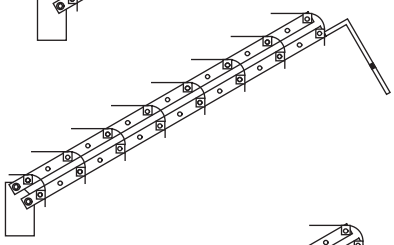


Operator Types

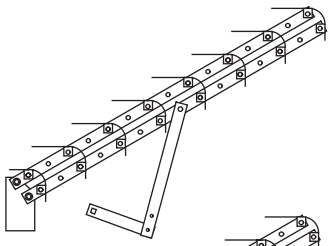
EX/EXD-1
Standard unit with adjusting strap.



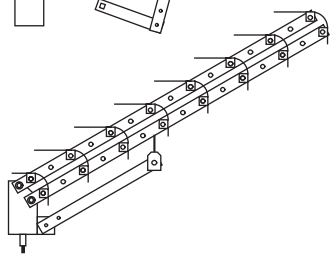
EX/EXD-1-R
Rod operator for external operation.



EX/EXD-2
Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.

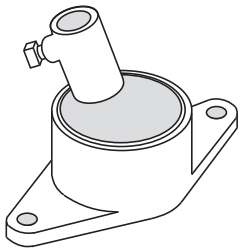


EX/EXD-3
Screw gear operator. Adjusts with 3/16" (5) wrench (by others).

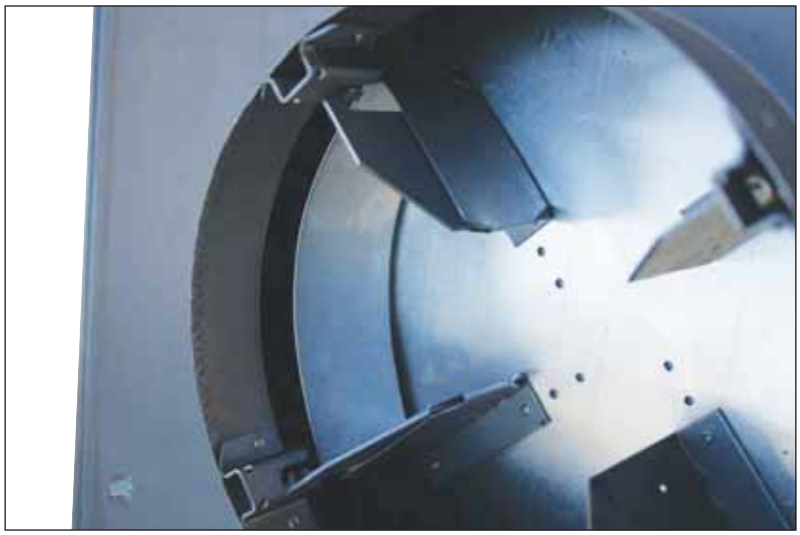


Optional Accessories

RLD
Locking device for Models **EX/EXD-1-R**.



Quadrant Blanks for Models UNI and AUNI Round Neck Plaque Diffusers



Quadrant Blanks

4695 QB for Models UNI, AUNI Round Neck Plaque Diffusers

QB3	3-Way Blow
QB2	2-Way Blow
QC2	2-Way Corner Blow
QB1	1-Way Blow

Model/Accessory: 4695/QB

Model 4695 Quadrant Blanks are specifically designed for use with the UNI Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of aluminum and the "notched" appearance of the flange features pre-cut grooves that form around the concealed neck bracketry in the diffuser to provide 1, 2, or 3-way discharge as required. The Quadrant Blanks are available for all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser

Pre-Installation (Required Items)

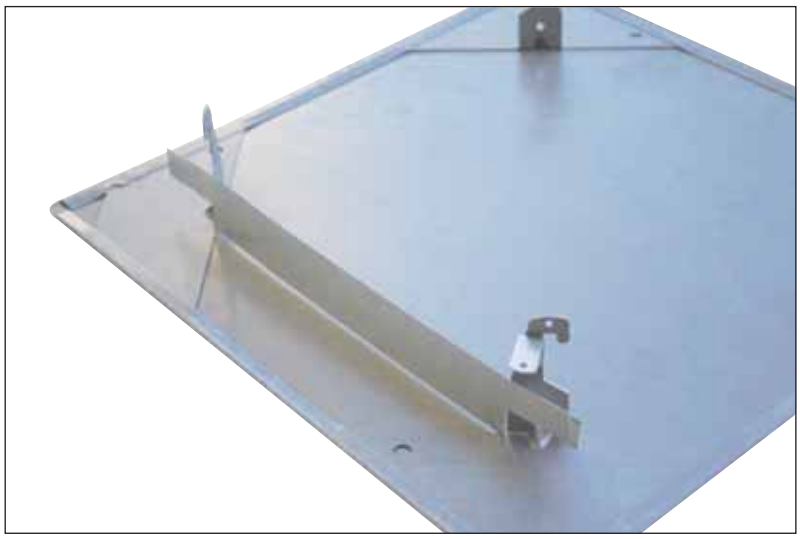
1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

Installation Instructions

1. A Quadrant Blank is a notched aluminum flange that is shipped loose from the factory and installed in the field (by others).
2. Prior to installation, gently bend the center of the Quadrant Blank flange to 90°, additionally bending the end notches to 90° for trouble-free installation.
3. Once the Quadrant Blank flange is formed properly, position the flange behind the neck bracketry, closest to the round inlet (in the desired location for directional blow). Prior to fastening into place, make sure that the flange is even on both sides of the neck bracketry and flush to the bottom of the backpan.
4. Installing one side at a time, form the end of the notch around the neck bracketry (once completed, repeat on the opposite side).

   Note: To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!

Quadrant Blanks for Model UNI2 Square Plaque Diffusers



Quadrant Blanks

4693 for Model UNI2 Square Plaque Diffusers

QB3	3-Way Blow
QB2	2-Way Blow
QC2	2-Way Corner Blow
QB1	1-Way Blow

Model/Accessory: 4693/QB

Model 4693 Quadrant Blanks are designed specifically for use with the UNI2 Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of an aluminum T-shaped flange that forms around the corner post bracketry, providing 1, 2, or 3-way discharge as required. Quadrant Blanks are available in all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field by others).

Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser

Required Items

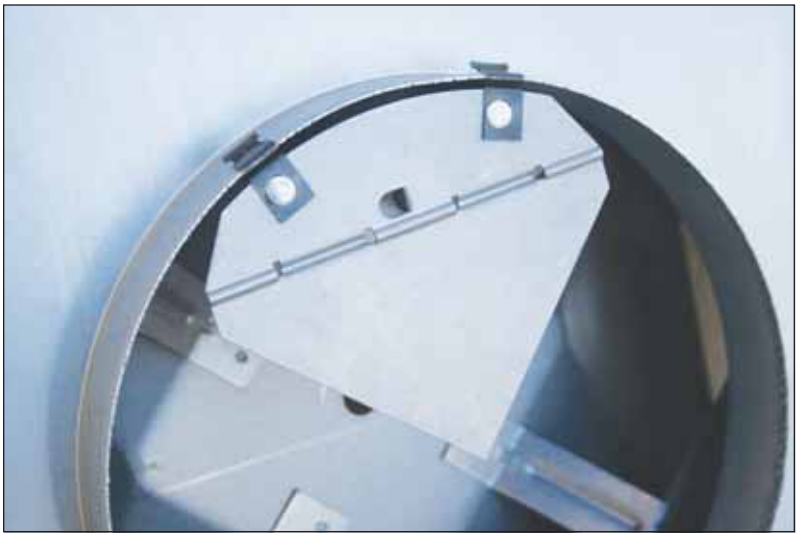
1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

Installation Instructions

1. The Quadrant Blank is shipped loose from the factory and shall be installed in the field (by others).
2. Prior to installation, position and center the T-shaped flange on the outside of the corner posts so that the extension ears are on top and the base of the flange is on the bottom, resting flush against the back of the plaque face. Flange ears shall be equal distance apart before folding around the corner post bracketry.
3. Carefully bend one side of the flange ears around the corner post bracketry (repeat on the opposite side of the post).
4. If installed properly, the base of the flange shall rest flush against the plaque face, ensuring that the airflow is restricted in that area. The ears of the flange shall be securely fastened around the corner post bracketry, equal distance apart on both sides, nearly touching the center of the corner post.

   Note: To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!

Quadrant Blanks for Models RNS3 and ARNS3 Round Neck Diffusers



Model/Accessory: 4293/QB

Model 4293 Quadrant Blanks are designed specifically for use with the RNS3 Series Square Ceiling Diffusers. The Quadrant Blanks are constructed of steel with S-Clip brackets attached to the pie-shaped piece for insertion onto the diffuser neck collar in order to provide 1, 2, or 3-way discharge as required. Quadrant Blanks are available for all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser

Required Items

1. Protective eyewear or safety glasses
2. Pair of work gloves

Installation Instructions

1. The steel, pie-shaped Quadrant Blanks with S-Clips are shipped loose from the factory and shall be installed in the field (by others).
2. Prior to installation, properly position the QB in the neck of the diffuser for desired directional blow. The round edge of the QB shall face the outside of the inlet, while the knife edge shall face the center of the inlet.
3. The S-Clips connected to the QB shall be securely pressed onto the neck of the diffuser. Once in place, the Quadrant Blank shall be held horizontally in place at the desired location.
4. For additional Quadrant Blank installation, please repeat steps 1 – 3.

Quadrant Blanks

4293 QB for Models RNS3, ARNS3 Round Neck Diffusers

QB3	3-Way Blow
QB2	2-Way Blow
QC2	2-Way Corner Blow
QB1	1-Way Blow

Quadrant Blanks for Model Series RNS and RNSA Round Neck Diffusers

Quadrant Blanks

4295 QB for Models RNS, ARNS, RNS2, RNSA1, RNSA2, ARNSA Round Neck Diffusers

QB3	3-Way Blow
QB2	2-Way Blow
QC2	2-Way Corner Blow
QB1	1-Way Blow

Model/Accessory: 4295/QB

Model 4295 Quadrant Blanks are designed specifically for use with the RNS Series Stamped Square Ceiling Diffusers. The Quadrant Blanks are constructed of steel, featuring a pie-shaped piece with a hinge pin that is pre-installed through pre-set holes for insertion into the riveted neck bracketry located in the diffuser, providing 1, 2, or 3-way discharge as required. Quadrant Blanks are available in all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser

Required Items

1. Protective eyewear or safety glasses
2. Pair of work gloves

Installation Instructions

1. The steel, pie-shaped Quadrant Blank is shipped loose with a hinge pin pre-installed through pre-set holes, to provide trouble-free installation, in the field (by others).
2. Prior to installation, properly position the QB around the neck of the diffuser for desired directional blow. The elevated eyehole located above the hinged pin on the quadrant blank, shall be facing in the upright position before the piece is installed in the diffuser. The round edge of the QB shall face the outside of the inlet collar, while the knife edge shall face the center of the inlet.
3. The hinge pins on the QB shall slide securely into the pre-set holes of the riveted neck bracketry located in the diffuser inlet collar. Once in place, the knife edge of the QB shall rest on top of the concealed neck bracketry.
4. For additional Quadrant Blank installation, repeat steps 1 – 3.

NOTES:

Nailor Industries Inc.

FIRE RATED PRODUCTS

TABLE OF CONTENTS

Page No.

Product Overview **E4**

Fire Rated Pattern Ceiling Diffusers **E7**
- 6500FRD • Fixed Pattern • Square Neck **E7**
- 6550FRD • Adjustable Pattern • Square Neck **E7**
- 6500IVFRD • Fixed Pattern • Square Neck • Induction Vanes **E7**
- 6505FRD • Fixed Pattern • Round Neck **E10**
- 6555FRD • Adjustable Pattern • Round Neck **E10**
- 6505IVFRD • Fixed Pattern • Round Neck • Induction Vanes **E10**

Fire Rated Stamped Square Ceiling Diffusers • Round Neck
- 4010, 4020 • Fixed Pattern • Full Face **E13**
- 4030, 4040 • Fixed Pattern • Panel Type **E13**
- 4010 • Fixed Pattern • Full Face • Surface Mount Module for Hard Ceilings **E16**
- 4010-1, 4020-1 • Adjustable Pattern • Full Face **E19**
- 4030-1, 4040-1 • Adjustable Pattern • Panel Type **E19**
- 4410, 4420 • Fixed Pattern • Full Face **E22**
- 4430, 4440 • Fixed Pattern • Panel Type **E22**

Fire Rated Architectural Ceiling Diffusers • Round Neck
- 4410-UNI, 4420-UNI • Flat Panel • Full Face **E25**
- 4430-UNI, 4440-UNI • Flat Panel • Panel Type **E25**
- 4410-UNI • Flat Panel • Plaque Face • Surface Mount Module for Hard Ceilings **E28**

Fire Rated Perforated Ceiling Diffusers • Round Neck

Supply • 1, 2, 3 or 4-Way Adjustable Discharge Pattern
- 4070, 4080 • Flush Face **E31**
- 4075, 4085 • Drop Face **E31**
- 4070 • Flush Face • Surface Mount Module for Hard Ceilings **E34**

Return Models • Ducted
- 4070R, 4080R • Flush Face **E31**
- 4075R, 4085R • Drop Face **E31**
- 4070R • Flush Face • Return • Surface Mount Module for Hard Ceilings **E34**

Supply • Curved Blade • 1, 2, 3 or 4-Way Adjustable Discharge Pattern
- 4070CB, 4080CB • Flush Face **E37**
- 4075CB, 4085CB • Drop Face **E37**

Fire Rated Modular Core Diffusers
- 7500FRD • Square Neck **E40**
- 7505FRD • Round Neck **E40**

TABLE OF CONTENTS

Page No.

Fire Rated Ductless Return Grilles
4111, 4112, 4113 • Perforated Face **E44**
4114, 4115, 4116 • Eggcrate Core **E44**
4117, 4118, 4119 • Open Face (grille by others) **E44**

Fire Rated Ductless Return Filter Grilles
4121, 4122, 4123 • Filter Grille • Louvered Face **E47**
4124, 4125, 4126 • Filter Grille • Eggcrate Face **E47**

Fire Rated Ductless Return Ceiling Damper
4127, 4128, 4129 • Raised Type • Optional Grilles **E50**

Fire Rated Open Face Plenum Diffusers
5200 • Plenum Type L • Turned In Leg **E53**
5200 • Plenum Type S • Hemmed Leg **E53**

Fire Rated Plenum Slot Diffusers
5500WB • Slot Diffuser • 'Wiper Blade' Pattern Controller **E56**
5500T • Slot Diffuser • 'Ice Tong' Pattern Controller **E59**
5500 • Slot Diffuser • 'Flip Flop' Pattern Controller **E62**
5500R • Return Model **E62**

GENERAL PRODUCT OVERVIEW

Fire Rated Products

Nailor offers a wide variety of fire rated products that are designed to provide the unobtrusive appearance required for architectural excellence and the high engineering performance required for use in heating and cooling applications. Ceiling diffusers, plenum slot diffusers and even ductless return air grilles are some of the many styles that are available.

Nailor's selection of fire rated products are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

FIRE RATED PATTERN CEILING DIFFUSERS

Nailor pattern ceiling diffusers are a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes: a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit particular requirements.

Square Neck –		
Fixed Pattern	Model 6500FRD	**Page E7**
Adjustable Pattern	Model 6550FRD	**Page E7**
Induction Vanes	Model 6500IVFRD	**Page E7**
Round Neck –		
Fixed Pattern	Model 6505FRD	**Page E10**
Adjustable Pattern	Model 6555FRD	**Page E10**
Induction Vanes	Model 6505IVFRD	**Page E10**

Model 6500FRD

Models 4010, 4010-1, 4420

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

Nailor 4000 and 4400 series models are a fire rated version of the popular RNS series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance.

Fixed Air Pattern – Round Neck		
Full Face	Models 4010, 4020	**Page E13**
Panel Type	Models 4030, 4040	**Page E13**
Surface Mount	Model 4010 Type S (ULC only)	**Page E16**
Adjustable Pattern – Round Neck		
Full Face	Models 4010-1, 4020-1	**Page E19**
Panel Type	Models 4030-1, 4040-1	**Page E19**
Fixed Pattern 2-Cone – Round Neck		
Full Face	Models 4410, 4420	**Page E22**
Panel Type	Models 4430, 4440	**Page E22**

FIRE RATED ARCHITECTURAL CEILING DIFFUSERS

These Nailor models are a fire rated version of the popular UNI series. Designed with the architect in mind, the diffusers in this series are fashioned to blend in with most ceiling types to create the ultimate aesthetic look. Nailor has made available the standard UNI with a fixed 360° air diffusion pattern.

Flat Panel – Round Neck		
Full Face	Models 4410-UNI, 4420-UNI	**Page E25**
Panel Type	Models 4430-UNI, 4440-UNI	**Page E25**
Surface Mount	Models 4410-UNI Type S (ULC only)	**Page E28**

Model 4410-UNI

FIRE RATED PERFORATED DIFFUSERS

The fire rated diffusers in this series are the most popular choices of Nailor's 4300 series perforated diffusers. Models included are the adjustable pattern controller design for ultimate performance flexibility. Available in both supply and return air styles with a choice of a flush or drop face.

Supply Air Adjustable Pattern Deflectors – Round Neck

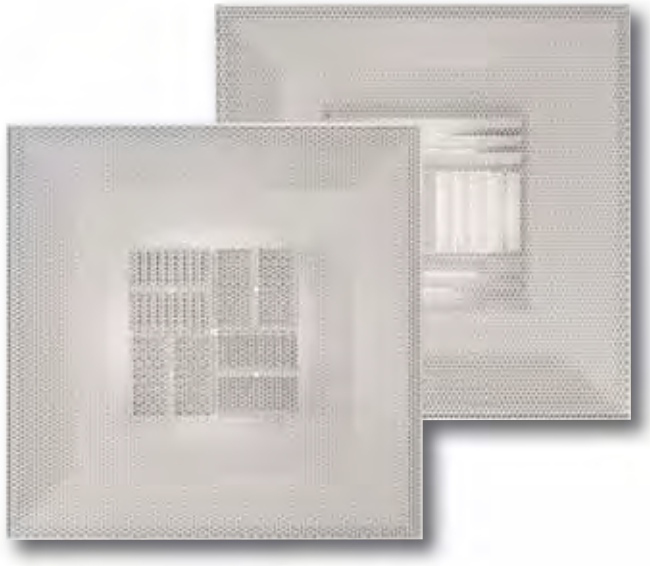
Flush Face	Models 4070, 4080	**Page E31**
Drop Face	Models 4075, 4085	**Page E31**
Surface Mount	Model 4070 Type S (ULC only)	**Page E34**

Return Air – Round Neck

Flush Face	Models 4070R, 4080R	**Page E31**
Drop Face	Models 4075R, 4085R	**Page E31**
Surface Mount	Models 4070R Type S (ULC only)	**Page E34**

Supply Air Curved Blade Pattern Controllers – Round Neck

Flush Face	Models 4070CB, 4080CB	**Page E37**
Drop Face	Models 4075CB, 4085CB	**Page E37**



Models 4080, 4080CB

Model 7500FRD

FIRE RATED MODULAR CORE DIFFUSERS

Nailor 7500 Series Modular Core Diffusers feature four individual spring-loaded 'modular' pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern. The diffuser maintains a horizontal ceiling pattern from maximum to minimum flow.

Square Neck –
Model 7500FRD **Page E40**

Round Neck –
Model 7505FRD **Page E40**

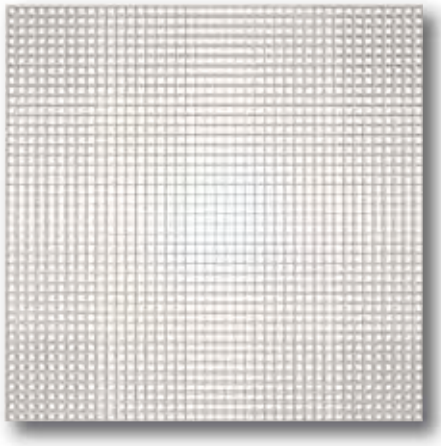
FIRE RATED DUCTLESS RETURN GRILLES

Model Series 4100 Ductless Return Grilles have been designed to complement the Nailor range of fire rated supply diffusers. The grilles have been tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. The grilles are available in three styles, a perforated face, an eggcrate face or an open face model that can accommodate a grille by others.

Perforated Face –
Models 4111, 4112, 4113 **Page E44**

Eggcrate Face –
Models 4114, 4115, 4116 **Page E44**

Open Face (grille by others) –
Models 4117, 4118, 4119 **Page E44**



Model 4116

FIRE RATED DUCTLESS RETURN FILTER GRILLES

Model Series 4100 Ductless Return Air Filter Grilles have been designed to complement the Nailor range of fire rated supply diffusers. These grilles are manufactured to accommodate a throw away filter by others. The grilles have been tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. The filter grilles are available in two styles, a louvered face or an eggcrate face.

Louvered Face –
Models 4121, 4122, 4123 **Page E47**

Eggcrate Face –
Models 4124, 4125, 4126 **Page E47**

Model 4123

Model 4129

FIRE RATED DUCTLESS RETURN CEILING DAMPERS FOR OPTIONAL GRILLE

A unique Nailor product that features a raised ceiling radiation damper mounted on an extended support frame above the ceiling line. It will accommodate any type of return air grille, filter grille or register manufactured from steel or aluminum. This allows the design engineer greater flexibility.

Optional Grilles –
Models 4127, 4128, 4129 **Page E50**

FIRE RATED OPEN FACE PLENUM DIFFUSERS

Nailor 5200 Series Fire Rated Plenums are designed for lay-in T-Bar. They can accommodate steel or aluminum grilles, registers or linear type slot diffusers and bar grilles. A turned in leg design is available to suit lay-in type cores and a hemmed leg design is available to accommodate concealed mounting angles.

Turned In Leg –
Model 5200 Type L **Page E53**

Hemmed Leg –
Model 5200 Type S **Page E53**

Model 5200

Models 5575, 5575R

FIRE RATED PLENUM SLOT DIFFUSERS

Nailor 5500 Series Plenum Slot Diffusers are designed for lay-in T-Bar. They are available for supply and return air. The supply air models feature pattern controllers that are available in three performance styles, four slot widths, and up to four parallel slots. The return models are designed to match the look of the supply air models.

'Wiper Blade' Pattern Controller –
Models 5550WB, 5575WB, 5510WB, 5515WB **Page E56**

'Ice Tong' Pattern Controller –
Models 5550T, 5575T, 5510T **Page E59**

'Flip Flop' Pattern Controller –
Model 5575 **Page E62**

Return Air –
Models 5550R, 5575R, 5510R, 5515R **Page E62**

FIRE RATED PATTERN CEILING DIFFUSERS

- SQUARE NECK
- 3 HOUR RATING
- LOUVERED FACE
- HIGH CAPACITY
- LAY-IN

CLASSIFIED C UL US

CATEGORY
CABS & CABS7

FIRE DAMPER LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE LISTING NO. 3225-0935:0102

Models:

6500FRD	**Fixed Pattern**
6550FRD	**Adjustable Pattern**
6500IVFRD	**Induction Vanes**

Model 6500FRD

Models 6500FRD, 6550FRD and 6500IVFRD are UL Classified fire rated ceiling diffuser component assemblies. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Pattern Ceiling Diffusers provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirements.

All models provide a tight horizontal discharge pattern from maximum to minimum airflow, making this product ideally suited to VAV applications.

Model 6550FRD Adjustable Pattern Ceiling Diffuser features four hinged, independently adjustable control vanes, providing continuous adjustment of the air discharge pattern from horizontal to vertical on each side of the diffuser.

Model 6500IVFRD Induction Vane Pattern Ceiling Diffuser features induction vanes mounted behind the louvers that create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with room air.

STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Spring-loaded core. Removable without the use of tools.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a variety of square neck sizes.
- Clean lines with no unsightly visible screws.
- The fixed ceiling radiation damper is standard. An adjustable model for balancing is optional (see page E8).
- Removing the inner core assembly gives access to AV balancing option.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

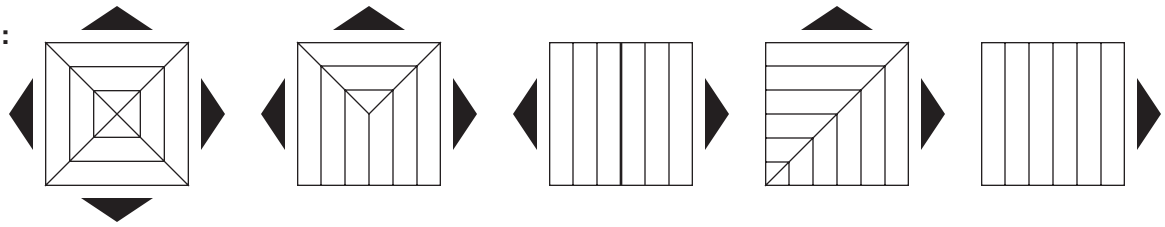
FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model 6500 or Model 6500IV.

Core Selection:

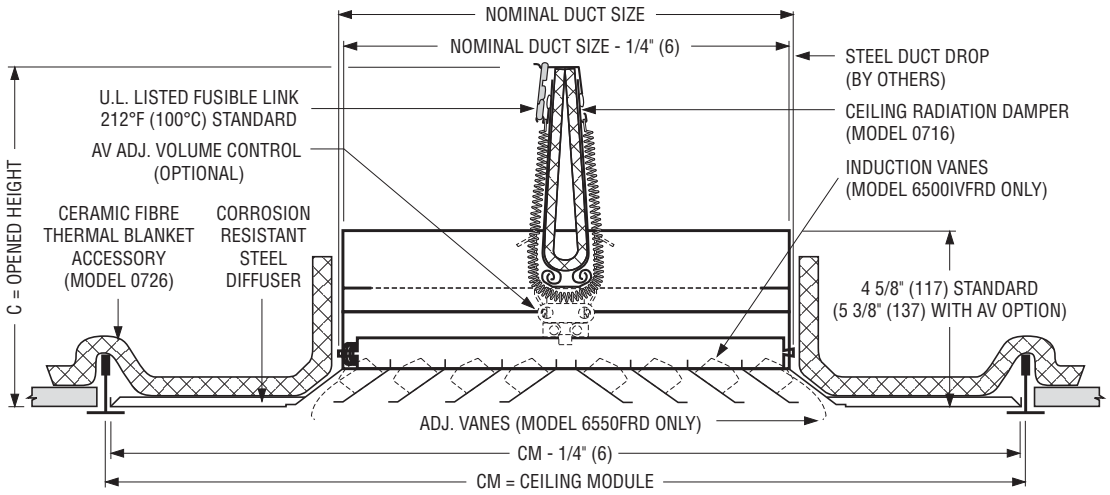


4A, 4-way | **3A, 3-way** | **2S, 2-way opposite** | **2G, 2-way corner** | **1S, 1-way**

Note:
Model 6550FRD is available in core style 4A only.

DIMENSIONAL DATA:

MODELS 6500FRD, 6550FRD AND 6500IVFRD • SQUARE NECK



Type L Lay-in T-Bar Frame

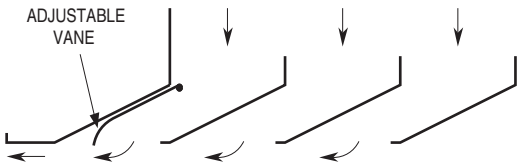
Dimensional Data and Sizing Availability:

Ceiling Module CM	Nominal Duct Size (square)	Opened Height C	
		Standard	With AV Option
12 x 12	6 x 6 (152 x 152) 9 x 9 (229 x 229)	5 3/4 (146) 7 1/4 (184)	6 1/2 (165) 8 (203)
24 x 24	6 x 6 (152 x 152) 9 x 9 (229 x 229) 12 x 12 (305 x 305)	5 3/4 (146) 7 1/4 (184) 9 (229)	6 1/2 (165) 8 (203) 9 3/4 (248)
	15 x 15 (381 x 381) 18 x 18 (457 x 457) 21 x 21 (533 x 533)	10 1/4 (260) 11 3/4 (298) 13 1/4 (337)	11 (279) N/A N/A

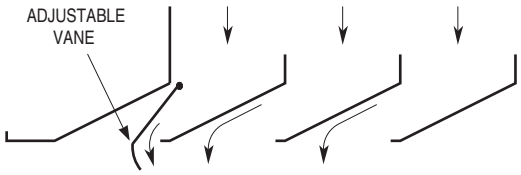
Dimensions are in inches (mm).

Note:
If the square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

Model 6550FRD Pattern Adjustment



Horizontal Pattern
Adjustable Vane Open Position

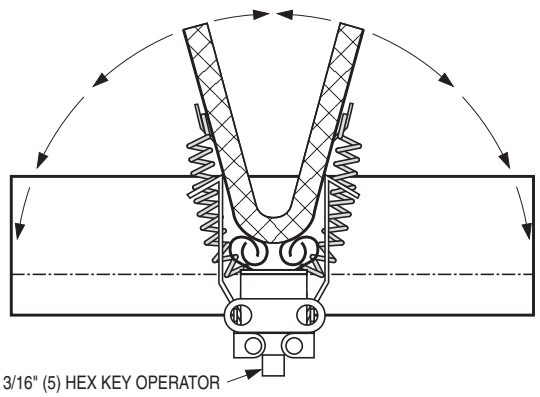


Vertical Pattern
Adjustable Vane Closed Position

AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0716A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.

Note: Maximum square duct size for this option is 15" x 15" (381 x 381).



HOW TO ORDER OR TO SPECIFY

FIRE RATED PATTERN CEILING DIFFUSERS • SQUARE NECK – MODELS 6500FRD, 6550FRD AND 6500IVFRD

EXAMPLE: 6500FRD - 0909 - 24" x 24" - L - AW - 4A - 212 - AV

1. **Models**
   - 6500FRD Fixed Pattern
   - 6550FRD Adjustable Pattern
   - 6500IVFRD Induction Vanes
2. **Neck Size**

   Imperial
   - 0606 06" x 06" (152 x 152) Square
   - 0909 09" x 09" (229 x 229) Square
   - 1212 12" x 12" (305 x 305) Square
   - 1515 15" x 15" (381 x 381) Square
   - 1818 18" x 18" (457 x 457) Square
   - 2121 21" x 21" (533 x 533) Square

   Only available on 24" x 24" or 600 x 600 ceiling modules
3. **Ceiling Module Size**

   Imperial

   12" x 12"
   24" x 24"

   Metric

   300 mm x 300 mm
   600 mm x 600 mm
4. **Frame Type**
   - L Lay-in T-Bar (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Core Style**
   - 4A 4-Way (default)
   - 1S 1-Way
   - 2G 2-Way Corner
   - 2S 2-Way Opposite Equal
   - 3A 3-Way
7. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
8. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Notes:

1. Consult individual model as to limitations of module, neck size and core style combination.
2. Model 6550FRD is available with core style 4A only.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6500FRD, 6550FRD** or **6500IVFRD Square Neck Steel Fire Rated Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall incorporate fixed discharge louvers for a horizontal throw pattern and shall be supplied in 4, 3, 2 or 1-way pattern as specified. Model 6550FRD shall include adjustable vanes to provide a vertical throw pattern capability. Model 6500IVFRD shall include induction vanes for high induction, reduced throw and rapid air mixing. (Optional: ceiling damper shall be provided with AV adjustable volume control for field balancing). The finish shall be AW Appliance White (optional finishes are available). The entire core assembly shall be removable without the use of tools. Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

FIRE RATED PATTERN CEILING DIFFUSERS

- ROUND NECK
- 3 HOUR RATING
- LOUVERED FACE
- HIGH CAPACITY
- LAY-IN

CLASSIFIED C UL US

CATEGORY
CABS & CABS7

FIRE DAMPER LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE
LISTING NO. 3225-0935:0102

Models:

6505FRD	**Fixed Pattern**
6555FRD	**Adjustable Pattern**
6505IVFRD	**Induction Vanes**

Model 6505FRD

Models 6505FRD, 6555FRD and 6505IVFRD are UL Classified fire rated ceiling diffuser component assemblies. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Pattern Ceiling Diffusers provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirements.

All models provide a tight horizontal discharge pattern from maximum to minimum airflow, making this product ideally suited for VAV applications.

Model 6555FRD Adjustable Pattern Ceiling Diffuser features four hinged, independently adjustable control vanes, providing continuous adjustment of the air discharge pattern from horizontal to vertical on each side of the diffuser.

Model 6505IVFRD Induction Vane Pattern Ceiling Diffuser features induction vanes mounted behind the louvers that create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with room air.

STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Spring-loaded core. Removable without the use of tools.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow.
- Clean lines with no unsightly visible screws.
- Round neck permits use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable model for balancing is optional (see page E11).
- Removing the inner core assembly gives access to AV balancing option.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

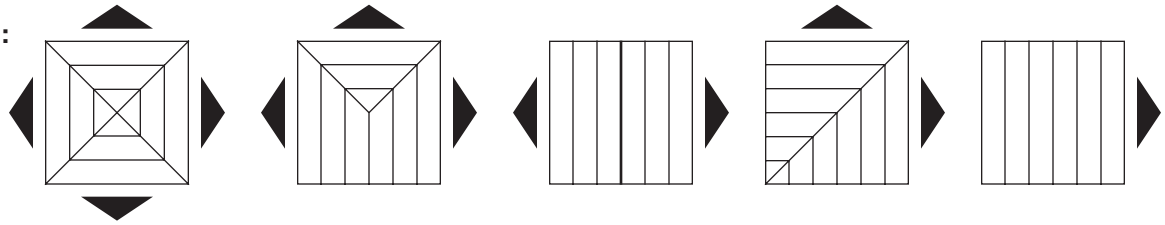
FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model 6500 or Model 6500IV.

Core Selection:

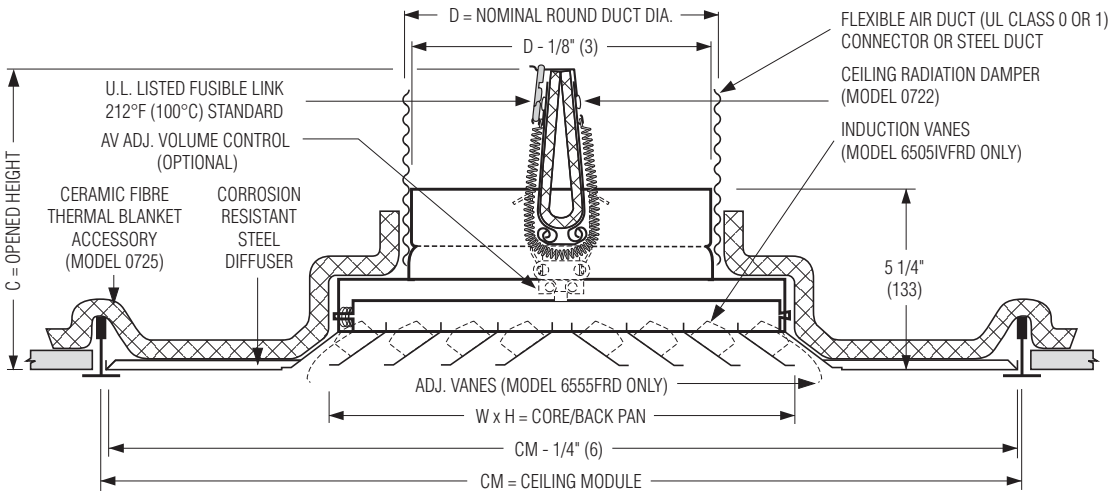


4A, 4-way | **3A, 3-way** | **2S, 2-way opposite** | **2G, 2-way corner** | **1S, 1-way**

Note:
Model 6555FRD is available in core style 4A only.

DIMENSIONAL DATA:

MODELS 6505FRD, 6555FRD AND 6505IVFRD • ROUND NECK



Type L Lay-in T-Bar Frame

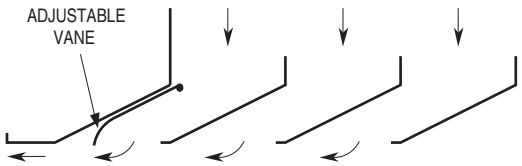
Dimensional Data and Sizing Availability:

Ceiling Module	Core / Back Pan	Round Neck	Opened Height
CM	W x H	D	C
12 x 12	9 x 9 (229 x 229)	6 (152) 8 (203)	6 1/2 (165) 7 1/2 (191)
24 x 24	9 x 9 (229 x 229)	6 (152) 8 (203)	6 1/2 (165) 7 1/2 (191)
	12 x 12 (305 x 305)	8 (203) 10 (254)	7 1/2 (191) 8 1/2 (216)
	15 x 15 (381 x 381)	10 (254) 12 (305) 14 (356)	8 1/2 (216) 9 1/2 (241) 10 1/2 (267)
	18 x 18 (457 x 457)	12 (305) 14 (356)	9 1/2 (241) 10 1/2 (267)

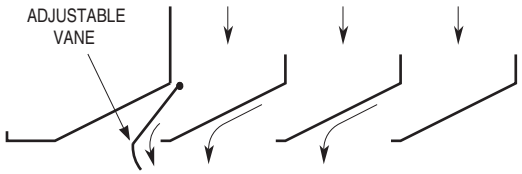
Dimensions are in inches (mm).

Note:
If the square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

Model 6555FRD Pattern Adjustment

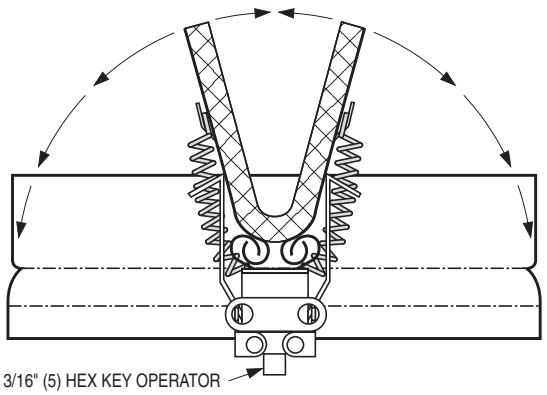


Horizontal Pattern
Adjustable Vane Open Position



Vertical Pattern
Adjustable Vane Closed Position

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED PATTERN CEILING DIFFUSERS • ROUND NECK – MODELS 6505FRD, 6555FRD AND 6505IVFRD

EXAMPLE: 6505FRD - 0909 - 08 - 24" x 24" - L - AW - 4A - 212 - AV

1. **Models**
   - 6505FRD Fixed Pattern
   - 6555FRD Adjustable Pattern
   - 6505IVFRD Induction Vanes
2. **Core/Back Pan Size**
   Imperial
   - 0909 09" x 09" (229 x 229)
   - 1212 12" x 12" (305 x 305)
   - 1515 15" x 15" (381 x 381)
   - 1818 18" x 18" (457 x 457)
3. **Neck Size**
   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   Only available on 24" x 24" or 600 mm x 600 mm ceiling modules
3. **Ceiling Module Size**
   Imperial
   - 12" x 12"
   - 24" x 24"

   Metric
   - 300 mm x 300 mm
   - 600 mm x 600 mm
4. **Frame Type**
   - L Lay-in T-Bar (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Core Style**
   - 4A 4-Way (default)
   - 1S 1-Way
   - 2G 2-Way Corner
   - 2S 2-Way Opposite Equal
   - 3A 3-Way
7. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
8. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Notes:

1. Consult individual model as to limitations of module, neck size and core style combination.
2. Model 6555FRD is available with core style 4A only.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6505FRD, 6555FRD** or **6505IVFRD Round Neck Steel Fire Rated Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall incorporate fixed discharge louvers for a horizontal throw pattern and shall be supplied in 4, 3, 2 or 1-way pattern as specified. Model 6555FRD shall include adjustable vanes to provide a vertical throw pattern capability. Model 6505IVFRD shall include induction vanes for high induction, reduced throw and rapid air mixing. (Optional: ceiling damper shall be provided with AV adjustable volume control for field balancing). The finish shall be AW Appliance White (optional finishes are available). The entire core assembly shall be removable without the use of tools. Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- FIXED AIR PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

CATEGORY BZZU

CATEGORY BZGUC

Full Face Models:

4010, 4020

Panel Type Models:

4030, 4040

Model 4020

Model Series 4000 are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular RNS Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions, and are particularly suitable for variable air volume systems.

STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- Spring-loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature four cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E14).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug. It is not necessary to remove the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

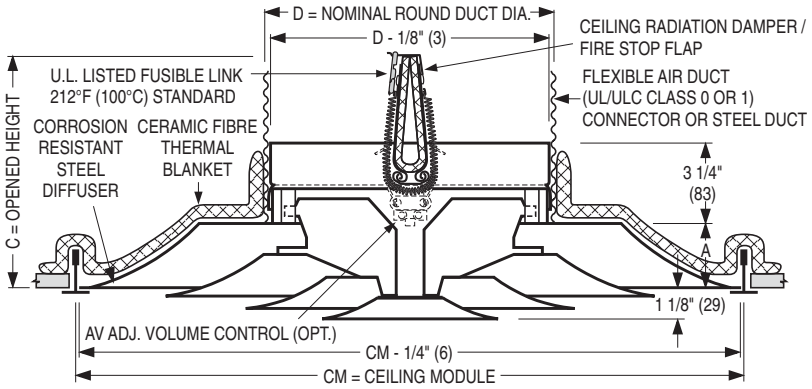
- See non-fire rated Model RNS.

DIMENSIONAL DATA:

MODELS 4010 AND 4020 • FULL FACE

Model 4010 12 x 12 or 300 x 300
Model 4020 24 x 24 or 600 x 600

	Imperial Modules (inches)			Metric Modules (mm)		
Listed Neck Size	CM = 12 x 12			CM = 300 x 300		
	D	A	C	D	A	C
6	6	1	5 1/2	152	25	140
8	8		6 1/2	203		165
Listed Neck Size	CM = 24 x 24			CM = 600 x 600		
	D	A	C	D	A	C
6	6	2 5/16	6 13/16	152	59	173
8	8		7 13/16	203		198
10	10		8 13/16	254		224
12	12		9 13/16	305		249
14	14		10 13/16	356		275

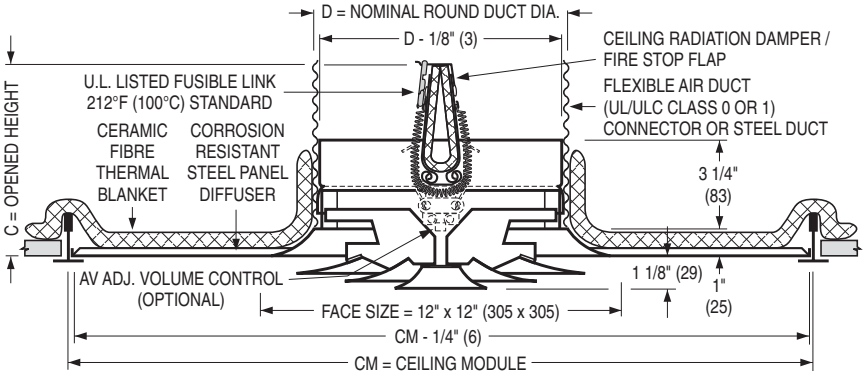


Type L Lay-in T-Bar Frame

MODELS 4030 AND 4040 • PANEL TYPE

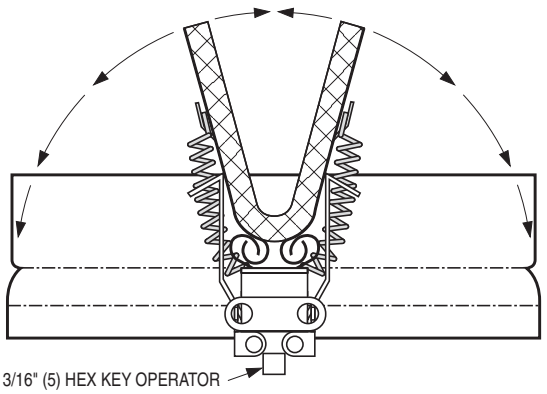
Model 4030 24 x 12 or 600 x 300
Model 4040 24 x 24 or 600 x 600

	Imperial Modules (inches)		Metric Modules (mm)	
Listed Neck Size	CM = 24 x 12		CM = 600 x 300	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165



Type PL Panel Lay-in T-Bar Frame

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – FIXED PATTERN
MODELS 4010, 4020, 4030, 4040

EXAMPLE: 4020 - 08 - 24" x 24" - L - AW - 212 - AV

1. **Models**
   - 4010 12" x 12" or 300 mm x 300 mm, Full Face
   - 4020 24" x 24" or 600 mm x 600 mm, Full Face
   - 4030 24" x 12" or 600 mm x 300 mm, Panel Type
   - 4040 24" x 24" or 600 mm x 600 mm, Panel Type
2. **Neck Size**

   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   Only available on Model 4020
3. **Ceiling Module Size**

   Imperial

   12" x 12" (Model 4010)
   24" x 12" (Model 4030)
   24" x 24" (Models 4020 and 4040)

   Metric

   300 mm x 300 mm (Model 4010)
   600 mm x 300 mm (Model 4030)
   600 mm x 600 mm (Models 4020 and 4040)
4. **Frame Type**
   - L Lay-in T-Bar (Models 4010 and 4020)
   - PL Panel Lay-in T-Bar (Models 4030 and 4040)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4010, 4020 (Full Face)** or **4030, 4040 (Panel Type) Fixed Pattern Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Certifications Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- FIXED AIR PATTERN
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT

CLASSIFIED C UL

CATEGORY BZGUC

Model:

4010 12 x 12 (300 x 300)
Type S Surface Mount

Model 4010

The only fire rated diffuser assembly of its kind for surface mount applications. Popular applications are fire rated ceiling designs which incorporate wooden joists on less than 24" (610) centers and 'Type X' gypsum wallboard ceiling membrane protection.
This model is a fire rated version of the popular RNS Louvered Face Series.
Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC Fire Resistance Directory. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.

STANDARD FEATURES:

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- AV Adjustable Volume control. Permits adjustment to damper blades for balancing.
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model RNS.

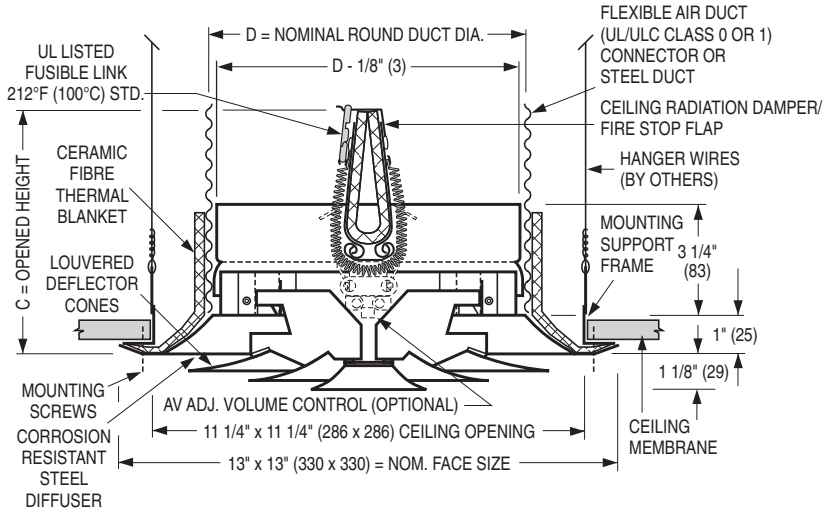
DIMENSIONAL DATA:

MODEL 4010 • FULL FACE

12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS

Model 4010: 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	CM = 12 x 12		CM = 300 x 300	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165

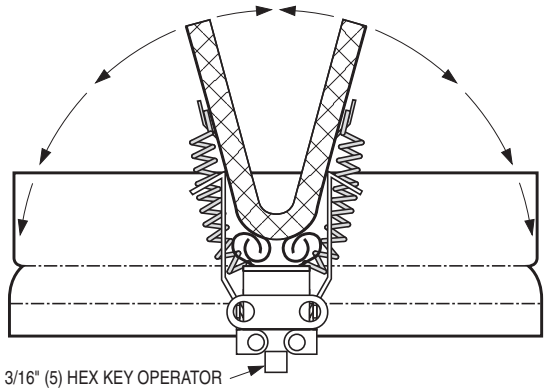


Type S Surface Mount

AV Fusible Link Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED STAMPED SQUARE CEILING DIFFUSER – 4 CONE FIXED PATTERN
MODEL 4010

EXAMPLE: 4010 - 08 - 12" x 12" - S - AW - 212 - AV

1. **Model**
   4010 12" x 12" or 300 mm x 300 mm, Full Face Module
2. **Neck Size**
   Imperial
   06 6" (152) Round
   08 8" (203) Round
3. **Ceiling Module Size**
   Imperial
   12" x 12"
   Metric
   300 mm x 300 mm
4. **Frame Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   PC Prime Coat
   SP Special Custom Color
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)
7. **Volume Control**
   — None (default)
   AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 4010 Type S** Surface Mount (round neck) **Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Certifications Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authority having jurisdiction.

FIRE RATED ADJUSTABLE STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- HORIZONTAL TO VERTICAL ADJUSTABLE DISCHARGE PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

CATEGORY BZZU

CATEGORY BZGUC

AIR DIFFUSER FIRE RATED LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE LISTING NO. 3161-0935:0104

Full Face Models:

4010-1, 4020-1

Panel Type Models:

4030-1, 4040-1

Model 4020-1

Model Series 4000 are UL/ULC Classified Fire Rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory and Underwriters Laboratories of Canada List of Equipment and Materials. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular RNSA Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. They provide the flexibility of a standard horizontal discharge or near vertical discharge pattern, useful in high ceiling applications where better air penetration or spot heating may be desired.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions, and are particularly suitable for variable air volume systems.

STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.

Adjustment: Quick and simple unique screw-type arrangement from the face of the diffuser. Permits gradual adjustment of the air discharge pattern from horizontal to vertical by rotating the center cone and so moving the inner cone assembly up or down.

- Spring-loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature four cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E20).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug. It is not necessary to remove the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model RNSA.

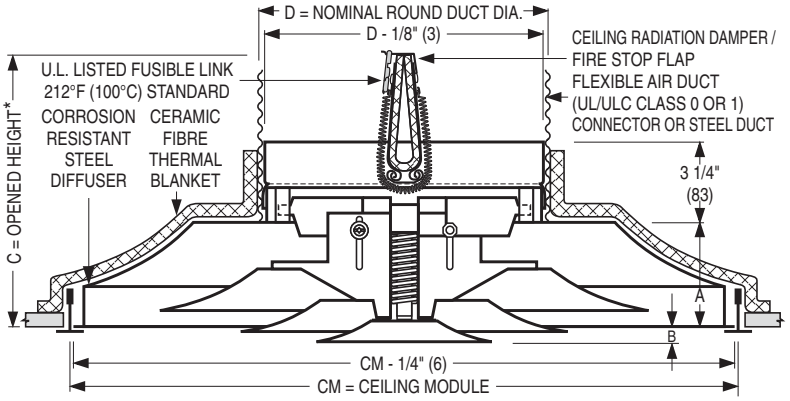
DIMENSIONAL DATA:

MODELS 4010-1 AND 4020-1 • FULL FACE

Model 4010-1 12 x 12 or 300 x 300
Model 4020-1 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)				Metric Modules (mm)			
	CM = 12 x 12				CM = 300 x 300			
	D	A	B	C*	D	A	B	C*
6	6	2 1/4	0 to 1/2	6 3/4	152	57	0 to 13	171
8	8			7 3/4	203			197
Listed Neck Size	CM = 24 x 24				CM = 600 x 600			
	D	A	B	C*	D	A	B	C*
6	6	3 3/4	0 to 3/8	8 1/4	152	95	0 to 10	210
8	8			9 1/4	203			235
10	10			10 1/4	254			260
12	12			11 1/4	305			286
14	14			12 1/4	356			311

* Plus 1 1/2" (38) with AV option.



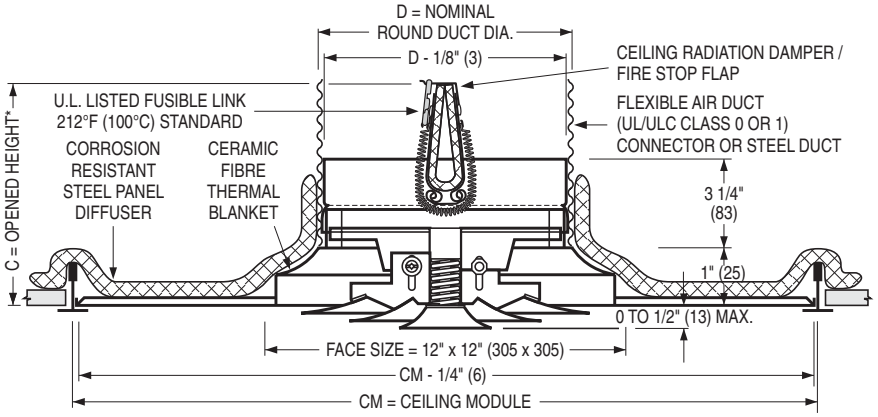
Type L Lay-in T-Bar Frame

MODELS 4030-1 AND 4040-1 • PANEL TYPE

Model 4030-1 24 x 12 or 600 x 300
Model 4040-1 24 x 24 or 600 x 600

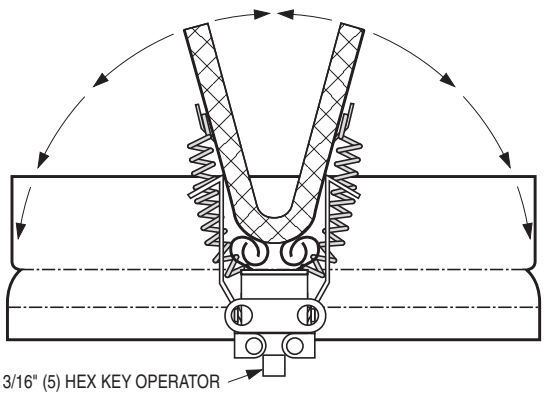
Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	CM = 24 x 12		CM = 600 x 300	
	D	C*	D	C*
6	6	6 3/4	152	171
8	8	7 3/4	203	197
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C*	D	C*
6	6	6 3/4	152	171
8	8	7 3/4	203	197

* Plus 1 1/2" (38) with AV option.



Type PL Panel Lay-in T-Bar Frame

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – 4 CONE ADJUSTABLE PATTERN MODELS 4010-1, 4020-1, 4030-1, 4040-1

EXAMPLE: 4020-1 - 10 - 24" x 24" - L - AW - 212 - AV

1. **Models**
   - 4010-1 12" x 12" or 300 mm x 300 mm, Full Face
   - 4020-1 24" x 24" or 600 mm x 600 mm, Full Face
   - 4030-1 24" x 12" or 600 mm x 300 mm, Panel Type
   - 4040-1 24" x 24" or 600 mm x 600 mm, Panel Type
2. **Round Neck Size**

   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   Only available on Model 4020-1
3. **Ceiling Module Size**

   Imperial

   12" x 12" (Model 4010-1)
   24" x 12" (Model 4030-1)
   24" x 24" (Models 4020-1 and 4040-1)

   Metric

   300 mm x 300 mm (Model 4010-1)
   600 mm x 300 mm (Model 4030-1)
   600 mm x 600 mm (Models 4020-1 and 4040-1)
4. **Frame Type**
   - L Lay-in T-Bar (Models 4010-1 and 4020-1)
   - PL Panel Lay-in T-Bar (Models 4030-1 and 4040-1)
   - S Surface Mount (Model 4010-1)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Notes:

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4010-1 (Frame Type S) is ULC Classified only.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4010-1, 4020-1, 4030-1, 4040-1 Adjustable Pattern Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 2 CONE
- FIXED AIR PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

CATEGORY BZZU

CATEGORY BZGUC

Full Face Models:
4410, 4420

Panel Type Models:
4430, 4440

Model 4420

Model Series 4400 are UL/ULC Classified Fire Rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the economical RNS2 Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and the diffusers provide stable diffusion and mixing patterns under constant and changing load conditions. They can accommodate a turn down of 80% without losing the ceiling coanda effect and dumping, making them particularly suitable for variable air volume systems.

STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- The inner cone assembly is fixed and non-removable, providing additional security and safety.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature two cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E23).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

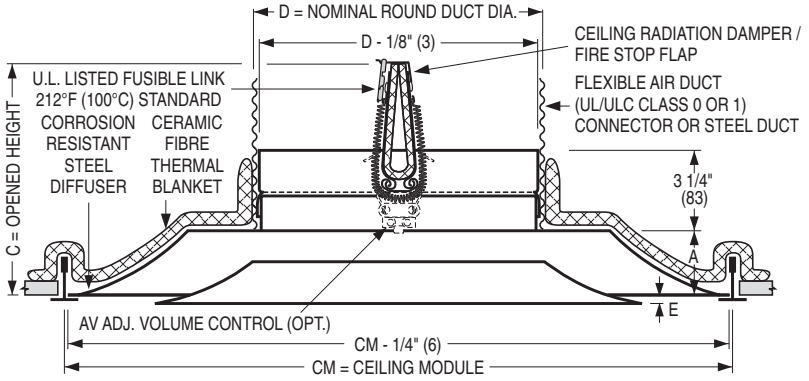
- See non-fire rated Model RNS2.

DIMENSIONAL DATA:

MODELS 4410 AND 4420 • FULL FACE

Model 4410 12 x 12 or 300 x 300
Model 4420 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)				Metric Modules (mm)			
	CM = 12 x 12				CM = 300 x 300			
	D	A	C	E	D	A	C	E
6 8	6 8	1	5 1/2 6 1/2	1 1/4	152 203	25	140 165	32
Listed Neck Size	**CM = 24 x 24**				**CM = 600 x 600**			
	D	A	C	E	D	A	C	E
6 8 10 12 14	6 8 10 12 14	2 5/16	6 13/16 7 13/16 8 13/16 9 13/16 10 13/16	7/8	152 203 254 305 356	59	173 198 224 249 275	22

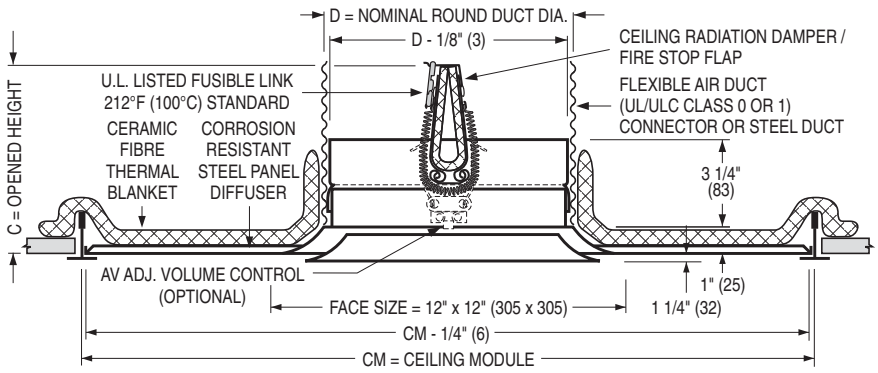


Type L Lay-in T-Bar Frame

MODELS 4430 AND 4440 • PANEL TYPE

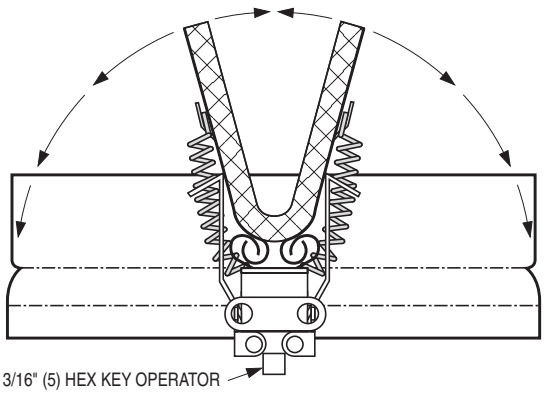
Model 4430 24 x 12 or 600 x 300
Model 4440 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	CM = 24 x 12		CM = 600 x 300	
	D	C	D	C
6 8	6 8	5 1/2 6 1/2	152 203	140 165
Listed Neck Size	**CM = 24 x 24**		**CM = 600 x 600**	
	D	C	D	C
6 8	6 8	5 1/2 6 1/2	152 203	140 165



Type PL Panel Lay-in T-Bar Frame

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – 2 CONE
MODELS 4410, 4420, 4430, 4440

EXAMPLE: 4420 - 12 - 24" x 24" - L - AW - 212 - AV

1. **Models**
   - 4410 12" x 12" or 300 mm x 300 mm, Full Face
   - 4420 24" x 24" or 600 mm x 600 mm, Full Face
   - 4430 24" x 12" or 600 mm x 300 mm, Panel Type
   - 4440 24" x 24" or 600 mm x 600 mm, Panel Type
2. **Round Neck Size**
   Imperial
   - 06 6"(152) Round
   - 08 8"(203) Round
   - 10 10"(254) Round
   - 12 12"(305) Round
   - 14 14"(356) Round

   Only available on Model 4420
3. **Ceiling Module Size**
   Imperial
   - 12" x 12" (Model 4410)
   - 24" x 12" (Model 4430)
   - 24" x 24" (Models 4420 and 4440)

   Metric
   - 300 mm x 300 mm (Model 4410)
   - 600 mm x 300 mm (Model 4430)
   - 600 mm x 600 mm (Models 4420 and 4440)
4. **Frame Type**
   - L Lay-in T-Bar (Models 4410 and 4420)
   - PL Panel Lay-in T-Bar (Models 4430 and 4440)
   - S Surface Mount (Model 4410)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Notes:

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4410 (Frame Type S) is ULC Classified only.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor** (select one or more) **Model 4410, 4420, 4430** or **4440 Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and consist of two die-formed concentric cones which eliminate mitered corners and provide uniform appearance in all neck sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED ARCHITECTURAL SQUARE CEILING DIFFUSERS

- SQUARE PLAQUE
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

Full Face Models:

4410-UNI, 4420-UNI

Panel Type Models:

4430-UNI, 4440-UNI

CLASSIFIED UL

CATEGORY BZZU

CLASSIFIED C UL

CATEGORY BZGUC

AIR DIFFUSER FIRE RATED LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE LISTING NO. 3161-0935:0104

Model 4420-UNI

Model Series 4400 are UL/ULC Classified Fire Rated Ceiling Diffuser / Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular UNI Series. They have been specially designed to provide the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

The UNI diffuser complements any decor, blending beautifully with virtually any architectural style or requirement. The UNI diffuser provides a stable, tight to the ceiling, horizontal air diffusion and mixing pattern under constant and changing load conditions throughout the cataloged range of air volumes, and is particularly suitable for variable air volume applications.

STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- Spring-loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- Face panel is virtually flush with the ceiling line and is double skinned for rigidity and strength. Features a hemmed edge for a professional finish.
- With two cones in all sizes, the diffusers provide a uniform appearance where different neck sizes are installed in the same area.
- RC Retaining Channels are available for ceiling tile installation on the face of the inner cone assembly.
- Unique, concealed neck bracketry is virtually invisible from most angles.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional.
- Access to the AV balancing option is achieved by removing the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

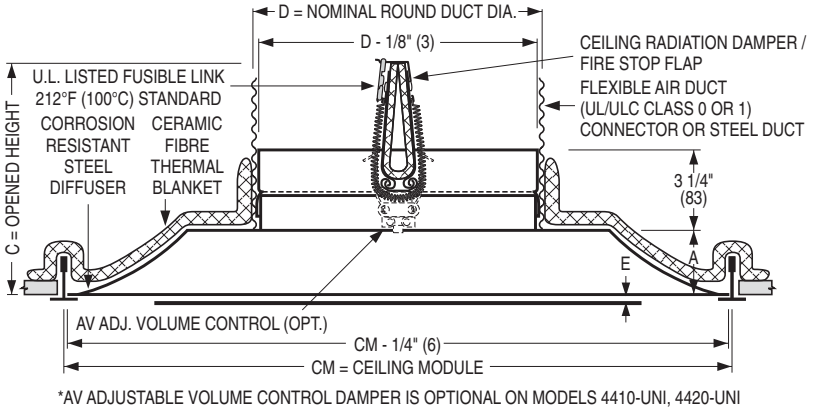
- See non-fire rated Model UNI.

DIMENSIONAL DATA:

MODELS 4410-UNI AND 4420-UNI • FULL FACE

Model 4410-UNI 12 x 12 or 300 x 300
Model 4420-UNI 24 x 24 or 600 x 600

	Imperial Modules (inches)				Metric Modules (mm)			
Listed Neck Size	CM = 12 x 12				CM = 300 x 300			
	D	A	C	E	D	A	C	E
6 8	6 8	1	5 1/2 6 1/2	5/8	152 203	25	140 165	16
Listed Neck Size	CM = 24 x 24				CM = 600 x 600			
	D	A	C	E	D	A	C	E
6 8 10 12 14	6 8 10 12 14	2 5/16	6 13/16 7 13/16 8 13/16 9 13/16 10 13/16	3/8	152 203 254 305 356	59	173 198 224 249 275	10



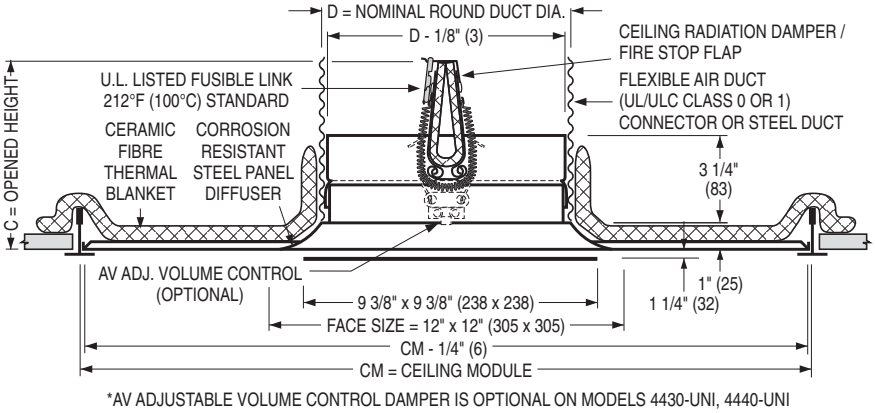
*AV ADJUSTABLE VOLUME CONTROL DAMPER IS OPTIONAL ON MODELS 4410-UNI, 4420-UNI

Type L Lay-in T-Bar Frame

MODELS 4430-UNI AND 4440-UNI • PANEL TYPE

Model 4430-UNI 24 x 12 or 600 x 300
Model 4440-UNI 24 x 24 or 600 x 600

	Imperial Modules (inches)		Metric Modules (mm)	
Listed Neck Size	CM = 24 x 12		CM = 600 x 300	
	D	C	D	C
6 8	6 8	5 1/2 6 1/2	152 203	140 165
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C	D	C
6 8	6 8	5 1/2 6 1/2	152 203	140 165



*AV ADJUSTABLE VOLUME CONTROL DAMPER IS OPTIONAL ON MODELS 4430-UNI, 4440-UNI

Type PL Panel Lay-in T-Bar Frame

Architectural Option
Model 4420-UNI

Model 4420-UNI Diffuser with optional RC Retaining Channel complements any decor blending beautifully with virtually any architectural style or requirement for a unique 'custom' appearance.

The retaining channel is shipped separately for field installation of a ceiling tile that has been cut to size and installs directly on the face of the inner cone assembly.

The result is a high performance, fire rated diffuser that blends harmoniously with the specified architectural ceiling design.

HOW TO ORDER OR TO SPECIFY

FIRE RATED ARCHITECTURAL CEILING DIFFUSERS – SQUARE PLAQUE
MODELS 4410-UNI, 4420-UNI, 4430-UNI, 4440-UNI

EXAMPLE: 4420-UNI - 08 - 24" x 24" - L - AW - 212 - AV

1. **Models**
   - 4410-UNI 12" x 12" or 300 mm x 300 mm, Full Face
   - 4420-UNI 24" x 24" or 600 mm x 600 mm, Full Face
   - 4430-UNI 24" x 12" or 600 mm x 300 mm, Panel Type
   - 4440-UNI 24" x 24" or 600 mm x 600 mm, Panel Type
2. **Round Neck Size**

   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   Only available on Model 4420-UNI
3. **Ceiling Module Size**

   Imperial
   - 12" x 12" (Model 4410-UNI)
   - 24" x 12" (Model 4430-UNI)
   - 24" x 24" (Models 4420-UNI and 4440-UNI)

   Metric
   - 3030 300 mm x 300 mm (Model 4410-UNI)
   - 6030 600 mm x 300 mm (Model 4430-UNI)
   - 6060 600 mm x 600 mm (Models 4420-UNI and 4440-UNI)
4. **Frame Type**
   - L Lay-in T-Bar (Models 4410-UNI and 4420-UNI)
   - PL Panel Lay-in T-Bar (Models 4430-UNI and 4440-UNI)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor** (select one or more) **Model 4410-UNI, 4420-UNI, 4430-UNI** or **4440-UNI Steel Fire Rated Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and consist of stamped one-piece outer-cone which eliminates mitered corners and a double-skinned inner face panel with a hemmed edge for strength and a clean appearance. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED ARCHITECTURAL SQUARE CEILING DIFFUSERS

- SQUARE PLAQUE
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT MODULE FOR HARD CEILINGS

CLASSIFIED C UL

CATEGORY BZGUC

Model:

4410-UNI 12 x 12 or 300 x 300
Type S Surface Mount

Model 4410-UNI

Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC Fire Resistance Directory. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.
The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems. Removable face has spring clips for easy access to the damper.

STANDARD FEATURES:

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- The diffuser consists of a stamped one piece outer cone and a plaque inner face panel with a hemmed edge for strength and a clean appearance.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E29).
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel diffuser.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

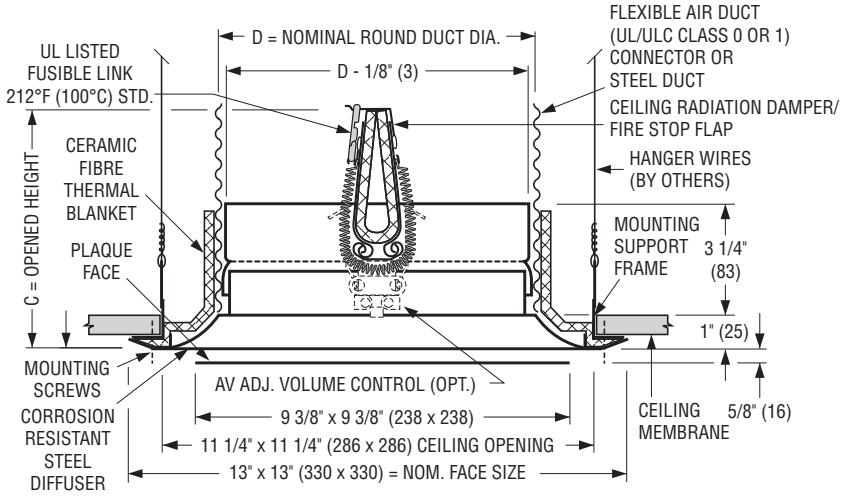
PERFORMANCE DATA:

- See non-fire rated Model UNI.

DIMENSIONAL DATA:

MODEL 4410-UNI • SQUARE FACE

12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS



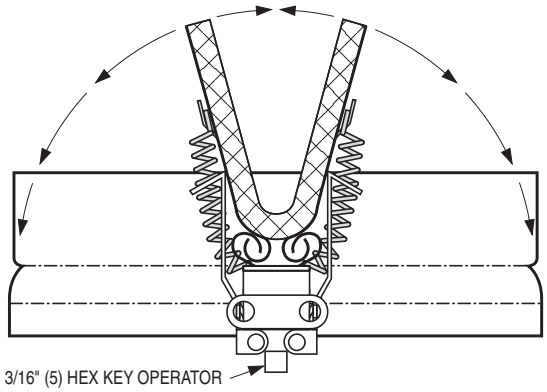
Type S Surface Mount

Available Sizes and Dimensional Data

Model 4410-UNI - 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules				Metric Modules	
	Imperial Units (in.)		SI Units (mm)		SI Units (mm)	
	CM = 12 x 12		CM = 305 x 305		CM = 300 x 300	
	D	C	D	C	D	C
6	6	5 1/2	152	140	152	140
8	8	6 1/2	203	165	203	165

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED ARCHITECTURAL CEILING DIFFUSERS – SQUARE PLAQUE – SURFACE MOUNT
MODEL 4410-UNI

EXAMPLE: 4410-UNI - 08 - 12" x 12" - S - AW - 212 - AV

1. **Models**
   4410-UNI 12" x 12" or 300 mm x 300 mm, Full Face
2. **Round Neck Size**
   Imperial
   06 6" (152) Round
   08 8" (203) Round
3. **Ceiling Module Size**
   Imperial
   12" x 12"
   Metric
   300 mm x 300 mm
4. **Frame Type**
   S Surface Mount for Hard Ceilings
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   PC Prime Coat
   SP Special Custom Color
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)
7. **Volume Control**
   — None (default)
   AV Adjustable Volume Control

Notes:

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4410-UNI (Frame Type S) is ULC Classified only.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 4410-UNI Type S** Surface Mount (round neck) **Steel Fire Rated Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and consist of a stamped one-piece outer-cone and a double-skinned inner face panel with a hemmed edge for strength and a clean appearance. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authorities having jurisdiction.

FIRE RATED PERFORATED CEILING DIFFUSERS

- FACE MOUNTED DEFLECTORS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

CATEGORY BZZU

CATEGORY BZGUC

AIR DIFFUSER FIRE RATED LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE LISTING NO. 3161-0935:0104

Supply Models:

4070, 4080	**Flush Face**
4075, 4085	**Drop Face**

Return Models:

4070R, 4080R	**Flush Face**
4075R, 4085R	**Drop Face**

Model 4080

Model Series 4070 and 4080 are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Fire Rated Perforated Ceiling Diffusers have been designed to provide the unobtrusive appearance required for architectural excellence and the high engineering performance required for use in heating and cooling applications. They have excellent performance in variable air volume systems and provide a tight horizontal discharge pattern without marking the ceiling.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern controllers.
- Round necks permit use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E32).
- Dropping the perforated face gives access to this balancing feature.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- Return models have the same face and frame construction as the supply models to match appearance. The deflectors are omitted for return applications.
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.
- Ductless returns are also available.

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

FINISH OPTIONS:

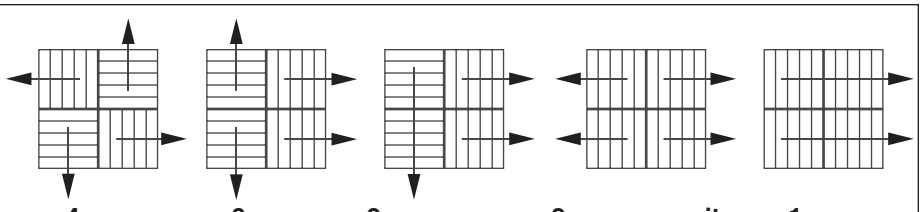
- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model 4320 (flush face), Model 4325 (drop face), Model 4360 (flush face) and Model 4365 (drop face).

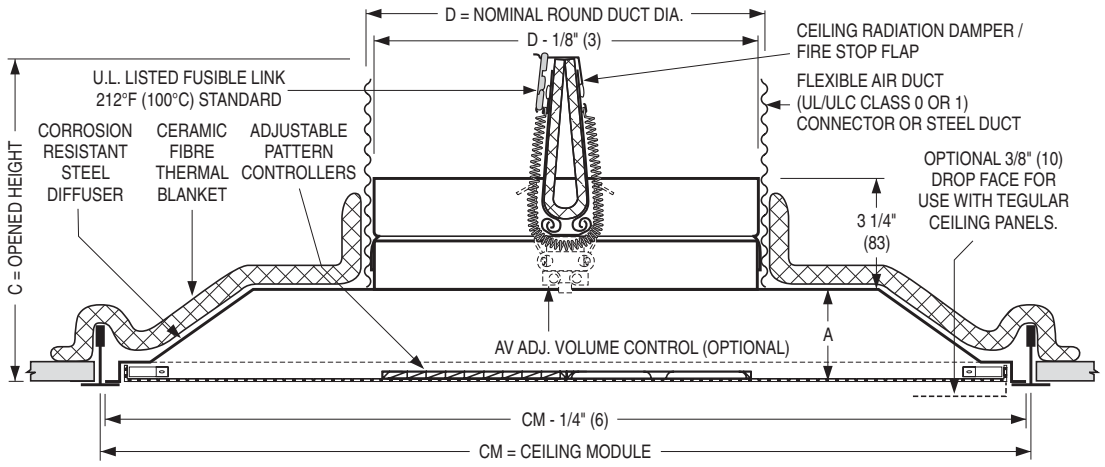
Available Air Patterns:

All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.



DIMENSIONAL DATA:

MODELS 4070, 4075, 4080, 4085, 4070R, 4075R, 4080R AND 4085R



Type L Lay-in T-Bar Frame

E

FIRE RATED PRODUCTS

Available Sizes and Dimensional Data

	Imperial Modules						Metric Modules		
	Imperial Units (in.)			SI Units (mm)			SI Units (mm)		
Listed Neck Size	CM = 12 x 12			CM = 305 x 305			CM = 300 x 300		
	D	A	C	D	A	C	D	A	C
6	6	1 7/8	6 3/8	152	48	162	152	48	162
8	8		7 3/8	203		187	203		187
Listed Neck Size	CM = 24 x 24			CM = 610 x 610			CM = 600 x 600		
	D	A	C	D	A	C	D	A	C
6	6	2 3/8	6 7/8	152	60	175	152	60	175
8	8		7 7/8	203		200	203		200
10	10		8 7/8	254		225	254		225
12	12		9 7/8	305		251	305		251
14	14		10 7/8	356		276	356		276

Model Number Designation

Supply Models:

4070, Flush Face
4075, Drop Face
12 x 12 or 300 x 300
Type L Lay-in Frame

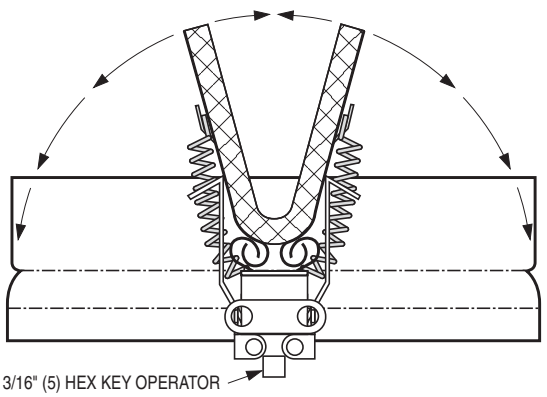
4080, Flush Face
4085, Drop Face
24 x 24 or 600 x 600
Type L Lay-in Frame

Return Models:

4070R, Flush Face
4075R, Drop Face
12 x 12 or 300 x 300
Type L Lay-in Frame

4080R, Flush Face
4085R, Drop Face
24 x 24 or 600 x 600
Type L Lay-in Frame

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK
MODELS 4070, 4080, 4075, 4085, 4070R, 4080R, 4075R, 4085R

EXAMPLE: 4070 - 06 - 12" x 12" - L - AW - 212 - AV

1. **Models**
   - 4070 12" x 12" or 300 mm x 300 mm, Flush Face - Supply
   - 4080 24" x 24" or 600 mm x 600 mm, Flush Face - Supply
   - 4075 12" x 12" or 300 mm x 300 mm, Drop Face - Supply
   - 4085 24" x 24" or 600 mm x 600 mm, Drop Face - Supply
   - 4070R 12" x 12" or 300 mm x 300 mm, Flush Face - Return
   - 4080R 24" x 24" or 600 mm x 600 mm, Flush Face - Return
   - 4075R 12" x 12" or 300 mm x 300 mm, Drop Face - Return
   - 4085R 24" x 24" or 600 mm x 600 mm, Drop Face - Return
2. **Neck Size**
   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   Available on Models 4080, 4085, 4080R, 4085R
3. **Ceiling Module Size**
   Imperial
   - 12" x 12"
   - 24" x 24"

   Metric
   - 300 mm x 300 mm
   - 600 mm x 600 mm
4. **Frame Type**
   - L Lay-in T-Bar
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BA Appliance White Face - Black Back Pan
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) Supply – **4070, 4080 (Flush Face),** or **4075, 4085 (Drop Face)** or Return **– 4070R, 4080R (Flush Face)** or **4075R, 4085R (Drop Face) Round Neck Steel Fire Rated Perforated Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have a hinged removable face plate with quick-release spring latches. The discharge pattern can adjust to vertical or 1, 2, 3, or 4-way horizontal, before or after installation, by dropping the perforated face and rotating the pattern controllers. Return models have the same face and frame construction as the supply models to match appearance. The deflectors are omitted for return applications. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED PERFORATED CEILING DIFFUSERS

- FACE MOUNTED DEFLECTORS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT

CLASSIFIED C UL

CATEGORY BZGUC

Supply Model:

4070 12 x 12 or 300 x 300 Type S Surface Mount

Return Model:

4070R 12 x 12 or 300 x 300 Type S Surface Mount

Model 4070

Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC List of Equipment and Materials Vol. III Fire Resistant Ratings. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.

The discharge pattern is 1, 2, 3, or 4-way horizontal and is adjusted by dropping the perforated face and rotating the pattern deflectors. Removable face has spring clips for easy access to the damper.

The return model is furnished without pattern controllers.

STANDARD FEATURES:

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E35).
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel diffuser.

FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

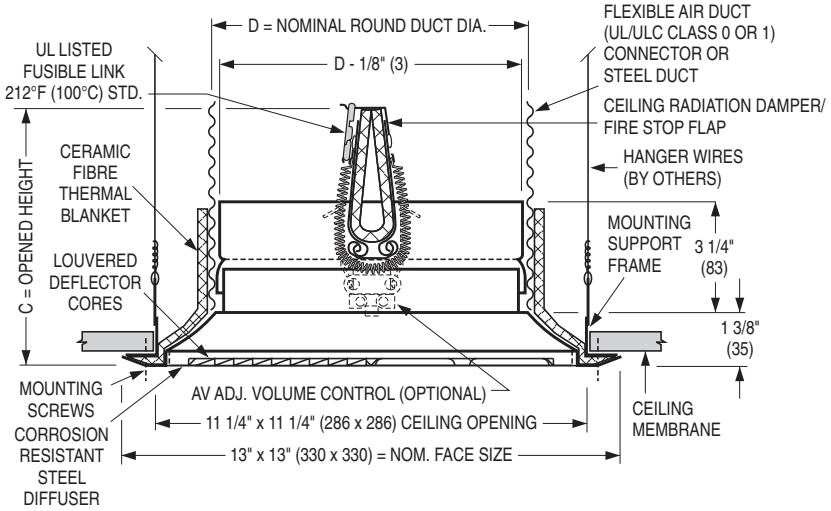
PERFORMANCE DATA:

- See non-fire rated Model 4320 and Model 4360.

DIMENSIONAL DATA:

MODELS 4070 AND 4070R

12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS



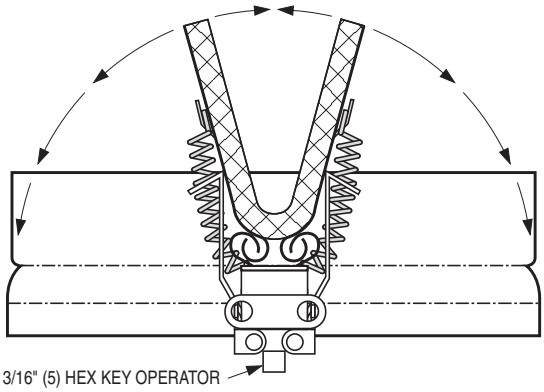
Type S Surface Mount

Available Sizes and Dimensional Data

Model 4070 - 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules				Metric Modules	
	Imperial Units (in.)		SI Units (mm)		SI Units (mm)	
	CM = 12 x 12		CM = 305 x 305		CM = 300 x 300	
	D	C	D	C	D	C
6	6	5 7/8	152	149	152	149
8	8	6 7/8	203	175	203	175

AV Adjustable Volume Control Option.
This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK
MODELS 4070, 4070R

EXAMPLE: 4070 - 06 - 12" x 12" - S - AW - 212 - AV

1. **Models**
   - 4070 Supply Air
   - 4070R Return Air
2. **Neck Size**
   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
3. **Ceiling Module Size**
   Imperial
   12" x 12"
   Metric
   300 mm x 300 mm
4. **Frame Type**
   - S Surface Mount
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4070 Type S** Surface Mount (Supply) or **4070R Type S** Surface Mount (Return) **Round Neck Steel Fire Rated Perforated Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel with a discharge pattern of 1, 2, 3, or 4-way horizontal and is adjusted by dropping the perforated face and rotating the pattern controllers. The return model is furnished without pattern controllers. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authority having jurisdiction.

FIRE RATED PERFORATED CURVED BLADE CEILING DIFFUSERS

- CURVED BLADE PATTERN CONTROLLERS
- 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

CLASSIFIED UL

CATEGORY BZZU

CLASSIFIED C UL

CATEGORY BZGUC

AIR DIFFUSER FIRE RATED LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE LISTING NO. 3161-0935:0104

Supply Models:

4070CB, 4080CB Flush Face

4075CB, 4085CB Drop Face

Model 4080CB

Model Series 4070CB and 4080CB are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Curved Blade Perforated Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

These models feature a 4-way adjustable discharge pattern as standard. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. They are optionally available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

The 4075CB and 4085CB feature a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so that the panel remains flush with the ceiling line.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.
- Round necks permit use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E38).
- Dropping the perforated face gives access to this balancing feature.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.
- Ductless returns are also available.

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

FINISH OPTIONS:

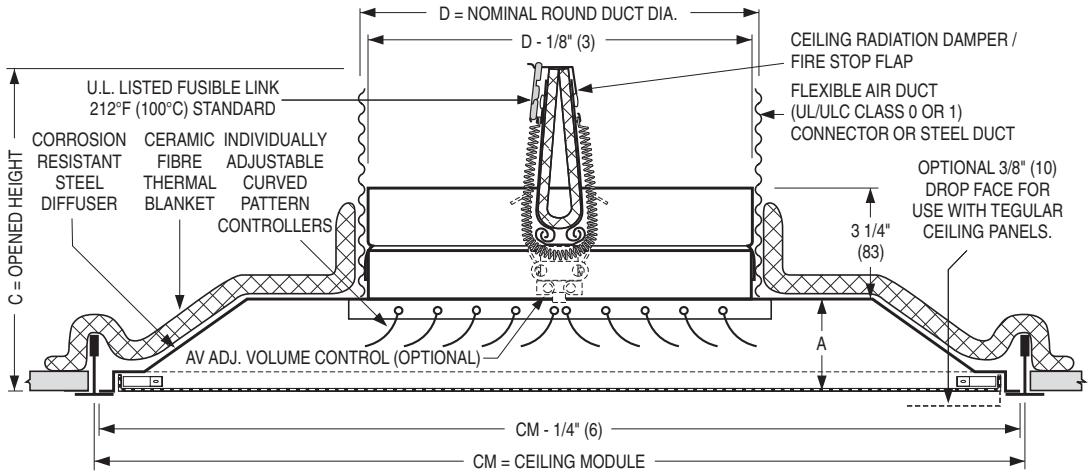
- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Models 4320CB and 4325CB.

DIMENSIONAL DATA:

MODELS 4070CB, 4075CB, 4080CB AND 4085CB



Type L Lay-in T-Bar Frame

Available Sizes and Dimensional Data

	Imperial Modules						Metric Modules		
	Imperial Units (in.)			SI Units (mm)			SI Units (mm)		
Listed Neck Size	CM = 12 x 12			CM = 305 x 305			CM = 300 x 300		
	D	A	C	D	A	C	D	A	C
6	6	1 7/8	6 3/8	152	48	162	152	48	162
8	8		7 3/8	203		187	203		187
Listed Neck Size	CM = 24 x 24			CM = 610 x 610			CM = 600 x 600		
	D	A	C	D	A	C	D	A	C
6	6	2 3/8	6 7/8	152	60	175	152	60	175
8	8		7 7/8	203		200	203		200
10	10		8 7/8	254		225	254		225
12	12		9 7/8	305		251	305		251
14	14		10 7/8	356		276	356		276

Model Number Designation

Supply Models:

4070CB, Flush Face

4075CB, Drop Face

12 x 12 or 300 x 300
Adjustable Curved Blades
Type L Lay-in Frame

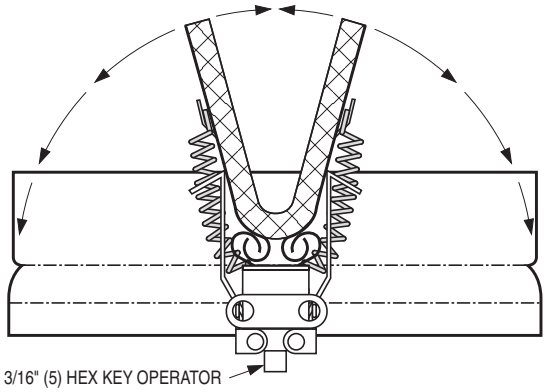
4080CB, Flush Face

4085CB, Drop Face

24 x 24 or 600 x 600
Adjustable Curved Blades
Type L Lay-in Frame

AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control **(Model 0722A)** option allows the ceiling radiation damper to be used as a balancing damper for volume control.
The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK
MODELS 4070CB, 4080CB (FLUSH FACE) - 4075CB, 4085CB (DROP FACE)

EXAMPLE: 4070CB - 06 - 12" x 12" - L - AW - 212 - AV - B4

1. **Models**
   - 4070CB 12" x 12" or 300 mm x 300 mm, Flush Face
   - 4080CB 24" x 24" or 600 mm x 600 mm, Flush Face
   - 4075CB 12" x 12" or 300 mm x 300 mm, Drop Face
   - 4085CB 24" x 24" or 600 mm x 600 mm, Drop Face
2. **Neck Size**
   Imperial
   - 06 6" (152) Round
   - 08 8" (203) Round
   - 10 10" (254) Round
   - 12 12" (305) Round
   - 14 14" (356) Round

   *Available on Models 4080CB, 4085CB
3. **Ceiling Module Size**
   Imperial
   - 12" x 12"
   - 24" x 24"

   Metric
   - 300 mm x 300 mm
   - 600 mm x 600 mm
4. **Frame Type**
   - L Lay-in T-Bar
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BA Appliance White Face - Black Back Pan
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control
8. **Blow Pattern**
   - B4 4-Way Blow (default)
   - B1 1-Way Blow
   - B2 2-Way Opposite Blow
   - B3 3-Way Blow
   - C2 2-Way Corner Blow

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4070CB, 4080CB (Flush Face)** or **4075CB, 4085CB (Drop Face) Round Neck Steel Fire Rated Perforated Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have a hinged removable face plate with quick-release spring latches. The discharge pattern is 4-way adjustable (vertical or horizontal) and can be adjusted either before or after installation by dropping the perforated face and moving the curved blade deflectors. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling radiation damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED SQUARE MODULAR CORE CEILING DIFFUSERS

- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND OR SQUARE NECK
- 3 HOUR RATING
- LAY-IN

CATEGORY
CABS & CABS7

Square Neck Models:
7500FRD

Round Neck Models:
7505FRD

Model 7500FRD

Model 7500FRD is a UL Classified Fire Rated Ceiling Diffuser Component Assembly. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

This model is classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Modular Core Diffusers provide a versatile 'modular core' design that is available in a comprehensive range of sizes and air capacities, providing optimum simplicity and flexibility for field adjustment of the discharge air pattern. They maintain a tight horizontal ceiling pattern from maximum to minimum flow and make an excellent choice for use in variable air volume systems.

These diffusers consist of four spring-loaded modular cores that may be simply adjusted by rotating each module after installation to provide a 1, 2, 3 or 4-way blow pattern in a few seconds.

STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Each diffuser has 4 separate individually adjustable spring-loaded modular cores.
- Simple adjustment for a 1, 2, 3 or 4-way horizontal discharge pattern without the use of tools.
- Square neck Model 7500FRD has ample collar depth and allows a solid duct connection.
- The fixed ceiling radiation damper is standard. The AV adjustable option is not available on this model as the core assembly restricts access. Balancing should be performed by installing a remote damper in the duct take-off.
- Round neck Model 7505FRD permits use of flexible duct.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Must be installed in accordance with the installation instructions for UL/ULC Classification.

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

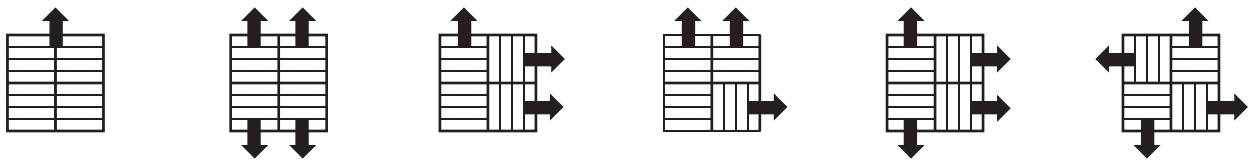
FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated Model 7500.

Modular Core Adjustments

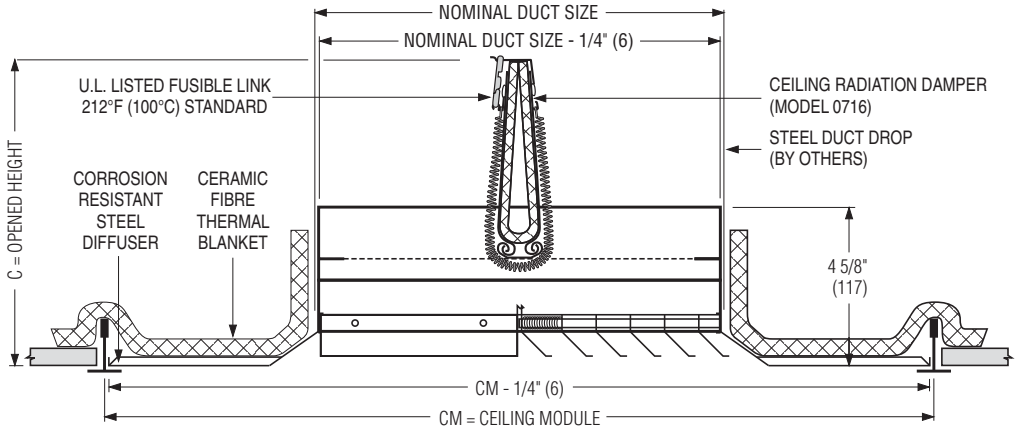


1-way | 2-way opposite | 2-way corner | 2-way (3 cores) | 3-way | 4-way

All diffusers are shipped with the core set for 4-way discharge, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring-loaded modules.

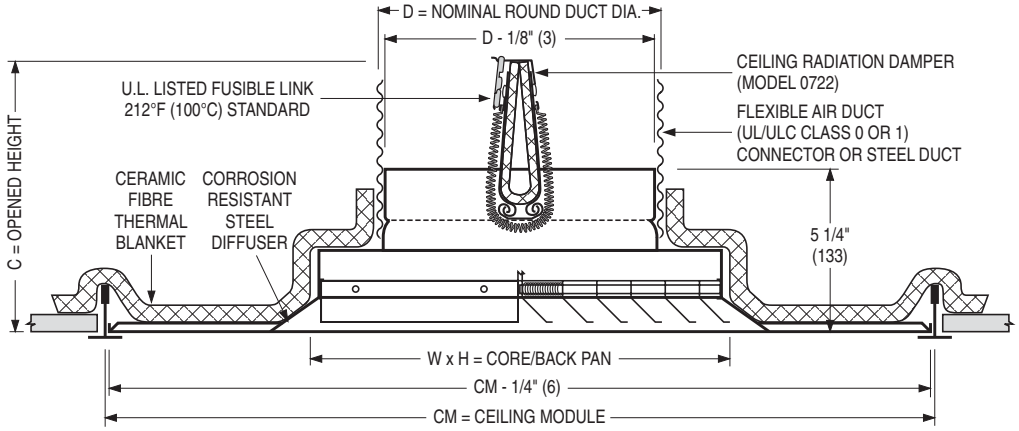
DIMENSIONAL DATA:

MODEL 7500FRD • SQUARE NECK



Type L Lay-in T-Bar Frame

MODEL 7505FRD • ROUND NECK



Type L Lay-in T-Bar Frame

Available Sizes and Dimensional Data:

Model 7500FRD

Ceiling Module	Nominal Duct Size (square)	Opening Height C
CM		Standard
12 x 12	6 x 6	5 3/4
	8 x 8	6 3/4
	9 x 9	7 1/4
24 x 24	6 x 6	5 3/4
	8 x 8	6 3/4
	9 x 9	7 1/4
	10 x 10	7 3/4
	12 x 12	9
	14 x 14	9 3/4
	15 x 15	10 1/4
	16 x 16	10 3/4
	18 x 18	11 3/4
	20 x 20	12 3/4

Model 7505FRD

Ceiling Module	Core/ Back Pan	Round Neck	Opening Height
CM	W x H	D	C
12 x 12	9 x 9	6	6 1/2
		8	7 1/2
24 x 24	9 x 9	6	6 1/2
		8	7 1/2
	10 x 10	6	6 1/2
		8	7 1/2
	12 x 12	8	7 1/2
		10	8 1/2
	15 x 15	10	8 1/2
		12	9 1/2
		14	10 1/2
	18 x 18	12	9 1/2
		14	10 1/2

Note: If the square ceiling module is more than 3" (76) larger than the square neck (core/back pan), a module sized extended panel is utilized.

HOW TO ORDER OR TO SPECIFY

FIRE RATED MODULAR CORE DIFFUSERS • SQUARE NECK – MODEL 7500FRD

EXAMPLE: 7500FRD - 0606 - 12" x 12" - L - AW - 212

1. **Model**
   7500FRD Square Neck
2. **Neck Size**
   Imperial
   0606 06" x 06" (152 x 152) Square
   0808 08" x 08" (203 x 203) Square
   0909 09" x 09" (229 x 229) Square
   1010 10" x 10" (254 x 254) Square
   1212 12" x 12" (305 x 305) Square
   1414 14" x 14" (356 x 356) Square
   1515 15" x 15" (381 x 381) Square
   1616 16" x 16" (406 x 406) Square
   1818 18" x 18" (457 x 457) Square
   2020 20" x 20" (508 x 508) Square

   Only available on 24" x 24" or 600 mm x 600 mm ceiling modules
3. **Ceiling Module Size**
   Imperial
   12" x 12"
   24" x 24"
   Metric
   300 mm x 300 mm
   600 mm x 600 mm
4. **Frame Type**
   L Lay-in T-Bar
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   PC Prime Coat
   SP Special Custom Color
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 7500FRD** (Square Neck) **Steel Fire Rated Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall consist of four spring-loaded modular cores that can be adjusted by lowering the hinged face and rotating each module after installation to provide a 1, 2, 3 or 4-way horizontal throw pattern without the use of tools. Diffusers shall include a factory mounted ceiling damper and thermal blanket. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

HOW TO ORDER OR TO SPECIFY

FIRE RATED MODULAR CORE DIFFUSERS • ROUND NECK – MODEL 7505FRD

EXAMPLE: 7505FRD - 1212 - 10 - 24" x 24" - L - AW - 212

1. **Model**
   7505FRD Round Neck
2. **Core / Backpan Size**
   Imperial
   0909 09" x 09" (229 x 229)
   1212 12" x 12" (305 x 305)
   1515 15" x 15" (381 x 381)
   1818 18" x 18" (457 x 457)
   ] Only available on 24" x 24" or 600 mm x 600 mm ceiling modules
3. **Neck Size**
   Imperial
   06 6" (152) Round
   08 8" (203) Round
   10 10" (254) Round
   12 12" (305) Round
   14 14" (356) Round
4. **Ceiling Module Size**
   Imperial
   12" x 12"
   24" x 24"
   Metric
   300 mm x 300 mm
   600 mm x 600 mm
5. **Frame Type**
   L Lay-in T-Bar
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   PC Prime Coat
   SP Special Custom Color
7. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 7505FRD** (Round Neck) **Steel Fire Rated Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall consist of four spring-loaded modular cores that can be adjusted by lowering the hinged face and rotating each module after installation to provide a 1, 2, 3 or 4-way horizontal throw pattern without the use of tools. Diffusers shall include a factory mounted ceiling damper and thermal blanket. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

FIRE RATED DUCTLESS RETURN GRILLES

- LOW PROFILE
- VOLUME CONTROL OPTION
- 3 HOUR RATING
- LAY-IN

CATEGORY BZZU

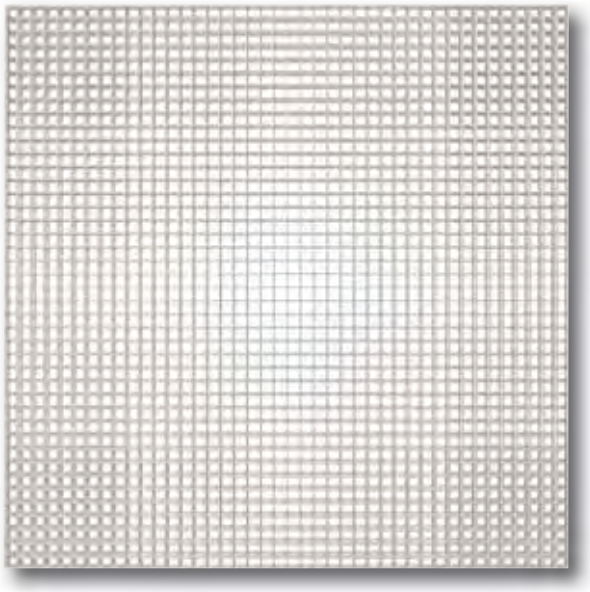
CATEGORY CABS & CABS7

Models:

Perforated Face:
4111, 4112, 4113

Eggcrate Face:
4114, 4115, 4116

Open Face (grille by others):
4117, 4118, 4119



Model 4116

Model Series 4100 are UL Classified Fire Rated Ceiling Diffuser assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models have been designed to complement the Nailor range of fire rated supply diffusers. Successfully tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. They enable the ceiling plenum to be utilized as a ductless return air system and so provide an extremely economical means of fire protection in return air applications.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- Available in both popular perforated and eggcrate face styles.
- Perforated face models are corrosion-resistant steel with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- Eggcrate models feature an 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum grid core.
- 212°F (100°C) fusible link is standard (165°F [74°C] is opt.).
- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E45).

CONSTRUCTION MATERIAL:

- Galvanized steel frame. Non-asbestos UL Classified insulation.

FINISH OPTIONS:

- AW Appliance White finish is standard to match supply models.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated models. Perforated Model 4302. Eggcrate Model 51EC.

Available Sizes and Dimensional Data

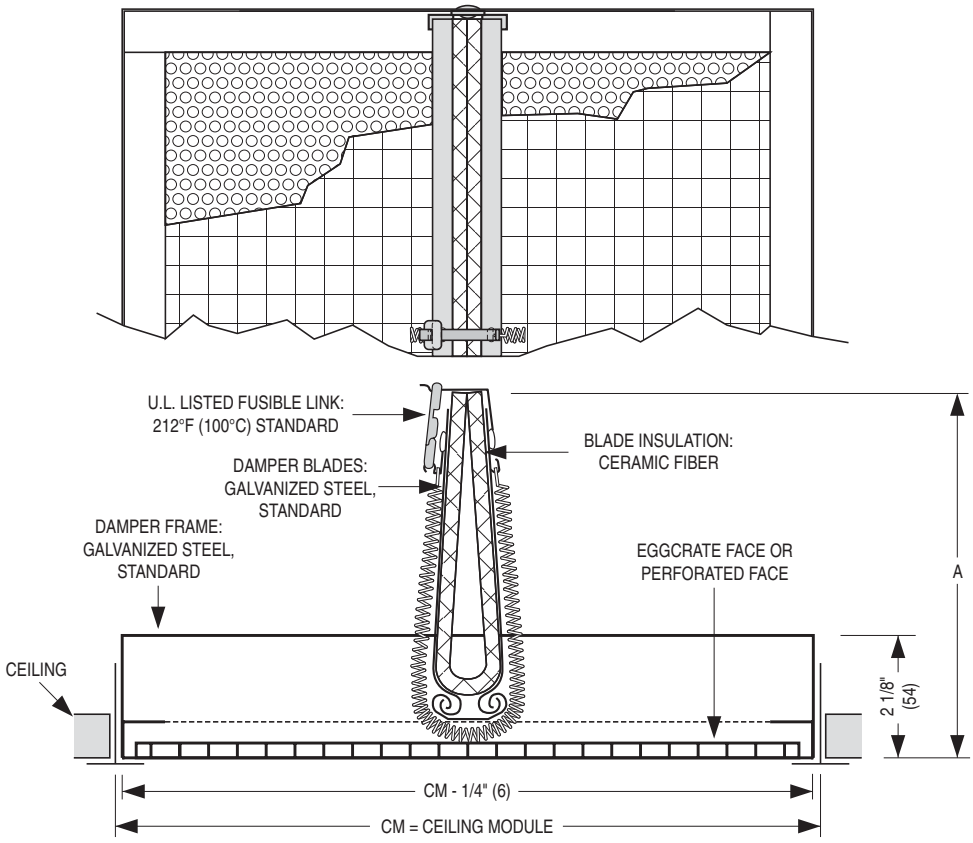
Model No.	Face Type	Ceiling Module		Opening Height A	
		Imperial (inches)	Metric (mm)	Standard	With AV Option
4111	Perforated	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4112		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4113		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)
4114	Eggcrate	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4115		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4116		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)
4117	Open	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4118		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4119		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)

Dimensions are in inches (mm).

DIMENSIONAL DATA:

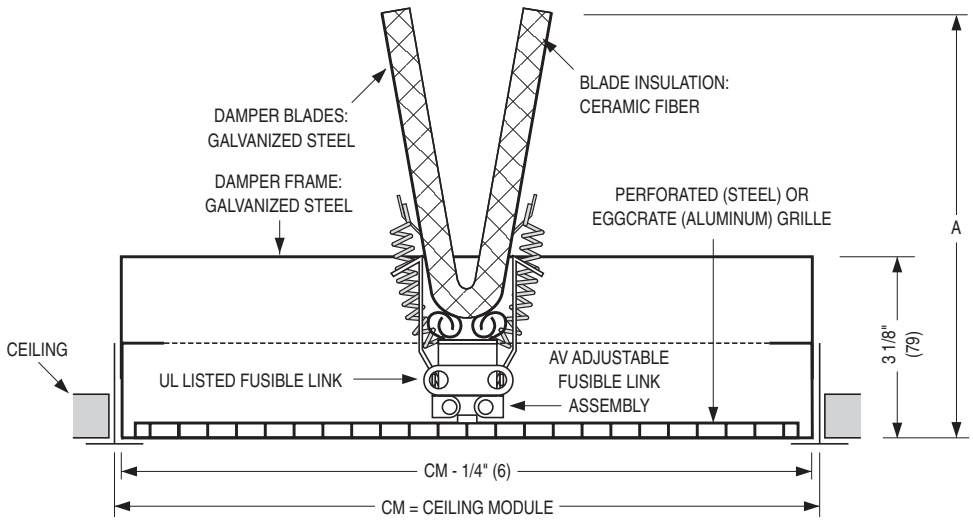
MODELS 4111 TO 4119 • PERFORATED, EGGCRATE OR OPEN FACE

Perforated Grille Models:
4111, 4112, 4113
Eggcrate Grille Models:
4114, 4115, 4116
Open Face Models (grille by others):
4117, 4118, 4119



MODELS 4111 TO 4119 • PERFORATED, EGGCRATE OR OPEN FACE • WITH AV OPTION

Perforated Grille Models with Adjustable Volume Control:
4111 AV, 4112 AV, 4113 AV
Eggcrate Grille Models with Adjustable Volume Control:
4114 AV, 4115 AV, 4116 AV
Open Face Models with Adjustable Volume Control:
4117 AV, 4118 AV, 4119 AV
AV Adjustable Volume Control Option.
This UL Listed option allows the damper to be used as a balancing damper for volume control.
The blades are adjusted with a 3/16" (5) hex key (by others) and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED DUCTLESS RETURN GRILLES
MODELS 4111, 4112, 4113, 4114, 4115, 4116, 4117, 4118, 4119

EXAMPLE: 4111 - 12" x 12" - AW - 212 - AV

1. **Models**
   - 4111 12" x 12" or 300 mm x 300 mm, Perforated Face
   - 4112 24" x 12" or 600 mm x 300 mm, Perforated Face
   - 4113 24" x 24" or 600 mm x 600 mm, Perforated Face
   - 4114 12" x 12" or 300 mm x 300 mm, Eggcrate Face
   - 4115 24" x 12" or 600 mm x 300 mm, Eggcrate Face
   - 4116 24" x 24" or 600 mm x 600 mm, Eggcrate Face
   - 4117 12" x 12" or 300 mm x 300 mm, Open Face (Grille by others)
   - 4118 24" x 12" or 600 mm x 300 mm, Open Face (Grille by others)
   - 4119 24" x 24" or 600 mm x 600 mm, Open Face (Grille by others)
2. **Ceiling Module Size**
   Imperial
   12" x 12"
   24" x 12"
   24" x 24"
   Metric
   300 mm x 300 mm
   600 mm x 300 mm
   600 mm x 600 mm
3. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
4. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
5. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module sizes.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4111, 4112, 4113 (Perforated Face)** or **4114, 4115, 4116 (Eggcrate Face)** or **4117, 4118, 4119 (Open Face for Grille [by others]) Fire Rated Ductless Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. Grilles shall include a factory mounted ceiling damper. The grilles shall be tested and classified for use without the requirement of duct work or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). Where a grille is part of the assembly the finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Grilles shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED DUCTLESS RETURN FILTER GRILLES

- RAISED TYPE
- VOLUME CONTROL OPTION
- 3 HOUR RATING
- LAY-IN

CLASSIFIED UL CATEGORY BZZU

CLASSIFIED C UL US CATEGORY CABS & CABS7

Model 4123

Models:

Louvered Face:

4121, 4122, 4123

Eggcrate Face:

4124, 4125, 4126

Model Series 4100 are UL Classified Fire Rated Ceiling Diffuser assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models have been designed to complement the Nailor range of fire rated supply diffusers. Successfully tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. They enable the ceiling plenum to be utilized as a ductless return air system and so provide an extremely economical means of fire protection in return air applications.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- Available in both popular louvered face and eggcrate face styles.
- Filter grille frames are constructed of corrosion-resistant steel and feature a hinged core secured by 1/4 turn fasteners. 1" (25) filter by others.
- Louvered face models feature fixed 45° deflection blades on 3/4" (19) centers.
- Eggcrate models feature a 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum grid core.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E48).

CONSTRUCTION MATERIAL:

- Galvanized steel frame and blades. Non-asbestos UL Classified insulation.

FINISH OPTIONS:

- AW Appliance White finish is standard to match supply models.
- Other finishes are available.

PERFORMANCE DATA:

- See non-fire rated models. Louvered Face Model 61FB45. Eggcrate Model 61FE.

Available Sizes and Dimensional Data

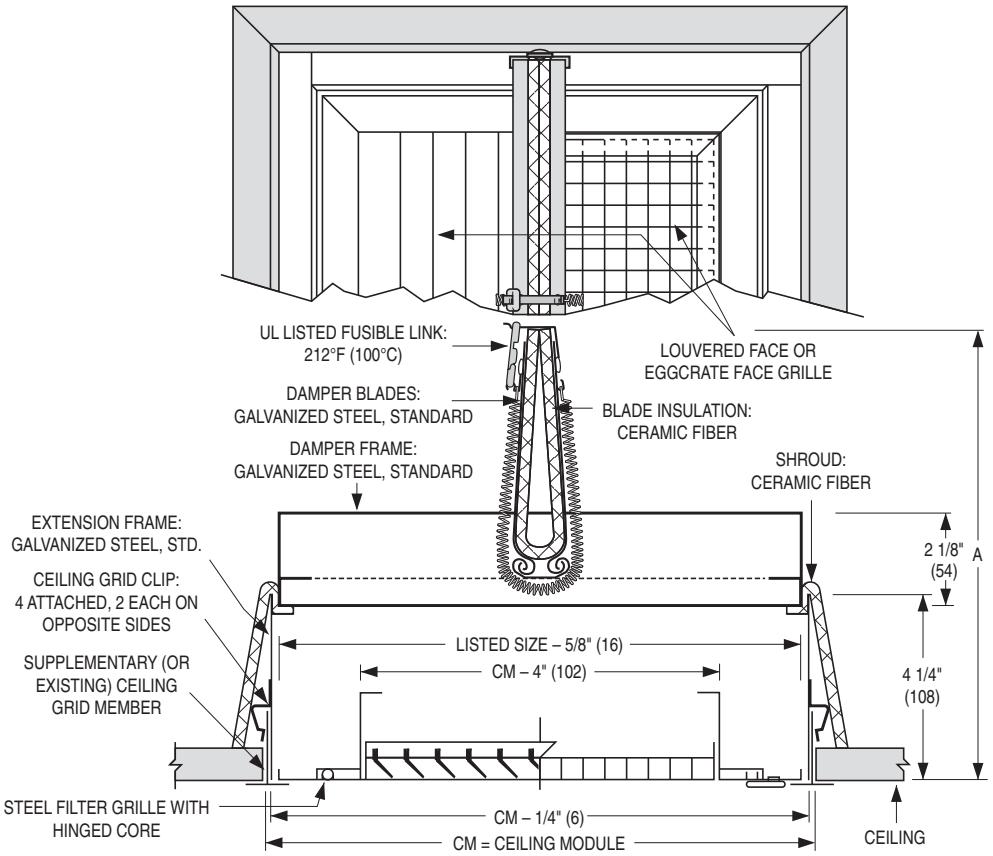
Model No.	Filter Grille	Ceiling Module		Opened Height A	1" (25) Filter Size
		Imperial (inches)	Metric (mm)		
4121	Louvered Face	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4122		24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4123		24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)
4124	Eggcrate Face	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4125		24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4126		24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)

Dimensions are in inches (mm).

DIMENSIONAL DATA:

MODELS 4121 TO 4126 • LOUVERED OR EGGCRATE FACE

Louvered Grille Models:
4121, 4122, 4123
Eggcrate Grille Models:
4124, 4125, 4126



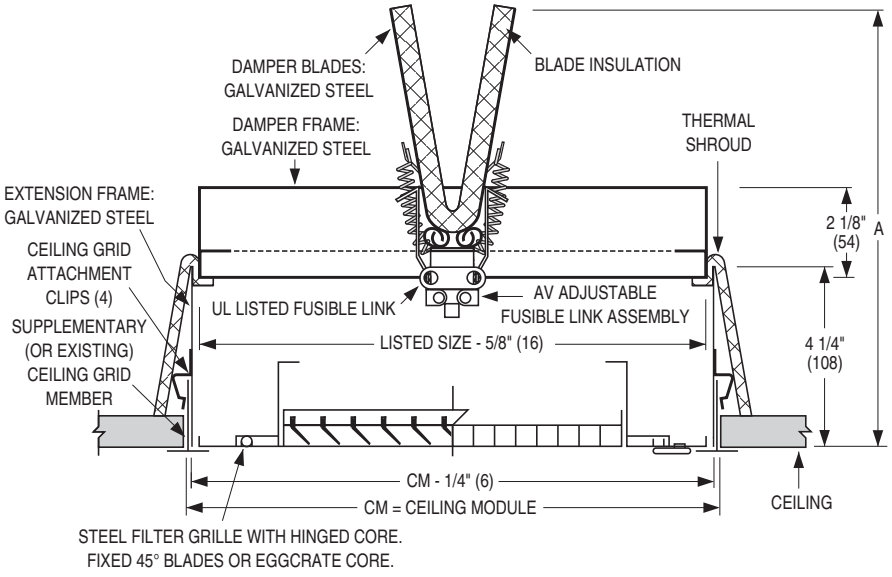
MODELS 4121 TO 4126 • LOUVERED OR EGGCRATE FACE • WITH AV OPTION

Louvered Grille Models with Adjustable Volume Control:
4121 AV, 4122 AV, 4123 AV
Eggcrate Grille Models with Adjustable Volume Control:
4124 AV, 4125 AV, 4126 AV

AV Adjustable Volume Control Option.

This UL Listed option allows the damper to be used as a balancing damper for volume control.

The blades are adjusted with a 3/16" (5) hex key (by others) and perform like a butterfly damper.



HOW TO ORDER OR TO SPECIFY

FIRE RATED DUCTLESS RETURN FILTER GRILLES
MODELS 4121, 4122, 4123, 4124, 4125, 4126

EXAMPLE: 4121 - 12" x 12" - AW - 212 - AV

1. **Models**
   - 4121 12" x 12" or 300 mm x 300 mm, Louvered Face
   - 4122 24" x 12" or 600 mm x 300 mm, Louvered Face
   - 4123 24" x 24" or 600 mm x 600 mm, Louvered Face
   - 4124 12" x 12" or 300 mm x 300 mm, Eggcrate Face
   - 4125 24" x 12" or 600 mm x 300 mm, Eggcrate Face
   - 4126 24" x 24" or 600 mm x 600 mm, Eggcrate Face
2. **Ceiling Module Size**

   Imperial

   12" x 12"
   24" x 12"
   24" x 24"

   Metric

   300 mm x 300 mm
   600 mm x 300 mm
   600 mm x 600 mm
3. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - PC Prime Coat
   - SP Special Custom Color
4. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
5. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

Note:

1. Consult individual model as to limitations of module sizes.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4121, 4122, 4123 (Louvered Face)** or **4124, 4125, 4126 (Eggcrate Face) Fire Rated Ductless Return Filter Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. Grilles shall include a raised type factory mounted ceiling damper and thermal shroud. Filter grilles shall be constructed of corrosion-resistant steel and feature a hinged core secured by 1/4 turn fasteners. The grilles shall be tested and classified for use without the requirement of duct work or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White to match supply models (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED DUCTLESS RETURN CEILING DAMPERS

- FOR OPTIONAL GRILLE (BY NAILOR OR OTHERS)
- RAISED TYPE
- 3 HOUR RATING
- LAY-IN

CLASSIFIED UL

CATEGORY BZZU

CLASSIFIED C UL US

CATEGORY CABS & CABS7

Models:

4127, 4128, 4129

Model 4129 [*Grille Ordered Separately]

Model Series 4100 are UL/ULC Classified Fire Rated Ceiling Diffuser Assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

This unique Nailor product features a raised ceiling radiation damper mounted on an extended support frame above the ceiling line. The integrity of the ceiling membrane protection is maintained by the addition of a peripheral, thermally retardant, shroud. The fire rated protected cavity allows the design engineer great flexibility. As the fire protection and integrity are supplied solely by the damper assembly, any type of return air grille, filter grille or register of steel or aluminum construction may be selected and installed in the fire rated ceiling. One such example is when a return air register with opposed blade damper is required.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Permits selection of any Nailor 6100 Series steel or 5100 Series aluminum return grille, which is manufactured to suit.
- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- AV Adjustable Volume Control. Permits field balancing. The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper. This option would be specified when the selected return grille has no damper and volume control is still desired (see page E51).

CONSTRUCTION MATERIAL:

- Galvanized steel frame and blades. Non-asbestos UL Classified insulation.

PERFORMANCE DATA:

- Refer to relevant performance tables in catalog for grille or register selected.

Available Sizes and Dimensional Data

Model No.	Ceiling Module		Opened Height A	1" (25) Filter Size
	Imperial (inches)	Metric (mm)		
4127	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4128	24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4129	24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)

Dimensions are in inches (mm).

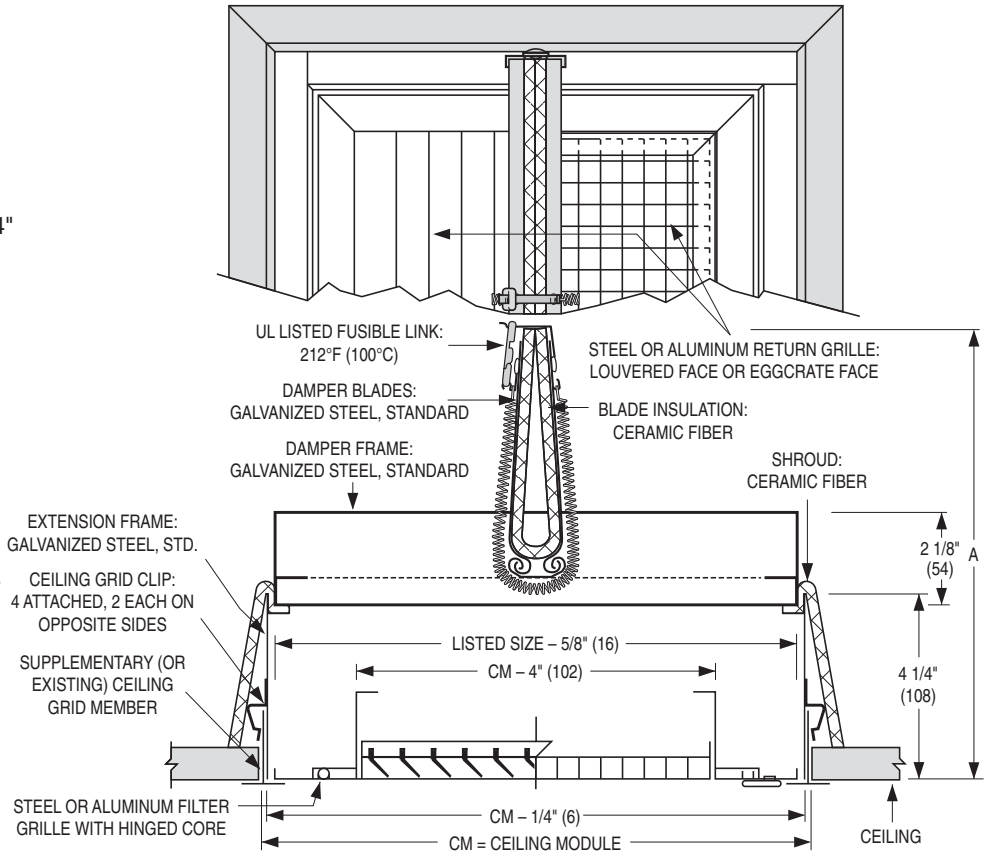
DIMENSIONAL DATA:

MODELS 4127, 4128 AND 4129

Some Commonly Selected Grille and Register Options:

- **61EC (-O) Type L**
  Steel Return Air Eggcrate Grille (Register).
- **6145H (-O)**
  Steel Return Air Grille (Register). Fixed 45° Deflection blades on 3/4" (19) centers.
- **5145H (-O)**
  Aluminum Return Air Grille (Register). Fixed 45° Deflection blades on 3/4" (19) centers.
- **7145H (-O)**
  Premium Airfoil Blade Aluminum Return Air Grille (Register).
- **61FP**
  Steel Perforated Face Filter Grille.

Note: Maximum grille depth capacity for this model is 4" (102).

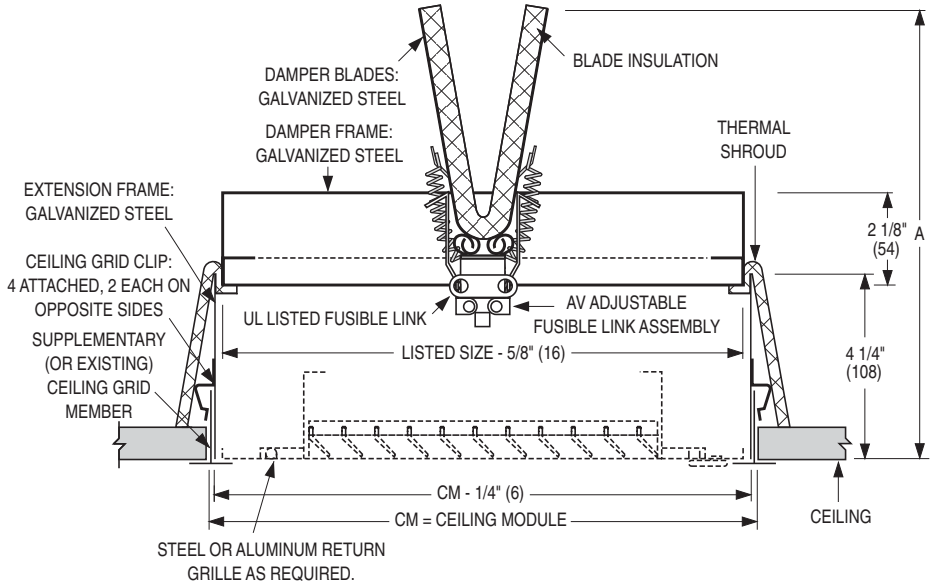


MODELS 4127, 4128 AND 4129 • WITH AV OPTION

Some Commonly Selected Grille Options:

- **6145H**
  Steel Return Air Grille. Fixed 45° Deflection blades on 3/4" (19) centers.
- **5145H**
  Aluminum Return Air Grille. Fixed 45° Deflection blades on 3/4" (19) centers.
- **61FP**
  Steel Perforated Face Filter Grille.

Note: Maximum grille depth capacity for this model is 2 1/4" (57).



HOW TO ORDER OR TO SPECIFY

FIRE RATED DUCTLESS RETURN CEILING DAMPERS
MODELS 4127, 4128, 4129

EXAMPLE: 4127 - 12" x 12" - 212 - AV

1. **Models**
   - 4127 12" x 12" or 300 mm x 300 mm
   - 4128 24" x 12" or 600 mm x 300 mm
   - 4129 24" x 24" or 600 mm x 600 mm
2. **Ceiling Module Size**

   Imperial
   - 1212 12" x 12"
   - 2412 24" x 12"
   - 2424 24" x 24"

   Metric
   - 3030 300 mm x 300 mm
   - 6030 600 mm x 300 mm
   - 6060 600 mm x 600 mm
3. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
4. **Volume Control**
   - — None (default)
   - AV Adjustable Volume Control

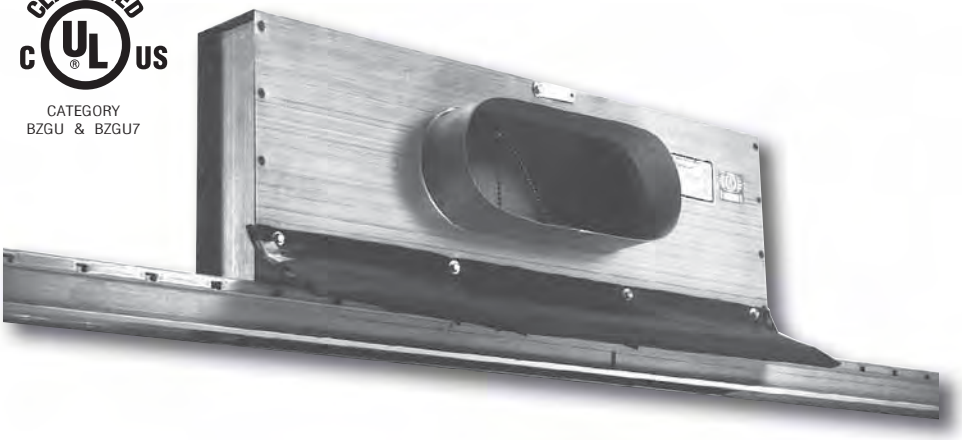
SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4127, 4128, 4129 Fire Rated Ductless Return Ceiling Dampers (Open Face for compatible aluminum or steel grille by Nailor)** of the sizes and capacities as shown on the plans and air distribution schedules. Dampers shall include a raised type factory mounted ceiling damper and thermal shroud. The dampers shall be successfully tested and classified for use without the requirement of ductwork or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED OPEN FACE PLENUM DIFFUSERS

- FOR USE WITH LINEAR TYPE DIFFUSERS
- 3 HOUR RATING
- FOR LAY-IN CEILINGS

CLASSIFIED UL C US
CATEGORY
BZGU & BZGU7



Model 5200

Model:
5200

- **Plenum Type L**
  Flat Leg (Lay-in)
- **Plenum Type S**
  Hemmed Leg (Surface Mount)

Model Series 5200 is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

A maximum of 20 lineal ft. (6096) of 2" (51) wide throat opening, 10 lineal ft. (3048) of 4" (102) wide throat opening, or 5 lineal ft. (1524) of 6" (152) and 8" (203) width throat opening is allowed for each 113 sq. inch (72,903 mm^2) duct outlet area permitted in specific design.

The 5200 Series provides flexibility, in that a variety of steel or aluminum grilles, registers or linear type slot diffusers and bar grilles may be used.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- 6", 8", 10" or 12" (152, 203, 254 or 305) inlet sizes are available.
- Plenum casing width (throat) dimension is variable and fabricated to suit required grille or diffuser.

Minimum = 1 11/16" (43).

Maximum = 8" (203).

- Plenum Type L features a flat leg for lay-in type cores.
- Plenum Type S features a hemmed leg for surface mounting a grille or diffuser with Type C concealed mounting straps.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with installation instructions for UL Classification.

CONSTRUCTION MATERIAL:

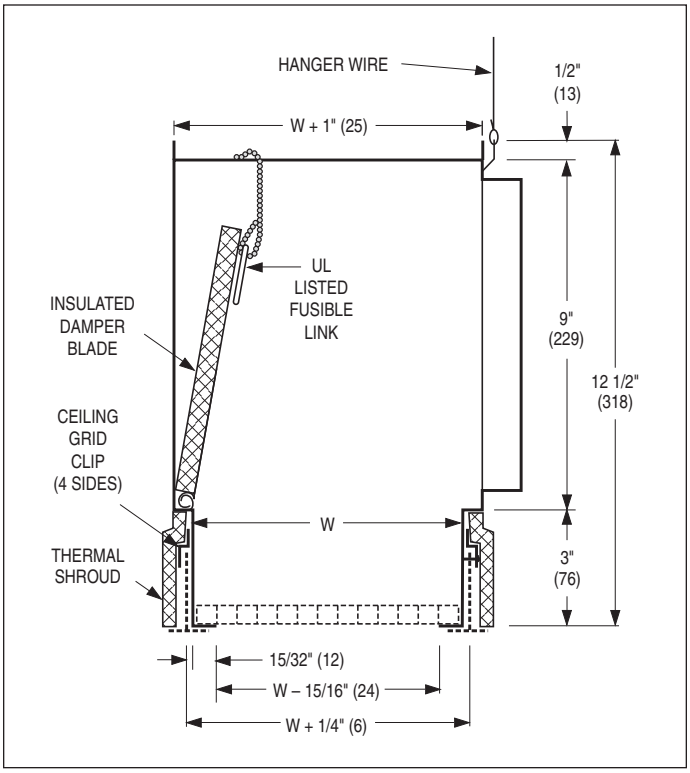
- Corrosion-resistant steel plenum and damper blades. Non-asbestos UL Classified insulation.

FINISH OPTIONS:

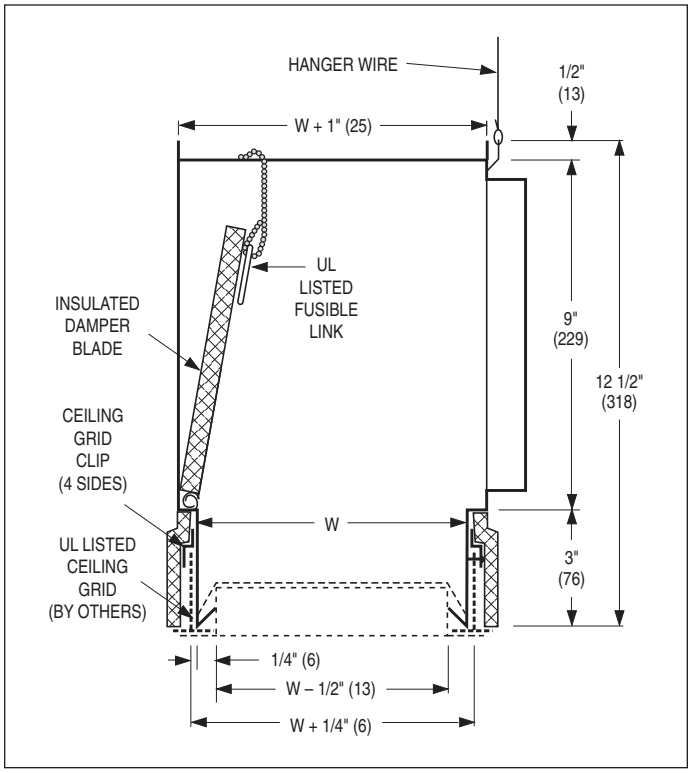
- Exposed surfaces are finished in BK Black.

DIMENSIONAL DATA:

MODEL SERIES 5200 – TYPE L
FLAT LEG • LAY-IN DIFFUSER CORE



MODEL SERIES 5200 – TYPE S
HEMMED LEG • SURFACE MOUNT DIFFUSER WITH CONCEALED MOUNTING BRACKETS



- 'W' Dimension (throat) is variable and manufactured to suit required grille or diffuser.

  Minimum 'W' = 1 11/16" (43).

  Maximum 'W' = 8" (203).
- Type L design is for flangeless lay-in core styles. e.g. Eggcrate Core Model 51EC Type C Core Only or Linear Slot Diffuser – Model Series 5000, Frame Type M.

Unit is installed by diagonally inserting it into plenum opening and allowing it to sit back on plenum flanges.

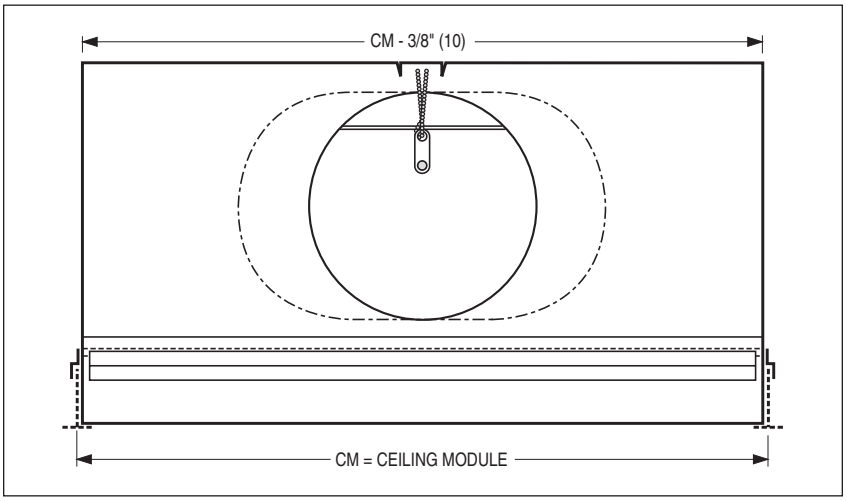
- Type S design is for flanged diffusers with concealed mounting straps which locate in hemmed plenum leg. e.g. Linear Slot Diffuser – Model Series 5000, Frame Types C and D.
- Available inlet sizes:

  Round sizes are: 5", 6", 7" and 8" (127, 152, 178 and 203).

  Flat oval sizes are: 9", 10" and 12" (229, 254 and 305).

Available Lengths

Nominal Length (CM)
20" (508)
24" (610)
30" (762)
36" (914)
48" (1219)
60" (1524)



HOW TO ORDER OR TO SPECIFY

FIRE RATED OPEN FACE PLENUM DIFFUSERS
MODEL 5200

EXAMPLE: 5200 - S - 48" x 2" - 08 - 212 - ID - EX - T1

1. **Model**
   5200
2. **Plenum Type**
   L Flat Leg for Lay-in Diffuser Core
   S Hemmed Leg for Surface Mount
3. **Nominal Length**
   Imperial
   inches (mm)
   20", 24", 30", 36", 48", 60"
   (508, 610, 762, 914, 1219, 1524)
   Metric
   mm
   500, 600, 750, 900, 1200, 1500
4. **Nominal Width**
   Minimum 1 11/16" (43) to
   Maximum 8" (203)
5. **Neck Size**
   Imperial
   05 5" (127) Round
   06 6" (152) Round
   07 7" (178) Round
   08 8" (203) Round
   09 9" (229) Flat Oval
   10 10" (254) Flat Oval
   12 12" (305) Flat Oval
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)
7. **Damper**
   ID Inlet Balancing Damper with Hand Locking Quadrant
8. **External Insulation**
   EX External Foil-Back Insulation, installed – R-4.2
9. **Supplementary T-Bars**
   T0 One - Opposite Inlet
   T1 One Inlet Side
   T2 Both Sides

Note:

1. Consult individual model as to limitations of module and neck size combination.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 5200 Fire Rated Open Face Plenum Diffusers (Lay-in)** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenum and damper blades shall be constructed from corrosion-resistant steel and the installation shall be non-asbestos UL Classified. Model 5200 Plenum Type L features a flat lip for lay-in type cores and Plenum Type S features a hemmed leg for surface mounting a grille or diffuser with Type C concealed mounting straps. Exposed surfaces shall be finished in Black. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED PLENUM SLOT SUPPLY DIFFUSERS

- ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLERS
- 3 HOUR RATING
- LAY-IN

CLASSIFIED C UL US

CATEGORY
BZGU & BZGU7

Models:

5550WB 1/2" (13) Slot Width
5575WB 3/4" (19) Slot Width
5510WB 1" (25) Slot Width
5515WB 1 1/2" (38) Slot Width

Model 5575WB

Model Series 5500WB is a UL Classified fire rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

The 5500WB Series features a friction pivoted adjustable extruded aluminum pattern controller in each slot. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar, assuring positive directional control. The pattern controller may also be set for vertical discharge.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500WB Series therefore provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of four slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Factory installed center tees on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 36" (900) and longer, permitting a 2-way opposite blow pattern from a single slot.
- Return models available. See page E62.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel plenum, extruded aluminum pattern controllers and factory supplied center tees.

FINISH OPTIONS:

- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on factory supplied T-Bars.

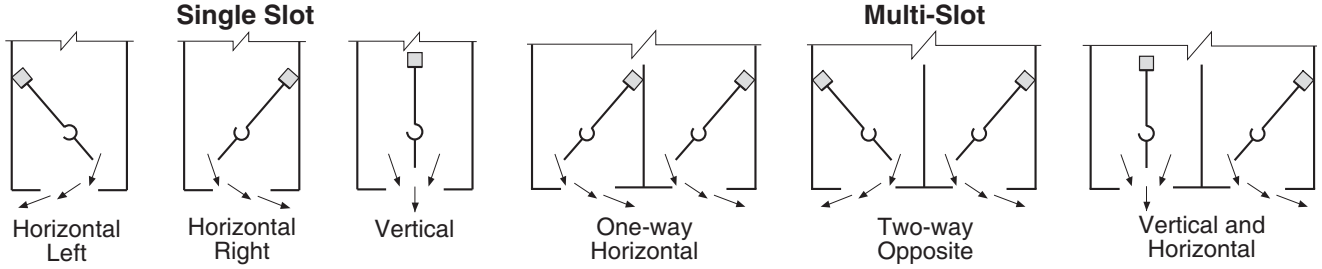
OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

PERFORMANCE DATA:

- Non-fire rated Model Series 5700.

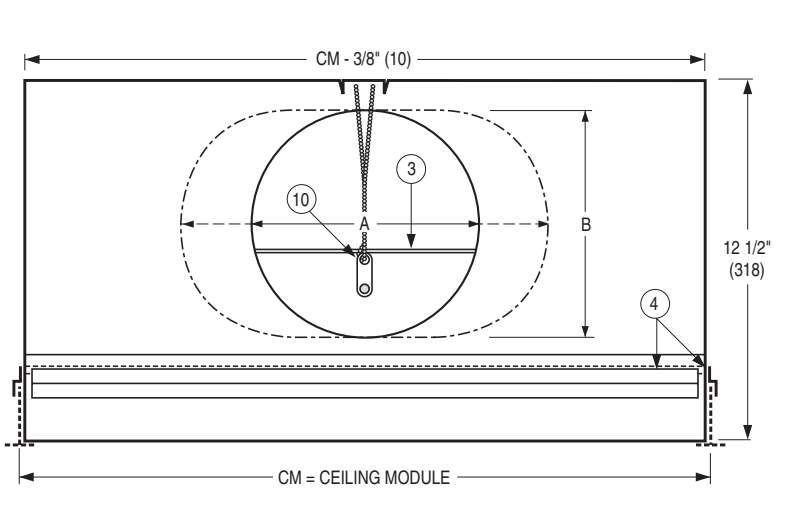
Air Patterns



DIMENSIONAL DATA:

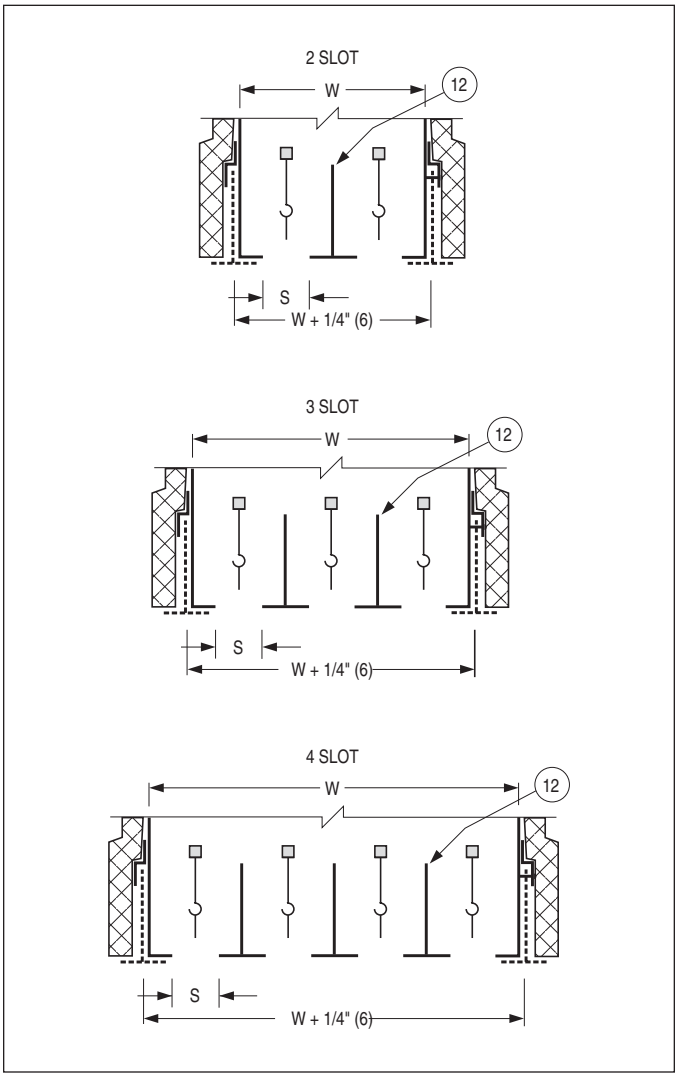
MODEL SERIES 5500WB

UNDERWRITER'S LABORATORIES, INC.®
CLASSIFIED AIR TERMINAL UNITS
LISTED FOR UP TO 3 HOURS
CATEGORY BZGU & BZGU7



ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.



		S (Slot Width)			
		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 slot	6" (152)	7" (178)	8" (203)	N/A

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	–	–	7 7/8" (200)	7 7/8" (200)

HOW TO ORDER OR TO SPECIFY

FIRE RATED PLENUM SLOT DIFFUSERS – 'WIPER BLADE' PATTERN CONTROLLER
MODELS 5550WB, 5575WB, 5510WB, 5515WB

EXAMPLE: 5515WB - 48 - 2 SLOT - 08 - AW - 212 - ID - EX - T1

1. **Models**
   5550WB • Supply, 1/2" (13) Slot Width
   5575WB • Supply, 3/4" (19) Slot Width
   5510WB • Supply, 1" (25) Slot Width
   5515WB • Supply, 1 1/2" (38) Slot Width
2. **Nominal Length**
   Imperial
   inches (mm)
   20", 24", 30", 36", 48", 60"
   (508, 610, 762, 914, 1219, 1524)
   Metric
   mm
   500, 600, 750, 900, 1200, 1500
3. **No. of Slots**
   1 through 4
4. **Inlet Size**
   Imperial
   05 5" (127) Round
   06 6" (152) Round
   07 7" (178) Round
   08 8" (203) Round
   09 9" (229) Flat Oval
   10 10" (254) Flat Oval
   12 12" (305) Flat Oval
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BW British White
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)
7. **Damper**
   ID Inlet Balancing Damper with Hand Locking Quadrant
8. **External Insulation**
   EX External Foil-Back Insulation, installed – R-4.2
9. **Supplementary T-Bars**
   T0 One - Opposite Inlet
   T1 One Inlet Side
   T2 Both Sides

Note:

1. Consult individual model as to limitations of length, width and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **5500WB, 5575WB, 5510WB** or **5515WB Fire Rated Plenum Slot Diffusers 'Wiper Blade'** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenums shall be constructed from corrosion-resistant steel and pattern controllers shall be extruded aluminum. The direction of airflow is adjustable through a full 180° from the face of the diffuser. Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED PLENUM SLOT DIFFUSERS

- ADJUSTABLE 'ICE TONG' PATTERN CONTROLLERS
- 3 HOUR RATING
- LAY-IN

CLASSIFIED C UL US

CATEGORY
BZGU & BZGU7

Model 5575T

Models:

5550T 1/2" (13) Slot Width
5575T 3/4" (19) Slot Width
5510T 1" (25) Slot Width

Model Series 5500T is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

The 5500T Series features the same 'ice tong' pattern controller as used in the 5000 Series Linear Slot Diffuser, providing total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may also be adjusted for volume control.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500T Series therefore provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Full 180° pattern controller adjustment means there are no 'lefts or rights'. Pattern controllers also permit volume control.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Factory installed center tees on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 48" (1200) and longer, permitting a 2-way opposite blow pattern from a single slot.
- Return models are available. See page E62.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel plenum and pattern controllers. Aluminum center tees.

FINISH OPTIONS:

- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on center tees.

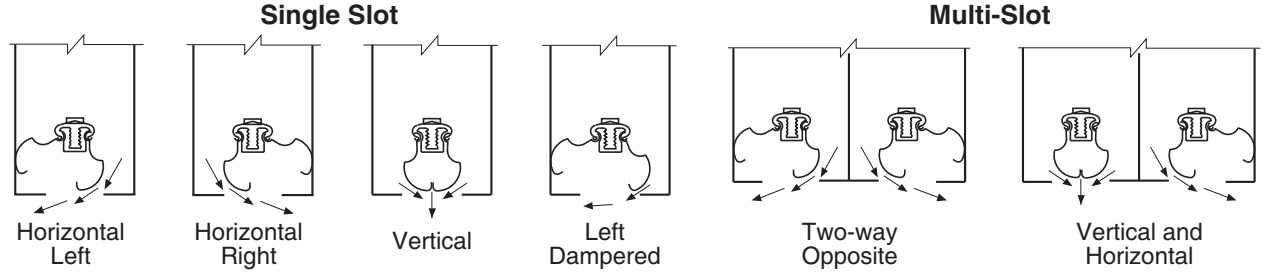
OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

PERFORMANCE DATA:

- See non-fire rated Model Series 5800.

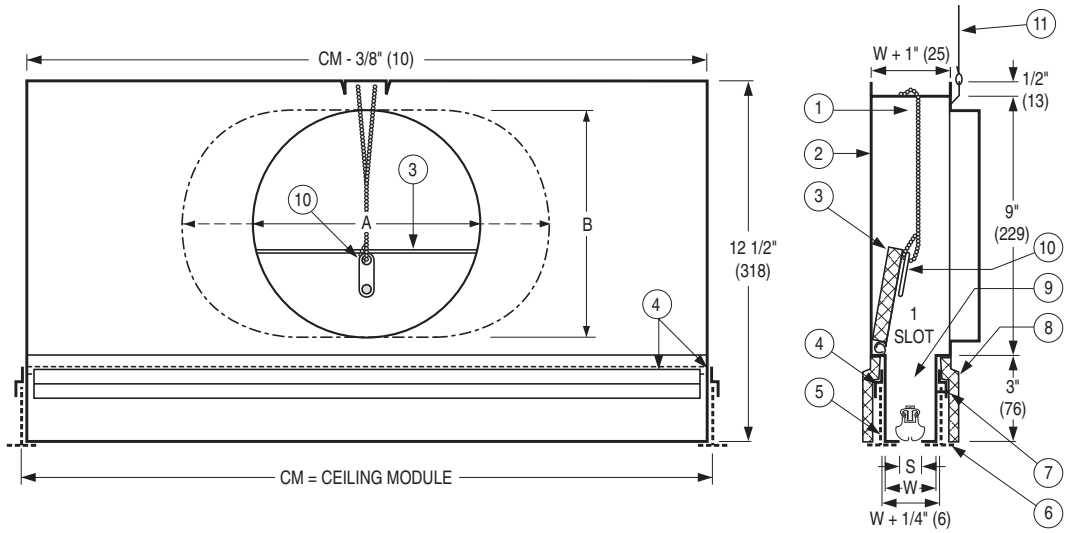
Air Patterns



DIMENSIONAL DATA:

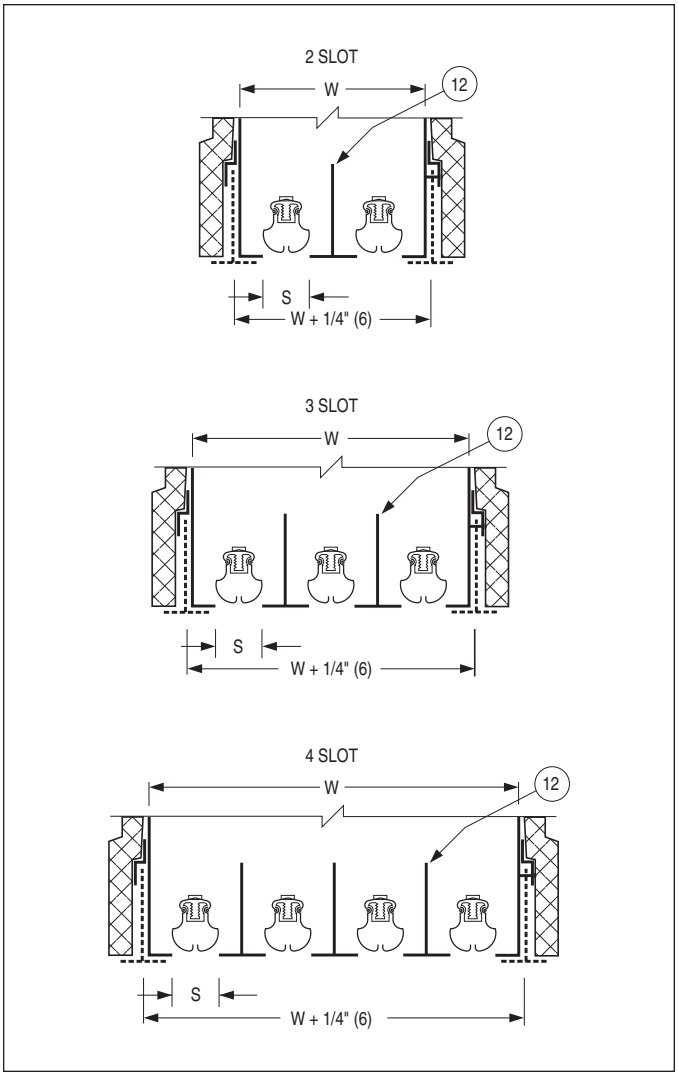
MODEL SERIES 5500T

UNDERWRITER'S LABORATORIES, INC.®
CLASSIFIED AIR TERMINAL UNITS
LISTED FOR UP TO 3 HOURS
CATEGORY BZGU & BZGU7



ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.



		S (Slot Width)		
		1/2" (13)	3/4" (19)	1" (25)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)
	2 slot	3" (76)	3 1/2" (89)	4" (102)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)
	4 slot	6" (152)	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	–	–	7 7/8" (200)	7 7/8" (200)

HOW TO ORDER OR TO SPECIFY

FIRE RATED PLENUM SLOT DIFFUSERS – ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER MODELS 5550T, 5575T, 5510T

EXAMPLE: 5550T - 48" - 2 SLOT - 08 - AW - 212 - ID - EX - T1

1. **Models**
   - 5550T Supply, 1/2" (13) Slot Width
   - 5575T Supply, 3/4" (19) Slot Width
   - 5510T Supply, 1" (25) Slot Width
2. **Nominal Length**
   - **Imperial**
   - inches (mm)
   - 20", 24", 30", 36", 48", 60"
   - (508, 610, 762, 914, 1219, 1524)
   - **Metric**
   - mm
   - 500, 600, 750, 900, 1200, 1500
3. **No. of Slots**
   - 1 through 4
4. **Inlet Size**
   - **Imperial**
   - 05 5" (127) Round
   - 06 6" (152) Round
   - 07 7" (178) Round
   - 08 8" (203) Round
   - 09 9" (229) Flat Oval
   - 10 10" (254) Flat Oval
   - 12 12" (305) Flat Oval
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BW British White
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **Damper**
   - ID Inlet Balancing Damper with Hand Locking Quadrant
8. **External Insulation**
   - EX External Foil-Back Insulation, installed – R-4.2
9. **Supplementary T-Bars**
   - T0 One - Opposite Inlet
   - T1 One Inlet Side
   - T2 Both Sides

Note:

1. Consult individual model as to limitations of length, width and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **5500T, 5575T** or **5510T Fire Rated Plenum Slot Diffusers with 'Ice Tong' Pattern Controllers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenum and pattern controllers shall be constructed from corrosion-resistant steel. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may be adjusted for volume control. Factory installed center tees shall be supplied as standard on multi-slot models. The diffuser plenum shall include an integral hinged ceiling damper that is suspended out of the airstream. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

FIRE RATED PLENUM SLOT DIFFUSERS

- SUPPLY MODEL INCLUDES CURVED BLADE 'FLIP FLOP' PATTERN CONTROLLER
- 3 HOUR RATING
- LAY-IN

CLASSIFIED C UL US

CATEGORY
BZGU & BZGU7

Supply Models:

5575 3/4" (19) Slot Width

Return Models:

5550R 1/2" (13) Slot Width
5575R 3/4" (19) Slot Width
5510R 1" (25) Slot Width
5515R 1 1/2" (38) Slot Width

Models 5575 and 5575R

Model Series 5500 is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Model 5575 features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the diffuser face for either a left or right discharge direction. In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500 Series therefore provides excellent performance in variable air volume applications.

STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Return models are same design, but omit pattern controllers. See page E46.
- Factory installed center tees on multi-slot models are standard.
- Blades are shipped locked. They may be set for left or right airflow pattern after installation.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

FINISH OPTIONS:

- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on center tees.

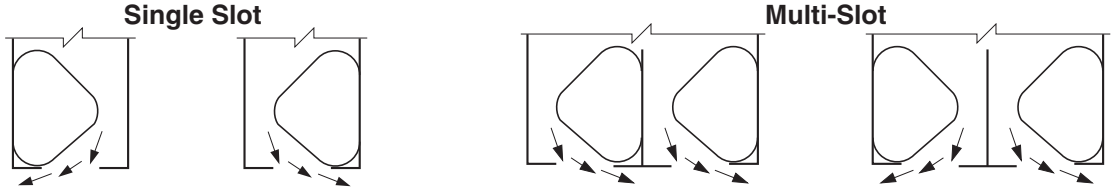
OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

PERFORMANCE DATA:

- See non-fire rated Model 5675.

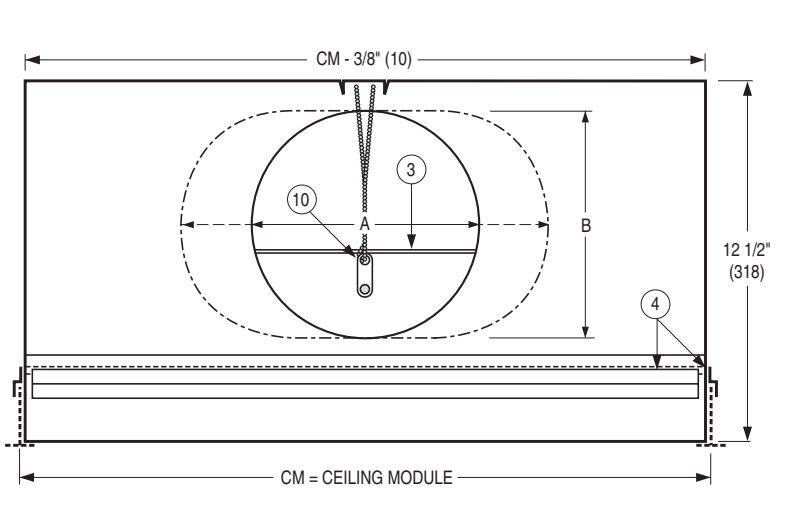
Model 5575 Supply Air Patterns:



DIMENSIONAL DATA:

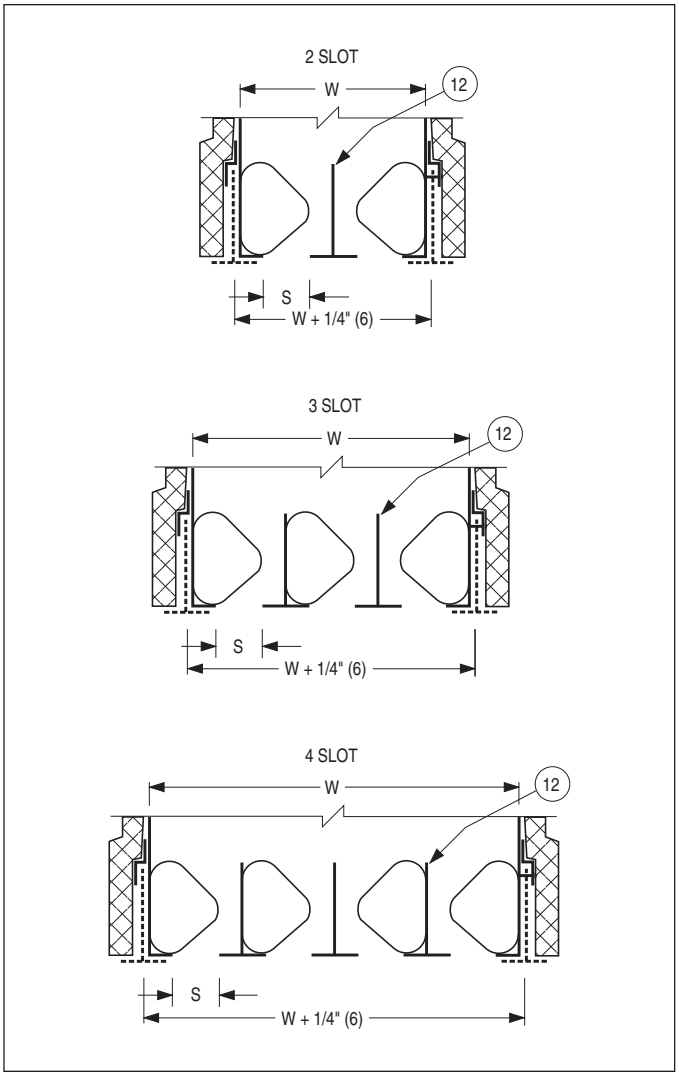
MODEL 5575

UNDERWRITER'S LABORATORIES, INC.®
CLASSIFIED AIR TERMINAL UNITS
LISTED FOR UP TO 3 HOURS
CATEGORY BZGU & BZGU7



ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller. The position can be as shown or rotated 180° to opposite position.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.



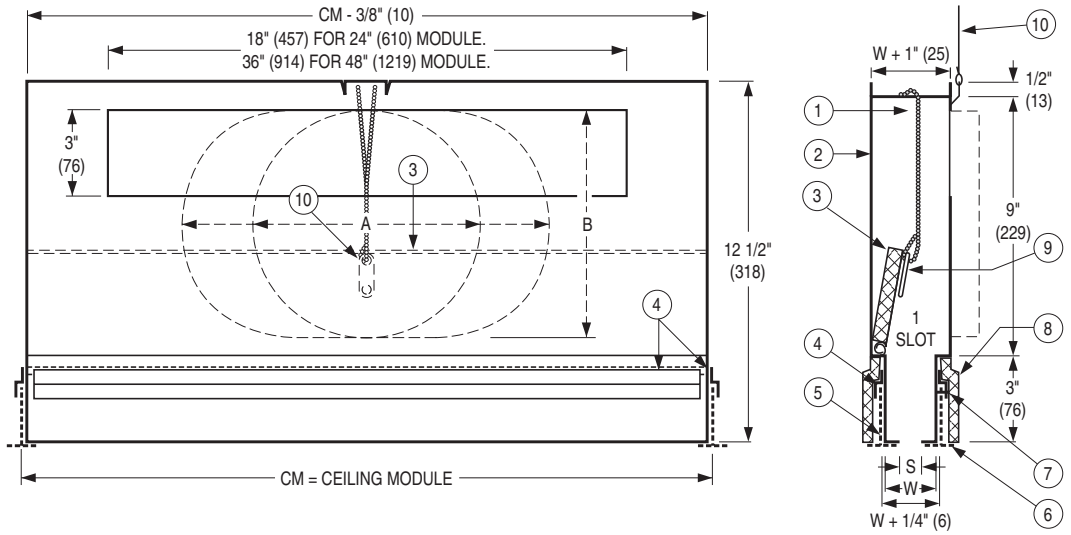
		S = 3/4" (19)
W (Width)	1 slot	1 11/16" (43)
	2 slot	3 3/8" (86)
	3 slot	5 1/16" (129)
	4 slot	6 3/4" (171)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	–	–	7 7/8" (200)	7 7/8" (200)

DIMENSIONAL DATA:

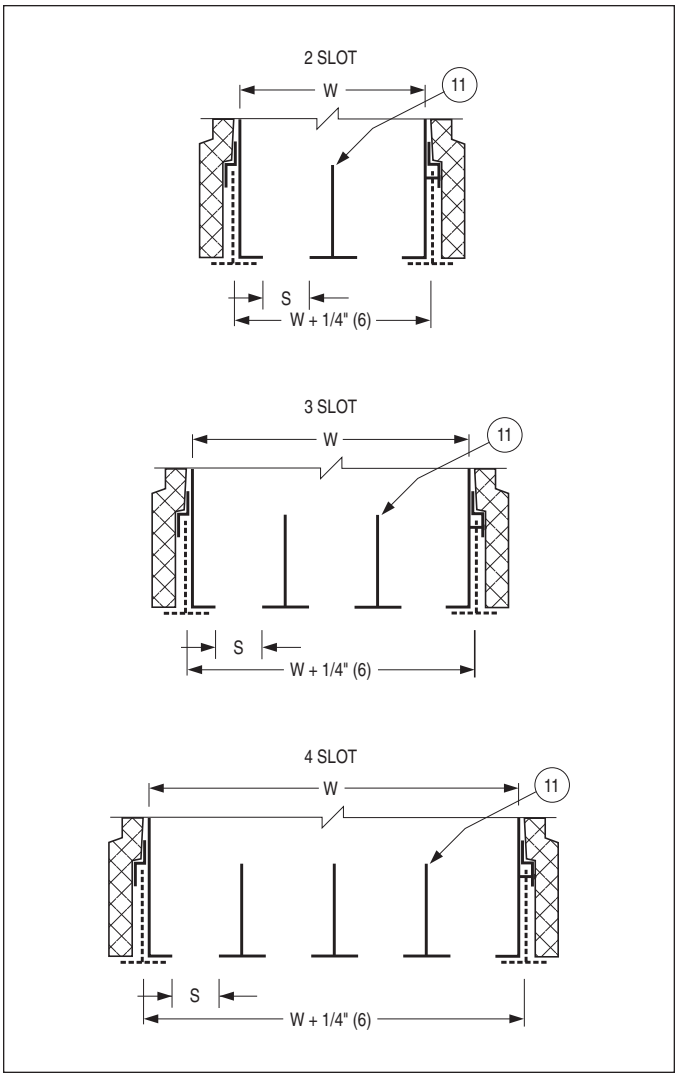
MODELS 5550R, 5575R, 5510R, 5515R • FIRE RATED PLENUM SLOT RETURN • DUCTLESS OPENING OR INLET OPTION

UNDERWRITER'S LABORATORIES, INC.®
CLASSIFIED AIR TERMINAL UNITS
LISTED FOR UP TO 3 HOURS
CATEGORY BZGU & BZGU7



ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. UL Listed fusible link (replaceable).
10. Hanger wire at casing mid-point.
11. Intermediate grid bars (shown solid) supplied and installed by factory.



		S (Slot Width)			
		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 slot	6" (152)	7" (178)	8" (203)	N/A

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	–	–	7 7/8" (200)	7 7/8" (200)

HOW TO ORDER OR TO SPECIFY

FIRE RATED PLENUM SLOT DIFFUSERS – 'FLIP FLOP' CONTROLLER
MODEL 5575

EXAMPLE: 5575 - 48" - 2 SLOT - 08 - AW - 212 - ID - EX - T1

1. **Models**
   5575 Supply, 3/4" (19) Slot Width
2. **Nominal Length**
   Imperial
   inches (mm)
   20", 24", 30", 36", 48", 60"
   (508, 610, 762, 914, 1219, 1524)
   Metric
   mm
   500, 600, 750, 900, 1200, 1500
3. **No. of Slots**
   1 through 4
4. **Inlet Size**
   Imperial
   05 5" (127) Round
   06 6" (152) Round
   07 7" (178) Round
   08 8" (203) Round
   09 9" (229) Flat Oval
   10 10" (254) Flat Oval
   12 12" (305) Flat Oval
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BW British White
6. **Fusible Link Temperature**
   212 212°F (100°C) (default)
   165 165°F (74°C)
7. **Damper**
   ID Inlet Balancing Damper with Hand Locking Quadrant
8. **External Insulation**
   EX External Foil-Back Insulation, installed – R-4.2
9. **Supplementary T-Bars**
   T0 One - Opposite Inlet
   T1 One Inlet Side
   T2 Both Sides

Note:

1. Consult individual model as to limitations of length, width and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 5575 Fire Rated Plenum Slot Supply Diffusers with 'Flip Flop' Pattern Controllers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be constructed from corrosion-resistant steel and the 'Flip-Flop' pattern controllers adjust from the face of the diffuser in a left or right discharge direction. Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

HOW TO ORDER OR TO SPECIFY

FIRE RATED PLENUM SLOT RETURN DIFFUSERS
MODELS 5550R, 5575R, 5510R, 5515R

EXAMPLE: 5510R - 48" - 2 SLOT - 08 - AW - 212 - EX - T1

1. **Models**
   - 5550R Return, 1/2" (13) Slot Width
   - 5575R Return, 3/4" (19) Slot Width
   - 5510R Return, 1" (25) Slot Width
   - 5515R Return, 1 1/2" (38) Slot Width
2. **Nominal Length**
   Imperial
   inches (mm)
   20", 24", 30", 36", 48", 60"
   (508, 610, 762, 914, 1219, 1524)
   Metric
   mm
   500, 600, 750, 900, 1200, 1500
3. **No. of Slots**
   1 through 4
4. **Inlet Size**
   Imperial
   - 05 5" (127) Round
   - 06 6" (152) Round
   - 07 7" (178) Round
   - 08 8" (203) Round
   - 09 9" (229) Flat Oval
   - 10 10" (254) Flat Oval
   - 12 12" (305) Flat Oval
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BW British White
6. **Fusible Link Temperature**
   - 212 212°F (100°C) (default)
   - 165 165°F (74°C)
7. **External Insulation**
   - EX External Foil-Back Insulation, installed – R-4.2
8. **Supplementary T-Bars**
   - T0 One - Opposite Inlet
   - T1 One Inlet Side
   - T2 Both Sides

Note:

1. Consult individual model as to limitations of length, width and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **5500R, 5575R, 5510R** or **5515R Fire Rated Plenum Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be constructed from corrosion-resistant steel and supplied with a rectangular opening as standard for ductless return applications (round/oval connections are an available option). Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). Blades shall be shipped locked and may be set for left or right airflow pattern after installation. The finish shall be Black on exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

Nailor® Industries Inc.

GRILLES AND REGISTERS

TABLE OF CONTENTS

	Page No.
General Product Overview	**F4**
Exclusive Steel Grille, Register and Diffuser Warranty	**F13**
Louvered Face Grilles and Registers	
Model Series 5100 - Aluminum - Double Deflection - Supply	**F14**
Model Series 5100 - Aluminum - Single Deflection - Supply	**F15**
Model Series 6100 - Steel - Double Deflection - Supply	**F16**
Model Series 6100 - Steel - Single Deflection - Supply	**F17**
Model Series 6700 - Stainless Steel - Double Deflection - Supply	**F18**
Model Series 6700 - Stainless Steel - Single Deflection - Supply	**F19**
Model Series 5100 - Aluminum - 3/4" (19) Spacing - Fixed 45° or 0° Blades - Return	**F28**
Model Series 5100 - Aluminum - 3/4" (19) Spacing - Fixed 45° Blades - Fineline® - Return	**F31**
Model Series 5100 - Aluminum - 1/2" (13) Spacing - Fixed 45° Blades - Return	**F32**
Model Series 6100 - Steel - 3/4" (19) Spacing - Fixed 45° or 0° Blades - Return	**F34**
Model Series 6100 - Steel - 3/4" (19) Spacing - Fixed 45° Blades - Fineline® - Return	**F36**
Model Series 6100 - Steel - 1/2" (13) Spacing - Fixed 45° Blades - Return	**F37**
Model Series 6700 - Stainless Steel - 3/4" (19) Spacing - Fixed 45° or 0° Blades - Return	**F39**
Model Series 6700 - Stainless Steel - 1/2" (13) Spacing - Fixed 45° Blades - Return	**F40**
Curved Spiral Duct Grilles	
Model Series 5100C - Aluminum - Double Deflection - Supply	**F50**
Model Series 5100C - Aluminum - Single Deflection - Supply	**F51**
Model Series 5100C - Aluminum - Perforated Face - Supply or Return	**F52**
Model Series 5100C - Aluminum - 3/4" (19) or 1/2" (13) Spacing - Fixed 45° Blades - Return	**F53**
Model Series 6100C - Steel - Double Deflection - Supply	**F54**
Model Series 6100C - Steel - Single Deflection - Supply	**F55**
Model Series 6100C - Steel - Perforated Face - Supply or Return	**F56**
Model Series 6100C - Steel - 3/4" (19) or 1/2" (13) Spacing - Fixed 45° Blades - Return	**F57**
Model Series 6100C - Steel - Linear Slot Face - True Full Radius Design - Supply	**F67**
Airfoil Blade Grilles and Registers	
Model Series 7100 - Extruded Aluminum - Double Deflection - Premium Performance - Supply	**F71**
Model Series 7100 - Extruded Aluminum - Single Deflection - Premium Performance - Supply	**F72**
Model Series 7100 - Extruded Aluminum - Fixed 45° or 0° Blades - Premium Perf. - Return	**F79**
Curved Blade Grilles and Registers	
Model Series 51C - Aluminum - One and Two-Way Discharge Pattern - Supply	**F86**
Model Series 51C - Aluminum - Three and Four-Way Discharge Pattern - Supply	**F87**
Model Series 61C - Steel - One and Two-Way Discharge Pattern - Supply	**F88**
Model Series 61C - Steel - Three and Four-Way Discharge Pattern - Supply	**F89**
Eggcrate Grilles and Registers	
Model Series 51EC - Aluminum - Return and Exhaust	**F96**
Model Series 51EC-MRI - 100% Aluminum - Suitable for MRI - Return	**F99**
Model Series 51EC45 - Aluminum - 45° Deflection - Sightproof - Exhaust and Return	**F100**
Model Series 61EC - Steel Frame - Aluminum Core - High Capacity - Exhaust and Return	**F101**
Model Series 61ECF - Steel Frame - Aluminum Core - High Capacity - Exhaust and Return	**F104**
Model Series 67EC - Stainless Steel Frame and Grid Core - Exhaust and Return	**F105**
Perforated Grilles and Registers	
Model Series 51PR - Aluminum - Return	**F114**
Model Series 61PR - Steel - Return	**F114**
Model Series 67PR - Stainless Steel - Return	**F116**

TABLE OF CONTENTS

Page No.

Filter Grilles
- Model Series 51F - Aluminum - Exhaust and Return **F122**
- Model Series 61F - Steel - Exhaust and Return **F122**
- Model Series 67F - Stainless Steel - Exhaust and Return **F122**

Door/Transfer Grilles
- Model Series 51DG - Aluminum - Single or Double Flange - Sightproof **F129**
- Model Series 61DG - Steel - Single or Double Flange or Core Only - Sightproof **F130**
- Model Series 61DGD-FR - Fire Rated - Louvered Face - UL Listed - Self Attaching Frame **F131**

Reversible Core Grilles and Registers
- Model Series 51RC - Aluminum - Supply or Return **F134**

Heavy Duty Grilles and Registers
- Model Series 51D00-HD - Aluminum - Supply **F139**
- Model Series 5100-HD - Aluminum - Return **F144**
- Model Series 6100-HD - Steel - Supply **F150**
- Model Series 6100-HD - Steel - Gymnasium - Louvered - Return **F158**
- Model Series 6700-HD - Stainless Steel - Fixed 45° Blades - 1/2" (13) Spacing - Return **F159**

Drum Louver Supply Grilles
- Model Series 45DLC - Aluminum - High Capacity - Long Throw - Supply **F168**
- Model Series 45DL - Aluminum - High Capacity - Long Throw - Supply **F170**

Industrial Supply Grilles and Registers
- Model Series 8100 - Aluminum - Double Deflection - 1 1/2" (38) and 3" (76) Spacing **F177**
- Model Series 8100 - Aluminum - Single Deflection - 1 1/2" (38) and 3" (76) Spacing **F177**
- Model Series 8100 - Aluminum - Gang Operated - 1 1/2" (38) Spacing **F177**
- Model Series 81MG - Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing **F184**

Lattice Grilles
- Model Series 51LG - Aluminum **F189**
- Model Series 61LG - Steel **F189**
- Model Series 67LG - Stainless Steel **F189**

Options and Accessories
- Overview **F191**
- Fastenings and Border Frames **F192**
- Mounting Frames **F193**
- Panel Mounting/Ceiling Modules **F194**
- Options **F195**
- Custom Sizing **F195**
- Finishes **F195**
- Sound Reduction for Return Air Grilles • RACA **F196**
- Air Balancing Devices - Steel and Aluminum - Opposed Blade Dampers **F197**
- Air Balancing Devices - Stainless Steel - Opposed Blade Dampers **F199**
- Volume Extractors **F200**

GENERAL PRODUCT OVERVIEW

GRILLES AND REGISTERS

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional work-manship with the backing of an industry leader – these add up to true value; prime reasons for specifying Nailor Grilles and Registers.

Architectural excellence and engineering selections demand high quality products and shipping schedules demand service; all part of the package.

- Comprehensive range of models and styles to choose from.
- Versatile selection and sizing ensures the correct product for any specific application.
- Material choice of premium quality extruded aluminum, cost-effective steel or stainless steel. Unique in our manufacturing process is the exclusive use of corrosion-resistant coated steel as used in the auto industry. The material has superb forming qualities and outlasts painted cold-rolled steel and galvanized steel by up to three times.
- Various border/frame types, combinations and mounting options.
- Balancing accessories.
- Superior finishes.
- Performance data in accordance with current international test standards and the back-up of one of the finest 'in-house' testing laboratories in North America.

LOUVERED FACE GRILLES AND REGISTERS

This series of grilles and registers are available in cost effective, corrosion-resistant steel, premium quality extruded aluminum or stainless steel construction. The blades are formed to a streamlined engineered contoured cross-section. Rigid, reinforced frames feature hairline-mitered corners. Optional opposed blade dampers have a screwdriver slot or lever operator for adjustment through the face of the register. As standard, the grilles and registers have countersunk screw holes in the frame, which make for an architecturally pleasing appearance.

LOUVERED FACE — SUPPLY AIR

DOUBLE DEFLECTION

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. Blades are spaced on 3/4" (19) centers.

Aluminum – Models 51DV, 51DH **Page F14**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Models 61DV, 61DH **Page F16**
Suffix '-O' adds a steel OBD

Stainless Steel – Models 67DV, 67DH **Page F18**
Suffix '-O' adds a stainless steel OBD

Models 51DV, 67DV

Models 51SH, 67SV

SINGLE DEFLECTION

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. Blades are spaced on 3/4" (19) centers.

Aluminum – Models 51SV, 51SH **Page F15**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Models 61SV, 61SH **Page F17**
Suffix '-O' adds a steel OBD

Stainless Steel – Models 67SV, 67SH **Page F19**
Suffix '-O' adds a stainless steel OBD

LOUVERED FACE — RETURN AIR

45° DEFLECTION, 3/4" (19) BLADE SPACING

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 5145V, 5145H **Page F28**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Aluminum – Fineline® – Model 5145F **Page F31**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Models 6145V, 6145H **Page F34**
Suffix '-O' adds a steel OBD

Steel – Fineline® – Model 6145F **Page F36**
Suffix '-O' adds a steel OBD

Stainless Steel – Models 6745V, 6745H **Page F39**
Suffix '-O' adds a stainless steel OBD

Models 6145H, 6745H

Models 5155H, 6755H

45° DEFLECTION, 1/2" (13) BLADE SPACING

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with the grille blade deflection facing away from the line of sight, and when viewed from straight ahead. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 5155V, 5155H **Page F32**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Models 6155V, 6155H **Page F37**
Suffix '-O' adds a steel OBD

Stainless Steel – Models 6755V, 6755H **Page F40**
Suffix '-O' adds a stainless steel OBD

0° DEFLECTION, 3/4" (19) BLADE SPACING

The blades are fixed at 0°. Their appearance complements the supply grilles and registers of the same series. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 51FV, 51FH **Page F29**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Models 61FV, 61FH **Page F35**
Suffix '-O' adds a steel OBD

Stainless Steel – Models 67FV, 67FH **Page F39**
Suffix '-O' adds a stainless steel OBD

Models 51FH, 67FH

CURVED SPIRAL DUCT GRILLES

Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct. This eliminates the need to fabricate stand-off saddles required for installing standard grilles. These grilles are available for both supply and return air applications.

Double Deflection – Aluminum Models 51DVC, 51DHC **Page F50**
Double Deflection – Steel Models 61DVC, 61DHC **Page F54**
Single Deflection – Aluminum Models 51SVC, 51SHC **Page F51**
Single Deflection – Steel Models 61SVC, 61SHC **Page F55**
Linear Slot Face – Steel Models 61L50C, 61L75C, 61L10C **Page F67**
Perforated – Aluminum Model 51PRC **Page F52**
Perforated – Steel Model 61PRC **Page F56**
45° Fixed Blade – Aluminum Models 5145HC, 5155HC **Page F53**
45° Fixed Blade – Steel Models 6145HC, 6155HC **Page F57**

Models 61DVC, 6155HC, 61SVC

AIRFOIL BLADE GRILLES AND REGISTERS

Sleek design, premium performance and a true extruded aluminum airfoil blade is what makes this series superior to the industry standard. The models in this series are designed for engineers and architects who require exceptional quality and performance. As standard, the grilles and registers have countersunk screw holes in the extruded aluminum frame, which make for a neat clean appearance. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register.

AIRFOIL BLADE — SUPPLY AIR

Model 71DV

DOUBLE DEFLECTION

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. The airfoil blades are spaced on 3/4" (19) centers.

Aluminum – Models 71DV, 71DH **Page F71**

Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

SINGLE DEFLECTION

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. The airfoil blades are spaced on 3/4" (19) centers.

Aluminum – Models 71SV, 71SH **Page F72**

Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Model 71SV

AIRFOIL BLADE — RETURN AIR

45° DEFLECTION, 3/4 (19) BLADE SPACING

The airfoil blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 7145H, 7145V **Page F79**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

0° DEFLECTION, 3/4 (19) BLADE SPACING

The airfoil blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 71FH, 71FV **Page F79**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Models 71FH, 7145H

CURVED BLADE DIRECTIONAL GRILLES AND REGISTERS

Nailor's curved blade directional grilles and registers are designed to meet the demand for top quality and competitive prices. Constructed with extruded aluminum blades, this model series is unobtrusive in appearance for architectural excellence. The grilles and registers may be used in sidewall and ceiling applications. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register. The 1 1/4" (32) frames have countersunk screw holes for an inconspicuous appearance.

Models 51CD, 61CD

CURVED BLADE WITH DEFLECTION VANES

The models in this series have individually adjustable curved blades that provide a true directional pattern. They also incorporate a set of rear adjustable vanes for complete directional control and flow equalization. They are available with one or two way directional throw.

Aluminum – Model 51CD **Page F86**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

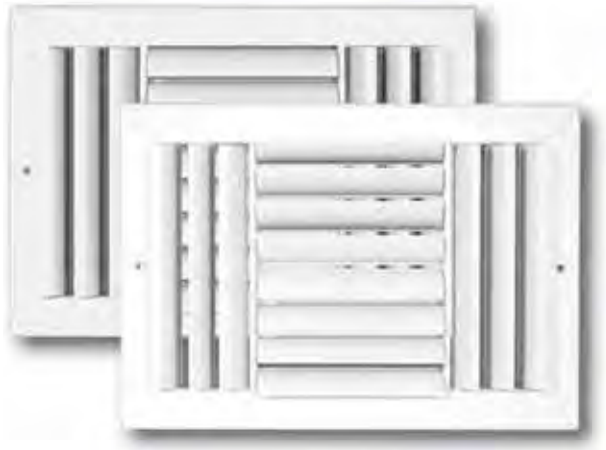
Steel – Model 61CD **Page F88**
Suffix '-O' adds a steel OBD

CURVED BLADE WITHOUT DEFLECTION VANES

The models in this series have curved blades that provide a true directional pattern. There are twelve available patterns to choose from.

Aluminum – Model 51C
One and Two-Way **Page F86**
Three and Four-Way **Page F87**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Model 61C
One and Two-Way **Page F88**
Three and Four-Way **Page F89**
Suffix '-O' adds a steel OBD



Models 51C, 61C

EGGCRATE RETURN AND EXHAUST GRILLES

The eggcrate grilles and registers are constructed of thin, interlocked aluminum or stainless steel strips assembled in a square grid fashion that is available in a variety of grid sizes. The standard grid size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with 1/2" x 1/2" x 1" (13 x 13 x 25) or 1" x 1" x 1" (25 x 25 x 25) as an option. Frame and border types are available in a variety of materials and mounting options.

Aluminum – Model 51EC **Page F96**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

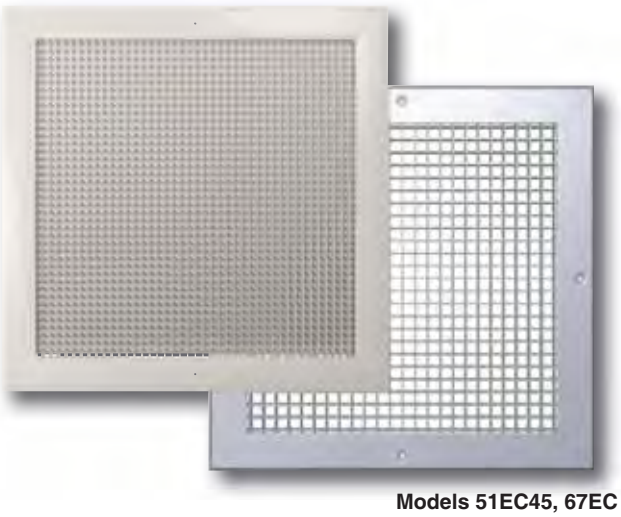
Aluminum – Model 51EC-MRI **Page F99**

Aluminum – Model 51EC45 **Page F100**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

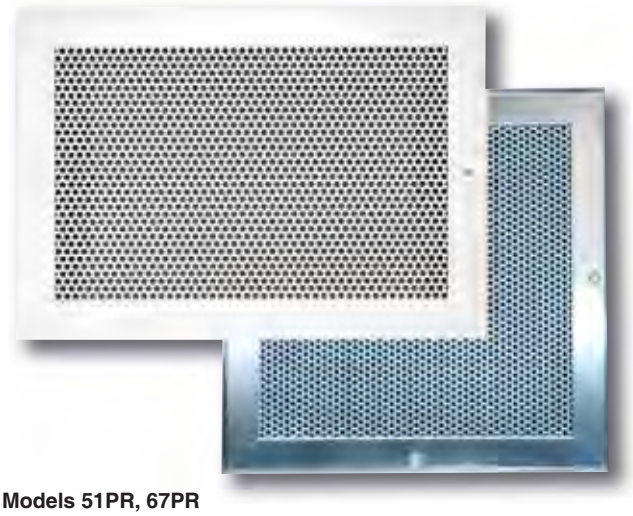
Steel – Model 61EC **Page F101**
Suffix '-O' adds a steel OBD

Steel – Fineline® – Model 61ECF **Page F104**

Stainless Steel – Model 67EC **Page F105**
Suffix '-O' adds a stainless steel OBD.



Models 51EC45, 67EC



Models 51PR, 67PR

PERFORATED RETURN GRILLES

The perforated face used on these grilles and registers have 3/16" (5) diameter holes on 1/4" (6) staggered centers (51% free area) and is available in a choice of aluminum, steel or stainless steel construction. Their general appearance matches and complements the popular perforated supply diffusers (refer to the **4300 Series** in the diffuser section of the catalog).

Aluminum – Model 51PR **Page F114**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Steel – Model 61PR **Page F114**
Suffix '-O' adds a steel OBD

Stainless Steel – Model 67PR **Page F116**
Suffix '-O' adds a steel OBD

FILTER RETURN AND EXHAUST GRILLES

Nailor offers a large selection of filter grilles that are designed to match and complement their respective base models in appearance. The standard filter frame accepts a standard 1" (25) thick, throw away type filter (by others) with an option for a 2" (51) filter frame.

- **Louvered Face** **Page F122**

Aluminum – Models 51FB45, 51FB55, 51FBS
Steel – Models 61FB45, 61FB55, 61FBS
Stainless Steel – 67FB45, 67FB55

- **Eggcrate** **Page F122**

Aluminum – Model 51FE
Aluminum – Model 51FE45
Steel – Model 61FE

- **Perforated** **Page F122**

Aluminum – Model 51FP
Steel – Model 61FP

Models 51FBS, 51FB55, 67FB45

DOOR/TRANSFER GRILLES

Nailor provides an assortment of door grilles that are designed to be completely sight proof and unobtrusive in appearance. They are constructed using extruded aluminum or steel materials. A fire-rated version is also available.

Aluminum – Models 51DGD, 51DGS **Page F129**
Steel – Models 61DGD, 61DGS, 61DGC **Page F130**
Steel Fire Rated – Models 61DGD-FR **Page F131**

Models 51DGD, 61DGD-FR

Model 51RCD

REVERSIBLE CORE

The versatile core in this series allows a combination of four different deflections and is removable without the need of special tools. Optional deflector vanes and an opposed blade damper are available for additional air control.

Aluminum – Models 51RC, 51RCD **Page F134**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

HEAVY DUTY EXTRUDED ALUMINUM BAR GRILLES AND REGISTERS

The grilles in this series are constructed to offer strength and durability for applications requiring strong impact resistance. The extruded aluminum frames are staked and welded, and the extruded aluminum blades are offered with a 0°, 15°, or 30° fixed deflection. Available for both supply and return air applications.

SUPPLY AIR

FIXED FRONT BARS WITH REAR DEFLECTION VANES

This supply air grille has adjustable rear vanes for directional control. The fixed extruded aluminum front blades are supported by a deep profile cross bar for strength.

Models 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD **Page F139**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Model 51D15H-HD

RETURN AIR

FIXED BARS

This return air grille has extruded aluminum fixed blades that are reinforced for strength.

Models 5130H-HD, 5130V-HD, 51FH-HD, 51FV-HD **Page F144**
Suffix '-O' adds a steel OBD
Suffix '-OA' adds an aluminum OBD

Model 5130H-HD

HEAVY DUTY STEEL GRILLES AND REGISTERS, GYMNASIUM STRENGTH

Nailor's Heavy Duty Steel Grilles and Registers are manufactured with 16 gauge steel frames and 14 gauge steel blades which gives them strength to stand up to abuse and high impacts that occur in schools, gymnasiums and other comparable applications.

SUPPLY AIR

Model 61SH-HD

ADJUSTABLE BLADES

The supply air grilles are offered with both single and double deflection blades. The adjustability of the blade is 0° — 40° deflection and they are spaced on 1/2" (13) centers. The double deflection rear blades are spaced on 3/4" (19) centers.

Double Deflection – Models 61DV-HD, 61DH-HD **Page F150**
Suffix '-O' adds a steel OBD

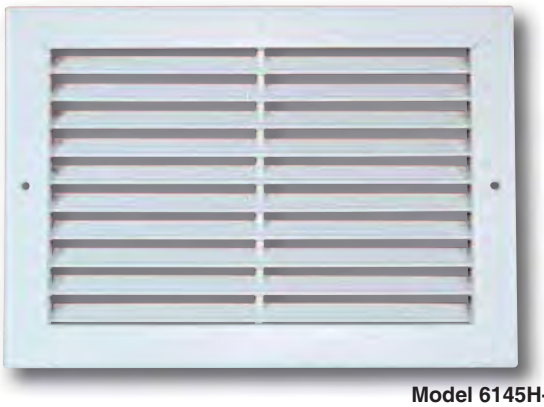
Single Deflection – Models 61SV-HD, 61SH-HD **Page F150**
Suffix '-O' adds a steel OBD

RETURN AIR

FIXED BLADES

Heavy gauge frame and blades and all welded construction make this series of grilles and registers extremely durable. These models are perfect for locations that require strong impact resistance. The blades are spaced on 1/2" (13) centers.

Models 6145H-HD, 6145V-HD, 61FH-HD, 61FV-HD **Page F158**
Suffix '-O' adds a steel OBD



Model 6145H-HD

HEAVY DUTY STAINLESS STEEL

This grille is used mainly for return air applications that require strength and durability in corrosive or high humidity environments. The frame is welded and the blades are spaced on 1/2" (13) centers and reinforced with a mullion on 8" (203) centers.

Stainless Steel – Models 6755H-HD, 6755V-HD **Page F159**
Suffix '-O' adds a stainless steel OBD

Model 6755H-HD

Models 45DL1, 45DL2

DRUM LOUVERS

These extruded aluminum drum louvers are appropriate when high volumes of air are used and in spot heating and cooling applications. A split-vane style and a pole operating bracket are available.

Models 45DLC1, 45DLC2 **Page F168**
Suffix '-DEX' adds a damper/extractor (air scoop)
Models 45DL1, 45DL2 **Page F170**
Suffix '-O' adds a steel OBD

INDUSTRIAL SUPPLY

The industrial supply grilles and registers have contoured airfoil blades that are extruded aluminum and are available with either 1 1/2" (38) or 3" (76) blade spacing. The heavy gauge, 1 1/4" (32) frame includes reinforced and staked mitered corners.

- **Double Deflection**

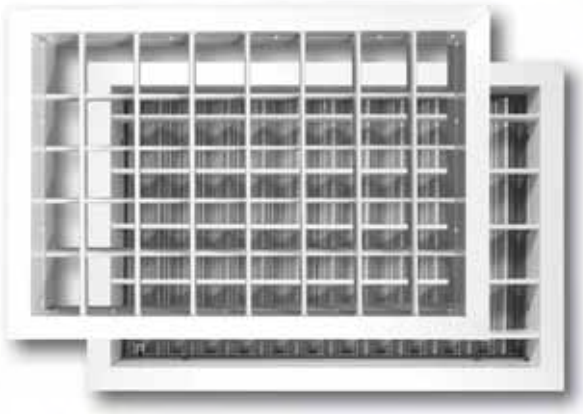
1 1/2" (38) Blade Spacing – Models 81DV, 81DH **Page F177**
3" (76) Blade Spacing – Models 813DV, 813DH **Page F177**
Suffix '-O' adds a steel OBD

- **Single Deflection**

1 1/2" (38) Blade Spacing – Models 81SV, 81SH **Page F177**
3" (76) Blade Spacing – Models 813SV, 813SH **Page F177**
Suffix '-O' adds a steel OBD

- **Gang Operated – Models 81GDV, 81GDH** **Page F177**

Suffix '-O' adds a steel OBD



Models 813SH-O, 813DV

Model 81MG3

MODULAR CORE - INDUSTRIAL SUPPLY

Nailor has incorporated the features of the 8100 Series (double deflection) industrial supply grilles with an aluminum modular frame, which allows for extra directional flow flexibility. Up to four modules are available in specific sizes from 8" x 8" to 15" x 15" (203 x 203 to 381 x 381).

Models 81MG1, 81MG2, 81MG3, 81MG4 **Page F184**

Suffix '-O' adds a steel OBD

LATTICE FACE

Lattice face grilles are available in heavy gauge aluminum, steel and stainless steel construction with a selection of hole patterns to choose from. Countersunk screw holes and mounting screws are optional.

Aluminum – Model 51LG **Page F189**
Steel – Model 61LG **Page F189**
Stainless Steel – Model 67LG **Page F189**

Model 61LG75

OPTIONS AND ACCESSORIES

Nailor offers an extensive selection of accessories and options for grilles and registers. Air balancing devices, air extractors and a variety of mounting frames are several of the accessories available. Grille options consist of special finishes, gaskets, alternative frames and a variety of other items.

Options

Fastening and Border Frames	**Page F192**
Mounting Frames	**Page F193**
Panel Mounting Frames	**Page F194**
Options	**Page F195**
Custom Sizing	**Page F195**
Finishes	**Page F195**
Sound Reduction for Return Air Grilles	**Page F196**

Accessories

Air Balancing Devices	**Page F197**
Volume Extractors	**Page F200**

Framing and Air Balancing Devices

EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2, UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel with a factory applied paint finish that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.

No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

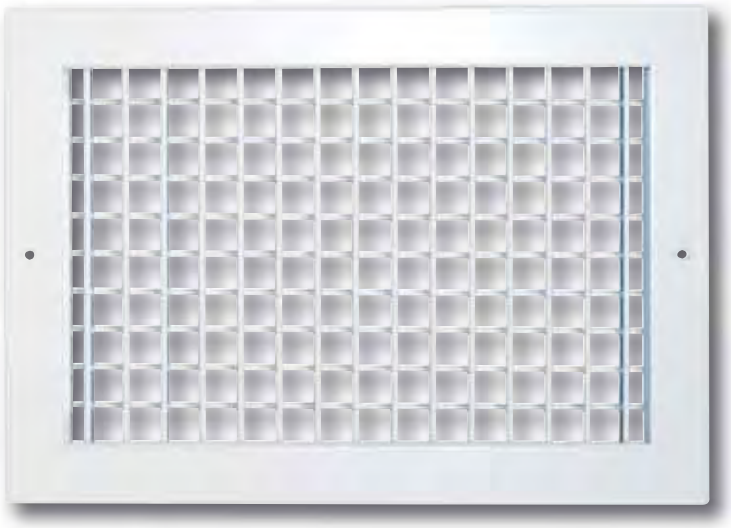
ALUMINUM DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

Models:

51DV and 51DH

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 51DV

Models 51DV and 51DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

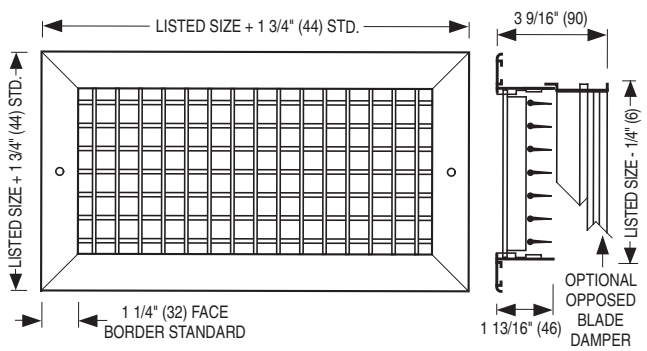
FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

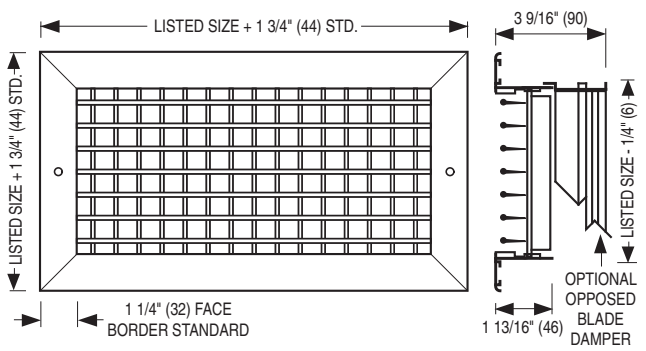
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 51DV Vertical Front Blades



MODEL 51DH Horizontal Front Blades

ALUMINUM SINGLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

Models:

51SV and 51SH

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 51SV

Models 51SV and 51SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

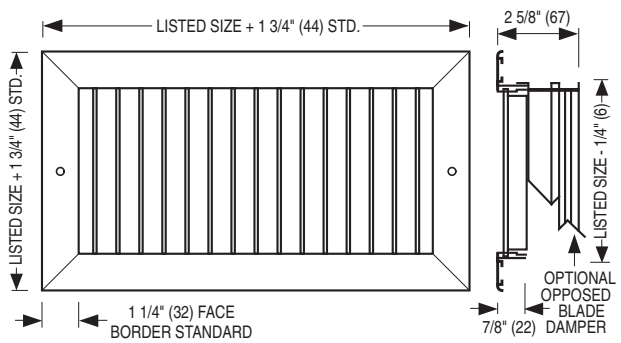
FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

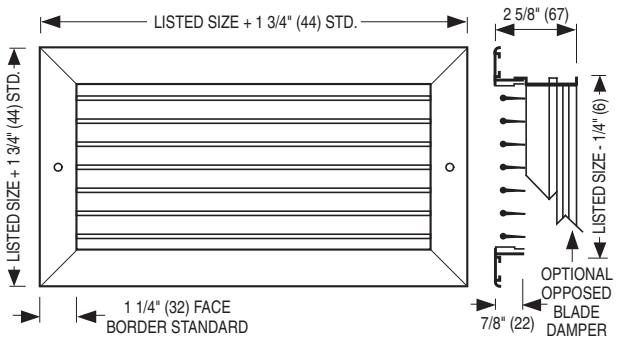
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 51SV Vertical Blades



MODEL 51SH Horizontal Blades

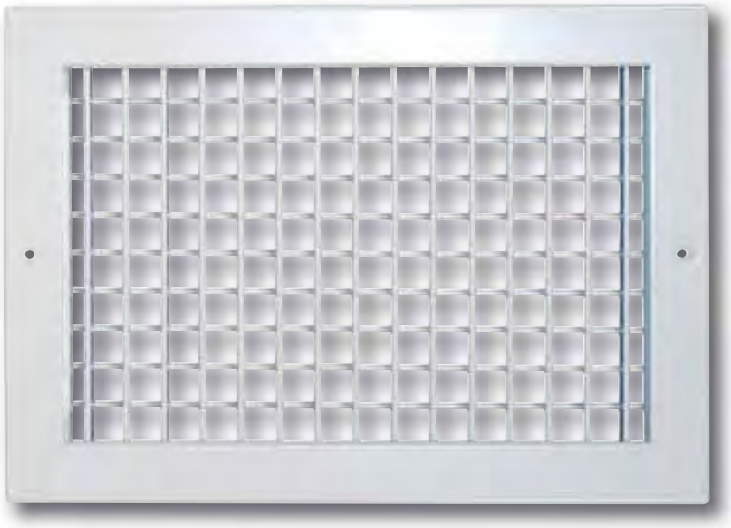
STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

Models:

61DV and 61DH

- **Suffix '-O' adds a steel opposed blade damper**



Model 61DV

Models 61DV and 61DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

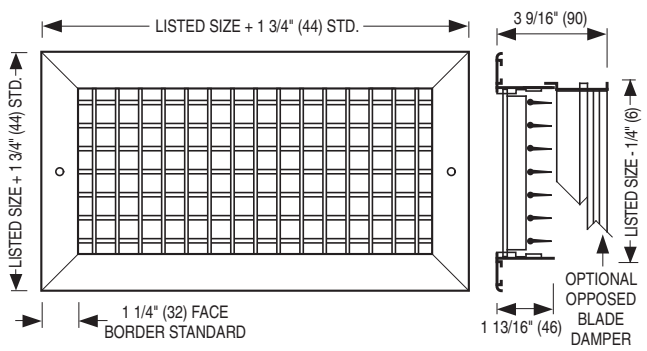
FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

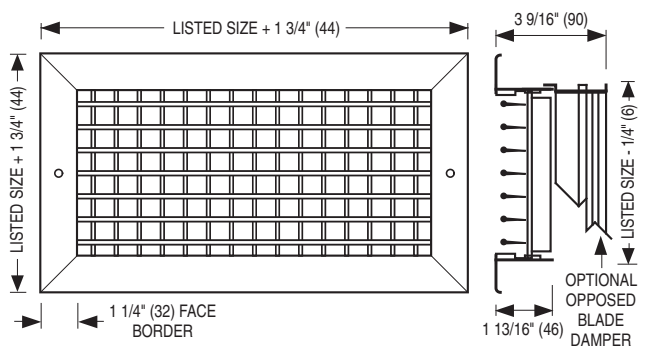
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 61DV Vertical Front Blades



MODEL 61DH Horizontal Front Blades

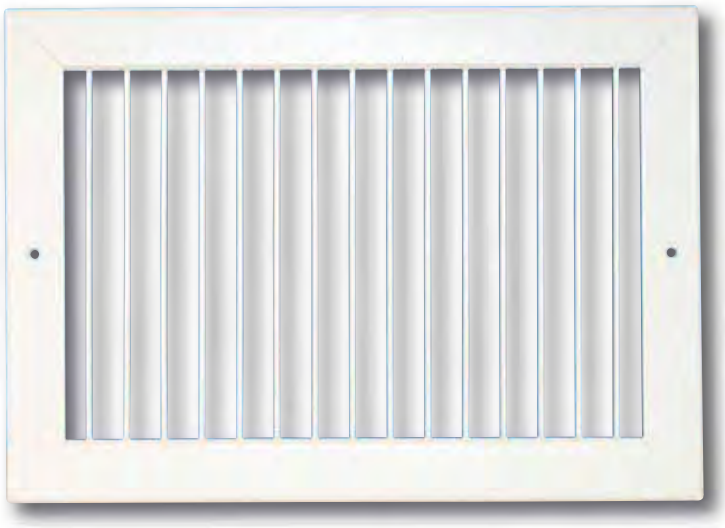
STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

Models:

61SV and 61SH

- **Suffix '-O' adds a steel opposed blade damper**



Model 61SV

Models 61SV and 61SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

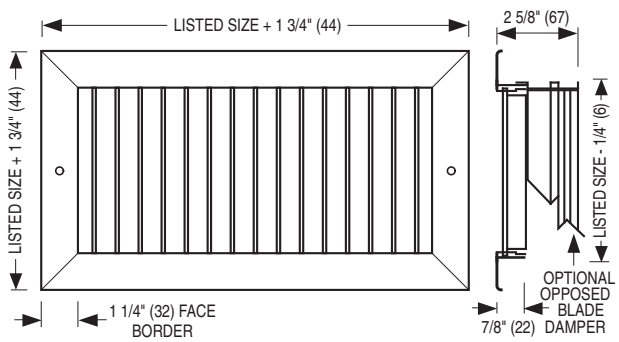
FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

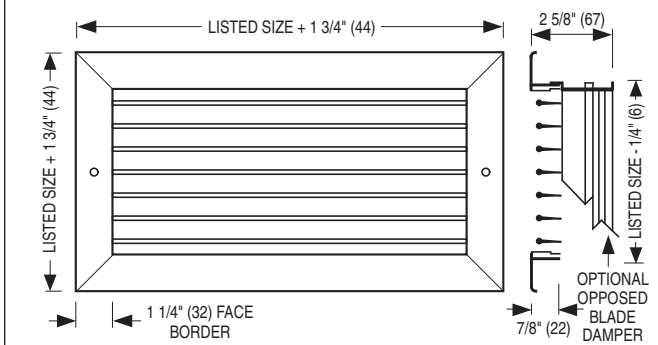
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 61SV Vertical Blades



MODEL 61SH Horizontal Blades

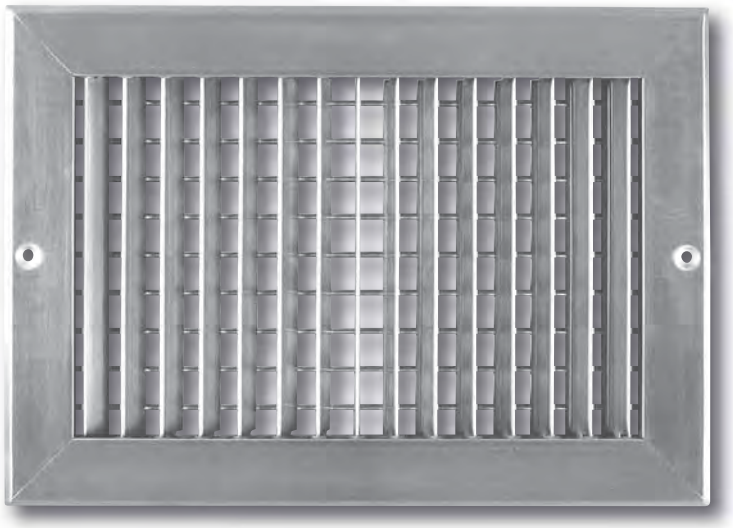
STAINLESS STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

Models:

67DV and 67DH

- **Suffix '-O' adds a stainless steel opposed blade damper**



Model 67DV

Models 67DV and 67DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

CONSTRUCTION MATERIAL:

- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

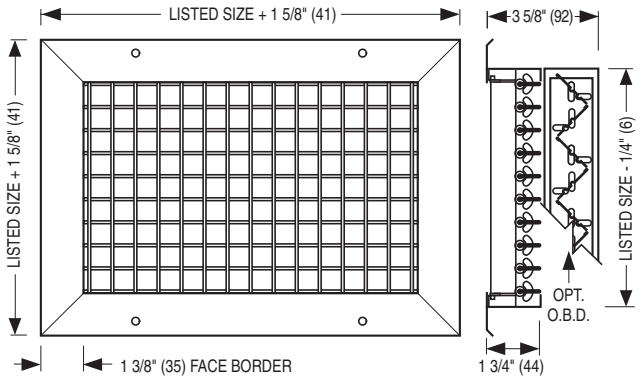
FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

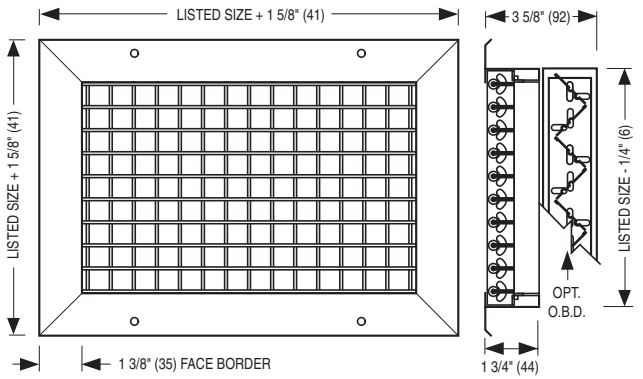
OPTIONS AND ACCESSORIES:

- Type 316 Stainless Steel Construction
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



MODEL 67DV Vertical Front Blades



MODEL 67DH Horizontal Front Blades

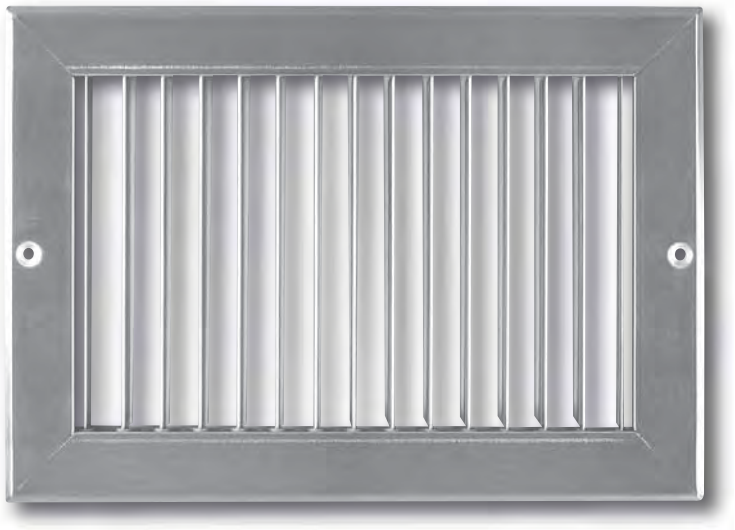
STAINLESS STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

- **SUPPLY**

Models:

67SV and 67SH

- **Suffix '-O' adds a stainless steel opposed blade damper**



Model 67SV

Models 67SV and 67SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

CONSTRUCTION MATERIAL:

- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

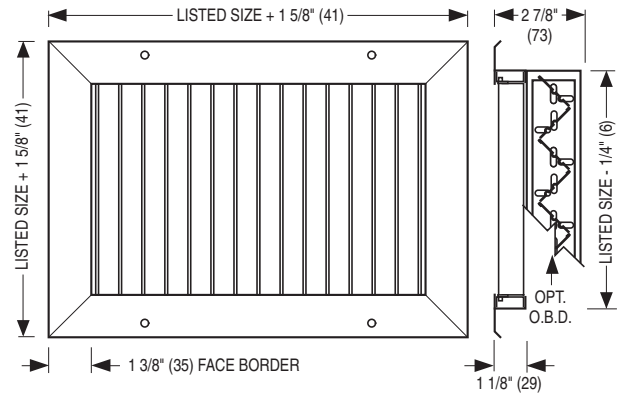
FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

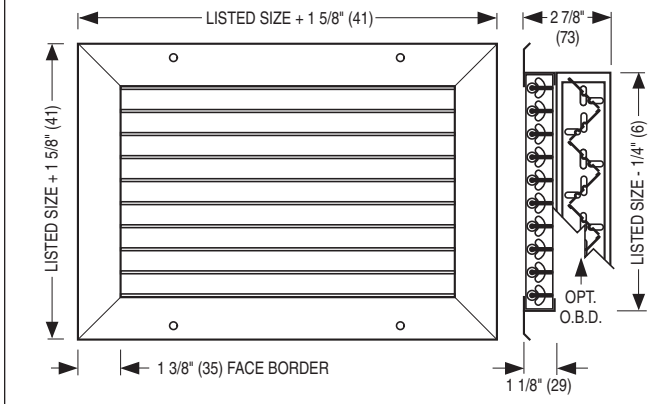
OPTIONS AND ACCESSORIES:

- Type 316 Stainless Steel Construction
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



MODEL 67SV Vertical Blades



MODEL 67SH Horizontal Blades

PERFORMANCE NOTES FOR SUPPLY GRILLES AND REGISTERS:
MODEL SERIES: 5100, 6100 AND 6700

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

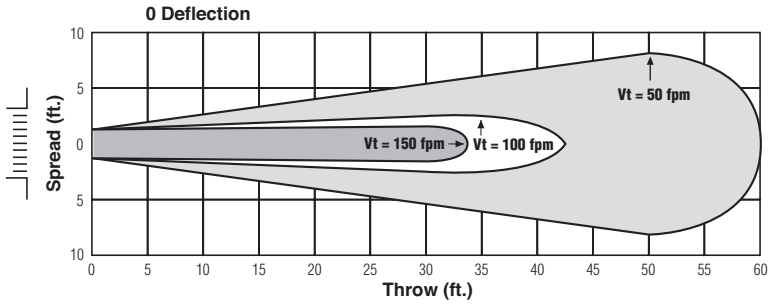
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

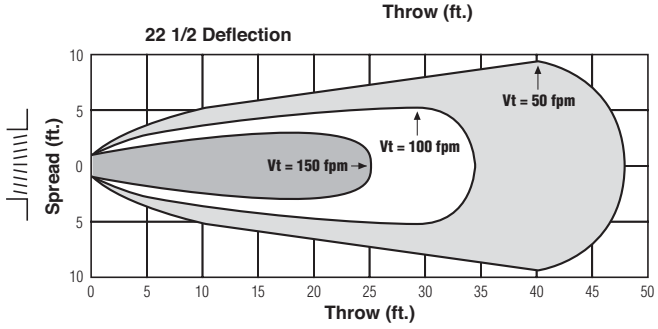
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

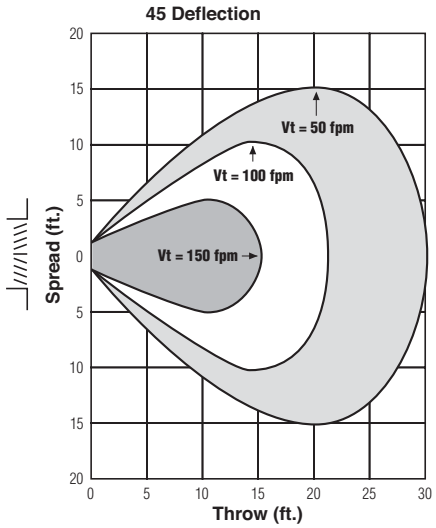
Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS







NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	– 4	– 2	+ 3
Single Deflection	With	– 4	– 1	+ 4
	Without	– 8	– 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
6 x 6	8 x 4 10 x 4	0.20		CFM		60	80	100	120	140	160	200	240	280
				Noise Criteria		–	–	–	–	19	23	29	35	40
			.14	Throw	0°	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	15-18-25	16-20-27	17-21-30
			.12		22 1/2°	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22	14-17-24
			.10		45°	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	8-9-13	8-10-14	9-11-15
8 x 6	10 x 5 12 x 4	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		–	–	–	15	20	24	30	36	41
			.18	Throw	0°	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	17-21-30	18-23-32	19-24-35
			.16		22 1/2°	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	14-17-24	14-18-26	15-19-28
			.14		45°	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-18
10 x 6	12 x 5 16 x 4	0.35		CFM		105	140	175	210	245	280	350	420	490
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.24	Throw	0°	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	20-23-33	21-25-36	22-27-39
			.21		22 1/2°	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	16-18-26	17-20-29	18-22-31
			.18		45°	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	10-12-17	11-13-18	11-14-20
8 x 8	14 x 5	0.38		CFM		114	152	190	228	266	304	380	456	532
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.26	Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40
			.22		22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	15-19-27	17-21-30	18-22-32
			.20		45°	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-13-19	12-14-20
12 x 6	18 x 4	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.29	Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	19-24-34	21-28-38	23-29-41
			.25		22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	15-19-27	17-22-30	18-23-33
			.22		45°	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-14-19	12-15-21
14 x 6	10 x 8	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		–	–	–	18	23	27	33	39	44
			.34	Throw	0°	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	21-25-36	23-28-40	25-31-43
			.30		22 1/2°	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	17-20-29	18-22-32	20-25-34
			.26		45°	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	11-13-18	12-14-20	13-16-22
12 x 8	16 x 6 24 x 4	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.39	Throw	0°	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45
			.34		22 1/2°	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	18-22-30	19-24-34	21-26-36
			.30		45°	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	11-14-19	12-15-21	13-16-23
10 x 10	14 x 7 26 x 4	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.41	Throw	0°	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	23-28-39	24-30-42	27-32-46
			.36		22 1/2°	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-31	19-24-34	22-26-37
			.31		45°	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	12-14-20	12-15-22	14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		195	260	325	390	455	520	650	780	910
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.44	Throw	0°	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	24-29-40	25-32-45	28-34-48
			.38		22 1/2°	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	19-23-32	20-26-36	22-27-38
			.33		45°	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	12-15-20	13-16-23	14-17-24
12 x 10	20 x 6 24 x 5	0.74		CFM		222	296	370	444	518	592	740	888	1036
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.50	Throw	0°	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	25-31-43	27-33-48	30-36-51
			.44		22 1/2°	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	20-25-34	22-26-38	24-29-41
			.38		45°	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	13-16-22	14-17-24	15-18-26
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.54	Throw	0°	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	26-32-45	28-35-50	31-38-53
			.47		22 1/2°	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	21-26-36	22-28-40	25-30-42
			.41		45°	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	13-16-23	14-18-25	16-19-27
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.61	Throw	0°	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	27-33-47	29-36-51	32-39-56
			.53		22 1/2°	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	22-26-38	23-29-41	26-31-45
			.46		45°	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	14-17-24	15-18-26	16-20-28
18 x 10	30 x 6	1.13		CFM		339	452	565	678	791	904	1130	1356	1582
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.77	Throw	0°	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	30-36-51	33-40-57	35-43-61
			.67		22 1/2°	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	24-29-41	26-32-46	28-34-49
			.58		45°	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	15-18-26	17-20-29	18-22-31

For performance data notes, see F24.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		**CFM**		**372**	**496**	**620**	**744**	**868**	**992**	**1240**	**1488**	**1736**
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.84	**Throw**	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71
			.73		22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
			.64		45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		**CFM**		**411**	**548**	**685**	**822**	**959**	**1096**	**1370**	**1644**	**1918**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			.93	**Throw**	0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72
			.81		22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	28-34-49	31-38-54	33-41-58
			.71		45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36
24 x 10	20 x 12 30 x 8	1.52		**CFM**		**456**	**608**	**760**	**912**	**1064**	**1216**	**1520**	**1824**	**2128**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.03	**Throw**	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
			.90		22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	34-42-61
			.78		45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		**CFM**		**492**	**656**	**820**	**984**	**1148**	**1312**	**1640**	**1968**	**2296**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.12	**Throw**	0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79
			.97		22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63
			.84		45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		**CFM**		**555**	**740**	**925**	**1110**	**1295**	**1480**	**1850**	**2220**	**2590**
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.26	**Throw**	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82
			1.09		22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66
			.95		45°	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	20-24-35	22-27-38	24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		**CFM**		**630**	**840**	**1050**	**1260**	**1470**	**1680**	**2100**	**2520**	**2940**
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.43	**Throw**	0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87
			1.24		22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70
			1.08		45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		**CFM**		**696**	**928**	**1160**	**1392**	**1624**	**1856**	**2320**	**2784**	**3248**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.58	**Throw**	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94
			1.37		22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	32-45-63	40-49-69	43-54-75
			1.19		45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47
24 x 16	32 x 12	2.50		**CFM**		**750**	**1000**	**1250**	**1500**	**1750**	**2000**	**2500**	**3000**	**3500**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.70	**Throw**	0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97
			1.48		22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78
			1.29		45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49
20 x 20	22 x 18	2.61		**CFM**		**783**	**1044**	**1305**	**1566**	**1827**	**2088**	**2610**	**3132**	**3654**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.77	**Throw**	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99
			1.54		22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-56-79
			1.34		45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	27-33-46	29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		**CFM**		**837**	**1116**	**1395**	**1674**	**1953**	**2232**	**2790**	**3348**	**3906**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.90	**Throw**	0°	15-25-48	23-34-55	28-42-61	34-48-68	40-51-73	45-55-77	50-61-86	55-68-95	59-73-103
			1.65		22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82
			1.44		45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		**CFM**		**951**	**1268**	**1585**	**1902**	**2219**	**2536**	**3170**	**3804**	**4438**
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.16	**Throw**	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109
			1.87		22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87
			1.63		45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55
42 x 12	36 x 14	3.27		**CFM**		**981**	**1308**	**1635**	**1962**	**2289**	**2616**	**3270**	**3924**	**4578**
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.22	**Throw**	0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109
			1.93		22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87
			1.68		45°	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	27-33-47	30-36-51	32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		**CFM**		**1062**	**1416**	**1770**	**2124**	**2478**	**2832**	**3540**	**4248**	**4956**
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.41	**Throw**	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115
			2.09		22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92
			1.82		45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58

For performance data notes, see F24.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		**CFM**		**1137**	**1516**	**1895**	**2274**	**2653**	**3032**	**3790**	**4548**	**5306**
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.58	**Throw**	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.24		22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
			1.95		45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59
36 x 18	32 x 20 40 x 16 46 x 14	4.29		**CFM**		**1287**	**1716**	**2145**	**2574**	**3003**	**3432**	**4290**	**5148**	**6006**
				Noise Criteria		–	15	22	27	32	36	42	48	53
				Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
					22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
					45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63
26 x 26	28 x 24 48 x 14	4.47		**CFM**		**1341**	**1788**	**2235**	**2682**	**3129**	**3576**	**4470**	**5364**	**6258**
				Noise Criteria		–	15	22	27	32	36	42	48	53
			3.04	**Throw**	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			2.64		22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
			2.30		45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65
30 x 24	32 x 22 36 x 20 40 x 18	4.77		**CFM**		**1431**	**1908**	**2385**	**2862**	**3339**	**3816**	**4770**	**5724**	**6678**
				Noise Criteria		–	15	22	27	32	36	42	48	53
			3.24	**Throw**	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			2.81		22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
			2.46		45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67
42 x 18	28 x 26	4.99		**CFM**		**1497**	**1997**	**2495**	**2994**	**3493**	**3992**	**4990**	**5988**	**6986**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.39	**Throw**	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			2.94		22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
			2.57		45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68
28 x 28	30 x 26 36 x 22 40 x 20	5.20		**CFM**		**1560**	**2080**	**2600**	**3120**	**3640**	**4160**	**5200**	**6240**	**7280**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.54	**Throw**	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.07		22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
			2.68		45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69
42 x 20	30 x 28	5.57		**CFM**		**1671**	**2228**	**2785**	**3342**	**3899**	**4456**	**5570**	**6684**	**7798**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.79	**Throw**	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			3.29		22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
			2.87		45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71
36 x 24	40 x 22 44 x 20	5.74		**CFM**		**1722**	**2296**	**2870**	**3444**	**4018**	**4592**	**5740**	**6888**	**8036**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.90	**Throw**	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			3.39		22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
			2.96		45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74
30 x 30	34 x 26 38 x 24 48 x 20	5.99		**CFM**		**1797**	**2396**	**2995**	**3594**	**4193**	**4792**	**5990**	**7188**	**8386**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			4.07	**Throw**	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			3.53		22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
			3.08		45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75
42 x 24	36 x 28 42 x 24 46 x 22	6.72		**CFM**		**2016**	**2688**	**3360**	**4032**	**4704**	**5376**	**6720**	**8064**	**9408**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.57	**Throw**	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			3.96		22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
			3.46		45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79
32 x 32	40 x 26	6.84		**CFM**		**2052**	**2736**	**3420**	**4104**	**4788**	**5472**	**6840**	**8208**	**9576**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.65	**Throw**	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
			4.04		22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
			3.52		45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	46-56-79
36 x 30	38 x 28	7.22		**CFM**		**2166**	**2888**	**3610**	**4332**	**5054**	**5776**	**7220**	**8664**	**10108**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.91	**Throw**	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			4.26		22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
			3.72		45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		**CFM**		**2307**	**3076**	**3845**	**4614**	**5383**	**6152**	**7690**	**9228**	**10766**
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.23	**Throw**	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			4.54		22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			3.96		45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84

For performance data notes, see F24.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
36 x 34	38 x 32 40 x 30 48 x 26	8.20		**CFM**		**2460**	**3280**	**4100**	**4920**	**5740**	**6560**	**8200**	**9840**	**11480**
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.58	**Throw**	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			4.84		22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			4.22		45°	13-21-40	19-29-	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		**CFM**		**2607**	**3476**	**4345**	**5214**	**6083**	**6952**	**8690**	**10428**	**12166**
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.91	**Throw**	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			5.13		22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			4.48		45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		**CFM**		**2910**	**3880**	**4850**	**5820**	**6790**	**7760**	**9700**	**11640**	**13580**
				Noise Criteria		–	19	26	31	36	40	46	52	57
			6.60	**Throw**	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			5.72		22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			5.00		45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		**CFM**		**3048**	**4064**	**5080**	**6096**	**7112**	**8128**	**10160**	**12192**	**14224**
				Noise Criteria		–	19	26	31	36	40	46	52	57
			6.91	**Throw**	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			5.99		22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			5.23		45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		**CFM**		**3231**	**4308**	**5385**	**6462**	**7539**	**8616**	**10770**	**12924**	**15078**
				Noise Criteria		–	19	26	31	36	40	46	52	57
			7.32	**Throw**	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			6.35		22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			5.55		45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		**CFM**		**3567**	**4756**	**5945**	**7134**	**8323**	**9512**	**11890**	**14268**	**16646**
				Noise Criteria		–	20	27	32	37	41	47	53	58
			8.09	**Throw**	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
			7.02		22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			6.12		45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		**CFM**		**3921**	**5228**	**6535**	**7842**	**9149**	**10456**	**13070**	**15684**	**18298**
				Noise Criteria		–	20	27	32	37	41	47	53	58
			8.89	**Throw**	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			7.71		22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			6.73		45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		**CFM**		**4290**	**5720**	**7150**	**8580**	**10010**	**11440**	**14300**	**17160**	**20020**
				Noise Criteria		–	20	27	32	37	41	47	53	58
			9.72	**Throw**	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			8.44		22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			7.36		45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		**CFM**		**4677**	**6236**	**7795**	**9354**	**10913**	**12472**	**15590**	**18708**	**21826**
				Noise Criteria		–	21	28	33	38	42	48	54	59
			10.60	**Throw**	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			9.20		22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			8.03		45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is based on double deflection grille with opposed blade damper (register).
4. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
5. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
6. Additional performance notes and correction factors for various models and settings may be found on page F20.
7. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.
8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 5100
ALUMINUM SUPPLY GRILLES AND REGISTERS

EXAMPLE: 51DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**

   Double Deflection:

   51DV Vertical Front Blades

   51DH Horizontal Front Blades

   Single Deflection:

   51SV Vertical Blades

   51SH Horizontal Blades

2. **Damper (OBD)**

   (model suffix)

   O Steel

   OA Aluminum

   — None

3. **Nominal Width x Height**

   inches (mm)

4. **Frame/Border Type**

   S Surface Mount
   Border 1 1/4" (32) (default)

   NF Narrow Frame
   Border 1" (25)

5. **Finish**

   AW Appliance White (default)

   AL Aluminum

   BK Black

   BW British White

   LBP Light Bronze Paint

   MBP Medium Bronze Paint

   DBP Dark Bronze Paint

   MI Mill

   PC Prime Coat

   SA Satin Anodized (clear)

   SP Special Custom Color

6. **Opposed Blade Damper Finish**

   DMI Mill (default)

   DBK Painted Black

7. **Fastening**

   A Screw Holes (default)

   C Concealed Mounting Straps

   D Concealed Screw Holes in Neck

   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Insect Screen**

   IS Insect Screen

9. **Plaster Sub-Frame**

   PF Plaster Sub-Frame

10. **Gaskets**

    GK Foam Gasket

11. **Earthquake Tabs**

    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, an aluminum double deflection register, front blades vertical and steel damper, is **Model 51DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

MODEL SERIES: 5100
ALUMINUM SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

51DV, 51DH Double Deflection

Furnish and install **Nailor Model** (select one) **51DV** or **51DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51SV, 51SH Single Deflection

Furnish and install **Nailor Model** (select one) **51SV** or **51SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 6100
STEEL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 61DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**

   Double Deflection:

   61DV Vertical Front Blades

   61DH Horizontal Front Blades

   Single Deflection:

   61SV Vertical Blades

   61SH Horizontal Blades

2. **Damper (OBD)**

   (model suffix)

   O Steel

   — None

3. **Nominal Width x Height**

   inches (mm)

4. **Frame/Border Type**

   S Surface Mount

   Border 1 1/4" (32) (default)

5. **Finish**

   AW Appliance White (default)

   AL Aluminum

   BK Black

   BW British White

   LBP Light Bronze Paint

   MBP Medium Bronze Paint

   DBP Dark Bronze Paint

   MI Mill

   PC Prime Coat

   SP Special Custom Color

6. **Opposed Blade Damper Finish**

   DMI Mill (default)

   DBK Painted Black

7. **Fastening**

   A Screw Holes (default)

   C Concealed Mounting Straps

   D Concealed Screw Holes in Neck

   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Insect Screen**

   IS Insect Screen

9. **Plaster Sub-Frame**

   PF Plaster Sub-Frame

10. **Gaskets**

    GK Foam Gasket

11. **Earthquake Tabs**

    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, a steel double deflection register, front blades vertical and steel damper, is **Model 61DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

MODEL SERIES: 6100
STEEL SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

61DV, 61DH Double Deflection

Furnish and install **Nailor Model** (select one) **61DV** or **61DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61SV, 61SH Single Deflection

Furnish and install **Nailor Model** (select one) **61SV** or **61SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 6700
STAINLESS STEEL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 67DV - O - 24 x 12 - S - #4 - A - 304 - PFS

1. **Models**

   Double Deflection:

   67DV Vertical Front Blades

   67DH Horizontal Front Blades

   Single Deflection:

   67SV Vertical Blades

   67SH Horizontal Blades

2. **Damper (OBD)**

   (model suffix)

   — None

   O Stainless Steel

3. **Nominal Width x Height**

   inches (mm)

4. **Frame/Border Type**

   S Surface Mount

   Border 1 3/8" (35) (default)

5. **Finish**

   #4 Brushed Satin Polished (default)

   AW Appliance White

6. **Fastening**

   A Screw Holes (default)

   N None

OPTIONS & ACCESSORIES:

7. **Construction**

   304 Type 304 Stainless Steel (default)

   316 Type 316 Stainless Steel

8. **Stainless Steel Plaster Sub-Frame**

   PFS Stainless Steel Plaster Sub-frame

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, a 304 stainless steel double deflection register, front blades vertical and stainless steel damper, is **Model 67DV-O**. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

MODEL SERIES: 6700
STAINLESS STEEL SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

67DV, 67DH Double Deflection

Furnish and install **Nailor Model** (select one) **67DV** or **67DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a dual set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

67SV, 67SH Single Deflection

Furnish and install **Nailor Model** (select one) **67SV** or **67SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ALUMINUM RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

5145H, 5145V, 51FH and 51FV

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 5145H

Models 5145H and 51FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 5145V and 51FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 5100 Series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille deflection facing away from the line of sight.

The design features a concealed rear reinforcing blade support mullion on 45° models. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F192 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type N None

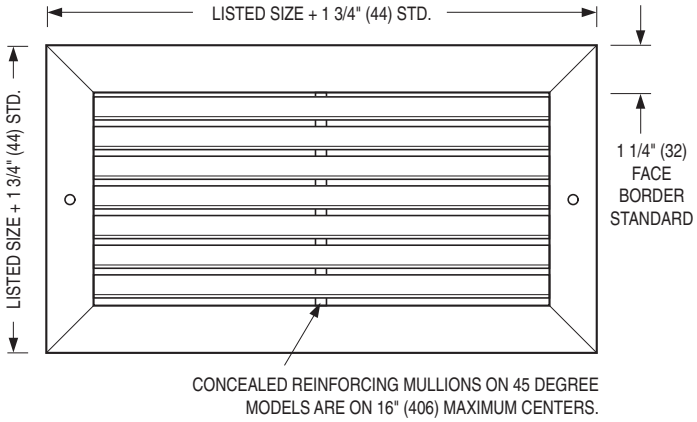
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

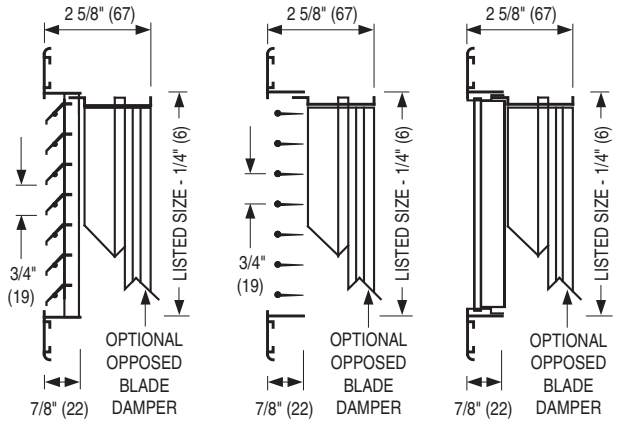
For additional options and accessories, see page F191.

DIMENSIONAL DATA:

5100 SERIES RETURN 3/4" (19) BLADE SPACING



Model 5145H

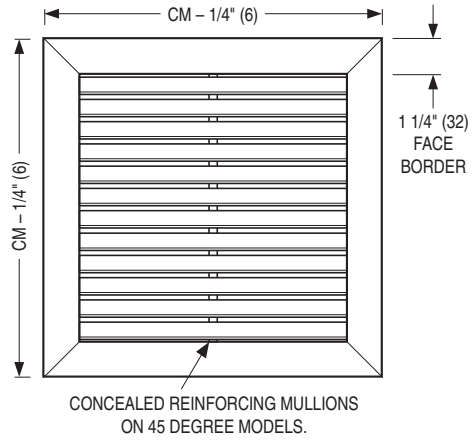


Model 5145H
Fixed 45°
Horizontal Blades

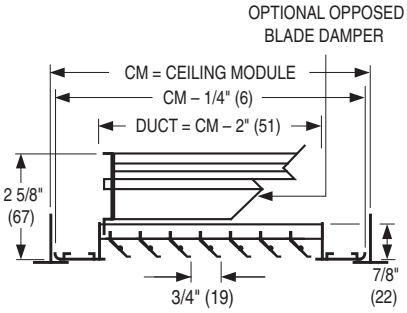
Model 51FH
Fixed 0°
Horizontal Blades

Model 51FV
Fixed 0°
Vertical Blades

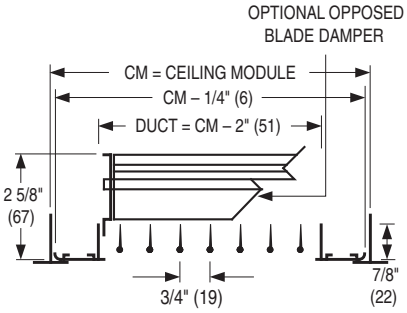
Frame/Border Type S – Surface Mount



Model 5145H

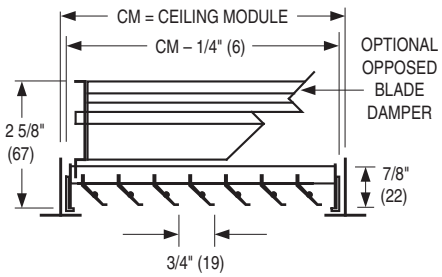


Model 5145H
Fixed 45°
Horizontal Blades



Model 51FH
Fixed 0°
Horizontal Blades

Frame/Border Type L – Lay-in T-Bar

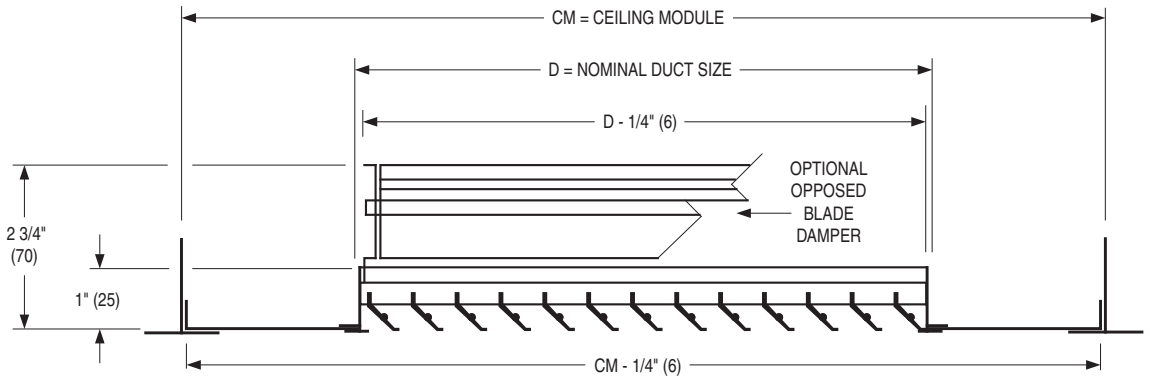


Model 5145H
Fixed 45°
Horizontal Blades

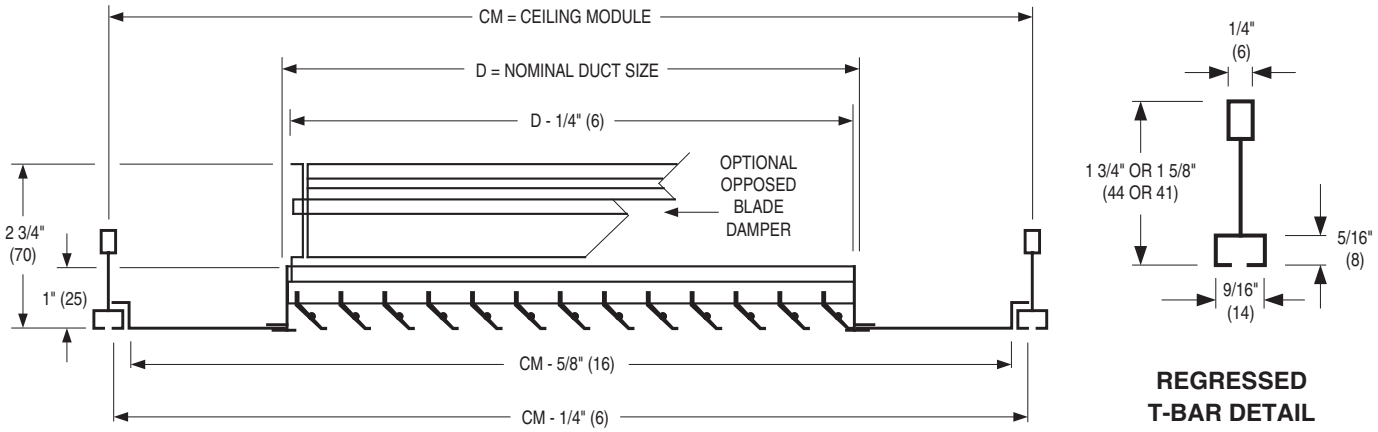
Frame/Border Type A – Lay-in T-Bar, Concealed Angle Frame

DIMENSIONAL DATA:

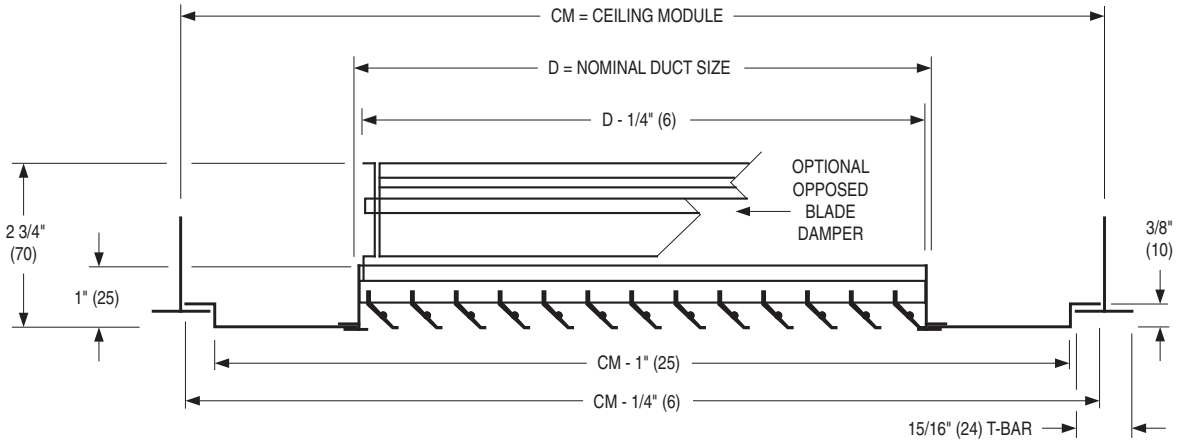
5100 SERIES RETURN 3/4" (19) BLADE SPACING



Frame/Border Type PLS or PLA – Panel Mounted – Lay-in T-Bar Type



Frame/Border Type FPS or FPA – Panel Mounted Lay-in – Narrow Regressed T-Bar Type



Frame/Border Type TPS or TPA – Tegular Panel Mounted – Lay-in T-Bar Type

Ceiling Module Size (Use only for Panel Mounting, Frame/Border Types PL, SP, MP, FP, TP)

Imperial Modules	Imperial Units (in.)	24 x 12	20 x 20	24 x 12	24 x 24	36 x 12	36 x 24	48 x 12	48 x 24
Metric Modules	S.I. Units (mm)	600 x 300	500 x 500	600 x 300	600 x 600	900 x 300	900 x 600	1200 x 300	1200 x 600

ALUMINUM RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE DEFLECTION
- 3/4" (19) SPACING
- FINELINE®
- FULL FACE

Model:

5145F

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 5145F

Model 5145F Return Grilles and Registers have been specially designed for return air applications to integrate and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The formed, corrosion-resistant steel frame with mitered corners includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized. The grilles have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° face deflection. Their appearance complements the supply grilles and registers in the 5100 series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation. The smooth blades do not accumulate lint and plug up. The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

STANDARD FEATURES:

- Available in ceiling module sizes 24" x 12" and 24" x 24" (610 x 305 and 610 x 610).
- Rigid, streamlined shaped solid blades on 3/4" (19) centers, fixed at 45° and reinforced with concealed mullion.
- Support rail on four sides, allowing full area of the ceiling module to be utilized.

CONSTRUCTION MATERIAL:

- Corrosion-resistant, formed steel frame with mitered corners construction.
- Extruded aluminum blades.
- Optional aluminum or roll-formed steel opposed blade damper with screwdriver slot operator accessible through the face of the register.

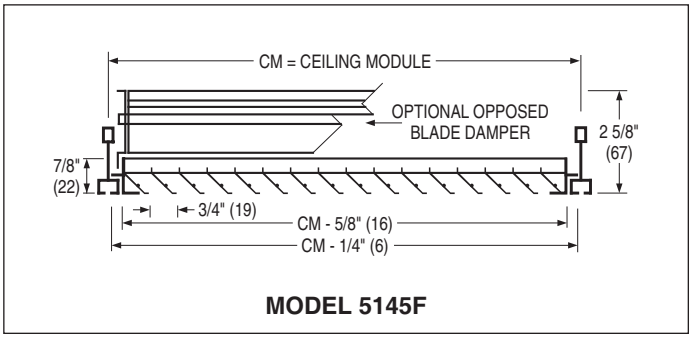
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

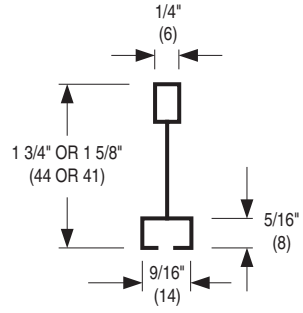
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 5145F



REGRESSED T-BAR DETAIL

Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Fineline® is a registered trademark of USG Interiors Inc.

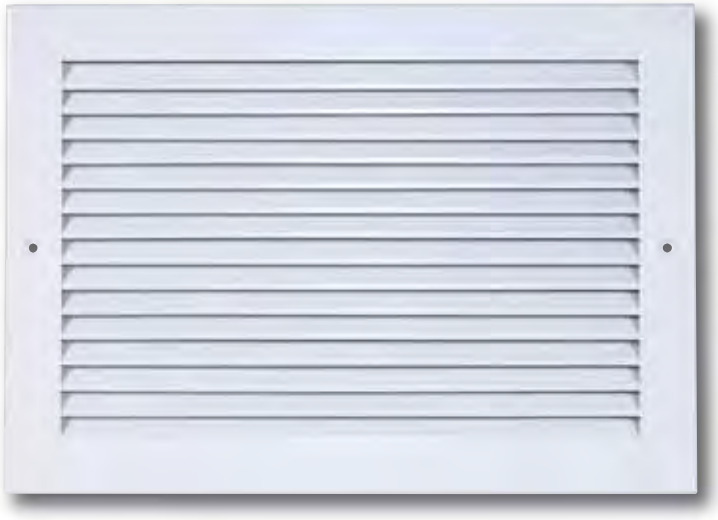
ALUMINUM RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

5155H and 5155V

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 5155H

Models 5155H and 5155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and mounting screws.

Narrow Frame with 1" (25) face border optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped solid blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver operator.

FINISH OPTIONS:

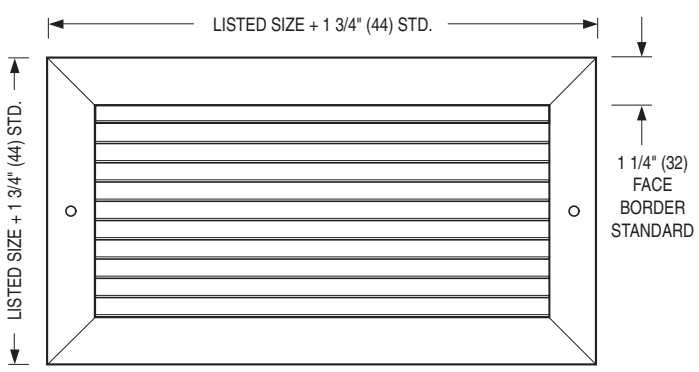
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

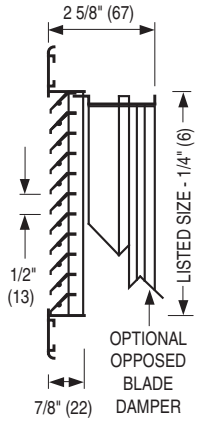
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

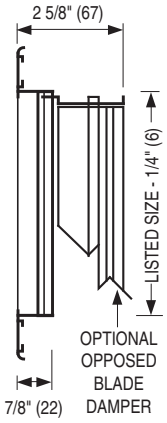
DIMENSIONAL DATA:
5100 SERIES RETURN 1/2" (13) BLADE SPACING



Model 5155H

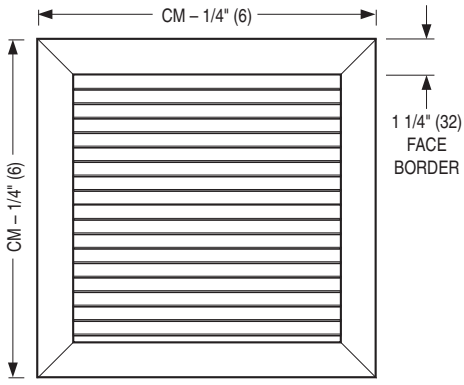


Model 5155H
Fixed 45°
Horizontal Blades

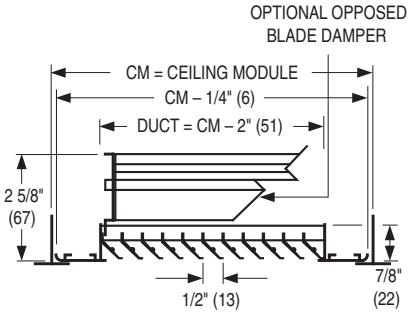


Model 5155V
Fixed 45°
Vertical Blades

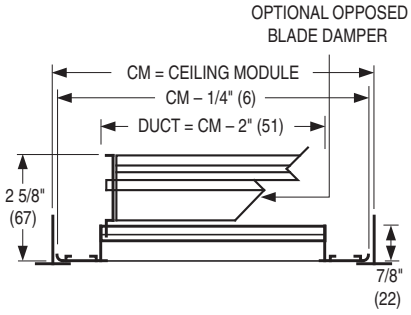
Frame/Border Type S – Surface Mount



Model 5155H

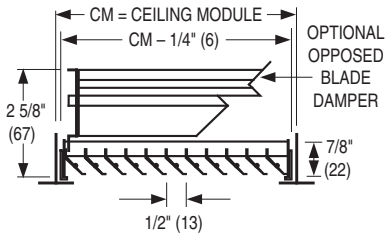


Model 5155H
Fixed 45°
Horizontal Blades



Model 5155V
Fixed 45°
Vertical Blades

Frame/Border Type L – Lay-in T-Bar



Model 5155H
Fixed 45°
Horizontal Blades

Frame/Border Type A – Lay-in T-Bar, Concealed Angle Frame

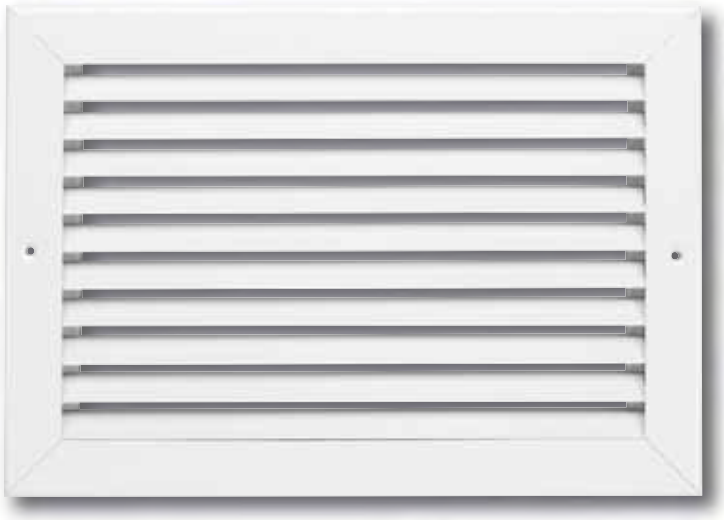
STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

6145H, 6145V, 61FH and 61FV

- **Suffix '-O' adds a steel opposed blade damper**



Model 6145H

Models 6145H and 61FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dimension) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 6145V and 61FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 6100 Series.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight. Concealed blade support mullions on 45° models provide a continuous louvered blade appearance on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant, steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

FASTENING OPTIONS:

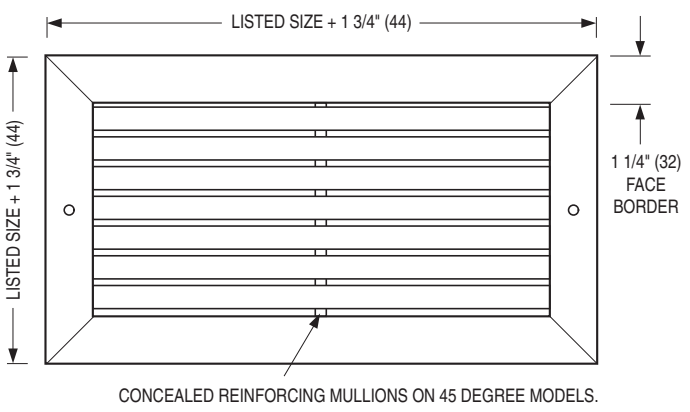
- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type N None

OPTIONS AND ACCESSORIES:

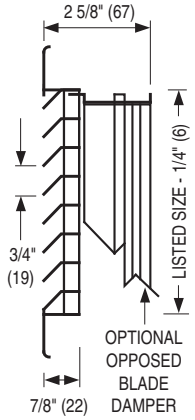
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

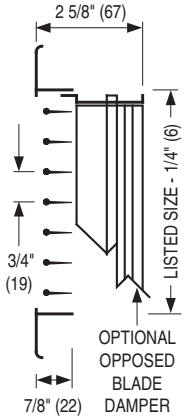
DIMENSIONAL DATA:
6100 SERIES RETURN 3/4" (19) BLADE SPACING



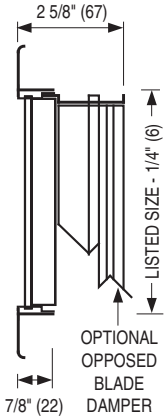
Model 6145H



Model 6145H
Horizontal Blades

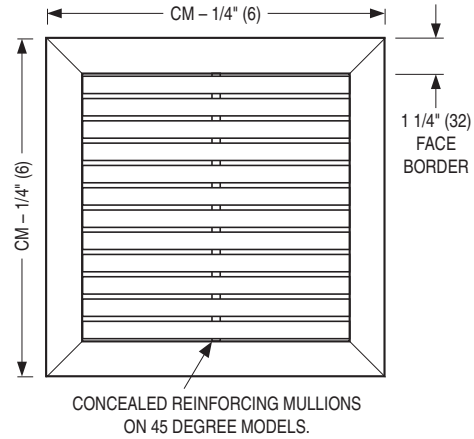


Model 61FH
Horizontal Blades

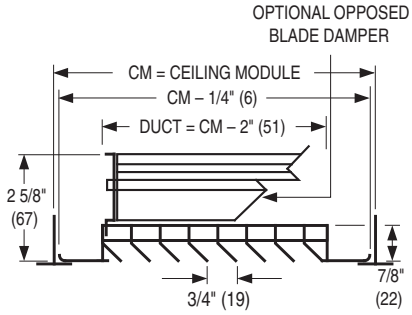


Model 61FV
Vertical Blades

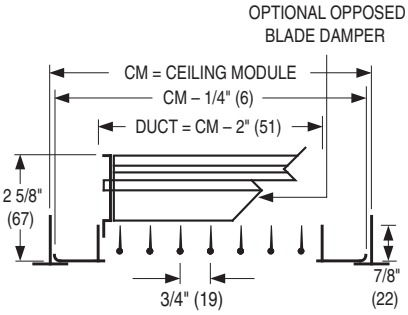
Frame/Border Type S – Surface Mount



Model 6145H

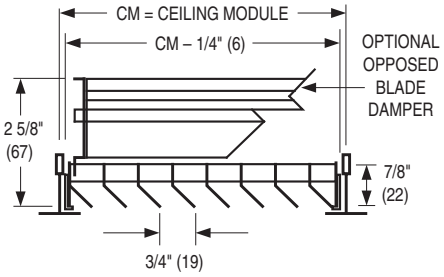


Model 6145H
Horizontal Blades



Model 61FH
Horizontal Blades

Frame/Border Type L – Lay-in T-Bar



Model 6145H
Horizontal Blades

Frame/Border Type A – Lay-in T-Bar, Concealed Angle Frame

STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE DEFLECTION
- 3/4" (19) SPACING
- FINELINE®
- FULL FACE

Model:

6145F

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 6145F

Model 6145F Return Grilles and Registers have been specially designed for return air applications to integrate and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The formed, corrosion-resistant steel frame with mitered corners includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized. The grilles have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° face deflection. Their appearance complements the supply grilles and registers in the 6100 series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation. The smooth blades do not accumulate lint and plug up. The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

STANDARD FEATURES:

- Available in ceiling module sizes 24" x 12" and 24" x 24" (610 x 305 and 610 x 610).
- Roll-formed blades on 3/4" (19) centers, fixed at 45° and reinforced with concealed mullions on 16" (406) maximum centers.
- Support rail on four sides, allowing full area of the ceiling module to be utilized.

CONSTRUCTION MATERIAL:

- Corrosion-resistant, formed steel frame with mitered corners construction.
- Optional roll-formed steel opposed blade damper has a screwdriver slot or lever operator accessible through the face of the register.

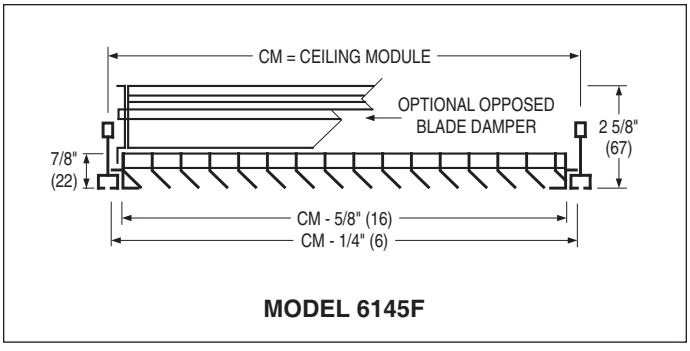
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

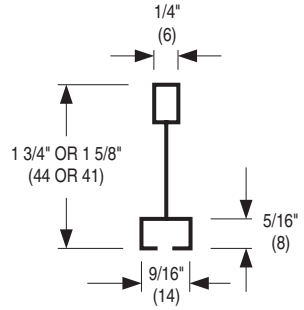
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 6145F



REGRESSED T-BAR DETAIL

Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Fineline® is a registered trademark of USG Interiors Inc.

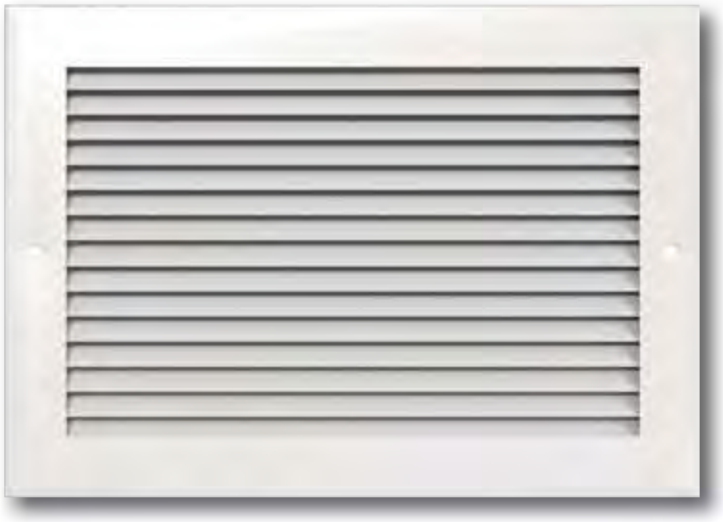
STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

6155H and 6155V

- **Suffix '-O' adds a steel opposed blade damper**



Model 6155H

Models 6155H and 6155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined roll-formed blade design features a concealed rear reinforcing mullion for support. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance. The open design maintains a minimum effective free area of 40%.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant, steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

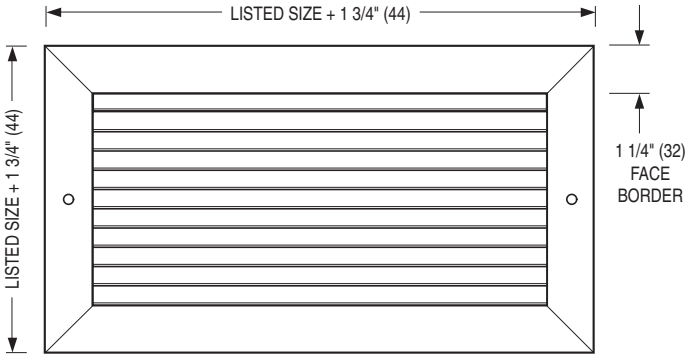
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

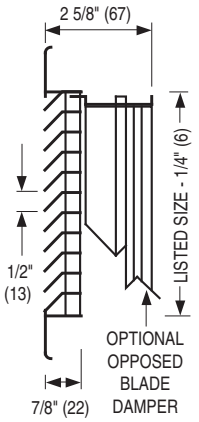
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

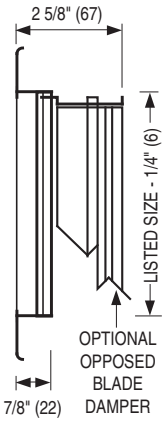
DIMENSIONAL DATA:
6100 SERIES RETURN 1/2" (13) BLADE SPACING



Model 6155H

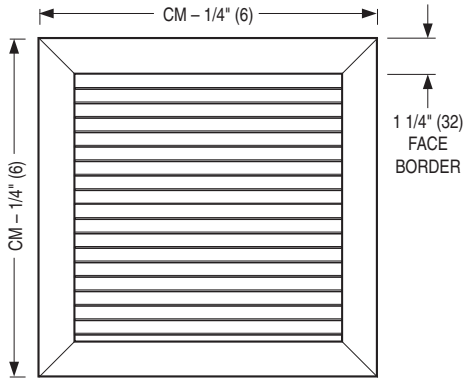


Model 6155H
Horizontal Blades

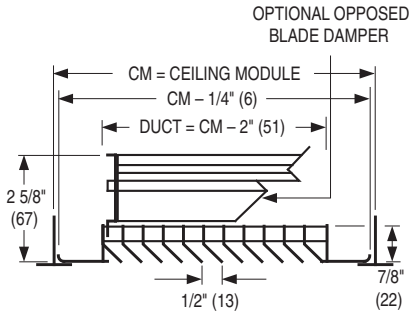


Model 6155V
Vertical Blades

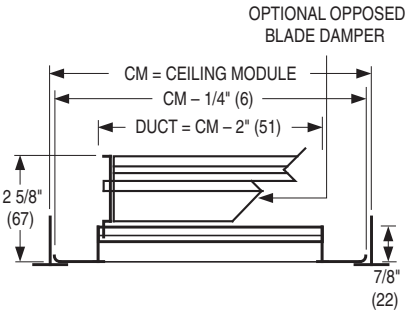
Frame/Border Type S – Surface Mount



Model 6155H

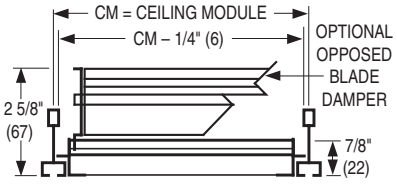


Model 6155H
Horizontal Blades

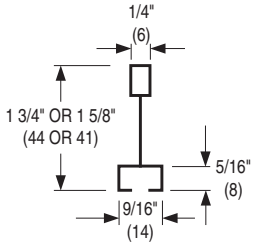


Model 6155V
Vertical Blades

Frame/Border Type L – Lay-in T-Bar

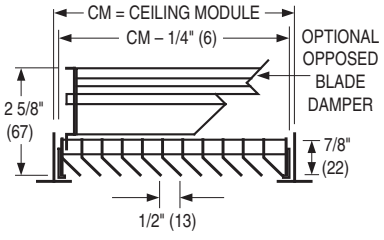


Model 6155V
Vertical Blades



Narrow Regressed T-Bar Detail

Frame/Border Type F – Narrow Regressed T-Bar



Model 6155H
Horizontal Blades

Frame/Border Type A – Lay-in T-Bar, Concealed Angle Frame

STAINLESS STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

6745H, 6745V, 67FH and 67FV

- **Suffix '-O' adds a stainless steel opposed blade damper**

Model 6745H

Models 6745H and 67FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 6745V and 67FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 6700 Series.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 70% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected bar grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

CONSTRUCTION MATERIAL:

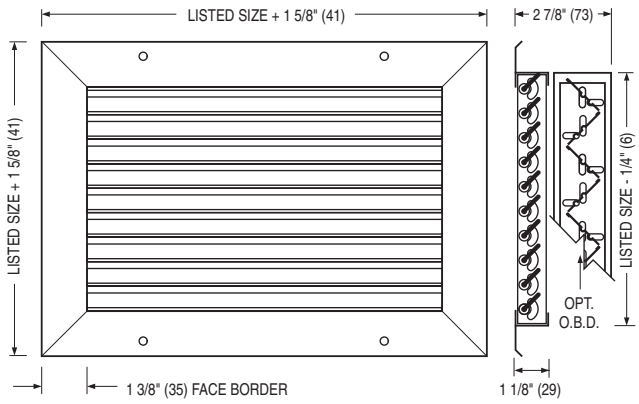
- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with screwdriver operator.

FINISH OPTIONS:

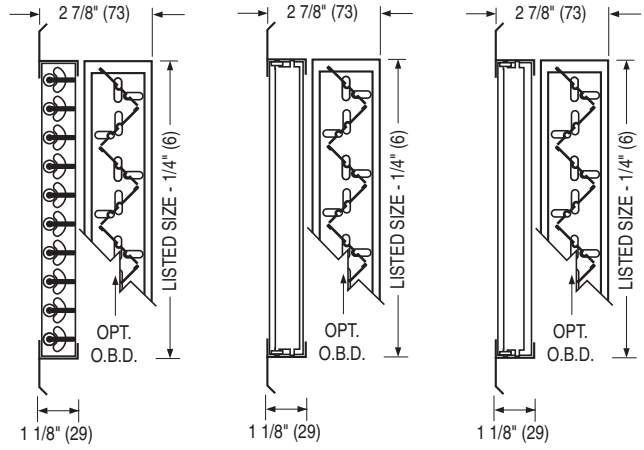
- #4 Brushed Satin Polished finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

- 316 Type 316 Stainless Steel construction is optional.
- PFS Stainless Steel Plaster Frame



MODEL 6745H Horizontal Blades



MODEL 67FH **MODEL 67FV** **MODEL 6745V**

STAINLESS STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

6755H and 6755V

- **Suffix '-O' adds a stainless steel opposed blade damper**

Model 6755H

Models 6755H and 6755V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

CONSTRUCTION MATERIAL:

- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with screwdriver operator.

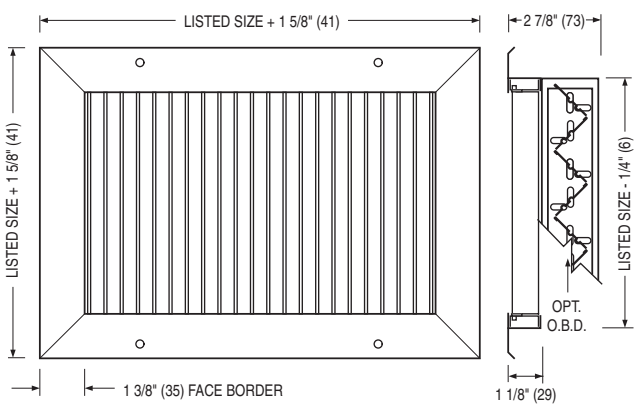
FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. Other finishes are available.

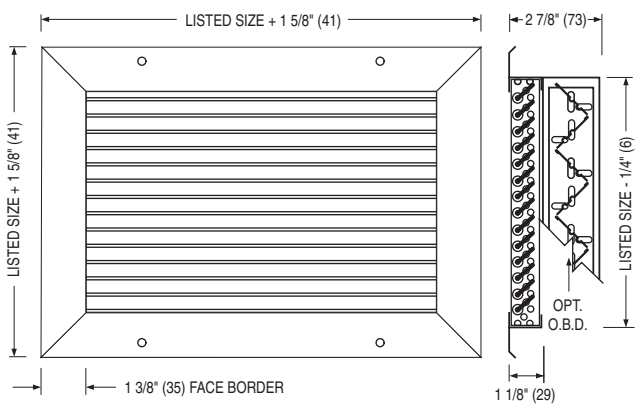
OPTIONS AND ACCESSORIES:

- 316 Type 316 Stainless Steel construction is optional.
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



MODEL 6755V Vertical Blades



MODEL 6755H Horizontal Blades

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 19	**140** 24	**160** 28	**180** 32	**200** 36
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 15	**168** 20	**196** 25	**224** 29	**252** 33	**280** 37
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 16	**210** 21	**245** 26	**280** 30	**315** 34	**350** 38
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 17	**228** 22	**266** 27	**304** 31	**342** 35	**380** 39
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 18	**252** 23	**294** 27	**336** 32	**378** 36	**420** 40
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 19	**348** 24	**406** 28	**464** 33	**522** 37	**580** 41
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 19	**366** 24	**427** 29	**488** 34	**549** 37	**610** 41
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 15	**325** 20	**390** 25	**455** 30	**520** 34	**585** 38	**650** 41
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 15	**370** 20	**444** 25	**518** 30	**592** 35	**666** 39	**740** 42
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 16	**450** 21	**540** 26	**630** 31	**720** 36	**810** 39	**900** 42
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 16	**620** 21	**744** 26	**868** 31	**992** 36	**1116** 40	**1240** 43
18 x 12	16 x 14 22 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** 17	**685** 22	**822** 27	**959** 32	**1096** 37	**1233** 40	**1370** 43
24 x 10	20 x 12 30 x 8		1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** 17	**760** 22	**912** 27	**1064** 32	**1216** 38	**1368** 41	**1520** 44
16 x 16	18 x 14 22 x 12	30 x 8	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** 18	**820** 23	**984** 28	**1148** 33	**1312** 38	**1476** 41	**1640** 44
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** 18	**925** 23	**1110** 28	**1295** 33	**1480** 38	**1665** 41	**1850** 45
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** 18	**1050** 23	**1260** 29	**1470** 34	**1680** 39	**1890** 42	**2100** 45
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** 19	**1160** 24	**1392** 29	**1624** 34	**1856** 39	**2088** 42	**2320** 46
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** 19	**1305** 24	**1566** 30	**1827** 35	**2088** 40	**2349** 43	**2610** 46
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 20	**1585** 25	**1902** 31	**2219** 35	**2536** 40	**2853** 43	**3170** 47
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 20	**1770** 25	**2124** 31	**2478** 36	**2832** 41	**3186** 44	**3540** 48
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 20	**1895** 25	**2274** 31	**2653** 36	**3032** 41	**3411** 44	**3790** 48
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 21	**2135** 26	**2562** 32	**2989** 37	**3416** 42	**3843** 45	**4270** 49
26 x 26	28 x 24 48 x 14		4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** –	**1788** 21	**2235** 26	**2682** 32	**3129** 37	**3576** 42	**4023** 45	**4470** 49
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 15	**1908** 22	**2385** 27	**2862** 33	**3339** 38	**3816** 42	**4293** 46	**4770** 50
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 15	**2080** 22	**2600** 27	**3120** 33	**3640** 38	**4160** 43	**4680** 46	**5200** 50
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 15	**2296** 22	**2870** 28	**3444** 34	**4018** 38	**4592** 43	**5166** 47	**5740** 51
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 15	**2396** 22	**2995** 28	**3594** 34	**4193** 39	**4792** 43	**5391** 47	**5990** 51

For performance data notes, see F42.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** 16	**2736** 23	**3420** 29	**4104** 35	**4788** 39	**5472** 44	**6156** 48	**6840** 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** 17	**3076** 23	**3845** 29	**4614** 35	**5383** 40	**6152** 44	**6921** 48	**7690** 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** 17	**3476** 24	**4345** 29	**5214** 36	**6083** 41	**6952** 45	**7821** 49	**8690** 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** 18	**3880** 24	**4850** 30	**5820** 36	**6790** 41	**7760** 45	**8730** 49	**9700** 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** 18	**4308** 24	**5385** 30	**6462** 36	**7539** 42	**8616** 45	**9693** 50	**10770** 54
42 x 42	46 x 42	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** 19	**4756** 25	**5945** 31	**7134** 37	**8323** 42	**9512** 46	**10701** 50	**11890** 54
44 x 44		13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** 19	**5228** 25	**6535** 31	**7842** 37	**9149** 42	**10456** 46	**11763** 50	**13070** 54
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** 20	**5720** 26	**7150** 32	**8580** 38	**10010** 43	**11440** 47	**12870** 51	**14300** 55
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** 20	**6236** 26	**7795** 32	**9354** 38	**10913** 43	**12472** 47	**14031** 51	**15590** 55

Performance Notes:

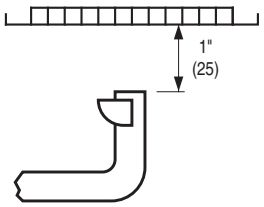
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .035	500 .016 .055	600 .022 079	700 .031 .107	800 .040 .140	900 .050 .177	1000 .062 .219
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 16	**140** 18	**160** 21	**180** 25	**200** 30
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** –	**168** 17	**196** 19	**224** 22	**252** 26	**280** 31
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** –	**210** 18	**245** 20	**280** 23	**315** 27	**350** 32
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** –	**228** 19	**266** 21	**304** 24	**342** 28	**380** 32
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 15	**252** 19	**294** 22	**336** 25	**378** 29	**420** 33
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 15	**348** 19	**406** 22	**464** 26	**522** 30	**580** 34
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 15	**366** 19	**427** 22	**488** 27	**549** 30	**610** 35
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** –	**325** 16	**390** 20	**455** 23	**520** 27	**585** 31	**650** 35
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** –	**370** 16	**444** 21	**518** 24	**592** 28	**666** 32	**740** 35
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** –	**450** 17	**540** 21	**630** 24	**720** 29	**810** 32	**900** 35
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** –	**620** 17	**744** 22	**868** 25	**992** 29	**1116** 33	**1240** 36
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** –	**685** 18	**822** 23	**959** 26	**1096** 31	**1233** 34	**1370** 37
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** –	**760** 18	**912** 23	**1064** 27	**1216** 32	**1368** 35	**1520** 38
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** –	**820** 19	**984** 23	**1148** 27	**1312** 32	**1476** 35	**1640** 38
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** –	**925** 19	**1110** 24	**1295** 27	**1480** 32	**1665** 35	**1850** 39
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** –	**1050** 19	**1260** 24	**1470** 28	**1680** 33	**1890** 36	**2100** 39
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** –	**1160** 19	**1392** 24	**1624** 28	**1856** 33	**2088** 36	**2320** 40
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** –	**1305** 19	**1566** 24	**1827** 28	**2088** 33	**2349** 36	**2610** 40
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 15	**1585** 20	**1902** 25	**2219** 29	**2536** 33	**2853** 36	**3170** 40
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 15	**1770** 20	**2124** 25	**2478** 29	**2832** 34	**3186** 37	**3540** 41
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 15	**1895** 20	**2274** 25	**2653** 30	**3032** 34	**3411** 37	**3790** 41
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 17	**2135** 22	**2562** 26	**2989** 30	**3416** 35	**3843** 38	**4270** 42
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** –	**1788** 17	**2235** 22	**2682** 26	**3129** 30	**3576** 35	**4023** 38	**4470** 42
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** –	**1908** 18	**2385** 23	**2862** 27	**3339** 31	**3816** 35	**4293** 39	**4770** 43
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** –	**2080** 18	**2600** 23	**3120** 27	**3640** 31	**4160** 36	**4680** 39	**5200** 43
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** –	**2296** 18	**2870** 23	**3444** 27	**4018** 31	**4592** 36	**5166** 40	**5740** 44
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** –	**2396** 18	**2995** 23	**3594** 28	**4193** 32	**4792** 36	**5391** 40	**5990** 44

For performance data notes, see F44.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** –	**2736** 18	**3420** 24	**4104** 28	**4788** 32	**5472** 37	**6156** 41	**6840** 45
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** –	**3076** 18	**3845** 24	**4614** 29	**5383** 33	**6152** 37	**6921** 41	**7690** 45
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** –	**3476** 19	**4345** 24	**5214** 29	**6083** 34	**6952** 38	**7821** 42	**8690** 46
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** –	**3880** 19	**4850** 25	**5820** 30	**6790** 34	**7760** 38	**8730** 42	**9700** 46
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** –	**4308** 20	**5385** 26	**6462** 30	**7539** 35	**8616** 38	**9693** 43	**10770** 47
42 x 42	46 x 42	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** –	**4756** 20	**5945** 26	**7134** 31	**8323** 35	**9512** 39	**10701** 43	**11890** 47
44 x 44		13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** 15	**5228** 20	**6535** 26	**7842** 31	**9149** 35	**10456** 39	**11763** 43	**13070** 47
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** 15	**5720** 21	**7150** 27	**8580** 32	**10010** 36	**11440** 40	**12870** 44	**14300** 48
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** 16	**6236** 21	**7795** 27	**9354** 32	**10913** 36	**12472** 40	**14031** 44	**15590** 48

Performance Notes:

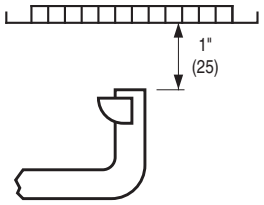
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** 16	**120** 21	**140** 26	**160** 30	**180** 34	**200** 38
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 17	**168** 22	**196** 27	**224** 31	**252** 35	**280** 39
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 18	**210** 23	**245** 28	**280** 32	**315** 36	**350** 40
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 19	**228** 24	**266** 29	**304** 33	**342** 37	**380** 41
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** 15	**210** 20	**252** 25	**294** 29	**336** 34	**378** 38	**420** 42
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** 16	**290** 21	**348** 26	**406** 30	**464** 35	**522** 39	**580** 43
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** 16	**305** 21	**366** 26	**427** 31	**488** 36	**549** 39	**610** 43
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 17	**325** 22	**390** 27	**455** 32	**520** 36	**585** 40	**650** 43
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 17	**370** 22	**444** 27	**518** 32	**592** 37	**666** 41	**740** 44
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 18	**450** 23	**540** 28	**630** 33	**720** 38	**810** 41	**900** 44
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 18	**620** 23	**744** 28	**868** 33	**992** 38	**1116** 42	**1240** 45
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** 15	**548** 20	**685** 25	**822** 30	**959** 35	**1096** 40	**1233** 43	**1370** 46
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** 15	**608** 20	**760** 25	**912** 30	**1064** 35	**1216** 41	**1368** 44	**1520** 47
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** 16	**656** 21	**820** 26	**984** 31	**1148** 36	**1312** 41	**1476** 44	**1640** 47
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** 16	**740** 21	**925** 26	**1110** 31	**1295** 36	**1480** 41	**1665** 44	**1850** 48
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** 16	**840** 21	**1050** 26	**1260** 32	**1470** 37	**1680** 42	**1890** 45	**2100** 48
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** 16	**928** 22	**1160** 27	**1392** 32	**1624** 37	**1856** 42	**2088** 45	**2320** 49
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** 16	**1044** 22	**1305** 27	**1566** 33	**1827** 38	**2088** 43	**2349** 46	**2610** 49
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** 17	**1268** 23	**1585** 28	**1902** 34	**2219** 38	**2536** 43	**2853** 46	**3170** 50
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** 17	**1416** 23	**1770** 28	**2124** 34	**2478** 39	**2832** 44	**3186** 47	**3540** 51
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** 17	**1516** 23	**1895** 28	**2274** 34	**2653** 39	**3032** 44	**3411** 47	**3790** 51
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** 18	**1708** 25	**2135** 29	**2562** 36	**2989** 41	**3416** 46	**3843** 49	**4270** 53
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** 18	**1788** 25	**2235** 30	**2682** 36	**3129** 41	**3576** 46	**4023** 49	**4470** 53
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 19	**1908** 26	**2385** 31	**2862** 37	**3339** 42	**3816** 46	**4293** 50	**4770** 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 19	**2080** 26	**2600** 31	**3120** 37	**3640** 42	**4160** 47	**4680** 50	**5200** 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 19	**2296** 26	**2870** 32	**3444** 38	**4018** 42	**4592** 47	**5166** 51	**5740** 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 19	**2396** 26	**2995** 32	**3594** 38	**4193** 43	**4792** 47	**5391** 51	**5990** 55

For performance data notes, see F46.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** 15	**2052** 20	**2736** 27	**3420** 33	**4104** 39	**4788** 43	**5472** 48	**6156** 52	**6840** 56
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** 16	**2307** 21	**3076** 27	**3845** 33	**4614** 39	**5383** 44	**6152** 48	**6921** 52	**7690** 56
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** 17	**2607** 21	**3476** 28	**4345** 33	**5214** 40	**6083** 45	**6952** 49	**7821** 53	**8690** 57
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** 18	**2910** 22	**3880** 28	**4850** 34	**5820** 40	**6790** 45	**7760** 49	**8730** 53	**9700** 57
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** 18	**3231** 23	**4308** 29	**5385** 35	**6462** 41	**7539** 47	**8616** 50	**9693** 55	**10770** 59
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** 19	**3567** 24	**4756** 30	**5945** 36	**7134** 42	**8323** 47	**9512** 51	**10701** 55	**11890** 59
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** 19	**3921** 24	**5228** 30	**6535** 36	**7842** 42	**9149** 47	**10456** 51	**11763** 55	**13070** 59
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** 15	**2860** 20	**4290** 25	**5720** 31	**7150** 37	**8580** 43	**10010** 48	**11440** 52	**12870** 56	**14300** 60
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** 15	**3118** 20	**4677** 25	**6236** 31	**7795** 37	**9354** 43	**10913** 48	**12472** 52	**14031** 56	**15590** 60

Performance Notes:

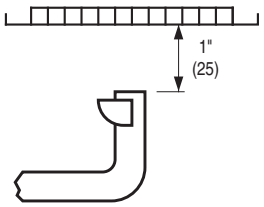
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 5100

ALUMINUM RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 5145H - O - 24 x 12 - S - — - AW - DBK - A - —

1. **Models**
   Horizontal/Long Dimension Blades:
   51FH Fixed, 0° Deflection, 3/4" (19) Spacing
   5145H Fixed, 45° Deflection, 3/4" (19) Spacing
   5155H Fixed, 45° Deflection, 1/2" (13) Spacing
   Vertical/Short Dimension Blades:
   51FV Fixed, 0° Deflection, 3/4" (19) Spacing
   5145V Fixed, 45° Deflection, 3/4" (19) Spacing
   5155V Fixed, 45° Deflection, 1/2" (13) Spacing
2. **Damper (OBD)**
   (model suffix)
   O Steel
   OA Aluminum
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Types S, NF, PL, SP, MP, FP and TP; W x H = Duct Size.
   Types L & A; W x H = Ceiling Module Size.
4. **Frame/Border Type**
   Surface Mount:
   S Surface Mount Border 1 1/4" (32) (default)
   NF Narrow Frame/Border 1" (25)
   Ceiling Grid:
   L Lay-in T-Bar *
   A Angle Frame
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   PLA Aluminum Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   FPA Aluminum Fineline® Panel
   SPS Steel Spline Panel
   SPA Aluminum Spline Panel
   MPS Steel Metal Pan Panel
   MPA Aluminum Metal Pan Panel
   TPS Steel Tegular Panel
   TPA Aluminum Tegular Pan Panel
5. **Ceiling Module Size**
   (Use only for Panel Mounting, Frame/Border Types PL, SP, MP, FP, TP)
   — None (default)

Imperial	Metric:
12" x 12"	(300 x 300)
20" x 20"	(500 x 500)
24" x 12"	(600 x 300)
24" x 24"	(600 x 600)
36" x 12"	(900 x 300)
36" x 24"	(900 x 600)
48" x 12"	(1200 x 300)
48" x 24"	(1200 x 600)

6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SA Satin Anodized (clear)
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
8. **Fastening**
   (Only for Frame/Border Types S, NF)
   A Standard Screw Holes (default)
   C Concealed Mounting Straps ***
   D Concealed Screw Holes in Neck ****
   N None

OPTIONS & ACCESSORIES:

— None (standard) (default)

9. **Insect Screen**
   IS Insect Screen
10. **Plaster Sub-Frame**
    PF Plaster Sub-Frame
11. **Gaskets**
    GK Foam Gasket
12. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

   The "default" will automatically select "standard". For example, an aluminum 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is **Model 5145H-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).

3. * For Type L Lay-in, Grille Neck Size is Ceiling Module Size – 2" (51).

   ** For Panel Mounting, Maximum Grille Neck Size is Ceiling Module Size – 3" (76).

   Refer to Options and Accessories page no. F194 for dimensional data.

   *** Not available with 1/2" (13) blade spacing models.

   ****Only available on Fixed 0° models.

MODEL SERIES: 5100

ALUMINUM RETURN GRILLES AND REGISTERS – FIXED BLADES

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5145H, 5145V, 5155H, 5155V, 51FH** or **51FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades and extruded aluminum frames that have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 6100

STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 6145H - O - 24 x 12 - S - — - AW - DBK - A - —

1. **Models**
   Horizontal/Long Dimension Blades:
   61FH Fixed, 0° Deflection, 3/4" (19) Spacing
   6145H Fixed, 45° Deflection, 3/4" (19) Spacing
   6155H Fixed, 45° Deflection, 1/2" (13) Spacing
   Vertical/Short Dimension Blades:
   61FV Fixed, 0° Deflection, 3/4" (19) Spacing
   6145V Fixed, 45° Deflection, 3/4" (19) Spacing
   6155V Fixed, 45° Deflection, 1/2" (13) Spacing
2. **Damper (OBD)**
   (model suffix)
   O Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Types S, PL, SP, MP, FP and TP; W x H = Duct Size.
   Types L & A; W x H = Ceiling Module Size.
4. **Frame/Border Type**
   Surface Mount:
   S Surface Mount Border 1 1/4" (32) (default)
   Ceiling Grid:
   L Lay-in T-Bar *
   A Angle Frame
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   SPS Steel Spline Panel
   MPS Steel Metal Pan Panel
   FPS Steel Fineline® Panel
   TPS Steel Tegular Panel
5. **Ceiling Module Size**
   (Use only for Panel Mounting, Frame/Border Types PL, SP, MP, FP, TP)
   — None (default)

Imperial	**Metric:**
12" x 12"	(300 x 300)
20" x 20"	(500 x 500)
24" x 12"	(600 x 300)
24" x 24"	(600 x 600)
36" x 12"	(900 x 300)
36" x 24"	(900 x 600)
48" x 12"	(1200 x 300)
48" x 24"	(1200 x 600)

6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
8. **Fastening**
   (Only for Frame/Border Type S)
   A Screw Holes (default)
   C Concealed Mounting Straps ***
   D Concealed Screw Holes in Neck ****
   N None

OPTIONS & ACCESSORIES:

— None (default)

9. **Insect Screen**
   IS Insect Screen
10. **Plaster Sub-Frame**
    PF Plaster Sub-Frame
11. **Gaskets**
    GK Foam Gasket
12. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

   The "default" will automatically select "standard". For example, a steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is **Model 6145H-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).

3. * For Type L Lay-in, Grille Neck Size is Ceiling Module Size – 2" (51).

   ** For Panel Mounting, Maximum Grille Neck Size is Ceiling Module Size – 3" (76).

   Refer to Options and Accessories page no. F194 for dimensional data.

   *** Not available with 1/2" (13) blade spacing models.

   **** Only available on Fixed 0° models.

MODEL SERIES: 6100

STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H, 6145V, 6155H, 6155V, 61FH** or **61FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have roll-formed corrosion-resistant steel fixed blades and the frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 6700

STAINLESS STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 6745H - O - 24 x 12 - S - #4 - A - 304 - PFS

1. **Models**
   Horizontal/Long Dimension Blades:
   67FH Fixed, 0° Deflection, 3/4" (19) Spacing
   6745H Fixed, 45° Deflection, 3/4" (19) Spacing
   6755H Fixed, 45° Deflection, 1/2" (13) Spacing
   Vertical/Short Dimension Blades:
   67FV Fixed, 0° Deflection, 3/4" (19) Spacing
   6745V Fixed, 45° Deflection, 3/4" (19) Spacing
   6755V Fixed, 45° Deflection, 1/2" (13) Spacing
2. **Damper (OBD)**
   (model suffix)
   — None
   O Stainless Steel
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount
   Border 1 3/8" (35) (default)
5. **Finish**
   #4 Brushed Satin Polished (default)
   AW Appliance White
6. **Fastening**
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

7. **Construction**
   304 Type 304 Stainless Steel (default)
   316 Type 316 Stainless Steel
8. **Plaster Sub-Frame**
   PFS Stainless Steel Plaster Sub-frame

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, a Type 304 stainless steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and stainless steel damper, is **Model 6745H-O**. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

2. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

MODEL SERIES: 6700

STAINLESS STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6745H, 6745V, 6755H, 6755V, 67FH** or **67FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed fixed blades. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

CURVED SPIRAL DUCT GRILLES

- TRUE FULL RADIUS DESIGN
- DOUBLE DEFLECTION
- SUPPLY
- ALUMINUM

Models:

51DVC and 51DHC

Model 51DVC-DEX

Models 51DVC and 51DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern, therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A dual set of individually adjustable, friction pivoted, extruded aluminum "teardrop" blades on 3/4" (19) centers.

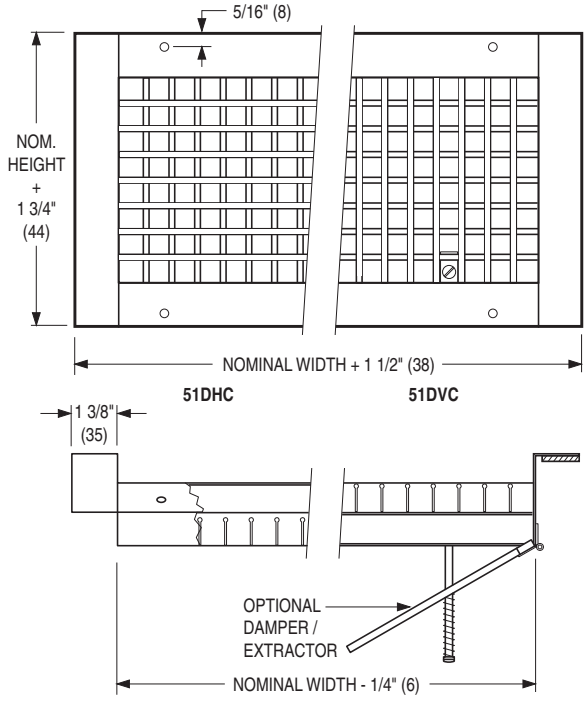
FINISH OPTIONS:

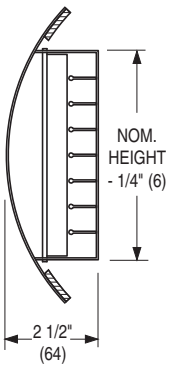
- Standard finish is AW Appliance White finish. Other finishes are available.

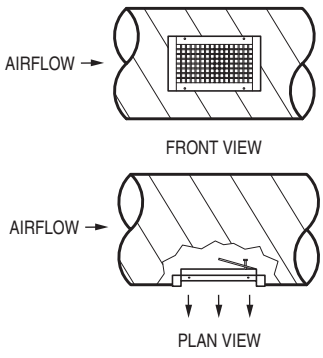
OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/ Extractor option.

Important:
Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT GRILLES

- SINGLE DEFLECTION
- SUPPLY
- ALUMINUM

Models:

51SVC and 51SHC

Model 51SVC

Models 51SVC and 51SHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring adjustment in a single horizontal or vertical plane. The vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of individually adjustable, friction pivoted, extruded aluminum "teardrop" blades on 3/4" (19) centers.

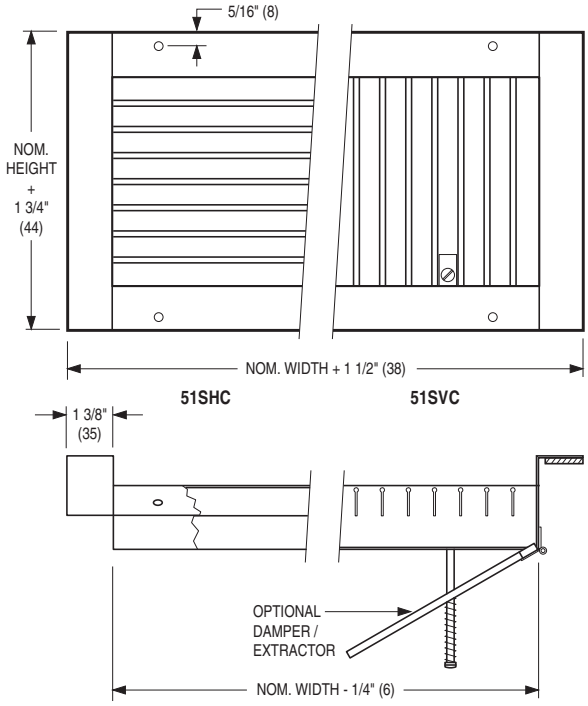
FINISH OPTIONS:

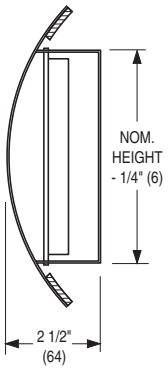
- Standard finish is AW Appliance White finish. Other finishes are available.

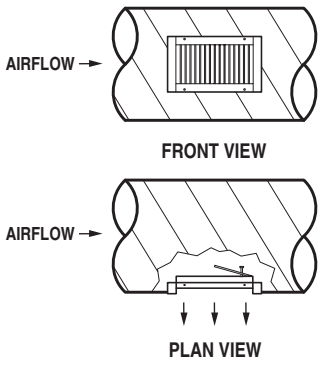
OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/ Extractor option.

Important:
Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- ALUMINUM

Model:
51PRC

Model 51PRC

Model 51PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique aluminum frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.
- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

FINISH OPTIONS:

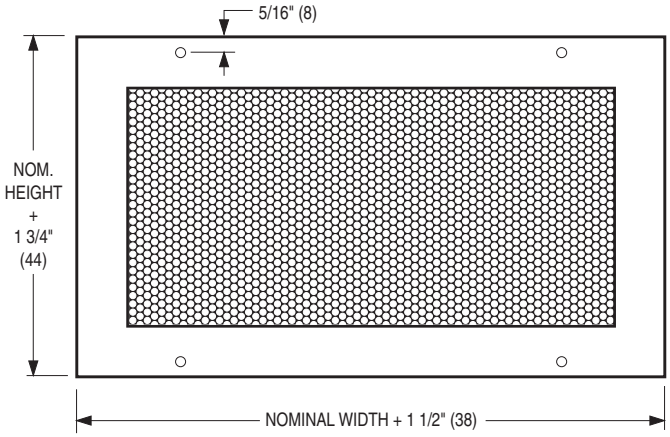
- Standard finish is AW Appliance White finish. Other finishes are available.

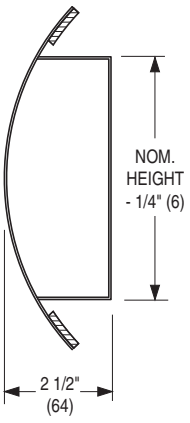
OPTIONS AND ACCESSORIES:

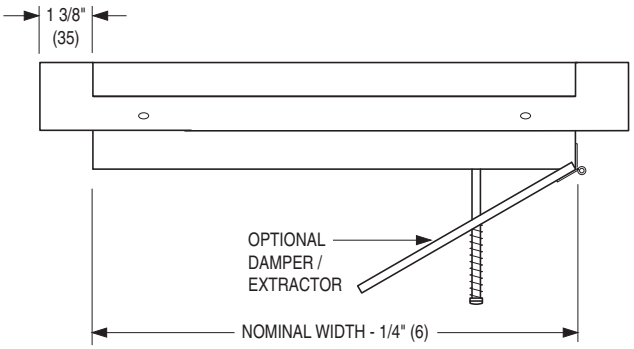
- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

Important: Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- TRUE FULL RADIUS DESIGN
- ALUMINUM

Model:

5145HC and 5155HC

Model 5145HC

Models 5145HC and 5155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural aluminum frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

CONSTRUCTION MATERIAL:

- Unique architectural aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

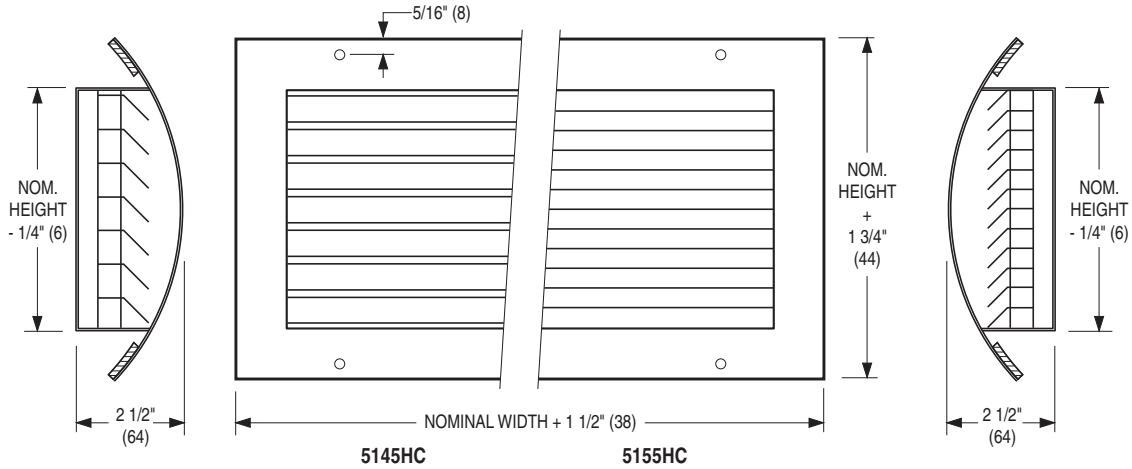
FINISH OPTIONS:

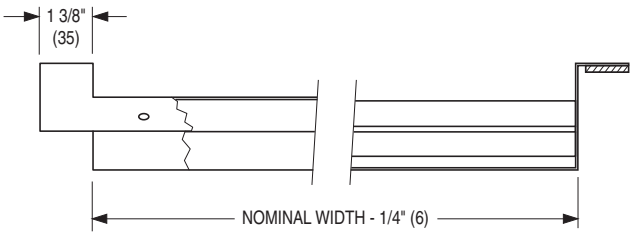
- Standard finish is AW Appliance White finish. Other finishes are available.

OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.





Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

Important: Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT GRILLES

- TRUE FULL RADIUS DESIGN
- DOUBLE DEFLECTION
- SUPPLY
- STEEL

Models:

61DVC and 61DHC

Model 61DVC

Models 61DVC and 61DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern, therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A dual set of individually adjustable, friction pivoted, "teardrop" blades on 3/4" (19) centers.

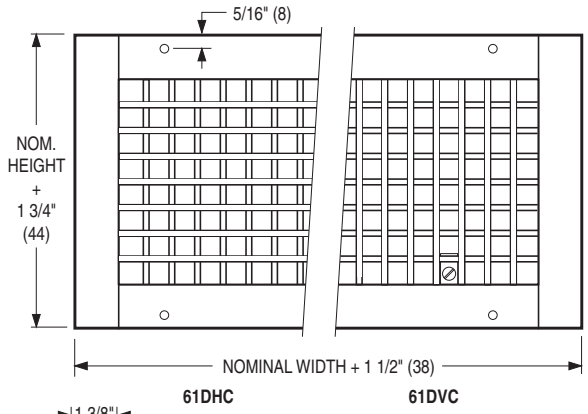
FINISH OPTIONS:

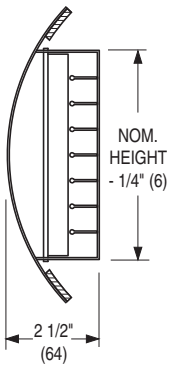
- Standard finish is AW Appliance White finish. Other finishes are available.

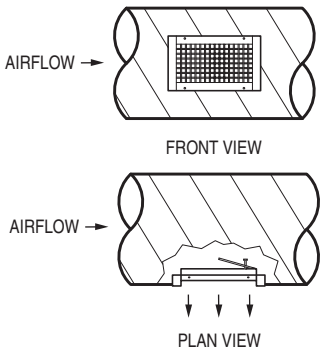
OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/ Extractor option.

Important:
Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT GRILLES

- SINGLE DEFLECTION
- SUPPLY
- STEEL

Models:

61SVC and 61SHC

Model 61SVC

Models 61SVC and 61SHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring adjustment in a single horizontal or vertical plane. The vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of individually adjustable, friction pivoted, "teardrop" blades on 3/4" (19) centers.

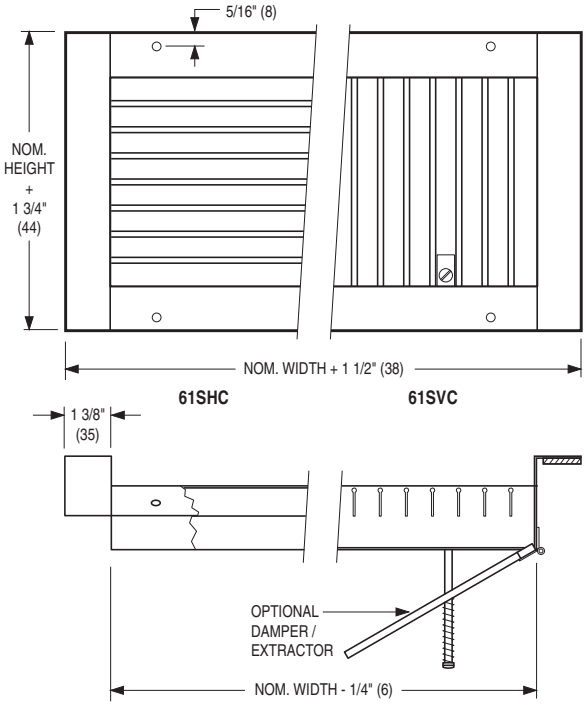
FINISH OPTIONS:

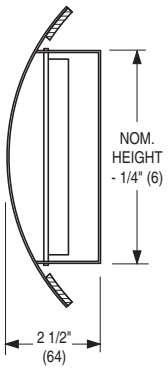
- Standard finish is AW Appliance White finish. Other finishes are available.

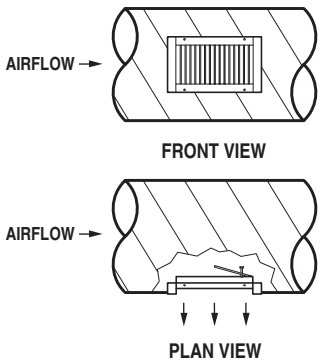
OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/ Extractor option.

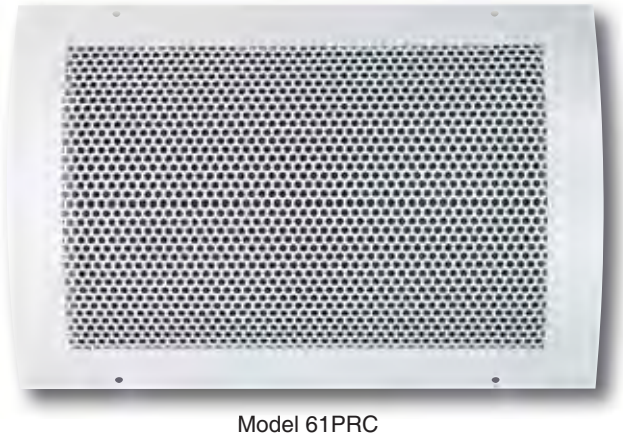
Important:
Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- STEEL

Model:

61PRC



Model 61PRC

Model 61PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique corrosion-resistant steel frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.
- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

FINISH OPTIONS:

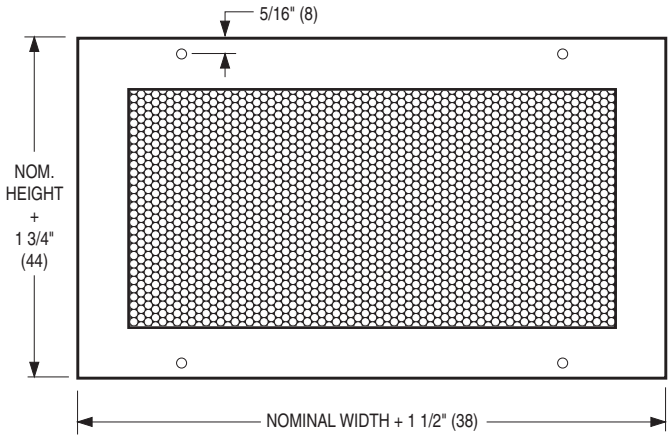
- Standard finish is AW Appliance White finish. Other finishes are available.

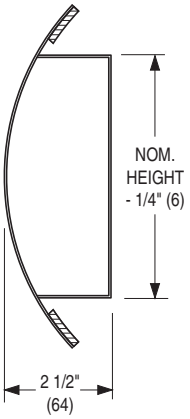
OPTIONS AND ACCESSORIES:

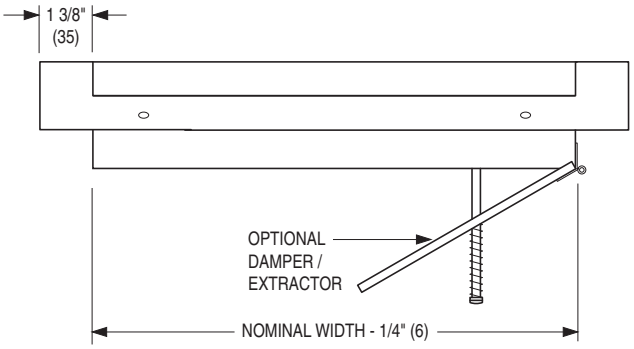
- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.







Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

Important:
Grilles custom fabricated to fit a single specified duct dia. only.

CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- STEEL

Models:

6145HC and 6155HC

Model 6145HC

Models 6145HC and 6155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural steel frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of steel roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes available.
- A single set of roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

CONSTRUCTION MATERIAL:

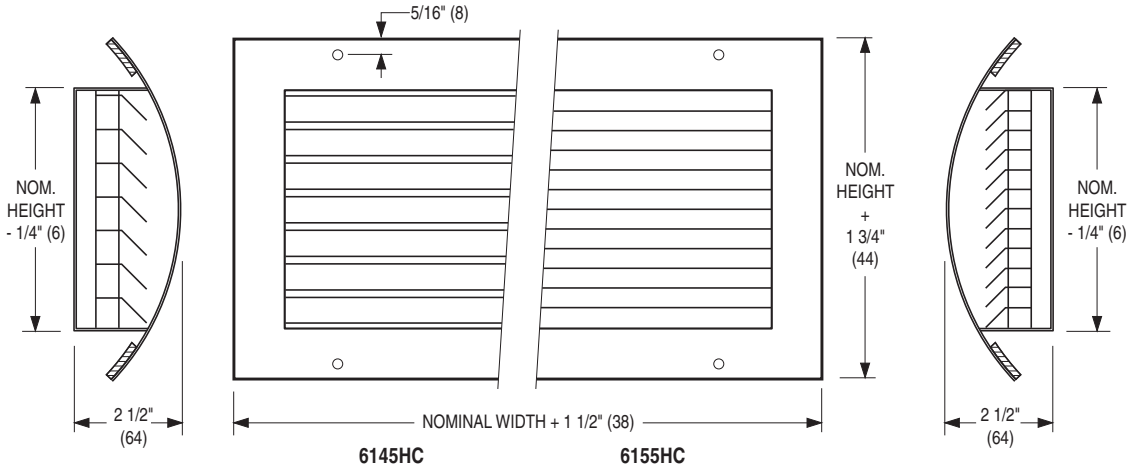
- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border rolled to match required duct radius.

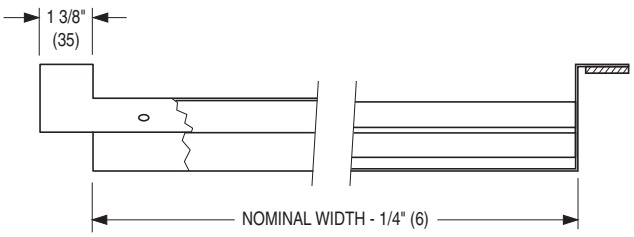
FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.





Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

Important:
Grilles custom fabricated to fit a single specified duct dia. only.

PERFORMANCE DATA:

CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° .013 .023 .040	.015	.026	.041	.060	.082	.107	.167	.241	.328
					22 1/2°									
					45°									
10 x 3		0.15		CFM		45	60	75	90	105	120	150	180	210
				Noise Criteria		–	–	–	–	18	22	28	34	39
			.14	Throw	0°	3-4-8	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	9-12-16	11-13-18	11-14-19
			.12		22 1/2°	2-3-6	3-4-7	4-5-9	5-6-10	6-8-11	6-9-12	7-10-13	9-10-14	9-11-15
			.10		45°	2-2-4	2-3-5	3-3-6	3-4-7	4-5-7	4-6-8	5-6-8	6-7-9	6-7-10
12 x 3		0.19		CFM		57	76	95	114	133	152	190	228	266
				Noise Criteria		–	–	–	–	19	23	29	35	40
			.14	Throw	0°	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	8-11-16	11-13-18	11-14-19	12-15-21
			.12		22 1/2°	3-4-7	4-5-9	4-7-10	6-8-11	6-8-12	7-9-13	8-10-14	9-11-15	10-12-17
			.10		45°	2-3-5	3-4-6	3-4-6	4-5-7	4-6-8	4-6-8	6-6-9	6-7-10	6-8-11
10 x 4	14 x 3	0.22		CFM		66	88	110	132	154	176	220	164	308
				Noise Criteria		–	–	–	–	19	23	29	35	41
			.14	Throw	0°	4-5-10	5-7-12	6-9-13	7-10-15	8-11-16	9-12-17	11-14-19	12-15-20	13-16-22
			.12		22 1/2°	3-4-8	4-6-10	5-7-10	6-8-12	6-9-13	7-10-14	9-11-15	10-12-16	10-13-18
			.10		45°	2-3-5	3-4-6	3-5-7	4-5-8	4-6-8	5-6-9	6-7-10	6-8-10	7-8-11
12 x 4	16 x 3	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		–	–	–	15	20	24	30	36	41
			.18	Throw	0°	4-6-11	6-8-13	7-10-14	8-11-16	9-13-18	11-13-19	12-15-21	13-16-22	13-17-25
			.16		22 1/2°	3-4-8	4-7-10	6-8-11	6-9-13	7-10-14	8-11-15	10-12-17	10-13-18	11-13-20
			.14		45°	2-3-6	3-4-6	4-5-7	4-6-8	5-6-9	6-7-10	6-8-11	6-8-11	7-8-13
18 x 3		0.29		CFM		87	116	145	174	203	232	290	348	406
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.18	Throw	0°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-19	12-14-20	13-16-22	14-17-24	14-18-26
			.16		22 1/2°	3-5-10	5-7-11	6-9-12	6-10-14	8-10-15	10-11-16	10-13-18	11-14-19	11-14-21
			.14		45°	2-3-6	3-5-7	4-6-8	4-6-9	5-7-10	6-7-10	7-8-11	7-9-12	7-9-13
20 x 3	10 x 6 14 x 4	0.32		CFM		96	128	160	192	224	256	320	384	448
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.24	Throw	0°	4-6-13	6-9-15	7-11-17	8-13-18	11-14-20	12-15-21	14-16-23	15-18-25	15-19-27
			.21		22 1/2°	4-5-10	5-7-12	6-9-13	7-11-15	8-11-15	10-12-17	11-13-18	12-14-20	13-15-22
			.18		45°	2-4-6	4-5-8	4-6-8	4-7-9	6-7-10	6-8-11	7-8-12	8-9-13	8-10-14
16 x 4	22 x 3	0.36		CFM		108	144	180	216	252	288	360	432	504
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.26	Throw	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-20	13-15-22	13-17-24	15-18-26	16-20-28
			.22		22 1/2°	4-5-11	5-8-13	6-9-14	7-11-15	9-12-16	10-13-18	11-13-19	12-15-21	13-15-22
			.20		45°	2-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-11	7-8-12	8-9-13	8-10-14
12 x 6	18 x 4 24 x 3	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.29	Throw	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-21	13-15-22	13-17-24	15-20-27	16-20-29
			.25		22 1/2°	4-5-11	5-8-13	6-9-14	7-11-15	9-12-17	10-13-18	11-13-19	12-15-21	13-16-23
			.22		45°	2-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-11	7-8-12	8-10-13	8-11-15
20 x 4	28 x 3	0.45		CFM		135	180	225	270	315	360	450	540	630
				Noise Criteria		–	–	–	18	23	26	32	39	43
			.34	Throw	0°	4-7-14	6-10-15	8-12-17	10-13-18	11-14-19	11-15-22	13-17-24	15-18-25	6-20-28
			.30		22 1/2°	3-6-11	5-8-12	6-10-14	8-10-14	9-11-15	9-12-18	10-14-19	12-14-20	13-16-22
			.26		45°	2-4-7	3-5-8	4-6-9	5-7-9	6-7-10	6-8-11	7-9-12	8-9-13	8-10-14
14 x 6	10 x 8 22 x 4	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		–	–	–	18	23	27	33	39	44
			.34	Throw	0°	4-8-14	7-11-16	8-13-18	11-14-20	11-15-22	13-16-23	15-18-25	16-20-28	18-22-30
			.30		22 1/2°	4-6-11	6-8-13	7-10-14	8-11-15	9-13-18	11-13-18	12-14-20	13-15-22	14-18-24
			.26		45°	2-4-7	4-6-8	4-6-9	6-7-10	6-8-11	7-8-12	8-9-13	8-10-14	9-11-15
12 x 8	16 x 6 24 x 4 32 x 3	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.39	Throw	0°	5-8-15	7-11-17	8-13-19	11-15-21	12-16-22	14-17-24	15-19-27	17-21-29	18-22-32
			.34		22 1/2°	4-6-12	6-8-13	7-11-15	8-12-17	10-13-18	11-13-19	13-15-21	13-17-24	15-18-25
			.30		45°	3-4-8	4-6-8	4-7-10	6-8-11	6-8-11	7-8-12	8-10-13	8-11-15	9-11-16
10 x 10	26 x 4 34 x 3	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.41	Throw	0°	5-8-15	7-11-17	9-13-20	11-15-21	12-16-22	14-17-25	16-20-27	17-21-30	19-22-32
			.36		22 1/2°	4-6-12	6-9-13	7-11-15	9-12-17	10-13-18	11-13-20	13-15-22	13-17-24	15-18-26
			.31		45°	3-4-8	4-6-8	5-7-10	6-8-12	6-8-11	7-8-13	8-10-14	8-11-15	10-11-16

For performance data notes, see F60.

PERFORMANCE DATA:

CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.013	.023	.036	.052	.071	.093	.145	.209	.285
					22 1/2°	.015	.026	.041	.060	.082	.107	.167	.241	.328
					45°	.023	.040	.063	.091	.125	.164	.254	.367	.499
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65		CFM		195	260	325	390	455	520	650	780	910
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.44	Throw	0°	5-8-15	8-11-18	9-14-20	11-15-22	13-17-24	15-18-25	17-20-28	18-22-32	20-24-34
			.38		22 1/2°	4-7-13	6-9-14	7-11-16	9-13-18	10-13-19	12-14-20	13-16-22	14-18-25	15-19-27
			.33		45°	3-4-8	4-6-9	5-7-11	6-8-11	6-8-12	8-9-13	8-11-14	9-11-16	10-12-17
12 x 10	20 x 6 30 x 4	0.74		CFM		222	296	370	444	518	592	740	888	1036
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.50	Throw	0°	6-9-17	8-12-19	10-15-22	12-17-23	14-18-25	15-19-27	18-22-30	19-23-34	21-25-36
			.44		22 1/2°	4-7-13	6-10-15	8-12-18	10-13-18	11-15-20	13-15-22	14-18-24	15-18-27	17-20-29
			.38		45°	3-5-8	4-6-10	5-8-11	6-8-12	7-9-13	8-10-14	9-11-15	10-12-17	11-13-18
22 x 6	16 x 8 34 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.54	Throw	0°	6-9-12	8-13-20	11-15-22	13-18-25	14-19-27	16-20-29	18-22-32	20-25-35	22-27-37
			.47		22 1/2°	4-7-14	6-10-15	8-13-18	10-14-20	11-15-21	13-15-23	15-18-25	15-20-28	18-21-29
			.41		45°	3-5-9	4-6-10	6-8-11	6-9-13	7-10-13	8-10-15	9-11-16	10-13-18	11-13-19
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.61	Throw	0°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-33	20-25-36	22-27-39
			.53		22 1/2°	5-8-15	7-10-16	8-13-18	10-15-20	12-15-22	13-16-24	15-18-27	16-20-29	18-22-32
			.46		45°	4-5-9	4-6-11	6-8-12	6-9-13	8-10-14	8-11-15	10-12-17	11-13-18	11-14-20
18 x 10	30 x 6	1.13		CFM		339	452	565	678	791	904	1130	1356	1582
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.77	Throw	0°	6-11-20	10-14-23	12-18-25	14-20-28	17-21-30	19-23-32	21-25-36	23-28-40	25-30-43
			.67		22 1/2°	5-8-16	8-11-18	10-14-20	11-16-22	13-17-24	15-18-26	17-20-29	18-22-32	20-24-34
			.58		45°	4-6-11	5-7-12	6-9-13	7-11-14	8-11-15	10-12-16	11-13-18	12-14-20	13-15-22
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20		CFM		360	480	600	720	840	960	1200	1440	1680
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.84	Throw	0°	8-13-23	11-18-27	14-20-29	17-23-33	19-25-36	22-27-38	25-29-42	27-33-46	29-36-50
			.73		22 1/2°	6-10-18	9-14-22	11-16-24	13-18-27	15-20-29	18-22-30	20-24-34	22-27-37	23-29-40
			.64		45°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	13-15-21	14-17-23	15-18-25
18 x 12	22 x 10 28 x 8 36 x 6	1.37		CFM		411	548	685	822	959	1096	1370	1644	1918
				Noise Criteria		–	–	18	23	28	32	38	44	49
			.93	Throw	0°	8-13-23	11-18-27	14-21-30	17-23-33	20-25-36	22-27-38	25-30-43	27-33-47	29-36-50
			.81		22 1/2°	6-10-18	9-14-22	11-17-24	13-18-27	15-20-29	18-22-30	20-24-34	22-27-38	23-29-41
			.71		45°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	13-15-22	14-17-24	15-18-25
24 x 10	20 x 12 30 x 8	1.52		CFM		456	608	760	912	1064	1216	1520	1824	2128
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.03	Throw	0°	8-13-25	11-18-29	15-22-32	18-25-35	20-27-37	24-29-40	26-32-45	29-35-49	30-37-53
			.90		22 1/2°	7-11-20	9-14-23	12-18-25	14-20-28	16-21-29	19-23-32	21-25-36	23-28-39	24-29-43
			.78		45°	4-7-13	6-9-15	8-11-16	9-13-18	11-13-19	12-15-20	13-16-22	15-18-25	15-19-27
32 x 8	22 x 12 26 x 10	1.61		CFM		483	644	805	966	1127	1288	1610	1932	2254
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.12	Throw	0°	8-14-26	12-18-29	15-22-33	18-26-36	22-28-39	25-29-41	27-33-47	29-36-51	32-39-55
			.97		22 1/2°	7-11-21	10-15-24	13-18-27	15-21-29	18-22-32	20-24-33	22-27-38	24-29-41	26-32-44
			.84		45°	4-7-13	6-9-15	8-11-17	9-13-18	11-14-20	13-15-21	14-17-24	15-18-26	16-20-28
24 x 12	30 x 10 36 x 8	1.85		CFM		555	740	925	1110	1295	1480	1850	2220	2590
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.26	Throw	0°	8-14-27	13-19-31	15-23-34	19-27-38	22-28-41	25-31-43	28-34-48	31-38-53	34-41-57
			1.09		22 1/2°	7-11-21	10-15-25	13-18-27	15-21-30	18-22-32	20-25-35	22-27-39	25-30-43	27-32-46
			.95		45°	4-7-13	6-10-15	8-12-17	10-13-19	11-14-20	13-15-22	14-17-25	15-19-27	17-20-29
32 x 10	28 x 12	2.04		CFM		612	816	1020	1224	1428	1632	2040	2448	2856
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.43	Throw	0°	9-15-28	13-20-33	17-25-36	20-28-40	23-30-43	27-33-46	29-36-52	33-40-57	35-43-61
			1.24		22 1/2°	7-12-22	11-16-27	13-20-29	16-22-32	18-24-35	21-27-37	24-29-41	27-32-46	28-35-49
			1.08		45°	5-8-14	7-11-17	8-13-18	11-14-20	12-15-22	13-17-23	15-18-26	17-20-29	18-22-31
30 x 12	36 x 10	2.32		CFM		696	928	1160	1392	1624	1856	2320	2784	3248
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.58	Throw	0°	10-16-30	15-22-35	18-27-39	22-30-43	25-33-47	29-35-50	32-37-55	35-43-60	38-47-66
			1.37		22 1/2°	8-13-24	13-18-28	15-22-32	18-24-34	20-27-38	23-28-40	22-32-44	28-34-48	30-38-53
			1.19		45°	5-8-15	8-11-18	9-14-20	11-15-22	13-17-24	15-18-25	16-20-28	18-22-30	19-24-33

For performance data notes, see F60.

PERFORMANCE DATA:

CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° 22 1/2° 45°	.013 .015 .023	.023 .026 .040	.036 .041 .063	.052 .060 .091	.071 .082 .125	.093 .107 .164	.145 .167 .254	.209 .241 .367	.285 .328 .499
32 x 12	38 x 10	2.48		CFM		744	992	1240	1488	1736	1984	2480	2976	3472
				Noise Criteria		–	–	–	–	–	–	–	–	–
			1.70	Throw	0°	10-17-32	15-22-36	19-28-41	22-32-45	26-34-48	30-36-52	34-41-57	36-45-63	39-48-68
			1.48		22 1/2°	8-13-25	13-18-29	15-22-32	18-25-36	21-27-38	24-29-42	27-32-46	29-36-50	32-38-55
			1.29		45°	5-8-16	8-11-18	10-14-20	11-16-22	13-18-24	15-18-26	17-20-29	18-22-32	20-24-34
40 x 10		2.56		CFM		768	1024	1280	1536	1792	2048	2560	3072	3584
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.77	Throw	0°	11-17-32	15-22-37	19-29-41	22-32-46	27-35-49	31-37-53	34-41-59	37-46-64	41-49-69
			1.54		22 1/2°	8-13-26	13-18-29	15-23-33	18-26-36	21-28-39	25-29-42	27-33-47	29-36-52	32-39-55
			1.34		45°	6-8-16	8-11-19	10-15-21	11-16-23	13-18-25	15-19-27	18-21-29	19-23-32	20-25-35
36 x 12	44 x 10	2.79		CFM		837	1116	1395	1674	1953	2232	2790	3348	3906
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.90	Throw	0°	11-18-34	16-24-39	20-29-43	24-34-48	28-36-51	32-39-54	34-43-60	39-48-67	41-51-72
			1.65		22 1/2°	8-14-27	13-19-31	15-24-34	19-27-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
			1.44		45°	6-9-17	8-12-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-30	20-30-34	21-26-36
48 x 10		3.08		CFM		924	1232	1540	1848	2156	2464	3080	3696	4312
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.16	Throw	0°	12-19-35	17-25-41	20-32-46	25-35-50	29-38-54	33-41-57	37-46-64	41-50-71	43-54-76
			1.87		22 1/2°	10-15-28	13-20-32	16-25-36	20-28-40	24-30-43	27-32-46	29-36-52	32-40-57	35-43-61
			1.63		45°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-32	20-25-36	22-27-39

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is based on double deflection grille without damper/extractor.
4. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
5. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions, direct duct mounted grille, exposed duct with no ceiling effect.
6. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

NC Corrections for Blade Deflection and Damper/Extractor set at 45 degrees (add).

Model Type	Damper/ Extractor	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	+ 5	+ 7	+ 12
	Without	0	+ 2	+ 7
Single Deflection	With	+ 1	+ 3	+ 10
	Without	– 4	– 2	+ 5

TP Correction Factors for Grilles With Damper/ Extractor set at 45 degrees.

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x 2.00	x 2.08	x 2.23
Single Deflection Factor	x 1.83	x 1.91	x 2.13

PERFORMANCE DATA:

CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
10 x 3		0.15	0.18	**CFM**	**15**	**30**	**45**	**60**	**75**	**90**	**105**	**120**	**135**	**150**
				Noise Criteria	–	–	–	–	–	15	20	24	28	32
12 x 3		0.19	0.22	**CFM**	**19**	**38**	**57**	**76**	**95**	**114**	**133**	**152**	**171**	**190**
				Noise Criteria	–	–	–	–	–	15	20	24	28	32
10 x 4	14 x 3	0.22	0.25	**CFM**	**22**	**44**	**66**	**88**	**110**	**132**	**154**	**176**	**198**	**220**
				Noise Criteria	–	–	–	–	–	16	21	25	29	33
12 x 4	16 x 3	0.27	0.29	**CFM**	**27**	**54**	**81**	**108**	**135**	**162**	**189**	**216**	**243**	**270**
				Noise Criteria	–	–	–	–	–	16	21	25	29	33
18 x 3		0.29	0.31	**CFM**	**29**	**58**	**87**	**116**	**145**	**174**	**203**	**232**	**261**	**290**
				Noise Criteria	–	–	–	–	–	17	22	26	30	34
20 x 3	10 x 6 14 x 4	0.32	0.34	**CFM**	**32**	**64**	**96**	**128**	**160**	**192**	**224**	**256**	**288**	**320**
				Noise Criteria	–	–	–	–	–	17	22	26	30	34
16 x 4	22 x 3	0.36	0.38	**CFM**	**36**	**72**	**108**	**144**	**180**	**216**	**252**	**288**	**324**	**360**
				Noise Criteria	–	–	–	–	–	18	23	27	31	35
12 x 6	18 x 4 24 x 3	0.42	0.45	**CFM**	**42**	**84**	**126**	**168**	**210**	**252**	**294**	**336**	**378**	**420**
				Noise Criteria	–	–	–	–	–	19	23	28	32	36
20 x 4	28 x 3	0.45	0.47	**CFM**	**45**	**90**	**135**	**180**	**225**	**270**	**315**	**360**	**405**	**450**
				Noise Criteria	–	–	–	–	–	19	23	28	32	36
14 x 6	10 x 8 22 x 4	0.50	0.51	**CFM**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
				Noise Criteria	–	–	–	–	15	20	24	29	33	37
12 x 8	16 x 6 24 x 4 32 x 3	0.58	0.59	**CFM**	**58**	**116**	**174**	**232**	**290**	**348**	**406**	**464**	**522**	**580**
				Noise Criteria	–	–	–	–	15	20	24	29	33	37
10 x 10	26 x 4 34 x 3	0.61	0.62	**CFM**	**61**	**122**	**183**	**244**	**305**	**366**	**427**	**488**	**549**	**610**
				Noise Criteria	–	–	–	–	15	20	25	30	33	37
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65	0.67	**CFM**	**65**	**130**	**195**	**260**	**325**	**390**	**455**	**520**	**585**	**650**
				Noise Criteria	–	–	–	–	16	21	26	30	34	37
12 x 10	20 x 6 30 x 4	0.74	0.74	**CFM**	**74**	**148**	**222**	**296**	**370**	**444**	**518**	**592**	**666**	**740**
				Noise Criteria	–	–	–	–	16	21	26	31	35	38
22 x 6	16 x 8 34 x 4	0.80	0.80	**CFM**	**80**	**160**	**240**	**320**	**400**	**480**	**560**	**640**	**720**	**800**
				Noise Criteria	–	–	–	–	16	21	26	31	35	38
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90	0.89	**CFM**	**90**	**180**	**270**	**360**	**450**	**540**	**630**	**720**	**810**	**900**
				Noise Criteria	–	–	–	–	17	22	27	32	35	38
18 x 10	30 x 6	1.13	1.12	**CFM**	**113**	**226**	**339**	**452**	**565**	**678**	**791**	**904**	**1017**	**1130**
				Noise Criteria	–	–	–	–	17	22	27	32	36	39
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20	1.19	**CFM**	**120**	**240**	**360**	**480**	**600**	**720**	**840**	**960**	**1080**	**1200**
				Noise Criteria	–	–	–	–	17	22	27	32	36	39

For performance table notes, see page F62.

PERFORMANCE DATA:

CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
18 x 12	22 x 10 28 x 8 36 x 6	1.37	1.34	**CFM**	**137**	**274**	**411**	**548**	**685**	**822**	**959**	**1096**	**1233**	**1370**
				Noise Criteria	–	–	–	–	18	23	28	33	36	39
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM**	**152**	**304**	**456**	**608**	**760**	**912**	**1064**	**1216**	**1368**	**1520**
				Noise Criteria	–	–	–	–	18	23	28	34	37	40
32 x 8	22 x 12 26 x 10	1.61	1.59	**CFM**	**161**	**322**	**483**	**644**	**805**	**966**	**1127**	**1288**	**1449**	**1610**
				Noise Criteria	–	–	–	–	19	24	29	34	37	40
24 x 12	30 x 10 36 x 8	1.85	1.78	**CFM**	**185**	**370**	**555**	**740**	**925**	**1110**	**1295**	**1480**	**1665**	**1850**
				Noise Criteria	–	–	–	–	19	24	29	34	37	41
32 x 10	28 x 12	2.04	1.96	**CFM**	**204**	**408**	**612**	**816**	**1020**	**1224**	**1428**	**1632**	**1836**	**2040**
				Noise Criteria	–	–	–	–	19	25	30	35	38	41
30 x 12	36 x 10	2.32	2.23	**CFM**	**232**	**464**	**696**	**928**	**1160**	**1392**	**1624**	**1856**	**2088**	**2320**
				Noise Criteria	–	–	–	15	20	25	30	35	38	42
32 x 12	38 x 10 48 x 8	2.48	2.38	**CFM**	**248**	**496**	**744**	**992**	**1240**	**1488**	**1736**	**1984**	**2232**	**2480**
				Noise Criteria	–	–	–	15	20	26	31	36	39	42
40 x 10		2.56	2.44	**CFM**	**256**	**512**	**768**	**1024**	**1280**	**1536**	**1792**	**2048**	**2304**	**2560**
				Noise Criteria	–	–	–	15	20	26	31	36	39	42
36 x 12	44 x 10	2.79	2.66	**CFM**	**279**	**558**	**837**	**1116**	**1395**	**1674**	**1953**	**2232**	**2511**	**2790**
				Noise Criteria	–	–	–	16	21	27	31	36	39	43
48 x 10		3.08	2.92	**CFM**	**308**	**616**	**924**	**1232**	**1540**	**1848**	**2156**	**2464**	**2772**	**3080**
				Noise Criteria	–	–	–	16	21	27	31	36	39	43

Performance Notes:

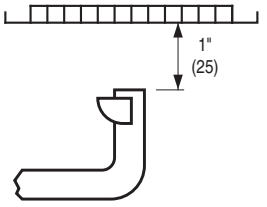
1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is based on Model 6145HC. For Model 6155HC apply the following correction factors:

Negative Static Pressure Listed Value x 1.3.

Noise Criteria Listed value + 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER

MODEL SERIES: 5100C

ALUMINUM CURVED SPIRAL DUCT GRILLES

EXAMPLE: 51DVC - 12 x 6 - 12 - S - AW - A - DEX

1. **Models**

   Supply Double Deflection:

   51DVC Vertical Front Blades, 3/4" (19) Spacing

   51DHC Horizontal Front Blades, 3/4" (19) Spacing

   Supply Single Deflection:

   51SVC Vertical Blades, 3/4" (19) Spacing

   51SHC Horizontal Blades, 3/4" (19) Spacing

   Return:

   51PRC Perforated Face

   5145HC 45° Deflection, 3/4" (19) Spacing

   5155HC 45° Deflection, 1/2" (13) Spacing

2. **Nominal Width x Height**
   inches (mm)
3. **Duct Diameter**
   inches
   06 through 36 (in 2" increments)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
6. **Fastening**
   A Screw Holes (default)
   N None
7. **Damper/Extractor**
   — None (standard) (default)
   DEX Damper/Extractor

Notes:

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.

2. Refer to "Available Sizes" table for grille height/duct diameter limitations.

3. Not available in fractional or metric sizes.

4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum double deflection grille with vertical front blades is Model 51DVC. Unit will be supplied with screw holes and AW Appliance White finish.

Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

HOW TO SPECIFY

MODEL SERIES: 5100C

ALUMINUM CURVED SPIRAL DUCT GRILLES

SUGGESTED SPECIFICATION:

51DVC, 51DHC Double Deflection

Furnish and install **Nailor Model** (select one) **51DVC** or **51DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51SVC, 51SHC Single Deflection

Furnish and install **Nailor Model** (select one) **51SVC** or **51SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51PRC Perforated Face

Furnish and install **Nailor Model 51PRC Perforated Face Curved Spiral Duct Supply** or **Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

5145HC, 5155HC 45° Deflection

Furnish and install **Nailor Model** (select one) **5145HC** or **5155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from aluminum and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 6100C

STEEL CURVED SPIRAL DUCT GRILLES

EXAMPLE: 61DVC - 12 x 6 - 12 - S - AW - A - DEX

1. **Models**

   Supply Double Deflection:

   61DVC Vertical Front Blades, 3/4" (19) Spacing

   61DHC Horizontal Front Blades, 3/4" (19) Spacing

   Supply Single Deflection:

   61SVC Vertical Blades, 3/4" (19) Spacing

   61SHC Horizontal Blades, 3/4" (19) Spacing

   Return:

   61PRC Perforated Face

   6145HC 45° Deflection, 3/4" (19) Spacing

   6155HC 45° Deflection, 1/2" (13) Spacing

2. **Nominal Width x Height**

   inches (mm)

3. **Duct Diameter**

   inches

   06 through 36 (in 2" increments)

4. **Frame/Border Type**

   S Surface Mount (default)

5. **Finish**

   AW Appliance White (default)

   AL Aluminum

   BK Black

   BW British White

   LBP Light Bronze Paint

   MBP Medium Bronze Paint

   DBP Dark Bronze Paint

   MI Mill

   PC Prime Coat

   SP Special Custom Color

6. **Fastening**

   A Screw Holes (default)

   N None

7. **Damper/Extractor**

   — None (standard) (default)

   DEX Damper/Extractor

Notes:

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.

2. Refer to "Available Sizes" table for grille height/duct diameter limitations.

3. Not available in fractional or metric sizes.

4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a double deflection grille with vertical front blades is Model 61DVC. Unit will be supplied with screw holes and AW Appliance White finish.

Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

HOW TO SPECIFY

MODEL SERIES: 6100C
STEEL CURVED SPIRAL DUCT GRILLES

SUGGESTED SPECIFICATION:

61DVC, 61DHC Double Deflection
Furnish and install **Nailor Model** (select one) **61DVC** or **61DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61SVC, 61SHC Single Deflection
Furnish and install **Nailor Model** (select one) **61SVC** or **61SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61PRC Perforated Face
Furnish and install **Nailor Model 61PRC Perforated Face Curved Spiral Duct Supply** or **Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

6145HC, 6155HC 45° Deflection
Furnish and install **Nailor Model** (select one) **6145HC** or **6155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

STEEL CURVED SPIRAL DUCT GRILLES

- LINEAR SLOT FACE
- TRUE FULL RADIUS DESIGN
- SUPPLY

Model 61L10C

Models:

61L50C 1/2" (13) Slot
61L75C 3/4" (19) Slot
61L10C 1" (25) Slot

Models 61L50C, 61L75C and 61L10C Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. This linear grille provides stable diffusion under large amounts of air with both constant and changing load conditions. The volume and direction of the discharge air can be adjusted by moving the pattern controllers.

The innovative design incorporates a unique rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

STANDARD FEATURES:

- Custom fabricated to fit only a single duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.

CONSTRUCTION MATERIAL:

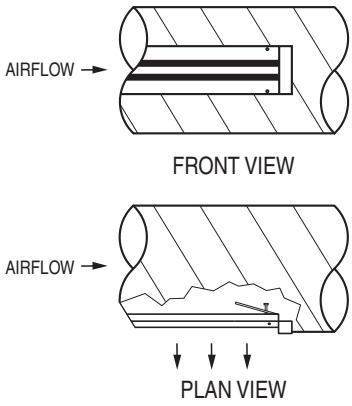
- Unique, corrosion-resistant steel frame design with a 1 3/8" (35) face border rolled to match required duct radius.
- Extruded aluminum adjustable "wiper blade" pattern controllers with gasket edge seal.

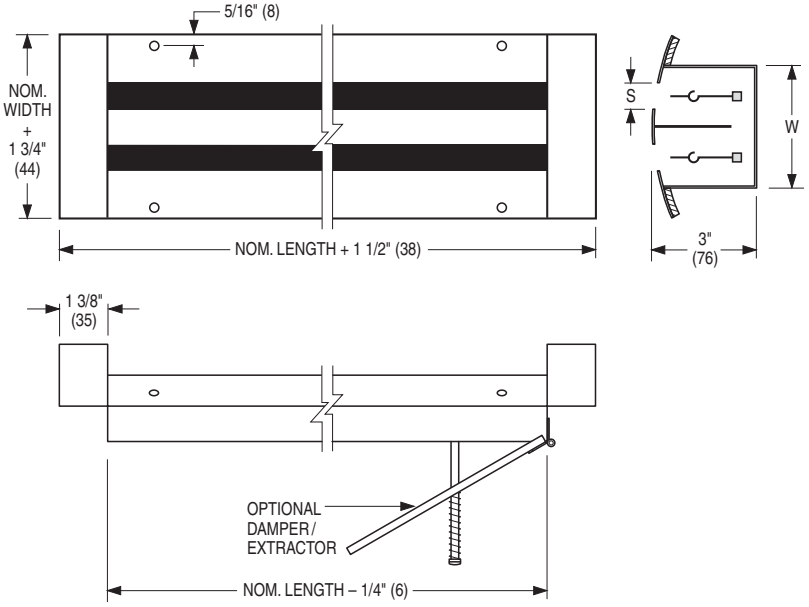
FINISH OPTIONS:

- Standard finish is AW Appliance White finish with BK black pattern controllers. Other finishes are available.

OPTIONS AND ACCESSORIES:

- DEX Damper/Extractor is available.





Standard No. of Slots: 1, 2, 3 or 4

Available Lengths:
12" through 72" (nominal 1" [25] increments only)

Available Sizes

No. of Slots	61L50C S = 1/2" (13)		61L75C S = 3/4" (19)		61L10C S = 1" (25)	
	W	Duct Dia. Min. – Max.	W	Duct Dia. Min. – Max.	W	Duct Dia. Min. – Max.
1	1 3/4 (44)	6 – 36 (152 – 914)	2 (51)	6 – 36 (152 – 914)	2 1/4 (57)	6 – 36 (152 – 914)
2	3 (76)	6 – 36 (152 – 914)	3 1/2 (89)	6 – 36 (152 – 914)	4 (102)	6 – 36 (152 – 914)
3	4 1/4 (108)	8 – 36 (203 – 914)	5 (127)	8 – 36 (203 – 914)	5 3/4 (146)	8 – 36 (203 – 914)
4	5 1/2 (140)	8 – 36 (203 – 914)	6 1/2 (165)	10 – 36 (254 – 914)	7 1/2 (191)	10 – 36 (254 – 914)

W = Nominal Width (duct opening)

* Opening = Nominal + 1/4" (6) with DEX Damper/Extractor option.

S = Slot Width

Duct diameters in even sizes only.

Important:
Grilles are custom fabricated to fit only a single specified duct diameter.

PERFORMANCE DATA:

CURVED SPIRAL DUCT LINEAR SLOT • "WIPER BLADE" PATTERN CONTROLLERS

MODEL: 61L50C • 1/2" (13) SLOT WIDTH

1 Slot	Airflow, CFM per Ft.	5	10	15	20	25	30	35	40
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	–	–	–	–	16	21	25	28
	Throw	1-1-2	2-3-6	3-5-9	4-6-11	4-6-12	4-7-13	5-7-14	5-8-15
2 Slot	Airflow, CFM per Ft.	10	20	30	40	50	60	70	80
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	–	–	–	–	18	24	28	31
	Throw	1-2-3	2-4-7	4-6-12	5-7-14	5-8-15	6-9-17	6-9-18	7-10-20
3 Slot	Airflow, CFM per Ft.	15	30	45	60	75	90	105	120
	Static Pressure	.003	.14	.027	.051	.083	.116	.158	.215
	Noise Criteria	–	–	–	16	21	26	30	33
	Throw	1-2-4	3-5-10	5-8-15	6-9-18	7-11-21	7-11-22	9-13-25	8-12-23
4 Slot	Airflow, CFM per Ft.	20	40	60	80	100	120	140	160
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	–	–	–	17	22	27	31	34
	Throw	2-3-6	4-6-11	5-8-16	7-10-20	7-11-22	8-12-24	9-13-26	10-15-29

MODEL: 61L75C • 3/4" (19) SLOT WIDTH

1 Slot	Airflow, CFM per Ft.	5	10	20	25	30	35	40	50
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	–	–	–	–	16	20	23	28
	Throw	1-1-2	2-3-6	3-5-10	4-6-12	4-7-13	5-7-14	5-8-15	5-8-16
2 Slot	Airflow, CFM per Ft.	10	20	40	50	60	70	80	100
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	–	–	–	–	19	23	26	31
	Throw	1-2-3	3-4-8	4-6-11	5-8-15	6-9-18	7-10-20	7-11-21	7-11-22
3 Slot	Airflow, CFM per Ft.	15	30	60	75	90	105	120	150
	Static Pressure	.003	.12	.026	.042	.065	.092	.125	.174
	Noise Criteria	–	–	–	16	21	25	28	33
	Throw	2-3-6	3-5-10	5-8-15	6-10-19	7-10-20	8-12-24	9-13-25	9-14-27
4 Slot	Airflow, CFM per Ft.	20	40	80	100	120	140	160	200
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	–	–	–	17	22	26	29	34
	Throw	2-3-5	4-6-11	6-9-18	7-11-21	9-13-25	9-14-27	10-15-30	11-16-31

NC Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Supply	- 3	- 1	0	+ 1	+ 2
Return	0	+ 2	+ 3	+ 3	+ 4

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Multiplier	0.70	0.85	1.0	1.125	1.25

Performance Notes:

1. All pressures are in inches w.g..
2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions. Exposed duct (no ceiling effect).
3. Horizontal throws are based on the same direction of all slots. Pattern controllers set in upright (non-directing) position.
4. Throw values are based on a 4 ft. section. For other lengths, use the correction factors table above.
5. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a NC level of less than 15.
6. Noise Criteria are based on a 4 ft. section, horizontal throw. For other lengths, use the correction factors table above.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

CURVED SPIRAL DUCT LINEAR SLOT • "WIPER BLADE" PATTERN CONTROLLERS

MODEL: 61L10C • 1" (25) SLOT WIDTH

1 Slot	**Airflow, CFM per Ft.**	**10**	**15**	**25**	**30**	**40**	**50**	**55**	**65**
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	–	–	–	–	19	24	27	31
	Throw	1-1-2	3-4-8	4-6-12	4-7-13	5-8-15	5-8-16	6-9-17	6-9-18
2 Slot	**Airflow, CFM per Ft.**	**20**	**30**	**50**	**60**	**80**	**100**	**110**	**130**
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	–	–	–	15	22	27	30	34
	Throw	1-2-4	3-5-10	5-8-16	6-10-19	7-10-20	7-11-21	8-12-23	9-13-25
3 Slot	**Airflow, CFM per Ft.**	**30**	**45**	**75**	**90**	**120**	**150**	**165**	**195**
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	–	–	–	17	24	29	32	36
	Throw	2-3-6	4-6-11	6-9-18	7-11-22	9-13-25	9-14-27	10-15-30	11-16-31
4 Slot	**Airflow, CFM per Ft.**	**40**	**60**	**100**	**120**	**160**	**200**	**220**	**260**
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	–	–	–	19	25	30	33	37
	Throw	2-4-7	4-7-13	7-11-21	9-13-26	10-15-29	10-15-30	12-17-34	12-18-36

NC Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Supply	- 3	- 1	0	+ 1	+ 2
Return	0	+ 2	+ 3	+ 3	+ 4

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Multiplier	0.70	0.85	1.0	1.125	1.25

Performance Notes:

1. All pressures are in inches w.g..
2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions. Exposed duct (no ceiling effect).
3. Horizontal throws are based on the same direction of all slots. Pattern controllers set in upright (non-directing) position.
4. Throw values are based on a 4 ft. section. For other lengths, use the correction factors table above.
5. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a NC level of less than 15.
6. Noise Criteria are based on a 4 ft. section, horizontal throw. For other lengths, use the correction factors table above.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 61LC

STEEL CURVED SPIRAL DUCT LINEAR SLOT GRILLES

EXAMPLE: 61L75C - 24 x 2 - 12 - S - AW - A - DEX

1. **Models**
   Supply:
   61L50C 1/2" (13) Linear Slot
   61L75C 3/4" (19) Linear Slot
   61L10C 1" (25) Linear Slot
2. **Nominal Length**
   12 through 72"
   (nominal 1" [25] increments only)
3. **No. of Slots**
   1 through 4
4. **Duct Diameter**
   inches
   06 through 36 (in 2" [51] increments)
5. **Frame/Border Type**
   S Surface Mount (default)
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
7. **Fastening**
   A Screw Holes (default)
   N None
8. **Damper/Extractor**
   — Standard (default) None
   DEX Damper/Extractor

Notes:

1. Refer to table for duct diameter limitations.

2. Not available in fractional or metric sizes.

3. For a standard grille without any special requirements, the "default" will automatically be selected. For example, a linear with a 3/4" (19) slot is Model 61L75C. Unit will be supplied with screw holes and AW Appliance White finish.

MODEL SERIES: 61LC

STEEL CURVED SPIRAL DUCT SUPPLY LINEAR SLOT

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **61L10C (1", [25] slot), 61L75C (3/4", [19] slot)** or **61L50C (1/2", [13] slot)** of the sizes and capacities as shown on the plans and air distribution schedules. The linear shall be supplied in 1 – 4 slots wide as specified. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The pattern deflectors shall have an aerodynamic 'ice tong' shape that can be adjusted to regulate the volume and direction of the airflow. The pattern deflector finish shall be black. The frame is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

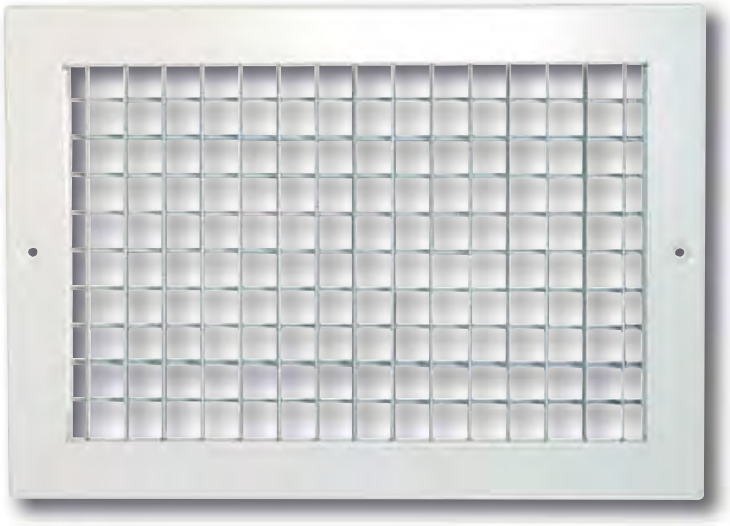
AIRFOIL SERIES DOUBLE DEFLECTION GRILLES AND REGISTERS

- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE
- SUPPLY

Models:

71DV and 71DH

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 71DV

Models 71DV and 71DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

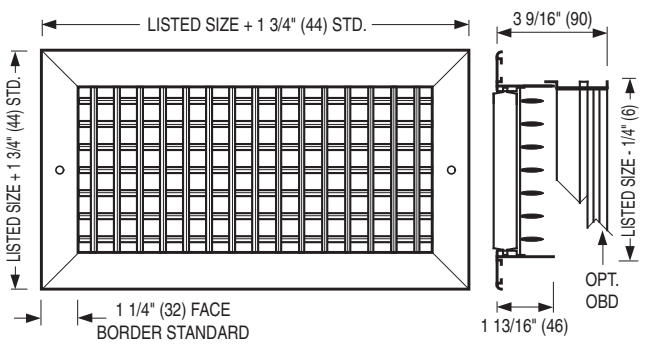
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

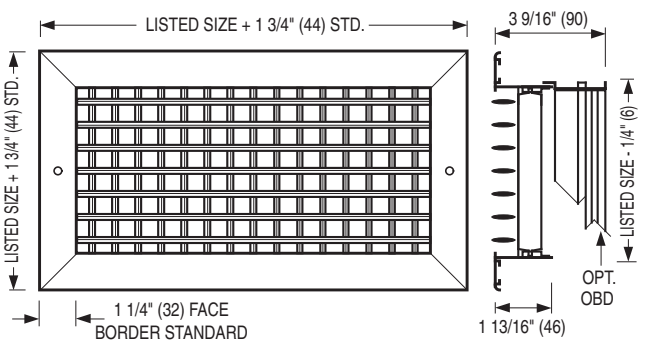
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 71DV Vertical Front Blades



MODEL 71DH Horizontal Front Blades

AIRFOIL SERIES SINGLE DEFLECTION GRILLES AND REGISTERS

- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE
- SUPPLY

Models:

71SV and 71SH

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 71SV

Models 71SV and 71SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

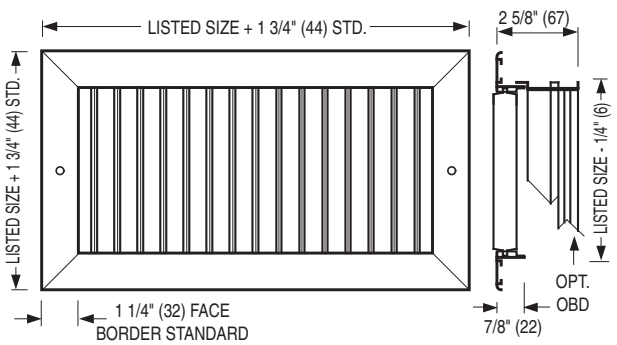
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

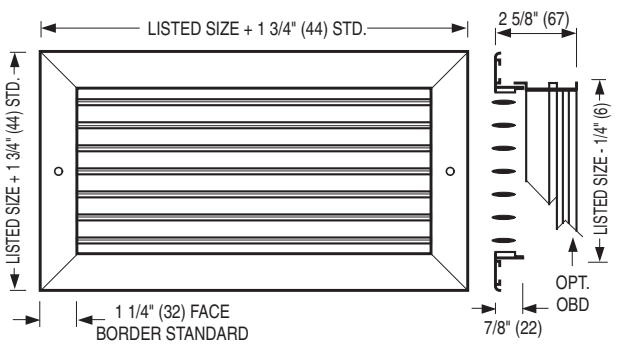
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 71SV Vertical Front Blades



MODEL 71SH Horizontal Front Blades

PERFORMANCE NOTES FOR SUPPLY GRILLES AND REGISTERS: AIRFOIL BLADE 7100 SERIES

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

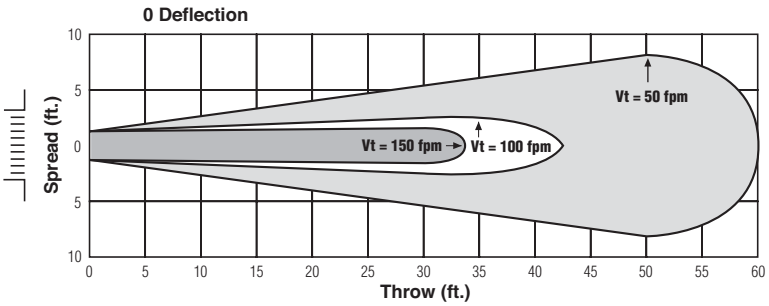
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

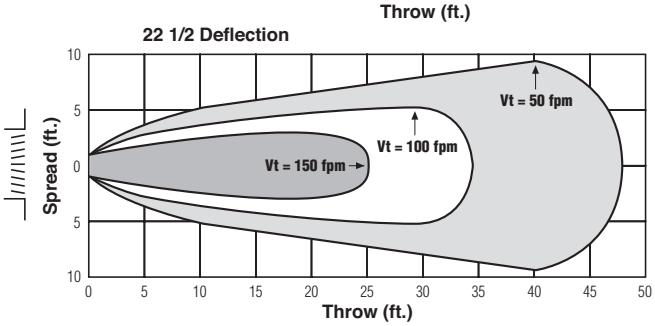
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

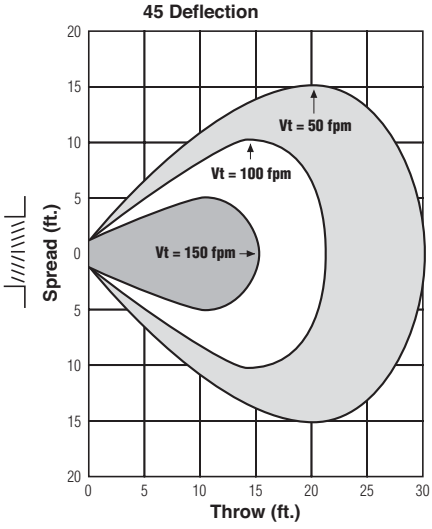
Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS







NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	– 4	– 2	+ 3
Single Deflection	With	– 4	– 1	+ 4
	Without	– 8	– 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .73	x .76	x .84
Single Deflection Factor	x .66	x .70	x .80

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° 22 1/2° 45°	.011 .012 .019	.019 .022 .033	.030 .034 .052	.044 .049 .074	.060 .067 .101	.078 .087 .132	.122 .136 .207	.175 .195 .298	.238 .267 .406
6 x 6	8 x 4 10 x 4	0.20		CFM		60	80	100	120	140	160	200	240	280
				Noise Criteria		–	–	–	–	16	20	26	32	37
			.16 .15 .14	Throw	0° 22 1/2° 45°	5-7-13 4-6-10 3-4-7	7-9-16 6-7-13 4-5-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-15-21 9-12-17 6-8-11	12-16-23 10-13-18 6-8-12	15-18-25 12-14-20 8-9-13	16-20-27 13-16-22 8-10-14	17-21-30 14-17-24 9-11-15
8 x 6	10 x 5 12 x 4	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		–	–	–	–	17	21	27	33	38
			.21 .20 .18	Throw	0° 22 1/2° 45°	5-8-15 4-6-12 3-4-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-16-23 9-13-18 6-8-12	13-18-25 10-14-20 7-9-13	15-19-27 12-15-22 8-10-14	17-21-30 14-17-24 9-11-15	18-23-32 14-18-26 9-12-16	19-24-35 15-19-28 10-12-18
10 x 6	12 x 5 16 x 4	0.35		CFM		105	140	175	210	245	280	350	420	490
				Noise Criteria		–	–	–	–	18	22	28	34	39
			.27 .26 .24	Throw	0° 22 1/2° 45°	6-9-18 5-7-14 3-5-9	9-13-21 7-10-17 5-7-11	10-16-24 8-13-19 5-8-12	12-19-26 10-15-21 6-10-13	15-20-28 12-16-22 8-10-14	17-21-30 14-17-24 9-11-15	20-23-33 16-18-26 10-12-17	21-25-36 17-20-29 11-13-18	22-27-39 18-22-31 11-14-20
8 x 8	14 x 5	0.38		CFM		114	152	190	228	266	304	380	456	532
				Noise Criteria		–	–	–	–	19	23	29	35	40
			.30 .29 .26	Throw	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
12 x 6	18 x 4	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		–	–	–	–	19	23	29	35	40
			.33 .32 .29	Throw	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-28-38 17-22-30 11-14-19	23-29-41 18-23-33 12-15-21
14 x 6	10 x 8	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		–	–	–	15	20	24	30	36	41
			.39 .38 .34	Throw	0° 22 1/2° 45°	6-11-20 5-9-16 3-6-10	10-15-23 8-12-18 5-8-12	12-18-25 10-14-20 6-9-13	15-20-28 12-16-22 8-10-14	16-22-31 13-18-25 8-11-16	19-23-33 15-18-26 10-12-17	21-25-36 17-20-29 11-13-18	23-28-40 18-22-32 12-14-20	25-31-43 20-25-34 13-16-22
12 x 8	16 x 6 24 x 4	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.45 .44 .39	Throw	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-15-24 8-12-19 5-8-12	12-19-27 10-15-22 6-10-14	15-21-30 12-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-34 16-19-27 10-12-17	22-27-38 18-22-30 11-14-19	24-30-42 19-24-34 12-15-21	26-32-45 21-26-36 13-16-23
10 x 10	14 x 7 26 x 4	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.48 .46 .41	Throw	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-16-24 8-13-19 5-8-12	13-19-28 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-35 16-19-28 10-12-18	23-28-39 18-22-31 12-14-20	24-30-42 19-24-34 12-15-22	27-32-46 22-26-37 14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		195	260	325	390	455	520	650	780	910
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.51 .49 .44	Throw	0° 22 1/2° 45°	7-12-22 6-10-18 4-6-11	11-16-25 9-13-20 6-8-13	13-20-29 10-16-23 7-10-15	16-22-32 13-18-26 8-11-16	18-24-34 14-19-27 9-12-17	21-25-36 17-20-29 11-13-18	24-29-40 19-23-32 12-15-20	25-32-45 20-26-36 13-16-23	28-34-48 22-27-38 14-17-24
12 x 10	20 x 6 24 x 5	0.74		CFM		222	296	370	444	518	592	740	888	1036
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.58 .56 .50	Throw	0° 22 1/2° 45°	8-13-24 6-10-19 4-7-12	11-17-27 9-14-22 6-9-14	14-21-31 11-17-25 7-11-16	17-24-33 14-19-26 9-12-17	20-26-36 16-21-29 10-13-18	22-27-39 18-22-31 11-14-20	25-31-43 20-25-34 13-16-22	27-33-48 22-26-38 14-17-24	30-36-51 24-29-41 15-18-26
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120
				Noise Criteria		–	–	–	18	23	27	33	39	44
			.62 .60 .54	Throw	0° 22 1/2° 45°	8-13-25 6-10-20 4-7-13	11-18-28 9-14-22 6-9-14	15-22-32 12-18-26 8-11-16	18-25-35 14-20-28 9-13-18	20-27-38 16-22-30 10-14-19	23-28-41 18-22-33 12-14-21	26-32-45 21-26-36 13-16-23	28-35-50 22-28-40 14-18-25	31-38-53 25-30-42 16-19-27
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260
				Noise Criteria		–	–	–	18	23	27	33	39	44
			.70 .68 .61	Throw	0° 22 1/2° 45°	9-14-26 7-11-21 5-7-13	12-18-29 10-14-23 6-9-15	15-23-33 12-18-26 8-12-17	18-26-36 14-21-29 9-13-18	21-27-39 17-22-31 11-14-20	24-29-42 19-23-34 12-15-21	27-33-47 22-26-38 14-17-24	29-36-51 23-29-41 15-18-26	32-39-56 26-31-45 16-20-28
18 x 10	30 x 6	1.13		CFM		339	452	565	678	791	904	1130	1356	1582
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.88 .85 .77	Throw	0° 22 1/2° 45°	9-15-29 7-12-23 5-8-15	14-20-33 11-16-26 7-10-17	17-25-36 14-20-29 9-13-18	20-29-40 16-23-32 10-15-20	24-30-43 19-24-34 12-15-22	27-33-46 22-26-37 14-17-23	30-36-51 24-29-41 15-18-26	33-40-57 26-32-46 17-20-29	35-43-61 28-34-49 18-22-31

For performance data notes, see F77.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° .011	.019	.030	.044	.060	.078	.122	.175	.238
					22 1/2° .012	.022	.034	.049	.067	.087	.136	.196	.267
					45° .019	.033	.052	.074	.101	.132	.207	.298	.406
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM		372	496	620	744	868	992	1240	1488	1736
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.97	Throw	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71
			.93		22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
			.84		45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM		411	548	685	822	959	1096	1370	1644	1918
				Noise Criteria		–	–	15	20	25	29	35	41	46
			1.07	Throw	0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72
			1.03		22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	28-34-49	31-38-54	33-41-58
			.93		45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM		456	608	760	912	1064	1216	1520	1824	2128
				Noise Criteria		–	–	15	20	25	29	35	41	46
			1.19	Throw	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
			1.14		22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	34-42-61
			1.03		45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM		492	656	820	984	1148	1312	1640	1968	2296
				Noise Criteria		–	–	15	20	25	29	35	41	46
			1.28	Throw	0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79
			1.23		22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63
			1.12		45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM		555	740	925	1110	1295	1480	1850	2220	2590
				Noise Criteria		–	–	16	21	26	30	36	42	47
			1.44	Throw	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82
			1.39		22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66
			1.26		45°	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	20-24-35	22-27-38	24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM		630	840	1050	1260	1470	1680	2100	2520	2940
				Noise Criteria		–	–	16	21	26	30	36	42	47
			1.64	Throw	0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87
			1.58		22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70
			1.43		45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM		696	928	1160	1392	1624	1856	2320	2784	3248
				Noise Criteria		–	–	17	22	27	31	37	43	48
			1.81	Throw	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94
			1.74		22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	32-45-63	40-49-69	43-54-75
			1.58		45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47
24 x 16	32 x 12	2.50		CFM		750	1000	1250	1500	1750	2000	2500	3000	3500
				Noise Criteria		–	–	17	22	27	31	37	43	48
			1.95	Throw	0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97
			1.88		22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78
			1.70		45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49
20 x 20	22 x 18	2.61		CFM		783	1044	1305	1566	1827	2088	2610	3132	3654
				Noise Criteria		–	–	17	22	27	31	37	43	48
			2.04	Throw	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99
			1.96		22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-56-79
			1.77		45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	27-33-46	29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM		837	1116	1395	1674	1953	2232	2790	3348	3906
				Noise Criteria		–	–	17	22	27	31	37	43	48
			2.18	Throw	0°	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	50-61-86	55-68-95	59-73-103
			2.09		22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82
			1.90		45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM		951	1268	1585	1902	2219	2536	3170	3804	4438
				Noise Criteria		–	–	18	23	28	32	38	44	49
			2.47	Throw	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109
			2.38		22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87
			2.16		45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55
42 x 12	36 x 14	3.27		CFM		981	1308	1635	1962	2289	2616	3270	3924	4578
				Noise Criteria		–	–	18	23	28	32	38	44	49
			2.55	Throw	0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109
			2.45		22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87
			2.22		45°	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	27-33-47	3-36-51	32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM		1062	1416	1770	2124	2478	2832	3540	4248	4956
				Noise Criteria		–	–	18	23	28	32	38	44	49
			2.76	Throw	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115
			2.66		22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92
			2.41		45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58

For performance data notes, see F77.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
					22 1/2°	.012	.022	.034	.049	.067	.087	.136	.196	.267
					45°	.019	.033	.052	.074	.101	.132	.207	.298	.406
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		–	–	18	23	28	32	38	44	49
			2.96	Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.84		22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
			2.58		45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		–	–	19	24	29	33	39	45	50
			3.35	Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
			3.22		22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
			2.92		45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		–	–	19	24	29	33	39	45	50
			3.49	Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			3.35		22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
			3.04		45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		–	–	19	24	29	33	39	45	50
			3.72	Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			3.58		22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
			3.24		45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67
42 x 18	28 x 26	4.99		CFM		1497	1996	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		–	–	20	25	30	34	40	46	51
			3.89	Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			3.74		22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
			3.39		45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		–	–	20	25	30	34	40	46	51
			4.06	Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.90		22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
			3.54		45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		–	–	20	25	30	34	40	46	51
			4.34	Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			4.18		22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
			3.79		45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		–	–	20	25	30	34	40	46	51
			4.48	Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			4.31		22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
			3.90		45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		–	–	20	25	30	34	40	46	51
			4.67	Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			4.49		22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
			4.07		45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		–	–	21	26	31	35	41	47	52
			5.24	Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			5.04		22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
			4.57		45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79
32 x 32	40 x 26	6.84		CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		–	–	21	26	31	35	41	47	52
			5.34	Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-15873-90-126
			5.13		22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	46-56-79
			4.65		45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	
36 x 30	38 x 28	7.22		CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		–	–	21	26	31	35	41	47	52
			5.63	Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			5.42		22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
			4.91		45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		–	–	22	27	32	36	42	48	53
			6.00	Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			5.77		22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			5.23		45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84

For performance data notes, see F77.

PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES
MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
					22 1/2°	.012	.022	.034	.049	.067	.087	.136	.196	.267
					45°	.019	.033	.052	.074	.101	.132	.207	.298	.406
36 x 34	38 x 32 40 x 30 48 x 26	8.20		**CFM**		**2460**	**3280**	**4100**	**4920**	**5740**	**6560**	**8200**	**9840**	**11480**
				Noise Criteria		–	15	22	27	32	36	42	48	53
			6.40	**Throw**	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			6.15		22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			5.58		45°	13-21-40	19-29-	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		**CFM**		**2607**	**3476**	**4345**	**5214**	**6083**	**6952**	**8690**	**10428**	**12166**
				Noise Criteria		–	15	22	27	32	36	42	48	53
			6.78	**Throw**	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			6.52		22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			5.91		45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		**CFM**		**2910**	**3880**	**4850**	**5820**	**6790**	**7760**	**9700**	**11640**	**13580**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			7.57	**Throw**	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			7.28		22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			6.60		45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		**CFM**		**3048**	**4064**	**5080**	**6096**	**7112**	**8128**	**10160**	**12192**	**14224**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			7.92	**Throw**	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			7.62		22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			6.91		45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		**CFM**		**3231**	**4308**	**5385**	**6462**	**7539**	**8616**	**10770**	**12924**	**15078**
				Noise Criteria		–	16	23	28	33	37	43	49	54
			8.40	**Throw**	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			8.08		22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			7.32		45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		**CFM**		**3567**	**4756**	**5945**	**7134**	**8323**	**9512**	**11890**	**14268**	**16646**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			9.27	**Throw**	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
			8.92		22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			8.09		45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		**CFM**		**3921**	**5228**	**6535**	**7842**	**9149**	**10456**	**13070**	**15684**	**18298**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			10.19	**Throw**	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			9.80		22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			8.89		45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		**CFM**		**4290**	**5720**	**7150**	**8580**	**10010**	**11440**	**14300**	**17160**	**20020**
				Noise Criteria		–	17	24	29	34	38	44	50	55
			11.15	**Throw**	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			10.73		22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			9.72		45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		**CFM**		**4677**	**6236**	**7795**	**9354**	**10913**	**12472**	**15590**	**18708**	**21826**
				Noise Criteria		–	18	25	30	35	39	45	51	56
			12.16	**Throw**	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			11.69		22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			10.60		45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

Performance Notes:

1. All pressures are in inches w.g..
2. Core velocity is in feet per minute.
3. Throw values are given for terminal velocitues of 150, 100 and 50 fpm under isothermal conditions.
4. Performance data is based on double deflection grille with opposed blade damper (register).
5. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
6. Additional performance notes and correction factors for various models and settings may be found on page F73.
7. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a NC level of less than 15.
8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 7100
ALUMINUM AIRFOIL BLADE SUPPLY GRILLES AND REGISTERS

EXAMPLE: 71DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
   Double Deflection:
   - 71DV Vertical Front Airfoil Blades
   - 71DH Horizontal Front Airfoil Blades

   Single Deflection:
   - 71SV Vertical Airfoil Blades
   - 71SH Horizontal Airfoil Blades
2. **Damper (OBD)**
   (model suffix)
   - O Steel
   - OA Aluminum
   - — None
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   Surface Mount:
   - S Surface Mount
     Border 1 1/4" (32) (default)
   - NF Narrow Frame
     Border 1" (25)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared
   - SA Satin Anodized (clear)
   - SP Special Custom Color
6. **Opposed Blade Damper Finish**
   - DMI Mill (default)
   - DBK Painted Black
7. **Fastening**
   - A Screw Holes (default)
   - C Concealed Mounting Straps
   - D Concealed Screw Holes in Neck
   - N None

OPTIONS & ACCESSORIES:

- — None (default)

8. **Insect Screen**
   - IS Insect Screen
9. **Plaster Sub-Frame**
   - PF Plaster Sub-Frame
10. **Gaskets**
    - GK Foam Gasket
11. **Earthquake Tabs**
    - EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

   The "default" will automatically select "standard". For example, an aluminum double deflection register, front airfoil blades vertical and steel damper, is **Model 71DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

MODEL SERIES: 7100
ALUMINUM AIRFOIL BLADE SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

71DV, 71DH Double Deflection
Furnish and install **Nailor Model** (select one) **71DV** or **71DH Airfoil Blade Double Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a double set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

71SV, 71SH Single Deflection
Furnish and install **Nailor Model** (select one) **71SV** or **71SH Airfoil Blade Single Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

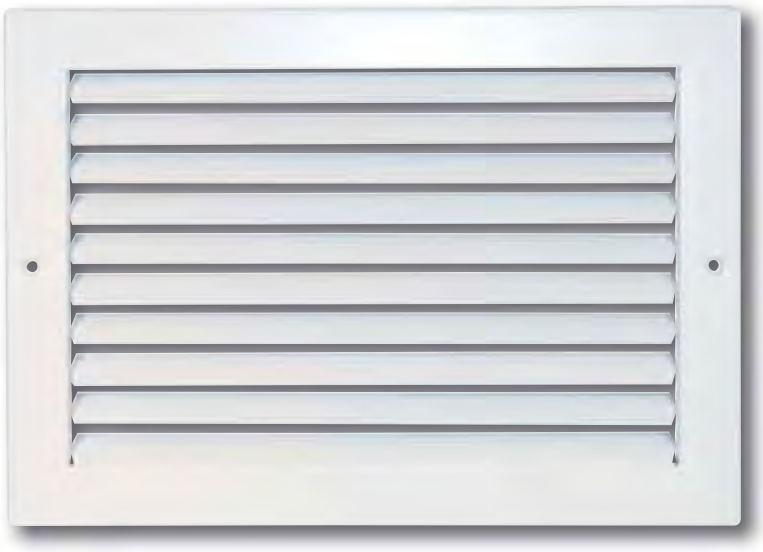
AIRFOIL BLADE RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

7145H, 7145V, 71FH and 71FV

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 7145H

Models 7145H and 71FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 7145V and 71FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 7100 Series.

The streamlined airfoil shaped blades and open spacing maintain a minimum effective free area capacity of 55% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

CONSTRUCTION MATERIAL:

- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

FINISH OPTIONS:

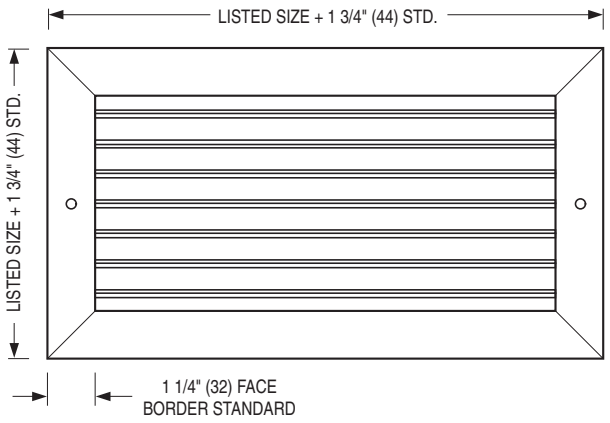
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

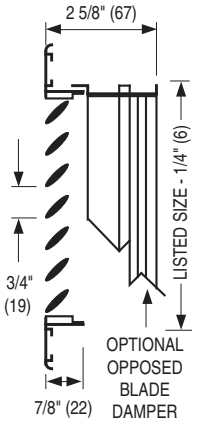
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

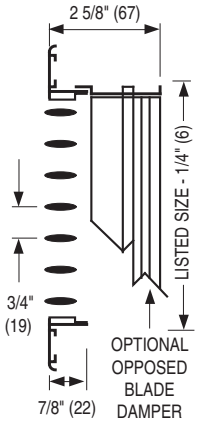
DIMENSIONAL DATA:
7100 SERIES RETURN 3/4" (19) BLADE SPACING



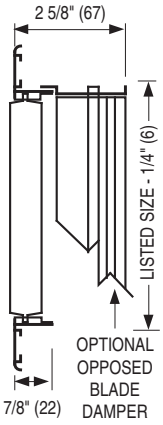
Model 71FH



Model 7145H
Horizontal Blades

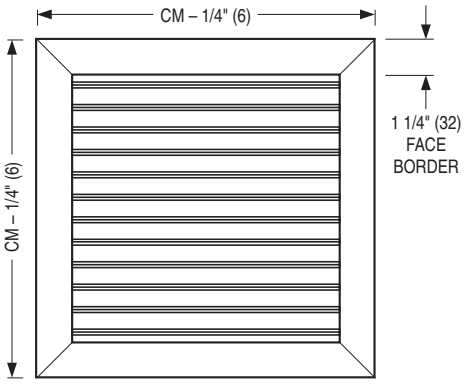


Model 71FH
Horizontal Blades

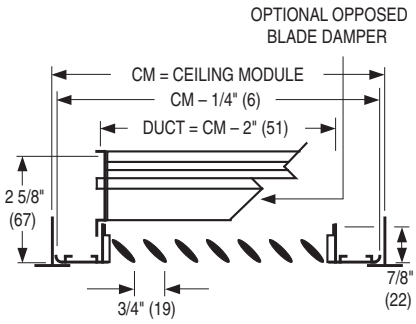


Model 71FV
Vertical Blades

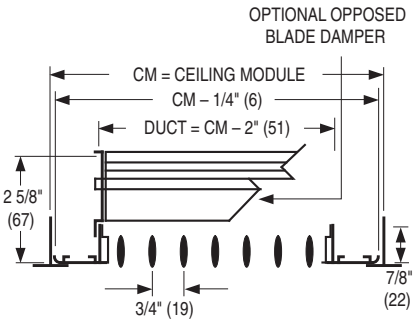
Frame/Border Type S – Surface Mount



Model 71FH

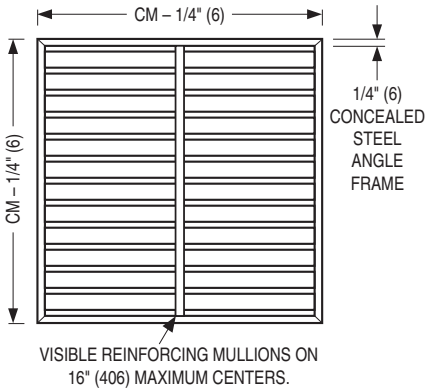


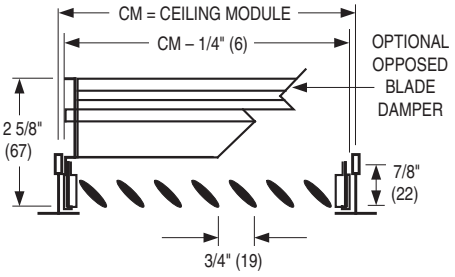
Model 7145H
Horizontal Blades



Model 71FH
Horizontal Blades

Frame/Border Type L – Lay-in T-Bar





Model 7145H
Horizontal Blades

Frame/Border Type A –
Lay-in T-Bar, Concealed Angle Frame

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)		Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
6 x 6	8 x 4 10 x 4		0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 17	**140** 22	**160** 26	**180** 30	**200** 34
8 x 6	10 x 5 12 x 4		0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** –	**168** 18	**196** 23	**224** 27	**252** 31	**280** 35
10 x 6	12 x 5 16 x 4		0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** –	**210** 19	**245** 24	**280** 28	**315** 32	**350** 36
8 x 8	14 x 5		0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 15	**228** 20	**266** 25	**304** 29	**342** 33	**380** 37
12 x 6	18 x 4		0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 16	**252** 21	**294** 25	**336** 29	**378** 33	**420** 37
12 x 8	16 x 6 24 x 4		0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 17	**348** 22	**406** 26	**464** 31	**522** 35	**580** 39
10 x 10	14 x 7 26 x 4		0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 17	**366** 22	**427** 27	**488** 32	**549** 35	**610** 39
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** –	**325** 18	**390** 23	**455** 28	**520** 32	**585** 36	**650** 39
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** –	**370** 18	**444** 23	**518** 28	**592** 33	**666** 37	**740** 40
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** –	**450** 19	**540** 24	**630** 29	**720** 34	**810** 37	**900** 40
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** –	**620** 19	**744** 24	**868** 29	**992** 34	**1116** 38	**1240** 41
18 x 12	16 x 14 20 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** 15	**685** 20	**822** 25	**959** 30	**1096** 35	**1233** 38	**1370** 41
24 x 10	20 x 12 30 x 8		1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** 15	**760** 20	**912** 25	**1064** 30	**1216** 36	**1368** 39	**1520** 42
16 x 16	18 x 14 22 x 12		1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** 16	**820** 21	**984** 26	**1148** 31	**1312** 36	**1476** 39	**1640** 42
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** 16	**925** 21	**1110** 26	**1295** 31	**1480** 36	**1665** 39	**1850** 43
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** 16	**1050** 21	**1260** 27	**1470** 32	**1680** 37	**1890** 40	**2100** 43
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** 17	**1160** 22	**1392** 27	**1624** 32	**1856** 37	**2088** 40	**2320** 44
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** 17	**1305** 22	**1566** 28	**1827** 33	**2088** 38	**2349** 41	**2610** 44
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 18	**1585** 23	**1902** 29	**2219** 33	**2536** 38	**2853** 41	**3170** 45
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 18	**1770** 23	**2124** 29	**2478** 34	**2832** 39	**3186** 42	**3540** 46
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 18	**1895** 23	**2274** 29	**2653** 34	**3032** 39	**3411** 42	**3790** 46
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 19	**2135** 24	**2562** 30	**2989** 35	**3416** 40	**3843** 43	**4270** 47
26 x 26	28 x 24 48 x 14		4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** –	**1788** 19	**2235** 24	**2682** 30	**3129** 35	**3576** 40	**4023** 43	**4470** 47
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** –	**1908** 20	**2385** 25	**2862** 31	**3339** 36	**3816** 40	**4293** 44	**4770** 48
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** –	**2080** 20	**2600** 25	**3120** 31	**3640** 36	**4160** 41	**4680** 44	**5200** 48
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** –	**2296** 20	**2870** 26	**3444** 32	**4018** 36	**4592** 41	**5166** 45	**5740** 49
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** –	**2396** 20	**2995** 26	**3594** 32	**4193** 37	**4792** 41	**5391** 45	**5990** 49

For performance data notes, see F82.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** –	**2736** 21	**3420** 27	**4104** 33	**4788** 37	**5472** 42	**6156** 46	**6840** 50
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** 15	**3076** 21	**3845** 27	**4614** 33	**5383** 38	**6152** 42	**6921** 46	**7690** 50
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** 15	**3476** 22	**4345** 27	**5214** 34	**6083** 39	**6952** 43	**7821** 47	**8690** 51
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** 16	**3880** 22	**4850** 28	**5820** 34	**6790** 39	**7760** 43	**8730** 47	**9700** 51
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** 16	**4308** 22	**5385** 28	**6462** 34	**7539** 40	**8616** 43	**9693** 48	**10770** 52
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** 17	**4756** 23	**5945** 29	**7134** 35	**8323** 40	**9512** 44	**10701** 48	**11890** 52
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** 17	**5228** 23	**6535** 29	**7842** 35	**9149** 40	**10456** 44	**11763** 48	**13070** 52
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** 18	**5720** 24	**7150** 30	**8580** 36	**10010** 41	**11440** 45	**12870** 49	**14300** 53
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** 18	**6236** 24	**7795** 30	**9354** 36	**10913** 41	**12472** 45	**14031** 49	**15590** 53

Performance Notes:

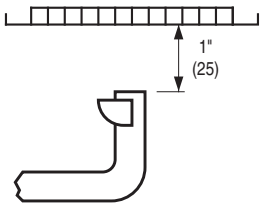
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 71FH, 71FV

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .007	300 .006 .017	400 .010 .030	500 .016 .047	600 .022 .067	700 .031 .092	800 .040 .120	900 .050 .152	1000 .062 .187
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 17	**140** 22	**160** 26	**180** 30	**200** 34
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** –	**168** 18	**196** 23	**224** 27	**252** 31	**280** 35
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** –	**210** 19	**245** 24	**280** 28	**315** 32	**350** 36
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 15	**228** 20	**266** 25	**304** 29	**342** 33	**380** 37
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** –	**252** 17	**294** 20	**336** 23	**378** 27	**420** 31
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** –	**348** 17	**406** 20	**464** 24	**522** 28	**580** 32
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** –	**366** 17	**427** 20	**488** 25	**549** 28	**610** 33
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** –	**325** –	**390** 18	**455** 21	**520** 25	**585** 29	**650** 33
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** –	**370** –	**444** 19	**518** 22	**592** 26	**666** 30	**740** 33
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** –	**450** 15	**540** 19	**630** 22	**720** 27	**810** 30	**900** 33
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** –	**620** 15	**744** 20	**868** 23	**992** 27	**1116** 31	**1240** 34
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** –	**685** 16	**822** 21	**959** 24	**1096** 29	**1233** 32	**1370** 35
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** –	**760** 16	**912** 21	**1064** 25	**1216** 30	**1368** 33	**1520** 36
16 x 16	18 x 14 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** –	**820** 17	**984** 21	**1148** 25	**1312** 30	**1476** 33	**1640** 36
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** –	**925** 17	**1110** 22	**1295** 25	**1480** 30	**1665** 33	**1850** 37
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** –	**1050** 17	**1260** 22	**1470** 26	**1680** 31	**1890** 34	**2100** 37
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** –	**1160** 17	**1392** 22	**1624** 26	**1856** 31	**2088** 34	**2320** 38
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** –	**1305** 17	**1566** 22	**1827** 26	**2088** 31	**2349** 34	**2610** 38
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** –	**1585** 18	**1902** 23	**2219** 27	**2536** 31	**2853** 34	**3170** 38
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** –	**1770** 18	**2124** 23	**2478** 27	**2832** 32	**3186** 35	**3540** 39
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** –	**1895** –	**2274** –	**2653** –	**3032** –	**3411** –	**3790** –
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 15	**2135** 20	**2562** 24	**2989** 28	**3416** 33	**3843** 36	**4270** 40
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**864** –	**1341** –	**1788** 15	**2235** 20	**2682** 24	**3129** 28	**3576** 33	**4023** 36	**4470** 40
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** –	**1908** 16	**2385** 21	**2862** 25	**3339** 29	**3816** 33	**4293** 37	**4770** 41
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** –	**2080** 16	**2600** 21	**3120** 25	**3640** 29	**4160** 34	**4680** 37	**5200** 41
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** –	**2296** 16	**2870** 21	**3444** 25	**4018** 29	**4592** 34	**5166** 38	**5740** 42
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** –	**2396** 16	**2995** 21	**3594** 26	**4193** 30	**4792** 34	**5391** 38	**5990** 42

For performance data notes, see F84.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 71FH, 71FV

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .007	300 .006 .017	400 .010 .030	500 .016 .047	600 .022 .067	700 .031 .092	800 .040 .120	900 .050 .152	1000 .062 .187
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** –	**2736** 16	**3420** 22	**4104** 26	**4788** 30	**5472** 35	**6156** 39	**6840** 43
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** –	**3076** 16	**3845** 22	**4614** 27	**5383** 31	**6152** 35	**6921** 39	**7690** 43
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** –	**3476** 17	**4345** 22	**5214** 27	**6083** 32	**6952** 36	**7821** 40	**8690** 44
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** –	**3880** 17	**4850** 23	**5820** 28	**6790** 32	**7760** 36	**8730** 40	**9700** 44
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** –	**4308** 18	**5385** 24	**6462** 28	**7539** 33	**8616** 36	**9693** 41	**10770** 45
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** –	**4756** 18	**5945** 24	**7134** 29	**8323** 33	**9512** 37	**10701** 41	**11890** 45
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** –	**5228** 18	**6535** 24	**7842** 29	**9149** 33	**10456** 37	**11763** 41	**13070** 45
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** –	**5720** 19	**7150** 25	**8580** 30	**10010** 34	**11440** 38	**12870** 42	**14300** 46
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** –	**6236** 19	**7795** 25	**9354** 30	**10913** 34	**12472** 38	**14031** 42	**15590** 46

Performance Notes:

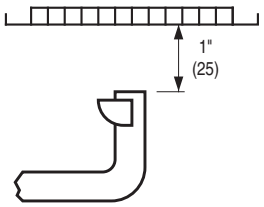
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 7100

ALUMINUM AIRFOIL BLADE RETURN GRILLES AND REGISTERS

EXAMPLE: 7145H - O - 24 x 12 - S - — - AW - DMI - A - —

1. **Models**
   Horizontal/Long Dimension Blades:
   - 71FH Fixed, 0° Deflection, 3/4" (19) Spacing
   - 7145H Fixed, 45° Deflection, 3/4" (19) Spacing

   Vertical/Short Dimension Blades:
   - 71FV Fixed, 0° Deflection, 3/4" (19) Spacing
   - 7145V Fixed, 45° Deflection, 3/4" (19) Spacing
2. **Damper (OBD)**
   (model suffix)
   - O Steel
   - OA Aluminum
   - — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size
   For Type L and A, W x H = Ceiling Module Size
4. **Frame/Border Type**
   Surface Mount:
   - S Surface Mount Border 1 1/4" (32) (standard) (default)
   - NF Narrow Frame/Border 1" (25)

   Ceiling Grid:
   - L Lay-in T-Bar *
   - A Angle Frame

   Panel Mount: **
   - PLS Steel Lay-in T-Bar Panel
   - PLA Aluminum Lay-in T-Bar Panel
   - FPS Steel Fineline® Panel
   - FPA Aluminum Fineline® Panel
   - SPS Steel Spline Panel
   - SPA Aluminum Spline Panel
   - MPS Steel Metal Pan Panel
   - MPA Aluminum Metal Pan Panel
   - TPS Steel Tegular Panel
   - TPA Aluminum Tegular Pan Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PL, SP, MP, FP and TP)
   - — None (default)

   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24

   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared Aluminum
   - SA Satin Anodized (clear)
   - SP Special Custom Color
7. **Opposed Blade Damper Finish**
   - DMI Mill (default)
   - DBK Painted Black
8. **Fastening**
   (only for frame/border Types S, NF)
   - A Screw Holes (default)
   - C Concealed Mounting Straps
   - D Concealed Screw Holes in Neck***
   - N None

OPTIONS & ACCESSORIES:

- — None (default)

9. **Insect Screen**
   - IS Insect Screen
10. **Plaster Sub-Frame**
    - PF Plaster Sub-Frame
11. **Gaskets**
    - GK Foam Gasket
12. **Earthquake Tabs**
    - EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically select "standard". For example, an aluminum register, fixed 45° airfoil blades vertical and steel damper, is **Model 7145V-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).

3. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

4. * For Type L Lay-in, grille neck size is ceiling module size – 2 (51).

** For Panel mounting, maximum grille neck size is ceiling module size – 3 (76).

*** Only available on Fixed 0° deflection.

MODEL SERIES: 7100

ALUMINUM AIRFOIL BLADE RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **7145H, 7145V, 71FH** or **71FV Airfoil Blade Airfoil Blade Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

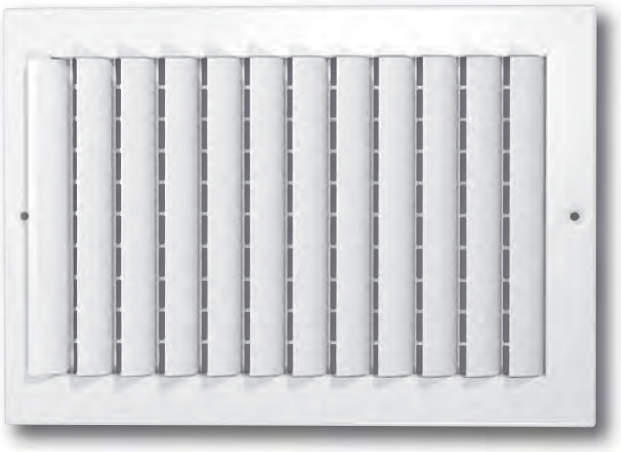
ALUMINUM CURVED BLADE GRILLES AND REGISTERS

- SUPPLY

Models:

51C and 51CD with One and Two-way Discharge Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 51CD (Pattern 1B)

Models 51C and 51CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

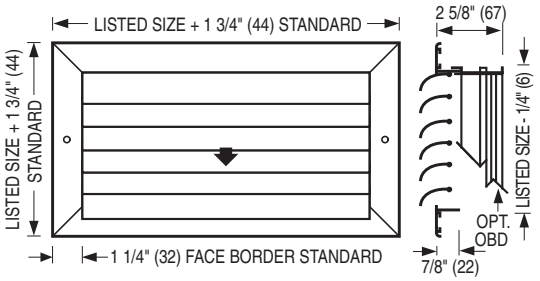
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

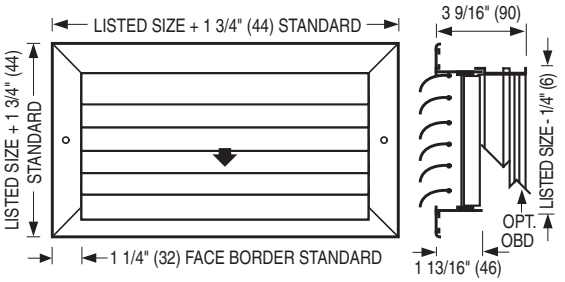
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

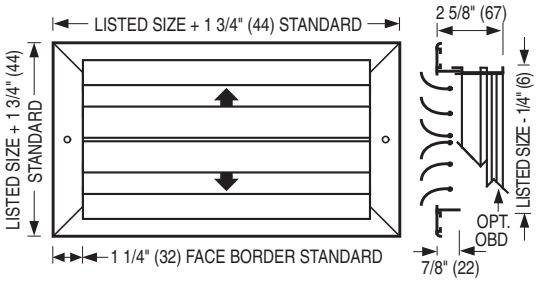
For additional options and accessories, see page F191.



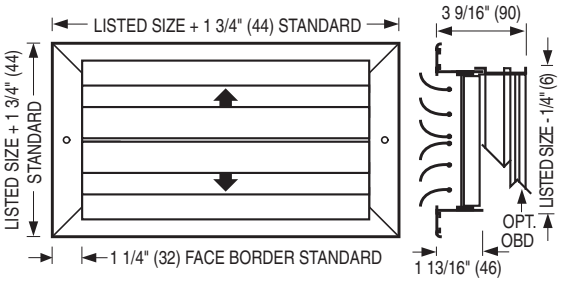
Model 51C One-way Blow (1A)



Model 51CD One-way Blow (1A) with Rear Directional Vanes



Model 51C Two-way Blow (2A)



Model 51CD Two-way Blow (2A) with Rear Directional Vanes

ALUMINUM CURVED BLADE GRILLES AND REGISTERS

- SUPPLY

Models:

51C with Three and Four-way Discharge Pattern

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 51C (Pattern 3A)

Model 51C Pattern 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. Model 51C Pattern 4A, 4B or 4C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Adjustable pattern – grille blades easily adjustable to provide horizontal three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

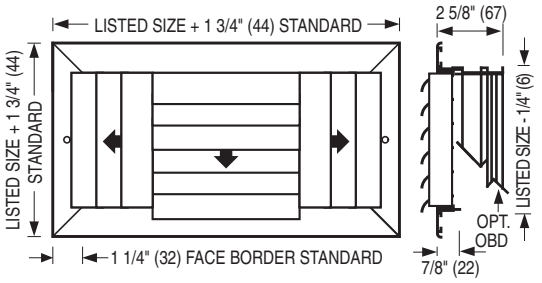
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

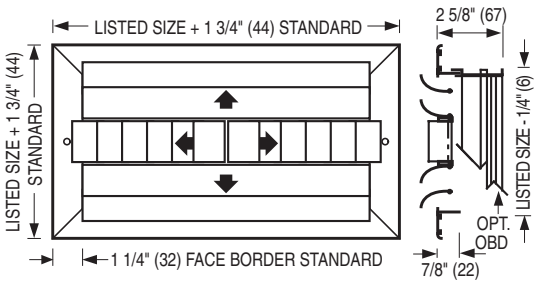
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

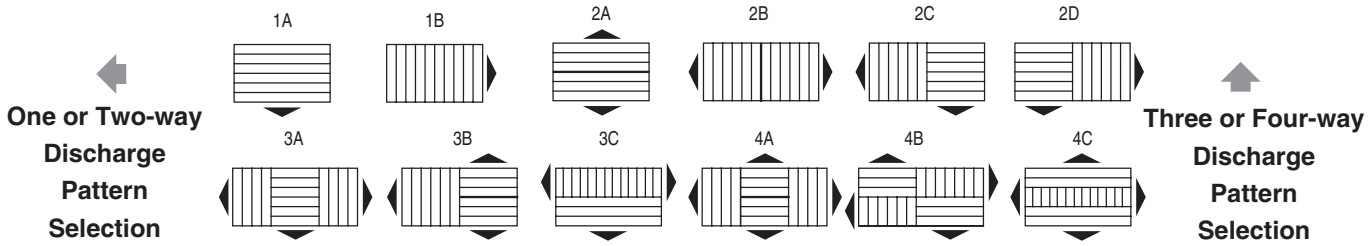
For additional options and accessories, see page F191.



Model 51C Three-way Blow (3A)



Model 51C Four-way Blow (4A)



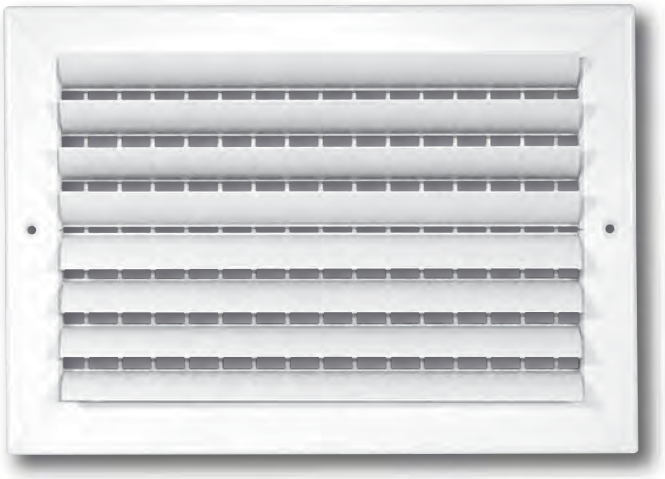
STEEL CURVED BLADE GRILLES AND REGISTERS

- SUPPLY

Models:

61C and 61CD with One and Two-way Discharge Pattern

- **Suffix '-O' adds a steel opposed blade damper**



Model 61CD (Pattern 2A)

Models 61C and 61CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Heavy gauge, roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Integral dampers - roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

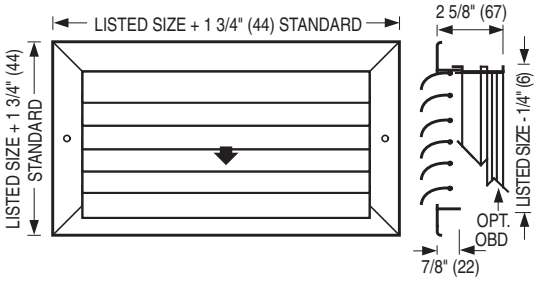
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

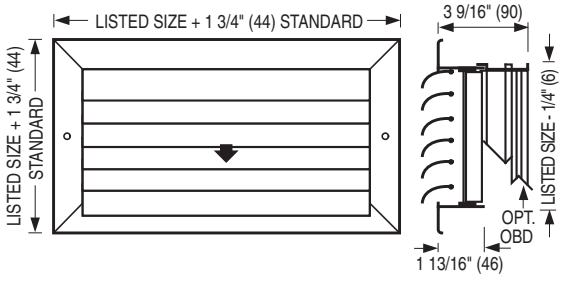
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

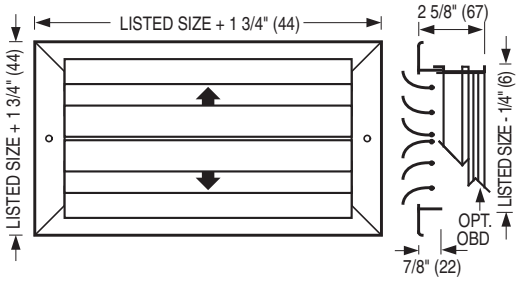
For additional options and accessories, see page F191.



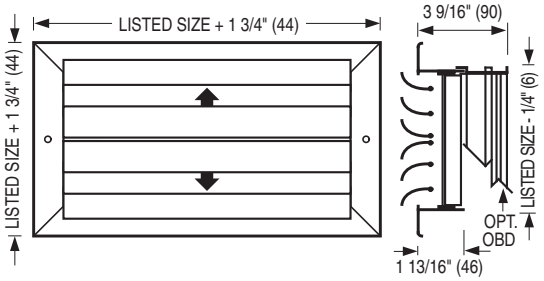
Model 61C One-way Blow (1A)



Model 61CD One-way Blow (1A) with Rear Directional Vanes



Model 61C Two-way Blow (2A)



Model 61CD Two-way Blow (2A) with Rear Directional Vanes

STEEL CURVED BLADE GRILLES AND REGISTERS

- **SUPPLY**

Models:

61C with Three and Four-way Discharge Pattern

- **Suffix '-O' adds a steel opposed blade damper**

Model 61C (Pattern 4A)

Model 61C Patterns 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. Model 61C Patterns 4A, 4B or 4C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Adjustable pattern – grille blades easily adjustable to provide horizontal three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Heavy gauge roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Integral dampers - roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

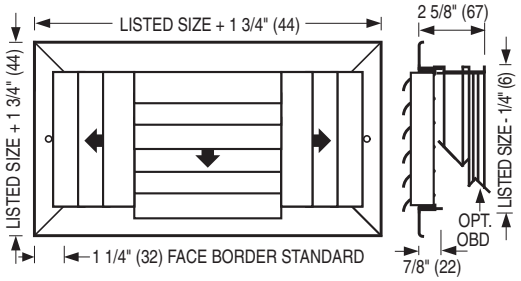
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

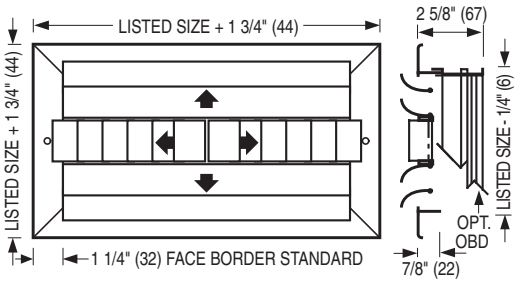
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

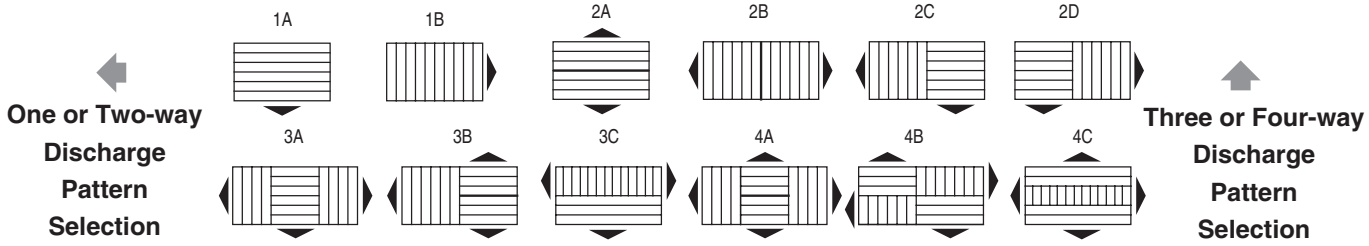
For additional options and accessories, see page F191.



Model 61C Three-way Blow (3A)



Model 61C Four-way Blow (4A)



PERFORMANCE DATA:
CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES
MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
.12	6 x 4	CFM	10	25	35	50	60	70	85	95	110	120
		Noise Criteria	–	–	–	–	20	23	27	30	33	36
		Throw 4-Way				5-7-11	5-8-13	7-10-16	8-12-18	9-13-20	10-15-23	11-16-25
		Throw 3-Way				5-7-12	9-6-14	7-11-16	8-12-19	10-14-22	10-16-24	12-17-27
		Throw 2-Way				5-8-13	7-10-16	8-12-18	9-14-21	10-16-24	12-17-27	13-18-30
		Throw 1-Way				7-10-16	8-12-18	10-14-22	11-16-26	12-18-29	14-20-33	15-22-36
.16	8 x 4	CFM	15	30	50	65	80	95	110	130	145	160
		Noise Criteria	–	–	–	15	20	25	29	31	34	37
		Throw 4-Way			4-6-9	5-7-12	6-9-14	7-11-16	8-12-19	9-14-21	10-16-24	12-17-27
		Throw 3-Way			4-6-10	5-8-13	6-9-15	8-12-18	9-14-21	10-15-23	11-16-26	12-18-29
		Throw 2-Way			5-7-11	6-9-14	7-11-16	9-13-20	10-15-23	11-16-26	12-18-29	14-20-32
		Throw 1-Way			5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	13-19-31	15-21-35	16-24-39
.20	10 x 4 6 x 6	CFM	20	40	60	80	100	120	140	160	180	200
		Noise Criteria	–	–	–	15	21	26	29	32	35	38
		Throw 4-Way			4-6-9	5-8-13	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	12-17-28
		Throw 3-Way			4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-28	13-19-31
		Throw 2-Way			5-7-11	5-9-15	8-11-17	9-14-21	10-16-24	12-17-28	13-19-31	15-21-39
		Throw 1-Way			6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41
.26	12 x 4 8 x 6	CFM	25	50	80	105	130	155	180	210	235	260
		Noise Criteria	–	–	–	16	22	27	30	33	36	39
		Throw 4-Way		3-4-7	4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-29	13-19-31
		Throw 3-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	13-18-30	14-20-33
		Throw 2-Way		3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	11-16-26	13-18-30	14-20-33	16-23-37
		Throw 1-Way		4-6-10	6-9-15	8-12-18	10-15-23	12-17-27	13-19-31	15-22-36	16-25-40	17-27-44
.30	14 x 4	CFM	30	60	90	120	150	180	210	240	270	300
		Noise Criteria	–	–	–	17	22	27	31	34	37	40
		Throw 4-Way		3-4-7	4-6-10	6-9-14	7-11-16	7-11-16	9-13-20	10-15-23	12-18-29	14-20-32
		Throw 3-Way		3-5-8	5-7-11	6-9-15	8-12-18	8-12-18	9-14-21	10-16-24	13-19-31	15-21-34
		Throw 2-Way		3-5-8	5-8-13	7-11-16	9-13-20	9-13-20	10-15-23	12-17-27	16-23-37	16-23-38
		Throw 1-Way		4-6-10	6-9-15	8-12-19	10-16-24	10-16-24	12-17-28	14-20-33	17-26-42	19-28-46
.35	16 x 4 10 x 6 8 x 8	CFM	35	70	105	140	175	210	245	280	315	350
		Noise Criteria	–	–	–	18	23	28	31	35	37	40
		Throw 4-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-16-24	12-17-27	13-18-30	14-20-33
		Throw 3-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	14-18-29	14-20-32	15-22-36
		Throw 2-Way		4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	14-20-32	15-22-36	16-25-40
		Throw 1-Way		4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
.40	18 x 4 12 x 6	CFM	40	80	120	160	200	240	280	320	360	400
		Noise Criteria	–	–	–	19	24	29	32	35	38	41
		Throw 4-Way		3-5-8	5-7-11	6-9-15	8-12-18	9-14-21	11-16-25	12-17-28	13-19-31	15-21-34
		Throw 3-Way		3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	11-16-26	13-18-30	15-21-34	16-23-37
		Throw 2-Way		4-6-9	6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41
		Throw 1-Way		5-7-11	7-10-16	9-14-21	11-16-25	13-18-30	15-21-35	16-25-40	18-28-45	20-31-49
.45	20 x 4 14 x 6 10 x 8	CFM	45	90	135	180	225	270	315	360	405	450
		Noise Criteria	–	–	–	19	25	29	32	36	39	42
		Throw 4-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	12-18-29	14-20-32	15-22-36
		Throw 3-Way		3-5-8	5-8-13	7-11-16	9-13-20	10-15-23	12-17-27	13-19-31	15-21-35	16-23-38
		Throw 2-Way		4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-43
		Throw 1-Way		5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-32-51
.55	24 x 4 16 x 6 12 x 8	CFM	55	110	165	220	275	330	385	440	495	550
		Noise Criteria	–	–	–	20	25	29	33	37	39	42
		Throw 4-Way	2-3-4	3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	12-17-27	13-18-30	15-22-34	16-23-38
		Throw 3-Way	2-3-5	4-6-9	5-8-13	8-11-17	9-14-21	11-16-25	12-18-29	14-20-32	16-23-37	16-25-40
		Throw 2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-15-23	12-17-28	14-26-32	15-22-36	16-25-40	18-28-45
		Throw 1-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-28	14-20-33	16-23-38	17-26-43	20-30-49	22-34-54

For performance data notes, see F93.

PERFORMANCE DATA:

CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
.62	18 x 6 10 x 10	CFM	60	125	185	250	310	370	435	495	560	620
		Noise Criteria	–	–	–	20	26	30	34	37	40	43
		Throw 4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39
		Throw 3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42
		Throw 2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
		Throw 1-Way	2-4-6	5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55
.70	30 x 4 20 x 6 14 x 8 12 x 10	CFM	70	140	210	280	350	420	490	560	630	700
		Noise Criteria	–	–	–	20	26	30	34	38	40	43
		Throw 4-Way	2-3-5	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-19-28	14-20-32	15-22-36	16-25-40
		Throw 3-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-19-31	15-21-35	16-24-39	17-26-43
		Throw 2-Way	2-4-6	5-7-11	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
		Throw 1-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-52	24-36-57
.81	36 x 4 24 x 6 16 x 8 14 x 10	CFM	80	160	245	325	405	485	565	650	730	810
		Noise Criteria	–	–	15	21	27	31	35	38	41	44
		Throw 4-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-26-42
		Throw 3-Way	2-3-5	4-6-10	6-9-15	8-12-19	11-16-25	12-17-27	14-20-32	15-22-36	16-25-40	18-28-45
		Throw 2-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-25	13-18-30	15-21-35	17-25-40	18-28-45	20-31-49
		Throw 1-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-19-31	16-23-37	17-26-43	19-30-48	22-33-53	25-38-60
.87	18 x 8 12 x 12	CFM	85	175	260	350	435	520	610	695	785	870
		Noise Criteria	–	–	–	21	27	31	35	38	41	44
		Throw 4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42
		Throw 3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46
		Throw 2-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51
		Throw 1-Way	3-4-7	6-9-14	8-12-19	11-16-25	13-19-30	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62
1.02	30 x 6 20 x 8 16 x 10 14 x 12	CFM	100	205	305	410	510	610	715	815	920	1020
		Noise Criteria	–	–	15	22	28	32	36	39	42	45
		Throw 4-Way	2-3-5	4-6-10	6-9-15	8-12-18	10-15-23	12-17-27	13-19-31	15-21-35	16-25-40	18-27-44
		Throw 3-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-43	19-29-47
		Throw 2-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-42	19-30-48	22-33-53
		Throw 1-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-46-57	26-40-63
1.15	24 x 8 18 x 10 16 x 12	CFM	115	230	345	460	575	690	805	920	1040	1150
		Noise Criteria	–	–	16	23	29	32	36	40	43	46
		Throw 4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	18-28-45
		Throw 3-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-25-40	18-27-44	20-30-49
		Throw 2-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-28	14-20-33	16-24-39	18-27-44	20-30-49	22-34-54
		Throw 1-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-40	19-28-46	21-33-53	24-36-58	27-41-66
1.25	36 x 6 20 x 10 14 x 14	CFM	125	250	375	500	625	750	875	1000	1120	1250
		Noise Criteria	–	–	16	23	29	33	37	40	43	46
		Throw 4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
		Throw 3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49
		Throw 2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55
		Throw 1-Way	3-5-8	6-9-15	9-14-20	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67
1.35	16 x 14 18 x 12	CFM	135	270	405	540	675	810	945	1080	1220	1350
		Noise Criteria	–	–	16	23	29	33	37	40	43	46
		Throw 4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
		Throw 3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
		Throw 2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
		Throw 1-Way	3-5-8	6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68
1.53	30 x 8 24 x 10 20 x 12 18 x 14 16 x 16	CFM	155	305	460	610	765	920	1070	1220	1380	1530
		Noise Criteria	–	–	17	24	29	34	38	41	44	47
		Throw 4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
		Throw 3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
		Throw 2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
		Throw 1-Way	3-5-8	7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	2-31-49	23-35-49	26-40-63	29-45-71

For performance data notes, see F93.

PERFORMANCE DATA:
CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES
MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
1.82	36 x 8 30 x 10 24 x 12 20 x 14 18 x 16	CFM	182	365	545	730	910	1090	1279	1460	1640	1820
		Noise Criteria	–	–	18	25	30	34	38	42	45	48
		Throw 4-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-32-51
		Throw 3-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-31-49	23-35-55
		Throw 2-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	25-38-61
		Throw 1-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	28-41-66	31-47-74
2.10	24 x 14 20 x 16 18 x 18	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
		Noise Criteria	–	–	19	25	30	35	39	42	45	48
		Throw 4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48	22-33-53
		Throw 3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
		Throw 2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57	27-40-64
		Throw 1-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68	32-49-78
2.35	36 x 10 30 x 12 24 x 16 20 x 18	CFM	235	470	705	940	1180	1410	1640	1880	2120	2350
		Noise Criteria	–	–	19	26	31	35	39	43	46	49
		Throw 4-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-30-49	23-35-55
		Throw 3-Way	3-4-7	5-8-13	8-12-19	10-16-24	13-18-30	15-22-36	17-26-42	19-30-48	22-33-53	24-36-58
		Throw 2-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	21-33-52	24-37-59	33-49-80
		Throw 1-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-44-70	33-49-80
2.68	36 x 12 30 x 14 24 x 18 20 x 20	CFM	270	535	805	1070	1340	1610	1880	2140	2410	2680
		Noise Criteria	–	–	19	26	31	36	40	43	46	48
		Throw 4-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-31-50	24-36-57
		Throw 3-Way	3-4-7	6-9-14	8-12-19	11-16-25	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	25-38-61
		Throw 2-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	19-29-47	19-30-48	22-34-54	25-38-60	27-43-68
		Throw 1-Way	4-6-9	8-11-17	11-16-26	15-21-34	17-26-42	20-31-49	24-36-57	27-40-64	30-46-73	34-51-82
3.15	36 x 14 30 x 16 24 x 20	CFM	315	630	945	1260	1580	1890	2200	2520	2840	3150
		Noise Criteria	–	–	20	27	32	37	41	44	47	49
		Throw 4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53	25-38-60
		Throw 3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57	27-40-64
		Throw 2-Way	3-5-8	7-10-16	10-13-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63	29-45-71
		Throw 1-Way	4-6-10	8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77	36-54-86
3.65	36 x 16 30 x 18 24 x 24	CFM	365	730	1100	1460	1820	2190	2560	2920	3280	3650
		Noise Criteria	–	–	20	28	33	37	41	45	48	50
		Throw 4-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	26-39-62
		Throw 3-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	22-33-53	24-37-59	27-41-66
		Throw 2-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	27-41-66	31-47-74
		Throw 1-Way	4-6-10	8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-50-80	37-55-89
4.05	36 x 18 30 x 20	CFM	405	810	1220	1620	2020	2430	2830	3240	3640	4050
		Noise Criteria	–	–	21	28	33	38	42	45	48	50
		Throw 4-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-36-57	27-40-64
		Throw 3-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	17-26-42	19-30-48	22-34-54	25-38-61	28-43-68
		Throw 2-Way	4-6-9	7-11-16	10-15-24	13-19-31	16-24-39	19-28-46	22-33-53	25-38-60	28-43-68	32-48-77
		Throw 1-Way	4-6-10	8-12-19	12-18-29	16-23-38	19-28-46	23-35-55	27-40-64	30-45-72	34-50-81	38-57-91
4.72	36 x 20 30 x 24	CFM	470	945	1420	1890	2360	2830	3300	3780	4250	4720
		Noise Criteria	–	–	21	30	34	38	42	46	48	51
		Throw 4-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-26-41	19-29-47	31-33-52	24-37-59	27-41-66
		Throw 3-Way	3-5-8	7-10-16	10-14-23	12-18-29	16-23-37	18-27-44	21-31-50	23-35-56	27-40-64	30-45-72
		Throw 2-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-45-71	33-49-80
		Throw 1-Way	5-7-11	9-13-20	13-18-30	16-24-39	19-30-48	24-36-57	27-41-66	31-48-76	36-53-85	40-59-95
5.82	36 x 24 30 x 30	CFM	580	1160	1750	2330	2910	3490	4070	4660	5240	5820
		Noise Criteria	–	–	22	29	35	39	43	47	49	52
		Throw 4-Way	3-5-8	6-9-15	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-56	26-39-62	29-44-70
		Throw 3-Way	4-6-9	7-10-16	10-16-24	13-19-31	16-24-39	19-28-46	22-33-53	24-37-59	28-43-68	31-48-76
		Throw 2-Way	4-6-9	8-11-17	11-16-26	15-21-34	17-26-43	21-31-50	24-36-58	27-41-66	31-47-75	35-52-84
		Throw 1-Way	5-7-11	9-14-21	13-19-31	11-25-41	21-31-50	25-38-60	28-44-70	33-49-80	38-56-90	43-64-102

For performance data notes, see F93.

PERFORMANCE DATA:

CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM		100	200	300	400	500	600	700	800	900	1000
		Total Pressure		.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
7.17	36 x 30	CFM		715	1430	2150	2870	3580	4300	5020	5740	6450	7170
		Noise Criteria		–	–	23	29	35	40	44	48	50	53
		Throw	4-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-22-38	18-28-45	21-33-52	24-36-58	27-41-66	31-47-74
			3-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	20-30-49	23-35-55	26-40-63	29-45-71	33-49-80
			2-Way	4-6-10	8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-49-80	37-55-89
			1-Way	5-7-12	10-14-22	14-20-33	17-26-43	22-33-53	27-40-64	31-47-75	35-52-84	40-59-95	45-67-107
8.63	36 x 36	CFM		865	1730	2590	3450	4320	5180	6040	6900	7700	8630
		Noise Criteria		–	–	24	30	36	41	45	48	50	53
		Throw	4-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-25-40	19-30-48	22-34-54	26-39-62	29-43-69	32-49-78
			3-Way	4-6-10	8-11-17	11-16-26	15-21-34	17-28-43	21-31-50	24-36-58	27-41-66	31-47-75	35-52-85
			2-Way	4-6-10	8-12-19	12-18-29	16-23-38	19-30-47	23-35-56	27-41-65	31-47-66	35-52-83	39-59-93
			1-Way	5-8-13	10-15-23	15-21-35	18-28-45	23-35-57	28-35-57	32-49-78	37-55-88	42-62-100	47-70-113

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential (ΔT) of 20°F and are based on surface mount units benefitting from the ceiling coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, which has the outer blades closest to the frame, set with an opening of 1/8" (3) and progressively wider spacings between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).
4. Blades in the full open position
   - reduce the Noise Criteria by 6.
   - multiply the Total Pressure x 0.3.
5. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 51C
ALUMINUM CURVED BLADE GRILLES AND REGISTERS

EXAMPLE: 51C - O - 24 x 12 - S - AW - DMI - A - 4C - AB - PF

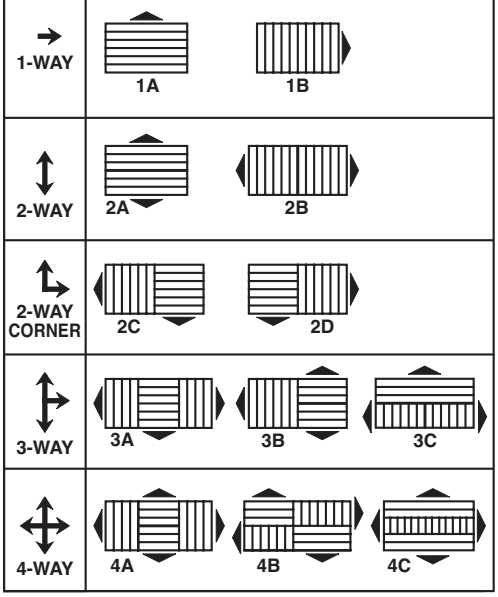
1. **Models**
   - 51C Aluminum
   - 51CD Aluminum w/rear vanes
2. **Damper (OBD)** (model suffix)
   - O Steel
   - OA Aluminum
   - — None
3. **Nominal Width x Height** inches (mm)
4. **Frame/Border Type**
   Surface Mount:
   - S Standard Border 1 1/4" (32) (default)
   - NF Narrow Frame Border 1" (25)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - SA Satin Anodized (clear)
   - SP Special Custom Color
6. **OBD Finish**
   - DMI Mill (default)
   - DBK Painted Black
7. **Fastening**
   - A Screw Holes (default)
   - C Concealed Mounting Straps
   - D Concealed Screw Holes in Neck
   - N None
8. **Blow Pattern**
   - 1A 1-Way Long
   - 1B 1-Way Short
   - 2A 2-Way Long
   - 2B 2-Way Short
   - 2C 2-Way Corner
   - 2D 2-Way Corner
   - 3A 3-Way Short
   - 3B 3-Way Long
   - 3C 3-Way Long
   - 4A 4-Way Long
   - 4B 4-Way Equal
   - 4C 4-Way Short
9. **Front Blades**
   - AB Adjustable (default)
   - FB Fixed

OPTIONS & ACCESSORIES:

- – None (default)

10. **Insect Screen**
    - IS Insect Screen
11. **Plaster Sub-Frame**
    - PF Plaster Sub-Frame
12. **Gaskets**
    - GK Foam Gasket
13. **Earthquake Tabs**
    - EQT Earthquake Tabs

AVAILABLE DISCHARGE PATTERNS



MODEL SERIES: 51C
ALUMINUM CURVED BLADE GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51C** or **51CD (with rear vanes) Aluminum Curved Blade Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape and assembled in a one, two, three or four-way pattern (specify pattern). The frame shall be heavy gauge extruded aluminum and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 61C
STEEL CURVED BLADE GRILLES AND REGISTERS

EXAMPLE: 61C - O - 24 x 12 - S - AW - DMI - A - 4C - AB - PF

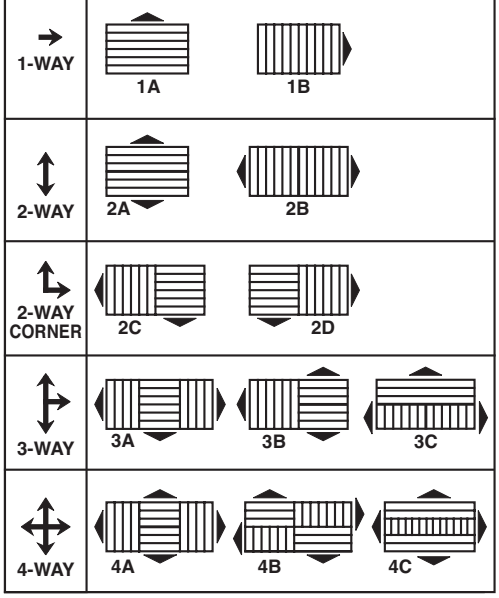
1. **Models**
   - 61C Steel
   - 61CD Steel w/rear vanes
2. **Damper (OBD)** (model suffix)
   - O Steel
   - — None
3. **Nominal Width x Height** inches (mm)
4. **Frame/Border Type**
   - S Standard Border 1 1/4" (32) (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - SP Special Custom Color
6. **OBD Finish**
   - DMI Mill (default)
   - DBK Painted Black
7. **Fastening**
   - A Screw Holes (default)
   - C Concealed Mounting Straps
   - D Concealed Screw Holes in Neck
   - N None
8. **Blow Pattern**
   - 1A 1-Way Long
   - 1B 1-Way Short
   - 2A 2-Way Long
   - 2B 2-Way Short
   - 2C 2-Way Corner
   - 2D 2-Way Corner
   - 3A 3-Way Short
   - 3B 3-Way Long
   - 3C 3-Way Long
   - 4A 4-Way Long
   - 4B 4-Way Equal
   - 4C 4-Way Short
9. **Front Blades**
   - AB Adjustable (default)
   - FB Fixed

OPTIONS & ACCESSORIES:

- – None (default)

10. **Insect Screen**
    - IS Insect Screen
11. **Plaster Sub-Frame**
    - PF Plaster Sub-Frame
12. **Gaskets**
    - GK Foam Gasket
13. **Earthquake Tabs**
    - EQT Earthquake Tabs

AVAILABLE DISCHARGE PATTERNS



MODEL SERIES: 61C
STEEL CURVED BLADE GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **61C** or **61CD (with rear vanes) Steel Curved Blade Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape and assembled in a one, two, three or four-way pattern (specify pattern). The frames shall be heavy gauge roll-formed steel and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

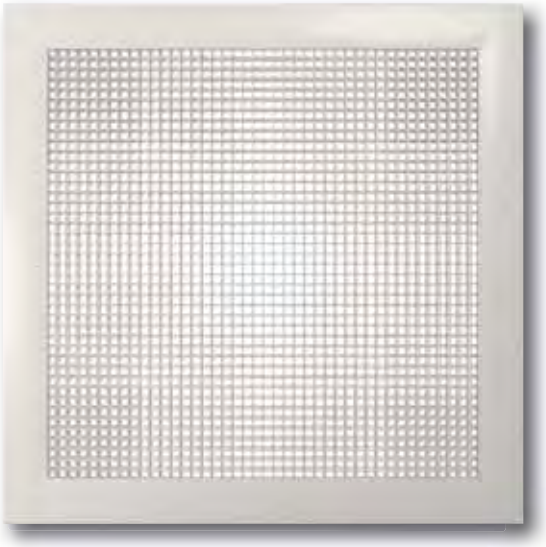
ALUMINUM EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN

Model:

51EC

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 51EC Frame/Border Type L

Model 51EC Eggcrate Return and Exhaust Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the eggcrate core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. The angle frame provides a finished edge to the eggcrate core which may be desirable if it is to be handled on a frequent basis. It also permits the attachment of an optional opposed blade damper.

Frame/Border Type C Lay-in T-Bar, Core Only – The most cost effective return air grille for T-Bar ceilings. The ceiling grid conceals the raw edges of the eggcrate when installed. Suitable for use only in non-ducted plenum return air applications. This model is not available with a damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border or concealed mounting is optional.

- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum frames, mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins, or available as core only. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

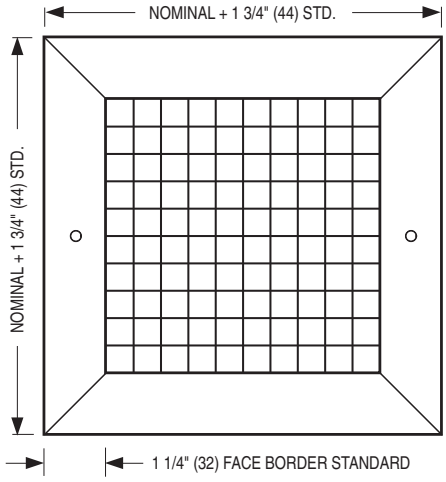
OPTIONS AND ACCESSORIES:

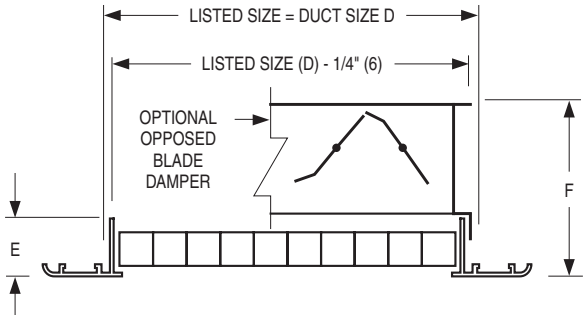
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

DIMENSIONAL DATA:

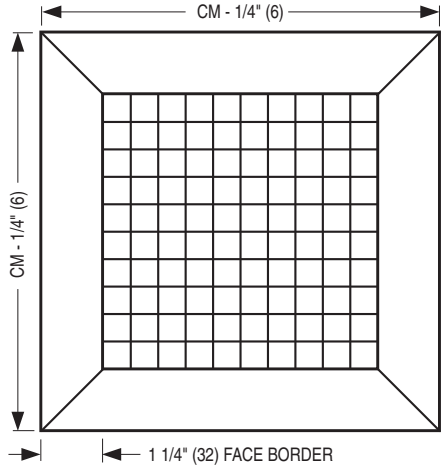
51EC SERIES EGGCRATE RETURN AND EXHAUST

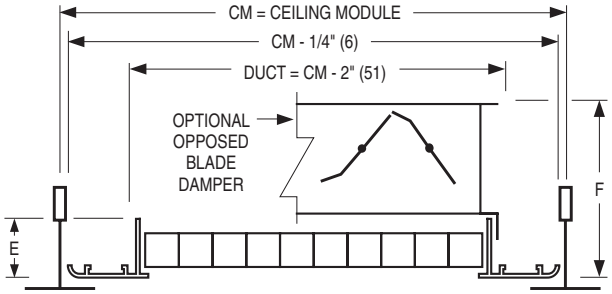




Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	Optional NF Frame and/or Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

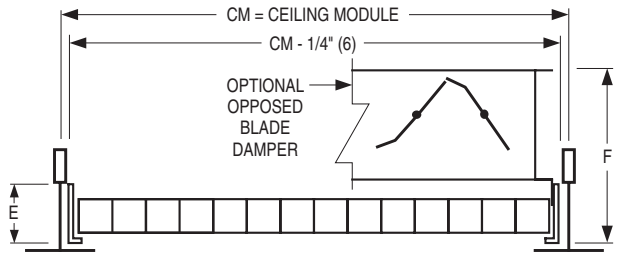
Frame/Border Type S – Surface Mount





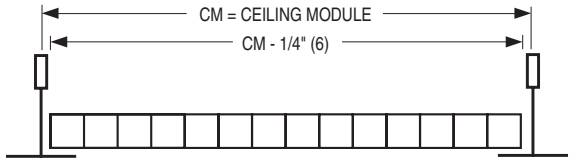
Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type L – Lay-in T-Bar



Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

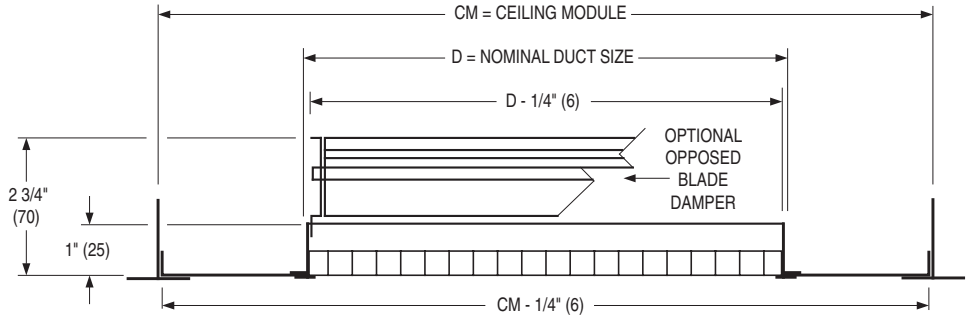
Frame/Border Type A – Concealed Angle Frame



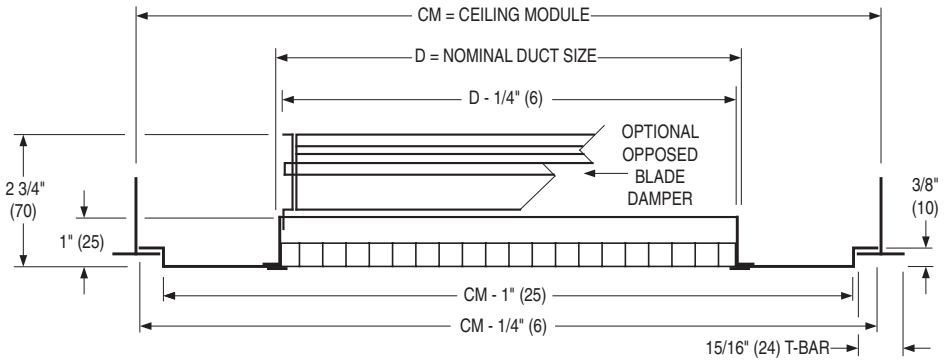
Frame/Border Type C – Core Only

DIMENSIONAL DATA:

51EC SERIES EGGCRATE RETURN AND EXHAUST



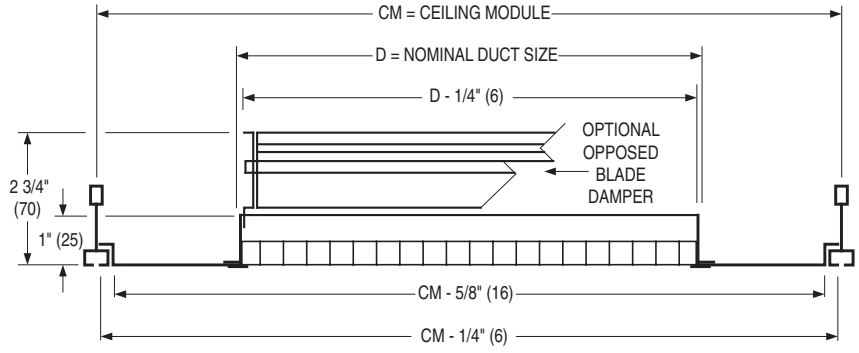
Frame/Border Type PLS or PLA – Panel Mounted – Lay-in T-Bar Type



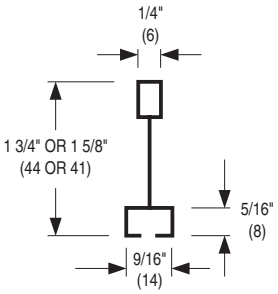
Frame/Border Type TPS or TPA – Tegular Panel Mounted – Lay-in T-Bar Type

Available Ceiling Module Sizes		
Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
24 x 12	610 x 305	600 x 300
36 x 12	914 x 305	900 x 300
48 x 12	1219 x 305	1200 x 300
20 x 20	508 x 508	500 x 500
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 24	1219 x 610	1200 x 600

Max. Duct/Neck Size D = Ceiling Module – 3" (76)



Frame/Border Type FPS or FPA – Panel Mounted Lay-in – Narrow Regressed T-Bar Type



REGRESSED T-BAR DETAIL

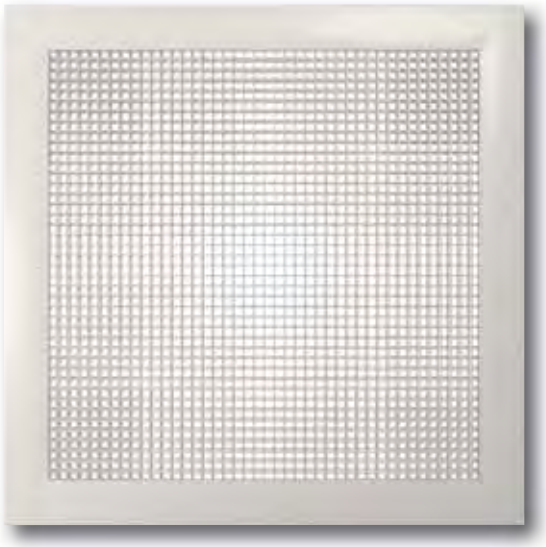
Available Ceiling Module Sizes			Available Duct/ Neck Sizes
Imperial Modules		Metric Modules	
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)	
20 x 20	508 x 508	500 x 500	6" x 6" (152 x 152) up to 16" x 16" (406 x 406) in 2" (51) increments
24 x 24	610 x 610	600 x 600	6" x 6" (152 x 152) up to 20" x 20" (508 x 508) in 2" (51) increments

ALUMINUM EGGCRATE GRILLES

- RETURN
- 100% ALUMINUM
- SUITABLE FOR MRI
- LAY-IN T-BAR

Model:

51EC-MRI



Model 51EC-MRI

Model 51EC-MRI Eggcrate Return and Exhaust Grilles have an aluminum core capable of transferring or returning high air volumes with minimum pressure drop and sound generation. They match in appearance the grid louvers on parabolic light fixtures and are available to suit Lay-in T-Bar openings in suspended grid ceilings. The grilles are constructed with 100% aluminum and are suitable for use in MRI applications.

STANDARD FEATURES:

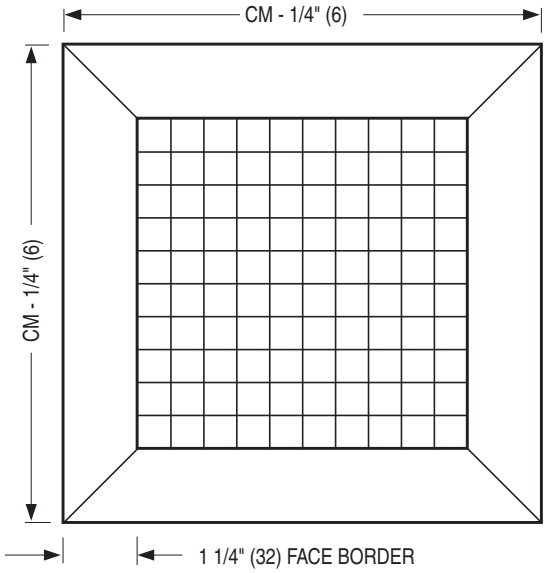
- Frame/Border Type L has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

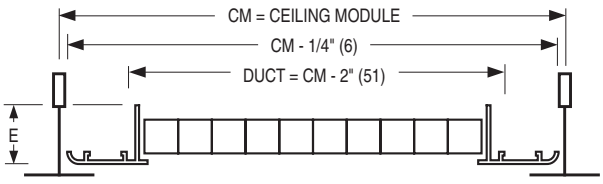
CONSTRUCTION MATERIAL:

- All aluminum construction with heavy gauge welded frame and mitered corners for strength.
- Aluminum grid core (code CA) size of 1/2" x 1/2" x 1/2" (13 x 13 x 13) is standard on all models. A high capacity return or exhaust outlet with maximum ree area for minimum pressure drop and sound generation. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.





Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)

MODEL 51EC-MRI GRILLE Type L Aluminum Frame/Border

Nailor®

ALUMINUM EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN
- 45° DEFLECTION
- SIGHTPROOF

Model:

51EC45

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 51EC45

Model 51EC45 Eggcrate Return and Exhaust Grilles and Registers have an aluminum grid core angled at 45° to prevent see through from three directions. The grid cores are capable of transferring or returning high volumes of air with minimum pressure requirements. Their appearance matches grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to Type S, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the frame style of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin, furnished with countersunk screw holes and mounting screws.
- Available from 4" x 4" to 48" x 24" (102 x 102 to 1219 x 610) in one piece construction.

CONSTRUCTION MATERIAL:

- Aluminum construction – heavy gauge extruded aluminum frame mechanically interlocked with hairline mitered corners.
- Aluminum grid core (code CA). Grid core size of 1/2" x 1/2" x 1/2" (13 x 13 x 13) is angled at 45° to prevent "see through" from three directions is standard.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

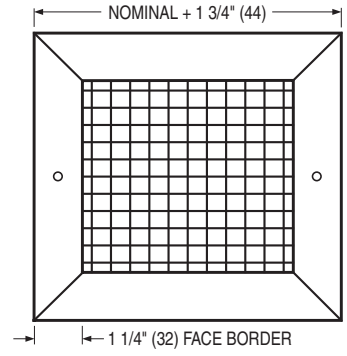
FINISH OPTIONS:

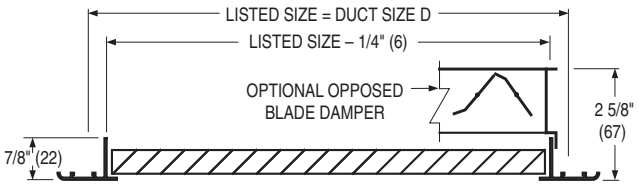
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

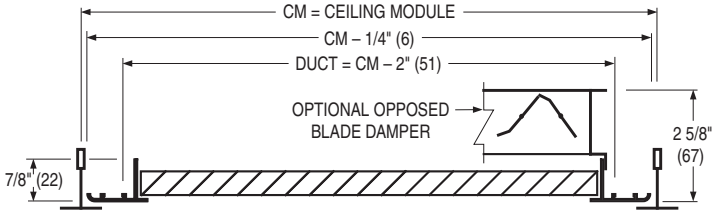
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





Type S Surface Mount Frame



Type L Lay-in T-Bar • Full Face

Type L Available Sizes

CM Ceiling Module Dimension	
inches	S. I. mm
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
20 x 20	500 x 500
24 x 24	600 x 600
36 x 24	900 x 600
48 x 24	1200 x 600

Duct size = CM – 2" (51)

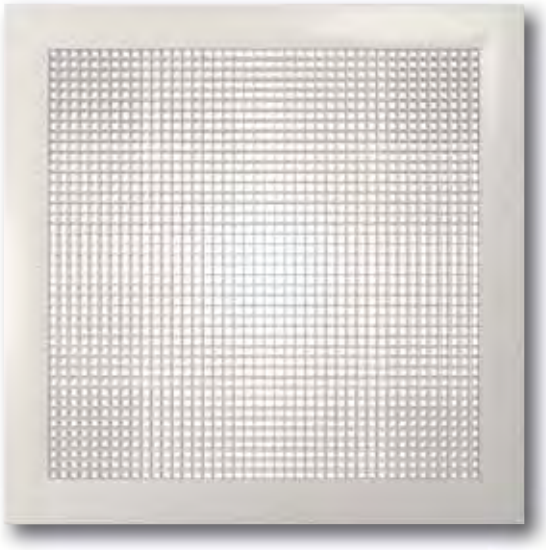
STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- **EXHAUST AND RETURN**

Models:

61EC

- **Suffix '-O' adds a steel opposed blade damper**



Model 61EC Frame/Border Type L

Model 61EC Eggcrate Return and Exhaust Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types.

STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in most models.

CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel is used for the frame.
- Heavy gauge, roll-formed frames, mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Integral dampers – roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

FINISH OPTIONS:

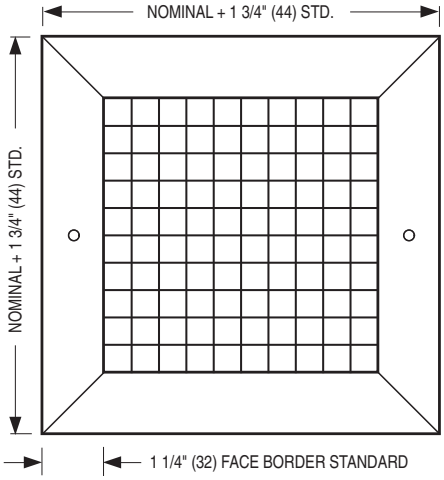
- AW Appliance White finish is standard. Other finishes are available.

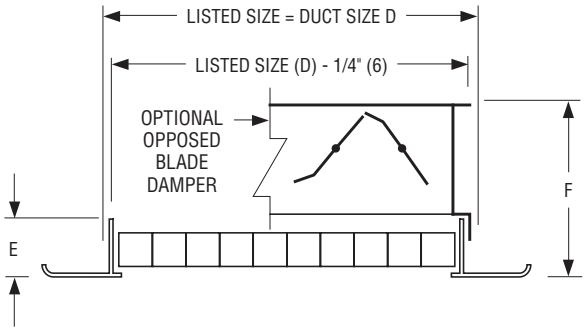
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

DIMENSIONAL DATA:

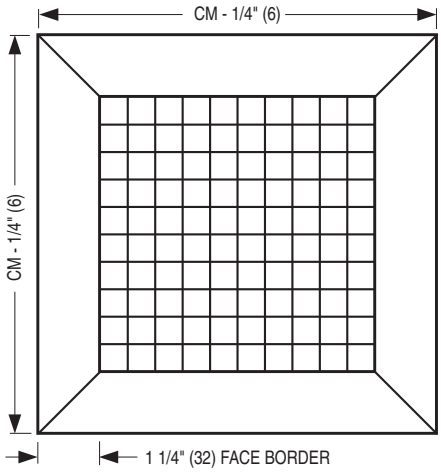
61EC SERIES STEEL EGGCRATE RETURN AND EXHAUST

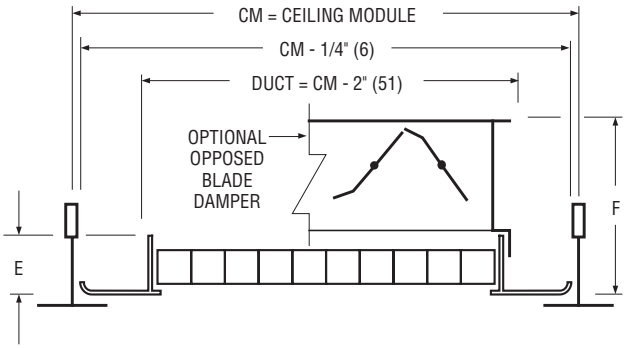




Dimension	1/2" x 1/2" x 1/2" Standard Core	Optional 1/2" x 1/2" x 1" or 1" x 1" x 1" Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type S – Surface Mount



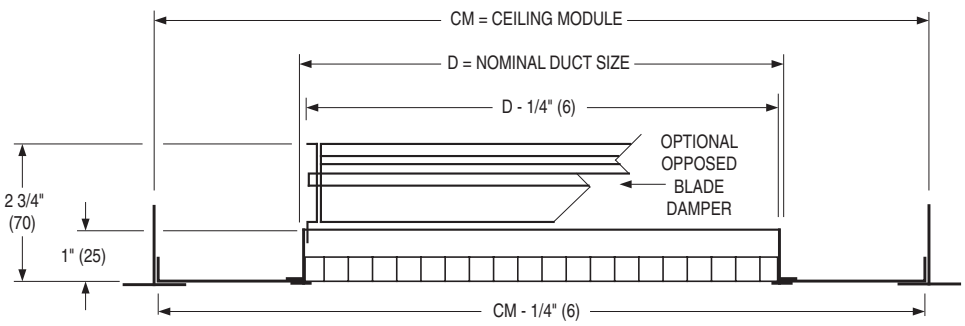


Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

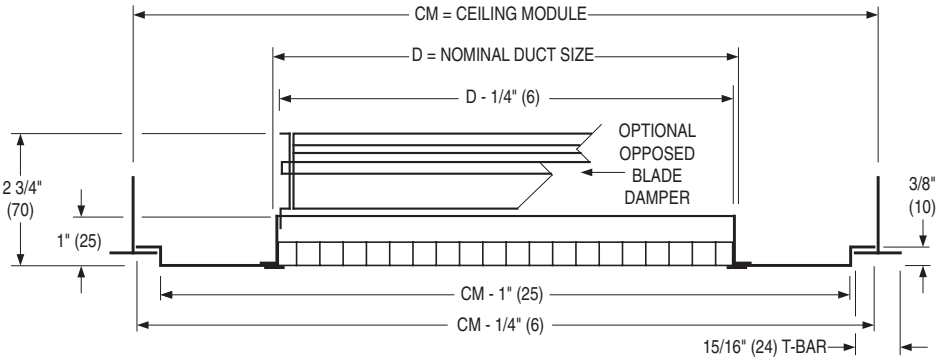
Frame/Borders Type L – Lay-in T-Bar

DIMENSIONAL DATA:

61EC SERIES STEEL EGGCRATE RETURN AND EXHAUST



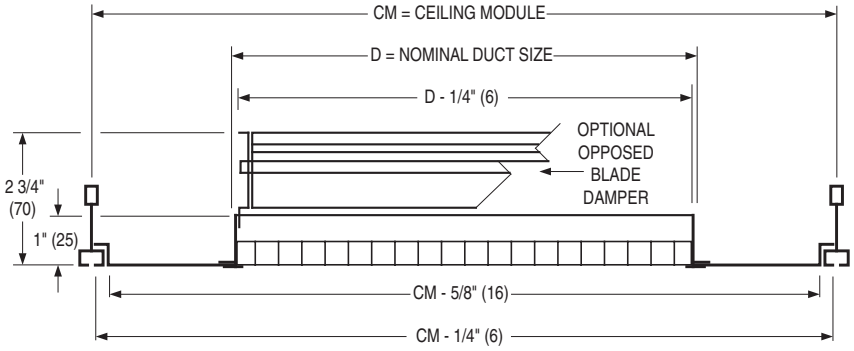
Frame/Border Type PLS – Panel Mounted – Lay-in T-Bar Type



Frame/Border Type TPS – Tegular Panel Mounted – Lay-in T-Bar Type

Available Ceiling Module Sizes		
Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
24 x 12	610 x 305	600 x 300
36 x 12	914 x 305	900 x 300
48 x 12	1219 x 305	1200 x 300
20 x 20	508 x 508	500 x 500
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 24	1219 x 610	1200 x 600

Max. Duct/Neck Size D =
Ceiling Module – 3" (76)



Frame/Border Type FPS – Panel Mounted Lay-in – Narrow Regressed T-Bar Type

Available Ceiling Module Sizes			Available Duct/ Neck Sizes
Imperial Modules		Metric Modules	
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)	
20 x 20	508 x 508	500 x 500	6" x 6" (152 x 152) up to 16" x 16" (406 x 406) in 2" (51) increments
24 x 24	610 x 610	600 x 600	6" x 6" (152 x 152) up to 20" x 20" (508 x 508) in 2" (51) increments

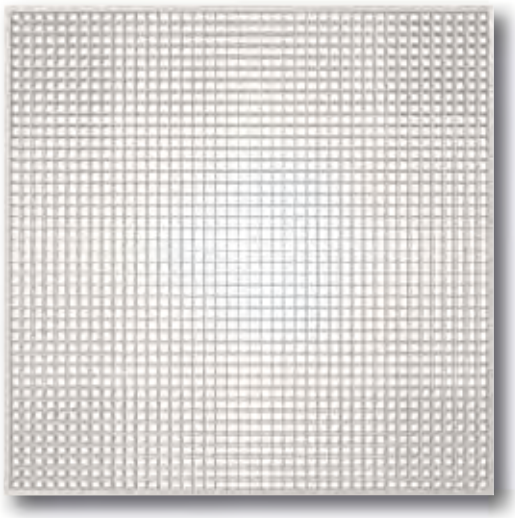
STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN
- ALUMINUM CORE
- HIGH CAPACITY
- FINELINE®

Models:

61ECF

- **Suffix '-O' adds a steel opposed blade damper**



Model 61ECF

Model 61ECF Eggcrate Return Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. Their appearance matches the grid louvers on parabolic light fixtures and has been specially designed to integrate with and complement Narrow Regressed T-Bar "Fineline®" type suspended ceiling systems. Suited for non-ducted plenum return air applications, the corrosion-resistant steel frame includes a support rail on four sides, allowing the full area of the ceiling module to be utilized.

STANDARD FEATURES:

- 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core is standard (Code CA).
- Available in CM sizes 24 x 12 and 24 x 24 (610 x 305 and 610 x 610).
- Specially designed for high capacity (90% free area) return air applications to integrate with and complement Fineline® type suspended ceiling systems.
- Support rail on four sides, allows full area of the ceiling module to be utilized.

CONSTRUCTION MATERIAL:

- Aluminum core with corrosion-resistant steel frame.
- Optional roll-formed steel opposed blade damper has a screwdriver slot operator accessible through the face of the register.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

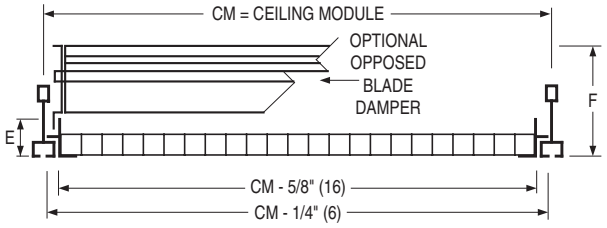
OPTIONS AND ACCESSORIES:

- CB Core size is 1/2" x 1/2" x 1" (13 x 13 x 25).
- CC Core size is 1" x 1" x 1" (25 x 25 x 25).
- IS Insect Screen
- EQT Earthquake Tabs

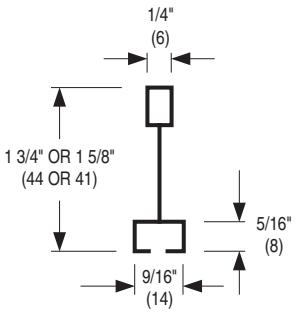
For additional options and accessories, see page F191.

Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

IMPERIAL MODULES		METRIC MODULES
Imperial Units (in.)	S.I. Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600



MODEL 61ECF GRILLE Aluminum Core - Steel Frame



REGRESSED T-BAR DETAIL

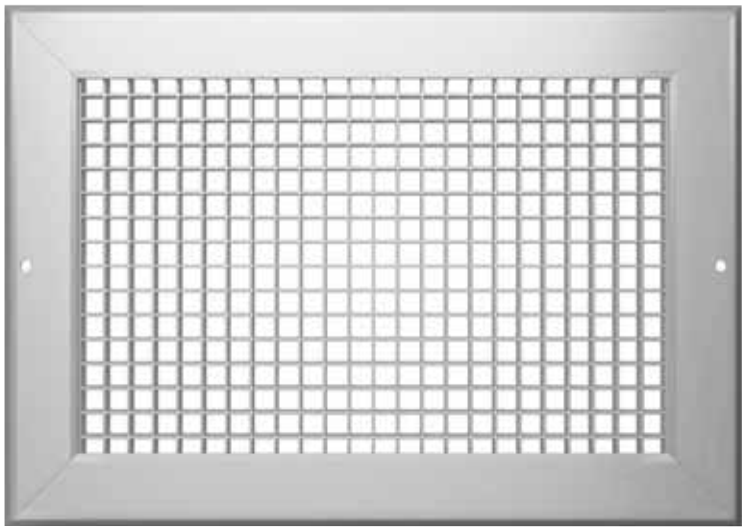
STAINLESS STEEL EGGCRATE GRILLES AND REGISTERS

- **EXHAUST AND RETURN**

Models:

67EC

- **Suffix '-O' adds a stainless steel opposed blade damper**



Model 67EC

Nailor Model Series 67EC Eggcrate Return and Exhaust Grilles and Registers have grid cores that are capable of transferring or returning high air volumes at minimum pressure requirements. The stainless steel grid core is 1/2" x 1/2" x 1/2" (13 x 13 x 13) and the appearance matches the grid louvers on parabolic light fixtures.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, cleanrooms, laboratories, industrial and manufacturing facilities.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core.
- Available from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in most models.

CONSTRUCTION MATERIAL:

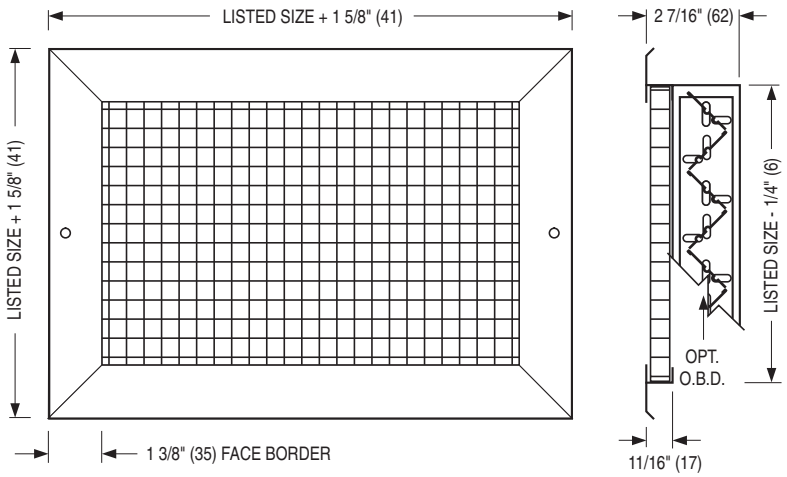
- Type 304 stainless steel construction.
- Optional dampers – roll-formed stainless steel opposed blade design with a screwdriver slot operator.

FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction is available.
- PFS Stainless Steel Plaster Frame



MODEL 67EC

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .012	400 .010 .021	500 .016 .033	600 .022 .048	700 .031 .065	800 .040 .085	900 .050 .107	1000 .062 .132	1200 .090 .190	1400 .122 .259
6 x 6	8 x 4 10 x 4	0.20	0.25	**CFM** Noise Criteria	**60** –	**80** –	**100** –	**120** –	**140** –	**160** 15	**180** 20	**200** 23	**240** 29	**280** 34
8 x 6	10 x 5 12 x 4	0.27	0.33	**CFM** Noise Criteria	**81** –	**108** –	**135** –	**162** –	**189** –	**216** 17	**243** 21	**270** 24	**324** 30	**378** 35
10 x 6	12 x 5 16 x 4	0.35	0.41	**CFM** Noise Criteria	**105** –	**140** –	**175** –	**210** –	**245** –	**280** 18	**315** 22	**350** 25	**420** 31	**490** 36
8 x 8	14 x 5	0.38	0.44	**CFM** Noise Criteria	**114** –	**152** –	**190** –	**228** –	**266** 15	**304** 18	**342** 23	**380** 26	**456** 32	**532** 37
12 x 6	18 x 4	0.42	0.50	**CFM** Noise Criteria	**126** –	**168** –	**210** –	**252** –	**294** 15	**336** 19	**378** 23	**420** 26	**504** 32	**588** 37
12 x 8	16 x 6 24 x 4	0.58	0.66	**CFM** Noise Criteria	**174** –	**232** –	**290** –	**348** –	**406** 17	**464** 20	**522** 24	**580** 27	**696** 33	**812** 38
10 x 10	14 x 7 26 x 4	0.61	0.69	**CFM** Noise Criteria	**183** –	**244** –	**305** –	**366** –	**427** 17	**488** 20	**549** 25	**610** 28	**732** 34	**854** 39
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.74	**CFM** Noise Criteria	**195** –	**260** –	**325** –	**390** –	**455** 17	**520** 21	**585** 25	**650** 28	**780** 34	**910** 39
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.82	**CFM** Noise Criteria	**222** –	**296** –	**370** –	**444** –	**518** 18	**592** 21	**666** 25	**740** 29	**888** 35	**1036** 40
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.99	**CFM** Noise Criteria	**270** –	**360** –	**450** –	**540** –	**630** 18	**720** 22	**810** 26	**900** 30	**1080** 36	**1260** 41
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.35	**CFM** Noise Criteria	**372** –	**496** –	**620** –	**744** –	**868** 19	**992** 23	**1116** 27	**1240** 31	**1488** 37	**1736** 42
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.49	**CFM** Noise Criteria	**411** –	**548** –	**685** –	**822** –	**959** 20	**1096** 24	**1233** 27	**1370** 31	**1644** 37	**1918** 42
24 x 10	20 x 12 30 x 8	1.52	1.65	**CFM** Noise Criteria	**456** –	**608** –	**760** –	**912** 15	**1064** 20	**1216** 24	**1368** 28	**1520** 32	**1824** 38	**420** 43
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.76	**CFM** Noise Criteria	**492** –	**656** –	**820** –	**984** 15	**1148** 20	**1312** 24	**1476** 28	**1640** 32	**1968** 38	**2296** 43
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.98	**CFM** Noise Criteria	**555** –	**740** –	**925** –	**1110** 15	**1295** 20	**1480** 24	**1665** 28	**1850** 32	**2220** 38	**2590** 43
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.23	**CFM** Noise Criteria	**630** –	**840** –	**1050** –	**1260** 15	**1470** 20	**1680** 25	**1890** 28	**2100** 32	**2520** 38	**2940** 43
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.48	**CFM** Noise Criteria	**696** –	**928** –	**1160** –	**1392** 16	**1624** 20	**1856** 26	**2088** 29	**2320** 33	**2784** 39	**3248** 44
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.75	**CFM** Noise Criteria	**783** –	**1044** –	**1305** –	**1566** 16	**1827** 20	**2088** 26	**2349** 29	**2610** 33	**3132** 39	**3654** 44
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.33	**CFM** Noise Criteria	**951** –	**1268** –	**1585** –	**1902** 17	**2219** 21	**2536** 26	**2853** 30	**3170** 34	**3804** 40	**4438** 45
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.71	**CFM** Noise Criteria	**1062** –	**1416** –	**1770** –	**2124** 17	**2478** 22	**2832** 26	**3186** 30	**3540** 34	**4248** 40	**4956** 45
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.96	**CFM** Noise Criteria	**1137** –	**1516** –	**1895** –	**2274** 18	**2653** 23	**3032** 27	**3411** 31	**3790** 35	**4548** 41	**5306** 46
36 x 18	32 x 20 46 x 14 40 x 16	4.29	4.46	**CFM** Noise Criteria	**1287** –	**1716** –	**2145** –	**2574** 18	**3003** 23	**3432** 27	**3861** 31	**4290** 35	**5148** 41	**6006** 46
26 x 26	28 x 24 48 x 14	4.47	4.65	**CFM** Noise Criteria	**1341** –	**1788** –	**2235** –	**2682** 19	**3129** 24	**3576** 28	**4023** 32	**4470** 36	**5364** 42	**6258** 47
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.95	**CFM** Noise Criteria	**1431** –	**1908** –	**2385** 15	**2862** 19	**3339** 24	**3816** 29	**4293** 32	**4770** 36	**5724** 42	**6678** 47
28 x 28	30 x 26 40 x 20 36 x 22	5.20	5.39	**CFM** Noise Criteria	**1560** –	**2080** –	**2600** –	**3120** 19	**3640** 24	**4160** 29	**4680** 32	**5200** 36	**6240** 41	**7280** 46
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.94	**CFM** Noise Criteria	**1722** –	**2296** –	**2870** –	**3444** 20	**4018** 25	**4592** 29	**5166** 33	**5740** 37	**6888** 43	**8036** 48
30 x 30	34 x 26 48 x 20 38 x 24	5.99	6.19	**CFM** Noise Criteria	**1797** –	**2396** –	**2995** –	**3594** 20	**4193** 25	**4792** 29	**5391** 33	**5990** 37	**7188** 43	**8386** 48

For performance data notes, see F107.

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .012	400 .010 .021	500 .016 .033	600 .022 .048	700 .031 .065	800 .040 .085	900 .050 .107	1000 .062 .132	1200 .090 .190	1400 .122 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	7.0	**CFM** Noise Criteria	**2052** –	**2736** –	**3420** 15	**4104** 20	**4788** 26	**5472** 30	**6156** 34	**6840** 37	**8208** 44	**9576** 49
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.92	**CFM** Noise Criteria	**2307** –	**3076** –	**3845** 16	**4614** 21	**5383** 26	**6152** 30	**6921** 35	**7690** 38	**9228** 44	**10776** 49
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.91	**CFM** Noise Criteria	**2607** –	**3476** –	**4345** 16	**5214** 22	**6083** 27	**6952** 31	**7821** 35	**8690** 38	**10428** 44	**12166** 49
38 x 38	42 x 34 48 x 30 44 x 34	9.70	9.93	**CFM** Noise Criteria	**2910** –	**3880** –	**4850** 16	**5820** 22	**6790** 27	**7760** 31	**8730** 36	**9700** 39	**11640** 45	**13580** 50
40 x 40	42 x 36 48 x 32 46 x 34	10.77	11.00	**CFM** Noise Criteria	**3231** –	**4308** –	**5385** 16	**6462** 22	**7539** 28	**8616** 32	**9693** 37	**10770** 40	**12924** 46	**15078** 51
42 x 42	44 x 40 48 x 36 46 x 38	11.89	12.13	**CFM** Noise Criteria	**3567** –	**4756** –	**5945** 17	**7134** 23	**8323** 28	**9512** 32	**10701** 37	**11890** 40	**14260** 46	**16646** 51
44 x 44	46 x 42	13.07	13.31	**CFM** Noise Criteria	**3921** –	**5228** –	**6535** 17	**7842** 23	**9149** 28	**10456** 33	**11763** 37	**13070** 40	**15684** 46	**18298** 51
46 x 46		14.30	14.55	**CFM** Noise Criteria	**4290** –	**5720** –	**7150** 18	**8580** 24	**10010** 29	**11440** 33	**12870** 37	**14300** 40	**17160** 46	**20020** 52
48 x 48		15.59	15.84	**CFM** Noise Criteria	**4677** –	**6236** –	**7795** 18	**9354** 24	**10913** 29	**12472** 33	**14031** 37	**15590** 40	**18708** 46	**21826** 52

Performance Notes:

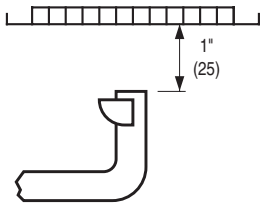
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.25.

Noise Criteria Add + 6 to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.

Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

SIGHT-PROOF EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100

MODEL: 51EC45

Listed Duct Size (inches)	Nominal Duct Area (sq. ft.)	Duct Velocity, FPM Velocity Pressure Neg. Static Pressure	200 .002 .016	250 .004 .025	300 .006 .037	350 .008 .050	400 .010 .065	450 .013 .082	500 .016 .101	550 .019 .123	600 .022 .146	650 .026 .171
10 x 10	0.69	**Airflow, CFM** Noise Criteria	**139** –	**174** –	**208** 16	**243** 20	**278** 24	**313** 27	**347** 30	**382** 33	**417** 35	**451** 37
22 x 10	1.53	**Airflow, CFM** Noise Criteria	**306** –	**382** –	**458** 18	**535** 22	**611** 26	**688** 30	**764** 33	**840** 36	**917** 38	**993** 41
22 x 22	3.36	**Airflow, CFM** Noise Criteria	**672** –	**840** 16	**1008** 22	**1176** 27	**1344** 31	**1513** 34	**1681** 38	**1849** 41	**2017** 43	**2185** 46
46 x 22	7.03	**Airflow, CFM** Noise Criteria	**1406** 21	**1757** 26	**2108** 30	**2460** 34	**2811** 37	**3163** 40	**3514** 42	**3865** 45	**4217** 47	**4568** 49

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.10.

Noise Criteria Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 51EC

ALUMINUM EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 51EC - O - 24 x 12 - S - — - AW - A - CA - DMI - —

1. **Models**
   - 51EC Aluminum
   - 51EC-MRI 100% Aluminum
   - 51EC45 Sight-proof
2. **Damper (OBD)**
   (Not available on 51EC-MRI)
   (model suffix)
   - O Steel
   - OA Aluminum
   - — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size
   For Type L and A and C, W x H = Ceiling Module Size
4. **Frame/Border Type**
   Surface Mount:
   - S Surface Mount Border 1 1/4" (32) (default)
   - NF Narrow Frame/Border 1" (25)

   Ceiling Grid:
   - L Lay-in T-Bar *
   - A Angle Frame
   - C Core only

   Panel Mount: **
   - PLS Steel Lay-in T-Bar Panel
   - PLA Aluminum Lay-in T-Bar Panel
   - FPS Steel Fineline® Panel
   - FPA Aluminum Fineline® Panel
   - SPS Steel Spline Panel
   - SPA Aluminum Spline Panel
   - MPS Steel Metal Pan Panel
   - MPA Aluminum Metal Pan Panel
   - TPS Steel Tegular Panel
   - TPA Aluminum Tegular Pan Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PL, SP, MP, FP and TP)
   - — None (default)

   Imperial (inches)
   12 x 12, 20 x 20, 24 x 8, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24

   Metric (mm)
   300 x 300, 500 x 500, 600 x 200, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - SA Satin Anodized (clear)***
   - SP Special Custom Color
7. **Fastening**
   (only for frame/border Types S, NF)
   - A Screw Holes (standard) (default)
   - C Concealed Mounting Straps
   - N None
8. **Core Style**
   - CA Standard 1/2" x 1/2" x 1/2" (default)
   - CB 1/2" x 1/2" x 1"
   - CC 1" x 1" x 1"
9. **Opposed Blade Damper Finish**
   - DMI Mill (default)
   - DBK Painted Black
   - — None

OPTIONS & ACCESSORIES:

- — None

10. **Insect Screen**
    - IS Insect Screen
11. **Plaster Sub-Frame**
    - PF Plaster Sub-Frame
12. **Gaskets**
    - GK Foam Gasket
13. **Earthquake Tabs**
    - EQT Earthquake Tabs

Notes:

1. Model 51EC-MRI is only available with Frame/Border Type L.

2. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).

** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).

*** Satin Anodized finish only available on 51EC and 51EC45 Frame/Border Type S and L (frame only, mill core).

HOW TO SPECIFY

MODEL SERIES: 51EC

ALUMINUM EGGCRATE RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

51EC – Aluminum Eggcrate Return Grille
Furnish and install **Nailor Model 51EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and extruded aluminum frame that has reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51EC-MRI – Eggcrate Return Grille – 100% Aluminum
Furnish and install **Nailor Model 51EC-MRI Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from aluminum with a 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core and welded frame that has reinforced mitered corners. The grilles shall be available to suit lay-in T-Bar openings in suspended grid ceilings. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51EC45 – Aluminum Eggcrate Return Grille - 45° Deflection
Furnish and install **Nailor Model 51EC45 Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core angled at 45° to prevent see through from three directions. The frame shall be constructed from heavy gauge extruded aluminum and mechanically interlocked with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 61EC
STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61EC - O - 24 x 12 - S - — - AW - DMI - A - CA - —

1. **Models**
   61EC Aluminum
2. **Damper (OBD)**
   (model suffix)
   O Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, PLS, SPS, MPS, FPS and TPS, W x H = Duct Size
   For Type L, W x H = Ceiling Module Size
4. **Frame/Border Type**
   Surface Mount:
   S Surface Mount Border 1 1/4" (32) (default)
   NF Narrow Frame/Border 1" (25)
   Ceiling Grid:
   L Lay-in T-Bar *
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   SPS Steel Spline Panel
   MPS Steel Metal Pan Panel
   TPS Steel Tegular Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PLS, SPS, MPS, FPS and TPS)
   — None (default)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 8, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 200, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
8. **Fastening**
   (only for frame/border Types S)
   A Screw Holes (default)
   C Concealed Mounting Straps
   N None
9. **Core Style**
   CA Standard 1/2" x 1/2" x 1/2" (default)
   CB 1/2" x 1/2" x 1"
   CC 1" x 1" x 1"

OPTIONS & ACCESSORIES:

— None

10. **Insect Screen**
    IS Insect Screen
11. **Plaster Sub-Frame**
    PF Plaster Sub-Frame
12. **Gaskets**
    GK Foam Gasket
13. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).

** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).

HOW TO SPECIFY

MODEL SERIES: 61EC
STEEL EGGCRATE RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 61EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant frame that has reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 61ECF
STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61ECF - O - 24 x 12 - AW - DMI - CA - —

1. **Model**
   61ECF Fineline® Steel Frame
2. **Damper (OBD)**
   (model suffix)
   O Steel (standard)
   — None
3. **Ceiling Module Size**
   Imperial (inches)
   24 x 12, 24 x 24
   Metric (mm)
   600 x 300, 600 x 600
4. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
5. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
6. **Core Style**
   CA Standard 1/2" x 1/2" x 1/2" (default)
   CB 1/2" x 1/2" x 1"
   CC 1" x 1" x 1"

OPTIONS & ACCESSORIES:

— None

7. **Insect Screen**
   IS Insect Screen
8. **Earthquake Tabs**
   EQT Earthquake Tabs

HOW TO SPECIFY

MODEL SERIES: 61ECF
STEEL EGGCRATE RETURN GRILLE - FINELINE®

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 61ECF Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core with a free area of 90%. The grille frame shall be constructed from corrosion-resistant steel with support rails on four sides. The grilles shall be used in ductless return air applications for Narrow Regressed T-Bar Fineline® type suspended ceiling systems. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 67EC
STAINLESS STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 67EC - O - 24 x 12 - S - #4 - A - 304

1. **Models**
   67EC Stainless Steel Eggcrate
2. **Damper (OBD)**
   (model suffix)
   O Stainless Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount
   Border 1 3/8" (35) (default)
5. **Finish**
   #4 Brushed Satin Polished (default)
   AW Appliance White
   SP Special Custom Color
6. **Fastening**
   A Screw Holes (standard)(default)
   N None

OPTIONS & ACCESSORIES:

7. **Construction**
   304 Type 304 Stainless Steel (default)
   316 Type 316 Stainless Steel
8. **Plaster Sub-Frame**
   PFS Stainless Steel Plaster Sub-Frame

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a Type 304 stainless steel register, eggcrate core, and stainless steel damper is Model 67EC-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

HOW TO SPECIFY

MODEL SERIES: 67EC
STAINLESS STEEL EGGCRATE RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 67EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The grid core shall be 1/2" x 1/2" x 1/2" (13 x 13 x 13). The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional AW Appliance White finish is available).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORATED RETURN GRILLES AND REGISTERS

- ALUMINUM OR STEEL

Model:

51PR Aluminum

61PR Steel

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**
  (available on Model 51PR only)

Model 51PR

Nailor Model Series 51PR and 61PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects and a face that is easy to maintain and clean. Their general appearance matches and complements the popular perforated supply diffusers (refer to the range of 4300 Series in the diffuser section of the catalog).

Models are available to suit both lay-in T-Bar openings in suspended ceiling systems and overlap openings in hard walls and ceilings.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- Available from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).

CONSTRUCTION MATERIAL:

- Available in all aluminum construction with extruded frames or cost effective, corrosion-resistant steel with roll-formed frames.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- Frames are staked and mechanically interlocked to provide reinforced mitered corners.

FINISH OPTIONS:

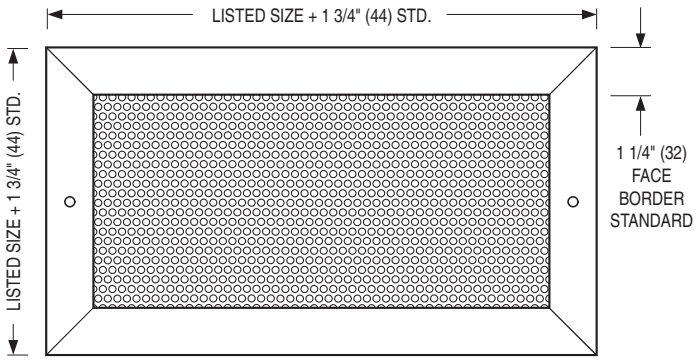
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

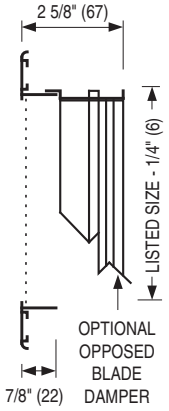
- NF Narrow Frame with 1" (25) face border optional on Model 51PR.
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

DIMENSIONAL DATA:
PERFORATED RETURN GRILLES AND REGISTERS - ALUMINUM OR STEEL
MODELS: 51PR, 61PR



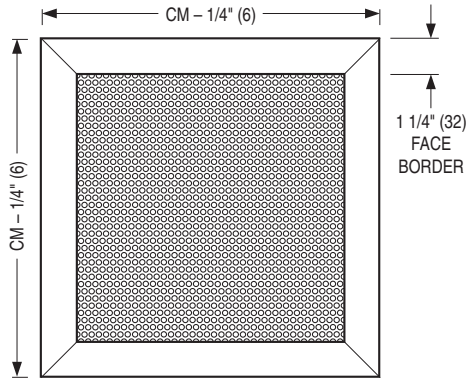
Model 51PR



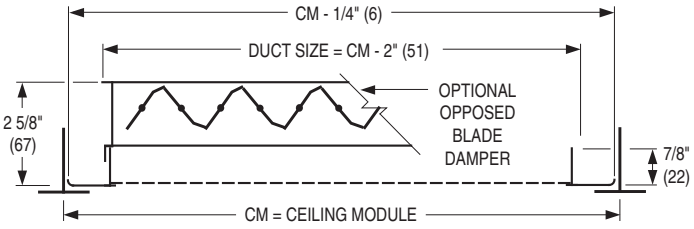
Model 51PR

Note: Model 51PR is available with an optional Type NF Frame. It has a 3/4" (19) overlap margin. Overall flange to flange dimensions = listed size + 1 1/4" (32).

Frame/Border Type S – Surface Mount



Model 61PR



Model 61PR

Frame/Border Type L – Lay-in T-Bar

PERFORATED RETURN GRILLES AND REGISTERS
- STAINLESS STEEL

Model:

67PR Stainless Steel

- **Suffix '-O' adds a stainless steel opposed blade damper**

Model 67PR

Nailor Model Series 67PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Available from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

CONSTRUCTION MATERIAL:

- Type 304 stainless steel construction.
- Optional dampers – roll-formed stainless steel opposed blade design with a screwdriver slot operator.

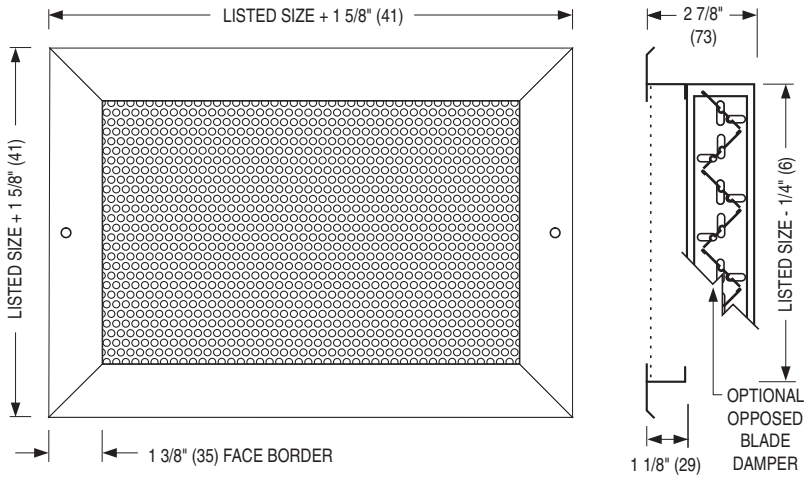
FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction is available.
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



MODEL 67PR GRILLE Stainless Steel

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
6 x 6	8 x 4 10 x 4	0.20	0.20	**CFM** Noise Criteria	**60** –	**80** –	**100** –	**120** 15	**140** 21	**160** 26	**180** 32	**200** 37	**240** 44
8 x 6	10 x 5 12 x 4	0.27	0.27	**CFM** Noise Criteria	**81** –	**108** –	**135** –	**162** 16	**189** 22	**216** 28	**243** 33	**270** 38	**324** 45
10 x 6	12 x 5 16 x 4	0.35	0.33	**CFM** Noise Criteria	**105** –	**140** –	**175** –	**210** 17	**245** 24	**280** 29	**315** 34	**350** 39	**420** 46
8 x 8	14 x 5	0.38	0.36	**CFM** Noise Criteria	**114** –	**152** –	**190** –	**228** 18	**266** 25	**304** 29	**342** 35	**380** 40	**456** 47
12 x 6	18 x 4	0.42	0.40	**CFM** Noise Criteria	**126** –	**168** –	**210** –	**252** 18	**294** 25	**336** 30	**378** 35	**420** 40	**504** 47
12 x 8	16 x 6 24 x 4	0.58	0.53	**CFM** Noise Criteria	**174** –	**232** –	**290** –	**348** 20	**406** 27	**464** 31	**522** 36	**580** 41	**696** 48
10 x 10	14 x 7	0.61	0.56	**CFM** Noise Criteria	**183** –	**244** –	**305** –	**366** 20	**427** 27	**488** 31	**549** 37	**610** 42	**732** 49
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.60	**CFM** Noise Criteria	**195** –	**260** –	**325** –	**390** 20	**455** 27	**520** 32	**585** 37	**650** 42	**780** 49
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.67	**CFM** Noise Criteria	**222** –	**296** –	**370** –	**444** 21	**518** 28	**592** 32	**666** 37	**740** 43	**888** 50
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.80	**CFM** Noise Criteria	**270** –	**360** –	**450** 15	**540** 22	**630** 28	**720** 33	**810** 38	**900** 44	**1080** 51
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.09	**CFM** Noise Criteria	**372** –	**496** –	**620** 16	**744** 23	**868** 29	**992** 34	**1116** 39	**1240** 45	**1488** 52
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.20	**CFM** Noise Criteria	**411** –	**548** –	**685** 17	**822** 23	**959** 30	**1096** 35	**1233** 39	**1370** 45	**1644** 52
24 x 10	20 x 12 30 x 8	1.52	1.33	**CFM** Noise Criteria	**456** –	**608** –	**760** 17	**912** 24	**1064** 30	**1216** 35	**1368** 40	**1520** 46	**1824** 53
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.42	**CFM** Noise Criteria	**492** –	**656** –	**820** 17	**984** 24	**1148** 30	**1312** 35	**1476** 40	**1640** 46	**1968** 53
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.60	**CFM** Noise Criteria	**555** –	**740** –	**925** 17	**1110** 24	**1295** 30	**1480** 35	**1665** 40	**1850** 46	**2220** 53
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	1.80	**CFM** Noise Criteria	**630** –	**840** –	**1050** 17	**1260** 24	**1470** 30	**1680** 36	**1890** 40	**2100** 46	**2520** 53
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.00	**CFM** Noise Criteria	**696** –	**928** –	**1160** 17	**1392** 25	**1624** 30	**1856** 37	**2088** 41	**2320** 47	**2784** 54
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.22	**CFM** Noise Criteria	**783** –	**1044** –	**1305** 18	**1566** 25	**1827** 30	**2088** 37	**2349** 41	**2610** 47	**3132** 54
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	2.69	**CFM** Noise Criteria	**951** –	**1268** –	**1585** 18	**1902** 26	**2219** 31	**2536** 37	**2853** 42	**3170** 48	**3804** 55
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.00	**CFM** Noise Criteria	**1062** –	**1416** –	**1770** 19	**2124** 26	**2478** 32	**2832** 37	**3186** 42	**3540** 48	**4248** 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.20	**CFM** Noise Criteria	**1137** –	**1516** –	**1895** 19	**2274** 27	**2653** 33	**3032** 38	**3411** 43	**3790** 49	**4548** 56
36 x 18	32 x 20 46 x 14 40 x 16	4.29	3.60	**CFM** Noise Criteria	**1287** –	**1716** –	**2145** 19	**2574** 27	**3003** 33	**3432** 38	**3861** 43	**4290** 49	**5148** 56
26 x 26	28 x 24 48 x 14	4.47	3.76	**CFM** Noise Criteria	**1341** –	**1788** –	**2235** 20	**2682** 28	**3129** 34	**3576** 39	**4025** 44	**4470** 50	**5364** 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.00	**CFM** Noise Criteria	**1431** –	**1908** –	**2385** 21	**2862** 28	**3339** 34	**3816** 39	**4293** 44	**4770** 50	**5724** 57
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.36	**CFM** Noise Criteria	**1560** –	**2080** –	**2600** 21	**3120** 28	**3640** 34	**4160** 40	**4680** 44	**5200** 50	**6240** 57
36 x 24	30 x 28 44 x 20 40 x 22	5.74	4.80	**CFM** Noise Criteria	**1722** –	**2296** –	**2870** 22	**3444** 29	**4018** 35	**4592** 40	**5166** 45	**5740** 50	**6888** 58
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.00	**CFM** Noise Criteria	**1797** –	**2396** –	**2995** 22	**3594** 29	**4193** 35	**4792** 40	**5391** 45	**5990** 51	**7188** 58

For performance data notes, see F118.

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	**CFM** Noise Criteria	**2052** –	**2736** 15	**3420** 23	**4104** 29	**4788** 36	**5472** 41	**6156** 46	**6840** 51	**8208** 58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	**CFM** Noise Criteria	**2307** –	**3076** 16	**3845** 24	**4614** 30	**5383** 36	**6152** 41	**6921** 47	**7690** 52	**9228** 59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	**CFM** Noise Criteria	**2607** –	**3476** 16	**4345** 24	**5214** 31	**6083** 37	**6952** 42	**7821** 47	**8690** 52	**10428** 59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	**CFM** Noise Criteria	**2910** –	**3880** 17	**4850** 24	**5820** 31	**6790** 37	**7760** 42	**8730** 48	**9700** 53	**11640** 60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	**CFM** Noise Criteria	**3231** –	**4308** 17	**5385** 24	**6462** 31	**7539** 38	**8616** 43	**9693** 49	**10770** 54	**12924** 61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	**CFM** Noise Criteria	**3567** –	**4756** 18	**5945** 25	**7134** 32	**8323** 38	**9512** 43	**10701** 49	**11890** 54	**14268** 61
44 x 44	46 x 42	13.07	10.76	**CFM** Noise Criteria	**3921** –	**5228** 18	**6535** 25	**7842** 32	**9149** 38	**10456** 44	**11763** 49	**13070** 54	**15684** 61
46 x 46		14.30	11.76	**CFM** Noise Criteria	**4290** –	**5720** 19	**7150** 26	**8580** 33	**10010** 39	**11440** 44	**12870** 49	**14300** 54	**17160** 61
48 x 48		15.59	12.80	**CFM** Noise Criteria	**4677** –	**6236** 19	**7795** 26	**9354** 33	**10913** 39	**12472** 44	**14031** 49	**15590** 54	**18708** 61

Performance Notes:

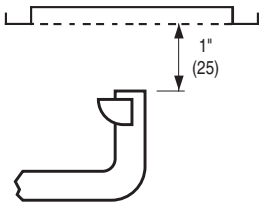
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.10.

Noise Criteria Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.

Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER

MODEL SERIES: 51PR
ALUMINUM PERFORATED RETURN GRILLES AND REGISTERS

EXAMPLE: 51PR - O - 24 x 12 - S - — - AW - DMI - A —

1. **Models**
   51PR Aluminum Construction
2. **Damper (OBD)**
   (model suffix)
   O Steel
   OA Aluminum
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, NF, PL, SP, MP, FP and TP,
   W x H = Duct Size
   For Type L,
   W x H = Ceiling Module Size
4. **Frame/Border Type**
   Surface Mount:
   S Surface Mount
   Border 1 1/4" (32) (default)
   NF Narrow Frame/Border 1" (25)
   Ceiling Grid:
   L Lay-in T-Bar *
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   PLA Aluminum Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   FPA Aluminum Fineline® Panel
   SPS Steel Spline Panel
   SPA Aluminum Spline Panel
   MPS Steel Metal Pan Panel
   MPA Aluminum Metal Pan Panel
   TPS Steel Tegular Panel
   TPA Aluminum Tegular Pan Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PL, SP, MP, FP and TP)
   — None (default)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
8. **Fastening**
   (only for frame/border Types S, NF)
   A Screw Holes (standard) (default)
   N None

OPTIONS & ACCESSORIES:

9. **Insect Screen**
   IS Insect Screen
10. **Plaster Sub-Frame**
    PF Plaster Sub-Frame
11. **Gaskets**
    GK Foam Gasket
12. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. Refer to individual model submittal for guidance on availability of options and accessories.

2. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).

** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).

HOW TO SPECIFY

MODEL SERIES: 51PR
ALUMINUM PERFORATED RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 51PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have an aluminum perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 61PR

STEEL PERFORATED RETURN GRILLES AND REGISTERS

EXAMPLE: 61PR - O - 24 x 12 - S - — - AW - DMI - A —

1. **Models**
   61PR Steel Construction
2. **Damper (OBD)**
   (model suffix)
   O Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, PLS, SPS, MPS, FPS and TPS,
   W x H = Duct Size
   For Type L,
   W x H = Ceiling Module Size
4. **Frame/Border Type**
   Surface Mount:
   S Surface Mount Border 1 1/4" (32) (default)
   Ceiling Grid:
   L Lay-in T-Bar *
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   SPS Steel Spline Panel
   MPS Steel Metal Pan Panel
   TPS Steel Tegular Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PLS, SPS, MPS, FPS and TPS)
   — None (default)
   Imperial (inches)
   12 x 12, 20 x 20, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24
   Metric (mm)
   300 x 300, 500 x 500, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
8. **Fastening**
   (only for frame/border Type S)
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

9. **Insect Screen**
   IS Insect Screen
10. **Plaster Sub-Frame**
    PF Plaster Sub-Frame
11. **Gaskets**
    GK Foam Gasket
12. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. Refer to individual model submittal for guidance on availability of options and accessories.

2. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).

** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).

HOW TO SPECIFY

MODEL SERIES: 61PR

STEEL PERFORATED RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 61PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a corrosion-resistant steel perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 67PR
STAINLESS STEEL PERFORATED RETURN GRILLES AND REGISTERS

EXAMPLE: 67PR - O - 24 x 12 - S - #4 - A - 304

1. **Models**
   - 67PR Stainless Steel Perforated Return
2. **Damper (OBD)** (model suffix)
   - — None
   - O Stainless Steel
3. **Nominal Width x Height** inches (mm)
4. **Frame/Border Type**
   - S Surface Mount Border 1 3/8" (35) (default)
5. **Finish**
   - #4 Brushed Satin Polished (default)
   - AW Appliance White
   - SP Special Custom Color
6. **Fastening**
   - A Screw Holes (default)
   - N None

OPTIONS & ACCESSORIES:

7. **Construction**
   - 304 Type 304 Stainless Steel (default)
   - 316 Type 316 Stainless Steel
8. **Plaster Sub-Frame**
   - — None (default)
   - PFS Stainless Steel Plaster Sub-Frame

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a Type 304 stainless steel register, surface mount with damper is Model 67PR-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

HOW TO SPECIFY

MODEL SERIES: 67PR
STAINLESS STEEL PERFORATED RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 67PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The perforated core shall have 3/16" (5) dia. perforated holes on 1/4" (6) staggered centers, providing 51% free area. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional AW Appliance White finish).

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

FILTER RETURN AND EXHAUST GRILLES

- ACCOMMODATES 1" (25) STANDARD FILTER
- AVAILABLE WITH LOUVERED, EGGCRATE OR PERFORATED CORE STYLES

Models:

51F "Series" Aluminum
61F "Series" Steel
67F "Series" Stainless Steel

Models 51FBS, 51FB55 and 67FB45

Nailor Model Series 51F, 61F and 67F Filter Return and Exhaust Grilles are a convenient and economical means of filtering primary return air locally. They are especially suited to recirculating air systems such as fan powered terminal units, fan coils and heat pumps. They have been designed to match and complement their respective base models in appearance.

SELECTION GUIDE:

ALUMINUM MODELS

51FB45 Fixed 45° Deflection, 3/4" (19) Spacing
51FB55 Fixed 45° Deflection, 1/2" (13) Spacing
51FBS Fixed 0° Deflection, 3/4" (19) Spacing
51FE Eggcrate Grid Core
51FE45 Eggcrate Grid Core, 45° Deflection (Contact factory for performance data).
51FP Perforated Face Core

STEEL MODELS

61FB45 Fixed 45° Deflection, 3/4" (19) Spacing
61FB55 Fixed 45° Deflection, 1/2" (13) Spacing
61FBS Fixed 0° Deflection, 3/4" (19) Spacing
61FE Eggcrate Grid Core
61FP Perforated Face Core

STAINLESS STEEL MODELS

67FB45 Fixed 45° Deflection, 3/4" (19) Spacing, Surface Mount.
67FB55 Fixed 55° Deflection, 1/2" (13) Spacing, Surface Mount.

Contact factory for availability of other frame/core combinations.

PERFORMANCE DATA: Refer to the appropriate base model and add pressure drop for the installed filter. Fixed Blade pages F41 thru F46. Eggcrate Grid Core pages F106 and F107. Perforated Face pages F117 and F118.

STANDARD FEATURES:

- Type S Surface Mount.

  Installed with sheet metal screws (or similar by others) through the neck of the outer frame. Provides an aesthetically clean visual appearance. Type A countersunk screw holes are an available option.
- Type L Lay-in T-Bar.

  Available to suit both imperial and metric ceiling modules.
- Frames and sub-frames are mechanically interlocked with reinforced mitered corners.
- Inner core is hinged on one side and secured on the opposite side with convenient 1/4 turn fasteners.
- Accepts standard 1" (25) thick, throw-away type filters (by others).

CONSTRUCTION MATERIAL:

• Extruded aluminum construction, roll-formed corrosion-resistant steel or stainless steel construction.

FINISH OPTIONS:

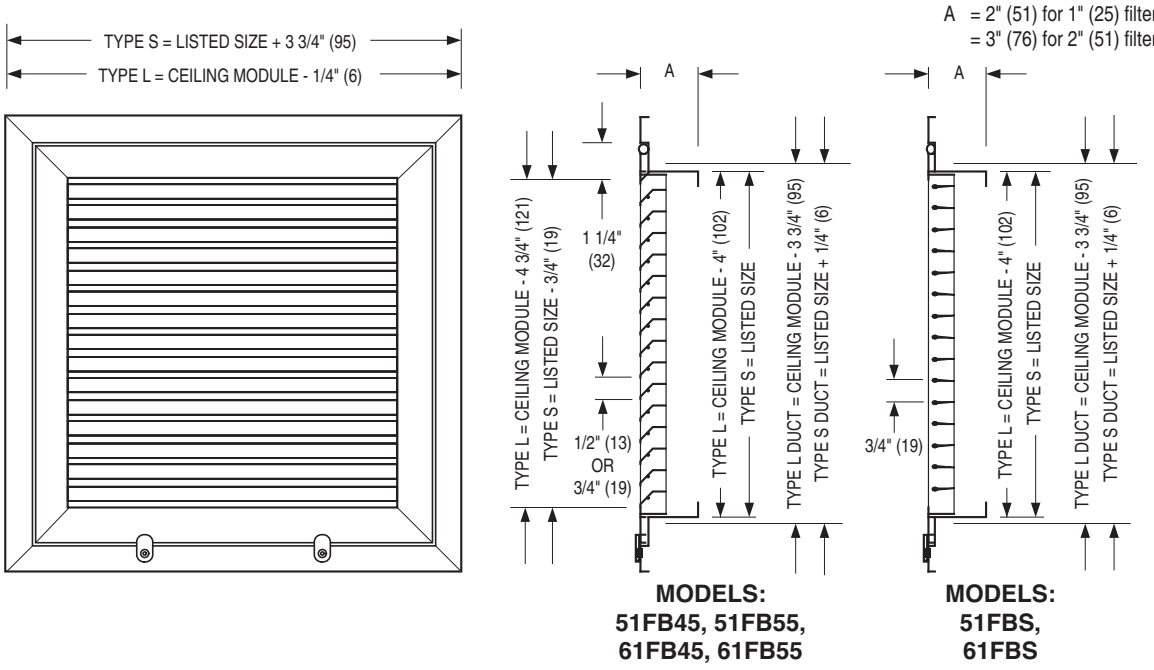
• AW Appliance White finish is standard on steel and aluminum constructed models. #4 Brushed Satin Polished finish is standard on stainless steel models. Other finishes are available.

OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs
- Optional 2" (51) filter frame is available.

For additional options and accessories, see page F191.

DIMENSIONAL DATA:
FILTER RETURN AND EXHAUST GRILLES • 51FB, 61FB, 67FB

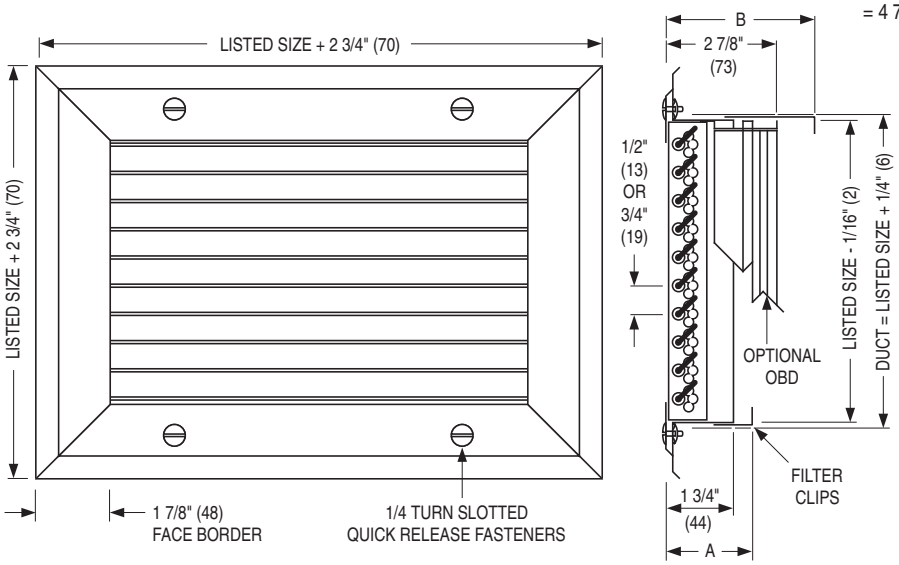


MODELS:
51FB45, 51FB55,
61FB45, 61FB55

MODELS:
51FBS,
61FBS

Aluminum or Steel Construction • Fixed Louvered Blades

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) maximum.
Type L (lay-in) is available in ceiling module sizes 12" x 12" (305 x 305) through 48" x 24" (1219 x 610) maximum.
Core is hinged and secured to outer frame with 1/4 turn fasteners.



MODELS:
67FB45, 67FB55

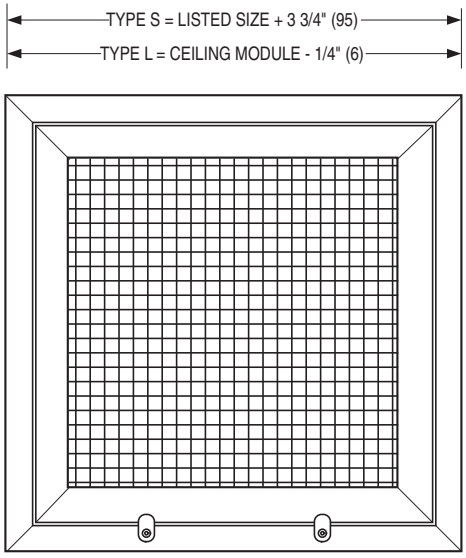
Without OBD: A = 2 1/4" (57) for 1" (25) filter. Standard.
= 3 1/4" (83) for 2" (51) filter. Optional.

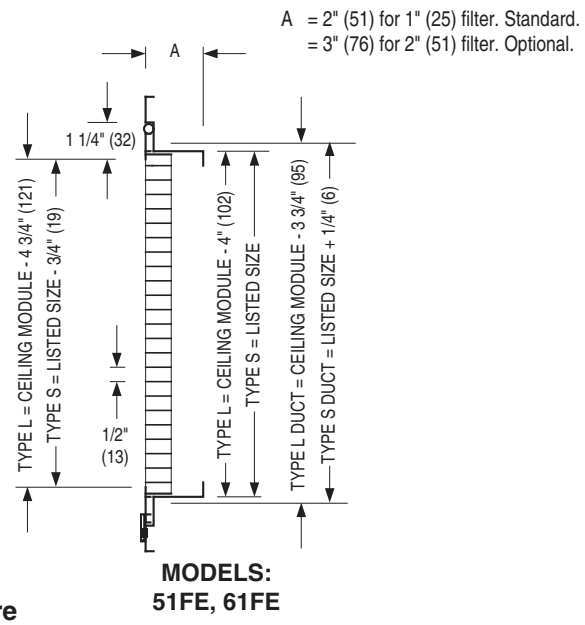
Stainless Steel Construction • Fixed Louvered Blades • Removable Face

Type S (surface mount) is available in nominal sizes 4" x 4" (102 x 102) through 60" x 48" (1524 x 1219).
Type L (lay-in) is available by ordering a listed size that is 3" (76) smaller than ceiling module size.
Core is secured to outer frame with Type QT stainless steel 1/4 turn slotted fasteners.

DIMENSIONAL DATA:

FILTER RETURN GRILLES • 51FE, 51FE45, 51FP, 61FE, 61FP





MODELS:
51FE, 61FE

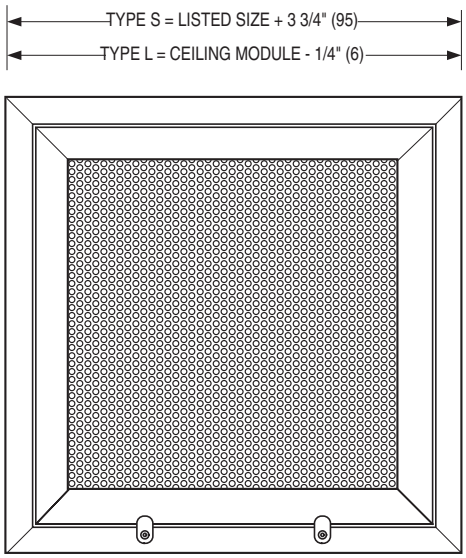
Eggcrate Core • 1/2 x 1/2 x 1/2 (13 x 13 x 13) Aluminum Core

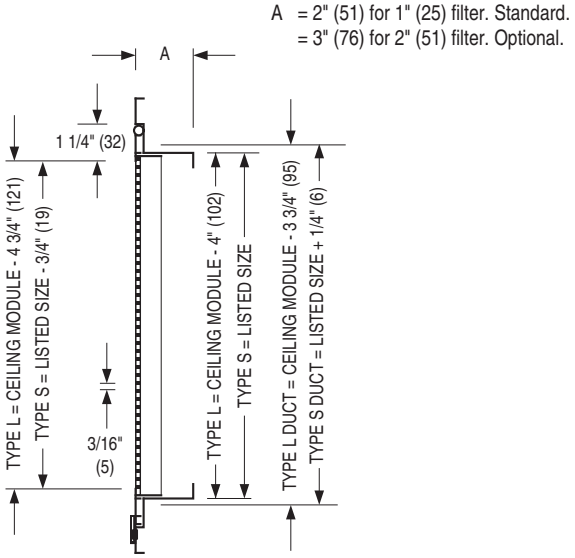
Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Maximum size for Model 51FE45 is 48" x 24" (1219 x 610).

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.





MODELS:
51FP, 61FP

Perforated Face • 3/16" (5) dia. holes on 1/4" (6) staggered centers

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments.

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.

HOW TO ORDER

MODEL SERIES: 51F, 61F

FILTER RETURN GRILLES AND REGISTERS

EXAMPLE: 61FB45 - 16 x 16 - S - AW - N - HT - QTL - —

1. **Models**

Fixed Louver Blades:

51FB45 Aluminum, 45° Deflection, 3/4" (19) spacing
61FB45 Steel, 45° Deflection, 3/4" (19) spacing
51FB55 Aluminum, 45° Deflection, 1/2" (13) spacing
61FB55 Steel, 45° Deflection, 1/2" (13) spacing
51FBS Aluminum, 0° Deflection, 3/4" (19) spacing
61FBS Steel, 0° Deflection, 3/4" (19) spacing

Eggcrate:

51FE Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
61FE Steel, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
51FE45 Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core, 45° Deflection, Sight Proof

Perforated Core:

51FP Aluminum, Perforated Face
61FP Steel, Perforated Face

2. **Nominal Width x Height**

inches (mm)

Surface Mount:

W x H = Duct Size

Lay-in T-Bar:

W x H = Ceiling Module Size

3. **Frame/Border Type**

S Surface Mount Border 1 1/4" (32) (default)
L Lay-in T-Bar

4. **Finish**

AW Appliance White (default)
AL Aluminum
BK Black
BW British White
LBP Light Bronze Paint
MBP Medium Bronze Paint
DBP Dark Bronze Paint
MI Mill
PC Prime Coat
SP Special Custom Color

5. **Fastening**

(only for frame/border Types S)
N None (default)
A Screw Holes

6. **Hinge**

HT Top (default)
HB Bottom
HL Left
HR Right

7. **Core Fastening**

QTL 1/4 Turn Latch (default)
KK Knurled Knob
QT 1/4 Turn Slotted

OPTIONS & ACCESSORIES:

8. **Filter**

F2 Provision for 2" (51)

9. **Gaskets**

GK Foam Gasket

10. **Earthquake Tabs**

EQT Earthquake Tabs

Notes:

1. For Type S, duct size is ceiling size + 1/4" (6).

2. For Type L, duct size is ceiling size – 3 3/4" (95).

3. Core Fastening: Standard core is hinged and secured with 1/4 turn latches.

HOW TO ORDER

MODEL SERIES: 67F

STAINLESS STEEL FILTER RETURN GRILLES & REGISTERS • REMOVABLE FACE W/ SUBFRAME

EXAMPLE: 67FB45 - O - 24 x 12 - S - #4 - A - 304 - F1 - QT

1. **Models**
   - 67FB45 45° Deflection, 3/4" (19) spacing,
   - 67FB55 45° Deflection, 1/2" (13) spacing,
2. **Damper (OBD)** (model suffix)
   - — None
   - O Stainless Steel
3. **Nominal Width x Height** inches (mm)
4. **Frame/Border Type**
   - S Surface Mount (default)
5. **Finish**
   - #4 Brushed Satin Polished (default)
   - AW Appliance White
   - SP Special Custom Color
6. **Fastening**
   - A Screw Holes (standard) (default)
   - N None

OPTIONS & ACCESSORIES:

7. **Construction**
   - 304 Type 304 Stainless Steel (default)
   - 316 Type 316 Stainless Steel
8. **Filter Clips**
   - F1 For 1" (25) filter (default)
   - F2 For 2" (51)
   - FN None
9. **Core Fastening**
   - QT 1/4 Turn Slotted Fasteners (default)
   - HTQT Hinged at Top / 1/4 Turn Slotted
   - WT 1/4 Turn "Wingnut" Fasteners

Notes:

1. These grilles feature a subframe as standard for applications which may require frequent removal for cleaning.

2. Frame/Border Type S is standard. Duct size = Listed Size + 1/4" (6).

3. For Lay-in T-Bar applications, order a listed size (neck/filter size) that is 3" (76) smaller than ceiling module size.

4. Core Fastening: Standard core is secured with four 1/4 turn slotted fasteners.

5. Louvered blades are parallel to width (first dimension).

HOW TO SPECIFY

MODEL SERIES: 51F
ALUMINUM FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

51FB45, 51FB55, 51FBS Aluminum Louvered Blade
Furnish and install **Nailor Model** (select one) **51FB45, 51FB55** or **51FBS Fixed Blade Filter Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grille shall have extruded aluminum fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51FE Aluminum Eggcrate Grid Core
Furnish and install **Nailor Model 51FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51FE45 – Aluminum Eggcrate Grid Core - 45° Deflection
Furnish and install **Nailor Model 51FE45 Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core angled at 45° and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

51FP Aluminum Perforated Face Core
Furnish and install **Nailor Model 51FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have an aluminum perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and an extruded aluminum frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

MODEL SERIES: 61F
STEEL FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

61FB45, 61FB55, 61FBS Steel Louvered Blade
Furnish and install **Nailor Model** (select one) **61FB45, 61FB55** or **61FBS Fixed Blade Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have roll-formed corrosion-resistant steel fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61FE Steel Eggcrate Grid Core
Furnish and install **Nailor Model 61FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant steel frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61FP Steel Perforated Face Core
Furnish and install **Nailor Model 61FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have a corrosion-resistant steel perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and a corrosion-resistant steel frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO SPECIFY

MODEL SERIES: 67F
STAINLESS STEEL FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

67FB45 Stainless Steel – 3/4" (19) Blade Spacing
Furnish and install **Nailor Model 67FB45 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White.

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

67FB55 Stainless Steel – 1/2" (13) Blade Spacing
Furnish and install **Nailor Model 67FB55 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White.

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ALUMINUM DOOR/TRANSFER GRILLES

- SIGHT-PROOF

Models:

51DGD Double Flange

51DGS Single Flange

Model 51DGD

Nailor Model Series 51DG Door/Transfer Grilles are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series 51DG offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing an inverted 'V' shape louver on 3/4" (19) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-V blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The 51DG durability assures good looks and long service.

Screw holes in the frame are countersunk for smooth appearance after installation.

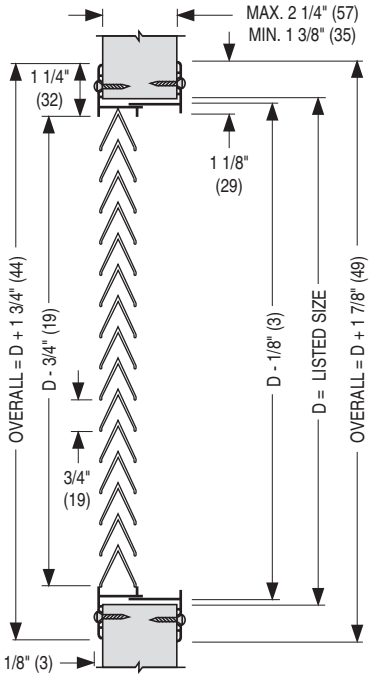
Available sizes 4" x 4" (102 x 102) through 36" x 36" (914 x 914) in 2" (51) increments.

CONSTRUCTION MATERIAL:

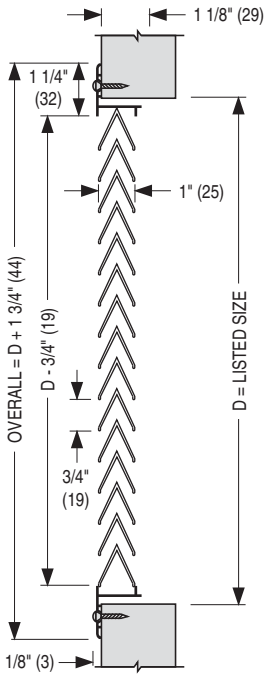
- Heavy gauge, extruded aluminum.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.



MODEL 51DGD (Double Flange)
Auxiliary Frame Assembly



MODEL 51DGS (Single Flange)
Core and Flange Frame Assembly

STEEL DOOR/TRANSFER GRILLES

- SIGHT-PROOF

Models:

61DGD Double Flange
61DGS Single Flange
61DGC Core Only

Models 61DGD, 61DGC

Nailor Model Series 61DG Door/Transfer Grilles are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series 61DG offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing a 90° inverted 'V' louver on 1/2" (13) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-V blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The 61DG durability assures good looks and long service.

Screw holes in the frame are countersunk for smooth appearance after installation.

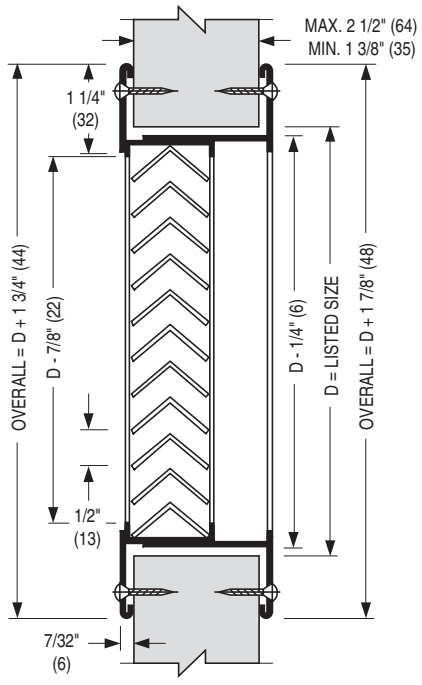
Available sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in 2" (51) increments.

CONSTRUCTION MATERIAL:

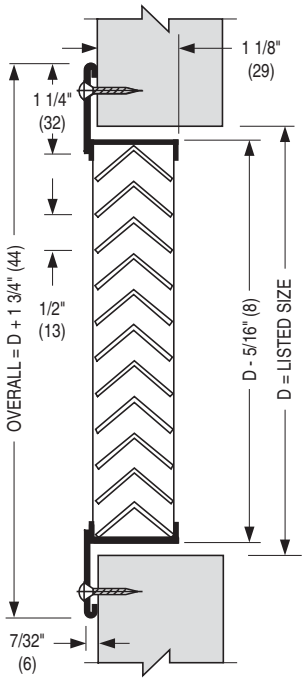
- Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

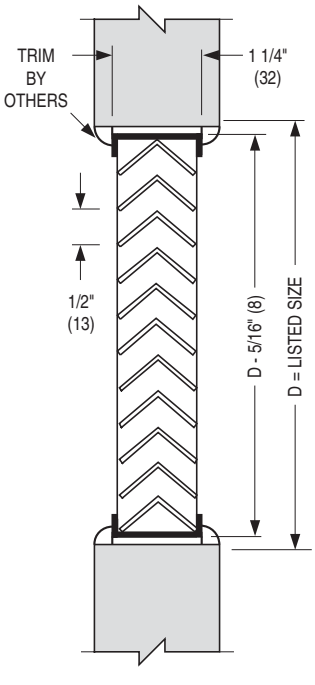
- AW Appliance White finish is standard. Other finishes are available.



MODEL 61DGD (Double Flange)
Auxiliary Frame Assembly



MODEL 61DGS (Single Flange)
Core and Flange Frame Assembly



MODEL 61DGC (Core Only)
Core and Channel Frame Assembly

STEEL FIRE RATED DOOR GRILLES

- LOUVERED FACE
- UL LISTED
- SELF ATTACHING AUXILIARY FRAME

c UL us LISTED
CATEGORY GVZS & GVZS7

Model:
61DGD-FR

Model 61DGD-FR

Nailor Model Series 61DGD-FR Fire Rated Door Grilles are listed by Underwriters Laboratories for use in hollow metal and composite type fire doors with up to a 1 1/2 hour rating.

The frame is designed to suit doors that are 1 3/4" (44) thick, and includes a self-attaching auxiliary frame which eliminates the need to drill holes in the door. The 18 gauge formed steel blades are "Z" shaped and are adjustable using the pull operator. 45% free area.

The closing assembly features a 160°F (71° C) UL listed fusible link with stainless steel operating spring and dead lock bar.

STANDARD FEATURES:

- Material: 18 gauge cold rolled steel frame and blades.
- 1 1/8" (29) wide face border with a 3/16" (5) bevelled edge.
- UL Listed with up to a 1 1/2 hr. rating. 160° F (71° C) fusible link.
- Available in 2" (51) incremental sizes from 10" x 6" (254 x 152) to 24" x 24" (610 x 610).

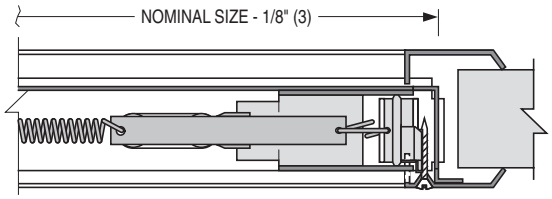
For your convenience, size Quick Delivery sizes are available. Contact your Nailor representative for details.

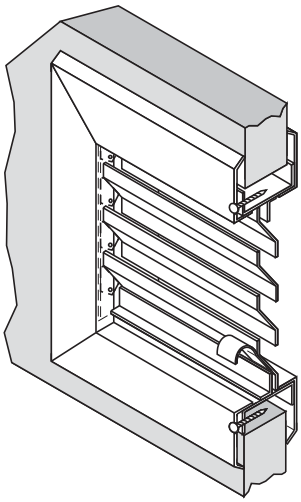
CONSTRUCTION MATERIAL:

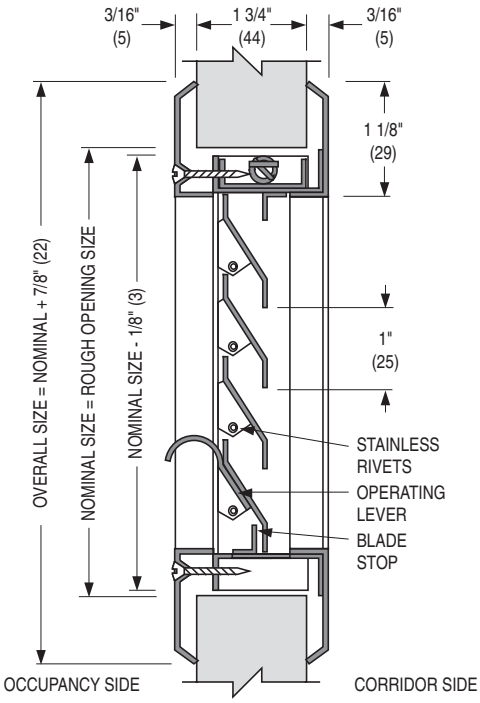
- Cold rolled steel construction.

FINISH OPTIONS:

- BP Dark Bronze primer is standard. Other finishes are available.







(*UL Listed Model FLDL-UL)

PERFORMANCE DATA:
DOOR/TRANSFER GRILLES – 5100 AND 6100 SERIES
MODELS: 51DG, 61DG

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	150 .001 .012	200 .002 .021	250 .004 .033	300 .006 .048	350 .008 .065	400 .010 .085	450 .013 .108
6 x 6	8 x 4 10 x 4	0.18	0.25	**CFM** Noise Criteria	**18** –	**27** –	**36** –	**45** 18	**54** 22	**63** 25	**72** 28	**81** 30
8 x 6	12 x 4	0.25	0.33	**CFM** Noise Criteria	**25** –	**38** –	**50** –	**63** 19	**75** 23	**88** 26	**100** 29	**113** 31
10 x 6	16 x 4	0.32	0.41	**CFM** Noise Criteria	**32** –	**48** –	**64** 15	**80** 20	**96** 24	**112** 27	**128** 30	**144** 33
8 x 8		0.35	0.44	**CFM** Noise Criteria	**35** –	**53** –	**70** 15	**88** 20	**105** 24	**123** 27	**140** 30	**158** 32
12 x 6	18 x 4	0.40	0.50	**CFM** Noise Criteria	**40** –	**60** –	**80** 16	**100** 21	**120** 25	**140** 28	**160** 31	**180** 33
12 x 8	16 x 6 24 x 4	0.55	0.66	**CFM** Noise Criteria	**58** –	**83** –	**110** 17	**138** 22	**165** 26	**193** 29	**220** 32	**248** 34
10 x 10	26 x 4	0.58	0.69	**CFM** Noise Criteria	**61** –	**87** –	**116** 17	**145** 22	**174** 26	**203** 29	**232** 32	**261** 35
12 x 10	16 x 8 20 x 6	0.70	0.82	**CFM** Noise Criteria	**74** –	**105** –	**140** 19	**175** 23	**210** 27	**245** 30	**280** 33	**315** 36
12 x 12	14 x 10 24 x 6 18 x 8	0.86	0.99	**CFM** Noise Criteria	**90** –	**129** –	**172** 20	**215** 24	**258** 28	**301** 31	**344** 34	**387** 36
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.20	1.35	**CFM** Noise Criteria	**124** –	**180** 15	**240** 21	**300** 25	**420** 29	**420** 32	**480** 35	**540** 37
18 x 12	16 x 14 28 x 8 22 x 10	1.32	1.49	**CFM** Noise Criteria	**132** –	**198** 16	**264** 22	**330** 26	**396** 30	**462** 33	**528** 36	**594** 38
16 x 16	18 x 14 30 x 8 22 x 12	1.59	1.76	**CFM** Noise Criteria	**159** –	**239** 16	**318** 22	**398** 27	**477** 32	**557** 34	**636** 36	**716** 39
24 x 12	18 x 16 30 x 10 20 x 14	1.79	1.98	**CFM** Noise Criteria	**179** –	**269** 17	**358** 23	**448** 28	**537** 33	**627** 35	**716** 37	**806** 40
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.04	2.23	**CFM** Noise Criteria	**204** –	**306** 18	**408** 24	**510** 29	**612** 34	**714** 36	**816** 38	**918** 41
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.25	2.48	**CFM** Noise Criteria	**225** –	**338** 18	**450** 24	**563** 29	**675** 34	**788** 36	**900** 38	**1013** 41
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.54	2.75	**CFM** Noise Criteria	**254** –	**381** 19	**508** 25	**635** 30	**762** 35	**889** 43	**1016** 39	**1143** 42
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.10	3.33	**CFM** Noise Criteria	**310** –	**465** 19	**620** 25	**775** 30	**930** 35	**1085** 38	**1240** 40	**1395** 43
30 x 18	24 x 22 40 x 14 34 x 16	3.46	3.71	**CFM** Noise Criteria	**346** –	**519** 20	**692** 26	**865** 30	**1038** 35	**1211** 38	**1384** 40	**1557** 43
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.71	3.96	**CFM** Noise Criteria	**371** –	**557** 20	**742** 26	**928** 30	**1113** 35	**1299** 38	**1484** 41	**1670** 44
36 x 18	32 x 20 46 x 14 40 x 16	4.18	4.46	**CFM** Noise Criteria	**418** –	**627** 20	**836** 26	**1045** 30	**1254** 35	**1463** 39	**1672** 41	**1881** 44
26 x 26	28 x 24	4.38	4.65	**CFM** Noise Criteria	**438** –	**657** 20	**876** 27	**1095** 31	**1314** 36	**1533** 39	**1752** 41	**1971** 44
30 x 24	28 x 26 36 x 20 32 x 22	4.68	4.95	**CFM** Noise Criteria	**468** –	**702** 21	**936** 27	**1170** 31	**1404** 36	**1638** 39	**1872** 41	**2106** 44
28 x 28	30 x 26 36 x 22	5.11	5.39	**CFM** Noise Criteria	**511** –	**767** 21	**1022** 28	**1278** 32	**1533** 37	**1789** 40	**2044** 42	**2300** 45
36 x 24	30 x 28	5.64	5.94	**CFM** Noise Criteria	**564** –	**846** 22	**1128** 28	**1410** 32	**1692** 37	**1974** 40	**2256** 42	**2538** 45
30 x 30	34 x 26	5.89	6.19	**CFM** Noise Criteria	**589** –	**884** 22	**1178** 28	**1473** 32	**1767** 37	**2062** 40	**2356** 42	**2651** 45

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Ak balancing factors are based on an Alnor velometer with a 2220A or 6070P Jet Probe. Position probe 1" (25) out from face of grille and take the average of several readings at various positions.

   Airflow (CFM) = Average Velocity (Vk) x Ak.
4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 51DG • ALUMINUM DOOR/TRANSFER GRILLE

EXAMPLE: 51DGD - 24 x 12 - AW

1. **Models**
   - 51DGD Double Flange
   - 51DGS Single Flange
2. **Width x Height**
   inches (mm)
3. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - SA Satin Anodized
   - SP Special Custom Color

Notes:

1. For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum door grille with a double flange, is Model 51DGD. Unit will be supplied with screw holes and AW Appliance White finish.

MODEL SERIES: 61DG • STEEL DOOR/TRANSFER GRILLE

EXAMPLE: 61DGD - 24 x 12 - AW

1. **Models**
   - 61DGD Double Flange
   - 61DGS Single Flange
   - 61DGC No Flange (core only)
   - 61DGD-FR Double Flange, Fire Rated
2. **Width x Height**
   inches (mm)
3. **Finish**
   - AW Appliance White *
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - BP Dark Bronze Primer **
   - MI Mill
   - PC Prime Coat
   - SP Special Custom Color *

Notes:

1. For a standard grille with no special requirements, the "default" will automatically be selected. Example: a steel door grille with a double flange, is Model 61DGD. Unit supplied with AW Appliance White finish.

2. * AW Appliance White is default on Models 61DGD, 61DGS and 61DGC.

** BP Dark Bronze Primer is the only available finish on Model 61DGD-FR.

HOW TO SPECIFY

MODEL SERIES: 51DG • ALUMINUM DOOR/TRANSFER GRILLE

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51DGD** or **51DGS Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have extruded aluminum inverted 'V' shaped blades and an extruded aluminum frame. The door grille is to be sight-proof. The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

MODEL SERIES: 61DGD, 61DGS, 61DGC • STEEL NON-FIRE RATED DOOR/TRANSFER GRILLE
MODEL SERIES: 61DGD-FR • STEEL FIRE RATED DOOR/TRANSFER GRILLE

SUGGESTED SPECIFICATION:

61DGD, 61DGS AND 61DGC – Steel Non-Fire Rated Door/Transfer Grille

Furnish and install **Nailor Model** (select one) **61DGD, 61DGS** or **61DGC Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have corrosion-resistant steel inverted 'V' shaped blades and frames. The door grille is to be sight-proof. The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61DGD-FR – Steel Fire Rated Door/Transfer Grille

Furnish and install **Nailor Model 61DGD-FR Fire Rated Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have corrosion-resistant steel blades and frames, UL Listed with a fire-rating up to 1 1/2 hours. The finish shall be BP Dark Bronze Primer. The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ALUMINUM REVERSIBLE CORE GRILLES AND REGISTERS

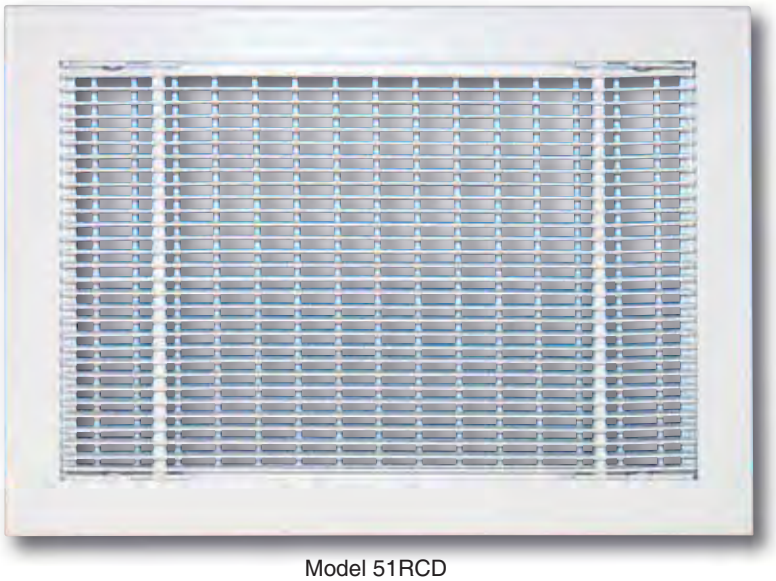
- SUPPLY OR RETURN

Models:

51RC

51RCD

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**



Model 51RCD

Nailor Models 51RC and 51RCD Reversible Core 'Linear Style' Grilles and Registers are designed to combine rugged aluminum construction, pleasing architectural design and flexible air pattern versatility. The blade core is removable and may be rotated or reversed to achieve any one of four air deflection patterns. The Model 51RCD incorporates a set of rear directional vanes that are individually adjustable for additional air pattern control in supply applications.

STANDARD FEATURES:

- Blade core is secured by a minimum of four sliding friction latches and is removable without the need for special tools.
- For additional air pattern control in supply applications, these grilles are available with optional rear deflection vanes, (on 3/4" [19] centers), which are friction pivoted and adjustable in order to provide horizontal spread of the air pattern from 0° to 45°.
- Type N standard fastening is with sheet metal screws through neck of grille frame while core is removed, providing a clean, architectural appearance.
- Optional Type A countersunk screw holes on frame available.
- Available in sizes from 6" x 4" to 48" x 24" (152 x 102 to 1219 x 610) in single section construction.

CONSTRUCTION MATERIAL:

- High quality extruded aluminum frame with reinforced mitered corners.
- Horizontal aluminum blades are spaced on 1/4" (6) centers and feature mandrel tube construction.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

FINISH OPTIONS:

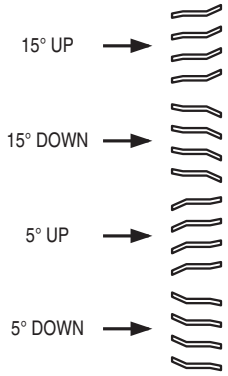
- AW Appliance White finish is standard. Other finishes are available.

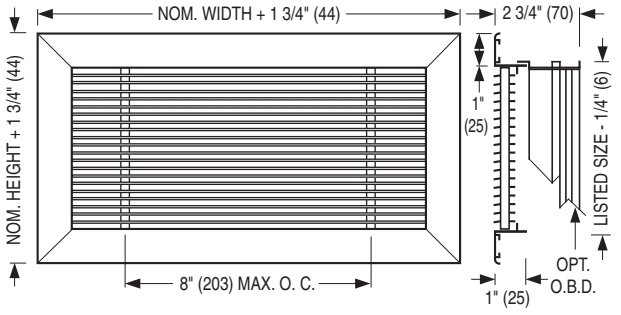
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

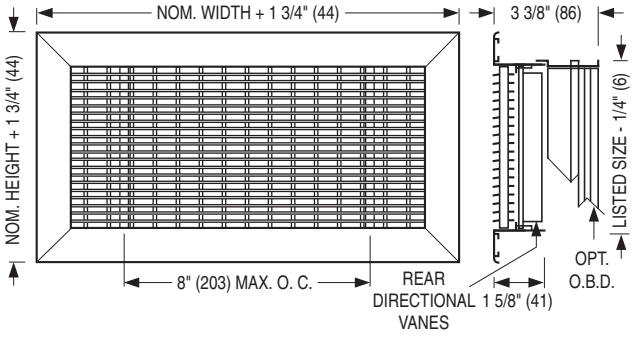
For additional options and accessories, see page F191.

Reversible core provides 4 different vertical deflections:





Model 51RC Reversible Core Grille



Model 51RCD Reversible Core Grille with Rear Directional Vanes

PERFORMANCE DATA:
REVERSIBLE CORE GRILLES AND REGISTERS • 51RC SERIES
MODELS: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
					22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
					45°	.013	.029	.051	.079	.113	.156	.205	.258	.318
6 x 6	8 x 4 10 x 4	0.20		CFM		40	60	80	100	120	140	160	180	200
				Noise Criteria		–	–	–	–	18	23	27	30	33
			.14	Throw	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
			.13		22 1/2°	2-4-8	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20
			.12		45°	1-2-5	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	7-8-12	8-9-13
8 x 6	10 x 5 12 x 4	0.27		CFM		54	81	108	135	162	189	216	243	270
				Noise Criteria		–	–	–	–	19	24	28	31	34
			.18	Throw	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
			.17		22 1/2°	2-4-10	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24
			.15		45°	1-2-6	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15
10 x 6	12 x 5 16 x 4	0.35		CFM		70	105	140	175	210	245	280	315	350
				Noise Criteria		–	–	–	15	20	25	29	32	35
			.23	Throw	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
			.21		22 1/2°	2-5-11	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26
			.20		45°	1-3-7	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17
8 x 8	14 x 5	0.38		CFM		76	114	152	190	228	266	304	342	380
				Noise Criteria		–	–	–	16	21	26	30	33	36
			.24	Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
			.22		22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27
			.21		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
12 x 6	18 x 4	0.42		CFM		84	126	168	210	252	294	336	378	420
				Noise Criteria		–	–	–	16	21	26	30	33	36
			.27	Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
			.25		22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27
			.23		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
14 x 6	10 x 8	0.50		CFM		100	150	200	250	300	350	400	450	500
				Noise Criteria		–	–	–	17	22	27	31	34	37
			.32	Throw	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
			.30		22 1/2°	2-6-13	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29
			.27		45°	1-3-8	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18
12 x 8	16 x 6 24 x 4	0.58		CFM		116	174	232	290	348	406	464	522	580
				Noise Criteria		–	–	–	18	23	28	32	35	38
			.36	Throw	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
			.33		22 1/2°	2-6-14	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30
			.31		45°	1-3-8	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19
10 x 10	14 x 7 26 x 4	0.61		CFM		122	183	244	305	366	427	488	549	610
				Noise Criteria		–	–	–	18	23	28	32	35	38
			.38	Throw	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
			.35		22 1/2°	2-6-14	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31
			.33		45°	1-3-8	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		130	195	260	325	390	455	520	585	650
				Noise Criteria		–	–	–	19	24	29	33	36	39
			.41	Throw	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
			.38		22 1/2°	2-6-14	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32
			.44		45°	1-3-9	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20
12 x 10	20 x 6 24 x 5	0.74		CFM		148	222	296	370	444	518	592	666	740
				Noise Criteria		–	–	–	19	24	29	33	36	39
			.46	Throw	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
			.43		22 1/2°	3-6-15	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34
			.39		45°	1-3-9	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		160	240	320	400	480	560	640	720	800
				Noise Criteria		–	–	–	20	25	30	34	37	40
			.50	Throw	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
			.46		22 1/2°	3-6-16	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36
			.43		45°	1-3-10	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		180	270	360	450	540	630	720	810	900
				Noise Criteria		–	–	–	20	25	30	34	37	40
			.55	Throw	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
			.51		22 1/2°	3-7-17	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38
			.47		45°	1-4-10	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24

For performance data notes, see F137.

PERFORMANCE DATA:
REVERSIBLE CORE GRILLES AND REGISTERS • 51RC SERIES
MODELS: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0° 22 1/2° 45°	.007 .008 .013	.016 .019 .029	.029 .033 .051	.045 .052 .079	.065 .075 .113	.089 .102 .156	.117 .134 .205	.147 .169 .258	.181 .209 .318
18 x 10	30 x 6	1.13		CFM		226	339	452	565	678	791	904	1017	1130
				Noise Criteria		–	–	–	21	26	31	35	38	41
			.69	Throw	0°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51
			.64		22 1/2°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	22-27-38	24-29-41
			.59		45°	1-5-11	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	14-17-24	15-18-26
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM		248	372	496	620	744	868	992	1116	1240
				Noise Criteria		–	–	–	21	26	31	35	38	41
			.75	Throw	0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60
			.70		22 1/2°	4-10-21	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-48
			.64		45°	2-6-13	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	16-20-28	18-21-30
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM		274	411	548	685	822	959	1096	1233	1370
				Noise Criteria		–	–	15	22	27	32	36	39	42
			.83	Throw	0°	5-12-26	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	33-41-58	35-43-61
			.77		22 1/2°	4-10-21	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	26-33-46	28-34-49
			.71		45°	2-6-13	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	16-20-29	18-22-31
24 x 10	20 x 12 30 x 8	1.52		CFM		304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria		–	–	15	22	27	32	36	39	42
			.92	Throw	0°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-65
			.85		22 1/2°	5-10-22	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	28-34-49	30-36-51
			.79		45°	3-6-14	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	17-21-30	19-23-32
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM		328	492	656	820	984	1148	1312	1476	1640
				Noise Criteria		–	–	15	22	27	32	36	39	42
			.99	Throw	0°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67
			.92		22 1/2°	5-10-24	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	30-36-51	31-38-54
			.85		45°	3-6-15	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	18-22-32	20-24-34
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM		370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria		–	–	16	23	28	33	37	40	43
			1.11	Throw	0°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69
			1.03		22 1/2°	5-10-24	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	30-37-52	32-38-55
			.95		45°	3-6-15	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	19-23-32	20-24-35
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM		420	630	840	1050	1260	1470	1680	1890	2100
				Noise Criteria		–	–	16	23	28	33	37	40	43
			1.25	Throw	0°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74
			1.16		22 1/2°	5-11-26	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	32-39-66	34-42-59
			1.07		45°	3-7-16	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	20-24-35	21-26-37
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM		464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria		–	–	17	24	29	34	38	41	44
			1.40	Throw	0°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79
			1.30		22 1/2°	6-12-27	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	35-42-60	32-45-63
			1.20		45°	3-7-17	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	22-26-37	23-28-40
24 x 16	32 x 12	2.50		CFM		500	750	1000	1250	1500	1750	2000	2250	2500
				Noise Criteria		–	–	17	24	29	34	38	41	44
			1.49	Throw	0°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82
			1.38		22 1/2°	6-13-29	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	37-44-62	38-46-66
			1.28		45°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	23-27-39	24-29-41
20 x 20	22 x 18	2.61		CFM		522	783	1044	1305	1566	1827	2088	2349	2610
				Noise Criteria		–	–	17	24	29	34	38	41	44
			1.55	Throw	0°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84
			1.44		22 1/2°	6-13-30	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	37-45-64	39-47-67
			1.33		45°	3-8-18	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	23-28-40	25-30-42
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM		558	837	1116	1395	1674	1953	2232	2511	2790
				Noise Criteria		–	–	17	24	29	34	38	41	44
			1.67	Throw	0°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86
			1.55		22 1/2°	6-13-30	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-69
			1.44		45°	3-8-19	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	23-29-41	25-31-43
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM		634	951	1268	1585	1902	2219	2536	2853	3170
				Noise Criteria		–	–	18	25	30	35	39	42	45
			1.89	Throw	0°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92
			1.76		22 1/2°	6-14-32	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	40-50-70	42-52-74
			1.62		45°	4-9-20	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	25-31-43	27-33-46

For performance data notes, see F137.

PERFORMANCE DATA:
REVERSIBLE CORE GRILLES AND REGISTERS • 51RC SERIES
MODELS: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0° 22 1/2° 45°	.007 .008 .013	.016 .019 .029	.029 .033 .051	.045 .052 .079	.065 .075 .113	.089 .102 .156	.117 .134 .205	.147 .169 .258	.181 .209 .318
42 x 12	36 x 14	3.27		CFM		654	981	1308	1635	1962	2289	2616	2943	3270
				Noise Criteria		–	–	18	25	30	35	39	42	45
			1.95	Throw	0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
			1.81		22 1/2°	6-14-33	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	40-50-70	42-53-74
			1.68		45°	4-9-20	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	25-31-44	27-33-47
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM		708	1062	1416	1770	2124	2478	2832	3186	3540
				Noise Criteria		–	–	18	25	30	35	39	42	45
			2.10	Throw	0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
			1.95		22 1/2°	7-14-34	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	42-52-74	45-55-78
			1.81		45°	4-9-21	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	26-32-46	28-35-49
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM		758	1137	1516	1895	2274	2653	3032	3411	3790
				Noise Criteria		–	–	18	25	30	35	39	42	45
			2.25	Throw	0°	9-19-44	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	54-66-94	57-70-99
			2.09		22 1/2°	7-15-35	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	43-53-75	46-56-79
			1.93		45°	4-9-22	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	27-33-47	29-35-50
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		858	1287	1716	2145	2574	3003	3432	3861	4290
				Noise Criteria		–	–	19	26	31	36	40	43	46
			2.53	Throw	0°	9-20-46	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	58-71-101	61-75-106
			2.36		22 1/2°	7-16-37	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	46-57-81	49-60-85
			2.18		45°	4-10-23	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	29-35-50	31-38-53
26 x 26	28 x 24 48 x 14	4.47		CFM		894	1341	1788	2235	2682	3129	3576	4023	4470
				Noise Criteria		–	–	19	26	31	36	40	43	46
			2.62	Throw	0°	9-21-47	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	60-73-103	63-77-109
			2.44		22 1/2°	7-17-38	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	48-58-82	50-62-87
			2.25		45°	4-10-23	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	30-36-51	32-39-55
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		954	1431	1908	2385	2862	3339	3816	4293	4770
				Noise Criteria		–	–	19	26	31	36	40	43	46
			2.81	Throw	0°	10-22-49	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	62-75-106	65-79-112
			2.62		22 1/2°	8-18-39	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	50-60-85	52-63-90
			2.42		45°	5-11-24	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	31-37-53	33-40-56
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1040	1560	2080	2600	3120	3640	4160	4680	5200
				Noise Criteria		–	–	20	27	32	37	41	44	47
			3.09	Throw	0°	10-22-50	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	64-78-110	67-82-116
			2.88		22 1/2°	8-18-40	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	51-62-88	54-66-93
			2.66		45°	5-11-25	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	32-39-55	34-41-58
36 x 24	40 x 22 44 x 20	5.74		CFM		1148	1722	2296	2870	3444	4018	4592	5166	5740
				Noise Criteria		–	–	20	27	32	37	41	44	47
			3.38	Throw	0°	11-24-54	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	68-84-118	72-88-124
			3.15		22 1/2°	9-19-43	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	54-67-94	58-70-99
			2.91		45°	5-12-27	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	34-42-59	36-44-62
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		1344	2016	2688	3360	4032	4704	5376	6048	6720
				Noise Criteria		–	–	21	28	33	38	42	45	48
			3.95	Throw	0°	12-26-58	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	73-88-125	77-93-132
			3.68		22 1/2°	10-21-46	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	58-70-100	62-74-106
			3.40		45°	6-13-29	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	36-44-62	39-47-66
36 x 30	38 x 28	7.22		CFM		1444	2166	2888	3610	4332	5054	5776	6498	7220
				Noise Criteria		–	–	21	28	33	38	42	45	48
			4.23	Throw	0°	12-26-61	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	76-93-132	80-98-139
			3.94		22 1/2°	10-21-49	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	61-74-106	64-78-111
			3.64		45°	6-13-30	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-70
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria		–	15	22	29	34	39	43	46	49
			4.51	Throw	0°	13-27-62	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	78-95-135	82-100-142
			4.20		22 1/2°	10-22-50	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	62-76-108	66-80-114
			3.88		45°	6-13-31	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	39-47-67	41-50-71

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Tabulated data includes opposed blade damper. Without OBD, multiply Total Pressure (TP) by x 0.8. Subtract 4 Noise Criteria (NC) from the Noise Criteria value shown.
4. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
5. Noise Criteria (NC) values were obtained using a 0° horizontal deflection rear blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 NC to the tabulated NC level respectively.
6. When used as a return grille, the negative static pressure is obtained by multiplying the tabulated Total Pressure @ 0° deflection by x 0.8. Add 4 Noise Criteria to the Noise Criteria value shown.
7. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 51RC, 51RCD
REVERSIBLE CORE GRILLES AND REGISTER

EXAMPLE: 51RC - O - 24 x 12 - S - AW - DMI - N - —

1. **Models**
   - 51RC Aluminum Construction
   - 51RCD Aluminum Construction with Rear Vanes
2. **Damper (OBD)** (model suffix)
   - O Steel
   - OA Aluminum
   - — None
3. **Nominal Width x Height** inches (mm)
4. **Frame/Border Type**
   - S Surface Mount Border 1 1/4" (32) (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PC Prime Coat
   - PPA Paint Prepared Aluminum
   - SP Special Custom Color
6. **Opposed Blade Damper Finish**
   - DMI Mill (default)
   - DBK Painted Black
7. **Fastening**
   - N None (default)
   - A Countersunk Screw Holes

OPTIONS & ACCESSORIES:

- — None (default)

8. **Plaster Sub-Frame**
   - PF Plaster Sub-Frame
9. **Insect Screen**
   - IS Insect Screen
10. **Gaskets**
    - GK Foam Gasket
11. **Earthquake Tabs**
    - EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum reversible core register, and steel damper, is Model 51RC-O. Unit will be supplied with no screw holes and AW Appliance White finish.

HOW TO SPECIFY

MODEL SERIES: 51RC, 51RCD
REVERSIBLE CORE GRILLES AND REGISTER

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51RC** or **51RCD (with rear vanes) Reversible Core Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have extruded aluminum blades and frame. The blade core is to be removable and may be rotated or reversed to achieve any one of four air deflection patterns. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS

- SUPPLY

Models:

51D30H-HD 30° Horizontal Blades
51D30V-HD 30° Vertical Blades
51D15H-HD 15° Horizontal Blades
51D15V-HD 15° Vertical Blades
51DFH-HD 0° Horizontal Blades
51DFV-HD 0° Vertical Blades

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 51D15H-HD

Nailor Model Series 51D00-HD Heavy Duty Supply Grilles and Registers are designed to combine heavy duty aluminum construction, pleasing architectural design and flexible air pattern versatility. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers. All models are supplied with a set of friction pivoted rear vanes on 3/4" (19) centers that are individually adjustable for directional control and air pattern spread.

STANDARD FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0°, 15° or 30° deflection.
- 0° and 15° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- Rear deflection vanes on 3/4" (19) centers are friction pivoted and adjustable in order to provide directional control and air pattern spread.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available in sizes from 6" x 4" to 48" x 36" (152 x 102 to 1219 x 910) in single section construction.

CONSTRUCTION MATERIAL:

- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

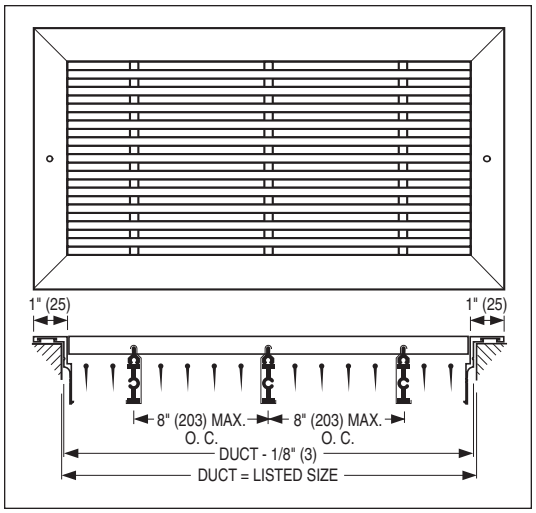
FINISH OPTIONS:

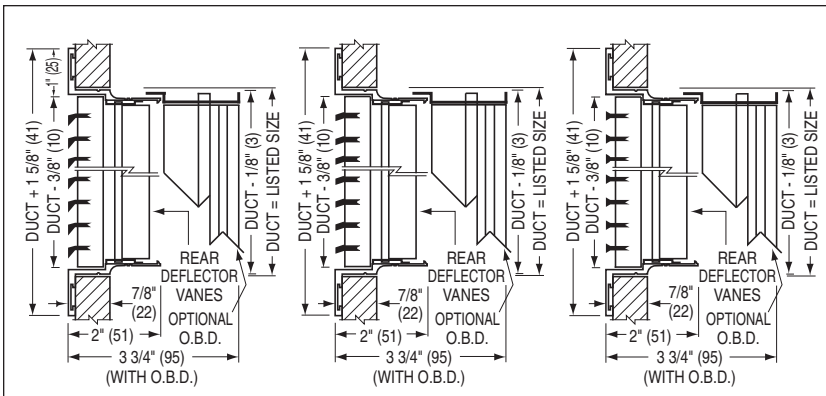
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





Model 51D30H-HD (Horizontal Shown)

Model 51D15H-HD (Horizontal Shown)

Model 51DFH-HD (Horizontal Shown)

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
					22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
					45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
6 x 6	8 x 4 10 x 4	0.20		CFM		40	60	80	100	120	140	160	180	200
				Noise Criteria		–	–	–	–	24	29	33	36	39
			.12	Throw	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
			.11		22 1/2°	2-4-8	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20
			.10		45°	1-2-5	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	7-8-12	8-9-13
8 x 6	10 x 5 12 x 4	0.27		CFM		54	81	108	135	162	189	216	243	270
				Noise Criteria		–	–	–	20	25	30	34	37	40
			.15	Throw	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
			.14		22 1/2°	2-4-10	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24
			.13		45°	1-2-6	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15
10 x 6	12 x 5 16 x 4	0.35		CFM		70	105	140	175	210	245	280	315	350
				Noise Criteria		–	–	–	21	26	31	35	38	41
			.20	Throw	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
			.18		22 1/2°	2-5-11	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26
			.17		45°	1-3-7	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17
8 x 8	14 x 5	0.38		CFM		76	114	152	190	228	266	304	342	380
				Noise Criteria		–	–	–	22	27	33	36	39	43
			.21	Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
			.19		22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27
			.18		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
12 x 6	18 x 4	0.42		CFM		84	126	168	210	252	294	336	378	420
				Noise Criteria		–	–	–	22	27	33	36	39	42
			.23	Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
			.21		22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27
			.20		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
14 x 6	10 x 8	0.50		CFM		100	150	200	250	300	350	400	450	500
				Noise Criteria		–	–	16	23	28	33	37	40	43
			.27	Throw	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
			.26		22 1/2°	2-6-13	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29
			.23		45°	1-3-8	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18
12 x 8	16 x 6 24 x 4	0.58		CFM		116	174	232	290	348	406	464	522	580
				Noise Criteria		–	–	17	25	29	34	38	41	44
			.31	Throw	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
			.28		22 1/2°	2-6-14	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30
			.27		45°	1-3-8	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19
10 x 10	14 x 7 26 x 4	0.61		CFM		122	183	244	305	366	427	488	549	610
				Noise Criteria		–	–	17	24	29	34	38	41	44
			.33	Throw	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
			.30		22 1/2°	2-6-14	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31
			.28		45°	1-3-8	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		130	195	260	325	390	455	520	585	650
				Noise Criteria		–	–	19	25	30	35	39	42	45
			.35	Throw	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
			.33		22 1/2°	2-6-14	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32
			.30		45°	1-3-9	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20
12 x 10	20 x 6 24 x 5	0.74		CFM		148	222	296	370	444	518	592	666	740
				Noise Criteria		–	–	18	25	30	35	39	42	45
			.40	Throw	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
			.37		22 1/2°	3-6-15	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34
			.33		45°	1-3-9	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		160	240	320	400	480	560	640	720	800
				Noise Criteria		–	–	19	26	31	36	40	43	46
			.43	Throw	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
			.40		22 1/2°	3-6-16	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36
			.37		45°	1-3-10	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		180	270	360	450	540	630	720	810	900
				Noise Criteria		–	–	19	26	31	36	40	43	46
			.47	Throw	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
			.44		22 1/2°	3-7-17	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38
			.40		45°	1-4-10	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24

For performance data notes, see F142.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
					22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
					45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
18 x 10	30 x 6	1.13		CFM		226	339	452	565	678	791	904	1130	1130
				Noise Criteria		–	–	20	27	32	37	41	44	47
			.59	Throw	0°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51
			.55		22 1/2°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	22-27-38	24-29-41
			.51		45°	1-5-11	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	14-17-23	15-18-26
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM		248	372	496	620	744	868	992	1116	1240
				Noise Criteria		–	–	20	27	32	37	41	44	47
			.64	Throw	0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60
			.60		22 1/2°	4-10-21	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-48
			.55		45°	2-6-13	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	16-20-28	18-21-30
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM		274	411	548	685	822	959	1096	1233	1370
				Noise Criteria		–	–	21	28	33	38	42	45	48
			.71	Throw	0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-41-58	35-43-61
			.66		22 1/2°	4-10-21	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	26-33-46	28-34-49
			.61		45°	2-6-13	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	16-20-29	18-22-31
24 x 10	20 x 12 30 x 8	1.52		CFM		304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria		–	–	21	28	33	38	42	45	48
			.79	Throw	0°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-64
			.73		22 1/2°	5-10-22	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	28-34-49	30-36-51
			.68		45°	3-6-14	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	17-21-30	19-23-32
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM		328	492	656	820	984	1148	1312	1476	1640
				Noise Criteria		–	–	21	28	33	38	42	45	48
			.85	Throw	0°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67
			.79		22 1/2°	5-10-24	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	30-36-51	31-38-54
			.73		45°	3-6-15	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	18-22-32	20-24-34
24 x 12	18 x 16 22 x 14 30 x 10 36 x 8	1.85		CFM		370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria		–	15	22	29	34	39	43	46	49
			.95	Throw	0°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69
			.89		22 1/2°	5-10-24	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	30-37-52	32-38-55
			.82		45°	3-6-15	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	19-23-32	20-24-35
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM		420	630	840	1050	1260	1470	1680	1890	2100
				Noise Criteria		–	15	22	29	34	39	43	46	49
			1.07	Throw	0°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74
			1.00		22 1/2°	5-11-26	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	32-39-66	34-42-59
			.92		45°	3-7-16	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	20-24-35	21-26-37
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM		464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria		–	16	23	30	35	40	44	47	50
			1.20	Throw	0°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79
			1.12		22 1/2°	6-12-27	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	35-42-60	32-45-63
			1.03		45°	3-7-17	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	22-26-37	23-28-40
24 x 16	32 x 12	2.50		CFM		500	750	1000	1250	1500	1750	2000	2250	2500
				Noise Criteria		–	16	23	30	35	40	44	47	50
			1.28	Throw	0°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82
			1.19		22 1/2°	6-13-29	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	37-44-62	38-46-66
			1.10		45°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	23-27-39	24-29-41
20 x 20	22 x 18	2.61		CFM		522	783	1044	1305	1566	1827	2088	2349	2610
				Noise Criteria		–	16	23	30	35	40	44	47	50
			1.33	Throw	0°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84
			1.24		22 1/2°	6-13-30	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	37-45-64	39-47-67
			1.14		45°	3-8-18	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	23-28-40	25-30-42
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM		558	837	1116	1395	1674	1953	2232	2511	2790
				Noise Criteria		–	16	23	30	35	40	44	47	50
			1.44	Throw	0°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86
			1.33		22 1/2°	6-13-30	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-69
			1.24		45°	3-8-19	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	23-29-41	25-31-43
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM		634	951	1268	1585	1902	2219	2536	2853	3170
				Noise Criteria		–	17	24	31	36	41	45	48	51
			1.62	Throw	0°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92
			1.51		22 1/2°	6-14-32	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	40-50-70	42-52-74
			1.39		45°	4-9-20	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	25-31-43	27-33-46

For performance data notes, see F142.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				Total Pressure	0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
					22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
					45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
42 x 12	36 x 14	3.27		**CFM**		**654**	**981**	**1308**	**1635**	**1962**	**2289**	**2616**	**2943**	**3270**
				Noise Criteria		–	17	24	31	36	41	45	48	51
			1.68	**Throw**	0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
			1.56		22 1/2°	6-14-33	14-22-41	19-29-47	24-36-53	29-41-58	34-44-58	38-47-66	40-50-70	42-53-74
			1.44		45°	4-9-20	9-14-26	12-18-30	15-23-33	18-26-36	18-26-36	24-30-42	25-31-44	27-33-47
30 x 18	24 x 22 34 x 16 40 x 14	3.54		**CFM**		**708**	**1062**	**1416**	**1770**	**2124**	**2478**	**2832**	**3186**	**3540**
				Noise Criteria		–	17	24	31	36	41	45	48	51
			1.81	**Throw**	0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
			1.68		22 1/2°	7-14-34	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	42-52-74	45-55-78
			1.56		45°	4-9-20	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	26-32-46	28-35-49
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		**CFM**		**758**	**1137**	**1516**	**1895**	**2274**	**2653**	**3032**	**3411**	**3790**
				Noise Criteria		–	17	24	31	36	41	45	48	51
			1.93	**Throw**	0°	9-19-44	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	54-66-94	57-70-99
			1.80		22 1/2°	7-15-35	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	43-53-75	46-56-79
			1.66		45°	4-9-22	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	27-33-47	29-35-50
36 x 18	32 x 20 40 x 16 46 x 14	4.29		**CFM**		**858**	**1287**	**1716**	**2145**	**2574**	**3003**	**3432**	**3861**	**4290**
				Noise Criteria		–	18	25	32	37	42	46	49	52
			2.18	**Throw**	0°	9-20-46	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	58-71-101	61-75-106
			2.03		22 1/2°	7-16-37	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	46-57-81	49-60-85
			1.87		45°	4-10-23	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	29-35-50	31-38-53
26 x 26	28 x 24 48 x 14	4.47		**CFM**		**894**	**1341**	**1788**	**2235**	**2682**	**3129**	**3576**	**4023**	**4470**
				Noise Criteria		–	18	25	32	37	42	46	49	52
			2.25	**Throw**	0°	9-21-47	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	60-73-103	63-77-109
			2.10		22 1/2°	7-17-38	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	48-58-82	50-62-87
			1.93		45°	4-10-23	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	30-36-51	32-39-55
30 x 24	32 x 22 36 x 20 40 x 18	4.77		**CFM**		**954**	**1431**	**1908**	**2385**	**2862**	**3339**	**3816**	**4293**	**4770**
				Noise Criteria		–	18	25	32	37	42	46	49	52
			2.42	**Throw**	0°	10-22-49	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	62-75-106	65-79-112
			2.25		22 1/2°	8-18-39	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	50-60-85	52-63-90
			2.08		45°	5-11-24	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	31-37-53	33-40-56
28 x 28	30 x 26 36 x 22 40 x 20	5.20		**CFM**		**1040**	**1560**	**2080**	**2600**	**3120**	**3640**	**4160**	**4680**	**5200**
				Noise Criteria		–	19	26	33	38	43	47	50	53
			2.66	**Throw**	0°	10-22-50	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	64-78-110	67-82-116
			2.48		22 1/2°	8-18-40	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	51-62-88	54-66-93
			2.29		45°	5-11-25	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	32-39-55	34-41-58
36 x 24	40 x 22 44 x 20	5.74		**CFM**		**1148**	**1722**	**2296**	**2870**	**3444**	**4018**	**4592**	**5166**	**5740**
				Noise Criteria		–	19	26	33	38	43	47	50	53
			2.91	**Throw**	0°	11-24-54	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	68-84-118	72-88-124
			2.71		22 1/2°	9-19-43	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	54-67-94	58-70-99
			2.50		45°	5-12-27	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	34-42-59	36-44-62
42 x 24	36 x 28 42 x 24 46 x 22	6.72		**CFM**		**1344**	**2016**	**2688**	**3360**	**4032**	**4704**	**5376**	**6048**	**6720**
				Noise Criteria		–	20	27	34	39	44	48	51	54
			3.40	**Throw**	0°	12-26-58	24-39-72	34-51-83	43-64-93	51-72-102	60-78-111	68-84-118	73-88-125	77-93-132
			3.16		22 1/2°	10-21-46	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	58-70-100	62-74-106
			2.31		45°	6-13-29	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	36-44-62	39-47-66
36 x 30	38 x 28	7.22		**CFM**		**1444**	**2166**	**2888**	**3610**	**4332**	**5054**	**5776**	**6498**	**7220**
				Noise Criteria		–	20	27	34	39	44	48	51	54
			3.64	**Throw**	0°	12-26-61	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	76-93-132	80-98-139
			3.39		22 1/2°	10-21-49	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	61-74-106	64-78-111
			3.13		45°	6-13-30	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-70
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		**CFM**		**1538**	**2307**	**3076**	**3845**	**4614**	**5383**	**6152**	**6921**	**7690**
				Noise Criteria		–	21	28	35	40	45	49	52	55
			3.88	**Throw**	0°	13-27-62	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	78-95-135	82-200-142
			3.61		22 1/2°	10-22-50	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	62-76-108	66-80-114
			3.34		45°	6-13-31	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	39-47-67	41-50-71

Performance Notes:

1. Performance data is based on Models 51DFH-HD and 51DFV-HD with 0° deflection front blades. For 15° and 30° deflection models, use: —
2. Tabulated data includes OBD (damper). Without OBD, multiply Total Pressure (TP) by 0.8. Subtract 4 NC from the NC value given.
3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise Criteria values were obtained using a 0° horizontal deflection near blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 Noise Criteria (NC) to the tabulated NC level respectively.
5. Data derived from tests conducted with ANSI/ASHRAE Standard 70-2023.

Correction Factor

Model	Deflection	TP	NC
51D15	15°	x 1.2	+ 3
51D30	30°	x 1.5	+ 7

HOW TO ORDER

MODEL SERIES: 51D00-HD

HEAVY DUTY BAR SUPPLY GRILLES AND REGISTERS – ALUMINUM

EXAMPLE: 51D15H-HD - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
   Double Deflection
   Horizontal/Long Dimension Blades:
   51DFH-HD Fixed 0° Deflection
   51D15H-HD Fixed 15° Deflection
   51D30H-HD Fixed 30° Deflection
   Vertical/Short Dimension Blades:
   51DFV-HD Fixed 0° Deflection
   51D15V-HD Fixed 15° Deflection
   51D30V-HD Fixed 30° Deflection
2. **Damper (OBD)**
   O Steel
   OA Aluminum
   — No Damper
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SA Satin (Clear) Anodized
   SP Special Custom Color
6. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
7. **Fastening**
   A Screw Holes (default)
   C Concealed Mounting Straps
   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Plaster Sub-Frame**
   PF Plaster Sub-Frame
9. **Insect Screen**
   IS Insect Screen
10. **Gaskets**
    GK Foam Gasket
11. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. Front bars are fixed deflection. Rear directional vanes (blades) are adjustable and perpendicular to front bars.

2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° fixed deflection with rear deflection vane register, horizontal blade direction and steel damper, is Model 51D30H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 51D00-HD

HEAVY DUTY BAR SUPPLY GRILLES AND REGISTERS – ALUMINUM

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD** or **51DFV-HD Aluminum Heavy Duty Bar Supply Grilles** with rear deflection vanes of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced blades and welded frame. The front bars are to be fixed on 1/2" (13) centers and the rear deflection vanes are to be adjustable on 3/4" (19) centers. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

ALUMINUM HEAVY DUTY BAR RETURN GRILLES

- GYMNASIUM

Models:

5130H-HD	**30° Horizontal Blades**
5130V-HD	**30° Vertical Blades**
51FH-HD	**0° Horizontal Blades**
51FV-HD	**0° Vertical Blades**

- **Suffix '-O' adds a steel opposed blade damper**
- **Suffix '-OA' adds an aluminum opposed blade damper**

Model 5130H-HD

Nailor Model Series 5100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty aluminum construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers.

STANDARD FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0° or 30° deflection.
- 0° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

CONSTRUCTION MATERIAL:

- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

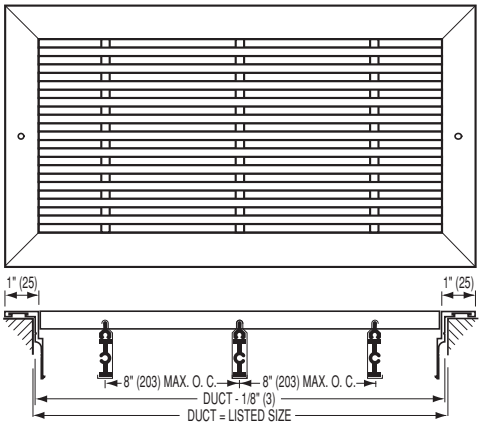
FINISH OPTIONS:

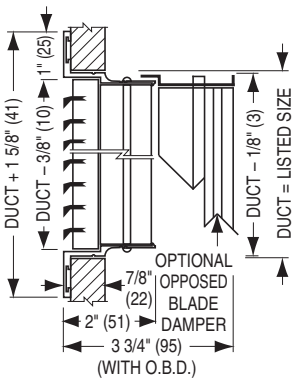
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

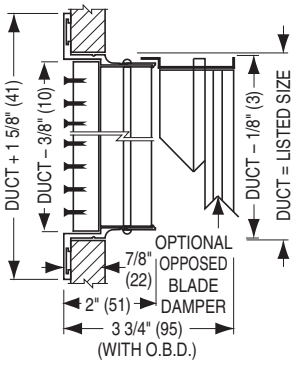
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





Model 5130H-HD
(Horizontal Shown)



Model 51FH-HD
(Horizontal Shown)

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .004	200 .002 .016	300 .006 .037	400 .010 .065	500 .016 .102	600 .022 .146	700 .031 .199	800 .040 .260	900 .050 .330	1000 .062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** 15	**60** 21	**80** 27	**100** 31	**120** 35	**140** 37	**160** 40	**180** 44	**200** 49
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** 15	**84** 21	**112** 27	**140** 32	**168** 36	**196** 38	**224** 41	**252** 45	**280** 50
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** 16	**105** 22	**140** 28	**175** 33	**210** 37	**245** 39	**280** 42	**315** 46	**350** 51
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** 16	**114** 22	**152** 28	**190** 33	**228** 38	**266** 40	**304** 43	**342** 47	**380** 51
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** 17	**126** 23	**168** 29	**210** 34	**252** 38	**294** 41	**336** 44	**378** 48	**420** 52
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** 17	**174** 23	**232** 29	**290** 34	**348** 38	**406** 41	**464** 45	**522** 49	**580** 53
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** 18	**183** 24	**244** 29	**305** 34	**366** 38	**427** 41	**488** 46	**549** 49	**610** 54
18 x 6	14 x 8 28 x 4 — 30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** 18	**195** 24	**260** 30	**325** 35	**390** 39	**455** 42	**520** 46	**585** 50	**650** 54
12 x 10	16 x 8 24 x 5 — 20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** 18	**222** 25	**296** 30	**370** 35	**444** 40	**518** 43	**592** 47	**666** 51	**740** 54
12 x 12	14 x 10 18 x 8 — 24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** 19	**270** 25	**360** 31	**450** 36	**540** 40	**630** 43	**720** 48	**810** 51	**900** 54
14 x 14	16 x 12 20 x 10 — 24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** 20	**372** 26	**496** 31	**620** 36	**744** 41	**868** 44	**992** 48	**1116** 52	**1240** 55
18 x 12	16 x 14 22 x 10 — 28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** 20	**411** 26	**548** 32	**685** 37	**822** 42	**959** 45	**1096** 50	**1233** 53	**1370** 56
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** 15	**304** 21	**456** 26	**608** 32	**760** 37	**912** 42	**1064** 46	**1216** 51	**1368** 54	**1520** 57
16 x 16	18 x 14 22 x 12 — 30 x 8	1.64	1.58	**CFM** Noise Criteria	**164** 15	**328** 21	**492** 27	**656** 33	**820** 38	**984** 42	**1148** 46	**1312** 51	**1476** 54	**1640** 57
24 x 12	18 x 16 20 x 14 — 30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** 15	**370** 21	**555** 27	**740** 33	**925** 38	**1110** 43	**1295** 46	**1480** 51	**1665** 54	**1850** 58
18 x 18	20 x 16 24 x 14 — 28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** 16	**420** 22	**630** 27	**840** 33	**1050** 38	**1260** 43	**1470** 47	**1680** 52	**1890** 55	**2100** 58
30 x 12	20 x 18 22 x 16 — 26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** 16	**464** 22	**696** 27	**928** 33	**1160** 38	**1392** 43	**1624** 47	**1856** 52	**2088** 55	**2320** 59
20 x 20	24 x 18 26 x 16 — 30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** 17	**522** 22	**783** 27	**1044** 33	**1305** 38	**1566** 43	**1827** 47	**2088** 52	**2349** 55	**2610** 59
22 x 22	24 x 20 26 x 18 — 30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** 17	**634** 23	**951** 28	**1268** 34	**1585** 39	**1902** 44	**2219** 48	**2536** 52	**2853** 55	**3170** 59
30 x 18	24 x 22 34 x 16 — 40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** 18	**708** 24	**1062** 28	**1416** 34	**1770** 39	**2124** 44	**2478** 48	**2832** 53	**3186** 56	**3540** 60
24 x 24	26 x 22 28 x 20 — 32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** 18	**758** 24	**1137** 28	**1516** 34	**1895** 39	**2274** 44	**2653** 49	**3032** 53	**3411** 56	**3790** 60
36 x 18	32 x 20 40 x 16 — 46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** 18	**854** 24	**1281** 29	**1708** 36	**2135** 41	**2562** 45	**2989** 49	**3416** 54	**3843** 57	**4270** 61
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** 19	**894** 25	**1341** 30	**1788** 36	**2235** 41	**2682** 45	**3129** 49	**3576** 54	**4023** 57	**4470** 61
30 x 24	28 x 26 32 x 22 — 36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** 19	**954** 25	**1431** 30	**1908** 37	**2385** 42	**2862** 46	**3339** 50	**3816** 54	**4293** 58	**4770** 62
28 x 28	30 x 26 36 x 22 — 40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** 19	**1040** 25	**1560** 30	**2080** 37	**2600** 42	**3120** 46	**3640** 50	**4160** 55	**4680** 58	**5200** 62
36 x 24	30 x 28 40 x 22 — 44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** 19	**1148** 25	**1722** 30	**2296** 37	**2870** 42	**3444** 46	**4018** 50	**4592** 55	**5166** 59	**5740** 63
30 x 30	34 x 26 38 x 24 — 48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** 20	**1198** 26	**1797** 31	**2396** 37	**2995** 42	**3594** 47	**4193** 51	**4792** 55	**5391** 59	**5990** 63

For performance data notes, see F146.

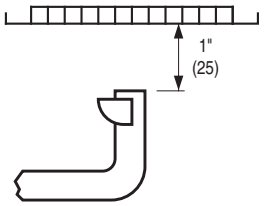
PERFORMANCE DATA:
ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES
MODELS: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .004	200 .002 .016	300 .006 .037	400 .010 .065	500 .016 .102	600 .022 .146	700 .031 .199	800 .040 .260	900 .050 .330	1000 .062 .407
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** 20	**1368** 26	**2052** 31	**2736** 37	**3420** 43	**4104** 47	**4788** 51	**5472** 56	**6156** 60	**6840** 64
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** 21	**1538** 26	**2307** 31	**3076** 37	**3845** 43	**4614** 48	**5383** 52	**6152** 56	**6921** 60	**7690** 64
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** 21	**1738** 27	**2607** 32	**3476** 38	**4345** 43	**5214** 48	**6083** 53	**6952** 57	**7821** 61	**8690** 65
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** 22	**1940** 27	**2910** 33	**3880** 38	**4850** 44	**5820** 49	**6790** 53	**7760** 57	**8730** 61	**9700** 65
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** 22	**2154** 27	**3231** 33	**4308** 39	**5385** 45	**6462** 49	**7539** 54	**8616** 57	**9693** 62	**10770** 66
42 x 42	44 x 40 46 x 36 48 x 36	11.89	10.92	**CFM** Noise Criteria	**1189** 22	**2378** 27	**3567** 33	**4756** 39	**5945** 45	**7134** 50	**8323** 54	**9512** 58	**10701** 62	**11890** 66
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** 22	**2614** 28	**3921** 34	**5228** 39	**6535** 45	**7842** 50	**9149** 54	**10456** 58	**11763** 62	**13070** 66
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** 23	**2860** 29	**4290** 34	**5720** 40	**7150** 46	**8580** 51	**10010** 55	**11440** 59	**12870** 63	**14300** 67
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** 23	**3118** 29	**4677** 35	**6236** 40	**7795** 46	**9354** 51	**10913** 55	**12472** 59	**14031** 63	**15590** 67

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.
   Neg. Static Pressure Listed Value x 0.91.
   Noise Criteria Listed value – 4.
4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (—) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
   Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .010	300 .006 .023	400 .010 .041	500 .016 .065	600 .022 093	700 .031 .127	800 .040 .166	900 .050 .210	1000 .062 .259
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** 15	**100** 19	**120** 23	**140** 25	**160** 28	**180** 32	**200** 37
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** 15	**140** 20	**168** 24	**196** 26	**224** 29	**252** 33	**280** 38
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** 16	**175** 21	**210** 25	**245** 27	**280** 30	**315** 34	**350** 39
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 21	**228** 26	**266** 28	**304** 31	**342** 35	**380** 39
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 22	**252** 26	**294** 29	**336** 32	**378** 36	**420** 40
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 22	**348** 26	**406** 29	**464** 33	**522** 37	**580** 41
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 22	**366** 26	**427** 29	**488** 34	**549** 37	**610** 42
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 18	**325** 23	**390** 27	**455** 30	**520** 34	**585** 38	**650** 42
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 18	**370** 23	**444** 28	**518** 31	**592** 35	**666** 39	**740** 42
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 19	**450** 24	**540** 28	**630** 31	**720** 36	**810** 39	**900** 42
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 19	**620** 24	**744** 29	**868** 32	**992** 36	**1116** 40	**1240** 43
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** 20	**685** 25	**822** 30	**959** 33	**1096** 38	**1233** 41	**1370** 44
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** 20	**760** 25	**912** 30	**1064** 34	**1216** 39	**1368** 42	**1520** 45
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** 15	**656** 21	**820** 26	**984** 31	**1148** 34	**1312** 39	**1476** 42	**1640** 45
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** 15	**740** 21	**925** 26	**1110** 31	**1295** 34	**1480** 39	**1665** 42	**1850** 46
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** 15	**840** 21	**1050** 26	**1260** 31	**1470** 35	**1680** 40	**1890** 43	**2100** 46
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** 15	**928** 21	**1160** 26	**1392** 31	**1624** 35	**1856** 40	**2088** 43	**2320** 47
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** 15	**1044** 21	**1305** 26	**1566** 31	**1827** 35	**2088** 40	**2349** 43	**2610** 47
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** 15	**1268** 22	**1585** 27	**1902** 32	**2219** 36	**2536** 40	**2853** 43	**3170** 47
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** 16	**1416** 22	**1770** 27	**2124** 32	**2478** 36	**2832** 41	**3186** 44	**3540** 48
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** 16	**1516** 22	**1895** 27	**2274** 32	**2653** 37	**3032** 41	**3411** 44	**3790** 48
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** 17	**1708** 24	**2135** 29	**2562** 33	**2989** 37	**3416** 42	**3843** 45	**4270** 49
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** 18	**1788** 24	**2235** 29	**2682** 33	**3129** 37	**3576** 42	**4023** 45	**4470** 49
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 18	**1908** 25	**2385** 30	**2862** 34	**3339** 38	**3816** 42	**4293** 46	**4770** 50
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 18	**2080** 25	**2600** 30	**3120** 34	**3640** 38	**4160** 43	**4680** 46	**5200** 50
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 18	**2296** 25	**2870** 30	**3444** 34	**4018** 38	**4592** 43	**5166** 47	**5740** 51
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 19	**2396** 25	**2995** 30	**3594** 35	**4193** 39	**4792** 43	**5391** 47	**5990** 51

For performance data notes, see F148.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

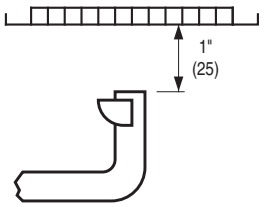
MODELS: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .010	300 .006 .023	400 .010 .041	500 .016 .065	600 .022 093	700 .031 .127	800 .040 .166	900 .050 .210	1000 .062 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** 19	**2736** 25	**3420** 31	**4104** 35	**4788** 39	**5472** 44	**6156** 48	**6840** 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** 19	**3076** 25	**3845** 31	**4614** 36	**5383** 40	**6152** 44	**6921** 48	**7690** 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** 20	**3476** 26	**4345** 31	**5214** 36	**6083** 41	**6952** 45	**7821** 49	**8690** 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** 15	**2910** 21	**3880** 26	**4850** 32	**5820** 37	**6790** 41	**7760** 45	**8730** 49	**9700** 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** 15	**3231** 21	**4308** 27	**5385** 33	**6462** 37	**7539** 42	**8616** 45	**9693** 50	**10770** 54
42 x 42	46 x 42 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** 15	**3567** 21	**4756** 27	**5945** 33	**7134** 38	**8323** 42	**9512** 46	**10701** 50	**11890** 54
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** 16	**3921** 22	**5228** 27	**6535** 33	**7842** 38	**9149** 42	**10456** 46	**11763** 50	**13070** 54
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** 17	**4290** 22	**5720** 28	**7150** 34	**8580** 39	**10010** 43	**11440** 47	**12870** 51	**14300** 55
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** 17	**4677** 23	**6236** 28	**7795** 34	**9354** 39	**10913** 43	**12472** 47	**14031** 51	**15590** 55

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.
   Neg. Static Pressure Listed Value x 0.91.
   Noise Criteria Listed value – 4.
4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
   Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER

MODEL SERIES: 5100-HD

HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

EXAMPLE: 5130H - HD - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
   Horizontal/Long Dimension Blades:
   51FH-HD Fixed 0° Deflection
   5130H-HD Fixed 30° Deflection
   Vertical/Short Dimension Blades:
   51FV-HD Fixed 0° Deflection
   5130V-HD Fixed 30° Deflection
2. **Damper (OBD)**
   O Steel
   OA Aluminum
   — No Damper
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SA Satin (Clear) Anodized
   SP Special Custom Color
6. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
7. **Fastening**
   A Screw Holes (default)
   C Concealed Mounting Straps
   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Plaster Sub-Frame**
   PF Plaster Sub-Frame
9. **Insect Screen**
   IS Insect Screen
10. **Gaskets**
    GK Foam Gasket
11. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° deflection register, horizontal blade direction and steel damper, is Model 5130H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 5100-HD

HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5130H-HD, 5130V-HD, 51FH-HD** or **51FV-HD Aluminum Heavy Duty Bar Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced fixed blades and welded frame with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS

- GYMNASIUM

Double Deflection Models:

61DH-HD and 61DV-HD

Single Deflection Models:

61SH-HD and 61SV-HD

- **Suffix '-O' adds a steel opposed blade damper**

Model 61SH-HD

Nailor Model Series 6100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The single deflection models include 14 gauge individually adjustable blades spaced on 1/2" (13) centers. The double deflection models incorporate two sets of individually adjustable perpendicular blades that provide air control in two planes. The front blades are 14 gauge spaced on 1/2" (13) centers and the rear "teardrop" blades are spaced on 3/4" (19) centers. All models have frames that are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin is standard, furnished with countersunk screw holes and mounting screws.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

CONSTRUCTION MATERIAL:

- The single deflection models have 14 gauge steel blades spaced on 1/2" (13) centers.
- The double deflection models feature two sets of perpendicular adjustable blades. Front blades are 14 gauge steel blades spaced on 1/2" (13) centers. Rear "teardrop" blades are spaced on 3/4" (19) centers.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

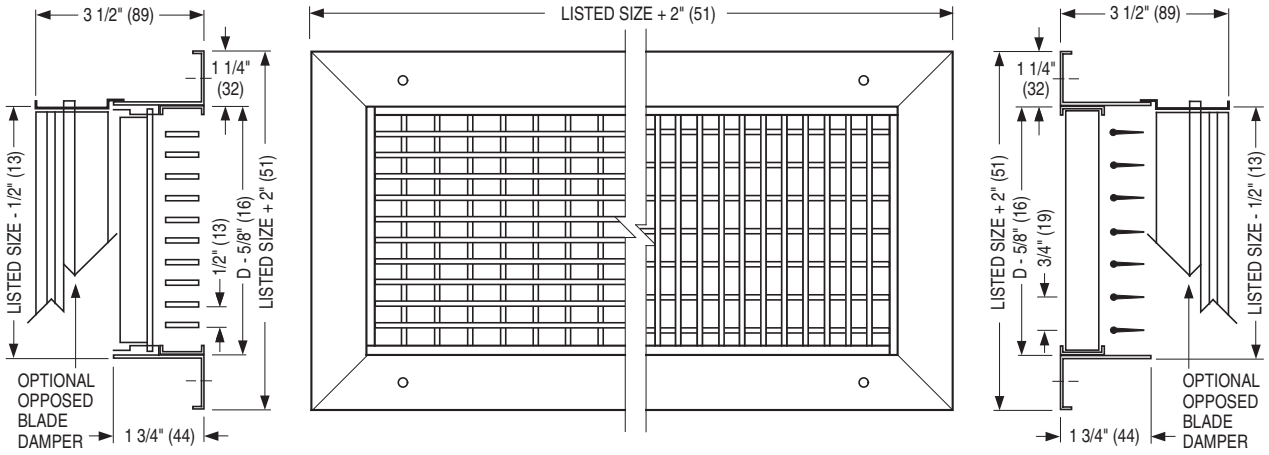
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

DIMENSIONAL DATA:

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

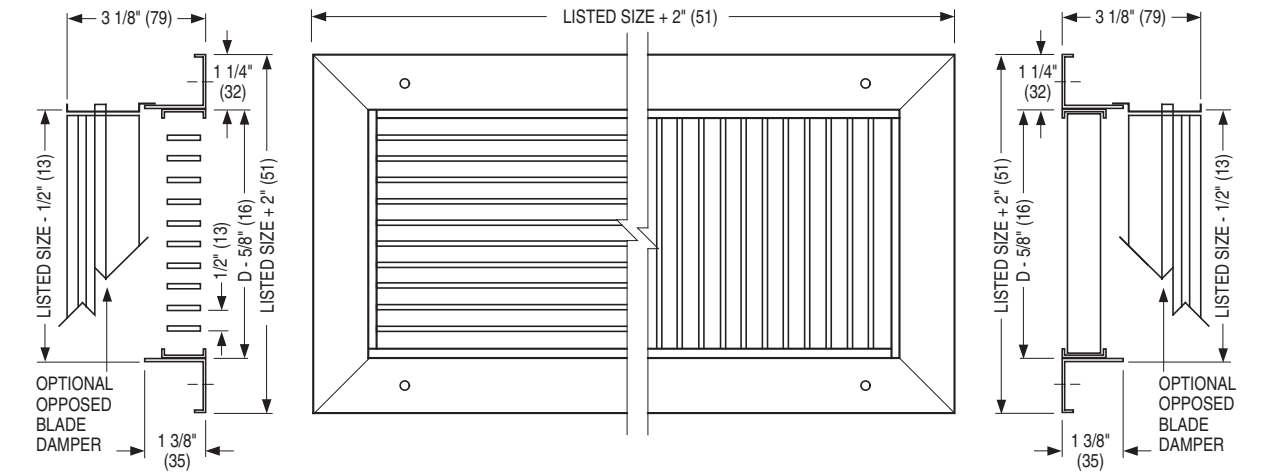
MODEL SERIES: 6100-HD



Model 61DH-HD
Horizontal Blades

Model 61DV-HD
Vertical Blades

Double Deflection



Model 61SH-HD
Horizontal Blades

Model 61SV-HD
Vertical Blades

Single Deflection

PERFORMANCE NOTES FOR HEAVY DUTY SUPPLY GRILLES AND REGISTERS:
MODEL SERIES: 6100-HD

THROW, SPREAD AND DROP:

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

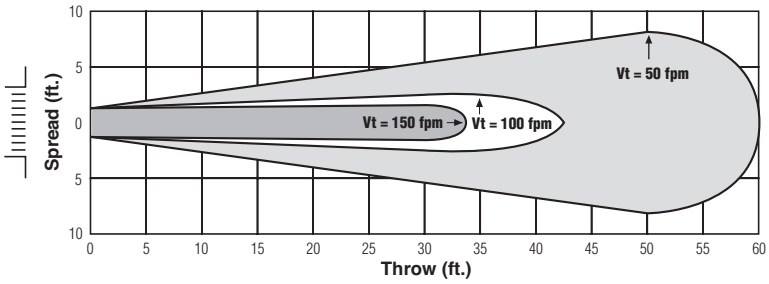
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

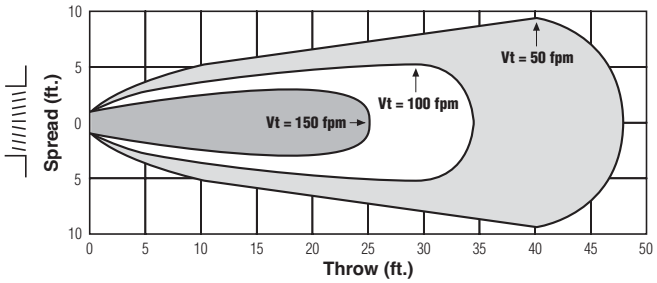
For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS

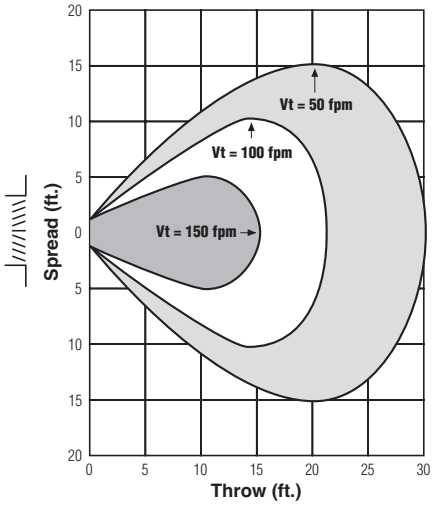
0 Deflection



22 1/2 Deflection



45 Deflection



NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	– 4	– 2	+ 3
Single Deflection	With	– 4	– 1	+ 4
	Without	– 8	– 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

PERFORMANCE DATA:

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° 22 1/2° 45°	.015 .017 .026	.026 .030 .046	.041 .047 .072	.059 .068 .103	.081 .093 .142	.106 .122 .186	.165 .190 .289	.238 .274 .417	.324 .373 .567
6 x 6	8 x 4 10 x 4	0.20		CFM		60	80	100	120	140	160	200	240	280
				Noise Criteria		–	–	–	–	19	23	29	35	40
			.14	Throw	0°	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	15-18-25	16-20-27	17-21-30
			.12		22 1/2°	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22	14-17-24
			.10		45°	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	8-9-13	8-10-14	9-11-15
8 x 6	10 x 5 12 x 4	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		–	–	–	15	20	24	30	36	41
			.18	Throw	0°	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	17-21-30	18-23-32	19-24-35
			.16		22 1/2°	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	14-17-24	14-18-26	15-19-28
			.14		45°	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-18
10 x 6	12 x 5 16 x 4	0.35		CFM		105	140	175	210	245	280	350	420	490
				Noise Criteria		–	–	–	16	21	25	31	37	42
			.24	Throw	0°	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	20-23-33	21-25-36	22-27-39
			.21		22 1/2°	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	16-18-26	17-20-29	18-22-31
			.18		45°	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	10-12-17	11-13-18	11-14-20
8 x 8	14 x 5	0.38		CFM		114	152	190	228	266	304	380	456	532
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.26	Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40
			.22		22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	15-19-27	17-21-30	18-22-32
			.20		45°	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-13-19	12-14-20
12 x 6	18 x 4	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		–	–	–	17	22	26	32	38	43
			.29	Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	19-24-34	21-28-38	23-29-41
			.25		22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	15-19-27	17-22-30	18-23-33
			.22		45°	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-14-19	12-15-21
14 x 6	10 x 8	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		–	–	–	18	23	27	33	39	44
			.34	Throw	0°	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	21-25-36	23-28-40	25-31-43
			.30		22 1/2°	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	17-20-29	18-22-32	20-25-34
			.26		45°	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	11-13-18	12-14-20	13-16-22
12 x 8	16 x 6 24 x 4	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.39	Throw	0°	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45
			.34		22 1/2°	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	18-22-30	19-24-34	21-26-36
			.30		45°	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	11-14-19	12-15-21	13-16-23
10 x 10	14 x 7 26 x 4	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		–	–	–	19	24	28	34	40	45
			.41	Throw	0°	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	23-28-39	24-30-42	27-32-46
			.36		22 1/2°	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-31	19-24-34	22-26-37
			.31		45°	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	12-14-20	12-15-22	14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		195	260	325	390	455	520	650	780	910
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.44	Throw	0°	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	24-29-40	25-32-45	28-34-48
			.38		22 1/2°	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	19-23-32	20-26-36	22-27-38
			.33		45°	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	12-15-20	13-16-23	14-17-24
12 x 10	20 x 6 24 x 5	0.74		CFM		222	296	370	444	518	592	740	888	1036
				Noise Criteria		–	–	15	20	25	29	35	41	46
			.50	Throw	0°	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	25-31-43	27-33-48	30-36-51
			.44		22 1/2°	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	20-25-34	22-26-38	24-29-41
			.38		45°	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	13-16-22	14-17-24	15-18-26
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.54	Throw	0°	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	26-32-45	28-35-50	31-38-53
			.47		22 1/2°	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	21-26-36	22-28-40	25-30-42
			.41		45°	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	13-16-23	14-18-25	16-19-27
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260
				Noise Criteria		–	–	16	21	26	30	36	42	47
			.61	Throw	0°	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	27-33-47	29-36-51	32-39-56
			.53		22 1/2°	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	22-26-38	23-29-41	26-31-45
			.46		45°	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	14-17-24	15-18-26	16-20-28

For performance data notes, see F156.

PERFORMANCE DATA:
STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM
MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° / 22 1/2° / 45°	.015 / .017 / .026	.026 / .030 / .046	.041 / .047 / .072	.059 / .068 / .103	.081 / .093 / .142	.106 / .122 / .186	.165 / .190 / .289	.238 / .274 / .417	.324 / .373 / .567
18 x 10	30 x 6	1.13		**CFM**		**339**	**452**	**565**	**678**	**791**	**904**	**1130**	**1356**	**1582**
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.77	**Throw**	0°	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	30-36-51	33-40-57	35-43-61
			.67		22 1/2°	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	24-29-41	26-32-46	28-34-49
			.58		45°	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	15-18-26	17-20-29	18-22-31
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		**CFM**		**372**	**496**	**620**	**744**	**868**	**992**	**1240**	**1488**	**1736**
				Noise Criteria		–	–	17	22	27	31	37	43	48
			.84	**Throw**	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71
			.73		22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
			.64		45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		**CFM**		**411**	**548**	**685**	**822**	**959**	**1096**	**1370**	**1644**	**1918**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			.93	**Throw**	0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72
			.81		22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	28-34-49	31-38-54	33-41-58
			.71		45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36
24 x 10	20 x 12 30 x 8	1.52		**CFM**		**456**	**608**	**760**	**912**	**1064**	**1216**	**1520**	**1824**	**2128**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.03	**Throw**	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
			.90		22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	34-42-61
			.78		45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		**CFM**		**492**	**656**	**820**	**984**	**1148**	**1312**	**1640**	**1968**	**2296**
				Noise Criteria		–	–	18	23	28	32	38	44	49
			1.12	**Throw**	0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79
			.97		22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63
			.84		45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		**CFM**		**555**	**740**	**925**	**1110**	**1295**	**1480**	**1850**	**2220**	**2590**
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.26	**Throw**	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82
			1.09		22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66
			.95		45°	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	20-24-35	22-27-38	24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		**CFM**		**630**	**840**	**1050**	**1260**	**1470**	**1680**	**2100**	**2520**	**2940**
				Noise Criteria		–	–	19	24	29	33	39	45	50
			1.43	**Throw**	0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87
			1.24		22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70
			1.08		45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		**CFM**		**696**	**928**	**1160**	**1392**	**1624**	**1856**	**2320**	**2784**	**3248**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.58	**Throw**	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94
			1.37		22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	32-45-63	40-49-69	43-54-75
			1.19		45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47
24 x 16	32 x 12	2.50		**CFM**		**750**	**1000**	**1250**	**1500**	**1750**	**2000**	**2500**	**3000**	**3500**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.70	**Throw**	0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97
			1.48		22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78
			1.29		45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49
20 x 20	22 x 18	2.61		**CFM**		**783**	**1044**	**1305**	**1566**	**1827**	**2088**	**2610**	**3132**	**3654**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.77	**Throw**	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99
			1.54		22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-56-79
			1.34		45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	27-33-46	29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		**CFM**		**837**	**1116**	**1395**	**1674**	**1953**	**2232**	**2790**	**3348**	**3906**
				Noise Criteria		–	–	20	25	30	34	40	46	51
			1.90	**Throw**	0°	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	50-61-86	55-68-95	59-73-103
			1.65		22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82
			1.44		45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		**CFM**		**951**	**1268**	**1585**	**1902**	**2219**	**2536**	**3170**	**3804**	**4438**
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.16	**Throw**	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109
			1.87		22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87
			1.63		45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55

For performance data notes, see F156.

PERFORMANCE DATA:

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0° .015 .017 .026	.026 .030 .046	.041 .047 .072	.059 .068 .103	.081 .093 .142	.106 .122 .186	.165 .190 .289	.238 .274 .417	.324 .373 .567	
42 x 12	36 x 14	3.27		CFM		981	1308	1635	1962	2289	2616	3270	3924	4578
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.22	Throw	0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109
			1.93		22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87
			1.68		45°	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	27-33-47	3-36-51	32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM		1062	1416	1770	2124	2478	2832	3540	4248	4956
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.41	Throw	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115
			2.09		22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92
			1.82		45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58
24 x 24	32 x 20 40 x 16 46 x 14	?		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		–	–	21	26	31	35	41	47	52
			2.58	Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.24		22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
			1.95		45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		–	15	22	27	32	36	42	48	53
				Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
					22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
					45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		–	15	22	27	32	36	42	48	53
			3.04	Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			2.64		22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
			2.30		45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		–	15	22	27	32	36	42	48	53
			3.24	Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			2.81		22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
			2.46		45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67
42 x 18	28 x 26	4.99		CFM		1497	1997	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.39	Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			2.94		22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
			2.57		45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.54	Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.07		22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
			2.68		45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.79	Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			3.29		22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
			2.87		45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		–	16	23	28	33	37	43	49	54
			3.90	Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			3.39		22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
			2.96		45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		–	16	23	28	33	37	43	49	54
			4.07	Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			3.53		22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
			3.08		45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.57	Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			3.96		22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
			3.46		45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79

For performance data notes, see F156.

PERFORMANCE DATA:

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity / Velocity Pressure		300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
32 x 32	40 x 26	6.84		CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.65	Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-15873-90-126 46-56-79
			4.04		22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	
			3.52		45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	
36 x 30	38 x 28	7.22		CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		–	17	24	29	34	38	44	50	55
			4.91	Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			4.26		22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
			3.72		45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.23	Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			4.54		22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			3.96		45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM		2460	3280	4100	4920	5740	6560	8200	9840	11480
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.58	Throw	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			4.84		22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			4.22		45°	13-21-40	19-29-	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM		2607	3476	4345	5214	6083	6952	8690	10428	12166
				Noise Criteria		–	18	25	30	35	39	45	51	56
			5.91	Throw	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			5.13		22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			4.48		45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		CFM		2910	3880	4850	5820	6790	7760	9700	11640	13580
				Noise Criteria		–	19	26	31	36	40	46	52	57
			6.60	Throw	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			5.72		22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			5.00		45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		CFM		3048	4064	5080	6096	7112	8128	10160	12192	14224
				Noise Criteria		–	19	26	31	36	40	46	52	57
			6.91	Throw	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			5.99		22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			5.23		45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM		3231	4308	5385	6462	7539	8616	10770	12924	15078
				Noise Criteria		–	19	26	31	36	40	46	52	57
			7.32	Throw	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			6.35		22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			5.55		45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM		3567	4756	5945	7134	8323	9512	11890	14268	16646
				Noise Criteria		–	20	27	32	37	41	47	53	58
			8.09	Throw	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
			7.02		22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			6.12		45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		CFM		3921	5228	6535	7842	9149	10456	13070	15684	18298
				Noise Criteria		–	20	27	32	37	41	47	53	58
			8.89	Throw	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			7.71		22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			6.73		45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		CFM		4290	5720	7150	8580	10010	11440	14300	17160	20020
				Noise Criteria		–	20	27	32	37	41	47	53	58
			9.72	Throw	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			8.44		22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			7.36		45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		CFM		4677	6236	7795	9354	10913	12472	15590	18708	21826
				Noise Criteria		–	21	28	33	38	42	48	54	59
			10.60	Throw	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			9.20		22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			8.03		45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).
2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
4. Additional performance notes and correction factors for various models and settings may be found on page F152.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

HOW TO ORDER

MODEL SERIES: 6100-HD

HEAVY DUTY SUPPLY GRILLES AND REGISTERS – STEEL – GYMNASIUM

EXAMPLE: 61DH-HD - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
   Double Deflection:
   61DH-HD Horizontal Front Blades
   61DV-HD Vertical Front Blades
   Single Deflection:
   61SH-HD Horizontal Blades
   61SV-HD Vertical Blades
2. **Damper (OBD)**
   O Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
6. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
7. **Fastening**
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Plaster Sub-Frame**
   PF Plaster Sub-Frame
9. **Insect Screen**
   IS Insect Screen
10. **Gaskets**
    GK Foam Gasket
11. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel heavy duty double deflection register, front blades vertical and steel damper, is Model 61DV-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.

3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 6100-HD

HEAVY DUTY SUPPLY GRILLES AND REGISTERS – STEEL – GYMNASIUM

SUGGESTED SPECIFICATION:

61DV-HD, 61DH-HD Double Deflection
Furnish and install **Nailor Model** (select one) **61DV-HD** or **61DH-HD Steel Heavy Duty Double Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a dual set of perpendicular blades that are adjustable. The front blades are to be 14 gauge steel spaced on 1/2" (13) centers and the rear blades are to be "teardrop" shaped spaced on 3/4" (19) centers. The frame is to be constructed from 16 gauge steel and have reinforced mitered corners and welded construction. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

61SV-HD, 61SH-HD Single Deflection
Furnish and install **Nailor Model** (select one) **61SV-HD** or **61SH-HD Steel Heavy Duty Single Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a single set of 14 gauge steel blades that are adjustable and spaced on 1/2" (13) centers. The frame is to be constructed from 16 gauge steel and have reinforced mitered corners and welded construction. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

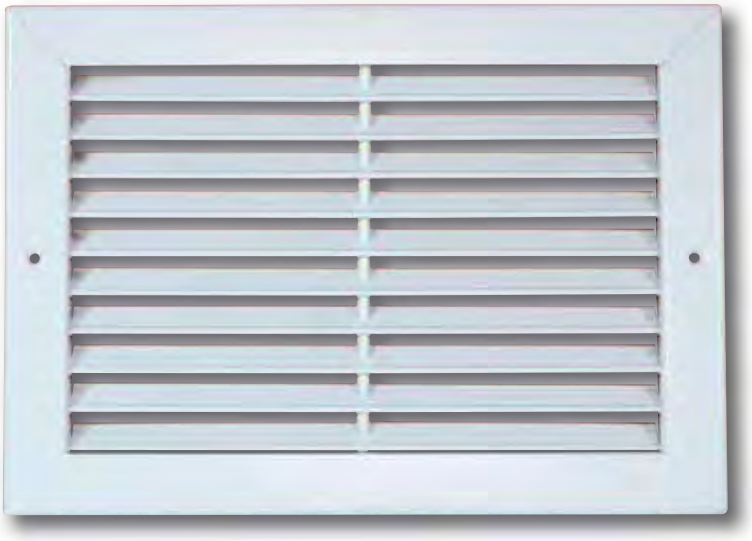
STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

- GYMNASIUM
- LOUVERED

Models:

6145H-HD 45° Deflection Horizontal Blades
6145V-HD 45° Deflection Vertical Blades
61FH-HD 0° Deflection Horizontal Blades
61FV-HD 0° Deflection Vertical Blades

- **Suffix '-O' adds a steel opposed blade damper**



Model 6145H-HD

Nailor Model Series 6100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

Heavy duty 14 gauge blades on 1/2" (13) centers are available with either a 45° or 0° fixed deflection setting. Blades are individually welded in position and are supported on maximum 6" (152) centers with heavy duty concealed support mullions for added strength, which are in turn welded to the grille frame. Frames are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin is standard, furnished with countersunk screw holes and mounting screws.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

CONSTRUCTION MATERIAL:

- Fixed 14 gauge steel blades on 1/2" (13) centers are available in 0° or 45° deflection.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.

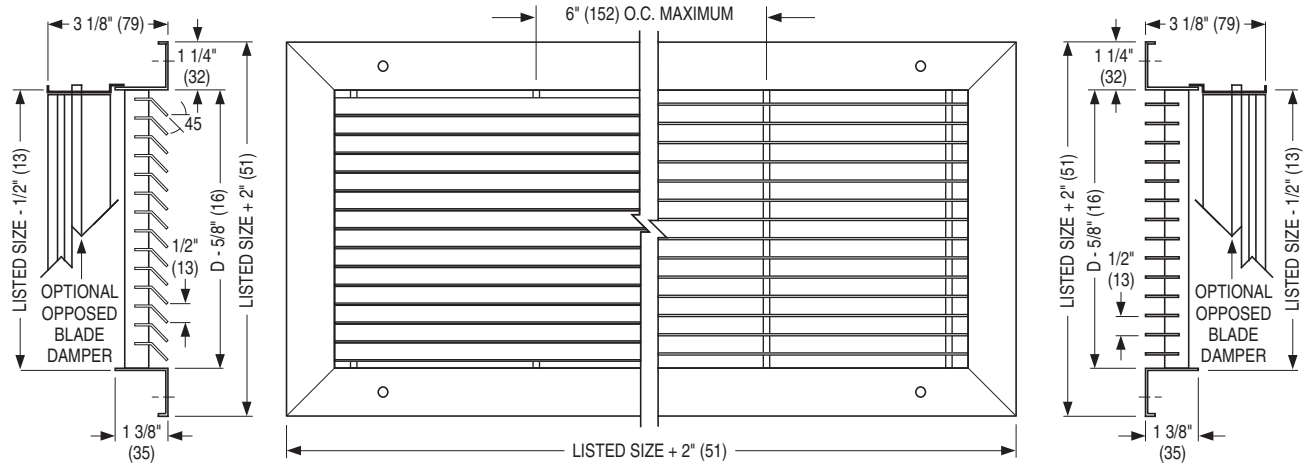
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



Model 6145H-HD
Horizontal Blades
45° Deflection

Model 61FH-HD
Horizontal Blades
0° Deflection

STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE
- 1/2" (13) SPACING

Models:

6755H-HD 45° Deflection Horizontal Blades

6755V-HD 45° Deflection Vertical Blades

- **Suffix '-O' adds a stainless steel opposed blade damper**

Model 6755H-HD

Models 6755H-HD and 6755V-HD Heavy Duty Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined airfoil shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Blades are reinforced by an additional support mullion on maximum 8" (203) centers.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

CONSTRUCTION MATERIAL:

- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

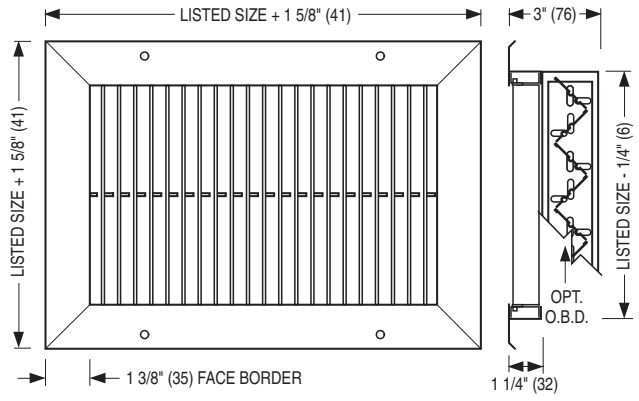
FINISH OPTIONS:

- #4 Brushed Satin Polished Finish is standard. AW Appliance White finish is optional. Other finishes are available.

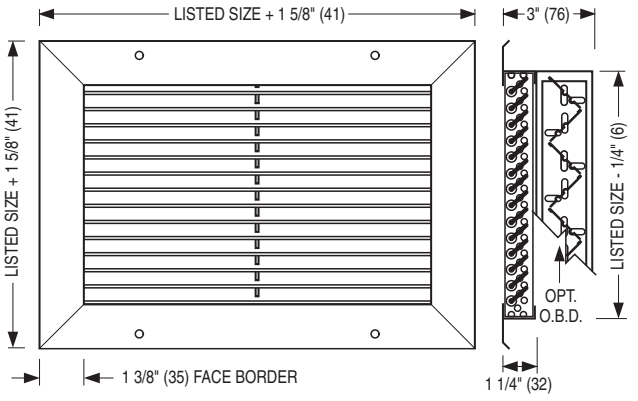
OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction available as an option.
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



MODEL 6755V-HD
Vertical Blades
45° Deflection



MODEL 6755H-HD
Horizontal Blades
45° Deflection

PERFORMANCE DATA:

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

MODELS: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .021	300 .006 .046	400 .010 .082	500 .016 .129	600 .022 .185	700 .031 .252	800 .040 .330	900 .050 .417	1000 .062 .515
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** 15	**100** 20	**120** 25	**140** 30	**160** 34	**180** 38	**200** 42
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** 16	**140** 21	**168** 26	**196** 31	**224** 35	**252** 39	**280** 43
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** 17	**175** 22	**210** 27	**245** 32	**280** 36	**315** 40	**350** 44
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** 18	**190** 23	**228** 28	**266** 33	**304** 37	**342** 41	**380** 45
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** 19	**210** 24	**252** 29	**294** 33	**336** 38	**378** 42	**420** 46
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** 15	**232** 20	**290** 25	**348** 30	**406** 34	**464** 39	**522** 43	**580** 47
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** 15	**244** 20	**305** 25	**366** 30	**427** 35	**488** 40	**549** 43	**610** 47
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** 15	**260** 21	**325** 26	**390** 31	**455** 36	**520** 40	**585** 44	**650** 47
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** 16	**296** 21	**370** 26	**444** 31	**518** 36	**592** 41	**666** 45	**740** 48
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** 17	**360** 22	**450** 27	**540** 32	**630** 37	**720** 42	**810** 45	**900** 48
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** 18	**496** 22	**620** 27	**744** 32	**868** 37	**992** 42	**1116** 46	**1240** 49
18 x 12	16 x 14 22 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** 19	**548** 24	**685** 29	**822** 34	**959** 39	**1096** 44	**1233** 47	**1370** 50
24 x 10	20 x 12 30 x 8		1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** 19	**608** 24	**760** 29	**912** 34	**1064** 39	**1216** 45	**1368** 48	**1520** 51
16 x 16	18 x 14 22 x 12	30 x 8	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** 20	**656** 25	**820** 30	**984** 35	**1148** 40	**1312** 45	**1476** 48	**1640** 51
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** 15	**555** 20	**740** 25	**925** 30	**1110** 35	**1295** 40	**1480** 45	**1665** 48	**1850** 52
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** 15	**630** 20	**840** 25	**1050** 30	**1260** 36	**1470** 41	**1680** 46	**1890** 49	**2100** 52
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** 15	**696** 20	**928** 26	**1160** 31	**1392** 36	**1624** 41	**1856** 46	**2088** 49	**2320** 53
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** 15	**783** 20	**1044** 26	**1305** 31	**1566** 37	**1827** 42	**2088** 47	**2349** 50	**2610** 53
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** 16	**951** 21	**1268** 27	**1585** 32	**1902** 38	**2219** 42	**2536** 47	**2853** 50	**3170** 54
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** 16	**1062** 21	**1416** 27	**1770** 32	**2124** 38	**2478** 43	**2832** 48	**3186** 51	**3540** 55
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** 16	**1137** 21	**1516** 27	**1895** 32	**2274** 38	**2653** 43	**3032** 48	**3411** 51	**3790** 55
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** 17	**1281** 22	**1708** 29	**2135** 34	**2562** 40	**2989** 45	**3416** 50	**3843** 53	**4270** 57
26 x 26	28 x 24 48 x 14		4.47	4.19	**CFM** Noise Criteria	**447** –	**894** 17	**1341** 22	**1788** 29	**2235** 34	**2682** 40	**3129** 45	**3576** 50	**4023** 53	**4470** 57
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** 18	**1431** 23	**1908** 30	**2385** 35	**2862** 41	**3339** 46	**3816** 50	**4293** 54	**4770** 58
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** 18	**1560** 23	**2080** 30	**2600** 35	**3120** 41	**3640** 46	**4160** 51	**4680** 54	**5200** 58
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** 18	**1722** 23	**2296** 30	**2870** 36	**3444** 42	**4018** 47	**4592** 51	**5166** 55	**5740** 59
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** 18	**1797** 235	**2396** 30	**2995** 36	**3594** 42	**4193** 47	**4792** 51	**5391** 55	**5990** 59

For performance data notes, see F161.

PERFORMANCE DATA:

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

MODELS: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .021	300 .006 .046	400 .010 .082	500 .016 .129	600 .022 .185	700 .031 .252	800 .040 .330	900 .050 .417	1000 .062 .515
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** 15	**1368** 19	**2052** 24	**2736** 31	**3420** 37	**4104** 43	**4788** 47	**5472** 52	**6156** 56	**6840** 60
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** 16	**1538** 20	**2307** 25	**3076** 31	**3845** 37	**4614** 43	**5383** 48	**6152** 52	**6921** 56	**7690** 60
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** 17	**1738** 21	**2607** 25	**3476** 32	**4345** 37	**5214** 44	**6083** 49	**6952** 53	**7821** 57	**8690** 61
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** 17	**1940** 22	**2910** 26	**3880** 32	**4850** 38	**5820** 44	**6790** 49	**7760** 53	**8730** 57	**9700** 61
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** 17	**2154** 22	**3231** 27	**4308** 33	**5385** 39	**6462** 45	**7539** 51	**8616** 54	**9693** 59	**10770** 63
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** 18	**2378** 23	**3567** 28	**4756** 34	**5945** 40	**7134** 46	**8323** 51	**9512** 55	**10701** 59	**11890** 63
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** 18	**2614** 23	**3921** 28	**5228** 34	**6535** 40	**7842** 46	**9149** 51	**10456** 55	**11763** 59	**13070** 63
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** 19	**2860** 24	**4290** 29	**5720** 35	**7150** 41	**8580** 47	**10010** 52	**11440** 56	**12870** 60	**14300** 64
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** 19	**3118** 24	**4677** 29	**6236** 35	**7795** 41	**9354** 47	**10913** 52	**12472** 56	**14031** 60	**15590** 64

Performance Notes:

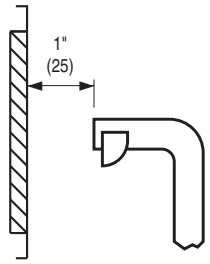
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 0° DEFLECTION

MODELS: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .036	500 .016 .057	600 .022 .082	700 .031 .111	800 .040 .145	900 .050 .183	1000 .062 .226
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** –	**120** 18	**140** 20	**160** 23	**180** 27	**200** 32
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 15	**168** 19	**196** 21	**224** 24	**252** 28	**280** 33
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 16	**210** 20	**245** 22	**280** 25	**315** 29	**350** 34
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** –	**190** 16	**228** 21	**266** 23	**304** 26	**342** 30	**380** 34
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** –	**210** 17	**252** 21	**294** 24	**336** 27	**378** 31	**420** 35
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** –	**290** 17	**348** 21	**406** 24	**464** 28	**522** 32	**580** 36
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** –	**305** 17	**366** 21	**427** 24	**488** 29	**549** 32	**610** 37
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** –	**325** 18	**390** 22	**455** 25	**520** 29	**585** 33	**650** 37
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** –	**370** 18	**444** 23	**518** 26	**592** 30	**666** 34	**740** 37
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** –	**450** 19	**540** 23	**630** 26	**720** 31	**810** 34	**900** 37
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** –	**620** 19	**744** 24	**868** 27	**992** 31	**1116** 35	**1240** 38
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** –	**548** 15	**685** 20	**822** 25	**959** 28	**1096** 33	**1233** 36	**1370** 39
24 x 10	20 x 12 30 x 8	1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** –	**608** 15	**760** 20	**912** 25	**1064** 29	**1216** 34	**1368** 37	**1520** 40
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** –	**656** 16	**820** 21	**984** 25	**1148** 29	**1312** 34	**1476** 37	**1640** 40
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** –	**740** 16	**925** 21	**1110** 26	**1295** 29	**1480** 34	**1665** 37	**1850** 41
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** –	**840** 16	**1050** 21	**1260** 26	**1470** 30	**1680** 35	**1890** 38	**2100** 41
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** –	**928** 16	**1160** 21	**1392** 26	**1624** 30	**1856** 35	**2088** 38	**2320** 42
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** –	**1044** 16	**1305** 21	**1566** 26	**1827** 30	**2088** 35	**2349** 38	**2610** 42
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** –	**1268** 17	**1585** 22	**1902** 27	**2219** 31	**2536** 35	**2853** 38	**3170** 42
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** –	**1416** 17	**1770** 22	**2124** 27	**2478** 31	**2832** 36	**3186** 39	**3540** 43
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** –	**1516** 17	**1895** 22	**2274** 27	**2653** 32	**3032** 36	**3411** 39	**3790** 43
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** –	**1708** 19	**2135** 24	**2562** 28	**2989** 32	**3416** 37	**3843** 40	**4270** 44
26 x 26	28 x 24 48 x 14	4.47	4.19	**CFM** Noise Criteria	**447** –	**864** –	**1341** –	**1788** 19	**2235** 24	**2682** 28	**3129** 32	**3576** 37	**4023** 40	**4470** 44
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** –	**1908** 20	**2385** 25	**2862** 29	**3339** 33	**3816** 37	**4293** 41	**4770** 45
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** –	**2080** 20	**2600** 25	**3120** 29	**3640** 33	**4160** 38	**4680** 41	**5200** 45
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** –	**2296** 20	**2870** 25	**3444** 29	**4018** 33	**4592** 38	**5166** 42	**5740** 46
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** –	**2396** 20	**2995** 25	**3594** 30	**4193** 34	**4792** 38	**5391** 42	**5990** 46

For performance data notes, see F163.

PERFORMANCE DATA:

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 0° DEFLECTION

MODELS: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .036	500 .016 .057	600 .022 .082	700 .031 .111	800 .040 .145	900 .050 .183	1000 .062 .226
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** –	**2052** –	**2736** 20	**3420** 26	**4104** 30	**4788** 34	**5472** 39	**6156** 43	**6840** 47
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** –	**2307** –	**3076** 20	**3845** 26	**4614** 31	**5383** 35	**6152** 39	**6921** 43	**7690** 47
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** –	**2607** –	**3476** 21	**4345** 26	**5214** 31	**6083** 36	**6952** 40	**7821** 44	**8690** 48
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** –	**2910** –	**3880** 21	**4850** 27	**5820** 32	**6790** 36	**7760** 40	**8730** 44	**9700** 48
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** –	**3231** –	**4308** 22	**5385** 28	**6462** 32	**7539** 37	**8616** 40	**9693** 45	**10770** 49
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** –	**2378** –	**3567** –	**4756** 22	**5945** 28	**7134** 33	**8323** 37	**9512** 41	**10701** 45	**11890** 49
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** –	**2614** –	**3921** –	**5228** 22	**6535** 28	**7842** 33	**9149** 37	**10456** 41	**11763** 45	**13070** 49
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** –	**2860** –	**4290** –	**5720** 23	**7150** 29	**8580** 34	**10010** 38	**11440** 42	**12870** 46	**14300** 50
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** –	**3118** –	**4677** –	**6236** 23	**7795** 29	**9354** 34	**10913** 38	**12472** 42	**14031** 46	**15590** 50

Performance Notes:

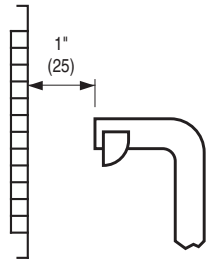
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

PERFORMANCE DATA:

STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

MODELS: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .021	300 .006 .046	400 .010 .082	500 .016 .129	600 .022 .185	700 .031 .252	800 .040 .330	900 .050 .417	1000 .062 .515
6 x 6	8 x 4 10 x 4	0.20	0.23	**CFM** Noise Criteria	**20** –	**40** –	**60** –	**80** –	**100** 17	**120** 22	**140** 27	**160** 31	**180** 35	**200** 39
8 x 6	10 x 5 12 x 4	0.28	0.30	**CFM** Noise Criteria	**28** –	**56** –	**84** –	**112** –	**140** 18	**168** 23	**196** 28	**224** 32	**252** 36	**280** 40
10 x 6	12 x 5 16 x 4	0.35	0.37	**CFM** Noise Criteria	**35** –	**70** –	**105** –	**140** –	**175** 19	**210** 24	**245** 29	**280** 33	**315** 37	**350** 41
8 x 8	14 x 5	0.38	0.40	**CFM** Noise Criteria	**38** –	**76** –	**114** –	**152** 15	**190** 20	**228** 25	**266** 30	**304** 34	**342** 38	**380** 42
12 x 6	18 x 4	0.42	0.45	**CFM** Noise Criteria	**42** –	**84** –	**126** –	**168** 16	**210** 21	**252** 26	**294** 30	**336** 35	**378** 39	**420** 43
12 x 8	16 x 6 24 x 4	0.58	0.59	**CFM** Noise Criteria	**58** –	**116** –	**174** –	**232** 17	**290** 22	**348** 27	**406** 31	**464** 36	**522** 40	**580** 44
10 x 10	14 x 7 26 x 4	0.61	0.62	**CFM** Noise Criteria	**61** –	**122** –	**183** –	**244** 17	**305** 22	**366** 27	**427** 32	**488** 37	**549** 40	**610** 44
18 x 6	14 x 8 28 x 4	30 x 4	0.65	0.67	**CFM** Noise Criteria	**65** –	**130** –	**195** –	**260** 18	**325** 23	**390** 28	**455** 33	**520** 37	**585** 41	**650** 44
12 x 10	16 x 8 24 x 5	20 x 6	0.74	0.74	**CFM** Noise Criteria	**74** –	**148** –	**222** –	**296** 18	**370** 23	**444** 28	**518** 33	**592** 38	**666** 42	**740** 45
12 x 12	14 x 10 18 x 8	24 x 6 38 x 4	0.90	0.89	**CFM** Noise Criteria	**90** –	**180** –	**270** –	**360** 19	**450** 24	**540** 29	**630** 34	**720** 39	**810** 42	**900** 45
14 x 14	16 x 12 20 x 10	24 x 8 34 x 6	1.24	1.22	**CFM** Noise Criteria	**124** –	**248** –	**372** –	**496** 19	**620** 24	**744** 29	**868** 34	**992** 39	**1116** 43	**1240** 46
18 x 12	16 x 14 22 x 10	28 x 8 38 x 6	1.37	1.34	**CFM** Noise Criteria	**137** –	**274** –	**411** 16	**548** 21	**685** 26	**822** 31	**959** 36	**1096** 41	**1233** 44	**1370** 47
24 x 10	20 x 12 30 x 8		1.52	1.49	**CFM** Noise Criteria	**152** –	**304** –	**456** 16	**608** 21	**760** 26	**912** 31	**1064** 36	**1216** 42	**1368** 45	**1520** 48
16 x 16	18 x 14 22 x 12	30 x 8	1.64	1.58	**CFM** Noise Criteria	**164** –	**328** –	**492** 17	**656** 22	**820** 27	**984** 32	**1148** 37	**1312** 42	**1476** 45	**1640** 48
24 x 12	18 x 16 20 x 14	30 x 10 36 x 8	1.85	1.78	**CFM** Noise Criteria	**185** –	**370** –	**555** 17	**740** 22	**925** 27	**1110** 32	**1295** 37	**1480** 42	**1665** 45	**1850** 49
18 x 18	20 x 16 24 x 14	28 x 12 32 x 10	2.10	2.01	**CFM** Noise Criteria	**210** –	**420** –	**630** 17	**840** 22	**1050** 27	**1260** 33	**1470** 38	**1680** 43	**1890** 46	**2100** 49
30 x 12	20 x 18 22 x 16	26 x 14 36 x 10	2.32	2.23	**CFM** Noise Criteria	**232** –	**464** –	**696** 17	**928** 23	**1160** 28	**1392** 33	**1624** 38	**1856** 43	**2088** 46	**2320** 50
20 x 20	24 x 18 26 x 16	30 x 14 36 x 12	2.61	2.48	**CFM** Noise Criteria	**261** –	**522** –	**783** 17	**1044** 23	**1305** 28	**1566** 34	**1827** 39	**2088** 44	**2349** 47	**2610** 50
22 x 22	24 x 20 26 x 18	30 x 16 36 x 14	3.17	3.00	**CFM** Noise Criteria	**317** –	**634** –	**951** 18	**1268** 24	**1585** 29	**1902** 35	**2219** 39	**2536** 44	**2853** 47	**3170** 51
30 x 18	24 x 22 34 x 16	40 x 14	3.54	3.34	**CFM** Noise Criteria	**354** –	**708** –	**1062** 18	**1416** 24	**1770** 29	**2124** 35	**2478** 40	**2832** 45	**3186** 48	**3540** 52
24 x 24	26 x 22 28 x 20	32 x 18 36 x 16	3.79	3.56	**CFM** Noise Criteria	**379** –	**758** –	**1137** 18	**1516** 24	**1895** 29	**2274** 35	**2653** 40	**3032** 45	**3411** 48	**3790** 52
36 x 18	32 x 20 40 x 16	46 x 14	4.27	4.01	**CFM** Noise Criteria	**427** –	**854** –	**1281** 19	**1708** 26	**2135** 30	**2562** 37	**2989** 42	**3416** 47	**3843** 50	**4270** 54
26 x 26	28 x 24 48 x 14		4.47	4.19	**CFM** Noise Criteria	**447** –	**894** –	**1341** 19	**1788** 26	**2235** 31	**2682** 37	**3129** 42	**3576** 47	**4023** 50	**4470** 54
30 x 24	28 x 26 32 x 22	36 x 20 40 x 18	4.77	4.46	**CFM** Noise Criteria	**477** –	**954** –	**1431** 20	**1908** 27	**2385** 32	**2862** 38	**3339** 43	**3816** 47	**4293** 51	**4770** 55
28 x 28	30 x 26 36 x 22	40 x 20	5.20	4.85	**CFM** Noise Criteria	**520** –	**1040** –	**1560** 20	**2080** 27	**2600** 32	**3120** 38	**3640** 43	**4160** 48	**4680** 51	**5200** 55
36 x 24	30 x 28 40 x 22	44 x 20	5.74	5.35	**CFM** Noise Criteria	**574** –	**1148** –	**1722** 20	**2296** 27	**2870** 33	**3444** 39	**4018** 43	**4592** 48	**5166** 52	**5740** 56
30 x 30	34 x 26 38 x 24	48 x 20	5.99	5.57	**CFM** Noise Criteria	**599** –	**1198** –	**1797** 20	**2396** 27	**2995** 33	**3594** 39	**4193** 44	**4792** 48	**5391** 52	**5990** 56

For performance data notes, see F165.

PERFORMANCE DATA:

STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

MODELS: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .005	200 .002 .019	300 .006 .042	400 .010 .075	500 .016 .117	600 .022 .169	700 .031 .230	800 .040 .300	900 .050 .380	1000 .062 .469
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	**CFM** Noise Criteria	**684** –	**1368** 16	**2052** 21	**2736** 28	**3420** 34	**4104** 40	**4788** 44	**5472** 49	**6156** 53	**6840** 57
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	**CFM** Noise Criteria	**769** –	**1538** 17	**2307** 22	**3076** 28	**3845** 34	**4614** 40	**5383** 45	**6152** 49	**6921** 53	**7690** 57
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	**CFM** Noise Criteria	**869** –	**1738** 18	**2607** 22	**3476** 29	**4345** 34	**5214** 41	**6083** 46	**6952** 50	**7821** 54	**8690** 58
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	**CFM** Noise Criteria	**970** –	**1940** 19	**2910** 23	**3880** 29	**4850** 35	**5820** 41	**6790** 46	**7760** 50	**8730** 54	**9700** 58
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	**CFM** Noise Criteria	**1077** –	**2154** 19	**3231** 24	**4308** 30	**5385** 36	**6462** 42	**7539** 48	**8616** 51	**9693** 56	**10770** 60
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	**CFM** Noise Criteria	**1189** 15	**2378** 20	**3567** 25	**4756** 31	**5945** 37	**7134** 43	**8323** 48	**9512** 52	**10701** 56	**11890** 60
44 x 44	46 x 42	13.07	11.98	**CFM** Noise Criteria	**1307** 15	**2614** 20	**3921** 25	**5228** 31	**6535** 37	**7842** 43	**9149** 48	**10456** 52	**11763** 56	**13070** 60
46 x 46		14.30	13.10	**CFM** Noise Criteria	**1430** 16	**2860** 21	**4290** 26	**5720** 32	**7150** 38	**8580** 44	**10010** 49	**11440** 53	**12870** 57	**14300** 61
48 x 48		15.59	14.26	**CFM** Noise Criteria	**1559** 16	**3118** 21	**4677** 26	**6236** 32	**7795** 38	**9354** 44	**10913** 49	**12472** 53	**14031** 57	**15590** 61

Performance Notes:

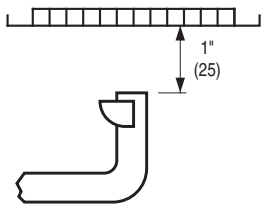
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2023.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER

MODEL SERIES: 6100-HD

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS – GYMNASIUM

EXAMPLE: 6145H-HD - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
   Horizontal/Long Dimension Blades:
   6145H-HD Fixed 45° Deflection
   61FH-HD Fixed 0° Deflection
   Vertical/Short Dimension Blades:
   6145V-HD Fixed 45° Deflection
   61FV-HD Fixed 0° Deflection
2. **Damper (OBD)**
   O Steel
   — No Damper
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   LBP Light Bronze Paint
   MBP Medium Bronze Paint
   DBP Dark Bronze Paint
   MI Mill
   PC Prime Coat
   SP Special Custom Color
6. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
7. **Fastening**
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

— None (default)

8. **Plaster Sub-Frame**
   PF Plaster Sub-Frame
9. **Insect Screen**
   IS Insect Screen
10. **Gaskets**
    GK Foam Gasket
11. **Earthquake Tabs**
    EQT Earthquake Tabs

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel 45° deflection register, horizontal blade orientation and steel damper, is Model 6145H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 6100-HD

STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS – GYMNASIUM

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H-HD, 6145V-HD, 61FH-HD** or **61FV-HD Steel Heavy Duty Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have fixed 14 gauge steel blades spaced on 1/2" (13) centers and a heavy duty 16 gauge steel welded frame. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 6700-HD

STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

EXAMPLE: 6755H-HD - O - 12 x 12 - S - #4 - A - 304 - PFS

1. **Models**
   Horizontal/Long Dimension Blades:
   6755H-HD 45° Deflection, 1/2 (13) Spacing
   Vertical/Short Dimension Blades:
   6755V-HD 45° Deflection, 1/2 (13) Spacing
2. **Damper (OBD)**
   O Steel
   — No Damper
3. **Nominal Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   #4 Brushed Satin Polished (default)
   AW Appliance White
   SP Special Custom Color
6. **Fastening**
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

— None (default)

7. **Construction**
   304 Type 304 Stainless Steel (default)
   316 Type 316 Stainless Steel
8. **Plaster Sub-Frame**
   PFS Stainless Steel Plaster Sub-Frame

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel 45° deflection register, horizontal blade direction and stainless steel damper, is Model 6755H-HD-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

3. Refer to individual model submittal for guidance on availability of options and accessories.

HOW TO SPECIFY

MODEL SERIES: 6700-HD

STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6755H-HD** or **6755V-HD Stainless Steel Heavy Duty Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional) with welded and reinforced frames. The blades shall be fixed at 45°, spaced on 1/2" (13) centers, and shall be reinforced by a support mullion on maximum 8" (203) centers. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

DRUM LOUVERS
45DLC SERIES

- SPIRAL DUCT MOUNT
- HIGH CAPACITY
- LONG THROW
- ALUMINUM CONSTRUCTION

Models:

45DLC1 Single Vanes
45DLC2 Split Vanes

Model 45DLC1

Model Series 45DLC Spiral Duct Mount Drum Louvers are supply air outlets that have been engineered for use in cooling, heating and ventilating applications requiring long throws and accurate directional control of conditioned air in large enclosed spaces where ductwork cannot be brought close to the occupants. The high capacity drum louvers ideally suited for use in sports arenas, shopping malls, exhibition halls, manufacturing and industrial plants and stadiums.

Model Series 45DLC are designed to provide jet or diffused air patterns in exposed duct applications. The drum louvers are constructed of aluminum and feature a curved frame that installs directly on spiral ducts without the use of duct taps, reducing installation time and costs. Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes.

Model Series 45DLC are ideal for vertical spot cooling or heating when mounted on the exposed ductwork. They are capable of supplying straight flow primary air jet streams at 0° deflection for long throws, and a diffused pattern of primary air at 15° and 30° deflections for shorter throws and greater spread. There is a difference of approximately 35 percent in throw between jet and diffused air patterns. The cylindrical drum enables primary air to be directed horizontally or vertically within a 60° arc, and when coupled with the adjustable louvers provides accurate directional control of primary air for people, plant or product.

Model 45DLC2 features a split-vane option. The individual vanes are separated by a central divider and may be adjusted in opposite directions to produce a 'counter flow' air pattern. This creates more rapid mixing of primary and room air and a further reduction in the length of throw. The robust design of the spiral duct mount drum louvers has been built to last and provide the utmost versatility for most applications.

STANDARD FEATURES:

- Curved frame mounts directly to spiral ducts without the use of duct taps.
- Felt seal around the drum minimizes air leakage and holds the drum securely in the selected position.
- Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes.
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the rectangular drum opening, and tightly hold deflection angle settings regardless of duct velocity and pressure levels.
- Sizes available are 6" (152), 10" (254), 12" (305) and 15" (381) in height and 9" (229) through 60" (1524) in width. See dimensional data on next page for available increments.
- Model 45DLC2 Split Vane option allows bi-directional horizontal throw.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

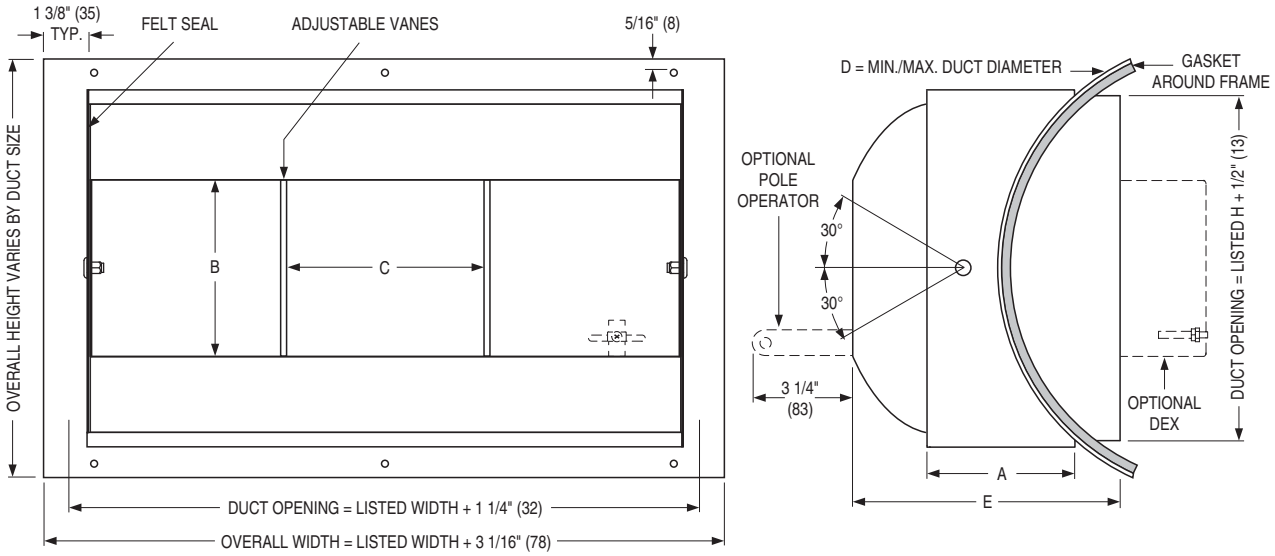
OPTIONS AND ACCESSORIES:

- PB Pole Operator is available to allow directional control of airflow in remote mounted locations
- DEX Damper/Extractor (Air Scoop)

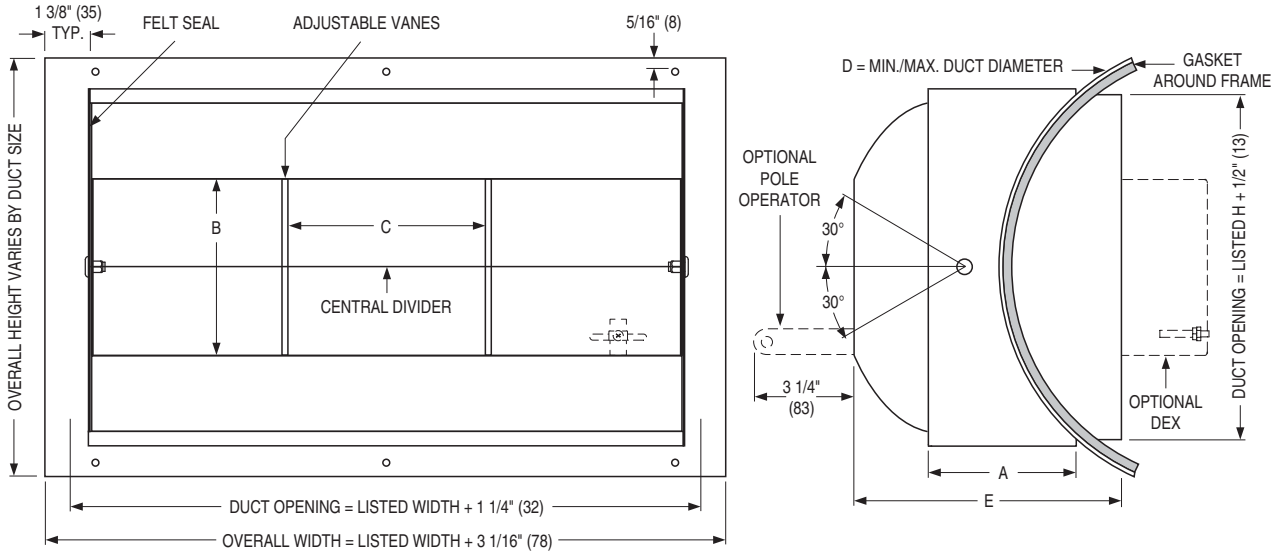
For additional options and accessories, see page F191.

DIMENSIONAL DATA:

SPIRAL DUCT DRUM LOUVERS • MODEL SERIES: 45DLC



MODEL 45DLC1



MODEL 45DLC2

HEIGHT	6		10		12		15	
LISTED SIZES NOMINAL WIDTH x HEIGHT IN INCHES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES
	9 x 6	2	18 x 10	2	18 x 12	2	18 x 15	2
	12 x 6	3	24 x 10	3	24 x 12	3	24 x 15	3
	15 x 6	4	30 x 10	4	30 x 12	4	30 x 15	4
	18 x 6	5	36 x 10	5	36 x 12	5	36 x 15	5
	24 x 6	7	42 x 10	6	42 x 12	6	42 x 15	6
	30 x 6	9	48 x 10	7	48 x 12	7	48 x 15	7
	36 x 6	11	54 x 10	8	54 x 12	8	54 x 15	8
	48 x 6	15	60 x 10	9	60 x 12	9	60 x 15	9
	54 x 6	17	–	–	–	–	–	–
	60 x 6	19	–	–	–	–	–	–

DIMENSIONS IN INCHES (MM)					
	A	2 3/4 (70)	4 1/2 (114)	5 1/2 (140)	7 (178)
	B	3 3/8 (86)	5 3/8 (137)	6 3/8 (162)	9 3/8 (238)
	C	3 (76)	6 (152)	6 (152)	6 (152)
	D	10 – 36 (254 – 914)	14 – 36 (356 – 914)	16 – 36 (406 – 914)	20 – 36 (508 – 914)
	E	5 (127)	8 1/8 (206)	9 9/16 (243)	11 9/16 (294)

DRUM LOUVERS
45DL SERIES

- HIGH CAPACITY
- LONG THROW
- ALUMINUM CONSTRUCTION

Models:

45DL1 Single Vanes

45DL2 Split Vanes

- **Suffix '-O' adds a steel opposed blade damper**

Models 45DL1-O and 45DL2

Model Series 45DL Drum Louvers are supply air outlets engineered for use in cooling, heating, and ventilating applications requiring long throws and accurate directional control of conditioned air in large enclosed spaces where ductwork cannot be brought close to the occupants. Typically, they are used in sport arenas, exhibition halls, manufacturing and industrial plants, office building entrances, lobbies, shopping malls and atriums.

Model Series 45DL Drum Louvers are designed to provide jet or diffused air patterns in ceiling, sidewall and exposed duct applications. In sidewall and exposed duct installations, the Model Series 45DL can be mounted vertically or horizontally.

Model Series 45DL are ideal for vertical spot cooling or heating when mounted in the ceiling or on the bottom of exposed ductwork. They are capable of supplying straight flow primary air jet streams at 0° deflection for long throws, and a diffused pattern of primary air at 15° and 30° deflections for shorter throws and greater spread. There is a difference of approximately 35 percent in throw between jet and diffused air patterns. The cylindrical drum enables primary air to be directed horizontally or vertically within a 60° arc, and when coupled with the adjustable louvers provides accurate directional control of primary air for people, plant or product.

Model 45DL2 features a split-vane option. The individual vanes are separated by a central divider and may be adjusted in opposite directions to produce a 'counter flow' air pattern. This creates more rapid mixing of primary and room air and a further reduction in the length of throw. With this option you therefore have the utmost versatility for most applications.

STANDARD FEATURES:

- Rotating adjustable cylindrical drums are tightly pivoted to the end caps of the 1 1/4" (32) wide border frames and are supplied with 3/16" (5) diameter face screw mounting holes and a perimeter frame gasket.
- Felt seal around the rotating drum to minimize air leakage.
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the rectangular drum opening, and tightly hold deflection angle settings regardless of duct velocity and pressure levels.
- The Drum Louver is rated for use at capacities ranging from 100 to 14,000 cfm.
- Sizes available are 6" (152), 10" (254), 12" (305) and 15" (381) in height and 9" (229) through 72" (1829) in width. See dimensional data on next page for available increments.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- An optional opposed blade damper is available with a screwdriver slot operator accessible through the discharge opening. However, they are not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g.. Under these conditions balancing should be performed by a remote damper installed in the take-off.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

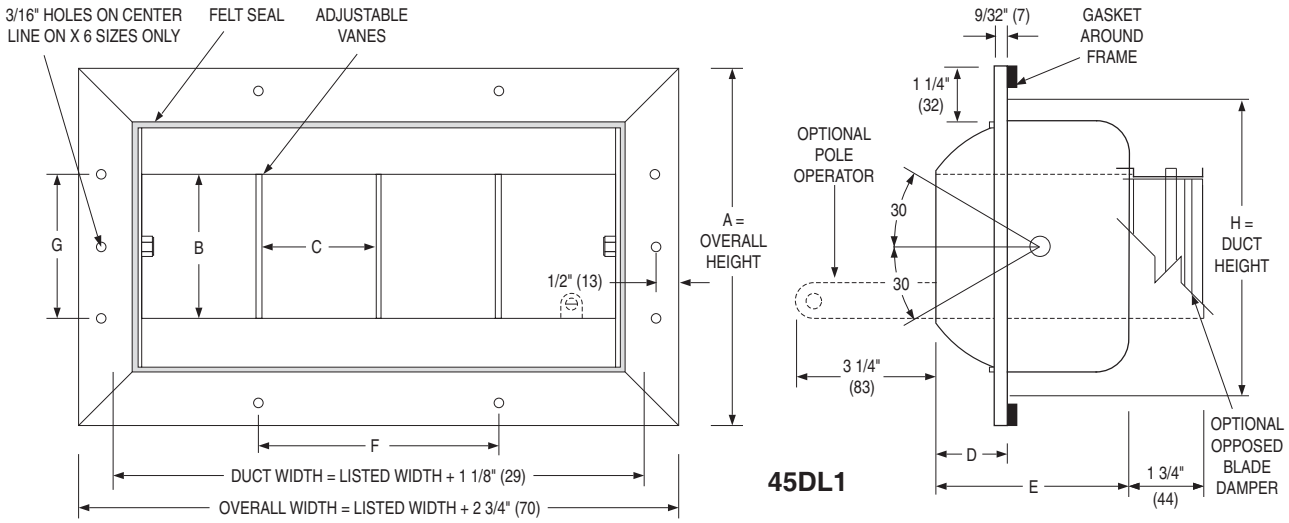
OPTIONS AND ACCESSORIES:

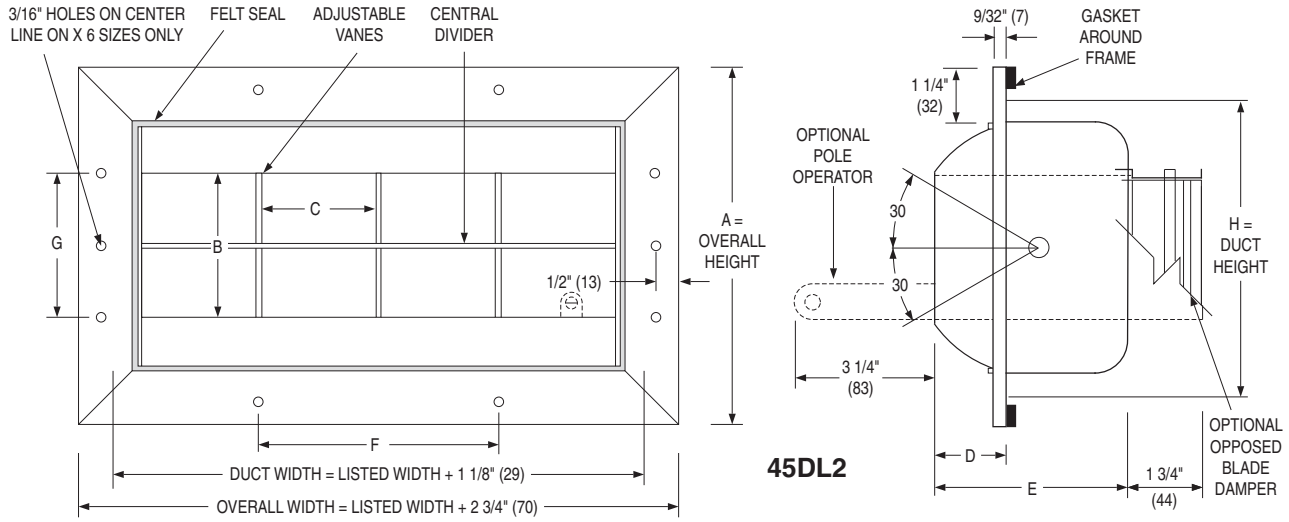
- PB Pole Operator is available to allow directional control of airflow in remote mounted locations

For additional options and accessories, see page F191.

DIMENSIONAL DATA:

DRUM LOUVERS • MODEL SERIES: 45DL





HEIGHT	6		10		12		15	
LISTED SIZES NOMINAL WIDTH x HEIGHT IN INCHES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES
	9 x 6	2	18 x 10	2	18 x 12	2	18 x 15	2
	12 x 6	3	24 x 10	3	24 x 12	3	24 x 15	3
	15 x 6	4	30 x 10	4	30 x 12	4	30 x 15	4
	18 x 6	5	36 x 10	5	36 x 12	5	36 x 15	5
	24 x 6	7	42 x 10	6	42 x 12	6	42 x 15	6
	30 x 6	9	48 x 10	7	48 x 12	7	48 x 15	7
	36 x 6	11	54 x 10	8	54 x 12	8	54 x 15	8
	48 x 6	15	60 x 10	9	60 x 12	9	60 x 15	9
	54 x 6	17	66 x 10	10	66 x 12	10	66 x 15	10
	60 x 6	19	72 x 10	11	72 x 12	11	72 x 15	11

DIMENSIONS IN INCHES (MM)					
	H	6 7/8 (175)	10 1/2 (267)	12 1/2 (3188)	15 1/2 (384)
	A	8 1/2 (216)	12 1/8 (308)	14 1/8 (359)	17 1/8 (435)
	B	3 3/8 (86)	5 3/8 (137)	6 3/8 (162)	9 3/8 (238)
	C	3 (76)	6 (152)	6 (152)	6 (152)
	D	1 11/16 (43)	2 21/32 (67)	3 9/32 (83)	3 3/4 (95)
	E	4 1/2 (114)	6 1/4 (159)	7 1/8 (181)	8 3/4 (222)
	F	6 (152)	6 (152)	6 (152)	6 (152)
	G	–	6 (152)	6 (152)	9 (229)

PERFORMANCE DATA:

MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 6" (152)

SIZE	Neck Velocity, FPM Velocity Pressure	280 .005	420 .011	560 .020	700 .031	840 .044	980 .060	1120 .078	1400 .122	1680 .176
9 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	105 .022 7-10-18 –	158 .06 10-14-24 –	210 .10 13-18-30 –	263 .16 15-21-35 22	315 .21 17-23-40 27	368 .30 20-28-46 32	420 .40 22-30-50 36	525 .60 26-35-56 41	630 .90 30-40-66 46
12 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	140 .03 8-11-18 –	210 .06 12-16-27 –	280 .10 16-21-34 –	350 .16 18-24-40 23	420 .23 20-26-45 28	490 .32 23-31-50 33	560 .40 25-34-55 37	700 .63 30-40-66 42	840 .90 35-47-76 47
18 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	210 .022 12-16-27 –	315 .06 17-22-36 –	420 .10 21-27-45 –	525 .16 25-32-52 24	630 .24 28-37-62 29	735 .33 31-42-70 34	840 .40 34-46-76 38	1050 .60 42-54-90 43	1260 .90 48-62-101 49
24 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	280 .03 16-21-33 –	420 .06 21-28-44 –	560 .10 26-33-54 –	700 .16 31-40-64 26	840 .24 35-45-72 31	980 .32 38-50-80 36	1120 .40 42-52-88 40	1400 .63 48-64-100 47	168 .90 52-71-110 52
30 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	350 .022 19-24-38 –	525 .06 25-32-50 –	700 .10 30-38-60 20	875 .16 35-45-70 27	1050 .21 39-50-78 32	1225 .32 43-56-86 37	1400 .40 47-60-94 41	1750 .63 54-70-100 48	210 .90 60-78-120 53
36 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	420 .03 20-26-40 –	630 .06 26-35-54 –	840 .10 32-41-64 21	1050 .16 36-46-74 28	1260 .22 40-52-82 33	1470 .30 44-55-90 38	1680 .40 48-62-100 42	2100 .60 54-72-115 49	2520 .90 62-80-130 55
48 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	565 .03 24-31-39 –	848 .06 31-42-63 –	1130 .10 37-49-76 22	1412 .16 44-56-89 29	1695 .24 48-62-100 34	1978 .32 50-70-110 39	2260 .40 58-74-120 43	2825 .63 65-82-130 50	3390 .90 74-95-150 56
60 x 6	Airflow, CFM Total Pressure Throw Noise Criteria	700 .03 28-36-54 –	1050 .06 34-46-66 –	1400 .10 43-55-84 23	1750 .16 49-63-96 30	2100 .24 52-70-110 35	2450 .32 60-75-120 40	2800 .40 65-82-130 44	3500 .63 75-90-150 51	4200 .90 84-105-170 57

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15° 30°	x 1.5 x 1.9	x .85 x .73	+ 4 + 9
45DL2	0° 15° 30°	x 1.3 x 1.7 x 2.2	— x .85 x .73	— +4 +9

PERFORMANCE DATA:

MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 10" (254)

SIZE	Neck Velocity, FPM Velocity Pressure	270 .005	400 .012	536 .018	670 .028	800 .040	940 .055	1075 .072	1340 .112	1610 .162
18 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	336 .02 15-20-32 –	504 .05 21-28-45 –	672 .08 26-35-52 –	840 .10 32-42-64 26	1008 .18 34-44-74 33	1176 .19 36-50-78 39	1344 .25 44-54-90 44	1680 .40 48-65-100 52	2016 .60 54-72-110 60
24 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	450 .02 19-25-40 –	675 .05 25-35-52 –	900 .08 30-42-64 21	1125 .13 35-46-74 30	1350 .18 38-52-80 34	1575 .20 44-54-94 43	1800 .3 50-65-100 48	2250 .45 54-72-110 58	2700 .7 64-82-125 63
30 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	560 .02 22-28-46 –	840 .05 29-40-62 –	1120 .08 36-50-82 23	1400 .13 42-55-86 31	1680 .18 46-62-96 38	1960 .24 50-68-100 46	2240 .31 54-72-110 50	2800 .48 65-82-130 58	3360 .7 72-92-145 64
36 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	670 .02 23-32-52 –	1005 .04 30-43-68 –	1340 .08 36-50-82 25	1675 .13 44-60-100 35	2010 .18 50-68-105 40	2345 .25 56-76-115 47	2680 .32 60-80-120 52	3350 .48 70-90-140 60	4020 .70 80-115-180 69
42 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	785 .02 25-34-54 –	1177 .05 32-45-70 –	1570 .08 40-54-86 26	1962 .13 46-62-100 35	2355 .19 54-72-110 42	2748 .26 60-80-120 48	3140 .34 66-86-140 53	3925 .52 75-100-150 60	4710 .75 88-115-180 69
48 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	895 .02 26-34-58 –	1342 .04 33-48-73 –	1790 .08 43-58-94 26	2238 .13 53-74-108 35	2685 .17 56-76-116 41	3133 .24 60-80-120 47	3580 .32 66-90-140 52	4475 .48 78-105-150 61	5370 .68 90-110-180 68
54 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	1010 .02 28-36-60 –	1515 .05 35-50-75 –	2020 .08 50-68-100 27	2525 .13 55-76-110 35	3030 .17 60-80-120 42	3535 .24 65-88-135 48	4040 .31 70-95-145 53	5050 .46 90-120-180 61	6060 .68 95-120-190 68
60 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	1120 .02 28-36-60 –	1120 05 40-54-72 –	2240 .08 50-68-100 27	2800 .13 58-76-120 35	3360 .17 65-84-130 42	3920 .23 70-92-140 48	4480 .30 78-100-150 53	5600 .46 90-120-180 61	6720 .68 100-13-190 68
72 x 10	Airflow, CFM Total Pressure Throw Noise Criteria	1345 .02 34-44-72 –	2018 .05 44-58-90 –	2690 .08 54-70-110 28	3362 .13 62-82-130 37	4035 .19 70-92-140 44	4707 .26 78-100-160 48	5380 .35 85-110-170 54	6725 .52 98-130-200 63	8070 .75 110-140-230 70

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15° 30°	x 1.5 x 1.9	x .85 x .73	+ 4 + 9
45DL2	0° 15° 30°	x 1.3 x 1.7 x 2.2	— x .85 x .73	— +4 +9

PERFORMANCE DATA:

MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 12" (305)

SIZE	Neck Velocity, FPM Velocity Pressure	265 .004	400 .010	530 .018	660 .027	795 .039	930 .054	1060 .070	1325 .109	1600 .160
18 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	400 .033 14-20-34 –	600 .08 19-27-46 –	800 .14 24-34-60 –	1000 .22 30-40-70 25	1200 .30 35-47-78 32	1400 .44 38-56-95 36	1600 .55 44-60-100 40	2000 .86 50-70-120 47	2400 1.04 55-80-130 52
24 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	530 .03 17-24-42 –	795 .07 24-34-54 –	1060 .13 26-37-64 –	1325 .20 35-47-78 27	1590 .29 38-56-95 32	1855 .42 45-65-110 35	2120 .53 52-72-120 40	2650 .82 65-85-140 46	3180 1.10 72-98-160 52
30 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	665 .03 18-25-44 –	998 .06 26-37-64 –	1330 .10 33-45-76 21	1662 .14 37-54-90 27	1993 .21 45-65-110 32	2328 .28 50-70-120 38	2660 .35 58-80-130 40	3324 .58 67-92-155 48	3990 .80 85-110-180 54
36 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	800 .03 22-31-54 –	1200 .05 30-44-74 –	1600 .08 38-54-90 22	2000 .12 46-64-110 28	2400 .17 50-70-120 34	2800 .22 58-80-135 38	3200 .30 65-90-150 42	4000 .46 78-105-180 50	4800 .63 90-120-200 55
42 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	930 .03 25-35-60 –	1395 .05 34-46-80 –	1860 .10 44-58-100 26	2325 .16 50-70-120 31	2790 .22 58-80-130 35	3255 .31 65-90-150 41	3720 .40 75-100-170 45	4650 .62 85-115-200 52	5580 .80 100-140-230 55
48 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	1065 .03 25-33-53 –	1598 .06 35-46-80 –	2130 .08 44-56-96 26	2663 .14 52-70-115 31	3195 .20 58-78-125 36	3728 .28 60-98-150 41	4260 .36 75-100-170 45	5326 .56 88-120-210 52	6390 .80 100-140-230 55
54 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	1200 .03 28-37-65 –	1800 .06 37-50-88 –	2400 .11 46-62-108 24	3000 .17 56-75-130 31	3600 .25 65-85-145 36	4200 .34 72-98-160 41	4800 .42 80-105-180 45	6000 .68 95-125-220 52	7200 .95 110-150-250 55
60 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	1350 .03 28-37-65 –	2025 .06 42-56-100 –	2700 .11 47-63-110 20	3375 .17 54-74-130 28	4050 .22 64-84-150 33	4725 .30 72-100-170 37	5400 .38 80-110-190 42	6750 .58 92-120-240 48	8100 .83 110-140-260 54
72 x 12	Airflow, CFM Total Pressure Throw Noise Criteria	1600 .03 32-42-72 –	2400 .06 42-54-100 –	3200 .11 52-72-120 25	4000 .17 62-74-140 31	4800 .22 72-100-170 36	5600 .30 82-110-190 41	6400 .38 92-120-240 45	8000 .58 110-140-260 52	9600 .83 120-160-290 55

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates an Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15° 30°	x 1.5 x 1.9	x .85 x .73	+ 4 + 9
45DL2	0° 15° 30°	x 1.3 x 1.7 x 2.2	— x .85 x .73	— +4 +9

PERFORMANCE DATA:

MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 15" (381)

SIZE	Neck Velocity, FPM Velocity Pressure	312 .006	470 .014	625 .024	780 .038	935 .054	1090 .074	1250 .097	1560 .152	1870 .218
18 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	585 .02 15-21-36 –	878 .05 21-30-52 –	1170 .09 28-40-67 22	1463 .14 32-45-75 28	1755 .21 37-51-94 33	2048 .27 42-59-100 38	2340 .36 47-65-110 42	2925 .55 58-82-140 49	3510 .82 66-92-160 54
24 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	780 .02 18-25-45 –	1170 .04 25-35-62 –	1560 .08 33-46-80 22	1950 .12 40-55-100 28	2340 .19 45-65-110 34	2730 .25 54-75-130 39	3120 .34 60-84-140 43	3900 .50 70-100-170 50	4680 .68 80-110-190 55
30 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	975 .02 21-30-52 –	1463 .05 30-42-74 –	1950 .08 38-54-97 22	2438 .13 45-64-110 29	2925 .20 54-75-130 35	3413 .25 60-84-140 40	3900 .34 66-94-160 44	4875 .50 80-110-190 51	5850 .72 92-130-225 56
36 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	1170 .025 23-33-58 –	1755 .05 32-45-80 –	2340 .10 40-56-100 25	2925 .15 47-65-110 32	3510 .20 56-76-130 37	4095 .26 62-88-150 42	4680 .36 70-100-170 45	5850 .55 80-110-190 52	7020 .78 110-130-220 58
42 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	1365 .02 27-37-66 –	2048 .05 38-52-92 –	2730 .10 47-65-110 25	3413 .15 56-76-130 31	4095 .22 62-88-150 36	4778 .30 70-100-170 41	5460 .38 80-110-190 44	6825 .60 100-130-220 51	8190 .85 110-150-260 57
48 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	1565 .02 28-40-70 –	2348 .05 40-55-100 –	3130 .08 50-70-120 25	3913 .13 60-82-140 32	4695 .18 70-98-160 37	5478 .25 80-110-190 42	6260 .33 90-130-220 45	7825 .50 110-150-260 52	9390 .8 120-180-300 58
54 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	1760 .025 30-44-75 –	2640 .05 44-60-110 –	3520 .10 54-78-130 26	4400 .16 65-90-160 32	5280 .21 75-105-180 37	6160 .30 90-120-210 42	7040 .40 10-135-240 45	8800 .65 120-160-280 52	10560 .85 130-180-310 58
60 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	1950 .02 34-45-76 –	2925 .045 44-60-110 –	3900 .08 54-78-130 26	4875 .12 65-90-160 33	5850 .17 75-105-180 38	6825 .25 90-120-210 43	7800 .30 10-135-240 46	9750 .50 120-160-280 53	11700 .75 130-180-310 59
72 x 15	Airflow, CFM Total Pressure Throw Noise Criteria	2345 .02 37-50-90 –	3518 .05 50-70-120 –	4690 .10 62-88-160 27	5863 .14 76-100-190 34	7035 .20 90-125-220 39	8208 .26 100-140-250 44	9380 .33 115-150-280 47	11725 .55 130-190-330 54	14070 .80 160-220-400 60

Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15° 30°	x 1.5 x 1.9	x .85 x .73	+ 4 + 9
45DL2	0° 15° 30°	x 1.3 x 1.7 x 2.2	— x .85 x .73	— +4 +9

HOW TO ORDER

MODEL SERIES: 45DLC
SPIRAL DUCT DRUM LOUVERS

EXAMPLE: 45DLC1 - 24 x 10 - 16 - S - AW - A - —

1. **Models**
   45DLC1 Spiral Duct, Single Vanes
   45DLC2 Spiral Duct, Split Vanes
2. **Width x Height**
   inches (mm)
3. **Duct Diameter**
   inches 10 through 36
   (in 2" increments)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PC Prime Coat
   SP Special Custom Color
6. **Fastening**
   A Screw Holes

OPTIONS & ACCESSORIES:

— None (default)

7. **Pole Operator**
   PB Pole Operator
8. **Damper / Extractor**
   DEX Damper / Extractor (Air Scoop)

Available Sizes		
Grille Width Min. - Max.	Grille Height	Duct Dia. Min. - Max.
9" - 60"	6"	10" - 36"
18" - 60"	10"	14" - 36"
18" - 60"	12"	16" - 36"
18" - 60"	15"	20" - 36"

MODEL SERIES: 45DL
DRUM LOUVERS

EXAMPLE: 45DL1 - O - 24 x 10 - S - AW - A - —

1. **Models**
   45DL1 Single Vanes
   45DL2 Split Vanes
2. **Damper (OBD)**
   O With Steel Damper
   — None
3. **Width x Height**
   inches (mm)
4. **Frame/Border Type**
   S Surface Mount (default)
5. **Finish**
   AW Appliance White (default)
   AL Aluminum
   BK Black
   BW British White
   MI Mill
   PPA Paint Prepared Aluminum
   SP Special Custom Color
6. **Fastening**
   A Screw Holes

OPTIONS & ACCESSORIES:

— None (default)

7. **Pole Operator**
   PB Pole Operator

Notes:

1. Damper not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g..

HOW TO SPECIFY

MODELS: 45DLC1, 45DLC2, 45DL1, 45DL2
SPIRAL DUCT DRUM LOUVERS AND DRUM LOUVERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **45DLC1** or **45DLC2 Spiral Duct Drum Louvers** or **Nailor Model** (select one) **45DL1** or **45DL2 Drum Louvers** of the types and sizes as shown on the plans and air distribution schedules. The louver is to be manufactured from extruded aluminum and have a cylindrical adjustable drum that rotates. The blades are to have a paddle like profile that pivot on nylon bushings. A perimeter gasket is to be included around the frame and a felt seal is to be around the drum. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the louver, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

INDUSTRIAL SUPPLY GRILLES AND REGISTERS

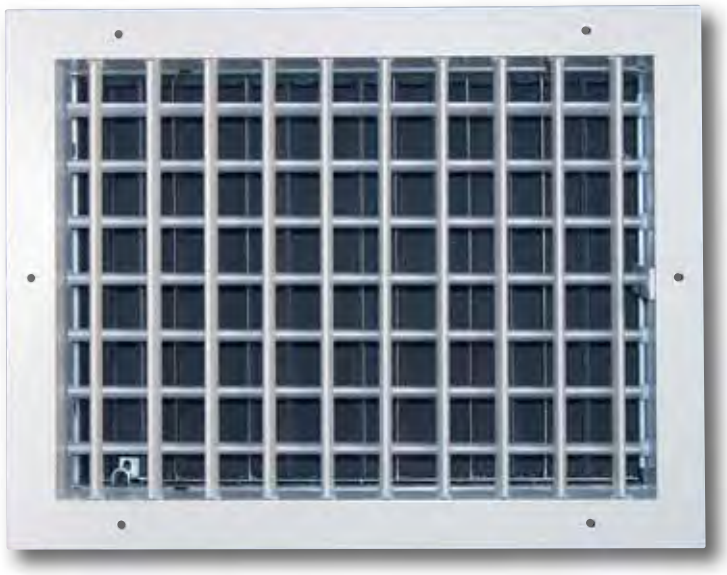
- HIGH CAPACITY
- EXTRUDED ALUMINUM
- 1 1/2 (38) OR 3 (76) SPACING

Double Deflection Models:
81DV, 81DH, 813DV, 813DH

Single Deflection Models:
81SV, 81SH, 813SV, 813SH

Gang Operated Models:
81GDV, 81GDH

- **Suffix '-O' adds a steel opposed blade damper**



Model 81GDV-O

Model Series 8100 Industrial Supply Grilles and Registers have been specially designed to handle the large air volumes common in industrial applications and provide a product that is superior in design and performance when compared to the industry standard.

The exclusive use of heavy gauge extrusions and attention to assembly detail ensure the product is well suited to handling the higher face velocities commonly associated with industrial applications where longer throws are desired. Such applications include factories, warehouses, textile mills and commercial projects where longer than normal throws or a more robust grille design are required.

STANDARD FEATURES:

- Surface mount 1 1/4" (32) face border frame, furnished with screw holes and painted screws.
- The single deflection models have one set of blades and the double deflection have two sets of perpendicular blades. Blades are individually friction pivoted on screws and nylon washers to securely hold deflection setting.
- Models with 1 1/2" (38) blade spacing on centers, feature 1 1/2" (38) deep, smooth contoured airfoil blades with a minimum wall thickness of 0.05" (1.27) for optimum performance.
- The double deflection 1 1/2" (38) blade spacing models are available with front or rear gang operated blades to allow directional control of airflow in remote mounted locations. A pole operated lever on the face of the unit permits deflection of the ganged blades 45° from either side of center. The second set of perpendicular blades are individually adjustable from the face of the grille for additional directional control.
- Models with 3" (76) blade spacing, feature robust 3" (76) deep, smooth contoured airfoil blades.
- The 1 1/2" (38) blade spacing models are available in sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in single section construction. The 3" (76) blade spacing models are available in sizes 12" x 12" (305 x 305) through 48" x 48" (1219 x 1219) in single section construction. Multiple sections are furnished for larger sizes.

CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge, extruded frame with reinforced mitered corners.
- Optional opposed blade damper has a screwdriver slot operator.

FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

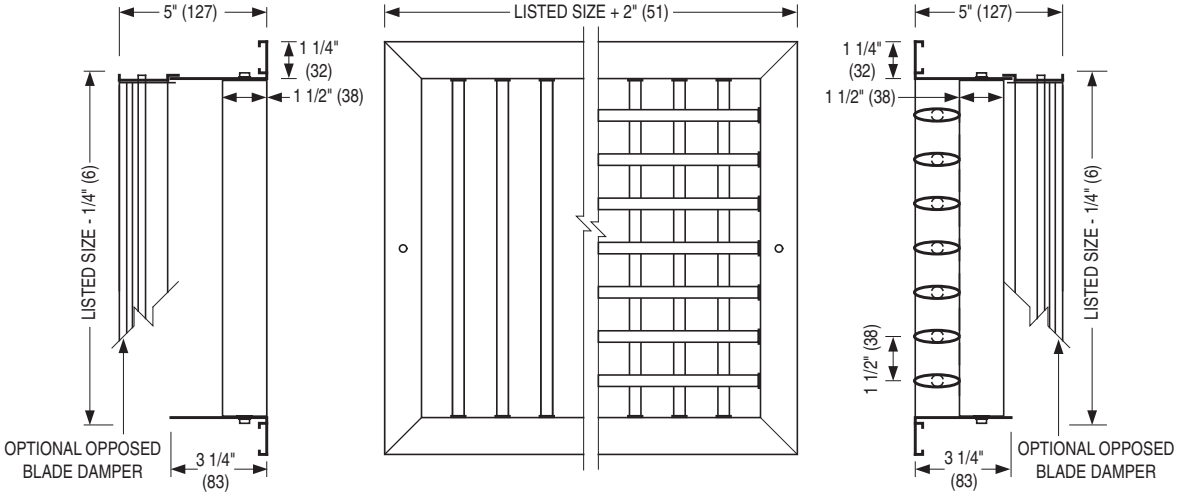
OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket

For additional options and accessories, see page F191.

DIMENSIONAL DATA:

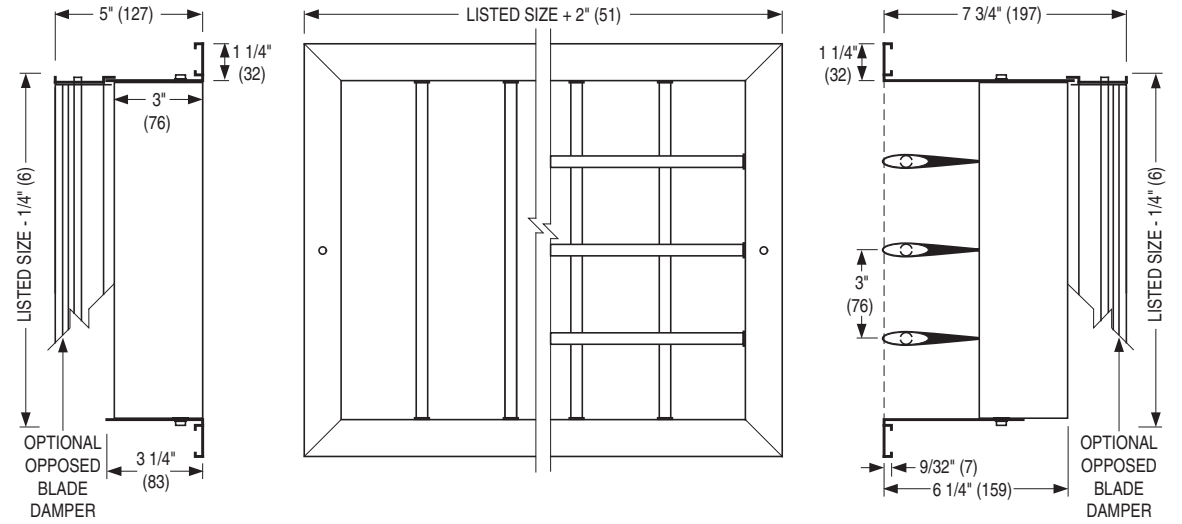
MODEL SERIES 8100 • INDUSTRIAL SUPPLY GRILLES AND REGISTERS



Model 81SV
Vertical Blades
Single Deflection

Model 81DH
Horizontal Front Blades
Double Deflection

1 1/2" (38) Spacing



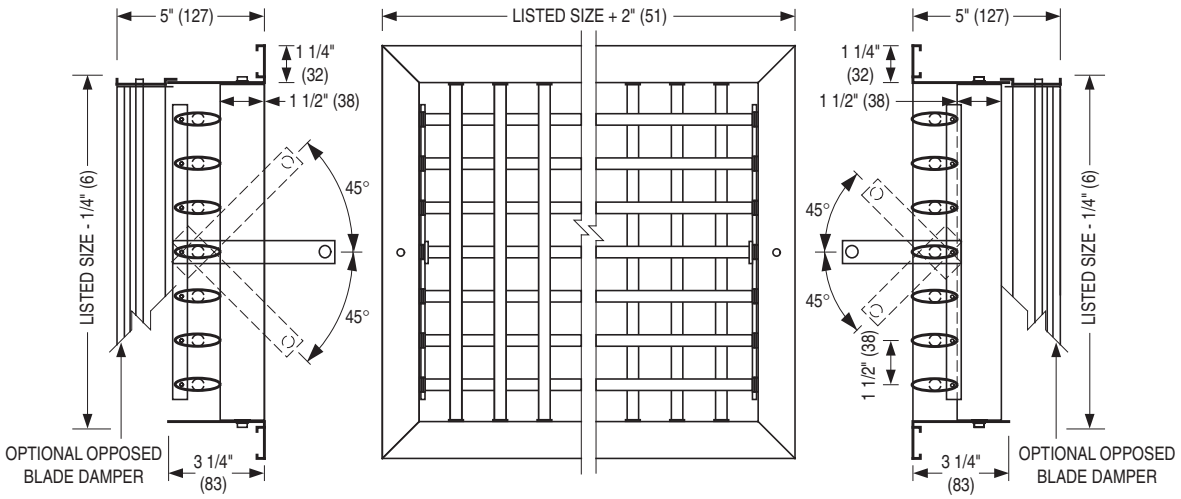
Model 813SV
Vertical Blades
Single Deflection

Model 813DH
Horizontal Front Blades
Double Deflection

3" (76) Spacing

DIMENSIONAL DATA:

MODEL SERIES 81DG • GANG OPERATED INDUSTRIAL SUPPLY GRILLES AND REGISTERS



Model 81GDV
Vertical Front Blades with
Ganged Horizontal Rear Blades

Model 81GDH
Ganged Horizontal Front Blades
with Vertical Rear Blades

PERFORMANCE DATA:

MODEL SERIES 8100 AND 81GD • INDUSTRIAL SUPPLY GRILLES AND REGISTERS

MODELS: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Ak Factor	Neck Velocity,FPM / Velocity Pressure		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
		Total Pressure	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
			22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
			45°	.059	.084	.115	.149	.233	.334	.458	.598	.757
18 x 4 14 x 5 12 x 6		CFM Noise Criteria		250 –	300 –	350 –	400 –	500 26	600 30	700 34	800 38	900 41
	.33 .32 .26	Throw	0° 22 1/2° 45°	13-20-28 10-16-22 7-10-13	15-22-31 12-18-24 8-11-14	17-24-34 13-20-26 9-12-16	19-26-36 15-21-28 10-12-17	22-28-39 17-23-31 11-13-19	24-30-42 18-25-33 12-14-20	26-32-45 20-27-35 13-15-22	28-34-48 22-29-37 14-16-23	30-36-51 23-31-39 15-17-25
26 x 6 18 x 8 16 x 10 12 x 12		CFM Noise Criteria		500 –	600 –	700 –	800 23	1000 29	1200 34	1400 38	1600 41	1800 44
	.71 .69 .55	Throw	0° 22 1/2° 45°	17-26-37 14-20-29 9-12-18	20-29-41 16-23-32 10-14-20	23-32-45 19-25-36 12-15-22	26-35-49 21-28-39 13-17-24	29-38-53 24-31-43 15-19-26	33-42-58 26-33-46 16-20-29	36-45-62 28-36-49 17-22-31	39-48-66 31-39-53 19-24-33	42-51-70 33-42-56 20-26-35
24 x 8 20 x 10 16 x 12 14 x 14		CFM Noise Criteria		750 –	900 –	1050 22	1200 25	1500 31	1800 36	2100 40	2400 43	2700 46
	.98 .95 .76	Throw	0° 22 1/2° 45°	24-35-48 19-28-38 12-17-24	28-38-53 22-31-42 14-19-26	31-42-58 25-34-46 16-21-29	35-45-63 27-36-50 17-23-31	39-49-69 30-39-55 19-25-34	42-52-74 33-42-59 21-27-36	46-56-79 36-45-63 23-29-39	50-59-84 39-48-67 25-31-41	53-63-89 42-51-71 27-33-44
36 x 8 30 x 10 24 x 12 20 x 14 18 x 16		CFM Noise Criteria		1000 –	1200 –	1400 23	1600 26	2000 32	2400 37	2800 41	3200 44	3600 48
	1.47 1.43 1.14	Noise Criteria	0° 22 1/2° 45°	25-37-54 20-30-44 12-18-27	29-41-60 24-33-49 14-20-30	34-46-66 27-37-54 17-23-33	39-51-73 31-41-58 19-25-36	43-55-79 35-44-63 22-28-39	48-60-85 38-48-68 24-30-42	52-64-92 42-51-73 26-32-45	57-69-98 46-55-78 29-35-48	61-73-104 50-58-83 31-37-51
36 x 12 30 x 14 26 x 16 24 x 18		CFM Noise Criteria		1500 –	1800 21	2100 25	2400 28	3000 34	3600 39	4200 43	4800 46	5400 49
	2.22 2.15 1.75	Throw	0° 22 1/2° 45°	30-44-66 24-35-53 15-22-33	36-50-74 28-40-59 18-25-37	42-56-81 33-45-65 21-28-41	47-62-89 37-50-71 23-31-44	53-68-97 42-55-78 26-34-48	59-74-104 46-60-84 29-37-52	65-80-112 51-65-90 32-40-56	71-86-120 55-70-96 35-43-60	77-92-127 60-75-102 38-46-64
48 x 12 36 x 16 30 x 20 24 x 24		CFM Noise Criteria		2000 –	2400 22	2800 26	3200 30	4000 36	4800 40	5600 44	6400 48	7200 51
	3.03 2.93 2.34	Throw	0° 22 1/2° 45°	33-49-76 27-40-61 16-25-38	40-56-85 32-45-68 19-28-42	47-63-94 38-51-75 23-32-47	53-70-102 43-57-82 27-35-51	60-77-111 49-62-89 30-39-56	67-85-120 54-68-96 34-42-60	74-92-129 59-73-103 37-45-64	81-99-138 65-79-110 41-49-69	88-106-147 70-84-117 44-52-73
60 x 12 54 x 14 48 x 16 42 x 18 36 x 20 30 x 24		CFM Noise Criteria		2500 –	3000 23	3500 27	4000 31	5000 37	6000 41	7000 45	8000 49	9000 52
	3.80 3.67 3.93	Throw	0° 22 1/2° 45°	38-56-87 30-45-70 19-28-44	45-64-96 36-51-77 23-32-48	52-72-105 42-57-85 26-36-53	60-79-115 47-63-92 30-39-58	67-87-124 53-70-100 34-43-62	74-95-133 59-76-107 37-47-67	82-103-143 65-83-114 41-51-71	89-111-152 71-89-122 45-55-76	96-119-161 77-95-129 49-59-80
72 x 12 60 x 14 54 x 16 48 x 18 36 x 24		CFM Noise Criteria		3000 –	3600 24	4200 28	4800 32	6000 38	7200 42	8400 46	9600 50	10800 53
	4.59 4.45 3.55	Throw	0° 22 1/2° 45°	42-62-95 33-50-75 21-32-48	50-70-105 39-57-83 25-36-53	58-79-115 46-64-91 29-40-58	66-88-126 53-70-99 33-44-63	74-96-136 59-77-107 37-48-68	82-105-146 66-84-115 41-53-74	90-113-157 72-91-123 45-57-79	98-122-167 79-98-131 49-61-84	106-130-177 85-105-139 53-65-89
72 x 14 60 x 16 54 x 18 48 x 20 30 x 30		CFM Noise Criteria		3500 20	4200 25	4900 29	5600 32	7000 38	8400 43	9800 47	11200 50	12600 54
	4.79 4.63 3.69	Throw	0° 22 1/2° 45°	44-55-101 35-53-80 22-32-50	53-66-112 42-60-89 26-37-56	62-77-124 49-68-98 31-42-62	70-88-136 57-76-108 35-47-67	79-99-147 64-83-117 40-52-73	88-111-159 71-91-126 44-57-79	97-122-170 79-98-136 48-62-85	106-133-182 86-106-145 53-67-91	115-144-193 93-113-154 57-72-97

Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

3. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

4. Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection.
Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria.
Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria.
Correction for 45° deflection – Add 7 dB to Noise Criteria.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODEL SERIES 8100 AND 81GD • INDUSTRIAL SUPPLY GRILLES AND REGISTERS

MODELS: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Ak Factor	Neck Velocity, FPM / Velocity Pressure		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
		Total Pressure	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
			22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
			45°	.059	.084	.115	.149	.233	.334	.458	.598	.757
64 x 18 58 x 20 54 x 22 48 x 24 44 x 26 38 x 30		CFM		4000	4800	5600	6400	8000	9600	11200	12800	14000
		Noise Criteria		21	26	30	33	39	44	48	51	54
	6.10	Throw	0°	47-59-108	56-71-120	66-83-132	75-94-145	85-106-157	94-118-169	103-130-182	113-142-194	122-154-206
	5.90		22 1/2°	37-57-85	45-65-95	53-73-105	60-81-115	68-89-125	76-97-135	84-105-145	92-113-155	100-121-165
	4.71		45°	23-34-53	28-39-59	33-44-65	37-50-72	42-55-78	47-60-84	52-66-91	57-71-97	62-76-103
72 x 18 60 x 22 54 x 24 48 x 28 36 x 36		CFM		4500	5400	6300	7200	9000	10800	12600	14400	16200
		Noise Criteria		22	26	30	34	40	44	48	52	55
	6.94	Throw	0°	50-63-115	60-76-128	70-88-141	80-101-154	90-113-167	100-126-181	110-139-194	120-151-207	130-164-220
	6.72		22 1/2°	39-61-91	47-69-101	56-78-112	64-87-123	73-95-133	81-104-144	89-112-154	98-121-165	106-129-175
	5.36		45°	25-36-56	30-42-63	35-47-69	40-53-76	45-59-83	51-64-89	56-70-96	61-76-103	68-82-110

Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

3. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

4. Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection.
Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria.
Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria.
Correction for 45° deflection – Add 7 dB to Noise Criteria.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 8100

ALUMINUM INDUSTRIAL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 81DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**

Single Deflection

81SH Horizontal Front Blades, 1 1/2" (38) Spacing

81SV Vertical Front Blades, 1 1/2" (38) Spacing

813SH Horizontal Front Blades, 3" (76) Spacing

813SV Vertical Front Blades, 3" (76) Spacing

Double Deflection

81DH Horizontal Front Blades, 1 1/2" (38) Spacing

81DV Vertical Front Blades, 1 1/2" (38) Spacing

813DH Horizontal Front Blades, 3" (76) Spacing

813DV Vertical Front Blades, 3" (76) Spacing

Gang Operated Double Deflection

81GDH Horizontal Front with Vertical Rear Blades, 1 1/2" (38) Spacing

81GDV Vertical Front with Horizontal Rear Blades, 1 1/2" (38) Spacing

2. **Damper (OBD)**

O Steel

OA Aluminum

— No Damper

3. **Width x Height**

inches (mm)

4. **Frame/Border Type**

S Surface Mount (default)

5. **Finish**

AW Appliance White (default)

AL Aluminum

BK Black

BW British White

LBP Light Bronze Paint

MBP Medium Bronze Paint

DBP Dark Bronze Paint

MI Mill

PPA Paint Prepared Aluminum

SP Special Custom Color

6. **Opposed Blade Damper Finish**

DMI Mill (default)

DBK Painted Black

— None

7. **Fastening**

A Screw Holes (default)

N None

OPTIONS & ACCESSORIES:

— None

8. **Plaster Sub-Frame**

PF Plaster Sub-Frame

9. **Insect Screen**

IS Insect Screen

10. **Gaskets**

GK Foam Gasket

Notes:

1. On double deflection gang operated models, the horizontal blades (parallel to width) are ganged, whether front (81GDH) or rear (81GDV). The other set are individually adjustable.

2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a double deflection register with 3" (76) blade spacing, vertical front blades, and a damper is Model 813DV-O. Unit will be supplied with screw holes and AW Appliance White finish.

3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 8100

ALUMINUM INDUSTRIAL SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

81DV, 81DH Double Deflection – 1 1/2" (38) Blade Spacing
Furnish and install **Nailor Model** (select one) **81DV** or **81DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

81SV, 81SH Single Deflection – 1 1/2" (38) Blade Spacing
Furnish and install **Nailor Model** (select one) **81SV** or **81SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

813DV, 813DH Double Deflection – 3" (76) Blade Spacing
Furnish and install **Nailor Model** (select one) **813DV** or **813DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

813SV, 813SH Single Deflection – 3" (76) Blade Spacing
Furnish and install **Nailor Model** (select one) **813SV** or **813SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

81GDV, 81GDH Double Deflection Gang Operated – 1 1/2" (38) Blade Spacing
Furnish and install **Nailor Model** (select one) **81GDV** or **81GDH Double Deflection Gang Operated Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The horizontal blades shall be gang operated. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

INDUSTRIAL SUPPLY GRILLES AND REGISTERS

- MODULAR CORE
- HIGH CAPACITY

Models:

81MG1 - One Module

81MG2 - Two Modules

81MG3 - Three Modules

81MG4 - Four Modules

- **Suffix '-O' adds a steel opposed blade damper**

Model 81GDV-O

Model Series 81MG Industrial Supply Grilles and Registers have been specially designed to incorporate the industry leading characteristics of the 8100 Series into a unique modular mounting arrangement. The double deflection blade design incorporates two sets of heavy duty extruded aluminum, individually adjustable airfoil blades on 1 1/2" (38) centers allowing maximum flexibility. Quick release fasteners on each module allow them to be quickly removed and adjusted or rotated to control the spread, throw distance and air pattern.

Ideal for use in applications such as factories, warehouses, shopping malls, atriums and stadiums, the removable modules can be easily readjusted to suit almost any application.

STANDARD FEATURES:

- Grilles are attached to modular frame by quick release 1/4 turn fasteners.

Modular frame has pre-punched holes for attachment to flanged duct.

- Blades are friction pivoted on screws and nylon washers to securely hold deflection setting.
- Individual grille modules are available in sizes 8" x 8", 10" x 10", 12" x 12" and 15" x 15", (203 x 203, 254 x 254, 305 x 305 and 381 x 381).

CONSTRUCTION MATERIAL:

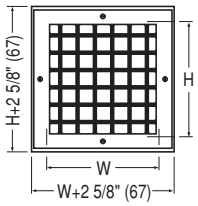
- Heavy duty 18 gauge galvanized steel frame accommodates up to four individual grilles.
- Each grille features a heavy duty extruded aluminum frame with reinforced mitered corners.
- Streamlined airfoil shaped, individually adjustable, heavy duty aluminum blades 1 1/2" (38) deep with a minimum wall thickness of 0.05" (1.27) on 1 1/2" (38) centers for optimum performance.
- Optional opposed blade damper has a screwdriver slot operator.

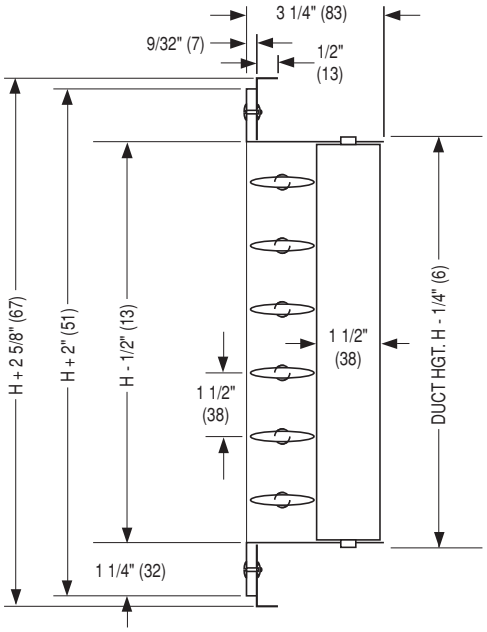
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

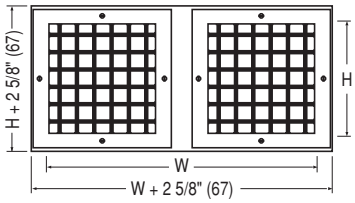
DIMENSIONAL DATA:
MODEL SERIES 81MG • INDUSTRIAL SUPPLY GRILLES • MODULAR FRAMES

81MG1 One Module

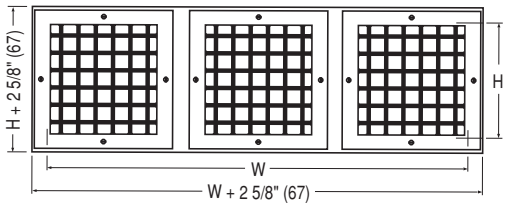




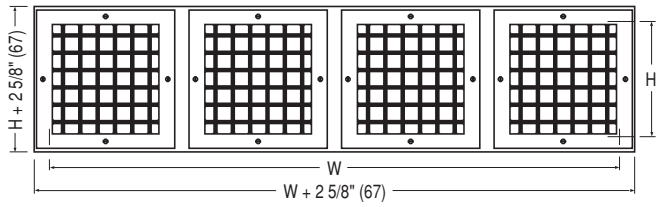
81MG2 Two Modules



81MG3 Three Modules



81MG4 Four Modules



Dimensional Data / Imperial (inches)

H – Listed Size (Duct)	W – Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
8	8	19	30	41
10	10	23	36	49
12	12	27	42	57
15	15	33	51	69

Dimensional Data / Metric (mm)

H – Listed Size (Duct)	W – Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
203	203	483	762	1041
254	254	584	914	1245
305	305	686	1067	1448
381	381	838	1295	1753

PERFORMANCE DATA:

INDUSTRIAL SUPPLY GRILLES & REGISTERS • MODULAR CORE MODELS • 81MG SERIES

Model 81MG1 • One Module

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM / Velocity Pressure		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
			Total Pressure	0° .036 .042 .061	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	0.38		CFM		190	228	266	304	380	456	532	608	684
			Noise Criteria		–	–	16	19	25	29	33	37	41
		0.30	Throw	0°	11-18-25	12-19-27	14-21-29	16-22-30	19-24-33	21-26-36	23-28-39	25-30-41	27-32-44
		0.29		22 1/2°	9-14-20	10-16-22	11-17-23	13-17-24	15-19-26	17-21-29	18-22-31	20-24-33	22-25-35
		0.23		45°	5-9-12	6-9-13	7-10-14	8-10-14	9-11-16	10-12-17	11-13-18	12-14-20	13-15-21
10	0.61		CFM		305	366	427	488	610	732	854	976	1098
			Noise Criteria		–	15	18	21	27	31	35	39	42
		0.49	Throw	0°	14-22-30	17-24-33	19-26-36	22-28-39	25-30-42	27-33-45	29-35-49	31-37-52	33-40-55
		0.47		22 1/2°	11-17-24	14-19-26	15-21-29	18-22-31	20-24-34	22-26-36	23-28-39	25-30-41	26-32-44
		0.38		45°	7-10-14	8-11-16	9-12-17	11-13-19	12-15-20	13-16-22	14-17-23	15-18-25	16-19-26
12	0.90		CFM		450	540	630	720	900	1080	1260	1440	1620
			Noise Criteria		–	16	20	23	29	33	37	41	43
		0.72	Throw	0°	17-27-37	20-29-40	22-31-43	25-33-46	28-36-50	31-39-54	34-42-58	37-44-62	40-47-66
		0.70		22 1/2°	14-21-30	16-23-32	18-25-34	20-26-37	22-29-40	25-31-43	27-33-46	30-35-50	32-37-53
		0.56		45°	8-13-18	10-14-19	11-15-21	12-16-22	13-17-24	15-19-26	16-20-28	18-21-30	19-22-32
15	1.44		CFM		720	864	1008	1152	1440	1728	2016	2304	2592
			Noise Criteria		–	17	21	24	30	35	39	42	45
		1.15	Throw	0°	23-33-46	27-37-52	31-41-57	34-44-61	38-48-67	42-52-72	45-55-77	49-59-82	52-63-87
		1.11		22 1/2°	18-26-37	22-30-42	25-33-46	27-35-49	30-39-54	33-41-58	36-44-62	39-47-66	42-50-70
		0.89		45°	11-16-22	13-18-25	15-20-27	16-21-29	18-23-32	20-25-35	22-27-37	23-28-39	25-30-42

Model 81MG2 • Two Module

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM / Velocity Pressure		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
			Total Pressure	0° .036 .042 .061	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	0.76		CFM		380	456	532	608	760	912	1064	1216	1368
			Noise Criteria		–	–	18	22	28	33	37	40	44
		0.60	Throw	0°	15-23-32	18-26-36	20-29-40	22-31-43	26-33-46	29-36-50	31-39-54	34-41-57	36-44-61
		0.59		22 1/2°	12-18-26	14-21-29	16-23-32	18-25-34	21-26-37	23-29-40	25-31-43	27-33-46	29-35-49
		0.47		45°	7-11-15	9-12-17	10-14-19	11-15-21	12-16-22	14-17-24	15-18-26	16-20-27	17-21-29
10	1.22		CFM		610	732	854	976	1220	1464	1708	1952	2196
			Noise Criteria		–	16	20	24	30	34	38	41	45
		0.98	Throw	0°	18-30-42	22-34-47	27-37-52	30-40-56	34-43-60	37-46-65	41-50-69	44-53-74	47-55-78
		0.95		22 1/2°	14-24-34	28-27-38	22-30-42	24-32-45	27-35-48	30-37-52	32-40-55	35-42-59	38-44-62
		0.76		45°	9-15-20	11-16-23	13-18-25	14-19-27	16-21-29	18-22-31	19-24-33	21-25-35	23-27-37
12	1.80		CFM		900	1080	1260	1440	1800	2160	2520	2880	3240
			Noise Criteria		–	18	22	25	31	36	40	43	47
		1.44	Throw	0°	24-37-52	28-42-59	32-46-64	36-49-68	41-54-75	45-57-81	50-61-86	54-65-92	58-69-97
		1.39		22 1/2°	19-30-42	22-34-47	26-37-51	29-39-54	33-43-60	36-46-64	40-49-69	43-52-73	46-55-78
		1.11		45°	12-18-25	13-20-28	15-22-31	17-23-33	20-26-36	22-27-39	24-29-41	26-31-44	28-33-47
15	2.87		CFM		1435	1722	2009	2296	2870	3444	4018	4592	5166
			Noise Criteria		15	20	24	27	33	38	42	45	48
		2.30	Throw	0°	29-47-65	35-52-72	40-57-80	45-62-87	51-67-95	57-73-102	63-78-110	69-83-117	75-88-124
		2.22		22 1/2°	23-37-52	28-41-58	32-45-64	36-49-70	41-54-76	46-58-82	50-62-88	55-66-93	60-70-99
		1.78		45°	14-22-31	17-25-35	19-27-38	22-30-42	24-32-46	27-35-49	30-37-53	33-40-56	36-42-60

Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

3. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

4. Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection.
Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria.
Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria.
Correction for 45° deflection – Add 7 dB to Noise Criteria.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

INDUSTRIAL SUPPLY GRILLES & REGISTERS • MODULAR CORE MODELS • 81MG SERIES

Model 81MG3 • Three Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM / VP		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
			Total Pressure	0° .036 .042 .061	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	1.15		CFM		565	678	791	904	1130	1356	1582	1808	2034
			Noise Criteria		–	15	19	23	29	34	38	41	45
		0.91	Throw	0°	17-29-40	21-32-44	25-35-49	28-38-53	31-41-57	34-44-61	38-46-66	41-50-70	44-53-74
		0.88		22 1/2°	14-23-32	17-25-35	20-28-39	22-31-42	25-33-46	27-35-49	30-38-52	33-40-56	35-42-59
		0.70		45°	8-14-19	10-15-21	12-17-24	13-18-25	15-20-27	16-21-29	18-23-31	20-24-33	21-25-36
10	1.83		CFM		915	1098	1281	1464	1830	2196	2562	2928	3294
			Noise Criteria		–	17	22	25	31	36	40	43	47
		1.46	Throw	0°	24-37-52	28-42-59	32-46-64	36-50-69	41-55-76	45-58-82	50-62-88	54-66-93	58-7099
		1.42		22 1/2°	19-30-42	22-34-47	26-37-51	29-40-55	33-44-61	36-46-65	40-50-70	43-53-75	46-56-79
		1.14		45°	12-18-25	13-20-28	15-22-31	17-24-33	20-26-36	22-28-39	24-30-42	26-32-45	28-34-48
12	2.70		CFM		1350	1620	1890	2160	2700	3240	3780	4320	4860
			Noise Criteria		15	19	23	27	33	38	42	46	49
		2.16	Throw	0°	29-45-63	35-50-70	40-55-77	45-60-84	50-65-92	56-70-99	61-76-107	67-81-114	72-86-121
		2.09		22 1/2°	23-36-50	28-40-56	32-44-62	36-48-67	40-52-74	44-56-79	49-60-85	53-65-91	58-69-97
		1.67		45°	14-22-30	17-24-34	19-27-37	22-29-40	24-31-44	27-34-48	29-36-51	32-39-55	35-41-58
15	4.31		CFM		2155	2586	3017	3448	4310	5172	6034	6896	7758
			Noise Criteria		18	22	26	30	36	40	44	48	51
		3.44	Throw	0°	35-58-82	42-63-89	49-69-97	55-75-105	62-82-115	69-88-124	77-95-134	84-101-143	91-108-152
		3.34		22 1/2°	28-47-66	34-51-71	39-55-78	44-60-84	50-65-92	55-71-99	61-76-107	67-81-114	73-86-122
		2.67		45°	17-28-39	20-30-43	24-33-47	26-36-50	30-39-55	33-42-60	37-45-64	40-49-69	44-52-73

Model 81MG4 • Four Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM / VP		500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122	1600 .160	1800 .202
			Total Pressure	0° .036 .042 .061	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	1.51		CFM		755	906	1057	1208	1510	1812	2114	2416	2718
			Noise Criteria		–	18	22	25	31	36	40	43	46
		1.21	Throw	0°	24-34-48	28-38-53	31-41-58	35-45-63	39-49-69	42-53-74	46-56-79	50-60-84	53-63-89
		1.17		22 1/2°	19-27-38	22-30-42	25-33-46	28-36-50	31-39-55	34-42-59	37-45-63	40-48-67	42-51-71
		0.94		45°	12-16-23	13-18-25	15-20-28	17-21-30	19-24-33	20-25-36	22-27-38	24-29-40	25-30-43
10	2.44		CFM		1220	1464	1708	1952	2440	2928	3416	3904	4392
			Noise Criteria		17	20	24	28	34	38	42	45	48
		1.95	Throw	0°	27-43-60	32-47-66	37-52-73	41-57-80	47-62-87	52-67-94	58-71-101	63-76-107	68-81-114
		1.89		22 1/2°	22-34-48	26-37-53	30-41-58	33-45-64	38-49-70	42-53-75	46-57-80	50-61-86	54-65-91
		1.51		45°	13-20-29	15-22-32	18-25-35	20-27-38	23-30-42	25-32-45	28-34-48	30-37-51	33-39-55
12	3.59		CFM		1795	2154	2513	2872	3590	4308	5026	5744	6462
			Noise Criteria		18	22	26	30	36	40	44	48	51
		2.88	Throw	0°	32-53-73	39-57-80	45-63-89	51-69-97	57-75-105	64-81-114	71-87-122	77-93-131	84-99-139
		2.78		22 1/2°	26-42-58	31-45-64	36-51-71	41-55-78	46-60-84	51-64-91	56-69-98	62-74-104	67-79-111
		2.23		45°	15-25-35	19-27-38	22-30-43	24-33-47	27-36-50	31-39-54	34-42-59	37-44-63	40-48-67
15	5.74		CFM		2870	3444	4018	4592	5740	6888	8036	9184	10332
			Noise Criteria		20	24	28	32	38	42	46	50	53
		4.59	Throw	0°	39-66-92	47-72-102	55-80-112	63-87-123	71-94-133	79-102-143	87-109-154	95-116-164	103-127-174
		4.45		22 1/2°	31-53-74	38-58-82	44-64-90	50-70-98	57-76-106	63-81-115	70-87-123	76-93-131	82-102-139
		3.56		45°	19-32-44	23-35-49	26-38-54	30-42-59	34-45-64	38-49-69	42-52-74	46-56-79	49-61-84

Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

3. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

4. Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection.
Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria.
Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria.
Correction for 45° deflection – Add 7 dB to Noise Criteria.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

HOW TO ORDER

MODEL SERIES: 81MG

MODULAR CORE INDUSTRIAL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 81MG2 - O - 10 - S - AW - DMI

1. **Models**
   - 81MG1 1 Modular Core Grille
   - 81MG2 2 Modular Core Grilles
   - 81MG3 3 Modular Core Grilles
   - 81MG4 4 Modular Core Grilles
2. **Damper (OBD)**
   - O Steel
   - — No Damper
3. **Module Size**

   Imperial (inches) Metric (mm)
   - 08 8 x 8 (203 x 203)
   - 10 10 x 10 (254 x 254)
   - 12 12 x 12 (305 x 305)
   - 15 15 x 15 (381 x 381)
4. **Frame/Border Type**
   - S Surface Mount (default)
5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - LBP Light Bronze Paint
   - MBP Medium Bronze Paint
   - DBP Dark Bronze Paint
   - MI Mill
   - PPA Paint Prepared Aluminum
   - SP Special Custom Color
6. **Opposed Blade Damper Finish**
   - DMI Mill (default)
   - DBK Painted Black
   - — None

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a two module register with a damper is Model 81MG2-O. Unit will be supplied with AW Appliance White finish.
2. Refer to individual model submittal for guidance on availability of options and accessories.

HOW TO SPECIFY

MODEL SERIES: 81MG

MODULAR CORE INDUSTRIAL SUPPLY GRILLES AND REGISTERS

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **81MG1, 81MG2, 81MG3** or **81MG4 Double Deflection Modular Core Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. Grilles are to be attached to a modular frame by quick release 1/4 turn fasteners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, adjustable from the face of the grille, shall be provided with all units. Dampers shall be attached to the grille core and be completely removable.

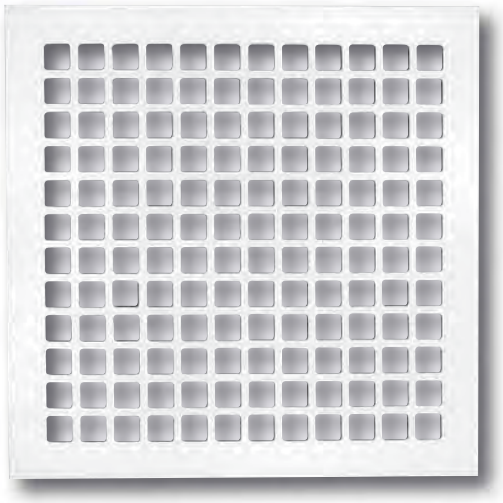
The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2023.

LATTICE FACE GRILLES

- VARIOUS CONFIGURATIONS AVAILABLE
- ALUMINUM, STEEL OR STAINLESS STEEL

Models:

51LG Aluminum
61LG Steel
67LG Stainless Steel



Model 61LG75

The Nailor Model Series 51LG, 61LG and 67LG Lattice Face Grilles are available for return air, architectural and minimum security applications. The standard Model 61LG75 features 3/4" (19) square holes on 1" (25) centers in 14 gauge steel construction.

STANDARD FEATURES:

- Many choices of lattice design to suit any application (see table below).
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).

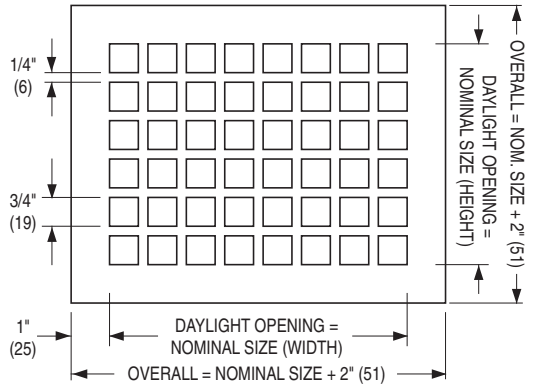
CONSTRUCTION MATERIAL:

- Model Series 61LG standard 14 gauge steel construction. Optional 10 or 12 gauge steel construction is available.
- Model Series 51LG standard 12 gauge aluminum construction.
- Model Series 67LG standard 14 gauge 304 stainless steel construction.
- Optional countersunk screw holes and mounting screws are available.
- Optional opposed blade damper has a screwdriver slot operator.

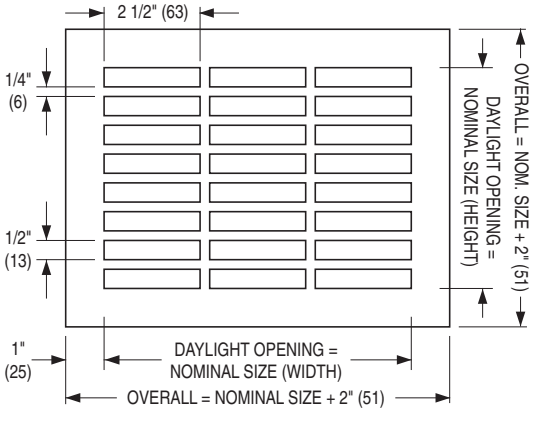
FINISH OPTIONS:

- AW Appliance White finish is standard on steel and aluminum models. Stainless steel models have #4 Brushed Satin Polished finish as standard. Other finishes are available.

Model 61LG75 (standard model)



Model 61LG25 (optional model)



Lattice Configurations and Free Area:

Model No. Suffix e.g. 61LG _ _	Hole Pattern	Average Free Area
75	3/4" (19) square holes on 1" (25) centers	60%
50	1/2" (13) square holes on 3/4" (19) centers	50%
13	13/16" (21) square holes on 1" (25) centers	70%
10	1" (25) square holes on 1 1/4" (32) centers	68%
25	2 1/2" x 1/2" (64 x 13) rectangular holes on 2 3/4" x 3/4" (70 x 19) centers	65%

Suffix 75 is standard.

SIZING SCHEDULE AND PERFORMANCE DATA:
MODEL SERIES: 51LG, 61LG AND 67LG • LATTICE FACE GRILLES

No. of Holes	LG75 3/4" Square		LG50 1/2" Square		LG13 13/16" Square		LG10 1" Square		No. of Holes	LG25 2 1/2" x 1/2"			
										Width		Height	
	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	in.	mm
6	5 3/4	146	4 1/4	108	5 13/16	148	7 1/4	184	3	6 1/2	165	2	51
8	7 3/4	197	5 3/4	146	7 13/16	198	9 3/4	248	4	8 3/4	222	2 3/4	70
10	9 3/4	248	7 1/4	184	8 13/16	249	12 1/4	311	5	11	279	3 1/2	89
12	11 3/4	298	8 3/4	222	11 13/16	300	14 3/4	375	6	13 1/4	337	4 1/4	18
14	13 3/4	349	10 1/4	260	13 13/16	335	17 1/4	438	7	15 1/2	394	5	127
16	15 3/4	400	11 3/4	298	15 13/16	402	19 3/4	502	8	17 3/4	451	5 3/4	146
18	17 3/4	451	13 1/4	337	17 13/16	452	22 1/4	565	9	20	508	6 1/2	165
20	19 3/4	502	14 3/4	375	19 13/16	503	24 3/4	629	10	22 1/4	565	7 1/4	184
22	21 3/4	552	16 1/4	413	21 13/16	554	27 1/4	692	11	24 1/2	622	8	203
24	23 3/4	603	17 3/4	451	23 13/16	605	29 3/4	756	12	26 3/4	679	8 3/4	222
26	25 3/4	654	19 1/4	489	25 13/16	656	32 1/4	819	13	29	737	9 1/2	241
28	27 3/4	705	20 3/4	527	27 13/16	706	34 3/4	883	14	31 1/4	794	10 1/4	260
30	29 3/4	756	22 1/4	565	29 13/16	757	37 1/4	946	15	33 1/2	851	11	279
32	31 3/4	806	23 3/4	603	31 13/16	808	39 3/4	1010	16	35 3/4	908	11 3/4	298
34	33 3/4	857	25 1/4	641	33 13/16	859	42 1/4	1073	17	38	965	12 1/2	317
36	35 3/4	908	26 3/4	679	35 13/16	910	44 3/4	1137	18	40 1/4	1022	13 1/4	336
38	37 3/4	959	28 1/4	718	37 13/16	960	47 1/4	1200	19	42 1/2	1079	14	356
40	39 3/4	1010	29 3/4	756	39 13/16	1011	–	–	20	44 3/4	1136	14 3/4	375
42	41 3/4	1060	31 1/4	794	41 13/16	1062	–	–	21	47	1194	15 1/2	394
44	43 3/4	1111	32 3/4	832	43 13/16	1113	–	–	–	–	–	–	–
46	45 3/4	1162	34 1/4	870	45 13/16	1164	–	–	–	–	–	–	–
48	47 3/4	1213	35 3/4	908	47 13/16	1214	–	–	–	–	–	–	–
50	–	–	37 1/4	946	–	–	–	–	–	–	–	–	–
52	–	–	38 3/4	984	–	–	–	–	–	–	–	–	–
54	–	–	40 1/4	1022	–	–	–	–	–	–	–	–	–
56	–	–	41 3/4	1060	–	–	–	–	–	–	–	–	–
58	–	–	43 1/4	1099	–	–	–	–	–	–	–	–	–
60	–	–	44 3/4	1137	–	–	–	–	–	–	–	–	–
62	–	–	46 1/4	1175	–	–	–	–	–	–	–	–	–
64	–	–	47 3/4	1213	–	–	–	–	–	–	–	–	–

PRESSURE LOSS THROUGH LATTICE GRILLE

Model (Free Area)	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062	1200 .090	1400 .122
LG75 (60%)	**Neg. SP**	.019	.034	.053	.077	.105	.137	.173	.213	.307	.418
LG50 (50%)		.032	.057	.089	.128	.174	.228	.288	.356	.512	.697
LG13 (70%)		.011	.020	.031	.044	.060	.078	.099	.122	.176	.240
LG10 (68%)		.012	.022	.034	.050	.068	.089	.112	.138	.198	.270
LG25 (65%)		.015	.027	.042	.061	.083	.108	.137	.167	.243	.331

Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Core represents daylight opening dimensions.

PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR GRILLES AND REGISTERS

MOUNTING FRAMES

- Up to four methods of fastening available for most models.
- Sub-frame available for professionally finished openings.
- Surface mount adapter frame for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.
- Panel mounting available to suit architectural ceiling systems.

OPTIONS

- A selection of optional items that are available on grilles and registers.
- Information on custom sizing for special applications.

FINISHES

- Selection of standard and non-standard finishes to choose from.
- Anodizing of aluminum products.

AIR BALANCING DEVICES

- Opposed blade dampers for every application.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be supplied as factory mounted or packaged accessories on grilles and registers.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.

Model PF
Sub-Frame

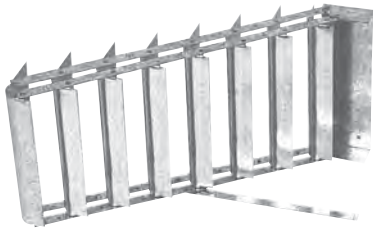
Model DFA
Drywall/Plaster Frame
Surface Mount
Ceiling Adapter

Model OBD
Opposed Blade Damper
Steel, Neck Mount

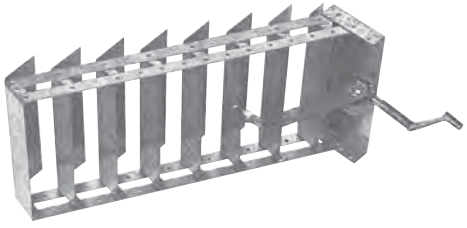
Model OBDD
Opposed Blade Damper
Steel, Duct Mount

Model OBD-A
Opposed Blade Damper
Aluminum, Neck Mount

Model OBD-SS
Opposed Blade Damper
Stainless Steel, Neck Mount



Model EX-1
Volume Extractor



Model EX-1
Volume Extractor

Fastening and Border Frames

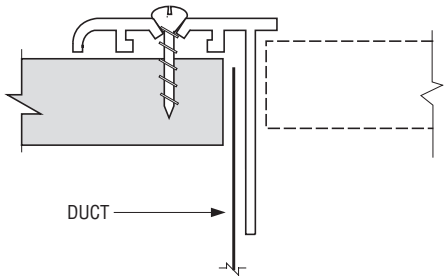
Type A Screw Fastening (External)

Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

Screw holes are countersunk in the frame for most models to provide an aesthetically pleasing appearance and are sized for #8 x 1 1/2" (38) oval-head screws which are supplied from the factory packed with each grille or register and are painted to match the specified finish.

Type A Screw Fastening (external)

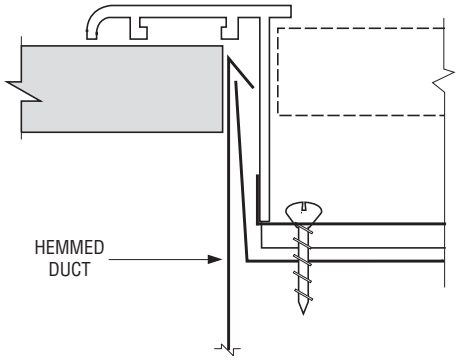
Standard



Type C Concealed Mounting

Grilles and registers are supplied with concealed mounting straps (at additional cost) which permit surface mounting with concealed screws, allowing a clean frame appearance. The bracket is shipped loose for installation in the field (by others). The bracket attaches to the back of the grille screws to an adjustable mounting strap which can either be secured directly to the duct wall or hooked into a hem formed in the end of the duct. Not available on return grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).

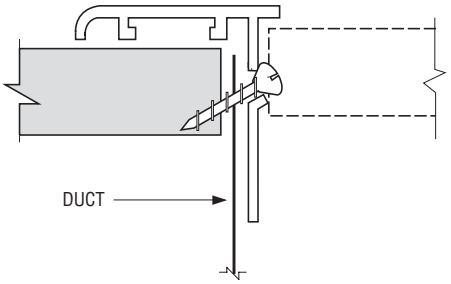
Type C Concealed Mounting



Type D Screw Fastening (Concealed)

Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must be taken not to bend or scratch the grille. Not recommended on return air grilles with a fixed angled blade deflection as accessibility to screw holes is greatly restricted.

Type D Screw Fastening (concealed)

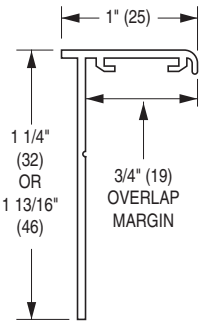


Type NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

See individual models for availability.

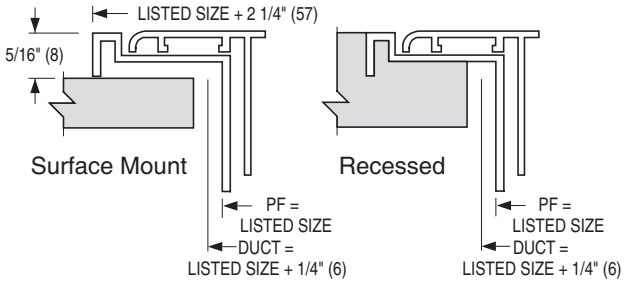
NF Narrow Frame



Mounting Frames

PF Plaster/Mounting Frame

Available (at additional cost) with most standard steel and aluminum grilles and registers. The Model PF Plaster Frame is constructed from extruded aluminum and provides a convenient and professional way for finishing off the grille or register opening. It provides a stable anchor for attachment, while enabling the grille or register to be detached and replaced readily without disturbing the finished surface of the wall or ceiling opening. It may be used for surface mounting on various materials or recess mounted in wet plaster.



Model PF Plaster Frame

DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

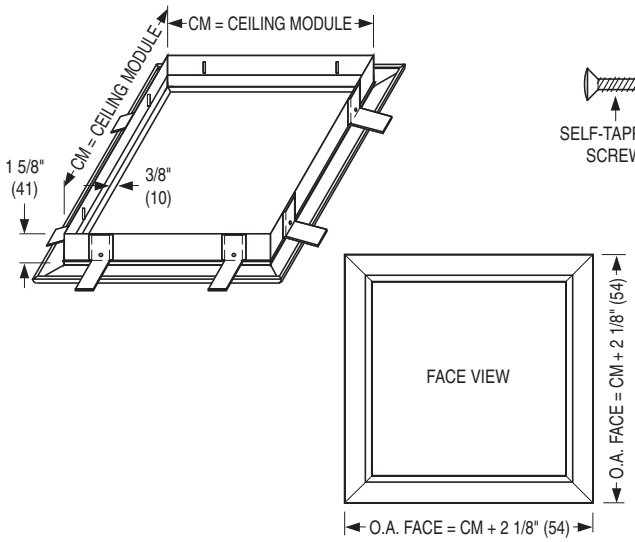
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

Standard Finish: AW Appliance White. Other finishes are available.

Model DFS is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

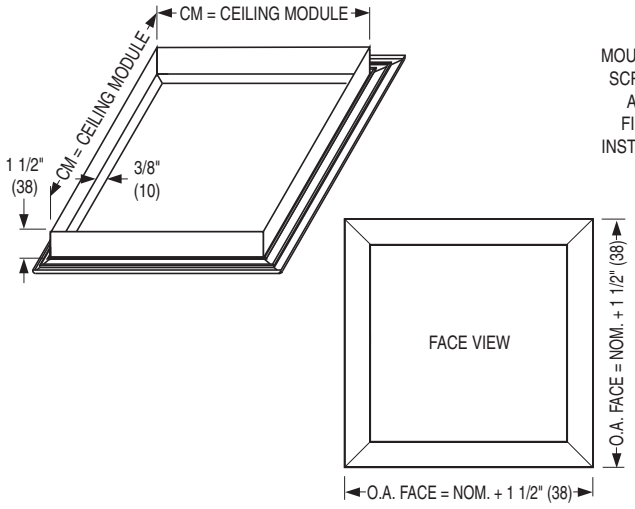


Model DFS

Model DFA requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 1219	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



Model DFA

Panel Mounting/Ceiling Modules

A panel can be added to the majority of Nailor's steel and aluminum return grilles to suit many special architectural ceiling designs and ceiling module sizes. These panel mount grilles are available in corrosion-resistant steel for the 6100 series steel grilles and both aluminum and corrosion-resistant steel for the 5100 and 7100 series aluminum grilles.

To specify a steel panel; add the suffix S to the end of the selected panel variant. To specify an aluminum panel; add the suffix A to the end of the selected panel variant. e.g. If a steel panel is required with a Spline Type ceiling module, the variant code will become SPS.

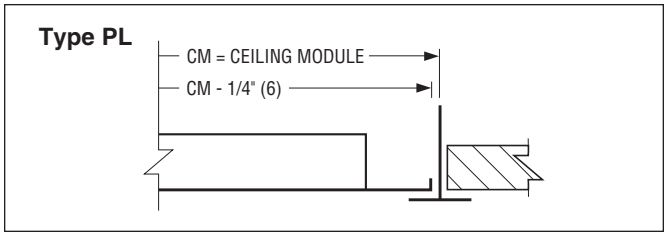
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

Available Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	Metric Units (mm)
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 1200 x 600

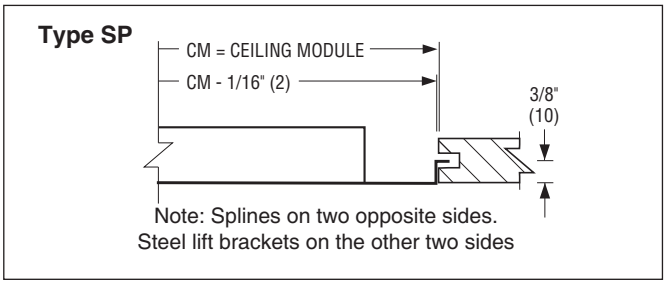
Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.



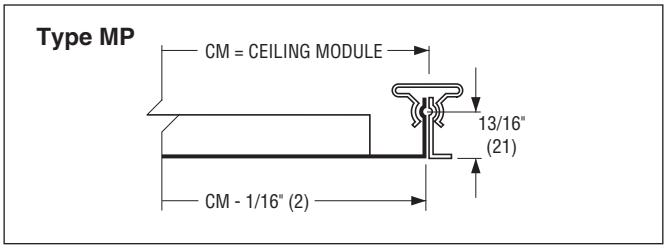
Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.



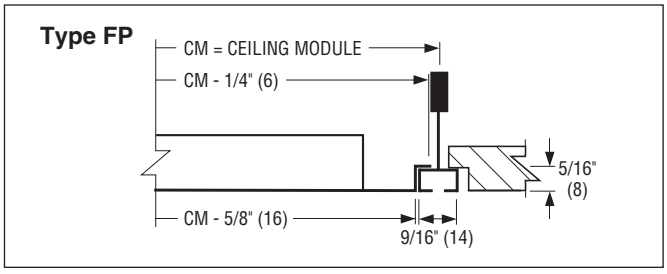
Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.



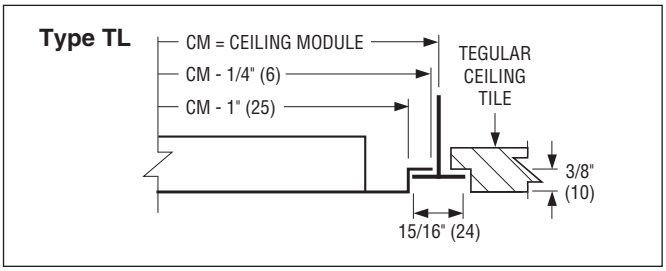
Border Type FP: Narrow Regressed T-Bar (Fineline®)

The grille or register is mounted in an extended panel that will fit a narrow regressed T-Bar ceiling grid.



Border Type TL: Tegular Type T-Bar

The grille or register is mounted in a panel that will extend below the T-Bar ceiling grid.



Options, Custom Sizing and Finishes

OPTIONS:

RACA Return Air Crosstalk Attenuator

Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space.

EQT Earthquake Tabs

Earthquake (seismic) retaining safety tabs are available; factory installed on grilles or registers when required by local building code that units be independently restrained and safety wired to supporting structure.

GK Foam Gaskets

An optional foam gasket is available factory installed on the rear of all Type S corrosion-resistant steel and aluminum surface mount grilles and registers.

Eliminates air leakage and the possibility of dirt streaking and smudging from entrainment, particularly when installed on unevenly finished surfaces such as stucco.

IS Insect Screen

1/16" (2) galvanized steel mesh, factory installed.

CUSTOM SIZING:

Oversized Units

For specialized applications and architectural considerations; certain grilles and registers can be manufactured in single sections larger than the standard published maximum size at additional cost. Aspect ratio, tolerances, manufacturing capability and weight have all to be considered by the factory prior to acceptance. Consult your Nailor representative for specific applications.

Fractional/Hard Metric Sizes

Nailor grilles and registers have been designed and are manufactured to suit HVAC systems where the duct design has been done using Imperial Units of measurement (i.e. feet and inches). The majority of Nailor grilles and registers are fabricated as standard in 1" (25) nominal incremental units, giving the designer great flexibility during sizing selection.

At additional cost, the majority of Nailor grilles and registers can be custom fabricated in fractional sizes for special applications and in Hard Metric (S.I. Units) when the HVAC duct design has been done using the Metric System.

Consult your Nailor representative for availability on specific project applications.

FINISHES:

POWDER COAT

AW Appliance White (standard)

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

AL Aluminum

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

WH Off-White

Has a creamy appearance. (Additional cost)

BW British White

Matches most white ceiling tiles. (No additional cost)

LBP Light Bronze Paint

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

MBP Medium Bronze Paint

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

DBP Dark Bronze Paint

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

BK Black

This black has a matte finish. (Additional cost)

SP Special

The Nailor range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

ALUMINUM PRODUCT FINISHES:

SA Satin (Clear) Anodized

Adds a smooth satin finish to further protect the aluminum from corrosion (clear). (Additional cost)

STAINLESS STEEL PRODUCT FINISH ONLY:

#4 Brushed Satin Polished

Stainless Steel models only. (No additional cost)

ALSO AVAILABLE:

MI Mill Finish

(No additional cost).

PPA Paint Prepared Aluminum (Washed only)

(No additional cost).

PC Prime Coat Paint

Color will vary (Additional cost).

Sound Reduction for Return Air Grilles

RETURN AIR CROSSTALK ATTENUATOR – STEEL – RETURN AIR GRILLES

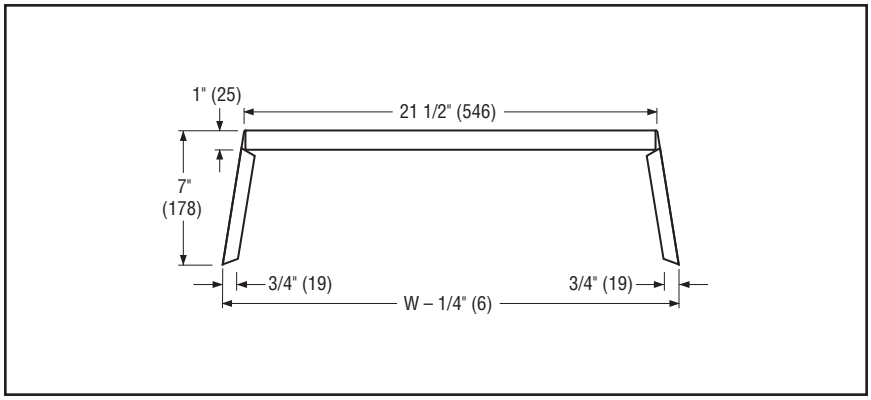
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to flow through with minimal pressure drop, while reducing the sound transmission by 7 – 10 NC. Constructed of 22 gauge galvanized steel, the compact, light weight design takes up minimal space in the return plenum, rests on the ceiling grid for easy installation and works effectively as a light shield. Available with 1" (25) fiberglass insulation as standard or optional 1" (25) fiber-free closed cell foam insulation. The RACA fits standard grille sizes and is ideal for interior offices, conference rooms, hotel rooms as well as recording studios.

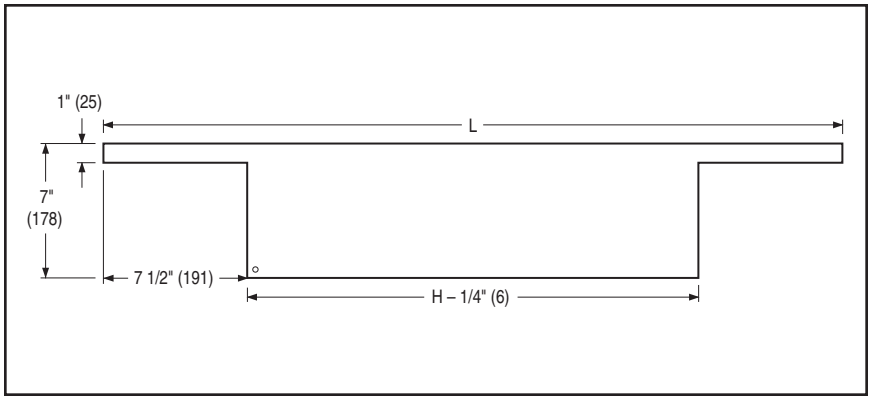
FEATURES:

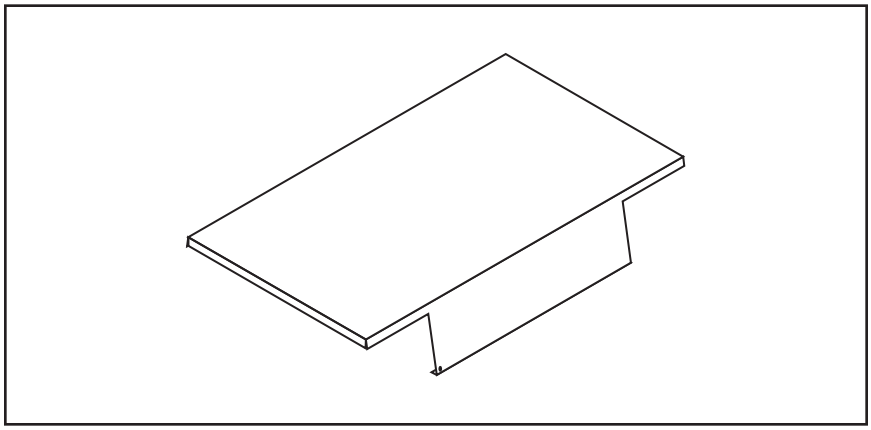
- Economical and light- weight design.
- Fits standard grille sizes.
- Easy installation sits on ceiling grid.
- Compact design takes up minimal space in return plenum.
- 1" (25) fiberglass insulation (standard).

DIMENSIONAL DATA:

CM Ceiling Module	W	H	L
12" x 12" (305 x 305)	12" (305)	12" (305)	26 1/2" (673)
24" x 12" (610 x 305)	24" (610)	12" (305)	26 1/2" (673)
20" x 20" (508 x 508)	20" (508)	20" (508)	34 1/2" (876)
24" x 24" (610 x 610)	24" (610)	24" (610)	38 1/2" (978)
30" x 30" (762 x 762)	30" (762)	30" (762)	44 1/2" (1130)
48" x 24" (1219 x 610)	48" (1219)	24" (610)	38 1/2" (978)







PERFORMANCE DATA

MODEL: RACA RETURN AIR CROSSTALK ATTENUATOR

NOISE REDUCTION (dB)

Octave Band/Center Frequency (Hz)							
1	2	3	4	5	6	7	8
63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
9	8	10	13	18	19	20	24

PRESSURE DROP (in. w.g.)

Face Velocity (fpm)	100	200	300	400	500	600
in w.g.	.01	.04	.08	.15	.23	.33

Performance Notes:

1. For optimum performance the RACA should be used in applications with grille face velocities below 500 fpm (2.54 m/s) or 2000 cfm (944 l/s) for a 24" x 24" (600 x 600) return grille.

2. Noise Reduction data derived from modified testing in accordance with ASTM Standard E477-13.

3. Velocity based on grille (W x H) core cross-sectional area.

4. Performance data based on a 24" x 24" (600 x 600) unit.

Air Balancing Devices

OPPOSED BLADE DAMPERS — STEEL AND ALUMINUM

Nailor Opposed Blade Dampers are manufactured from heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE MOUNT MODELS:

OBD Steel

OBD-A Aluminum

This style of damper mounts directly on the neck of the grille and is sized to fit most Nailor grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return registers. Type SL operator is standard if damper is ordered separately from grille. A lever operator (Type GL) is available as an option on fixed, angled deflection return registers.

Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model.

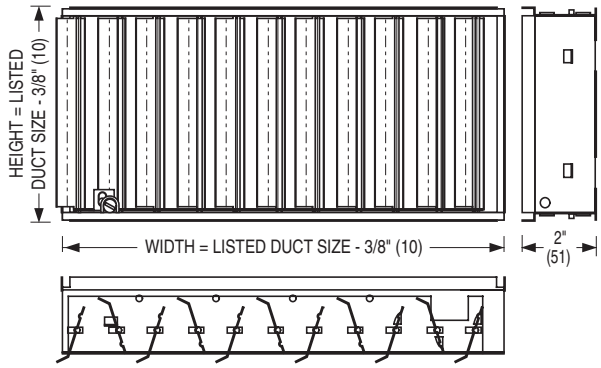
Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610).

Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the register. This operator is the standard supplied with supply air registers such as the single and double deflection adjustable blade.

Model OBD Type SL (Screwdriver Slot)

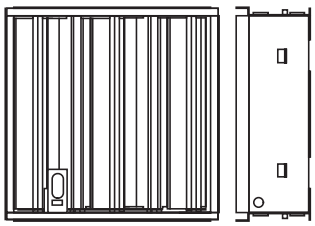
Grille Mount – Face Operator



Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the register using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.

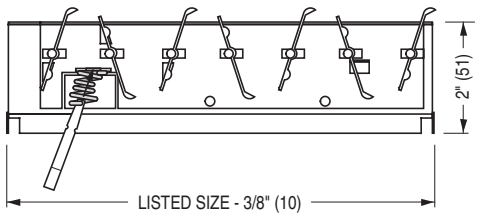
Type PL (Pivot Lever)



Type GL Operator

The GL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the grille face and is an alternative for fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille being used and the grille model must be specified.

Type GL (Lever)



Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

OBDD-A Aluminum

Designed for field installation, this damper mounts independently in the duct, separate from and behind the grille. Sized to suit and offer a friction fit in nominally sized ducts. Secure the dampers with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Supplied as standard with a screwdriver slot operator (Type SL).

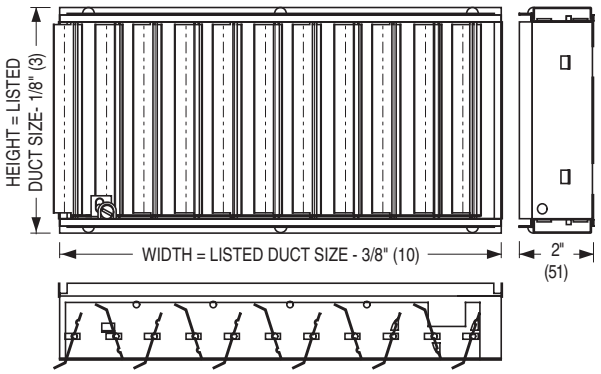
Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the grille.

Model OBDD Type SL (Screwdriver Slot)

Duct Mount – Face Operator

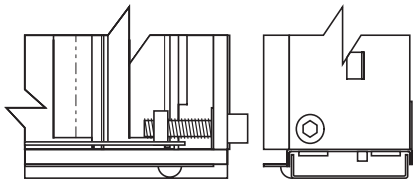


Type EH Operator

The EH Operator incorporates an external hex device that penetrates the duct wall to provide control. For use with 3/16" (5) Allen key wrench (by others).

Model OBDD Type EH (Hex.)

Duct Mount – External Operator

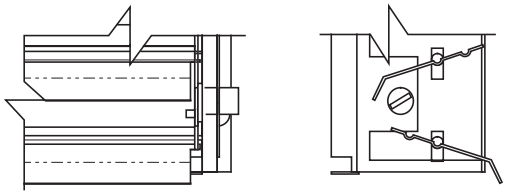


Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.

Model OBDD Type EN (Screwdriver Slot)

Duct Mount – External Operator



Type QD Operator *

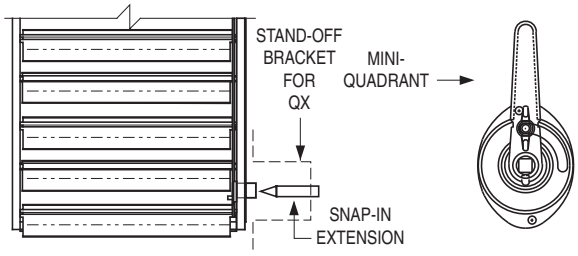
The QD Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a hand locking quadrant operator for control and position indication.

Type QX Operator *

The QX Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a 2" (51) stand-off bracket and hand locking quadrant for control and position indication. To ensure quadrant is located on vertical side of duct, specify damper with blades parallel to the horizontal duct dimension.

*Not available on Model OBDD-A

Type QD or Type QX (Hand Quadrant)



Air Balancing Devices

OPPOSED BLADE DAMPERS — STAINLESS STEEL

Nailor Stainless Steel Opposed Blade Dampers feature heavy gauge, roll-formed blades and a heavy duty frame in all stainless steel construction. Type 304 stainless steel is standard with Type 316 as an available option.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE/DUCT MOUNT MODELS:

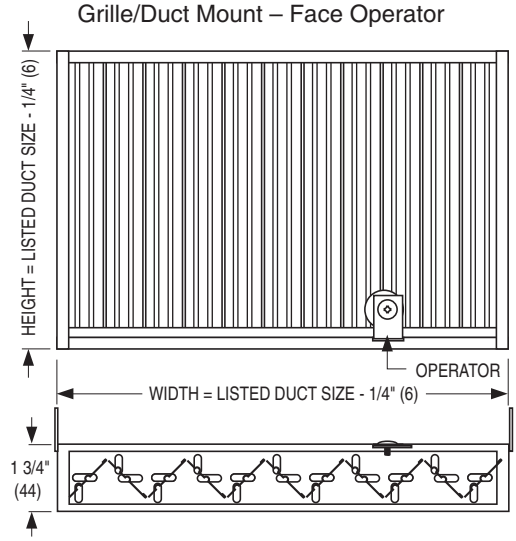
OBD-SS Stainless Steel

When ordered as part of the stainless steel grille, (using the suffix '-O' on the model number), the dampers are factory welded to the grille frame to provide a secure non-removable connection. If the dampers are ordered separately, they are supplied with mounting tabs. The tabs allow the dampers to be field installed onto a grille or to be mounted independently in the duct, separate from and behind the grille.

All Nailor stainless steel dampers feature a Philip's head screwdriver operator that is accessed through the face of the grille.

Model OBD-SS

Grille/Duct Mount – Face Operator



Volume Extractors

MODEL SERIES

EX Blades on 2" centers

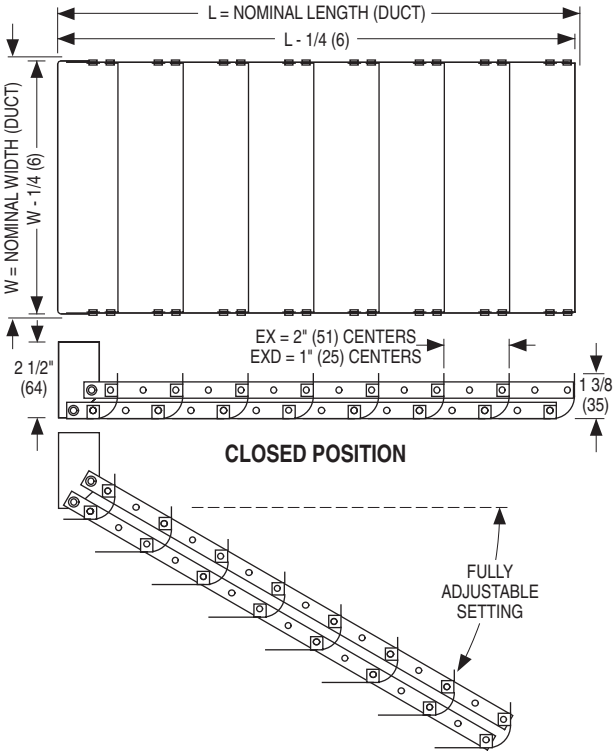
EXD Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

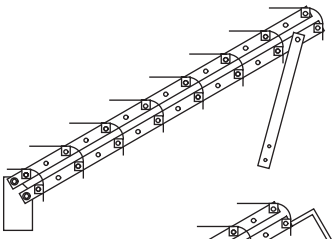
FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

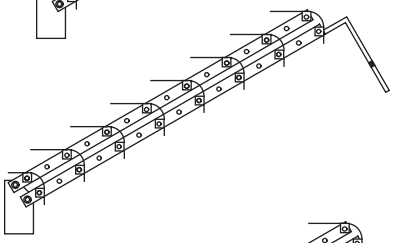


Operator Types

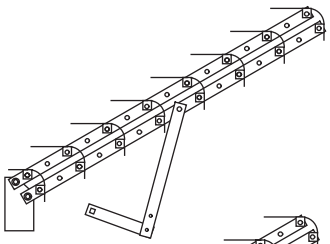
EX/EXD-1
Standard unit with adjusting strap.



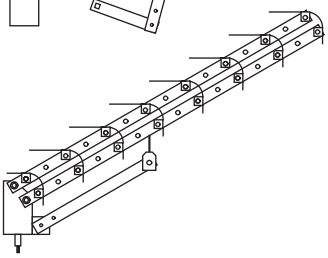
EX/EXD-1-R
Rod operator for external operation.



EX/EXD-2
Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.

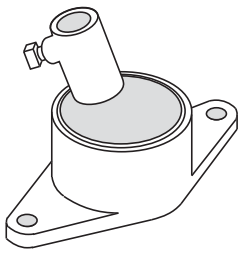


EX/EXD-3
Screw gear operator. Adjusts with 3/16" (48) wrench (by others).



Optional Accessories

RLD
Locking device for Models **EX/EXD-1-R**.



Nailor® Industries Inc.

SECURITY PRODUCTS

TABLE OF CONTENTS

Page No.

Product Overview G3

Maximum Security Grilles & Registers
Steel • Square Lattice • Wire Mesh Screen
Model SG-LM G5
Steel • Perforated Face
Model SG-PR G8

Medium/Minimum Security Bar Grilles & Registers
Steel • Fixed Bars
Model SG-BM4 • 40° Deflection G11
Model SG-BMZ • 0° Deflection G11

Minimum Security Diffusers
Louvered Pattern • 1, 2, 3, or 4-way blow • Lattice Face
Model SG-6500 • Steel G13
Model SG-6200 • Aluminum G13

Minimum Security Bar Grilles & Registers
Aluminum • Fixed Bars • 0° Deflection
Model SG-280 • 1/2" (13) Spacing G15
Model SG-480 • 1/4" (6) Spacing G15

Minimum Security Louvered Supply Grilles & Registers
Double Deflection • 3/4" (19) Spacing • Lattice Face
Models SG-67DV and H • Stainless Steel G17
Models SG-61DV and H • Steel G18
Models SG-51DV and H • Aluminum G18
Single Deflection • 3/4" (19) Spacing • Lattice Face
Models SG-61SV and H • Steel G19
Models SG-51SV and H • Aluminum G19

Minimum Security Louvered Return Grilles & Registers
45° Deflection • 3/4" (19) Spacing • Lattice Face
Models SG-6145H and V • Steel G20
Models SG-5145H and V • Aluminum G20
0° Deflection • 3/4" (19) Spacing • Lattice Face
Models SG-61FH and V • Steel G21
Models SG-51FH and V • Aluminum G21

Minimum Security Lattice Face Grilles
Model SG-LGS • Steel G22
Model SG-LGA • Aluminum G22

Options & Accessories G24

GENERAL PRODUCT OVERVIEW

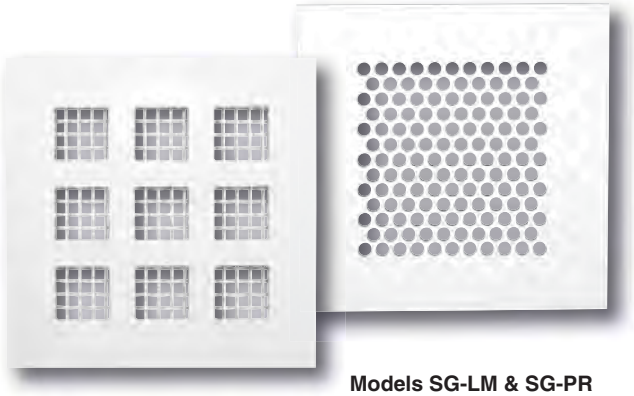
Security Products

Nailor offers a complete line of Security Grilles, Registers and Diffusers. The product line includes grilles and registers for maximum, medium and minimum security and a diffuser for minimum security applications. The grilles and registers that are for use in the highest security areas are constructed from very heavy gauge welded steel that provides exceptional strength and durability. A wide range of options and accessories are available that can enhance the strength and performance of the grilles and registers.

MAXIMUM SECURITY GRILLES & REGISTERS

Nailor's maximum security grilles and registers are constructed from heavy gauge welded steel and are for use in areas where maximum security is vital. These grilles can be used for both supply and return air applications.

Lattice Face w/Mesh	Model SG-LM	**Page G5**
Perforated Face Plate	Model SG-PR	**Page G8**



Models SG-LM & SG-PR

Model SG-BM4

MEDIUM/MINIMUM SECURITY GRILLES & REGISTERS

This sidewall bar grille is constructed from 14 gauge steel and has blades that are fixed at 40° or 0° deflection. The louvered blade and steel mesh screen are reinforced with heavy gauge steel mullions and a welded sleeve. These grilles can be used for both supply and return air applications.

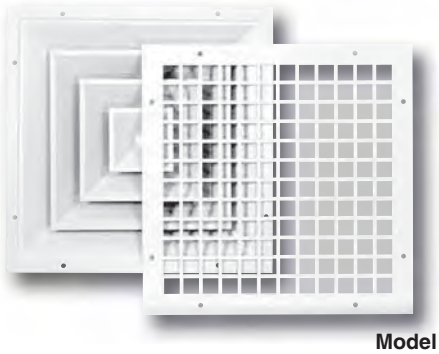
40° Deflection	Model SG-BM4	**Page G11**
0° Deflection	Model SG-BMZ	**Page G11**

MINIMUM SECURITY DIFFUSERS

These diffusers are a combination of a louvered pattern diffuser with a lattice face plate for minimum security protection. The diffusers are available with a choice of 1, 2, 3 or 4-way throw patterns. Use these diffusers in applications where constant supervision occurs.

Steel	Model SG-6500	**Page G13**
Aluminum	Model SG-6200	**Page G13**

Suffix '-O' adds an opposed blade damper.

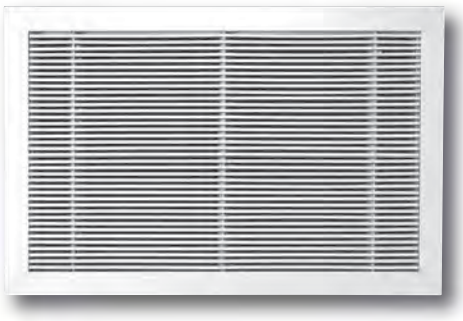


Model SG-6500

MINIMUM SECURITY BAR GRILLES & REGISTERS

These minimum security bar grilles are all aluminum rust-proof construction, which makes them ideal for use in showers and wet areas. The frame and blades are welded for extra strength. These grilles have 0° deflection blades that are spaced on either 1/2" (13) or 1/4" (6) centers.

1/2" (13) Spacing	Model SG-280	**Page G15**
1/4" (6) Spacing	Model SG-480	**Page G15**



Model SG-480

MINIMUM SECURITY GRILLES & REGISTERS

These louvered blade grilles and registers are paired up with a lattice face plate to meet minimum security requirements. They are available for both supply and return air applications with a choice of steel or aluminum construction.

Double Deflection Supply

Stainless Steel - Models SG-67DV, 67DH **Page G17**
Steel - Models SG-61DV, SG-61DH **Page G18**
Aluminum - Models SG-51DV, SG-51DH **Page G18**
Suffix '-O' adds an opposed blade damper.

Single Deflection Supply

Steel - Models SG-61SV, SG-61SH **Page G19**
Aluminum - Models SG-51SV, SG-51SH **Page G19**
Suffix '-O' adds an opposed blade damper.

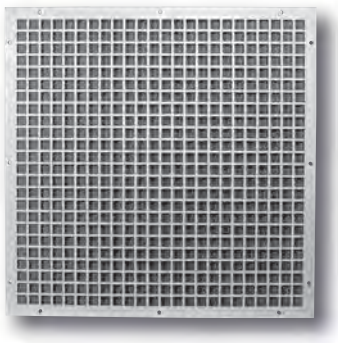
Fixed, 45° Deflection

Steel - Models SG-6145H, SG-6145V **Page G20**
Aluminum - Models SG-5145H, SG-5145V **Page G20**
Suffix '-O' adds an opposed blade damper.

Fixed, 0° Deflection

Steel - Models SG-61FH, SG-61FV **Page G21**
Aluminum - Models SG-51FH, SG-51FV **Page G21**
Suffix '-O' adds an opposed blade damper.

Models SG-67DH, SG-61DH, SG-6145H



Model SG-LGS-B3

MINIMUM SECURITY LATTICE FACE GRILLES

These lattice face grilles are offered as an economical return air grille for minimum security applications. They are available in heavy gauge steel or heavy gauge aluminum with a selection of hole pattern designs.

Steel Model SG-LGS **Page G22**
Aluminum Model SG-LGA **Page G22**

OPTIONS & ACCESSORIES

A selection of mounting angles, security bars, opposed blade dampers and directional blades are the enhancements that are offered on the maximum and medium security grilles.

Mounting Angles **Page G24**
Masonry Anchor Tabs **Page G24**
Security Bars **Page G24**
Opposed Blade Dampers **Page G25**
Directional Blades **Page G25**

Options A and J shown

MAXIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- SQUARE LATTICE FACE
- MESH SCREEN

Model:

SG-LM

Model SG-LM

Model SG-LM meets the industry standard for maximum security applications. It can be used as a supply or return grille where maximum security is paramount, supervision is minimal and absolute grille integrity must be maintained. These units are constructed of welded heavy gauge steel that allows the grille to become an integral part of the wall structure, providing additional strength.

STANDARD FEATURES:

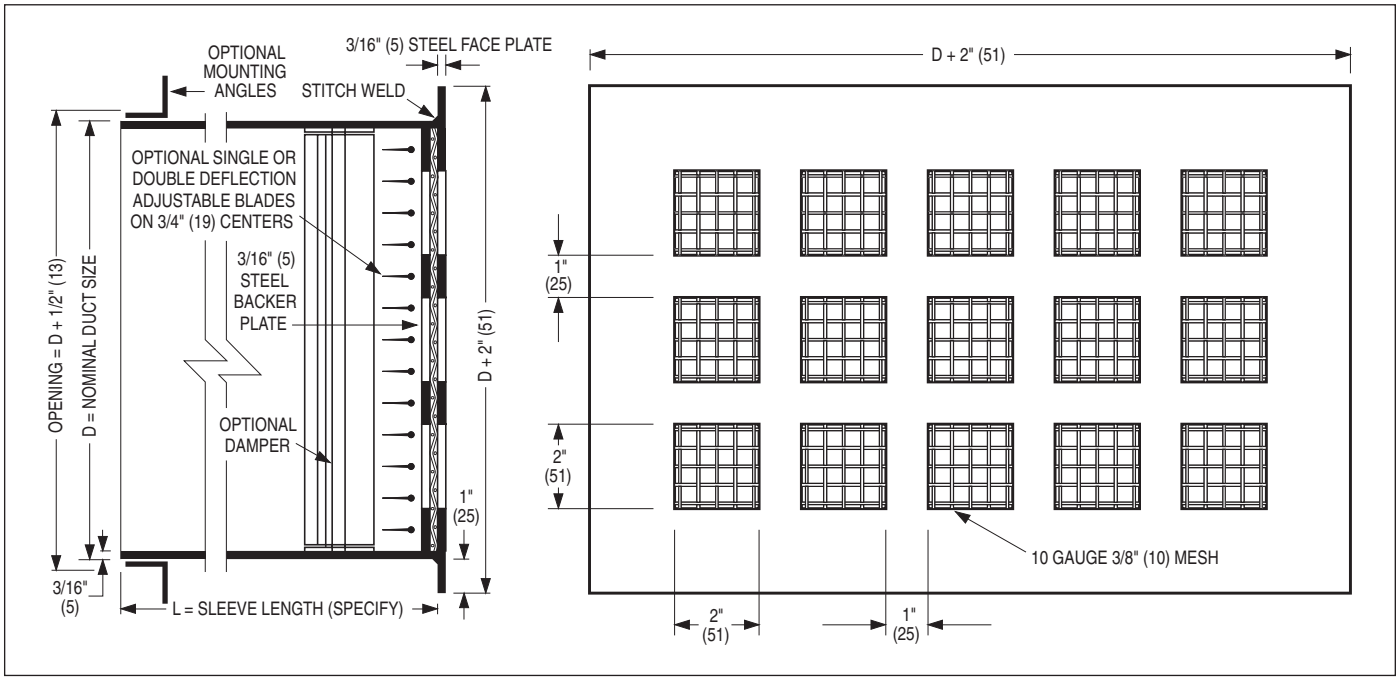
- Face Plate: 3/16" (5) steel lattice plate with 2" (51) square holes and 1" (25) fret bars.
- Backer Plate: 3/16" (5) steel lattice plate standard to match face.
- Sleeve: 3/16" (5) steel, of length required, with continuously welded seams and stitch welded to face plate.
- Protective screen sandwiched between face and backer plate.
- 10 gauge x 3/8" (10) clear opening (No. 2 mesh) woven steel wire.

FINISH OPTIONS:

- Standard finish is prime coat for field painting.

OPTIONS & ACCESSORIES:

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E, F, G or H. See page G24.
- Opposed Blade Damper: Option J, Face operator (screwdriver slot). Option K, Rear operator (screwdriver slot). See page G25.
- Adjustable Blade Packs: Single deflection: Option L, horizontal blades. Option M, vertical blades. Double deflection: Option N, horizontal front blades. Option P, vertical front blades. See page G25.



PERFORMANCE DATA:

MODEL SG-LM • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.011	.026	.046	.072	.103	.141	.184	.232	.287
6 x 6	CFM	25	38	50	63	75	88	100	113	125
	Noise Criteria	–	–	–	–	19	23	27	30	33
	Throw	2-3-6	3-5-10	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	10-12-17	11-12-18
9 x 6	CFM	38	56	75	94	113	131	150	169	188
	Noise Criteria	–	–	–	16	21	25	29	32	35
	Throw	2-4-8	4-6-12	5-8-14	7-10-16	8-12-17	9-14-19	11-14-20	12-15-21	13-16-23
12 x 6	CFM	50	75	100	125	150	175	200	225	250
	Noise Criteria	–	–	–	19	25	29	32	34	38
	Throw	3-4-9	4-7-13	6-9-16	8-12-18	9-14-20	11-15-22	13-16-24	14-19-25	15-18-26
15 x 6	CFM	63	94	125	156	188	219	250	281	313
	Noise Criteria	–	–	15	21	26	30	34	37	40
	Throw	3-5-10	5-8-15	7-10-18	9-12-21	10-15-23	12-17-25	13-18-26	15-19-28	17-21-29
18 x 6	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	–	–	16	22	27	31	35	38	41
	Throw	3-5-11	5-8-16	7-11-20	9-13-23	11-16-25	13-19-27	14-20-29	16-21-30	18-23-32
21 x 6	CFM	88	131	175	219	263	306	350	394	438
	Noise Criteria	–	–	17	23	28	32	35	39	41
	Throw	4-6-12	6-9-18	8-12-22	10-15-25	12-18-27	14-20-29	17-22-31	18-23-33	20-25-34
24 x 6	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	–	–	17	23	38	32	36	39	42
	Throw	4-6-13	6-10-19	9-13-24	11-16-26	13-19-29	15-22-31	17-24-33	19-25-35	22-26-37
9 x 9	CFM	56	84	113	141	169	197	225	253	281
	Noise Criteria	–	–	–	20	25	29	33	36	39
	Throw	3-5-10	5-7-14	6-10-17	8-12-19	10-14-21	12-16-23	13-17-25	14-18-27	16-19-28
12 x 9	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	–	–	16	22	27	31	35	38	41
	Throw	3-5-11	5-8-16	7-11-20	9-14-23	11-16-25	13-19-27	14-20-29	16-21-30	18-23-32
15 x 9	CFM	94	141	188	234	281	328	375	422	469
	Noise Criteria	–	–	16	23	28	32	36	39	42
	Throw	4-6-12	6-10-19	8-12-23	11-15-26	12-19-28	14-21-30	16-23-32	19-24-34	21-26-36
18 x 9	CFM	113	169	225	281	338	394	450	506	563
	Noise Criteria	–	–	18	24	29	33	37	40	43
	Throw	4-7-13	7-10-20	9-13-25	12-17-28	13-20-30	16-23-33	18-25-35	20-21-37	23-28-39
21 x 9	CFM	131	197	263	328	394	459	525	591	656
	Noise Criteria	–	–	19	25	30	34	35	41	44
	Throw	5-7-14	7-11-22	10-14-27	13-18-30	14-22-33	17-25-35	20-27-38	22-29-40	25-30-43
24 x 9	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	–	–	19	25	30	35	38	41	44
	Throw	5-8-15	8-12-24	11-15-29	13-20-32	15-24-35	18-27-38	21-29-41	24-30-43	26-32-46
12 x 12	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	–	–	17	23	28	32	36	39	42
	Throw	4-6-13	6-10-19	9-12-24	11-16-26	13-19-29	15-22-32	17-24-34	19-25-36	21-26-38
15 x 12	CFM	125	188	250	313	375	438	500	563	625
	Noise Criteria	–	–	18	24	29	34	37	40	43
	Throw	5-7-13	7-11-22	10-14-26	12-18-30	14-22-33	17-25-35	19-26-38	22-28-40	24-30-42
18 x 12	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	–	–	19	25	30	35	38	41	44
	Throw	5-8-15	8-12-24	11-15-29	13-20-33	15-24-36	18-27-39	21-29-41	24-30-43	26-32-46
21 x 12	CFM	175	263	350	438	525	613	700	788	875
	Noise Criteria	–	–	20	26	31	35	39	42	45
	Throw	6-9-17	9-12-26	12-17-31	14-21-34	17-26-38	20-29-41	23-31-44	26-33-47	29-34-50
24 x 12	CFM	200	300	400	500	600	700	800	900	1000
	Noise Criteria	–	–	21	27	32	36	40	43	46
	Throw	6-9-18	9-13-28	12-18-33	15-23-37	18-28-41	21-31-44	25-33-48	28-35-50	30-37-52

Performance Notes:

1. All pressure are in inches w.g..

2. Performance data is based on supply air and standard construction.

3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

4. Return Performance:

Negative static pressure approximates to listed total pressure.

Add + 2 to listed Noise Criteria value.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts.

Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODEL SG-LM • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.011	.026	.046	.072	.103	.141	.184	.232	.287
15 x 15	CFM	156	234	313	391	469	547	625	703	781
	Noise Criteria	–	–	20	26	31	35	38	42	44
	Throw	5-8-16	8-12-24	11-16-30	13-20-32	16-24-37	19-28-39	22-30-42	24-31-44	27-32-47
18 x 15	CFM	188	281	375	469	563	656	750	844	938
	Noise Criteria	–	–	21	27	32	36	39	43	45
	Throw	6-9-17	9-13-27	12-17-32	14-22-36	17-27-39	21-30-43	24-32-46	27-34-49	30-36-52
21 x 15	CFM	219	328	438	547	656	766	875	984	1094
	Noise Criteria	–	–	21	27	32	37	40	43	46
	Throw	6-10-19	10-14-29	13-19-34	16-24-39	19-29-43	22-32-46	26-34-50	29-37-53	31-39-56
24 x 15	CFM	250	375	500	625	750	875	1000	1125	1250
	Noise Criteria	–	–	22	28	33	37	41	42	47
	Throw	7-10-20	10-15-30	13-20-37	17-26-42	20-30-46	24-34-50	28-37-53	30-39-57	34-42-60
18 x 18	CFM	225	338	450	563	675	788	900	1013	1125
	Noise Criteria	–	–	22	28	33	37	40	43	46
	Throw	6-10-19	10-14-29	13-19-35	16-24-39	19-30-43	23-33-47	26-35-51	30-37-54	32-39-57
21 x 18	CFM	263	394	525	656	788	919	1050	1181	1313
	Noise Criteria	–	–	22	28	33	37	41	44	47
	Throw	7-11-21	11-15-31	14-21-38	17-26-43	21-31-47	25-35-51	28-38-55	31-40-58	34-43-62
24 x 18	CFM	300	450	600	750	900	1050	1200	1350	1500
	Noise Criteria	–	15	23	29	34	38	42	45	48
	Throw	7-11-22	11-16-33	15-22-41	18-28-46	22-33-51	26-38-55	30-41-59	33-43-62	37-46-66
21 x 21	CFM	306	459	613	766	919	1072	1225	1378	1531
	Noise Criteria	–	15	23	29	34	38	42	45	48
	Throw	8-12-24	12-17-34	15-23-41	19-29-46	22-34-51	27-39-55	30-41-59	34-44-63	37-46-67
24 x 21	CFM	350	525	700	875	1050	1225	1400	1575	1750
	Noise Criteria	–	16	24	30	35	39	43	46	49
	Throw	8-12-25	12-18-36	16-24-44	20-30-50	24-36-55	29-41-59	33-45-64	36-47-68	40-50-71
24 x 24	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	–	17	25	31	36	40	43	46	49
	Throw	9-13-26	13-19-39	17-26-48	22-33-53	26-39-59	31-44-64	35-48-68	39-51-73	43-53-77

Performance Notes:

1. All pressure are in inches w.g..
2. Performance data is based on supply air and standard construction.
3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Return Performance:

Negative static pressure approximates to listed total pressure.

Add + 2 to listed Noise Criteria value.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts.

Dash (–) in space indicates a Noise Criteria of less than 15.

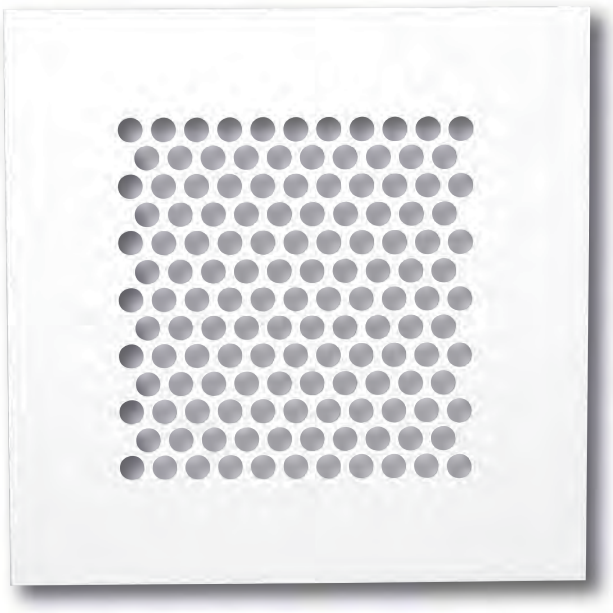
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

MAXIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- PERFORATED FACE

Model:

SG-PR



Model SG-PR

Model SG-PR is utilized in maximum security areas. Its design features a perforated face plate with 5/16" (8) dia. holes that allows a greater effective free area, but still upholds the required level of security and safety. It can be used as a supply or return grille. These units are constructed of welded heavy gauge steel that allows the grille to become an integral part of the wall structure, providing additional strength.

STANDARD FEATURES:

- Face Plate: 3/16" (5) steel lattice plate with 5/16" (8) dia. holes on staggered 7/16" (11) centers.
- Sleeve: 3/16" (5) steel, of length required, with continuously welded seams and stitch welded to face plate.

FINISH OPTIONS:

- Standard finish is prime coat for field painting.

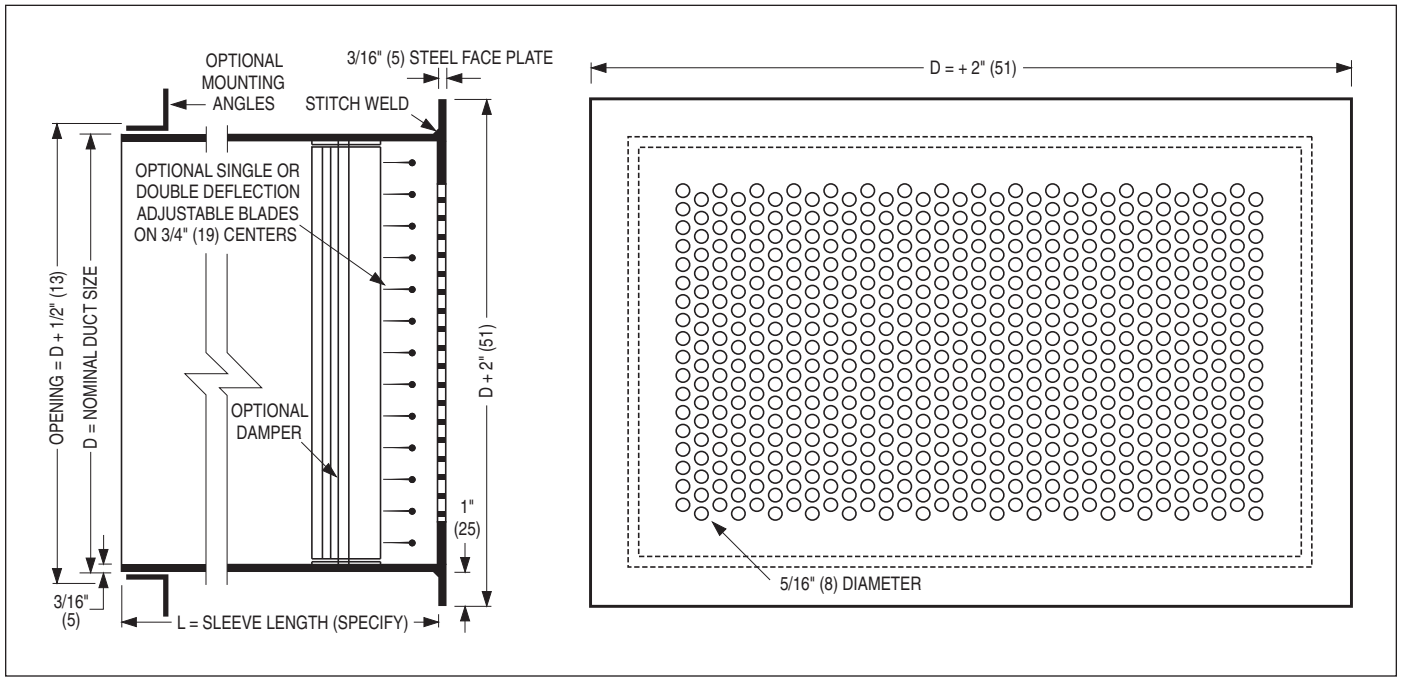
OPTIONS & ACCESSORIES:

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E, F, G or H. See page G24.
- Opposed Blade Damper: Option J, Face operator (screwdriver slot).

Option K, Rear operator (screwdriver slot). See page G25.

- Adjustable Blade Packs:

Single deflection: Option L, horizontal blades. Option M, vertical blades. Double deflection: Option N, horizontal front blades. Option P, vertical front blades. See page G25.



PERFORMANCE DATA:

MODEL SG-PR • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.005	.011	.020	.031	.044	.060	.079	.100	.123
6 x 6	CFM	25	38	50	63	75	88	100	113	125
	Noise Criteria	–	–	–	–	–	16	20	24	27
	Throw	1-2-5	2-3-7	3-5-10	4-6-12	5-7-12	5-8-13	6-10-14	7-11-15	8-12-16
9 x 6	CFM	38	56	75	94	113	131	150	169	188
	Noise Criteria	–	–	–	–	–	18	22	25	29
	Throw	2-3-6	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-19	10-14-20
12 x 6	CFM	50	75	100	125	150	175	200	225	250
	Noise Criteria	–	–	–	–	15	19	23	27	30
	Throw	2-3-7	3-5-10	4-7-13	6-9-16	7-10-18	8-12-10	9-13-21	10-15-22	12-16-24
15 x 6	CFM	63	94	125	156	188	219	250	281	313
	Noise Criteria	–	–	–	–	16	20	24	28	31
	Throw	2-4-8	4-6-12	5-8-17	6-10-18	8-12-20	9-13-22	10-15-24	12-17-25	13-18-27
18 x 6	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	–	–	–	–	17	21	25	28	32
	Throw	2-4-8	4-6-12	5-8-16	7-11-20	8-12-22	10-14-24	11-16-26	12-18-28	13-20-29
21 x 6	CFM	88	131	175	219	263	306	350	394	438
	Noise Criteria	–	–	–	–	18	22	26	29	32
	Throw	3-4-9	4-7-13	6-9-18	7-11-22	9-13-24	11-15-26	12-18-28	13-20-29	14-22-31
24 x 6	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	–	–	–	–	18	22	26	30	33
	Throw	3-5-10	5-7-14	6-10-19	8-12-24	10-14-26	11-16-28	13-19-29	14-21-33	16-24-34
9 x 9	CFM	56	84	113	141	169	197	225	253	281
	Noise Criteria	–	–	–	–	15	20	24	27	30
	Throw	2-3-7	3-5-11	5-7-14	6-9-17	7-11-19	8-12-21	10-14-22	11-16-24	12-17-25
12 x 9	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	–	–	–	–	17	21	25	28	32
	Throw	2-4-8	4-6-12	5-8-16	7-11-20	8-12-22	10-14-24	11-16-26	12-18-28	13-20-29
15 x 9	CFM	94	141	188	234	281	328	375	422	469
	Noise Criteria	–	–	–	–	18	22	26	29	33
	Throw	3-4-9	4-7-13	6-9-18	8-12-23	9-13-25	11-16-27	12-18-29	13-21-30	15-23-32
18 x 9	CFM	113	169	225	281	338	394	450	506	563
	Noise Criteria	–	–	–	–	18	23	27	30	33
	Throw	3-5-10	5-8-15	7-10-20	9-12-25	10-15-28	12-17-29	13-20-31	15-23-33	17-25-35
21 x 9	CFM	131	197	263	328	394	459	525	591	656
	Noise Criteria	–	–	–	–	19	24	27	31	34
	Throw	3-5-11	5-8-16	7-11-22	9-13-27	11-16-29	12-19-32	14-22-34	16-25-36	18-27-38
24 x 9	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	–	–	–	–	19	24	28	31	35
	Throw	4-6-12	6-9-17	8-12-23	10-14-29	12-17-31	13-20-34	15-23-36	17-27-39	19-29-41
12 x 12	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	–	–	–	–	18	22	26	30	33
	Throw	3-5-10	5-7-14	6-10-19	8-12-24	10-14-26	11-16-28	12-19-29	14-21-31	16-24-33
15 x 12	CFM	125	188	250	313	375	438	500	563	625
	Noise Criteria	–	–	–	–	19	23	27	31	34
	Throw	3-5-11	5-8-16	7-11-21	9-13-27	11-16-29	12-18-31	14-21-33	16-24-35	18-27-37
18 x 12	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	–	–	–	–	20	24	28	31	35
	Throw	4-6-12	6-9-17	8-12-23	10-14-29	12-17-31	13-20-34	15-23-36	17-27-39	19-29-41
21 x 12	CFM	175	263	350	438	525	613	700	788	875
	Noise Criteria	–	–	–	15	21	25	29	32	35
	Throw	4-6-12	6-10-19	8-13-25	11-15-31	12-19-34	14-22-37	16-25-39	19-29-42	21-32-44
24 x 12	CFM	200	300	400	500	600	700	800	900	1000
	Noise Criteria	–	–	–	15	21	25	29	33	36
	Throw	4-7-13	7-10-20	9-14-27	12-17-33	14-20-36	15-24-39	18-27-42	20-30-45	23-33-48

Performance Notes:

1. All pressure are in inches w.g..

2. Performance data is based on supply air and standard construction.

3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

4. Return Performance:

Negative static pressure approximates to listed total pressure.

Add + 2 to listed Noise Criteria value.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts.

Dash (–) in space indicates a Noise Criteria of less than 15.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

PERFORMANCE DATA:

MODEL SG-PR • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.011	.026	.046	.072	.103	.141	.184	.232	.287
15 x 15	CFM	156	234	313	391	469	547	625	703	781
	Noise Criteria	–	–	–	–	20	24	28	32	35
	Throw	4-6-12	6-9-18	8-12-24	10-14-29	12-18-32	14-21-35	16-24-37	18-27-40	20-29-42
18 x 15	CFM	188	281	375	469	563	656	750	844	938
	Noise Criteria	–	–	–	15	21	25	29	32	35
	Throw	4-6-13	6-10-19	9-13-26	11-16-33	13-19-36	15-23-38	17-26-41	19-29-44	22-33-46
21 x 15	CFM	219	328	438	547	656	766	875	984	1094
	Noise Criteria	–	–	–	15	21	26	30	33	36
	Throw	5-7-14	7-11-22	10-14-28	12-17-35	14-21-38	16-25-42	19-29-44	21-31-47	24-35-50
24 x 15	CFM	250	375	500	625	750	875	1000	1125	1250
	Noise Criteria	–	–	–	16	22	26	30	34	37
	Throw	5-8-15	8-12-23	10-15-29	13-19-37	15-23-41	17-27-44	20-30-48	23-34-51	25-37-54
18 x 18	CFM	225	338	450	563	675	788	900	1013	1125
	Noise Criteria	–	–	–	16	21	26	30	33	36
	Throw	5-7-14	7-11-21	10-14-29	11-18-35	14-21-39	16-25-42	19-28-45	21-32-48	24-35-51
21 x 18	CFM	263	394	525	656	788	919	1050	1181	1313
	Noise Criteria	–	–	–	17	22	26	30	34	37
	Throw	5-8-15	8-12-23	11-15-31	12-19-38	15-23-42	18-27-46	21-31-49	23-35-52	25-38-55
24 x 18	CFM	300	450	600	750	900	1050	1200	1350	1500
	Noise Criteria	–	–	–	17	23	27	31	34	38
	Throw	5-8-16	8-13-25	11-16-34	13-21-41	16-25-45	19-29-49	22-34-52	25-37-56	28-41-59
21 x 21	CFM	306	459	613	766	919	1072	1225	1378	1531
	Noise Criteria	–	–	–	18	23	27	31	35	38
	Throw	5-8-16	8-13-25	11-16-33	13-21-41	16-25-46	19-29-49	22-34-53	25-38-56	29-41-59
24 x 21	CFM	350	525	700	875	1050	1225	1400	1575	1750
	Noise Criteria	–	–	–	18	23	28	32	35	38
	Throw	6-9-18	9-14-27	12-18-36	14-22-44	18-27-49	21-31-53	24-36-57	27-40-60	30-44-64
24 x 24	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	–	–	–	18	24	28	32	36	39
	Throw	6-10-19	10-14-29	13-19-39	16-24-48	19-29-52	22-33-57	2-38-61	28-43-65	33-48-68

Performance Notes:

1. All pressure are in inches w.g..
2. Performance data is based on supply air and standard construction.
3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Return Performance:

   Negative static pressure approximates to listed total pressure.

   Add + 2 to listed Noise Criteria value.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts.

   Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

MEDIUM /MINIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- FIXED BARS

Models:

SG-BM4 **40° deflection**

SG-BMZ **0° deflection**

Model SG-BM4

Model Series SG-BM may be used for sidewall applications in medium or minimum security areas. Model Series SG-BM construction includes a stamped, heavy gauge steel, one piece frame welded to the sleeve. The louvered bars and steel mesh screen are reinforced with heavy gauge steel support mullions on 3" (76) maximum centers and welded to a steel sleeve passing through the wall. This design makes the Model Series SG-BM the highest quality standard security grille of its kind, providing exceptional strength and impact resistance.

STANDARD FEATURES:

- Face Plate (frame) constructed from 14 gauge steel.
- 1/2" (13) x 14 gauge blades on 1/2" (13) centers passing through 14 gauge vertical support bars on 3" (76) centers. Blades are fixed at 40° or 0° deflection.
- Sleeve: 14 gauge steel, of length required, with welded seams and welded to face plate.
- Protective screen behind face bars of 10 gauge x 3/8" (10) clear opening (No. 2 mesh) woven steel wire, secured in place by stitch welded support angles.

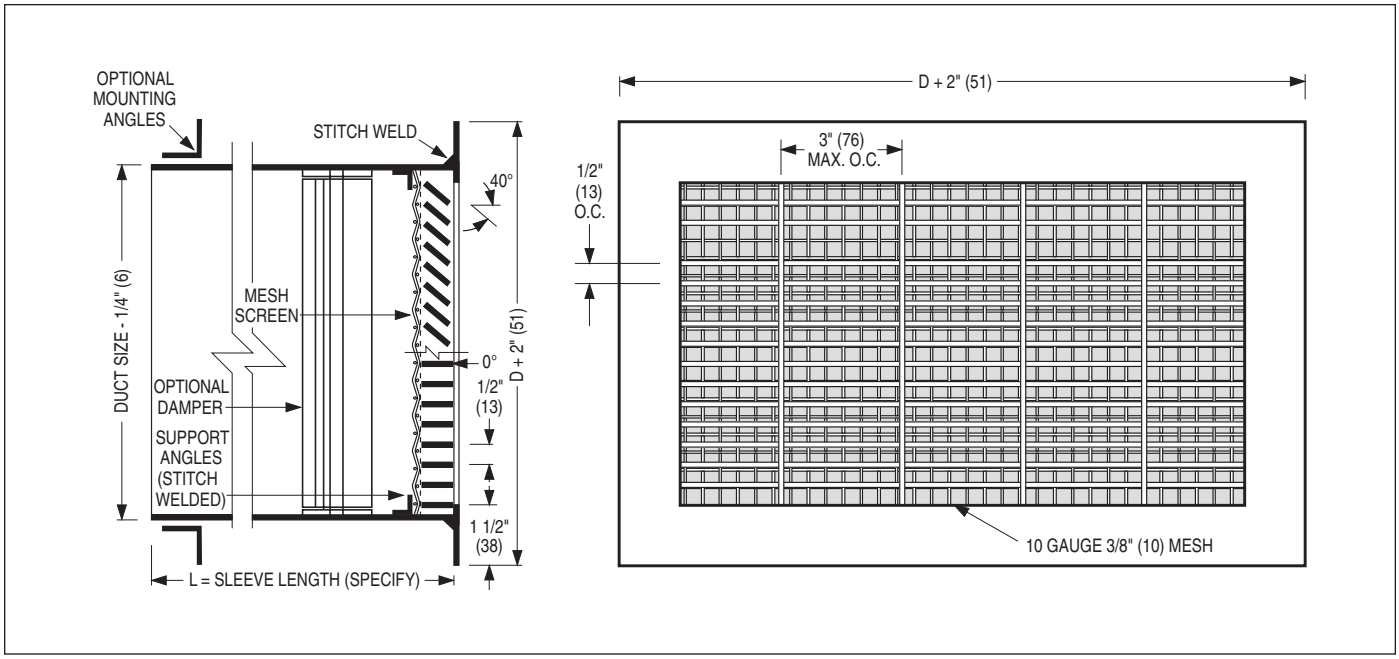
FINISH OPTIONS:

- Standard finish is prime coat for field painting.

OPTIONS & ACCESSORIES:

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E or F. See page G24.
- Opposed Blade Damper:

Face operator (lever): Option J, Rear operator (screwdriver slot): Option K, See page G25.



PERFORMANCE DATA:

MODEL SG-BM4 • SUPPLY

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	300	400	500	600	800	1000	1200
			Total Pressure	.041	.067	.108	.149	.27	.420	.615
.18	8 x 4	6 x 6	CFM	55	70	90	110	145	180	215
			Noise Criteria	–	–	21	27	36	42	48
			Throw	5-8-12	7-9-13	9-11-15	10-12-16	11-13-19	13-15-21	14-16-23
.39	18 x 4	12 x 6	CFM	115	155	195	235	310	390	470
			Noise Criteria	–	–	25	30	39	45	52
			Throw	8-12-16	11-13-20	12-15-22	14-17-24	16-19-28	17-21-31	19-24-33
.52	24 x 4	16 x 6	CFM	155	210	260	310	415	520	625
			Noise Criteria	–	–	26	31	40	46	53
			Throw	9-13-19	12-16-23	13-17-24	16-19-28	18-21-31	21-26-36	24-29-4
1.18	14 x 12	16 x 12	CFM	355	470	590	710	945	1180	1420
			Noise Criteria	–	23	29	34	43	50	55
			Throw	13-20-30	17-24-33	22-27-38	25-30-42	29-33-48	32-38-54	34-41-58
1.60	30 x 8	24 x 10	CFM	480	640	800	960	1280	1600	1920
			Noise Criteria	–	27	33	38	47	53	59
			Throw	14-22-33	20-29-40	24-31-45	29-35-50	32-40-55	37-45-64	38-48-68
2.78	30 x 14	24 x 18	CFM	835	1110	1320	1676	2220	2780	3340
			Noise Criteria	–	27	33	38	47	53	60
			Throw	20-30-46	26-35-55	31-40-58	37-47-69	45-55-78	48-60-85	54-66-91
4.29	30 x 22	28 x 24	CFM	1290	1720	2140	2570	3430	4290	5150
			Noise Criteria	20	28	35	40	49	55	61
			Throw	24-36-55	32-42-61	41-51-72	46-56-80	51-62-87	58-71-97	67-82-111

MODEL SG-BM4 • RETURN

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	200	300	400	500	600	800	1000
			Neg. Static Pressu	.018	.055	.091	.146	.200	.364	.565
.18	8 x 4	6 x 6	CFM	35	55	70	90	110	145	180
			Noise Criteria	–	–	–	25	29	36	42
.39	18 x 4	12 x 6	CFM	80	115	155	195	235	310	390
			Noise Criteria	–	–	25	31	35	42	48
.52	24 x 4	16 x 6	CFM	105	155	210	260	310	415	520
			Noise Criteria	–	–	26	32	37	44	49
1.18	14 x 14	16 x 12	CFM	235	355	470	590	710	945	1180
			Noise Criteria	–	26	32	37	43	50	55
1.60	30 x 8	24 x 10	CFM	320	480	640	800	960	1280	1600
			Noise Criteria	–	28	34	40	45	52	58
2.78	30 x 14	24 x 18	CFM	555	835	1110	1390	1670	2220	2780
			Noise Criteria	20	32	38	44	49	56	61
4.29	30 x 22	28 x 24	CFM	860	1290	1720	2140	2570	3430	4290
			Noise Criteria	24	35	41	47	52	60	64

Performance Notes:

1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute
3. Throws are given at 150, 100 and 50 fpm terminal velocities.
4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

MINIMUM SECURITY DIFFUSERS

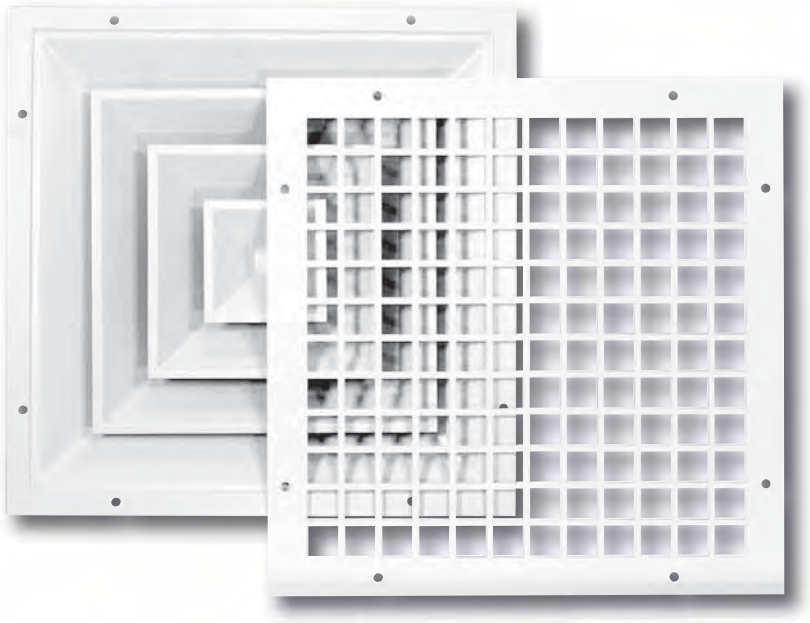
- LOUVERED CORE
- LATTICE FACE
- 1, 2, 3 OR 4-WAY BLOW PATTERN

Models:

SG-6500 Steel

SG-6200 Aluminum

- **Suffix '-O' adds an opposed blade damper**



Model SG-6500

Model SG-6500 is most often used in minimum security areas such as lobbies and foyers where constant supervision is required. This ceiling diffuser assembly combines the high performance Model Series 6500 Pattern Diffuser with a heavy gauge steel lattice grille mounted on the diffuser face. Also available in aluminum construction as Model SG-6200.

STANDARD FEATURES:

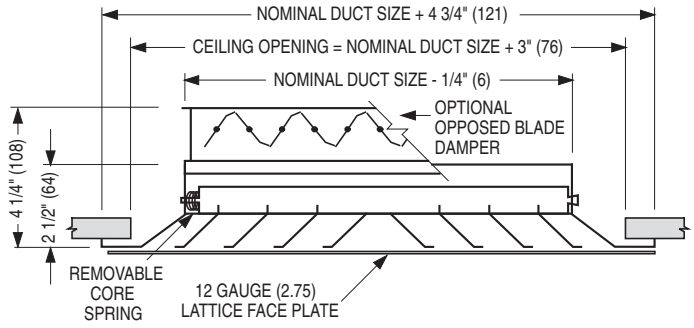
- Model Series 6500 or 6200 diffusers with Frame Type S and 1, 2, 3 or 4-way blow pattern.
- Face plate is constructed of 12 gauge steel with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Available in square neck sizes 6" x 6" (152 x 152) through 24" x 24" (610 x 610) in 3" (76) increments.

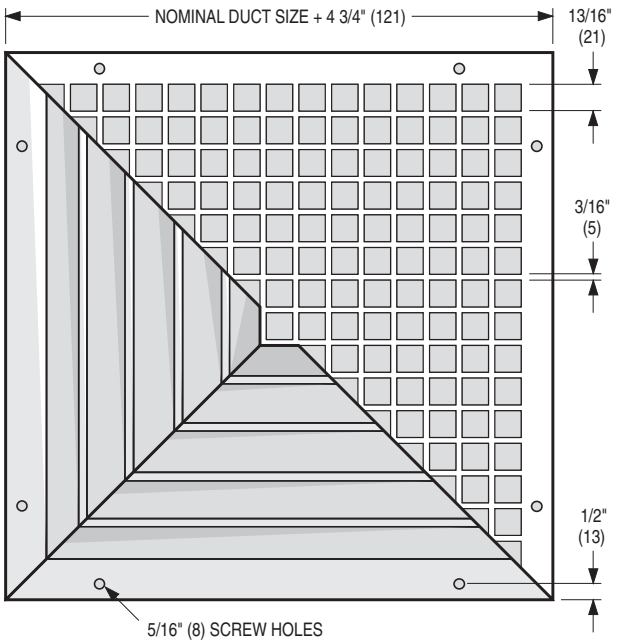
FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper. Adjustable from the face with lattice and core removed.





Screw Hole Number and Location

Neck Size	No.	Location
6"	4	Center line
9" to 18"	8	Two per side, 3" (76) from corner
21" to 24"	12	Three per side, equally spaced

PERFORMANCE DATA:

MODELS SG-6500 AND SG-6200

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Total Pressure	.006	.022	.049	.087	.134	.193	.270
6 x 6 .25 Sq. ft.	CFM	25	50	75	100	125	150	175
	Noise Criteria	–	–	–	–	23	30	34
	Throw	1-1-2	1-2-3	1-3-5	3-5-7	3-6-8	4-7-10	5-7-11
9 x 9 .56 Sq. ft.	CFM	55	110	170	225	280	335	390
	Noise Criteria	–	–	–	22	29	36	40
	Throw	1-1-2	1-3-5	3-5-7	5-7-10	6-8-12	7-10-15	8-10-17
12 x 12 1.0 Sq. ft.	CFM	100	200	300	400	500	600	700
	Noise Criteria	–	–	–	26	34	40	45
	Throw	1-1-2	2-4-5	4-6-9	6-9-12	7-10-15	9-13-20	10-13-21
15 x 15 1.56 Sq. ft.	CFM	155	310	470	625	780	935	1090
	Noise Criteria	–	–	21	29	37	43	48
	Throw	1-2-4	2-5-8	4-8-12	8-11-13	10-13-21	11-16-26	13-18-29
18 x 18 2.25 Sq. ft.	CFM	225	450	675	900	1125	1350	1575
	Noise Criteria	–	–	24	34	41	45	51
	Throw	1-2-4	3-7-11	5-9-15	8-12-20	11-16-27	13-19-31	14-21-35
21 x 21 3.06 Sq. ft.	CFM	305	610	920	1225	1530	1835	2140
	Noise Criteria	–	–	26	35	43	48	53
	Throw	1-3-5	3-8-12	7-11-18	10-15-24	13-20-29	15-22-36	17-24-40
24 x 24 4.0 Sq. ft.	CFM	400	800	1200	1600	2000	2400	2800
	Noise Criteria	–	–	28	37	44	50	54
	Throw	1-3-5	4-6-13	8-12-21	12-15-28	16-22-35	18-26-42	20-29-45

Performance Notes:

1. All pressure are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities.
3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

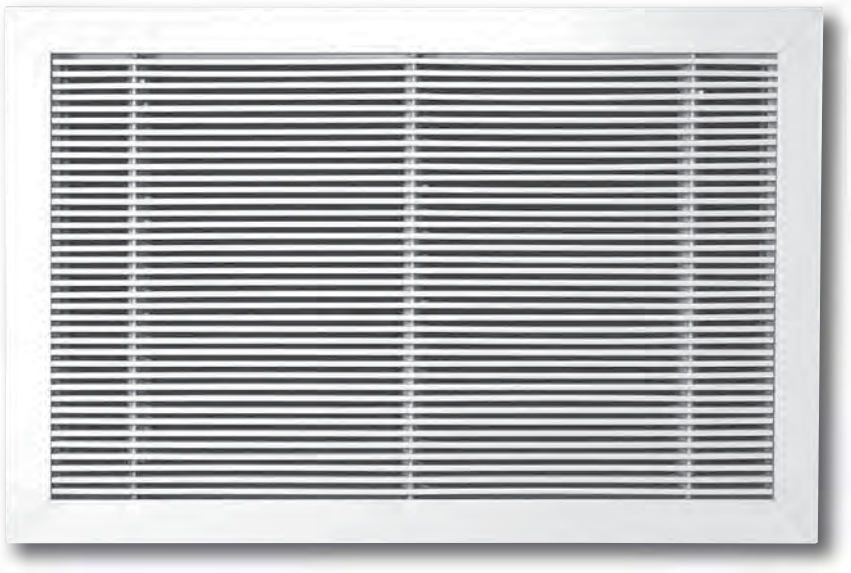
MINIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- ALUMINUM CONSTRUCTION
- FIXED BARS 0° DEFLECTION

Models:

SG-280 1/2" (13) spacing

SG-480 1/4" (6) spacing



Model SG-480

Models SG-280 and SG-480 are all aluminum minimum security grilles. Rust-proof construction makes these models ideal for use in showers and wet areas where they are constantly exposed to humid conditions. Models have fixed 1/8" (3) thick, extruded horizontal bars on 1/4" (6) or 1/2" (13) centers. They are fixed at 0° deflection and are individually welded to their cross-bar spacers, which in turn are supported by heavy duty extruded aluminum members welded to the grille frame. This grille is securely fastened with a heavy gauge aluminum sleeve welded to the grille frame which passes through the wall. The sleeve is fastened with an optional extruded aluminum wall flange on the reverse side.

STANDARD FEATURES:

- Frame: Heavy gauge extruded aluminum with welded mitered corners.
- Bars: 1/8" (3) thick extruded aluminum on 1/4" (6) or 1/2" (13) centers, welded to cross-bars and supported by 1 1/8" x 3/8" (29 x 10) heavy duty extruded support members on maximum 6" (152) centers welded to frame.
- Sleeve: 10 gauge aluminum welded to frame. Length as specified to suit wall thickness.
- Available in sizes 6" x 6" (152 x 152) through 36" x 36" (914 x 914) in single piece construction.

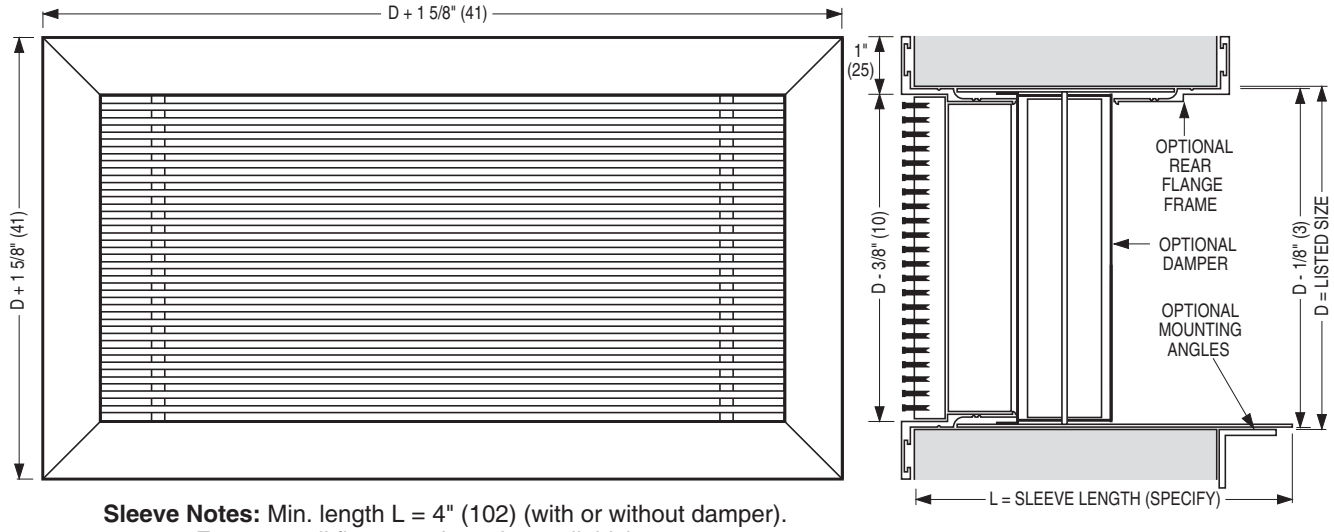
FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Rear wall flange. Same construction as grille frame. Shipped loose to be field welded to sleeve.
- Mounting angles: Option A, B or C. See page G24.
- Opposed Blade Damper:

Face operator (screwdriver slot or lever), Option J, Rear operator (screwdriver slot), Option K, see page G25.



Sleeve Notes: Min. length L = 4" (102) (with or without damper).
For rear wall flange option – L = wall thickness.
For mounting angle option – L = wall thickness + 2" (51).

Model SG-480 shown

PERFORMANCE DATA:

MODEL SG-280 • SUPPLY

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	300	400	500	600	800	1000	1200
			Total Pressure	.033	.055	.087	.120	.220	.338	.491
.18	8 x 4	6 x 6	CFM	55	70	90	110	145	180	215
			Noise Criteria	–	–	–	21	30	36	42
			Throw	6-9-13	7-10-14	10-12-16	11-13-18	12-14-21	14-17-23	15-18-26
.26	12 x 4	8 x 6	CFM	80	105	130	155	210	260	310
			Noise Criteria	–	–	–	22	31	37	43
			Throw	7-11-15	11-13-18	11-14-19	13-15-22	14-18-26	16-20-28	18-21-30
.52	24 x 4	16 x 6	CFM	155	210	260	310	415	520	625
			Noise Criteria	–	–	23	29	34	40	46
			Throw	10-14-22	12-17-25	16-20-27	18-23-31	21-26-37	23-29-40	25-31-44
.81	14 x 10	16 x 8	CFM	245	325	405	485	650	810	970
			Noise Criteria	–	–	25	30	37	43	47
			Throw	12-17-27	16-22-30	20-26-32	24-30-38	27-32-45	29-34-50	30-38-55
1.60	30 x 8	24 x 10	CFM	480	640	800	960	1280	1600	1920
			Noise Criteria	–	–	26	31	38	44	50
			Throw	16-24-37	24-31-41	30-36-46	34-41-54	40-46-64	41-49-67	43-53-75
2.78	30 x 14	24 x 18	CFM	835	1110	1320	1676	2220	2780	3340
			Noise Criteria	–	21	27	34	41	47	53
			Throw	23-33-51	30-45-58	38-46-67	42-50-71	49-59-82	57-68-92	60-71-105
4.29	30 x 22	28 x 24	CFM	1290	1720	2140	2570	3430	4290	5150
			Noise Criteria	–	23	29	36	43	49	56
			Throw	27-39-63	37-53-73	44-58-81	50-63-92	60-73-105	66-80-119	70-85-130

MODEL SG-280 • RETURN

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	200	300	400	500	600	800	1000
			Neg. Static Pressu	.011	.032	.053	.084	.116	.210	.326
.18	8 x 4	6 x 6	CFM	35	55	70	90	110	145	180
			Noise Criteria	–	–	–	–	21	28	34
.39	12 x 4	8 x 6	CFM	50	80	105	130	155	210	260
			Noise Criteria	–	–	–	–	24	30	37
.52	24 x 4	16 x 6	CFM	105	155	210	260	310	415	520
			Noise Criteria	–	–	–	25	29	36	42
1.18	14 x 10	16 x 8	CFM	160	245	325	405	485	650	810
			Noise Criteria	–	–	22	28	32	39	45
1.60	30 x 8	24 x 10	CFM	320	480	640	800	960	1280	1600
			Noise Criteria	–	–	26	32	36	43	49
2.78	30 x 14	24 x 18	CFM	555	835	1110	1390	1670	2220	2780
			Noise Criteria	–	22	30	36	40	48	53
4.29	30 x 22	28 x 24	CFM	860	1290	1720	2140	2570	3430	4290
			Noise Criteria	–	26	33	39	43	50	57

Performance Notes:

1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute
3. Throws are given at 150, 100 and 50 fpm terminal velocities.
4. Correction factors for Model SG-480 are as follows:

Total Pressure = Listed value x 1.5

Noise Criteria level, add + 5 to listed value.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10^{-12} watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

MINIMUM SECURITY DOUBLE DEFLECTION SUPPLY GRILLES AND REGISTERS

- LATTICE FACE
- LOUVERED BLADES

Models:

SG-67DV and DH Stainless Steel

- **Suffix '-O' adds an opposed blade damper**

Model SG-67DV

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6700 Series grilles with the addition of a lattice face for additional security.

STANDARD FEATURES:

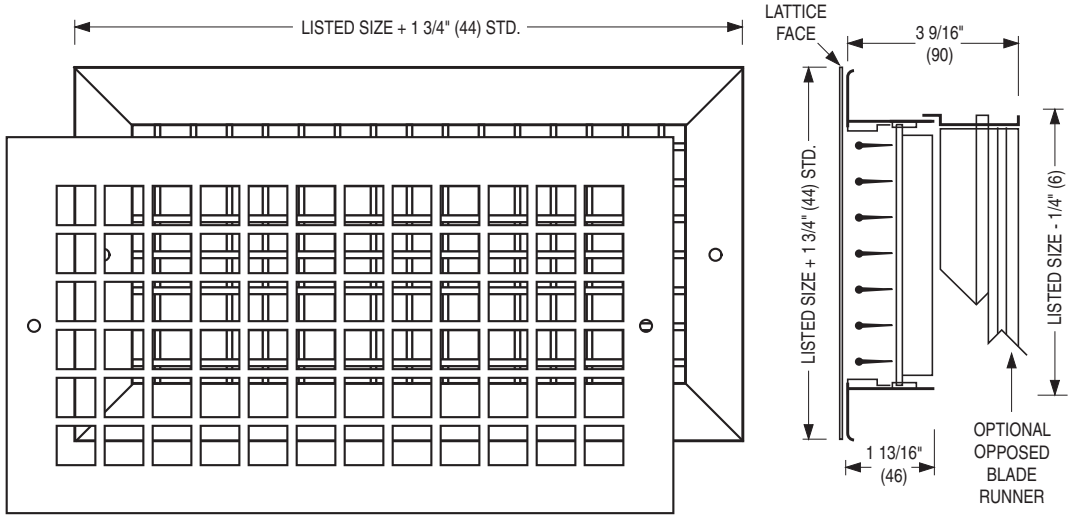
- Lattice Face: 12 gauge Type 304 stainless steel with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6700 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Front blades are vertical (V) or horizontal (H) with the rear blades having the opposite orientation.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

FINISH OPTIONS:

- Standard finish is #4 Brushed Satin Polished. AW Appliance White is optional. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper (stainless steel) has a screwdriver slot operator accessible through face of register.



Model SG-67DV/H

MINIMUM SECURITY DOUBLE DEFLECTION SUPPLY GRILLES AND REGISTERS

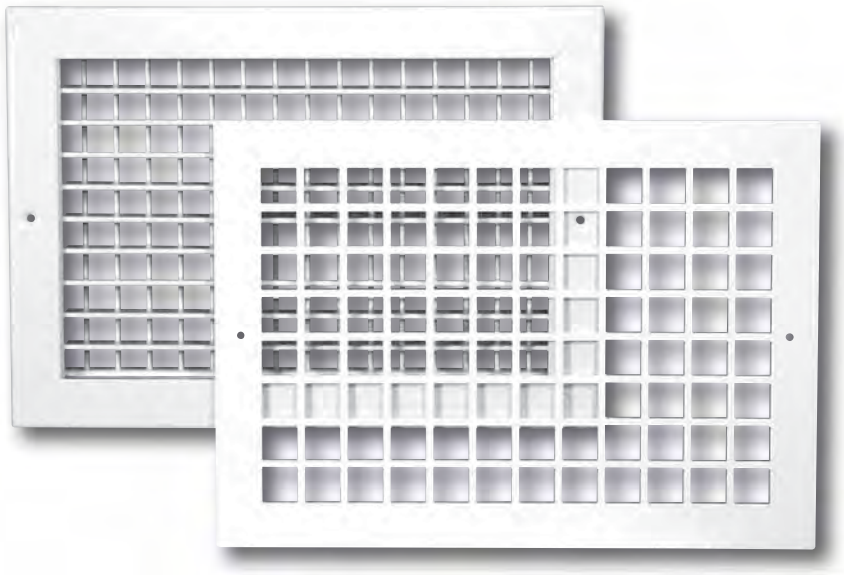
- LATTICE FACE
- LOUVERED BLADES

Models:

SG-61DV and DH Steel

SG-51DV and DH Aluminum

- **Suffix '-O' adds an opposed blade damper**



Model SG-61DV

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of grilles with the addition of a lattice face for additional security.

STANDARD FEATURES:

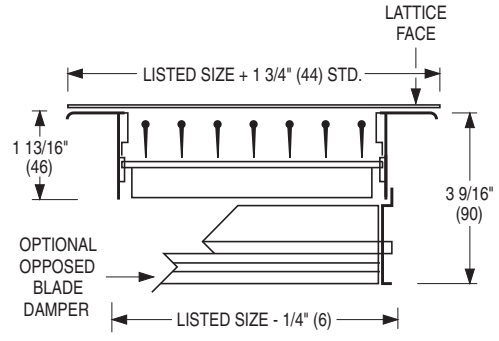
- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Front blades are vertical (V) or horizontal (H) with the rear blades having the opposite orientation.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

FINISH OPTIONS:

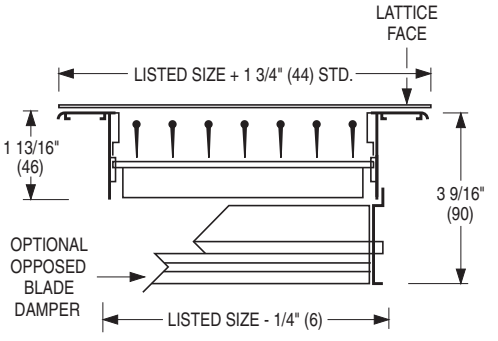
- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



Model SG-61DV/H



Model SG-51DV/H

MINIMUM SECURITY SINGLE DEFLECTION SUPPLY GRILLES AND REGISTERS

- LATTICE FACE
- LOUVERED BLADES

Models:

SG-61SV and SH Steel

SG-51SV and SH Aluminum

- **Suffix '-O' adds an opposed blade damper**

Model SG-61SH

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of grilles with the addition of a lattice face for additional security.

STANDARD FEATURES:

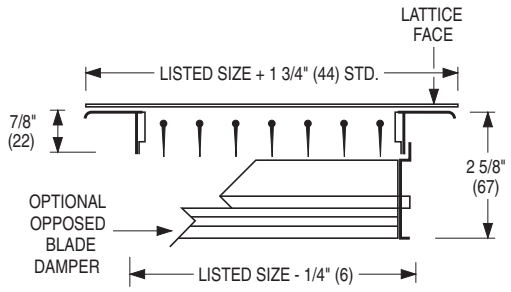
- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

FINISH OPTIONS:

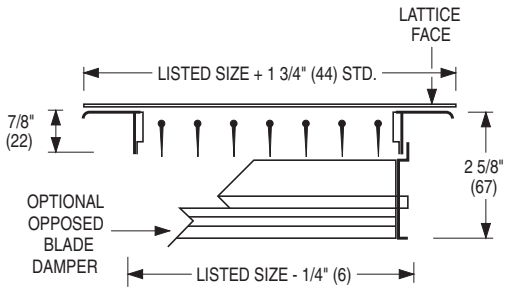
- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



Model SG-61SV/H



Model SG-51SV/H

MINIMUM SECURITY FIXED BLADE RETURN GRILLES AND REGISTERS

- LATTICE FACE
- 45° DEFLECTION BLADES

Models:

SG-6145H and 45V Steel

SG-5145H and 45V Aluminum

- **Suffix '-O' adds an opposed blade damper**

Model SG-6145H

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of return grilles with the addition of a lattice face for additional security.

STANDARD FEATURES:

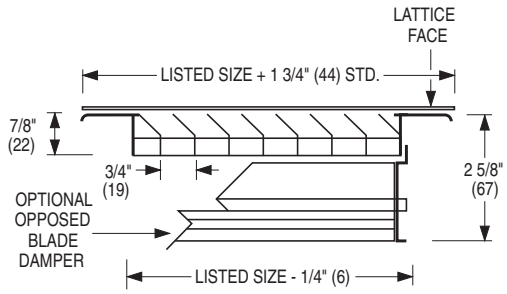
- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

FINISH OPTIONS:

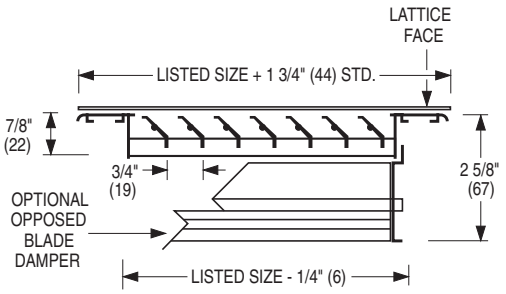
- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



Model SG-6145H/V



Model SG-5145H/V

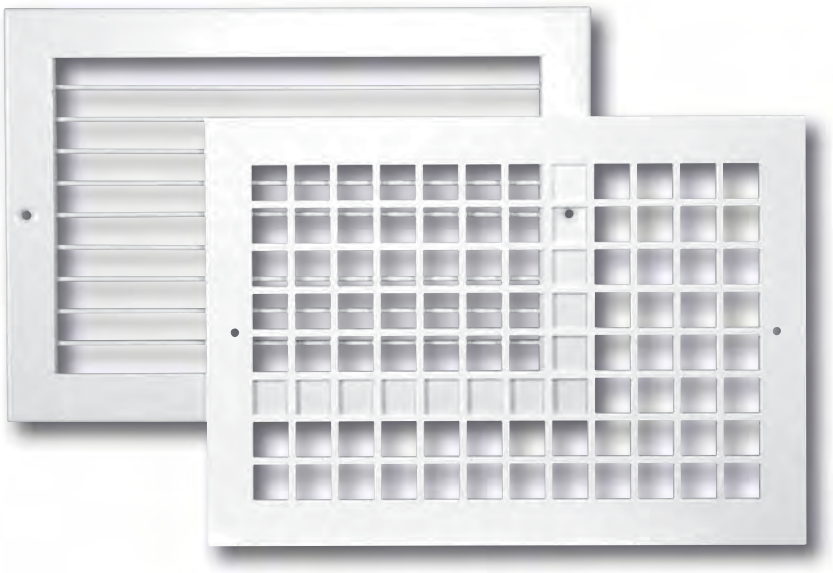
MINIMUM SECURITY FIXED BLADE RETURN GRILLES AND REGISTERS

- LATTICE FACE
- 0° DEFLECTION BLADES

Models:

SG-61FH and FV	**Steel**
SG-51FH and FV	**Aluminum**

- **Suffix '-O' adds an opposed blade damper**



Model SG-61FH

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of return grilles with the addition of a lattice face for additional security.

STANDARD FEATURES:

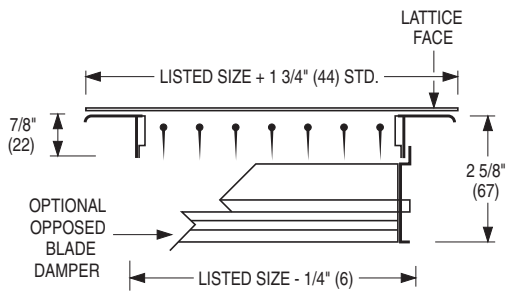
- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

FINISH OPTIONS:

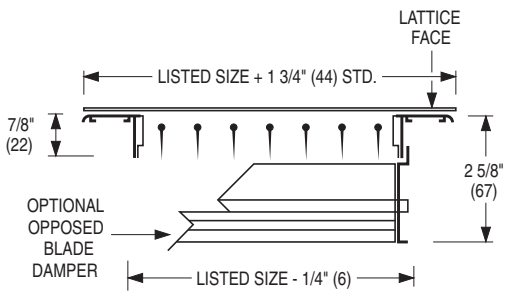
- Standard finish is AW Appliance White. Other finishes are available.

OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



Model SG-61FH/V



Model SG-51FH/V

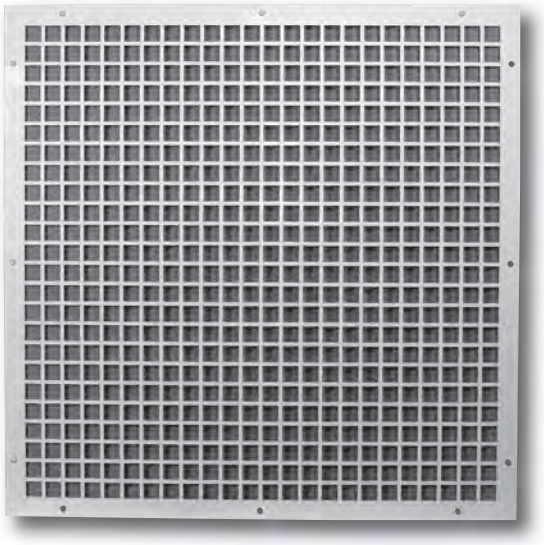
MINIMUM SECURITY LATTICE FACE GRILLES

- RETURN
- 13/16" (21) SQUARE HOLES ON 1" (25) CENTERS
- 12 GAUGE MATERIAL

Models:

SG-LGS **Steel**

SG-LGA **Aluminum**



Model SG-LGS-B3

Model Series SG-LG Series Lattice Face Grilles are available as an economical return air grille for minimum security applications.

Model Series SG-LG are available with an optional PF Plaster/Mounting Sub-frame which provides not only a professional finish, but also allows the option of an opposed blade damper mounted inside the neck for air balancing.

STANDARD FEATURES:

- Model Series SG-LG features 13/16" (21) square holes on 1" (25) centers with 3/16" (5) fret bars in 12 gauge (2.75) steel or aluminum construction.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.

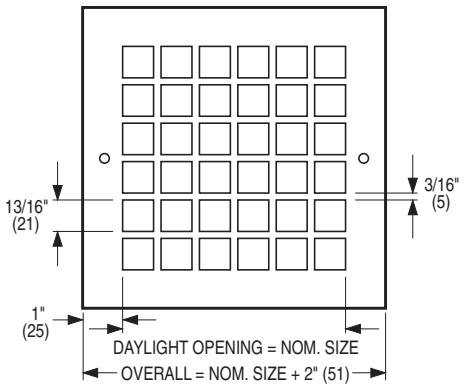
FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

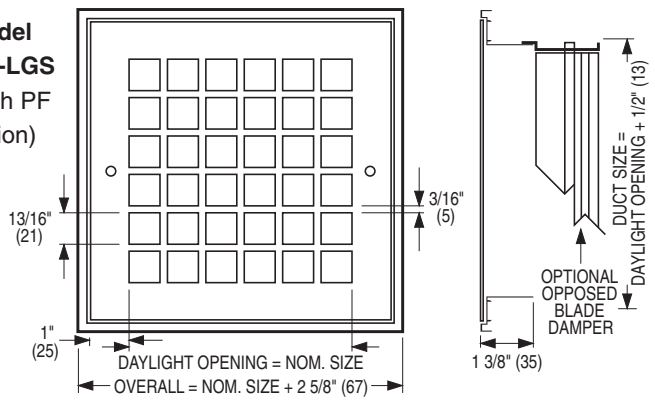
OPTIONS & ACCESSORIES:

- PF Plaster/Mounting sub-frame.
- Opposed blade damper with screwdriver slot operator, operable from face, available with PF option.
- Other material gauges: 10 gauge or 14 gauge steel or aluminum.
- Other lattice designs. See table.

Model SG-LGS (standard model)



Model SG-LGS (with PF option)



OPTIONAL LATTICE CONFIGURATIONS

Hole Pattern	Code Option		
	10 ga.	12 ga.	14 ga.
3/4" (19) square holes on 1" (25) centers	A1	B1	C1
1/2" (13) square holes on 3/4" (19) centers	A2	B2	C2
13/16" (21) square holes on 1" (25) centers	A3	B3	C3
1" (25) square holes on 1 1/4" (32) centers	A4	B4	C4
2 1/2" x 1/2" (64 x 13) rectangular holes on 2 3/4" x 3/4" (70 x 19) centers	A5	B5	C5

Code option B3 is standard.

SIZING SCHEDULE AND PERFORMANCE DATA:

MODEL SERIES SG-LGS & SG-LGA • LATTICE FACE GRILLES

DAYLIGHT OPENING DIMENSION													
NO. OF HOLES	CODE A1, B1, C1 3/4" SQ.		CODE A2, B2, C2 1/2" SQ.		CODE A3, B3, C3 13/16" SQ.		CODE A4, B4, C4 1" SQ.		NO. OF HOLES	CODE A5, B5, C5 2 1/2" x 1/2"			
										WIDTH		Height	
	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	in.	mm
6	5 3/4	146	4 1/4	108	5 13/16	148	7 1/4	184	3	6 1/2	165	2	51
8	7 3/4	197	5 3/4	146	7 13/16	198	9 3/4	248	4	8 3/4	222	2 3/4	70
10	9 3/4	248	7 1/4	184	8 13/16	224	12 1/4	311	5	11	279	3 1/2	89
12	11 3/4	298	8 3/4	222	11 13/16	300	14 3/4	375	6	13 1/4	337	4 1/4	108
14	13 3/4	349	10 1/4	260	13 13/16	351	17 1/4	438	7	15 1/2	394	5	127
16	15 3/4	400	11 3/4	298	15 13/16	402	19 3/4	502	8	17 3/4	451	5 3/4	146
18	17 3/4	451	13 1/4	337	17 13/16	452	22 1/4	565	9	20	508	6 1/2	165
20	19 3/4	502	14 3/4	375	19 13/16	503	24 3/4	629	10	22 1/4	565	7 1/4	184
22	21 3/4	552	16 1/4	413	21 13/16	554	27 1/4	692	11	24 1/2	622	8	203
24	23 3/4	603	17 3/4	451	23 13/16	605	29 3/4	756	12	26 3/4	679	8 3/4	222
26	25 3/4	654	19 1/4	489	25 13/16	656	32 1/4	819	13	29	737	9 1/2	241
28	27 3/4	705	20 3/4	527	27 13/16	706	34 3/4	883	14	31 1/4	794	10 1/4	260
30	29 3/4	756	22 1/4	565	29 13/16	757	37 1/4	946	15	33 1/2	851	11	279
32	31 3/4	806	23 3/4	603	31 13/16	808	39 3/4	1010	16	35 3/4	908	11 3/4	298
34	33 3/4	857	25 1/4	641	33 13/16	859	42 1/4	1073	17	38	965	12 1/2	318
36	35 3/4	908	26 3/4	679	35 13/16	910	44 3/4	1137	18	40 1/4	1022	13 1/4	337
38	37 3/4	959	28 1/4	718	37 13/16	960	47 1/4	1200	19	42 1/2	1080	14	356
40	39 3/4	1010	29 3/4	756	39 13/16	1011			20	44 3/4	1137	14 3/4	375
42	41 3/4	1060	31 1/4	794	41 13/16	1062			21	47	1194	15 1/2	394
44	43 3/4	1111	32 3/4	832	43 13/16	1113							
46	45 3/4	1162	34 1/4	870	45 13/16	1164							
48	47 3/4	1213	35 3/4	908	47 13/16	1214							
50			37 1/4	946									
52			38 3/4	984									
54			40 1/4	1022									
56			41 3/4	1060									
58			43 1/4	1099									
60			44 3/4	1137									
62			46 1/4	1175									
64			47 3/4	1213									

Pressure Loss Through Lattice Grille

Option Code	Core Velocity	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.051	.062	.090	.122
A1, B1, C1 (60%)	Negative Static Pressure	.019	.034	.053	.077	.105	.137	.173	.213	.307	.418
A2, B2, C2 (50%)		.032	.057	.089	.128	.174	.228	.288	.356	.512	.697
A3, B3, C3 (70%)		.011	.020	.031	.044	.060	.078	.099	.122	.176	.240
A4, B4, C4 (68%)		.012	.022	.034	.050	.068	.089	.112	.138	.198	.270
A5, B5, C5 (65%)		.015	.027	.042	.061	.083	.108	.137	.167	.243	.331

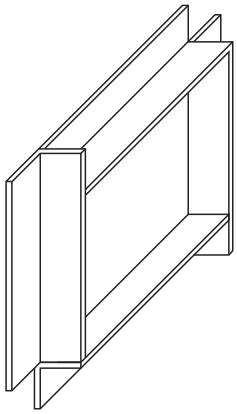
Performance Notes:

1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute.
3. Core represents daylight opening dimensions.

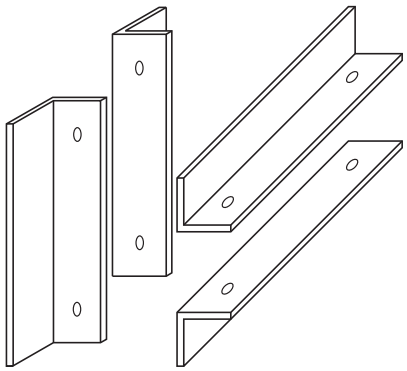
Options and Accessories

MOUNTING ANGLES:

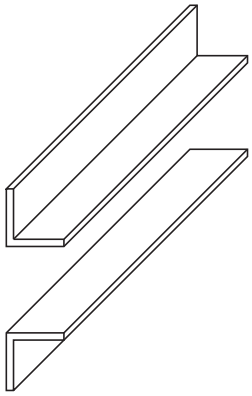
Option A 1" x 1" x 1/8" (25 x 25 x 3) welded rear angle frame. Shipped loose for field attachment (weld or bolt).



Option B 4 pcs. 1" x 1" x 1/8" (25 x 25 x 3) mounting angles, with holes and bolts. Shipped loose for field attachment.

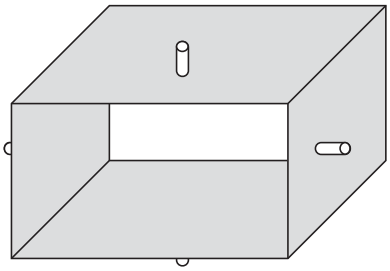


Option C 2 pcs. 1" x 1" x 1/8" (25 x 25 x 3) mounting angles (long dim.). Shipped loose for field attachment (weld or bolt).

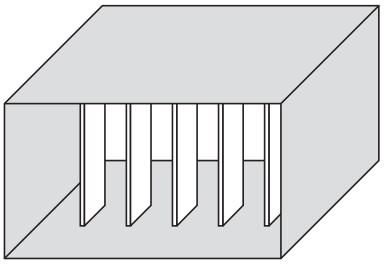


MASONRY ANCHOR TABS AND SECURITY BARS:

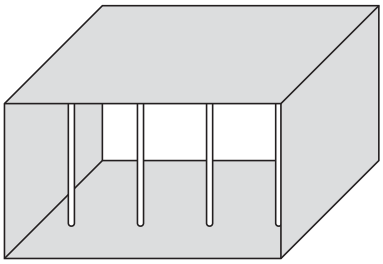
Option D 1/2" (13) dia. steel anchor tabs. 3" (76) long for concrete or brick walls. Minimum one per side.



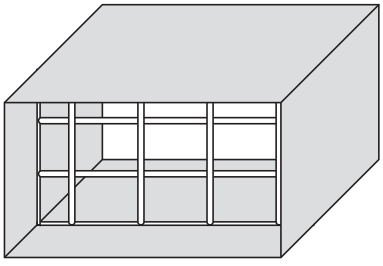
Option E 2 1/2" x 3/8" (64 x 10) flat security bars welded in sleeve, 4" (102) max. on center.



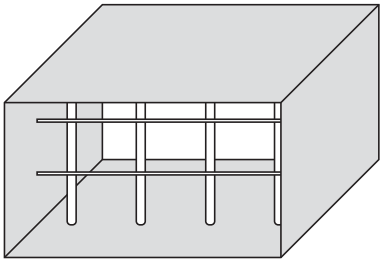
Option F 1/2" (13) dia. round security bars welded in sleeve, 6" (152) max. on center.



Option G Barrier Grille. 1/2" (13) dia. round security bars, vertical and horizontal, 6" (152) max. on center welded to sleeve and at each cross-point.



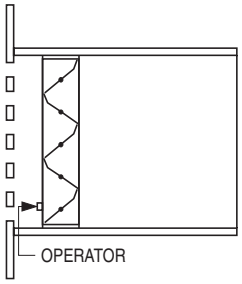
Option H Barrier Grille. 3/4" (19) dia. vertical bars with 2" x 1/4" (51 x 6) horizontal flat bars welded to sleeve and at each cross-point.



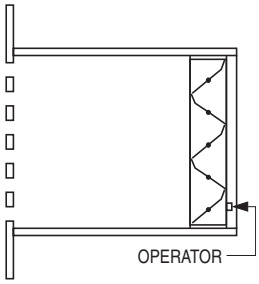
Options and Accessories

OPPOSED BLADE DAMPERS:

Option J Opposed Blade Damper. Face operator (screwdriver slot or lever).

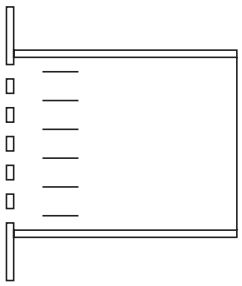


Option K Opposed Blade Damper. Rear operator (screwdriver slot).

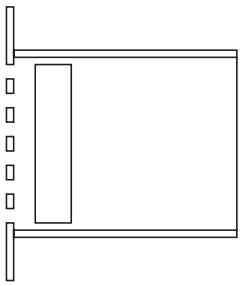


DIRECTIONAL BLADES:

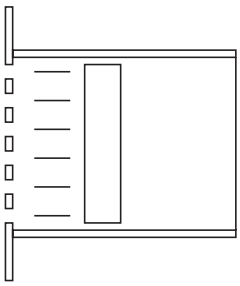
Option L Adjustable single deflection horizontal blades on 3/4" (19) centers.



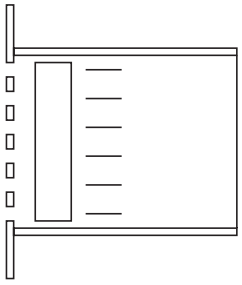
Option M Adjustable single deflection vertical blades on 3/4" (19) centers.



Option N Adjustable double deflection blades on 3/4" (19) centers. Horizontal front blades.



Option P Adjustable double deflection blades on 3/4" (19) centers. Vertical front blades.



Important note for all options and accessories:

Not all options shown, or certain combinations, are necessarily available on individual security products. Consult the individual model description to determine which options apply.

NOTES:

Nailor® Industries Inc.

ENGINEERING GUIDE

Area	square foot	square meter	(m²)	0.0929	10.764
	square inch	square millimeter	(mm²)	645.16	.00155
Density	pounds per cubic foot	kilograms per cubic meter	(kg/M³)	16.018	.0624
Energy	British thermal unit (BTU)	joule	(J)	1055.056	.000948
	kilowatt hour	megajoule	(MJ)	3.6	.2778
	watts per second	joule	(J)	1.0	1.0
	horsepower hour	megajoule	(MJ)	2.6845	.3725
Force	pound force	newton	(N)	4.448	0.697
	pound force	newton	(N)	4.4482	.2248
	kilogram force	newton	(N)	9.8067	.102
Heat	BTU per hour	watt	(W)	.2931	3.412
	BTU per pound	joules per kilogram	(J/kg)	2326.0	.00043
Length	inch	millimeter	(mm)	25.4	.0394
	inch	millimeter	(mm)	304.8	.00328
	foot	meter	(m)	.3048	3.2808
	yard	meter	(m)	.9144	1.0936
Mass (weight)	ounce (avoirdupois)	grams	(g)	28.350	.0353
	pound (avoirdupois)	kilogram	(kg)	.4536	2.2046
Power	horsepower	kilowatt	(kW)	.2457	1.341
	kilogram per hour	kilowatt	(kW)	0.6098	1019
	foot pound force per minute	watt	(W)	.0226	44.254
	ton of refrigeration	kilowatt	(kW)	3.517	.2843
Pressure	pounds per square inch	kilopascal	(kPa)	.2486	4.0219
	foot of water column	kilopascal	(kPa)	2.9837	.3552
	inch of mercury column	kilopascal	(kPa)	3.3243	.2964
	ounces per square inch	kilopascal	(kPa)	.4309	2.3206
	pounds per square inch	kilopascal	(kPa)	6.8948	.145
Temperature	Fahrenheit	Celsius	(°C)	5.9(°F-32)	(9/5°C)+32
Torque	ounce - force inch	millinewton - meter	(mN.m)	7.0616	.1416
	pound - force inch	newton - meter	(N.m)	.1130	8.8496
	pound - force foot	newton - meter	(N.m)	1.3558	.7376
Velocity	feet per second	meters per second	(m/s)	.3048	3.2809
	feet per minute	meters per second	(m/s)	.00508	196.85
	miles per hour	meters per second	(m/s)	.44704	2.2369
Volume (capacity)	cubic foot	liter	(l)	28.3168	.03531
	cubic inch	cubic centimeter	(cm³)	16.3871	.06102
	cubic yard	cubic meter	(m³)	.7646	1.308
	gallon (U.S.)	liter	(l)	3.785	.2642
	gallon (Imperial)	liter	(l)	4.546	.2120
Volume (flow)	cubic feet per minute (cfm)	liters per second	(l/s)	.4719	2.119
	cubic feet per minute (cfm)	cubic meters per second	(m³/s)	.0004719	2119.0
	cubic feet per hour (cfh)	milliliters per second	(ml/s)	7.8658	.127133
	gallons per minute (U.S.)	liters per second	(l/s)	.06309	15.850
	gallons per minute (Imperial)	liters per second	(l/s)	0.07577	13.198

TABLE OF CONTENTS

	Page No.
Engineering Performance Data	H3
Comfortable Environment	H3
Isothermal Jets	H4
Coanda Effect	H6
Jet Interference	H6
Throw, Spread, Drop	H8
Industrial Ventilation	H12
Noise Criteria	H17
Air Diffusion Performance Index	H24
Pressure Measurement	H29
Velocity Pressure Chart	H30
Definitions and Formulae	H31
Thermal Linear Type Grille Expansion	H31
Measures of Force and Pressure	H31
Equivalent Measures of Pressure	H32
Sheet Metal Thickness	H32
Round Duct Area	H32
Common Fractions	H33
Mathematical Formulae	H33
Metric Conversion Factors	H34

ENGINEERING PERFORMANCE DATA

Engineering Performance Data

The performance data shown in this catalog has been derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

This standard incorporates ISO 5219 and ADC 1062 Test Standards by inclusion and also includes provisions for acoustical tests for ratings of diffusers using reverberant room test procedures, referencing ANSI Acoustical Test Procedures. Where possible, applicable ASHRAE standards are referenced for measurement specifications and procedures.

COMFORTABLE ENVIRONMENT

Comfortable in Today's Environment

The human body feels comfortable when four conditions in the immediate environment are correctly controlled. These are radiant temperature, air dry bulb temperature, relative humidity, and air motion.

Ideal comfort conditions are reached when the heat generated within the body is in balance with the heat lost to the surrounding air. Body heat is lost through radiation, evaporation of sweat by convection to air currents and conduction through surfaces with which it is in contact.

Not everyone is comfortable under identical conditions. Some prefer more air movement or higher or lower temperatures or higher or lower humidity. Generally speaking most people are comfortable when the relative humidity is between 30% and 65% and the dry bulb temperature is between 22° and 24° centigrade (72° – 76°F). However, in the summertime when people wear lighter clothing, they can become accustomed to higher temperatures.

Radiant panels can affect body comfort. One degree F change in the temperature of a radiant panel will affect body comfort in the same way that 0.5°F change in air temperature will.

Humidity is very important to the feeling of comfort. Under normal conditions a relative humidity of 40% to 60% is ideal. As the ambient temperature rises, the body attempts to achieve a lower temperature by sweating. The sweat will evaporate and thus lower the skin surface temperature. The higher the relative humidity, the less sweat will evaporate. Therefore, as temperature rises, it is desirable to maintain lower humidities.

Air motion is also important to the feeling of comfort. The desirable velocity in normal situations for individuals who are moderately active and normally clothed is between 30 and 50 feet per minute. When velocities are too high, people complain of drafts. On the other hand, reduced air motion creates a feeling of oppressive discomfort because lower thermal conductivity rates between body and air result in higher skin temperature and less body heat loss. Even when the body is sweating profusely, low air motion inhibits evaporation. A rapidly moving air stream lowers skin temperature by convection and will evaporate sweat even under conditions of high humidity. The resulting lower skin temperature makes the body feel more comfortable. Drafts at ankle level can be 4°F cooler than at neck level and still be equally tolerable.

The basic criteria for room air movement may be obtained from the curves shown in Figure 1.

The Art of Comfort Ventilation

To maintain ideal comfort conditions in a space, ambient temperature, air movement, and humidity must meet design criteria. Heat losses in winter and heat gains in summer must be controlled. Sufficient "conditioned" air must be introduced unobtrusively into the space to mix with room air so that the resulting diluted conditions meet comfort requirements. The usual method is to supply air through circular or linear ceiling diffusers. Wall or floor grilles are often used in residences. Heating or cooling devices located in the space, supply air through specially designed outlet grilles. The art is to supply the air so that there will be no objectionable drafts in the occupied zone. High velocity streams of conditioned air should be supplied outside this zone, in the space one foot from the walls and above six feet from the floor.

The desired room temperature may be maintained by varying the volume of air supplied in response to a thermostat. This will be chilled air to cool or hot air for heating.

Alternatively the volume of air supplied can remain constant and only its temperature varied in response to load conditions.

Effect of Drafts on the Feeling of Comfort

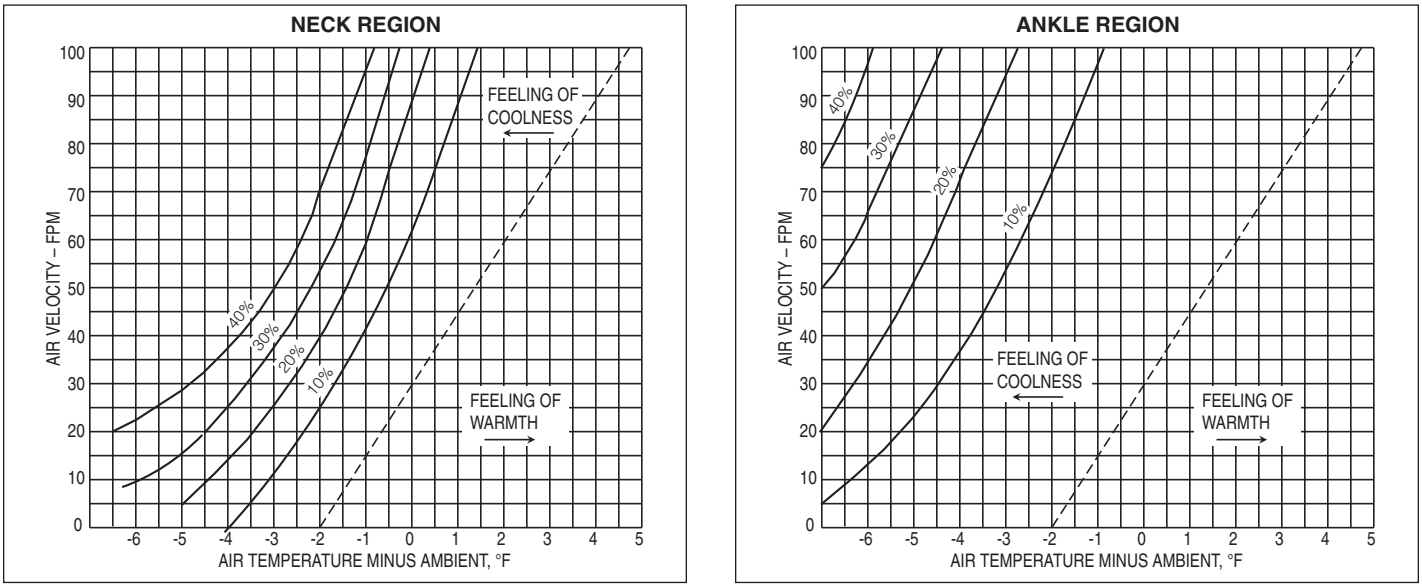


Fig. 1. Percentage of Occupants Objecting to Drafts in Air Conditioned Rooms.

ISOTHERMAL JETS

Isothermal Free Air Jets

In order to perform this task of draft free ventilation we must first learn how high velocity air jets behave. An isothermal jet is a jet of air at the same temperature as the ambient air into which it is being introduced.

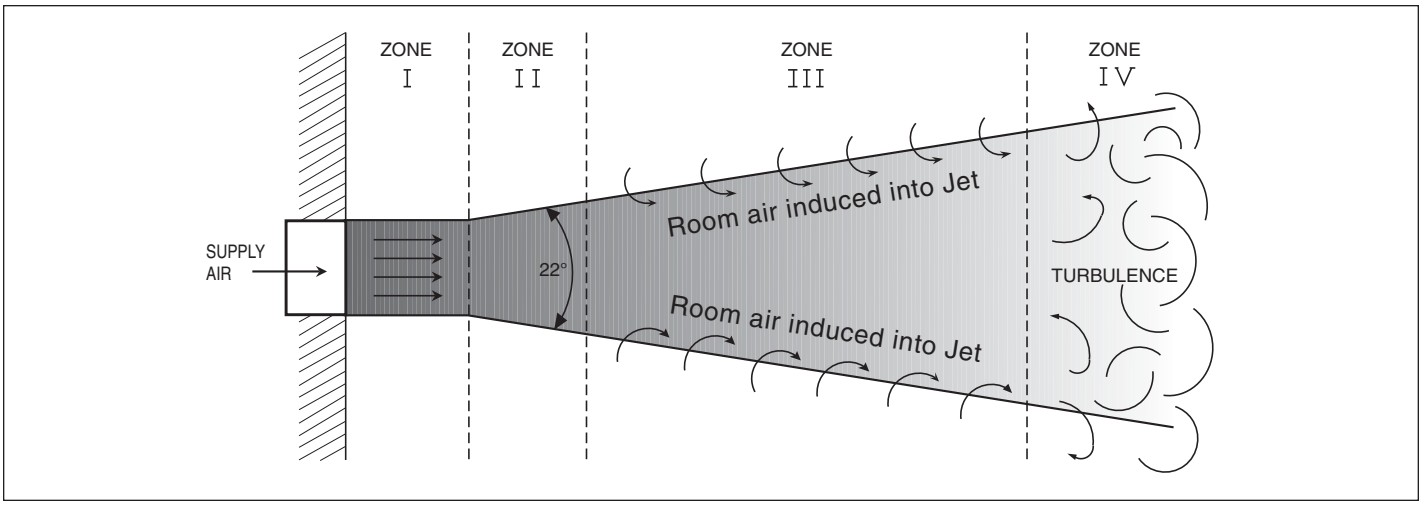


Fig. 2. Zones of Expansion of an Isothermal Jet.

For isothermal air jets, the relationship between average outlet face velocity and distance from the outlet has been shown to change as the jet progresses through four characteristic zones.

Zone I: A short zone, extending to about 4 diameters from the outlet, in which the centerline velocity remains practically unchanged.

$$Vx / Vo = \text{constant} \quad (1)$$

Zone II: A transition zone, extending to about eight diameters for round outlets, or for slots of large aspect ratio, to a distance of approximately the width multiplied by four times the aspect ratio. In this zone, velocities vary inversely to the square root of the distance from the outlet.

$$Vx \propto = \frac{1}{\sqrt{X}} \qquad (2)$$

Zone III: A long zone of turbulent flow where the jet expands as it draws room air into it. It may be 25 to 100 diameters long. In this zone, velocity varies inversely with the distance from the outlet.

$$Vx = \frac{K\ Vo\sqrt{Ao}}{X} \qquad (3)$$

or

$$Vx = \frac{K\ Qo}{X\sqrt{Ao}} \qquad (4)$$

Where: K = Proportionality constant.
Vx = Centerline velocity at distance X from outlet.
Vo = Outlet velocity.
Ao = Area of primary air stream (outlet) at the Vena Contracta.
X = Distance from outlet.
Q = Supply airflow rate (cfm).

Zone IV: A terminal zone in which the maximum velocity decreases rapidly to a velocity below 50 fpm and becomes a rolling mass of air at a temperature differential of about 1° to 2°F above or below room temperature, depending on whether the air jet is heating or cooling.

Air velocity at distance X from the outlet is approximately:

$$Vx = \frac{0.8\ K\ Qo}{X\sqrt{Ao}} \qquad (5)$$

For Non-isothermal Jets at Terminal Velocities Below 150 fpm

K =	Free openings, round or square	5.8
	Rectangular slots aspect ratio (< 40)	5.0
	Radial slots (use X / H instead of X $\sqrt{Ao}$)	3.9
	Grilles & Grids (> 40% Free Area)	4.8
	Perforated panels	4.0

Performance of Non-isothermal Jets

Formulas for isothermal jet behavior have been determined for jets projected into a space where the space air temperature is the same temperature as that of the jet. In normal heating, ventilating and air conditioning installations the temperature conditions are non-isothermal; that is, the temperature of the supply air jet is higher or lower than the temperature of the air in the space into which it is projected. The K factors in non-isothermal formulas have been adjusted to suit actual conditions.

COANDA EFFECT

Coanda Effect

The techniques of modern comfortable draft free air conditioning would not be possible were it not for the "Coanda Effect". This refers to the behavior of a jet of air on a flat surface. If the jet hits the surface at an angle less than 40 degrees, it will hug the surface, whether it be a soffit, a wall, or ceiling and progress along it. This is why air flowing from a side wall supply outlet 12" below the ceiling, will jump up to the ceiling and cling to it as it progresses across the room. Supply air from ceiling diffusers works in the same way.

The phenomenon is due to the creation of a low pressure area between the jet and the surface and the reduced induction on the surface side of the jet. The "Coanda Effect" increases the throw for all types of outlets and reduces the drop for air projected horizontally as, for example, from a ceiling diffuser.

JET INTERFERENCE

Jet Interference

A jet of air projected across a ceiling needs a clear smooth path to distribute its temporizing effect in an efficient manner. Beams, light fixtures, or architectural features, which interfere with the flow of the jet stream, will deflect it into the occupied zone. This not only causes uncomfortable drafts, but it also prevents the air conditioning system from doing a satisfactory job.

Air Through Grilles

When a jet of ventilation air is projected into a space, it begins to expand. The edges of the jet induce room air into the jet stream. This dilutes the primary jet reducing its temperature and slowing its forward motion. When the forward motion slows to 75 to 50 fpm, called the terminal velocity, there is no longer enough energy left to push room air out of the way and the jet breaks down into a rolling mass of turbulent air.

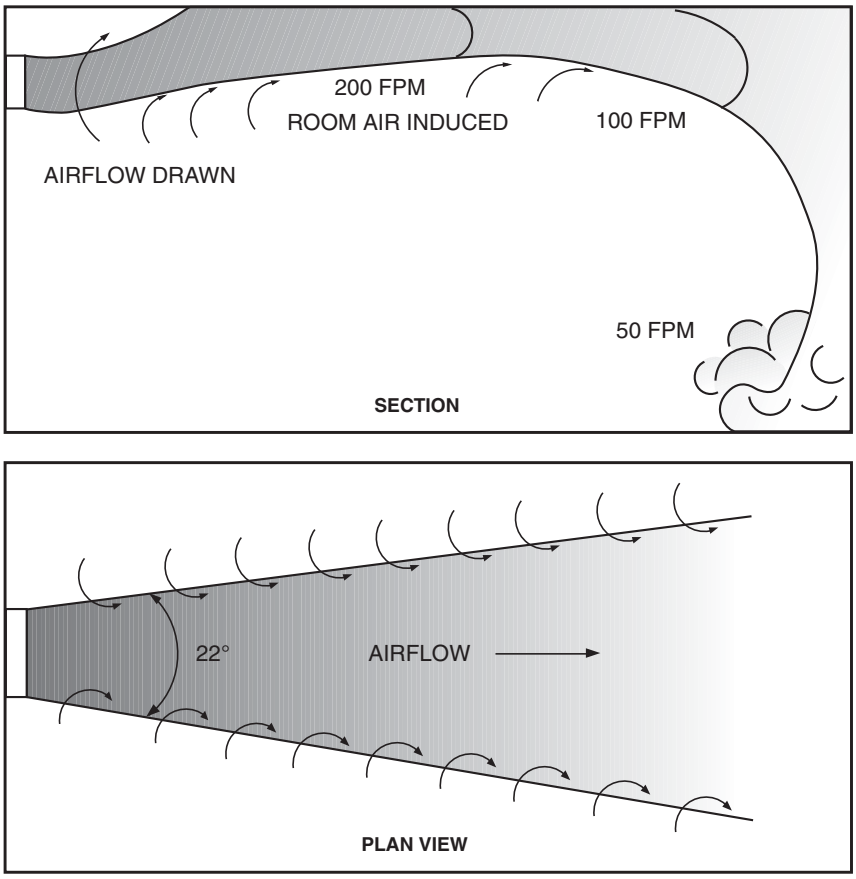


Fig. 3. A Jet of Ventilating Air from a Wall Outlet a Few Inches Below the Ceiling.

High Ceilings

Catalog data for diffuser throw is based on a 9 foot ceiling height. Diffuser supply conditions would be chosen so that throw terminal velocity of 100 fpm would occur midway between adjacent diffusers or at a wall. This will result in a room residual velocity of about 35 fpm. Where ceiling heights are above 10 feet, higher terminal velocities are required. Increase terminal velocities one foot for each foot the ceiling height is above 10 feet.

Return Air Inlets

Air return inlets affect air patterns only in their immediate vicinity. For heating, the return should be at the floor to drain off the cold air. For cooling locate the return in the stagnant zone.

Air Volume Requirements

The primary air jets supplying air to a space must contain enough energy to keep the room air mass in the occupied zone moving at a velocity of 20 to 50 fpm. Excessive velocities create uncomfortable drafts and should be avoided. Cold air is heavier than warm air and tends to fall to the floor. Warm air, being lighter, tends to rise. Because of this, pockets of stagnant air will form where room air motion is minimal, often resulting in large temperature gradients. Temperature differential near the floor, between average room air and stagnant air zones greater than 4°F, are undesirable. Higher primary air velocities will get room air moving and reduce stagnant air pockets.

Air volume of 0.75 to 1 cfm per square foot may satisfy cooling or heating loads at the low end of variable volume systems, however this may not provide enough air to prevent stuffy and stagnant room conditions. Changing the primary air temperature, higher for cooling and lower for heating, will increase supply air volumes and greatly improve comfort conditions.

At the high end of a variable volume system, interior zones may require as much as 3 cfm per square foot. Exterior zones may require more, often as high as 4 cfm per square foot. Air volumes for perimeter diffusers can vary from 20 to 200 cfm per linear foot. These volumes are governed by external wall heat transfer coefficients, wall height and infiltration rates.

Jet Temperature Change

As the jet progresses into the room, air next to the jet is drawn into it. The moving mass of air becomes more and more diluted by mixing with room air. The more it is diluted, the closer the jet temperature approaches room temperature. Temperature may be approximated by this equation:

$$\Delta tx = 0.8\ \Delta to \left(\frac{Vx}{Vo}\right) \qquad (6)$$

Where: Δtx = Temperature differential degrees F at distance X ft. from outlet.

Δto = Temperature differential degrees F at outlet.

Vx = Velocity at centerline of jet distance X ft. from outlet.

Vo = Velocity of jet at outlet.

Jet Temperature						
Δto = 20°F	Vx fpm					
Vo fpm	500	400	300	200	100	50
2000	4	3.2	2.4	1.6	0.8	0.4
1500	5.3	4.3	3.2	2.1	1.1	0.5
1000	8	6.4	4.8	3.2	1.6	0.8
500	16	12.8	9.6	6.4	3.2	1.6

Table 1. Temperature Differential - Supply Air Stream Minus Ambient Room Temperature.

THROW, SPREAD, DROP

Throw

Throw is defined as the distance from the outlet to a location where the jet velocity, or terminal velocity, is some pre-determined value; usually 150, 100, 75 or 50 fpm. At 100 fpm the jet pattern is beginning to break down. At 50 fpm the jet has entered the fourth zone and has become a rolling mass of air. Here, air temperatures are within 1.0 degrees F of room temperature.

For zone III: $$Tv = \frac{K\ Qo}{Vt\ \sqrt{Ao}} \quad (7)$$

For zone IV: $$Tv = K\left(\frac{Qo}{Vt}\right) \quad (8)$$

Where: Tv = Throw to a distance where the centerline jet velocity is V fpm.
Qo = Supply Airflow Rate (cfm).
Vt = Terminal Velocity.

Spread

The divergence of an air stream vertically and horizontally after it leaves the outlet. In a free jet the spread proceeds at 22 degrees. Vertical grille vanes are adjustable to any angle.When set to deflect the outer 1/3 of the outlet in various degree patterns, the throw is reduced.

e.g. 22 1/2° pattern reduces throw by one quarter.
45° pattern reduces throw by one half.

Drop

Drop results from the vertical spread of an air stream in combination with the tendency for warm air to rise or cold air to fall.

Total Air Drop From Sidewall Outlet in Feet

Vk Outlet Velocity fpm	Sidewall Throw In Feet													
	10		15		20		25		30		40		50	
	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F
500	3.5	4.0	5.5	6.0	7.5	8.5	9.0	10.0	10.5	13.5	15.5	18.0	18.5	23.0
750	2.5	3.5	4.0	5.5	6.0	6.5	7.0	8.0	8.5	10.5	11.5	14.5	15.0	18.5
1000	2.0	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	8.5	10.0	12.0	12.5	16.0
1250	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0	6.5	7.5	9.0	11.0	11.5	13.5
1500	1.5	2.0	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.5	9.5	10.5	12.5
1750	1.0	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.5	8.0	9.0	10.0	11.5
2000	1.0	1.5	2.5	3.0	3.5	4.0	4.0	4.5	5.0	6.0	7.5	8.5	9.5	10.5

Table 2. Drop Due to Spread Plus Cold Air Fall.

Drop can be significantly lessened by projecting the air path upward. This is done by setting horizontal bars at 15° to 20° up.

	Throw in Feet						
	10	15	20	25	30	40	50
Drop Reduction in Feet	2.5	3.5	4.5	6.0	7.0	9.0	11.5

Table 3. Drop Correction Using 15° to 20° Upward Deflection Bars.

Effective Area

The effective area (Ak) of an outlet is not necessarily the area of the duct from which the air is projected. For grilles, the frame and vertical and horizontal bars restrict the opening. The spaces between bars are not completely filled with air. The sum of all these openings multiplied by the coefficient of contraction gives the effective area. The effective area, Ak, for each product is obtained by laboratory tests and will be found in the manufacturer's catalog.

$$Ak = \frac{Qo}{Vk} \qquad (9)$$

Where: Ak = The outlet effective area in sq. ft.
Qo = Quantity of air flowing, cfm.
Vk = Outlet velocity measured in a specified manner.

Entrainment Ratio

Also called the induction ratio, is the increased volumetric flow at a distance X from the face of the outlet, divided by the discharge volume.

$$\frac{Qx}{Qo} = C\ \frac{Vo}{Vx} \qquad (10)$$

$$C = \left(\frac{X}{K\sqrt{Ao}} \right) \qquad (11)$$

Where: Qx = Flow rate at section X feet from outlet.
Qo = Flow rate at outlet.
C = Entrainment coefficient
- 1.4 for slots.
- 2.0 for free round jets.

Vo = Outlet velocity, fpm.
Vx = Centerline velocity at X, fpm.
K = See equation 4.

Jet Behavior

- Free jets tend to become circular regardless of the original shape of the outlet, whether round, rectangular or a long slot. Jets hugging the ceiling or wall tend to become semi-circular.
- Wall air outlets within one foot of the ceiling project an air pattern which hugs the ceiling.
- Static room air drifts toward the fast flowing primary air stream where it is drawn into the expanding jet.
- The 'Coanda' surface effect propels the air further than if it were a free jet in space.
- Warm air has a buoyant effect and tends to rise.
- Cold air is heavier than warm room air and tends to fall.
- To reduce throw and drop, increase the spread.
- More outlets with less air each, will reduce throw and drop.
- Adjust vertical grille vanes to create a wide pattern and reduce throw. This reduces room temperature gradients, floor to ceiling.
- To achieve a wide pattern with shorter throw from a side wall diffuser, direct the air up to the ceiling at 45°.
- To reduce room air temperature gradients from floor to ceiling, increase primary air volumes or supply velocities.
- A spreading pattern produces shorter throws and thinner air stream with greater induction of room air.

Effect of Supply Air Patterns on Room Air Motion

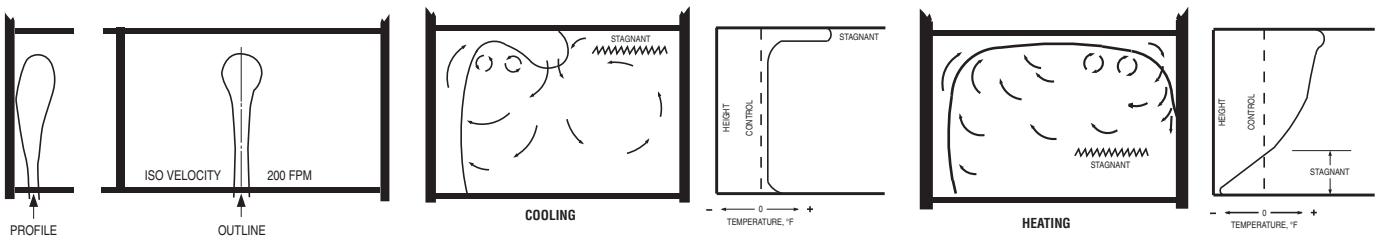


Fig. 4. Non-spreading Vertical Upward Jet. Perimeter Floor Grille.

• A long throw reaching far into the room. Room air is drawn to the jet in the center of the room.

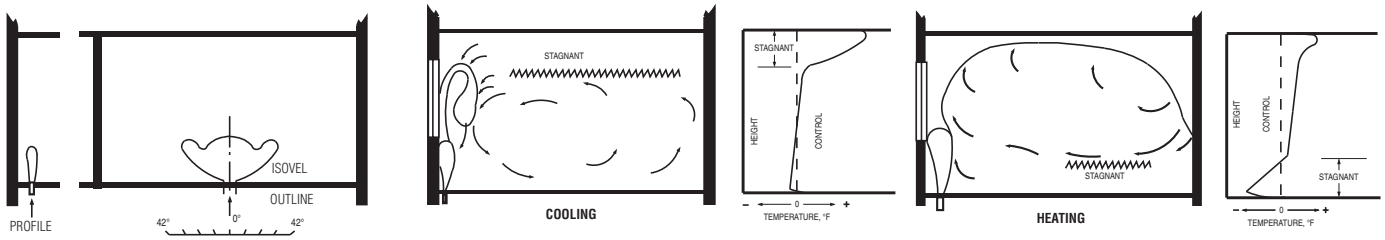


Fig. 5. Spreading Vertical Upward Jet. Floor Diffuser.

• When heating, large temperature variations occur near the floor in the stagnant zone.

• A spreading pattern provides a thinner air stream with greater room air induction, but does not project as far into the room. The tendency to drop is also reduced.

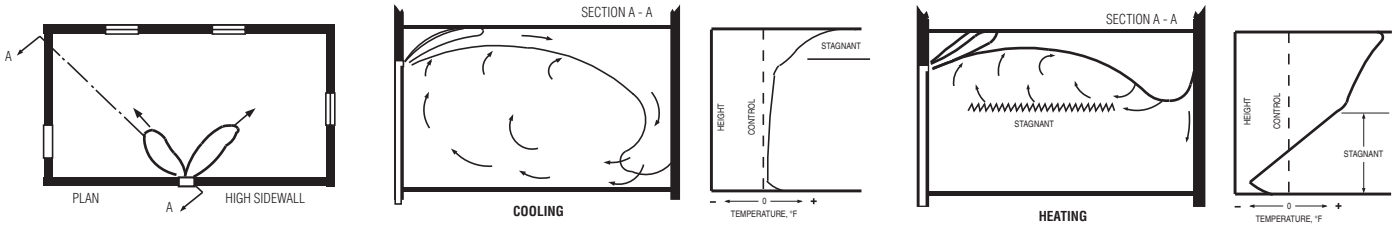


Fig. 6. Spreading Horizontal Projection at Ceiling Level. High Sidewall Grille.

• The air pattern will be across the ceiling and down the wall to the floor. When heating, this results in a smaller stagnant zone with more even temperatures in the occupied zone.

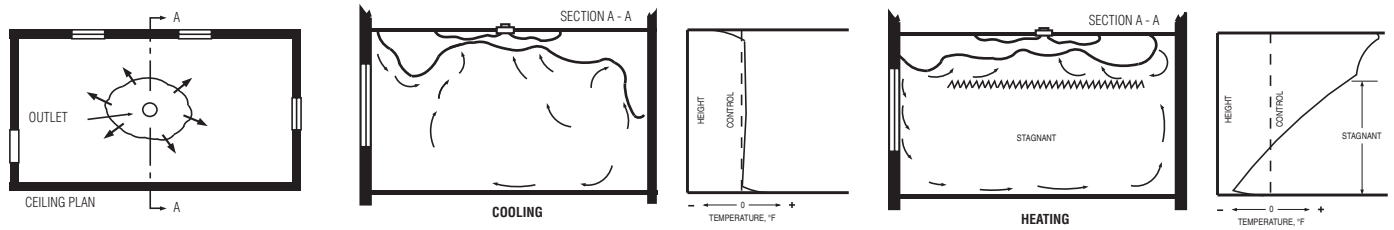


Fig. 7. Radial Horizontal Projection. Ceiling Diffuser.

• Ideal for year round cooling. Thinner air pattern gives greater spread and more uniform space temperatures.

• Wide temperature variations when heating.

Heating From Above

Heating a space by the downward projection of hot air from the ceiling is not recommended. However, if it becomes necessary, the designer should be guided by the following notes:

• Where possible, heat outside walls and windows by radiation, floor outlets, or under window units. Heat should be supplied at the location where it is lost to the outside.

• Temperature of downward projected hot air should not be more than 20° to 25°F higher than room temperature.

• When projecting air horizontally from slots, locate the slot several feet from a cold wall so that the jet 150 fpm throw distance occurs at the junction of the ceiling and wall. The air envelope will spread over the wall as it progresses toward the floor. The terminal 50 fpm throw point cannot be easily determined. It may occur close to the floor, but because of the buoyancy of the warm air it will be much less than the catalog throw data for cold air.

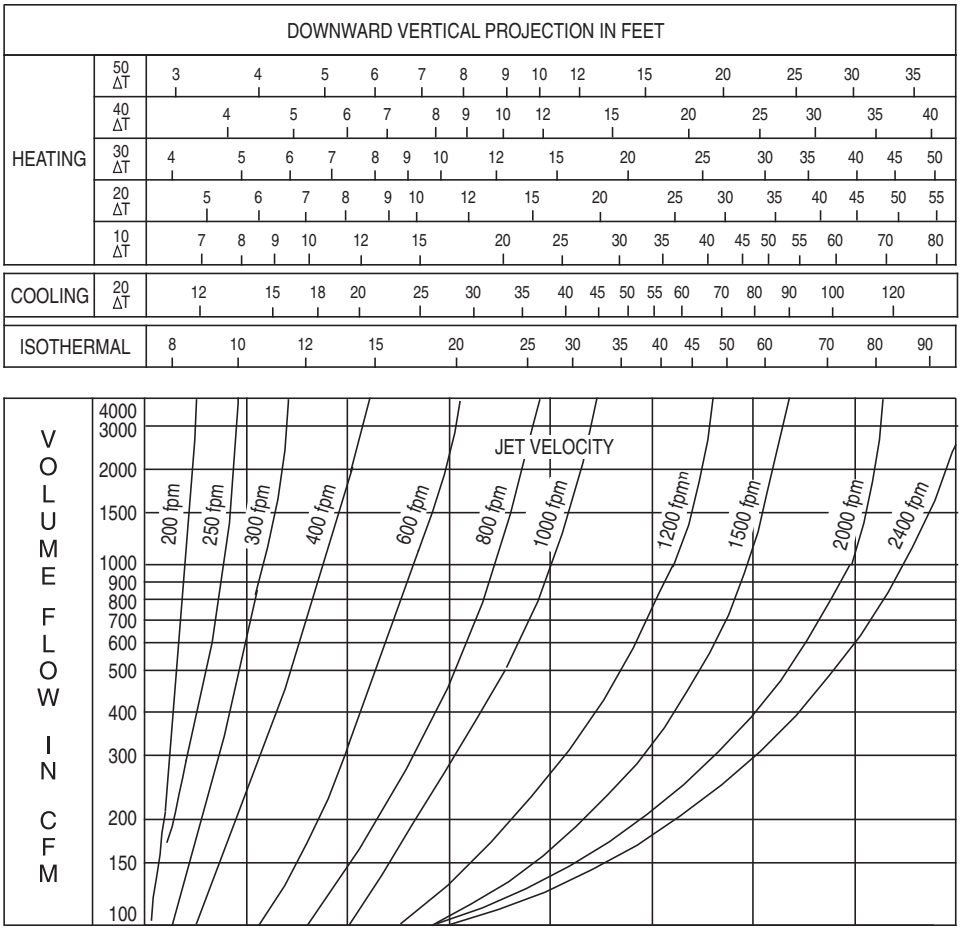
• Consideration must be made for outlet performance during the summer cooling season. Outlet throw to 150 fpm is the same as for heating, i.e., equal to the distance to the wall. The distance from 150 fpm to 50 fpm should be the same as approximately the distance from ceiling to the floor.

• A continuous slot directed toward the wall should be broken into active and inactive sections to allow the warm air to spread over the wall surface.

Table 4. Location of Inactive Sections of Slot Diffuser.

Length of Active Sections in Feet	1	5	10
Length of Inactive Sections in Feet	1	2	3

Fig. 8. Downward Projection of Hot Air from Grilles.



Air Temperature and Direction

A temperature of 80°F is recommended when air is blowing directly on the subject. Air should be directed to the front upper torso.

People's tolerance to air temperature, air motion, and humidity varies a great deal. Provisions should be made for the individual to control air direction and velocity.

Outlet Location

For local area ventilation, outlets should be at about the 10 foot level. For spot cooling the outlet should be at about the 7 foot level and as close to the subject as is practical. The closer to the subject the less room air is induced into the jet stream.

High Velocity Jets

High outlet velocities are usually chosen in the 1000 to 2000 fpm range, although in extremely uncomfortable conditions velocities of up to 4000 fpm may be directed at a worker, and only for very short periods of time.

Higher velocities require higher pressures. This will create higher noise levels and induce more hot local air into the jet.

Discharge Volume

For spot cooling, volumes between 1500 and 5000 cfm per outlet are frequently used. For large areas volume may exceed 10,000 cfm per outlet. When the supply outlet is far away from the work station large amounts of room air are induced into the primary air, making it less effective. The longer the throw the greater the air volume required.

Directional Control

There should be some means of controlling the direction of the air for the following reasons:

- Seasonal: up in winter, down in summer.
- Change from one work station to another.
- Direct the air away from the product or process.
- Personal preference of the worker.

Individual volume control units are desirable for each outlet. Their use simplifies balancing of the system and ensures that the balance is not changed when one outlet is adjusted.

Special Features Are Available

- Insect screens or bird screens.
- Filter grilles.
- Special fastenings for quick and easy grille removal.
- Concealed fasteners and tamper-proof screws for security.
- Heavy duty security grilles.
- Stainless steel construction for corrosive atmospheres.
- Fire dampers.

INDUSTRIAL VENTILATION

Industrial Ventilation

Maintaining satisfactory working conditions in industrial situations often requires special treatment. A common problem is how to improve the environment for workers who are subject to high temperatures or noxious fumes. There are generally three problem categories:

(a) The hot and dry environment where the worker is subject to sensible and radiant heat exposure. An exposed worker will sweat profusely but heat loss by evaporation cannot match the high radiant heat gain the worker is receiving. Examples are found in the steel industry, rolling mills, open hearth furnaces, foundries and forging operations.

(b) High ambient temperatures due to weather, aggravated by the low air motion in the building. Examples are warehouses, and the light manufacturing industries where the working area is so large that it is not practical to air condition it. The worker cannot get cool enough by sweating because of high humidity and lack of air motion.

(c) Warm moist environments where the worker is subject to latent heat from wet processes. Examples are dye houses, textile mills, laundries and tanneries. The high humidity inhibits the evaporation of sweat and prevents the worker from keeping cool by natural processes.

Heat Shields

For hot, dry exposure use heat shields to reduce radiant heat loads. Where possible lower the temperature of hot objects by insulation, water cooling, or shielding. Heat reflective clothing is used with success. Install exhaust hoods to draw off process heat. Cooler air will flow over the worker as it progresses toward an exhaust hood.

Local Ventilation

When it is impractical to supply treated air in volumes large enough to control temperature, humidity, or air motion, the best method is to blow air directly on an individual worker or into a work station. The worker is now cooled by convection and the evaporation of sweat.

Supply air to the desired location by ducts or use "man cooler" portable fans.

Treated air is supplied at the 8 to 12 foot level to displace air heated by machines, processes, lights and people. No attempt is made to treat air above or outside the chosen work area.

In some cases the best method is to supply conditioned air to an enclosure which surrounds the worker.

Spot cool by blowing high velocity air directly on the worker.

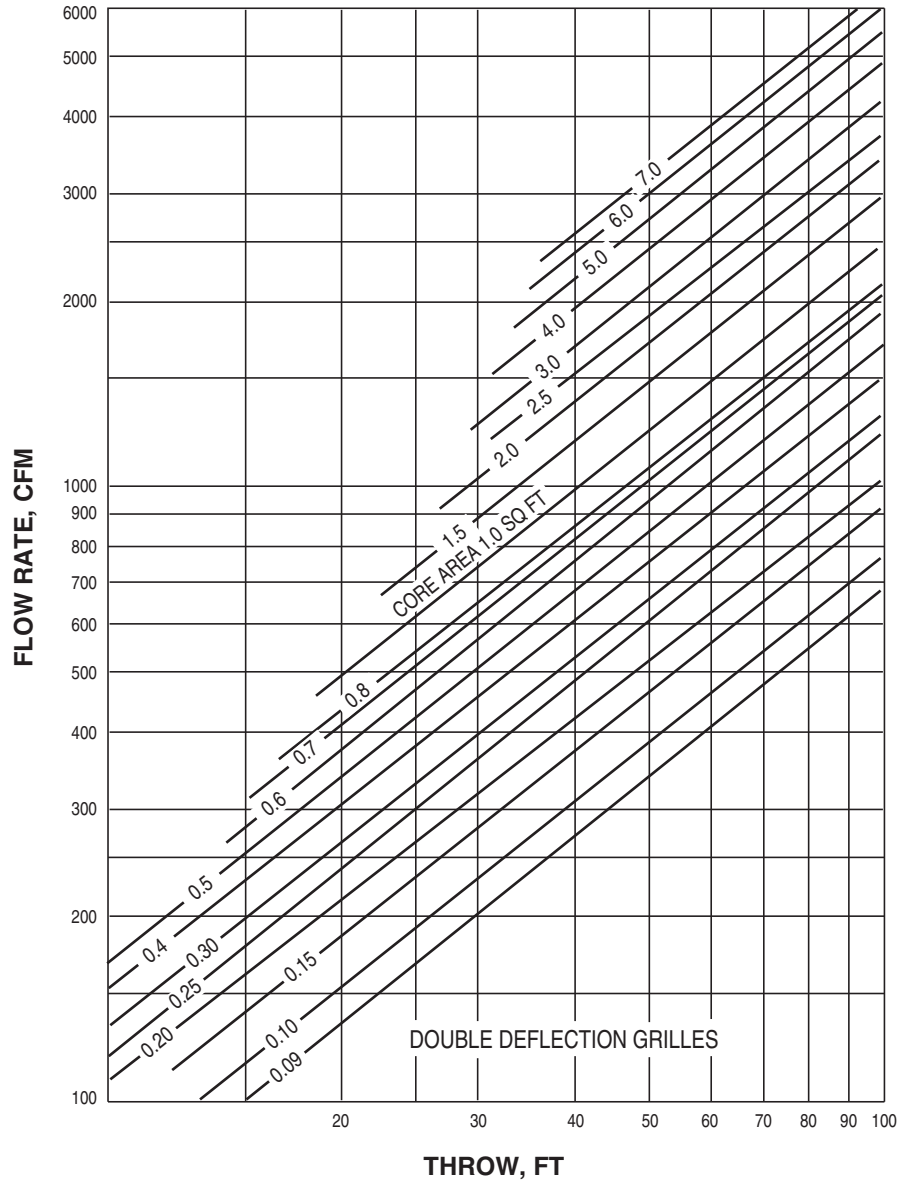
Tolerable Velocities

Air velocities from 50 to 80 fpm are acceptable in areas of light activity.

Calculated jet velocity is the centerline velocity of the jet. The average velocity away from the center of the jet will be much less.

It is undesirable to blow air directly on a worker at a velocity greater than 200 fpm for a long period of time.

Double Deflection Grilles and Registers
Supply Grille and Register Selection for Commercial Applications



THROW IS BASED ON 75 FPM TERMINAL VELOCITY. (Vt)

Fig. 9. Grille and Register Selection for Commercial Applications – Double Deflection Grilles with a Damper, 3/4" Blade Spacing.

For other terminal velocities multiply by factor.					
Vt 50	**Vt 75**	**Vt 100**	**Vt 150**	**Vt 200**	**Vt 300**
1.5	1.0	0.75	0.50	0.375	0.25

Vt = Terminal Velocity.

Adjustable Vane Supply Single and Double Deflection Grilles

Outlet Area In Square Feet

Example: Listed size 28 x 28 @ 0°, Ao area factor = 3.54 square feet.

LISTED WIDTH	LISTED HEIGHT																						AO		
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	0°	22.5°	45°
	8		6																						0.14	0.12	0.10
	12	10	8																						0.18	0.16	0.14
	16	12	10																						0.24	0.21	0.18
		14		8																					0.26	0.22	0.20
	18		12																						0.29	0.25	0.22
			14	10																					0.34	0.30	0.26
	24		16	12																					0.39	0.34	0.30
	26				10																				0.41	0.36	0.31
	30		18	14																					0.44	0.38	0.33
		24	20		12																				0.50	0.44	0.38
	36	28	22	16																					0.54	0.47	0.41
	38		24	18	14	12																			0.61	0.53	0.46
			30		18																				0.77	0.67	0.58
			34	24	20	16	14																		0.84	0.73	0.64
			38	28	22	18	16																		0.93	0.81	0.71
				30	24	20																			1.03	0.90	0.78
						22	18	16																	1.12	0.97	0.84
				36	30	24	20	18																	1.26	1.09	0.95
					32	28	24	20	18																1.43	1.24	1.08
					36	30	26	22	20																1.58	1.37	1.19
						32		24																	1.70	1.48	1.29
									22	20															1.77	1.54	1.34
						36	30	26	24	22															1.90	1.65	1.44
						40		30	26	24	22														2.16	1.87	1.63
						42	36																		2.22	1.93	1.68
							40	34	30		24														2.41	2.09	1.82
								36	32	28	26	24													2.58	2.24	1.95
							46	40	36	32															2.92	2.53	2.21
							48					28	26												3.04	2.64	2.30
									40	36	32	30													3.24	2.81	2.46
									42				28												3.39	2.94	2.57
										40	36		30	28											3.54	3.07	2.68
										42				30											3.79	3.29	2.87
										44	40	36													3.90	3.39	2.96
										48		38	34		30										4.07	3.53	3.08
											46	42		36											4.57	3.96	3.46
													40			32									4.65	4.04	3.52
														38	36										4.91	4.26	3.72
												48		42	38	36	34								5.23	4.54	3.96
													48		40	38	36								5.58	4.84	4.22
														46	42		38	36							5.91	5.13	4.48
																	42		38						6.60	5.72	5.00
															48		44	42							6.91	5.99	5.23
																48	46		42	40					7.32	6.35	5.55
																		48	46	44	42				8.09	7.02	6.12
																					46	44			8.89	7.71	6.73
																							46		9.72	8.44	7.36
																								48	10.60	9.20	8.03

Table 5.

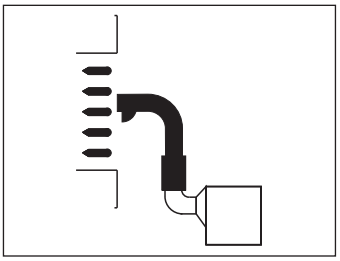
Grille Air Measurement

cfm = AoVo (12)

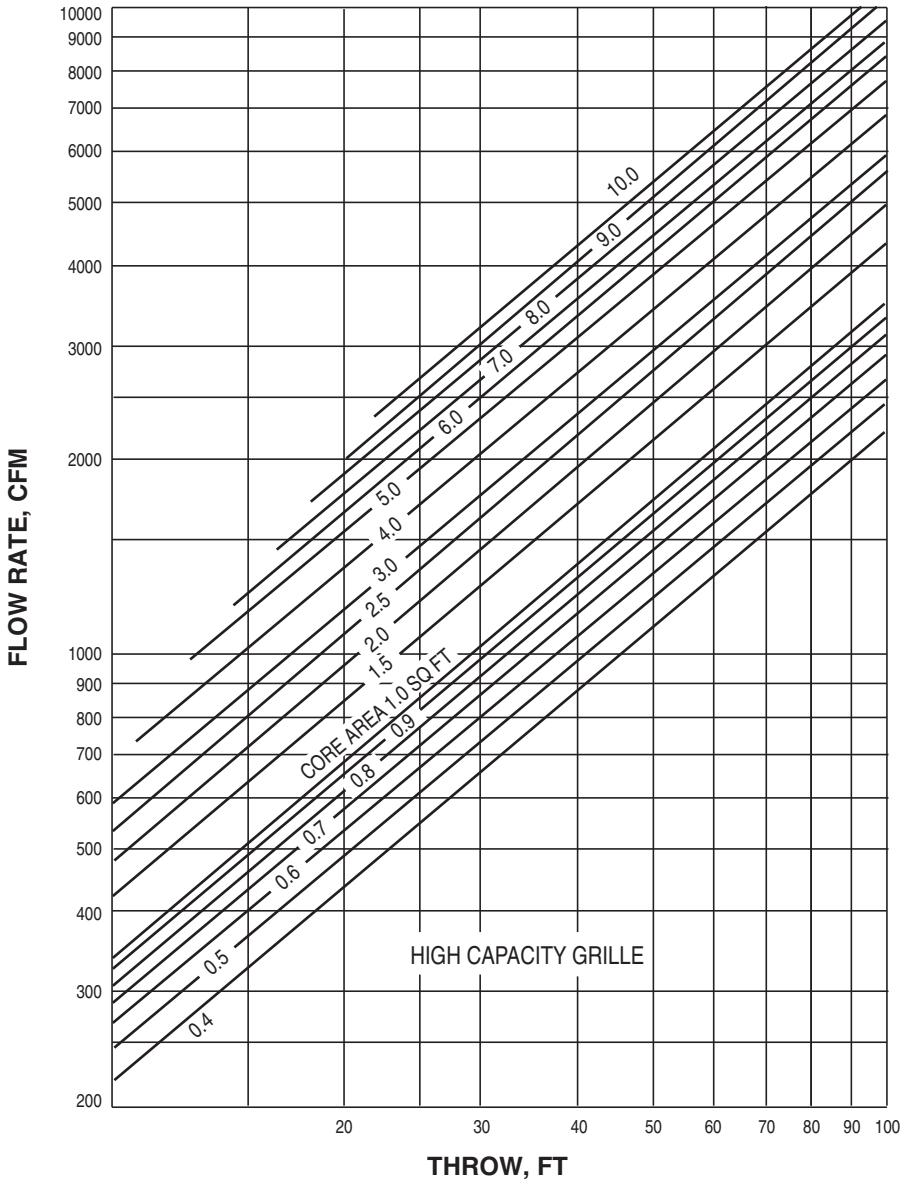
Ao = Outlet Area, sq. ft.

Vo = Outlet Velocity, fpm.

Fig. 10. Using 2220A Velometer Tip to Measure Vo Outlet Velocity.



High Capacity Grilles and Registers Supply Grille and Register Selection for High Capacity Industrial Applications



THROW IS BASED ON 75 FPM TERMINAL VELOCITY. (Vt)

Fig. 11. Grille and Register Selection for Industrial Applications – Double Deflection Grilles with a Damper, 1 1/2" Blade Spacing.

For other terminal velocities multiply by factor.				
Vt 50	**Vt 75**	**Vt 100**	**Vt 150**	**Vt 200**
2.0	1.3	1.0	0.7	0.5

Vt = Terminal Velocity.

Fixed Vane Return Single Deflection Grilles

Outlet Area In Square Feet

Example: Listed size 28 x 28,
Ao area factor = 4.85 square feet.

LISTED WIDTH	LISTED HEIGHT																						AO
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
	8		6																						0.23
	12	10	8																						0.30
	16	12	10																						0.37
		14		8																					0.40
	18		12																						0.45
	24		16	12																					0.59
	26				10																				0.62
	28		18	14																					0.67
		24	20	16	12																				0.74
	38		24	18	14	12																			0.89
			34	24	20	16	14																		1.22
			38	28	22	18	16																		1.34
				30	24	20																			1.49
				30		22	18	16																	1.58
				36	30	24	20	18																	1.78
					32	28	24	20	18																2.01
					36	30	26	22	20																2.23
						36	30	26	24	20															2.48
							36	30	26	24	22														3.00
							40	34	30		24														3.34
								36	32	28	26	24													3.56
							46	40	36	32															4.01
							48					28	26												4.19
									40	36	32	30	28												4.46
										40	36		30	28											4.85
										44	40	36		30											5.35
										48		38	34		30										5.57
											46			38	36	32									6.34
												48		48	38	36	34								7.13
													48	46	42		38	36							8.02
															48		42		38						8.94
																48	46	42		40					9.90
																		48	46	44	42				10.92
																					46	44			11.98
																							46		13.10
																								48	14.26

Table 6.

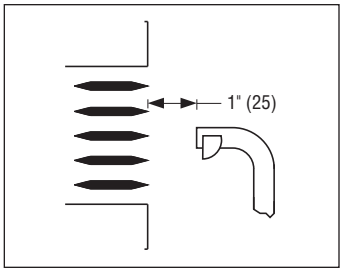
Grille Air Measurement

cfm = AoVo (13)

Ao = Outlet Area, sq. ft.

Vo = Outlet Velocity, fpm.

Fig. 12. Using 2220A Velometer Tip to Measure Vo Outlet Velocity.



NOISE CRITERIA

Noise Level in a Ventilated Space

Noise in a ventilated space may come from a wide variety of sources. Noises in the room can result from air flowing through ceiling diffusers or sidewall grilles. Air outlets also radiate noise generated in the duct system, such as fan noise, air flowing around dampers, turning vanes, or through terminal units. Noise from outside the room may be machinery noise, or traffic noise. Our interest in this discussion is limited to the noise generated by grilles, ceiling diffusers, and noise emanating from air supply or return outlets.

It is generally assumed that it is desirable to have completely silent air systems. Although this is necessary for some situations, such as concert halls or live theatre, it is not always the case. For example, in office areas without suitable masking noise, it is often necessary to provide background music. A comfortable background noise level will mask sudden disruptive noises such as from traffic or garbage collection. Another important effect of background noise is that it provides a degree of speech privacy so there is no need to talk behind closed doors.

The ideal background noise should not be loud enough to interfere with normal speech. It should be well balanced, not all high pitched sounds or all low sounds.

For example, a low duct noise will complement higher octave diffuser noise and provide a balanced pleasant acoustic background.

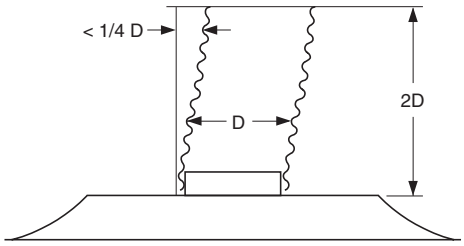
Noise from the duct system may be falsely attributed to the performance of the diffuser. Removal of the diffuser core quickly determines whether the offending noise is from the duct system or from the diffuser. Duct system noise should be 5 dB less than the diffuser dB rating.

The level of noise is measured in decibels. Air outlet manufacturers catalog noise values in NC numbers for air flowing through their products. The more air handled, the higher the NC value. It is generally assumed that an average office or ventilated space will have a room attenuation of 10 dB so suppliers' catalogs give product NC numbers as Sound Pressure Level with the 10 dB already deducted.

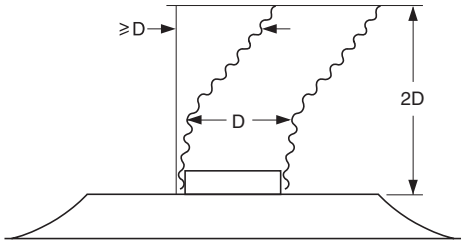
Diffuser Inlet Conditions

Performance data as shown in this catalog is obtained in accordance with ANSI/ASHRAE Standard 70-2023. This standard provides the laboratory method for testing and rating the performance of air outlets and inlets. The standard does not however, take into effect the real world conditions often encountered in typical installations. For example, it assumes a uniform velocity distribution throughout the grille or diffuser neck. This is obviously not always the case in practice, with the use of flexible duct, elbows, inlet dampers, etc... the velocity could vary substantially. These conditions could cause greatly increased turbulence and substantially higher sound levels than those indicated by the tested catalog data. Also, the sound levels are for only one diffuser, multiple diffusers in the same area will increase the resultant sound level.

Inlet conditions are crucial in the proper performance of an outlet. With the common use of flexible duct, this is often overlooked and can result in significant increases in sound levels. If the flexible duct connection is misaligned less than 1/4 the diffuser neck diameter over a connection length equal to twice the inlet diameter, no significant change in sound levels will occur. However, if the connection is misaligned equal to or more than the neck diameter over a distance of twice the inlet diameter, the resultant sound levels can increase by as much as 12 dB.



Good Inlet Conditions
(Sound levels as catalogued)



Poor Inlet Conditions
(Sound levels up to 12 dB higher than catalog)

Balancing dampers are another significant source of noise in any HVAC system. Ideally, balancing dampers should be located as far from the air outlet as possible, (5 to 10 duct diameters), and acoustic duct should be used between them. The use of volume dampers on diffuser inlets can significantly increase sound levels due to the effect on the air turbulence between the damper and the diffuser as well as the resultant increase in pressure drop.

Diffuser Damper Sound Correction

The following table provides an addition to be added for ceiling diffusers with neck mounted opposed blade dampers.

Table 7.
Diffuser Damper Sound Correction.

	Pressure Drop – In. w.g.		
Damper throttling effect	0.05"	0.15"	0.25"
Approximate damper opening	3/4	2/3	1/2
NC add to single outlet sound rating	5	10	15

The following table provides an addition to be added for linear diffusers based on the damper pressure ratio. This is the pressure drop across the partially closed damper divided by the pressure drop across the fully open damper.

Table 8. Decibels to Be Added to Diffuser Sound Rating to Allow for Throttling of Volume Damper

	Damper Pressure Ratio					
	1.5	2	2.5	3	4	6
Location of Volume Damper	**dB to be added to Diffuser Sound Rating**					
In neck of linear diffuser	5	9	12	15	18	24
In inlet of plenum of linear diffuser	2	3	4	5	6	9
In supply duct at least 5 ft. (1.5 m) from inlet plenum of linear diffuser	0	0	0	2	3	5

Air extractors are another commonly used accessory that must be applied properly in order to avoid a detrimental effect on the system design. They should only be used when the duct is wide enough to allow the device to open to its maximum position without causing undue restriction of the airflow in the duct. Otherwise, they could limit downstream airflow, increase duct velocity and increase sound levels.

Equalizing grids can have positive impact on diffuser inlet conditions and reduce the resultant sound levels if they are used properly. A poor inlet condition that results in a noise problem can sometimes be helped substantially by using equalizing grids in the neck of the diffusers or at the branch take off to the diffuser. However, an equalizing grid will not help a good inlet condition and can in fact add 2 - 3 dB to the diffuser sound levels in ideal conditions.

Flow generated noise should be minimized wherever possible by locating elbows or branch takeoffs at least 4 to 5 duct diameters from each other. This will also help to reduce sound transmission from one room to another through the duct.

Sound Pressure Level

The noise we hear in a space is not the absolute "Sound Power Level" noise generated by these sources, but it is the Sound Power Level minus the attenuating value of the space. This is called "Sound Pressure Level". The space attenuation is due to the sound absorptive value of ceiling tiles, walls, drapes, windows, floor, rugs, furniture, people, etc...

Sound Pressure Levels for Evenly Distributed Ceiling Diffusers

Where there are four or more similar ceiling diffusers, evenly distributed about the room, Lp may be calculated using formula 15. Where there are rows of linear diffusers, use the sound power level of a single section for Lws and the number of sources as the number of sections in the array.

Lpt, 5 ft. = Lws - 5 log X - 28 log h + 1.3 log N - 3 log f + 31 dB (15)

Where: Lpt = The average sound pressure level (+ or - 1 dB) in a plane 5 feet off the floor, in dB re 20 µPa.

- Lws = Sound power level of a single outlet (outlet sound power plus duct noise and any noise created at the air terminal) in dB re 10^{-12} watts.
- X = Ratio of floor area served by each outlet to the square of the ceiling height.
- h = Ceiling height in feet.
- N = Number of ceiling outlets in the room (4 or more).
- f = Octave band center frequency in Hz.

Estimating Sound Pressure Levels

Lp = Lw - 5 log V - 3 log f - 10 log r + 25 dB (14)

Where: Lp = Room sound pressure level at a reference location in dB re 20 µPa.

- Lw = Source sound power level in dB re 10^{-12} watts.
- V = Room volume in cubic feet.
- f = Octave band center frequency in Hz.
- r = Distance from the sound source to reference location in feet.

This equation is for a single noise source in the room. The total sound pressure level is obtained by adding the Lp at r distance from the reference location for each additional noise source, on an energy basis.

Fig. 13. Combining Two Sound Levels.

Table 9. Combining Several Sound Levels.

Number of Multiple Outlets	2	3	4	5	6	8	10
Increase in Noise Level, dB	3	5	6	7	8	9	10

RC (Room Criterion) Curves

It has been the practice to use NC curves to specify the noise level in an occupied space. This simple one number method of specifying acoustic conditions has been used successfully for many projects. However, there are some HVAC duct values specified which, although the installation may meet the NC values indicated, are still not acceptable. It has been found that predominant low octave band noise which does not exceed the specified NC curve can generate a low rumble. This is difficult if not impossible to correct once the installation is complete. At the other end of the scale, a predominant high octave band noise may follow the specified NC curve but will generate a hissing sound which can not be tolerated. To try to prevent system designs which result in such conditions, a revised set of curves has been developed called RC curves.

Chapter 42 of the ASHRAE Fundamentals Handbook recommends the use of RC curves in the design of air conditioning ventilating systems as a tool to help prevent acoustical disasters. RC curves eliminate the 8000 Hz octave band but use the 31.5 Hz octave band and the 16 Hz band to avoid the possibility of low frequency fan noise. An RC designation is based on a speech interference rating, a dB rating and a letter of the alphabet to describe the quality of the sound.

Determining an RC Noise Rating

1. Plot the octave band sound pressure level spectrum on an RC chart.
2. Calculate the Speech Interference Level (SIL) by taking the arithmetic average in dB of the sound level reading in the 500, 1000, 2000 Hz octave bands.
3. Mark the SIL on the 1000 Hz band line.
4. Draw a line with a slope upward to the left of 5 dB per octave through the SIL point, from the 4000 to 31.5 Hz octave band lines. This has established a reference line for evaluating the sound quality of the sound spectrum.
5. Draw a line from the 500 to 31.5 Hz octave band line parallel to, and 5 dB above, the line drawn in step 4. Draw a second line from the 1000 to 4000 Hz octave band 3 dB above the lines drawn in step 4. If the sound spectrum does not extend above these boundary lines the RC noise rating is labeled neutral (N).
6. The RC noise rating is the value of the SIL point on the 1000 Hz band line.
7. The quality of the sound can be determined by the manner in which the sound spectrum goes beyond the boundary limits. This is specified alphabetically as follows:

Neutral Spectrum (N)
The plotted levels in the octave bands must not exceed the levels of the boundary lines constructed as above. Example Fig. 14.

Rumbly Spectrum (R)
The levels of the octave bands less than 500 Hz exceed the lower octave band boundary line levels. Example Fig. 15.

Hissy Spectrum (H)
The levels in the octave bands higher than 1000 Hz exceed the higher octave band boundary line level. Example Fig 16.

Tonal Spectrum (T)
A sharp peak in the sound spectrum in a particular octave band, which is 3 dB or more above a line joining the readings of the octave bands on either side of the sound spike.

Acoustically Induced Perceptible Vibration (RV)
If the sound spectrum reaches the cross- hatched region on the RC chart, the sound energy could be sufficient to induce vibration in walls and ceilings of light building structures. Sound pressure readings in the 16 Hz octave band are important because they reveal any HVAC noises of significant energy. Besides creating a deep rumbling noise, these can induce audible rattles in light fixtures, air diffusers and grilles. Example Fig 17.

RC Noise Ratings

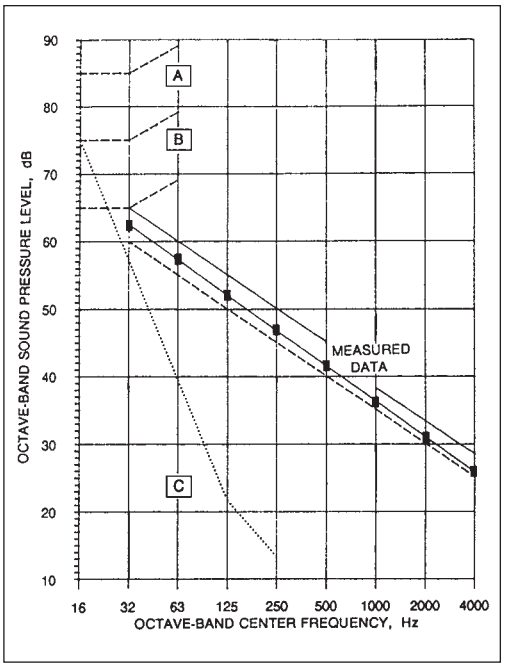


Fig. 14.
Neutral RC 35 (N).

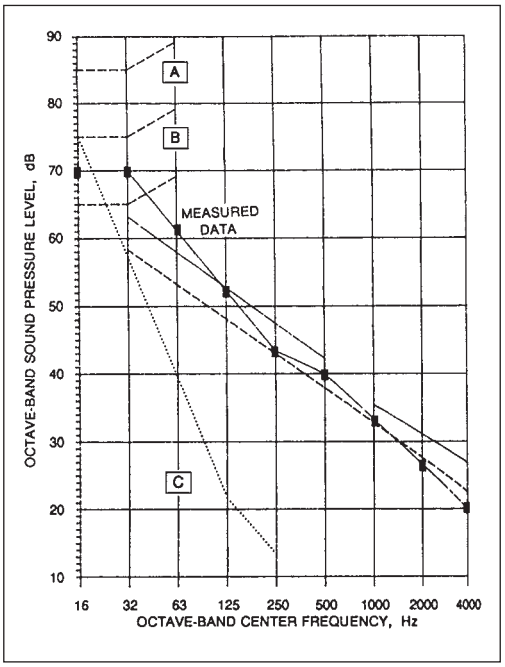


Fig. 15.
Rumbly RC 33 (R).

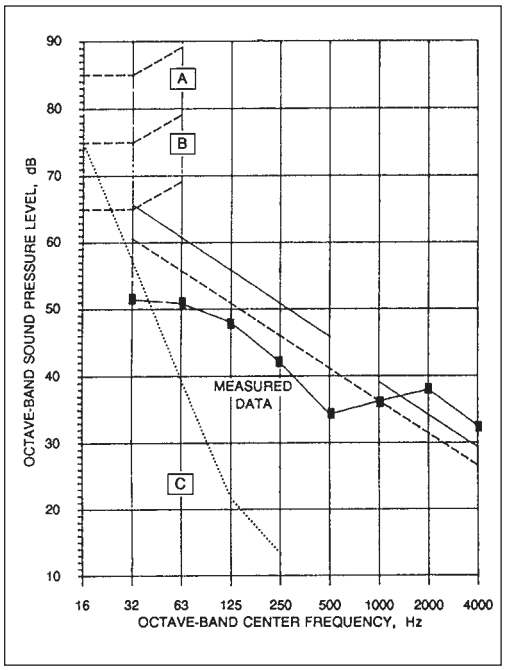


Fig. 16.
Hissy RC 37 (H).

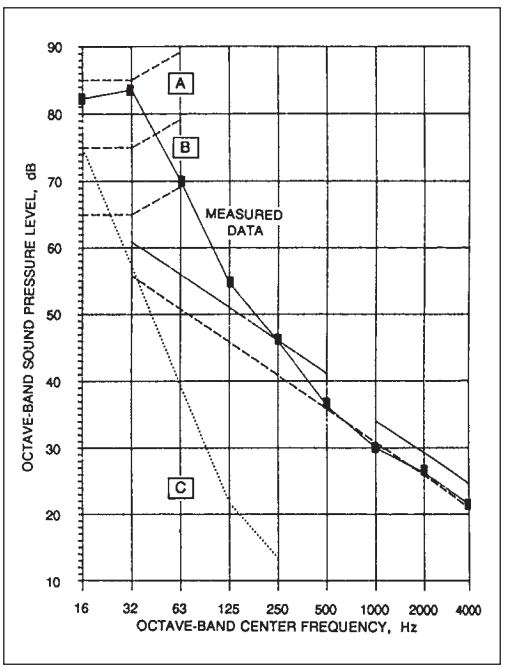


Fig. 17.
Rumbly and Induced Vibration
RC 31 (RV).

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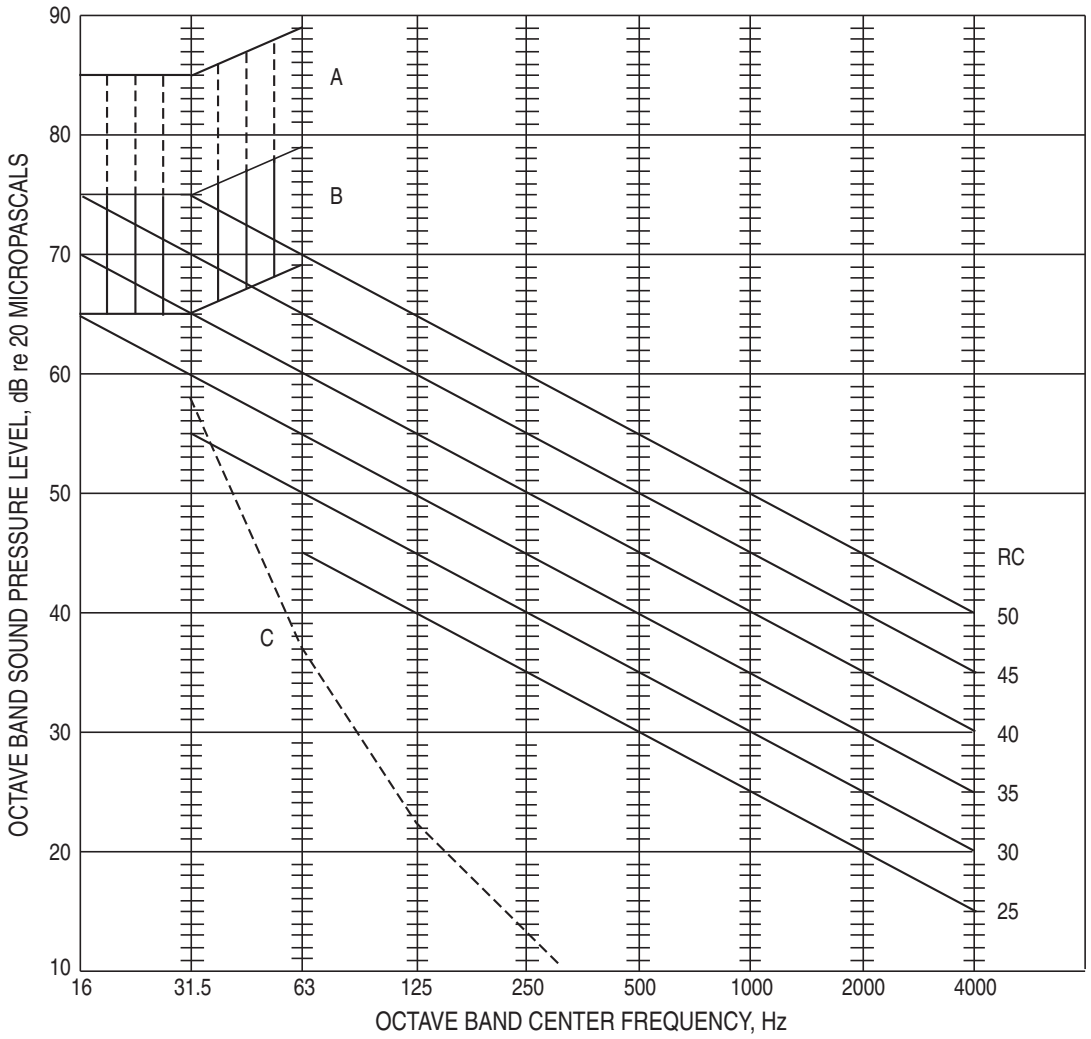
Acceptable HVAC Noise Levels

Room noise levels must not mask sounds that people want to hear nor be of an obtrusive or annoying character. The RC system of rating noise levels should be used where a neutral unobtrusive background sound is desired. If rumbles, hisses and tonal noise is acceptable, then the alternate NC method of specifying sound can be used.

RC Curves



Region A: High probability that noise-induced vibration levels in light wall and ceiling construction will be clearly felt; anticipate audible rattles in low mass fixtures, doors, windows, etc.

Region B: Noise-induced vibration levels in light wall and ceiling constructions may be moderately felt; slight possibility of rattles in low mass fixtures, doors, windows, etc.

Region C: Below threshold of hearing for continuous noise.

Fig.18. RC (Room Criteria) Curves for Specifying Design Levels to give a Balanced Sound Spectrum.

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Alternate NC Noise Criteria Curves

Noise Criteria, or NC numbers provide a single number method of specifying a noise spectrum. To determine a Noise Criteria number, the Sound Pressure Level in each octave band is plotted on an NC Chart. The resulting NC number is the number of the maximum NC curve on the chart, tangent to the plotted data.

NC Curves

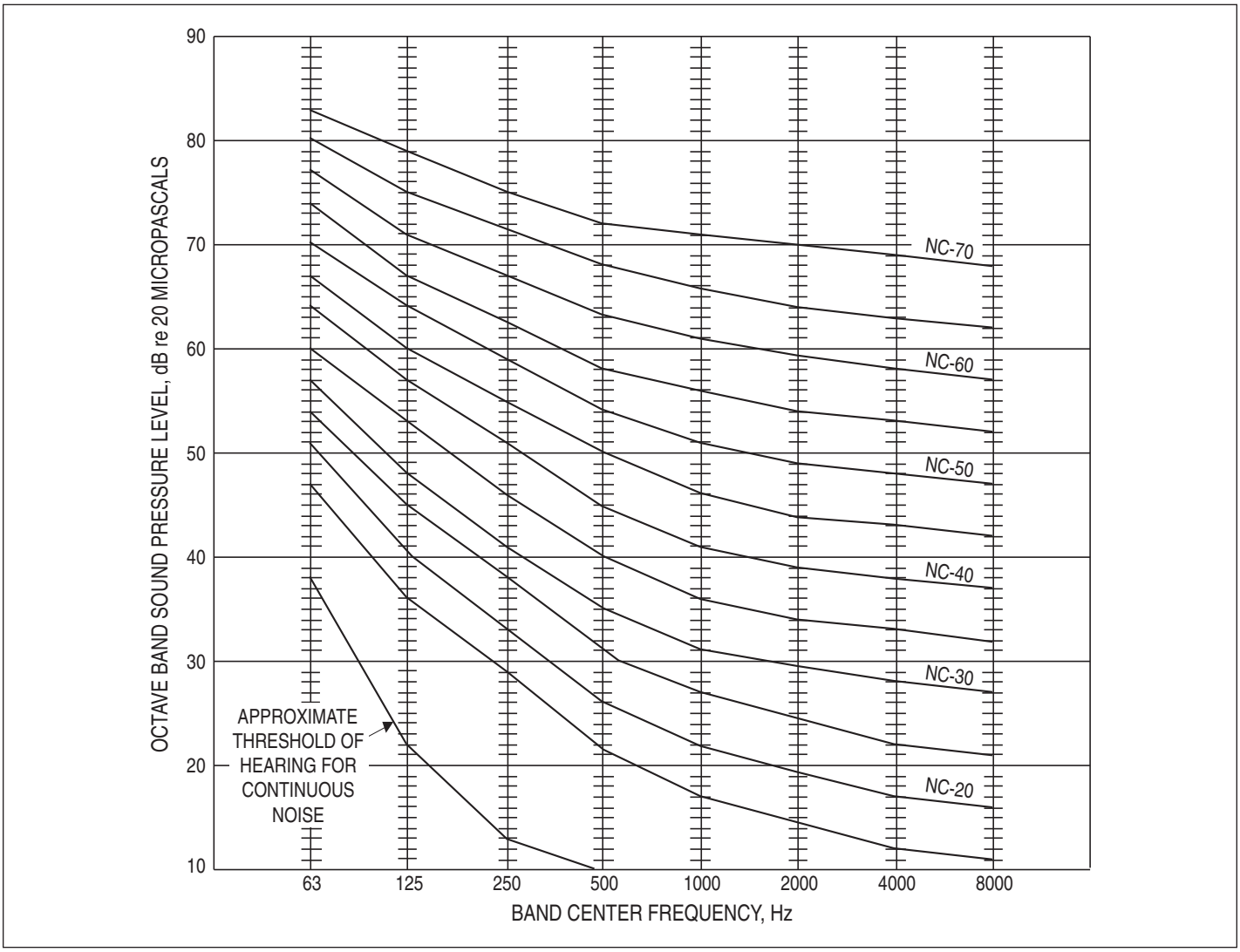


Fig. 19. Noise Criteria Curves for Specifying Desired Sound Levels.

Table 10. Acceptable HVAC Noise Levels in Unoccupied Rooms.

	Preferred	Alternate
Private Residences	RC 25-30 (N)	
Apartments	RC 30-35 (N)	NC 30-35
Hotel/Motel		
Bedrooms/Suites	RC 30-35 (N)	NC 30-35
Meeting/Banquet Rooms	RC 30-35 (N)	NC 30-35
Halls, Lobbies, Corridors	RC 35-40 (N)	NC 35-40
Service Areas	RC 40-45 (N)	NC 40-45
Offices		
Executive	RC 25-30 (N)	
Conference Rooms	RC 25-30 (N)	
Private	RC 30-35 (N)	
Open-plan Areas	RC 35-40 (N)	NC 35-40
Business Machines/Computers	RC 40-45 (N)	NC 40-45
Public Circulation	RC 40-45 (N)	NC 40-45
Hospitals		
Private Rooms	RC 25-30 (N)	
Wards	RC 30-35 (N)	
Operating Rooms	RC 25-30 (N)	
Laboratories	RC 35-40 (N)	NC 35-40
Corridors	RC 30-35 (N)	NC 30-35
Public Areas	RC 35-40 (N)	NC 35-40
Churches	RC 30-35 (N)	
Schools		
Lecture/Classrooms	RC 25-30 (N)	
Open Plan Classrooms	RC 35-40 (N)	NC 35-40
Libraries	RC 35-40 (N)	
Courtrooms	RC 35-40 (N)	
Legitimate Theaters	RC 20-25 (N)	
Movie Theaters	RC 30-35 (N)	NC 30-35
Restaurants	RC 40-45 (N)	NC 40-45
Concert and Recital Halls	RC 15-20 (N)	
Recording Studios	RC 15-20 (N)	
TV Studios	RC 20-25 (N)	

AIR DIFFUSION PERFORMANCE INDEX

ADPI

Air Diffusion Performance Index

Dr. Ralph Nevins has made a thorough study of room comfort conditions under the following circumstances. He has tested room air velocity and temperature patterns using a variety of air supply systems, each with different room heating and cooling loads. The air supply systems tested were:

Floor grilles with non-spreading and spreading air patterns.

Sill grilles with vertical blow, 22 1/2° and 45° upward blow.

High sidewall grilles.

2 slot and 4 slot ceiling diffusers to Vt of 50 and 100 fpm.

Groups of 4 and 8 troffer diffusers.

Circular ceiling diffusers.

Square perforated and louvered ceiling diffusers.

Airflow rates – cfm/sq ft of floor – 0.5, 1, 2, 3, 4, 5

Room heating loads – Btuh/sq. ft. of floor – min, 17.5, 35, 50, 70

Dr. Nevins developed Air Diffusion Performance Index numbers for each different ventilating system. These ADPI numbers were based on criteria which he judged would satisfy the comfort expectations of most people.

The **Air Diffusion Performance Index** is the percentage of measurements of air velocity and temperature, made on a horizontal and vertical grid pattern in an occupied space, which meet the following conditions:

- room air velocities 70 fpm or less.
- temperature difference from floor to head height within -3 degrees or +2 degrees F of the room ambient temperature.

Curves were plotted for each system, ADPI against T_{50}/L.

These curves give the designer a tool which enables him to pick the best diffuser system for the project.

T_{50} = the distance in feet from the diffuser outlet to the place where the centerline jet velocity is 50 fpm.

L = the desired length of throw to give proper air distribution.

Comfort Index (APDI) vs. Throw Ratio (T_{50} / L)

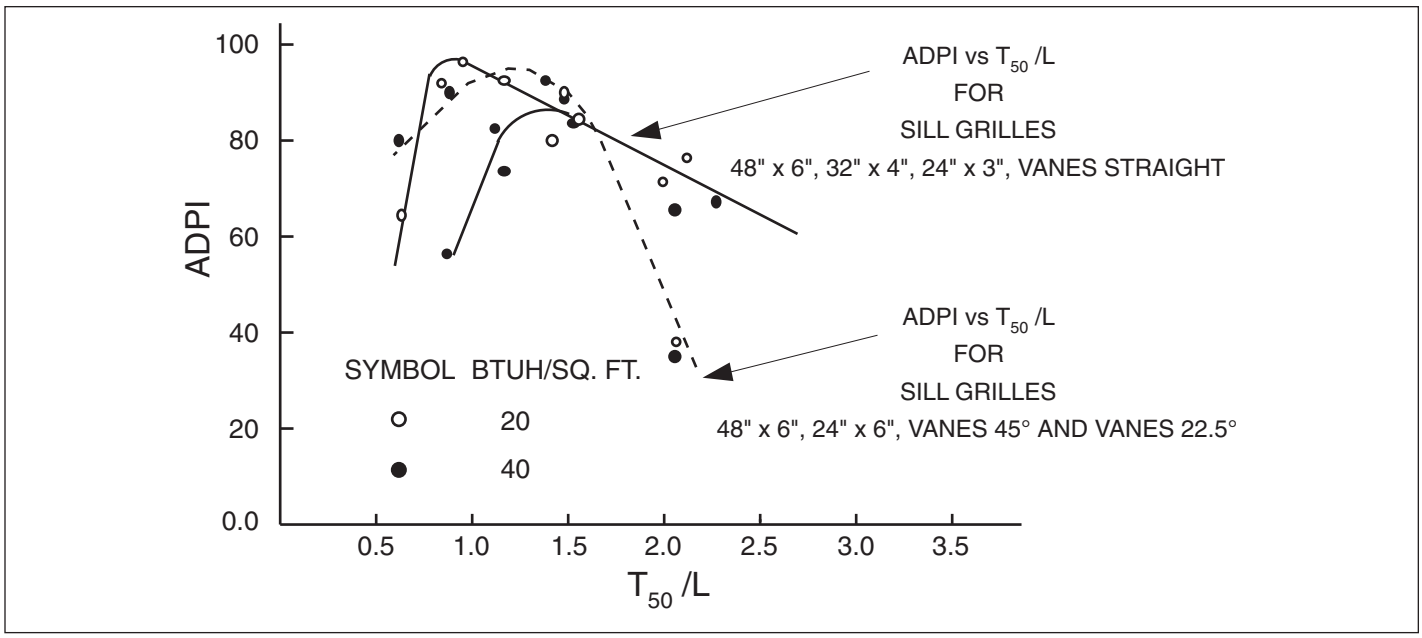


Fig. 20. Sill Grilles.

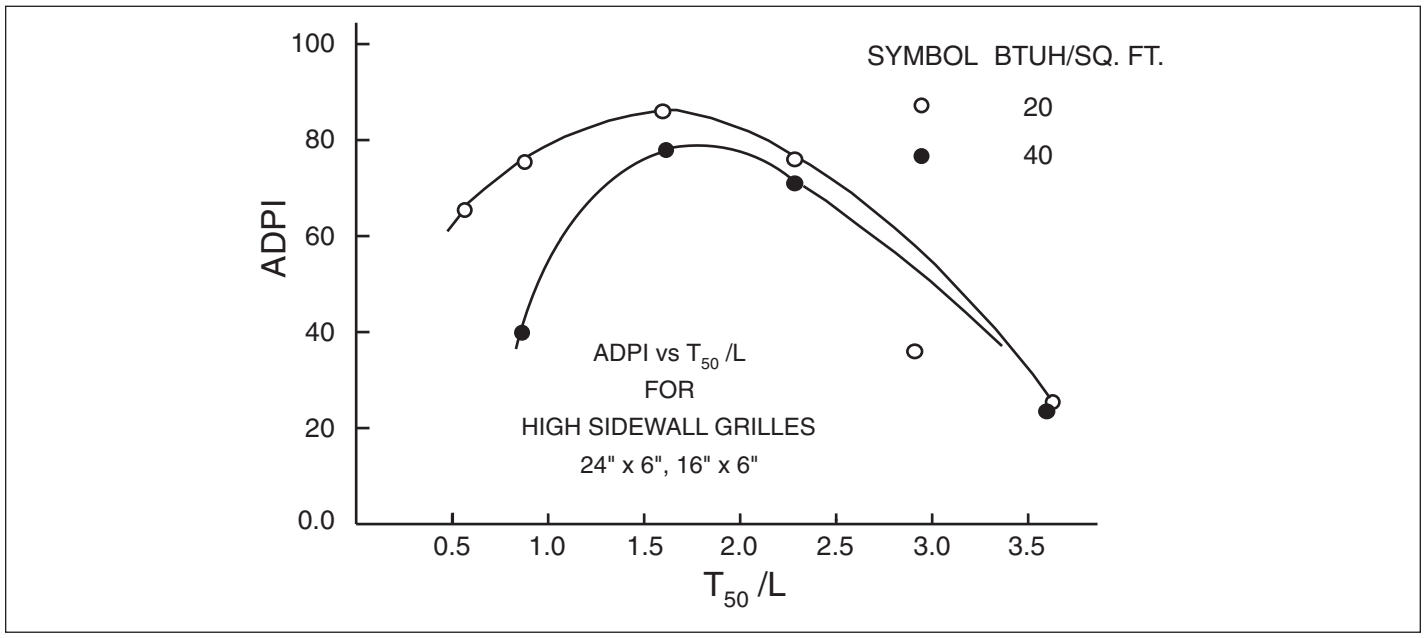


Fig. 21. High Sidewall Grilles.

Comfort Index (APDI) vs. Throw Ratio (T_{50} / L)

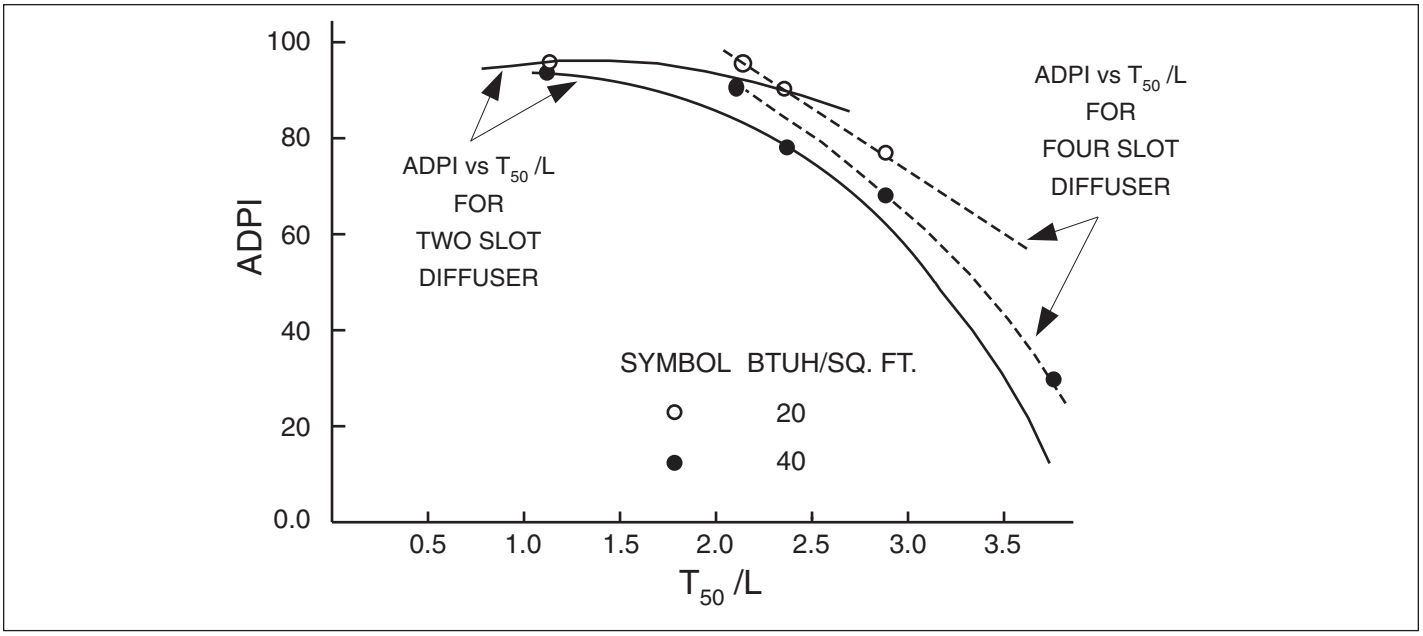


Fig. 22. 2 and 4 Slot Diffusers.

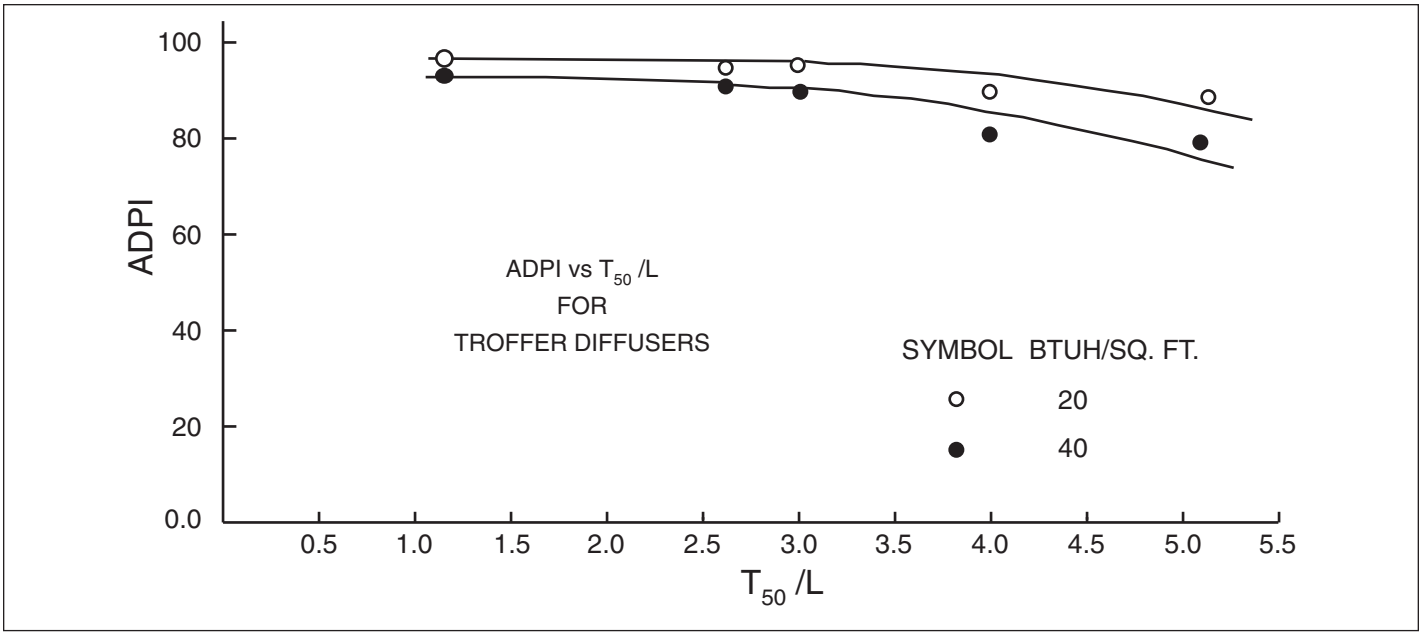


Fig. 23. Troffer Diffusers.

Comfort Index (APDI) vs. Throw Ratio (T_{50} / L)

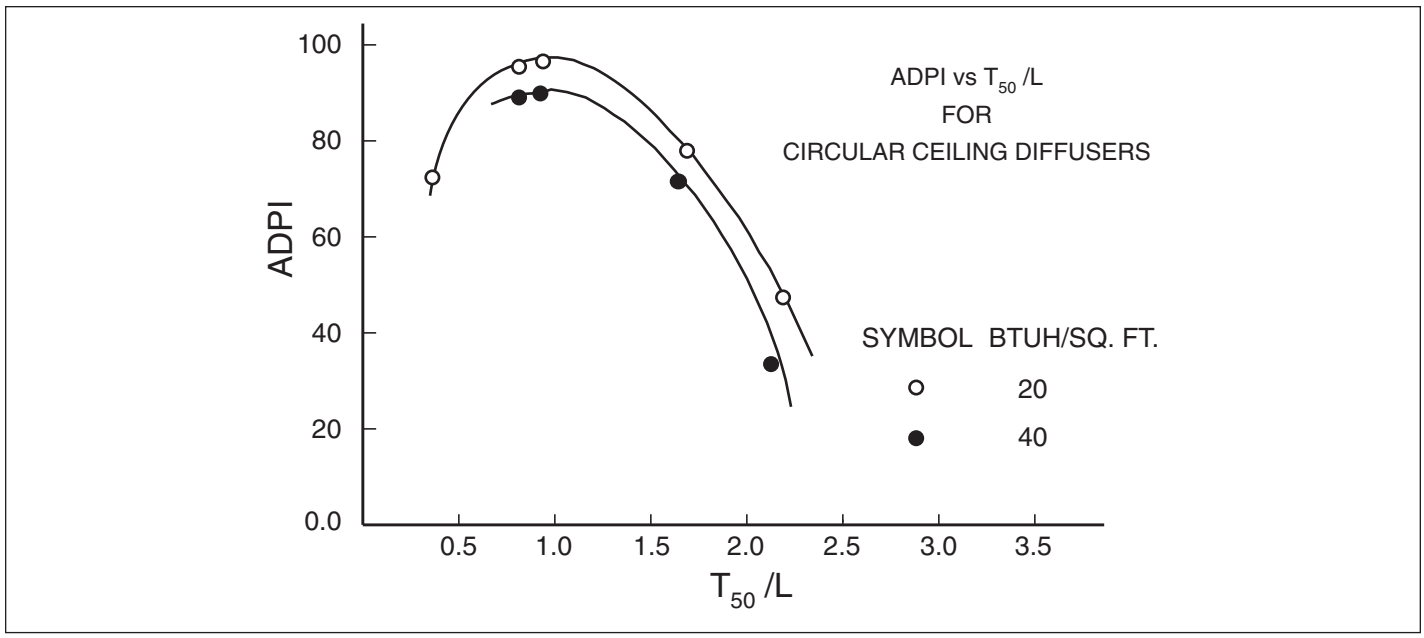


Fig. 24. Round Ceiling Diffusers.

Comfort Index (APDI) vs. Throw Ratio (T_{50} / L)

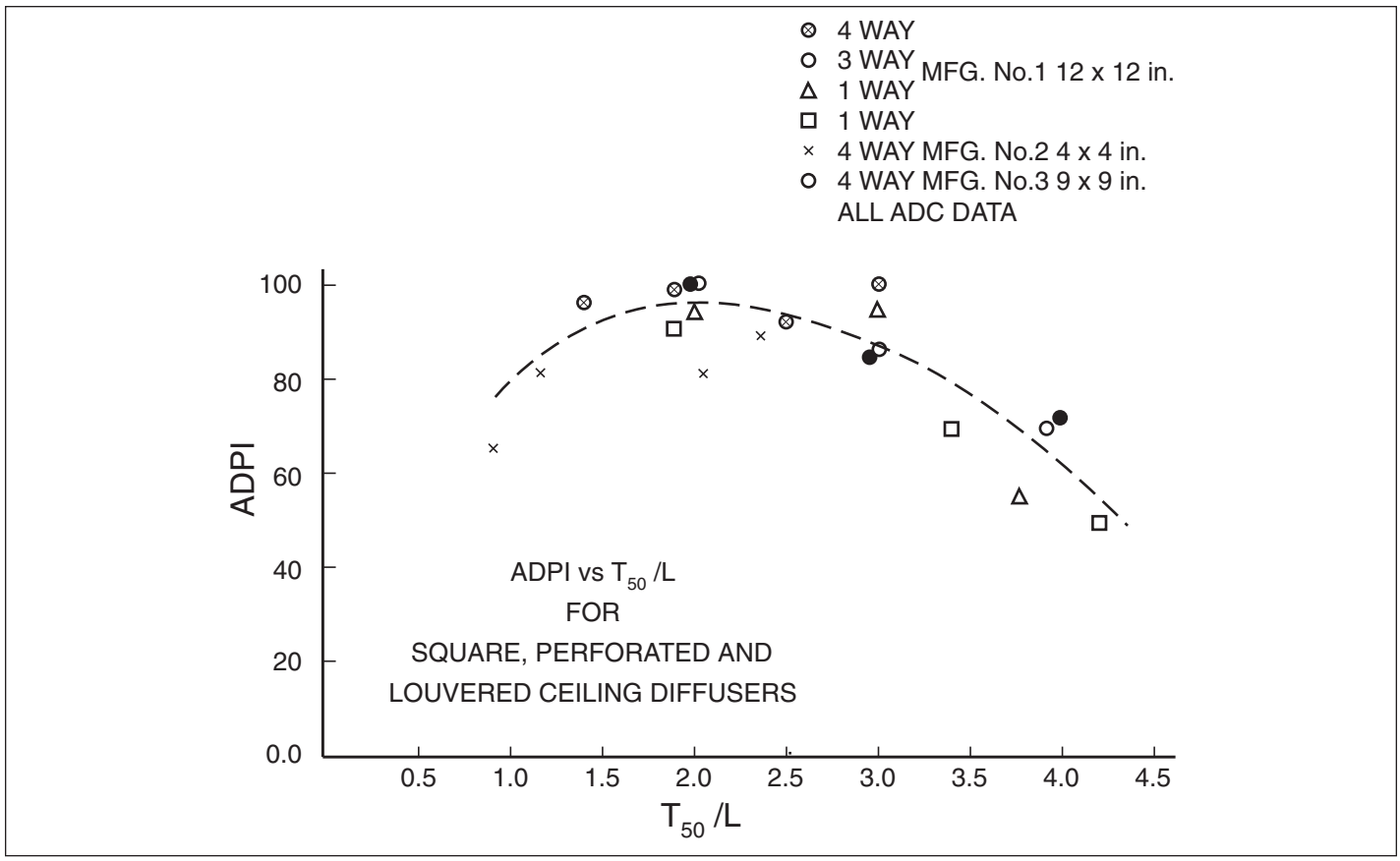


Fig. 25. Square, Perforated and Louvered Ceiling Diffusers. Room loads from 11 to 51 Btuh/sq. ft.

Table 11.

Room Length 'L' for Several Diffuser Types	
Diffuser Type	Length 'L', Distance
High Side Wall Grille	- to wall perpendicular to jet.
Circular Ceiling Diffuser	- to closest wall, or intersecting jet.
Sill Grille	- length of room in direction of throw.
Ceiling Slot Diffuser	- to wall or mid-plane between outlets.
Light Troffer Diffuser	- to mid-plane between outlets + distance ceiling to top of occupied zone.
Perforated Louvered Ceiling Diffusers	- to wall or mid-plane between outlets.

Table 12. ADPI Selection Guide

Terminal Device	Room Load Btuh/ft	T50/L	Maximum ADPI	For ADPI Greater Than	T50/L
High Side Wall Grilles	80	1.8	68	—	—
	60	1.8	72	70	1.5 - 2.2
	40	1.6	78	70	1.2 - 2.3
	20	1.5	85	80	1.0 - 1.9
Circular Ceiling Diffusers	80	0.8	76	70	0.7 - 1.3
	60	0.8	83	80	0.7 - 1.2
	40	0.8	88	80	0.5 - 1.5
	20	0.8	93	90	0.7 - 1.3
Sill Grille Straight Vanes	80	1.7	61	60	1.5 - 1.7
	60	1.7	72	70	1.4 - 1.7
	40	1.3	86	80	1.2 - 1.8
	20	0.9	95	90	0.8 - 1.3
Sill Grille Spread Vanes	80	0.7	94	90	0.8 - 1.5
	60	0.7	94	80	0.6 - 1.7
	40	0.7	94	—	—
	20	0.7	94	—	—
Ceiling Slot Diffuser	80	0.3*	85	80	0.3 - 0.7
	60	0.3*	88	80	0.3 - 0.8
	40	0.3*	91	80	0.3 - 1.1
	20	0.3*	92	80	0.3 - 1.5
Light Troffer Diffuser	60	2.5	86	80	<3.8
	40	1.0	92	90	<3.0
	20	1.0	95	90	<4.5
Perforated & Louvered Ceiling Diffusers**	11 -51	2.0	96	90	1.4 - 2.7
				80	1.0 - 3.4
Air Distributing Ceilings	80	—	57	—	—
	60	—	68	—	—
	40	—	78	—	—
	20	—	88	—	—

* T_{100}/L (** Square face)

PRESSURE MEASUREMENT

Pressure Measurement

Concepts of pressure. Pressure is force per unit area. This may also be defined as energy per unit volume of fluid. There are three categories of pressure — Total Pressure, Static Pressure and Velocity Pressure that are associated with air handling. Unit of pressure is expressed in inches of water, designated **in. w.g.**

Static Pressure is the normal force per unit area at a small hole in the wall of a duct or other boundaries. It is a function of air density and degree of compression. It may be thought of as the pressure in a tire or in a tank; extends in all directions.

Velocity Pressure is the force per unit area capable of causing an equivalent velocity in moving air. Velocity pressure is a function of air density and velocity. At standard air density, the relationship between velocity pressure and velocity is expressed in the following formula:

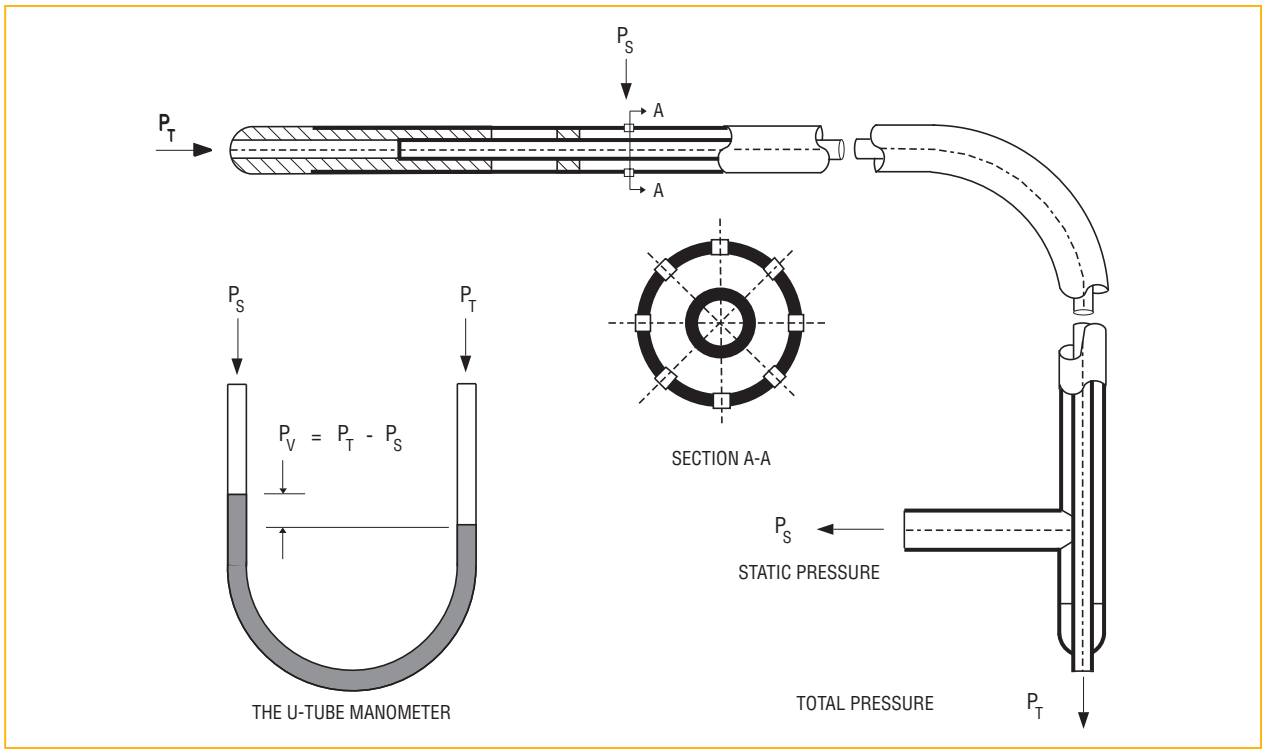
$$Pv = \left(\frac{V}{4005}\right)^2 \text{ or } V = 4005\sqrt{Pv}$$

Where: V = Air Velocity (FPM)
Pv = Velocity Pressure (in. w.g.)

Total Pressure, as its name implies, is the sum of static pressure and velocity pressure.

The Pitot Static Tube is an instrument used to measure pressure and velocities as illustrated below. It is constructed of two tubes. The inner, or impact, tube senses the total pressure as the impact opening faces upstream. The outer tube senses only the static pressure, which communicates with the airstream through small holes in its wall.

The V-Tube Manometer connects both parts of the Pitot static tube. The manometer functions as a subtracting device to give a reading of velocity pressure.



VELOCITY PRESSURE CHART

CONVERSION CHART for converting *VELOCITY PRESSURE* in inches of water to *VELOCITY* in feet per minute

Note: This chart is based upon standard air conditions of 70° Fahrenheit and 29.92 inches of mercury (barometric pressure), and assumes that the airflow is essentially non-compressible (under 10 inches of water pressure); as reflected by the following formula.

$$\text{Velocity (fpm)} = 4005 \sqrt{\text{Velocity Pressure in inches of water}}$$

VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V
.001"	127	.062"	996	.123"	1404	.184"	1718	.245"	1982	.306"	2215	.367"	2426	.77"	3514	1.38"	4705	1.99"	5651	2.60"	6458
.002"	179	.063"	1004	.124"	1410	.185"	1723	.246"	1987	.307"	2219	.368"	2429	.78"	3537	1.39"	4722	2.00"	5664	2.61"	6470
.003"	219	.064"	1012	.125"	1416	.186"	1727	.247"	1991	.308"	2223	.369"	2433	.79"	3560	1.40"	4739	2.01"	5678	2.62"	6482
.004"	253	.065"	1020	.126"	1422	.187"	1732	.248"	1995	.309"	2226	.370"	2436	.80"	3582	1.41"	4756	2.02"	5692	2.63"	6495
.005"	283	.066"	1029	.127"	1427	.188"	1737	.249"	1999	.310"	2230	.371"	2439	.81"	3604	1.42"	4773	2.03"	5706	2.64"	6507
.006"	310	.067"	1037	.128"	1433	.189"	1741	.250"	2003	.311"	2233	.372"	2443	.82"	3625	1.43"	4790	2.04"	5720	2.65"	6519
.007"	335	.068"	1045	.129"	1439	.190"	1746	.251"	2007	.312"	2236	.373"	2445	.83"	3657	1.44"	4806	2.05"	5734	2.66"	6532
.008"	358	.069"	1052	.130"	1444	.191"	1750	.252"	2011	.313"	2239	.374"	2449	.84"	3669	1.45"	4823	2.06"	5748	2.67"	6544
.009"	380	.070"	1060	.131"	1449	.192"	1755	.253"	2015	.314"	2242	.375"	2453	.85"	3690	1.46"	4840	2.07"	5762	2.68"	6556
.010"	400	.071"	1067	.132"	1455	.193"	1759	.254"	2019	.315"	2245	.376"	2456	.86"	3709	1.47"	4856	2.08"	5776	2.69"	6569
.011"	420	.072"	1075	.133"	1461	.194"	1764	.255"	2023	.316"	2248	.377"	2459	.87"	3729	1.48"	4873	2.09"	5790	2.70"	6581
.012"	439	.073"	1082	.134"	1466	.195"	1768	.256"	2027	.317"	2251	.378"	2462	.88"	3758	1.49"	4889	2.10"	5804	2.71"	6593
.013"	457	.074"	1089	.135"	1471	.196"	1773	.257"	2031	.318"	2254	.379"	2466	.89"	3779	1.50"	4905	2.11"	5817	2.72"	6605
.014"	474	.075"	1097	.136"	1477	.197"	1777	.258"	2035	.319"	2257	.380"	2469	.90"	3800	1.51"	4921	2.12"	5831	2.73"	6617
.015"	491	.076"	1104	.137"	1482	.198"	1782	.259"	2039	.320"	2260	.381"	2472	.91"	3821	1.52"	4938	2.13"	5845	2.74"	6629
.016"	507	.077"	1111	.138"	1488	.199"	1787	.260"	2042	.321"	2264	.382"	2475	.92"	3842	1.53"	4954	2.14"	5859	2.75"	6641
.017"	522	.078"	1119	.139"	1493	.200"	1791	.261"	2046	.322"	2268	.383"	2479	.93"	3863	1.54"	4970	2.15"	5872	2.76"	6654
.018"	537	.079"	1125	.140"	1498	.201"	1795	.262"	2050	.323"	2272	.384"	2481	.94"	3884	1.55"	4986	2.16"	5886	2.77"	6666
.019"	552	.080"	1133	.141"	1504	.202"	1800	.263"	2054	.324"	2276	.385"	2485	.95"	3904	1.56"	5002	2.17"	5899	2.78"	6678
.020"	566	.081"	1140	.142"	1509	.203"	1804	.264"	2058	.325"	2280	.386"	2488	.96"	3924	1.57"	5018	2.18"	5913	2.79"	6690
.021"	580	.082"	1147	.143"	1515	.204"	1809	.265"	2062	.326"	2284	.387"	2491	.97"	3945	1.58"	5034	2.19"	5927	2.80"	6702
.022"	594	.083"	1154	.144"	1520	.205"	1813	.266"	2066	.327"	2289	.388"	2495	.98"	3965	1.59"	5050	2.20"	5940	2.81"	6714
.023"	607	.084"	1161	.145"	1525	.206"	1818	.267"	2070	.328"	2293	.389"	2499	.99"	3985	1.60"	5066	2.21"	5954	2.82"	6725
.024"	620	.085"	1167	.146"	1530	.207"	1822	.268"	2074	.329"	2297	.390"	2501	1.00"	4005	1.61"	5082	2.22"	5967	2.83"	6737
.025"	633	.086"	1175	.147"	1536	.208"	1827	.269"	2078	.330"	2301	.40"	2533	1.01"	4025	1.62"	5098	2.23"	5981	2.84"	6749
.026"	645	.087"	1181	.148"	1541	.209"	1831	.270"	2081	.331"	2304	.41"	2563	1.02"	4045	1.63"	5114	2.24"	5994	2.85"	6761
.027"	658	.088"	1188	.149"	1546	.210"	1835	.271"	2085	.332"	2308	.42"	2595	1.03"	4064	1.64"	5129	2.25"	6008	2.86"	6773
.028"	670	.089"	1193	.150"	1551	.211"	1839	.272"	2089	.333"	2311	.43"	2626	1.04"	4084	1.65"	5144	2.26"	6021	2.87"	6785
.029"	682	.090"	1201	.151"	1556	.212"	1844	.273"	2093	.334"	2315	.44"	2656	1.05"	4103	1.66"	5160	2.27"	6034	2.88"	6797
.030"	694	.091"	1208	.152"	1561	.213"	1848	.274"	2097	.335"	2318	.45"	2687	1.06"	4123	1.67"	5175	2.28"	6047	2.89"	6809
.031"	705	.092"	1215	.153"	1567	.214"	1853	.275"	2101	.336"	2322	.46"	2716	1.07"	4142	1.68"	5191	2.29"	6060	2.90"	6820
.032"	716	.093"	1222	.154"	1572	.215"	1857	.276"	2105	.337"	2325	.47"	2746	1.08"	4162	1.69"	5206	2.30"	6074	2.91"	6832
.033"	727	.094"	1228	.155"	1577	.216"	1862	.277"	2119	.338"	2329	.48"	2775	1.09"	4181	1.70"	5222	2.31"	6087	2.92"	6844
.034"	738	.095"	1234	.156"	1582	.217"	1866	.278"	2113	.339"	2332	.49"	2804	1.10"	4200	1.71"	5237	2.32"	6100	2.93"	6855
.035"	749	.096"	1241	.157"	1587	.218"	1870	.279"	2116	.340"	2335	.50"	2832	1.11"	4219	1.72"	5253	2.33"	6113	2.94"	6867
.036"	759	.097"	1247	.158"	1592	.219"	1875	.280"	2119	.341"	2338	.51"	2860	1.12"	4238	1.73"	5268	2.34"	6126	2.95"	6879
.037"	770	.098"	1254	.159"	1597	.220"	1879	.281"	2123	.342"	2342	.52"	2888	1.13"	4257	1.74"	5283	2.35"	6139	2.96"	6890
.038"	780	.099"	1260	.160"	1602	.221"	1883	.282"	2127	.343"	2345	.53"	2916	1.14"	4276	1.75"	5298	2.36"	6152	2.97"	6902
.039"	791	.100"	1266	.161"	1607	.222"	1887	.283"	2131	.344"	2349	.54"	2943	1.15"	4295	1.76"	5313	2.37"	6165	2.98"	6913
.040"	801	.101"	1273	.162"	1612	.223"	1892	.284"	2135	.345"	2352	.55"	2970	1.16"	4314	1.77"	5328	2.38"	6179	2.99"	6925
.041"	811	.102"	1279	.163"	1617	.224"	1896	.285"	2139	.346"	2356	.56"	2997	1.17"	4332	1.78"	5343	2.39"	6191	3.00"	6937
.042"	821	.103"	1285	.164"	1622	.225"	1900	.286"	2143	.347"	2360	.57"	3024	1.18"	4350	1.79"	5359	2.40"	6204	3.01"	6948
.043"	831	.104"	1292	.165"	1627	.226"	1905	.287"	2147	.348"	2363	.58"	3050	1.19"	4368	1.80"	5374	2.41"	6217	3.02"	6960
.044"	840	.105"	1298	.166"	1632	.227"	1909	.288"	2151	.349"	2366	.59"	3076	1.20"	4386	1.81"	5388	2.42"	6230	3.03"	6971
.045"	849	.106"	1304	.167"	1637	.228"	1913	.289"	2154	.350"	2369	.60"	3102	1.21"	4405	1.82"	5403	2.43"	6243	3.04"	6983
.046"	859	.107"	1310	.168"	1642	.229"	1917	.290"	2157	.351"	2372	.61"	3127	1.22"	4423	1.83"	5418	2.44"	6256	3.05"	6994
.047"	868	.108"	1316	.169"	1646	.230"	1921	.291"	2161	.352"	2376	.62"	3153	1.23"	4442	1.84"	5433	2.45"	6269	3.06"	7006
.048"	877	.109"	1322	.170"	1651	.231"	1925	.292"	2164	.353"	2379	.63"	3179	1.24"	4460	1.85"	5447	2.46"	6281	3.07"	7017
.049"	887	.110"	1328	.171"	1656	.232"	1929	.293"	2168	.354"	2383	.64"	3204	1.25"	4478	1.86"	5462	2.47"	6294	3.08"	7028
.050"	896	.111"	1334	.172"	1661	.233"	1933	.294"	2171	.355"	2386	.65"	3229	1.26"	4495	1.87"	5477	2.48"	6307	3.09"	7040
.051"	904	.112"	1340	.173"	1666	.234"	1937	.295"	2175	.356"	2389	.66"	3254	1.27"	4513	1.88"	5491	2.49"	6319	3.10"	7051
.052"	913	.113"	1346	.174"	1670	.235"	1941	.296"	2179	.357"	2393	.67"	3279	1.28"	4531	1.89"	5506	2.50"	6332	3.11"	7063
.053"	922	.114"	1352	.175"	1675	.236"	1945	.297"	2182	.358"	2396	.68"	3303	1.29"	4549	1.90"	5521	2.51"	6345	3.12"	7074
.054"	931	.115"	1358	.176"	1680	.237"	1950	.298"	2186	.359"	2400	.69"	3327	1.30"	4566	1.91"	5535	2.52"	6358	3.13"	7085
.055"	939	.116"	1364	.177"	1685	.238"	1954	.299"	2189	.360"	2403	.70"	3351	1.31"	4583	1.92"	5550	2.53"	6370	3.14"	7097
.056"	948	.117"	1370	.178"	1690	.239"	1958	.300"	2193	.361"	2406	.71"	3375	1.32"	4601	1.93"	5564	2.54"	6383	3.15"	7108
.057"	956	.118"	1376	.179"	1695	.240"	1962	.301"	2197	.362"	2410	.72"	3398	1.33"	4619	1.94"	5579	2.55"	6395	3.16"	7119
.058"	964	.119"	1382	.180"	1699	.241"	1966	.302"	2200	.363"	2413	.73"	3422	1.34"	4636	1.95"	5593	2.56"	6408	3.17"	7131
.059"	973	.120"	1387	.181"	1704	.242"	1970	.303"	2204	.364"	2416	.74"	3445	1.35"	4653	1.96"	5608	2.57"	6420	3.18"	7142
.060"	981	.121"	1393	.182"	1709	.243"	1974	.304"	2208	.365"	2420	.75"	3468	1.36"	4671	1.97"	5623	2.58"	6433	3.19"	7153
.061"	989	.122"	1399	.183"	1713	.244"	1978	.305"	2212	.366"	2423	.76"	3491	1.37"	4688	1.98"	5637	2.59"	6445	3.20"	7164

DEFINITIONS AND FORMULAE

Definitions and Formulae

CFM = Cubic Feet per Minute
FPM = Feet per Minute (Velocity)
Ak = Area Factor Expressed in Square Feet
TP = Total Pressure Expressed in Inches of Water
SP = Static Pressure Expressed in Inches of Water
VP = Velocity Pressure Expressed in Inches of Water
VP = $(FPM \div 4005)^2$
ΔP = Differential Pressure
ΔP_S = Static Differential Pressure
ΔP_T = Total Differential Pressure

$CFM = FPM \times Ak$
$FPM = CFM \div Ak$
$VP = TP - SP$
$TP = SP + VP$
$SP = TP - VP$
$\Delta P_T = TP_1 - TP_2$
$\Delta P_S = SP_1 - SP_2$

THERMAL LINEAR TYPE GRILLE EXPANSION

Thermal Linear Type Grille Expansion

ΔT Temperature Differential (°F)	Expansion (inches/ft.)		
	Aluminum	Steel	Copper
0	0	0	0
10	.00156	.00076	.00112
20	.00313	.00152	.00224
30	.00469	.00228	.00336
40	.00625	.00304	.00448
50	.00782	.00380	.00560
60	.00938	.00456	.00672
70	.01094	.00532	.00784
80	.01250	.00608	.00896
90	.01407	.00684	.01008
100	.01563	.00760	.01120

MEASURES OF FORCE AND PRESSURE

Measures of Force and Pressure

Dyne = force necessary to accelerate a 1 gram mass 1 centimeter per second squared = 0.000072 poundal.

Poundal = force necessary to accelerate a 1 pound mass 1 foot per second squared = 13,825.5 dynes = 0.138255 newtons.

Newton = force needed to accelerate a 1 kilogram mass 1 meter per second squared.

Pascal (pressure) = 1 newton per square meter = 0.020885 pound per square foot.

Atmosphere (air pressure at sea level) = 2,116.102; pounds per square foot = 14.6952; pounds per square inch = 1.0332; kilograms per square centimeter = 101,323 newtons per square meter.

EQUIVALENT MEASURES OF PRESSURE

Equivalent Measures of Pressure

1 lb. per square inch	=	144 lbs. per sq. ft. 2.036 in. Mercury at 32°F. 2.311 ft. Water at 70°F. 27.74 in. Water at 70°F.	1 inch Water at 70°F	=	.03609 lb. per sq. in. .5774 oz. per sq. in. 5.196 lbs. per sq. ft.
1 ounce per square inch	=	1272 in. Mercury at 32°F. 1.733 in. Water at 70°F.	1 foot Water at 70°F	=	.433 lbs. per sq. in. 62.31 lbs. sq. ft.
1 Atmosphere	=	14.696 lbs. per sq. in. 2116.3 lbs. per sq. ft. 33.96 ft. Water at 70°F. 29.92 in. Mercury at 32°F.	1 inch Mercury at 32°F	=	.491 lbs. per sq. in. 7.86 oz. per sq. in. 1.136 ft. Water at 70°F. 13.63 in. Water at 70°F.

SHEET METAL THICKNESS

Sheet Metal Thickness (Inches) and Weight (Lbs./Sq. Ft.)

Gauge No.	Steel		Galvanized Steel		Aluminum	
	Thickness	Weight	Thickness	Weight	Thickness	Weight
3	.2391	10.000			.2294	3.23
4	.2242	9.375			.2043	2.88
5	.2092	8.750			.1819	2.56
6	.1943	8.125			.1620	2.29
7	.1793	7.500			.1443	2.04
8	.1644	6.875	.1681	7.031	.1285	1.81
9	.1495	6.250	.1532	6.406	.1144	1.61
10	.1345	5.625	.1382	5.781	.1019	1.44
11	.1196	5.000	.1233	5.156	.0907	1.28
12	.1046	4.375	.1084	4.531	.0808	1.14
13	.0897	3.750	.0934	3.906	.0720	1.02
14	.0747	3.125	.0785	3.281	.0641	.905
15	.0673	2.812	.0710	2.969	.0571	.806
16	.0598	2.500	.0635	2.656	.0508	.717
17	.0538	2.250	.0575	2.406	.0453	.639
18	.0478	2.000	.0516	2.156	.0403	.569
19	.0418	1.750	.0456	1.906	.0359	.507
20	.0359	1.500	.0396	1.656	.0320	.452
21	.0329	1.375	.0366	1.531	.0285	.402
22	.0299	1.250	.0336	1.406	.0254	.357
23	.0269	1.125	.0306	1.281	.0226	.319
24	.0239	1.000	.0276	1.156	.0201	.284
25	.0209	.875	.0247	1.031	.0179	.253
26	.0179	.750	.0217	.906	.0159	.224
27	.0164	.688	.0202	.844	.0142	.200
28	.0149	.625	.0187	.781	.0126	.178
29	.0135	.562	.0172	.719	.0113	.159
30	.0120	.500	.0157	.656	.0100	.141
31	.0105	.438	.0142	.594	.0089	.126
32	.0097	.406	.0134	.563	.0080	.113

† Steel – U.S. Standard (Revised)
Galvanized – Galvanized Gauge No.
Aluminum – American Gauge and Brown & Sharpe

ROUND DUCT AREA

Round Duct Area and Circumference

Dia. In Inches	Area Sq. Ft.	Circum. Inches	Dia. In Inches	Area Sq. Ft.	Circum. Inches
1	.00545	3.142	26	3.687	81.68
2	.0218	6.283	27	3.976	84.82
3	.0491	9.425	28	4.276	87.96
4	.0873	12.57	29	4.587	91.11
5	.1364	15.71	30	4.909	94.25
6	.1963	18.85	31	5.241	97.39
7	.2673	21.99	32	5.585	100.5
8	.3491	25.13	33	5.940	103.7
9	.4418	28.27	34	6.305	106.8
10	.5454	31.42	35	6.681	110.0
11	.6600	34.56	36	7.069	113.1
12	.7854	37.70	37	7.467	116.2
13	.9218	40.84	38	7.876	119.4
14	1.069	43.98	39	8.296	122.5
15	1.227	47.12	40	8.727	125.7
16	1.396	50.27	41	9.168	128.8
17	1.576	53.41	42	9.621	131.9
18	1.767	56.55	43	10.08	135.1
19	1.969	59.69	44	10.56	138.2
20	2.182	62.83	45	11.04	141.4
21	2.405	65.97	46	11.54	144.5
22	2.640	69.12	47	12.05	147.7
23	2.885	72.26	48	12.57	150.8
24	3.142	75.40	49	13.09	153.9
25	3.409	78.54	50	13.64	157.1

COMMON FRACTIONS

Common Fractions Reduced to Decimals

8ths	16ths	32ds	64ths		8ths	16ths	32ds	64ths		8ths	16ths	32ds	64ths	
			1	.015625				23	.359375				45	.703125
		1	2	.03125	3	6	12	24	.375			23	46	.71875
			3	.046875				25	.390625				47	.734375
	1	2	4	.0625			13	26	.40625	6	12	24	48	.75
			5	.078125				27	.421875				49	.765625
		3	6	.09375		7	14	28	.4375			25	50	.78125
			7	.109375				29	.453125				51	.796875
1	2	4	8	.125			15	30	.46875		13	26	52	.8125
			9	.140625				31	.484375				53	.828125
		5	10	.15625	4	8	16	32	.5			27	54	.84375
			11	.171875				33	.515625				55	.859375
	3	6	12	.1875			17	34	.53125	7	14	28	56	.875
			13	.203125				35	.546875				57	.890625
		7	14	.21875		9	18	36	.5625			29	58	.90625
			15	.234375				37	.578125				59	.921875
2	4	8	16	.25			19	38	.59375		15	30	60	.9375
			17	.265625				39	.609375				61	.953125
		9	18	.28125	5	10	20	40	.625			31	62	.96875
			19	.296875				41	.640625				63	.984375
	5	10	20	.3125			21	42	.65625	8	16	32	64	1.
			21	.328125				43	.671875					
		11	22	.34375		11	22	44	.6875					

MATHEMATICAL FORMULAE

Mathematical Formulae

To find the CIRCUMFERENCE of a:

Circle — Multiply the diameter by 3.14159265 (usually 3.1416).

To find the AREA of a:

Circle — Multiply the square of the diameter by .785398 (usually .7854).

Rectangle — Multiply the length of the base by the height.

Sphere (surface) — Multiply the square of the radius by 3.1416 and multiply by 4.

Square — Square the length of one side.

Trapezoid — Add the two parallel sides, multiply by the height and divide by 2.

Triangle — Multiply the base by the height and divide by 2.

To find the VOLUME of a:

Cone — Multiply the square of the radius of the base by 3.1416, multiply by the height, and divide by 3.

Cube — Cube the length of one edge.

Cylinder — Multiply the square of the radius of the base by 3.1416 and multiply by the height.

Pyramid — Multiply the area of the base by the height and divide by 3.

Rectangular Prism — Multiply the length by the width by the height.

Sphere — Multiply the cube of the radius by 3.1416, multiply by 4 and divide by 3.

METRIC CONVERSION

Metric Guide Conversion Factors

Quantity	Imperial Unit	Metric Unit		From Imperial To Metric Multiply By:	From Metric To Imperial Multiply By:
Area	square foot	square meter	(m2)	0.0929	10.764
	square inch	square millimeter	(mm2)	645.16	.00155
Density	pounds per cubic foot	kilograms per cubic meter	(kg/M3)	16.018	.0624
Energy	British thermal unit (BTU)	joule	(J)	1055.056	.000948
	kilowatt hour	megajoule	(MJ)	3.6	.2778
	watts per second	joule	(J)	1.0	1.0
	horsepower hour	megajoule	(MJ)	2.6845	.3725
Force	ounce force	newton	(N)	.278	3.597
	pound force	newton	(N)	4.4482	.2248
	kilogram force	newton	(N)	9.8067	.102
Heat	BTU per hour	watt	(W)	.2931	3.412
	BTU per pound	joules per kilogram	(J/kg)	2326.0	.00043
Length	inch	millimeter	(mm)	25.4	.0394
	foot	millimeter	(mm)	304.8	.00328
	foot	meter	(m)	.3048	3.2808
	yard	meter	(m)	.9144	1.0936
Mass (weight)	ounce (avoirdupois)	gram	(g)	28.350	.0353
	pound (avoirdupois)	kilogram	(kg)	.4536	2.2046
Power	horsepower	kilowatt	(kW)	.7457	1.341
	horsepower (boiler)	kilowatt	(kW)	9.8095	.1019
	foot pound - force per minute	watt	(W)	.0226	44.254
	ton of refrigeration	kilowatt	(kW)	3.517	.2843
Pressure	inch of water column	kilopascal	(kPa)	.2486	4.0219
	foot of water column	kilopascal	(kPa)	2.9837	.3352
	inch of mercury column	kilopascal	(kPa)	3.3741	.2964
	ounces per square inch	kilopascal	(kPa)	.4309	2.3206
	pounds per square inch	kilopascal	(kPa)	6.8948	.145
Temperature	Fahrenheit	Celsius	(°C)	5/9(°F-32)	(9/5°C)+32
Torque	ounce - force inch	millinewton-meter	(mN.m)	7.0616	.1416
	pound - force inch	newton-meter	(N.m)	.1130	8.8495
	pound - force foot	newton-meter	(N.m)	1.3558	.7376
Velocity	feet per second	meters per second	(m/s)	.3048	3.2808
	feet per minute	meters per second	(m/s)	.00508	196.85
	miles per hour	meters per second	(m/s)	.44704	2.2369
Volume (capacity)	cubic foot	liter	(l)	28.3168	.03531
	cubic inch	cubic centimeter	(cm2)	16.3871	.06102
	cubic yard	cubic meter	(m3)	.7646	1.308
	gallon (U.S.)	liter	(l)	3.785	.2642
	gallon (imperial)	liter	(l)	4.546	.2120
Volume (flow)	cubic feet per minute (cfm)	liters per second	(l/s)	.4719	2.119
	cubic feet per minute (cfm)	cubic meters per second	(m3/s)	.0004719	2119.0
	cubic feet per hour (cfh)	milliliters per second	(ml/s)	7.8658	.127133
	gallons per minute (U.S.)	liters per second	(l/s)	.06309	15.850
	gallons per minute (imperial)	liters per second	(l/s)	0.07577	13.198

Nailor Industries Inc.

INDEX

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	GRILLES AND REGISTERS (CONTINUED)	
81DH	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 1 1/2" (38) Spacing - Horizontal Blades	G175
81DV	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 1 1/2" (38) Spacing - Vertical Blades	G176
81GDH	Industrial Supply Grilles and Registers • Aluminum - Gang Operated - 1 1/2" (38) Spacing - Horizontal Front Blades	G175
81GDV	Industrial Supply Grilles and Registers • Aluminum - Gang Operated - 1 1/2" (38) Spacing - Vertical Front Blades	G173
81MG1	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - One Module	G182
81MG2	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Two Modules	G182
81MG3	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Three Modules	G182
81MG4	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Four Modules	G182
81SH	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 1 1/2" (38) Spacing - Horizontal Blades	G173
81SV	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 1 1/2" (38) Spacing - Vertical Blades	G173
A Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Screw Fastening (External)	G189
C Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Concealed Mounting	G189
D Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Screw Fastening (Concealed)	G190
DFA	Grilles and Registers Options and Accessories • Drywall/Plaster Mounting Frames - Aluminum	G191
DFS	Grilles and Registers Options and Accessories • Drywall/Plaster Mounting Frames - Steel	G191
EQT	Grilles and Registers Options and Accessories • Options - Earthquake Tabs	G193
EX	Grilles and Registers Options and Accessories • Air Balancing Devices - Volume Extractors - 2" (51) Blade Spacing	G199
EXD	Grilles and Registers Options and Accessories • Air Balancing Devices - Volume Extractors - 1" (25) Blade Spacing	G199
FP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Narrow Regressed T-Bar (Fineline)	G192
GK	Grilles and Registers Options and Accessories • Options - Gasket	G193
IS	Grilles and Registers Options and Accessories • Options - Insect Screen	G193
MP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Metal Pan/Snap-In	G192
NF Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Narrow Frame	G189
OBD	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Steel - Grille Mount	G195
OBD-A	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Aluminum - Grille/Duct Mount	G195
OBD-SS	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Stainless Steel - Duct Mount	G197
OBDD	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Steel - Duct Mount	G196
OBDD-A	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Aluminum - Duct Mount	G196
PF Model	Grilles and Registers Options and Accessories • Plaster/Mounting Frames	G191
PL Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Lay-in T-Bar	G192
RACA	Grilles and Registers Options and Accessories • Return Air Crosstalk Attenuator • Steel • Return Air Grilles	G194
SP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Spline	G192
TL Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Tegular Type T-Bar	G192
	SECURITY PRODUCTS	H
SG-3N	Minimum Security Bar Grilles and Registers • Aluminum - Fixed Bars - 0° Deflection • 1/2" (13) Spacing	H15
SG-4N	Minimum Security Bar Grilles and Registers • Aluminum - Fixed Bars - 0° Deflection • 1/4" (6) Spacing	H15
SG-5145H	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	H20
SG-5145V	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	H23
SG-51DH	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	H19
SG-51DV	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	H18
SG-51FH	Minimum Security Louvered Return Grilles and Registers • 0° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	H21

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	FLOWLINE™ LINEAR DIFFUSERS	**A**
FLBO10	FlowLine™ Options and Accessories • Blank-Offs - 1" (25) Slot	A16
FLBO15	FlowLine™ Options and Accessories • Blank-Offs - 1 1/2" (38) Slot	A16
FLBO20	FlowLine™ Options and Accessories • Blank-Offs - 2" (51) Slot	A16
FLBO25	FlowLine™ Options and Accessories • Blank-Offs - 2 1/2" (64) Slot	A16
FLBO30	FlowLine™ Options and Accessories • Blank-Offs - 3" (76) Slot	A16
FLC10	FlowLine™ Options and Accessories • Transitions - Type C Cross - 1" (25) Slot	A16
FLC15	FlowLine™ Options and Accessories • Transitions - Type C Cross - 1 1/2" (38) Slot	A16
FLC20	FlowLine™ Options and Accessories • Transitions - Type C Cross - 2" (51) Slot	A16
FLC25	FlowLine™ Options and Accessories • Transitions - Type C Cross - 2 1/2" (64) Slot	A16
FLC30	FlowLine™ Options and Accessories • Transitions - Type C Cross - 3" (76) Slot	A16
FLH10	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - 1" (25) Slot.	A7
FLH Models	Curved FlowLine™ Linear Diffusers • Horizontal High Throw Pattern Controllers • Curving Options - 1" (25), 1 1/2" (38), 2" (51), 2 1/2" (64) or 3" (76) Slot	A22
FLH10TZ	FlowLine™ Linear Diffuser • TechZone™ • Horizontal High Throw Pattern Controllers - 1" (25) Slot	A18
FLH15	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - 1 1/2" (38) Slot.	A7
FLH20	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - 2" (51) Slot.	A7
FLH25	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - 2 1/2" (64) Slot.	A7
FLH30	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - 3" (76) Slot.	A7
FLMC10	FlowLine™ Options and Accessories • Mitered Corners - 1" (25) Slot	A16
FLMC15	FlowLine™ Options and Accessories • Mitered Corners - 1 1/2" (38) Slot	A16
FLMC20	FlowLine™ Options and Accessories • Mitered Corners - 2" (51) Slot	A16
FLMC25	FlowLine™ Options and Accessories • Mitered Corners - 2 1/2" (64) Slot	A16
FLMC30	FlowLine™ Options and Accessories • Mitered Corners - 3" (76) Slot	A16
FLP10	FlowLine™ Linear Diffuser • Engineered Plenums - 1" (25) Slot	A20
FLP15	FlowLine™ Linear Diffuser • Engineered Plenums - 1 1/2" (38) Slot	A20
FLP20	FlowLine™ Linear Diffuser • Engineered Plenums - 2" (51) Slot	A20
FLP25	FlowLine™ Linear Diffuser • Engineered Plenums - 2 1/2" (64) Slot	A20
FLP30	FlowLine™ Linear Diffuser • Engineered Plenums - 3" (76) Slot	A20
FLPI10	FlowLine™ Linear Diffuser • Engineered Plenums - 1" (25) Slot - Internal Insulation	A20
FLPI15	FlowLine™ Linear Diffuser • Engineered Plenums - 1 1/2" (38) Slot - Internal Insulation	A20
FLPI20	FlowLine™ Linear Diffuser • Engineered Plenums - 2" (51) Slot - Internal Insulation	A20
FLPI25	FlowLine™ Linear Diffuser • Engineered Plenums - 2 1/2" (64) Slot - Internal Insulation	A20
FLPI30	FlowLine™ Linear Diffuser • Engineered Plenums - 3" (76) Slot - Internal Insulation	A20
FLR10	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 1" (25) Slot - Uninsulated	A17
FLR15	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 1 1/2" (38) Slot - Uninsulated	A17
FLR20	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 2" (51) Slot - Uninsulated	A17
FLR25	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 2 1/2" (64) Slot - Uninsulated	A17
FLR30	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 3" (76) Slot - Uninsulated	A17
FLRI10	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 1" (25) Slot - Insulated	A17
FLRI15	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 1 1/2" (38) Slot - Insulated	A17
FLRI20	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 2" (51) Slot - Insulated	A17
FLRI25	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 2 1/2" (64) Slot - Insulated	A17
FLRI30	FlowLine™ Options and Accessories • Return Hood/Sight Shield - 3" (76) Slot - Insulated	A17
FLT10	FlowLine™ Options and Accessories • Transitions - Type T Tee - 1" (25) Slot	A16
FLT15	FlowLine™ Options and Accessories • Transitions - Type T Tee - 1 1/2" (38) Slot	A16
FLT20	FlowLine™ Options and Accessories • Transitions - Type T Tee - 2" (51) Slot	A16
FLT25	FlowLine™ Options and Accessories • Transitions - Type T Tee - 2 1/2" (64) Slot	A16
FLT30	FlowLine™ Options and Accessories • Transitions - Type T Tee - 3" (76) Slot	A16
FLV Models	Curved FlowLine™ Linear Diffusers • Vertical Jet Throw Pattern Controllers • Curving Options - 1" (25), 1 1/2" (38), 2" (51), 2 1/2" (64) or 3" (76) Slot	A22
FLV10	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - 1" (25) Slot	A8
FLV10TZ	FlowLine™ Linear Diffuser • TechZone™ • Vertical Jet Throw Pattern Controllers - 1" (25) Slot	A18
FLV15	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - 1 1/2" (38) Slot	A8
FLV20	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - 2" (51) Slot	A8
FLV25	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - 2 1/2" (64) Slot	A8
FLV30	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - 3" (76) Slot	A8
FM10	Modular FlowLine™ Square Ceiling Diffuser • Supply - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot	A48
FMB10	Modular FlowLine™ Square Ceiling Diffuser • Supply - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot.	A48
FMBI10	Modular FlowLine™ Square Ceiling Diffuser • Supply - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot - Internal Insulation	A48
FMBR10	Modular FlowLine™ Square Ceiling Diffuser • Return - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot	A48

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	FLOWLINE™ LINEAR DIFFUSERS (CONTINUED)	
FMI10	Modular FlowLine™ Square Ceiling Diffuser • Supply - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot - Internal Insulation	A48
FMR10	Modular FlowLine™ Square Ceiling Diffuser • Return - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot	A48
FTBH10	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot	A29
FTBH15	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1 1/2" (38) Slot	A29
FTBH20	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2" (51) Slot	A29
FTBH25	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2 1/2" (64) Slot	A29
FTBH30	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 3" (76) Slot	A29
FTBHI10	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot - In. Insulation	A29
FTBHI15	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1 1/2" (38) Slot - In. Insulation	A29
FTBHI20	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2" (51) Slot - In. Insulation	A29
FTBHI25	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2 1/2" (64) Slot - In. Ins.	A29
FTBHI30	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 3" (76) Slot - In. Ins.	A29
FTBV10	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot	A29
FTBV15	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1 1/2" (38) Slot	A29
FTBV20	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2" (51) Slot	A29
FTBV25	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2 1/2" (64) Slot	A29
FTBV30	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 3" (76) Slot	A29
FTBVI10	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1" (25) Slot - In. Insulation	A29
FTBVI15	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 1 1/2" (38) Slot - In. Insulation	A29
FTBVI20	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2" (51) Slot - In. Insulation	A29
FTBVI25	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 2 1/2" (64) Slot - In. Ins.	A29
FTBVI30	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Bolt-Slot (Fineline®) Type T-Bar - 3" (76) Slot - In. Ins.	A29
FTH10	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot.	A29
FTH15	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1 1/2" (38) Slot.	A29
FTH20	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2" (51) Slot.	A29
FTH25	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2 1/2" (64) Slot.	A29
FTH30	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 3" (76) Slot.	A29
FTHI10	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot - In. Ins.	A29
FTHI15	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1 1/2" (38) Slot - In. Ins.	A29
FTHI20	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2" (51) Slot - In. Ins.	A29
FTHI25	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2 1/2" (64) Slot - In. Ins.	A29
FTHI30	FlowLine™ Linear Diffuser • Horizontal High Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 3" (76) Slot - In. Ins.	A29
FTV10	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot	A29
FTV15	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1 1/2" (38) Slot	A29
FTV20	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2" (51) Slot	A29
FTV25	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2 1/2" (64) Slot	A29
FTV30	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 3" (76) Slot	A29
FTVI10	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1" (25) Slot - In. Ins.	A29
FTVI15	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 1 1/2" (38) Slot - In. Ins.	A29
FTVI20	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2" (51) Slot - In. Ins.	A29
FTVI25	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 2 1/2" (64) Slot - In. Ins.	A29
FTVI30	FlowLine™ Linear Diffuser • Vertical Jet Throw Pattern Controllers - Std. 15/16" (24) or 9/16" (14) Flat T-Bar - 3" (76) Slot - In. Ins.	A29
	LINEAR DIFFUSERS AND BAR GRILLES	B
48LL1	Linear Louver Diffusers • Extruded Aluminum - One-way Pattern	B66
48LL2	Linear Louver Diffusers • Extruded Aluminum - Two-way Pattern	B66
48LV1	Linear Vane Diffusers • Extruded Aluminum - One-way Pattern	B70
48LV2	Linear Vane Diffusers • Extruded Aluminum - Two-way Pattern	B70
49-240	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 0° Deflection	B47
49-240MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 0° Deflection	B52
49-241	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 15° Deflection	B47
49-241MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 15° Deflection	B52
49-243	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 30° Deflection	B47
49-243MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/2" (13) Spacing - 1/4" (6) Bars - 30° Deflection	B52
49-280	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/2" (13) Spacing - 1/8" (3) Bars - 0° Deflection	B47
49-280MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/2" (13) Spacing - 1/8" (3) Bars - 0° Deflection	B52
49-281	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/2" (13) Spacing - 1/8" (3) Bars - 15° Deflection	B47
49-281MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/2" (13) Spacing - 1/8" (3) Bars - 15° Deflection	B52
49-480	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/4" (6) Spacing - 1/8" (3) Bars - 0° Deflection	B47

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	LINEAR DIFFUSERS AND BAR GRILLES (CONTINUED)	
49-480MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/4" (6) Spacing - 1/8" (3) Bars - 0° Deflection	B52
49-481	Linear Bar Grilles • Fixed Bars - Extruded Aluminum - 1/4" (6) Spacing - 1/8" (3) Bars - 15° Deflection	B47
49-481MC	Linear Bar Grilles • Mitered Corners - Extruded Aluminum - 1/4" (6) Spacing - 1/8" (3) Bars - 15° Deflection	B52
5010	Linear Slot Ceiling Diffusers • 'Ice Tong' Pattern Controllers - Extruded Aluminum - Supply - 1" (25) Slot	B5
5010BO	Linear Slot Ceiling Diffusers • Blank-off - Extruded Aluminum - 1" (25) Slot	B15
5010MC	Linear Slot Ceiling Diffusers • Mitered Corners - Extruded Aluminum - 1" (25) Slot	B15
5010R	Linear Slot Ceiling Diffusers • Extruded Aluminum - Return - 1" (25) Slot	B5
5015	Linear Slot Ceiling Diffusers • 'Ice Tong' Pattern Controllers - Extruded Aluminum - Supply - 1 1/2" (38) Slot	B5
5015BO	Linear Slot Ceiling Diffusers • Blank-off - Extruded Aluminum - 1 1/2" (38) Slot	B15
5015MC	Linear Slot Ceiling Diffusers • Mitered Corners - Extruded Aluminum - 1 1/2" (38) Slot	B15
5015R	Linear Slot Ceiling Diffusers • Extruded Aluminum - Return - 1 1/2" (38) Slot	B5
5050	Linear Slot Ceiling Diffusers • 'Ice Tong' Pattern Controllers - Extruded Aluminum - Supply - 1/2" (13) Slot	B5
5050BO	Linear Slot Ceiling Diffusers • Blank-off - Extruded Aluminum - 1/2" (13) Slot	B15
5050MC	Linear Slot Ceiling Diffusers • Mitered Corners - Extruded Aluminum - 1/2" (13) Slot	B15
5050R	Linear Slot Ceiling Diffusers • Extruded Aluminum - Return - 1/2" (13) Slot	B5
5075	Linear Slot Ceiling Diffusers • 'Ice Tong' Pattern Controllers - Extruded Aluminum - Supply - 3/4" (19) Slot	B5
5075BO	Linear Slot Ceiling Diffusers • Blank-off - Extruded Aluminum - 3/4" (19) Slot	B15
5075MC	Linear Slot Ceiling Diffusers • Mitered Corners - Extruded Aluminum - 3/4" (19) Slot	B15
5075R	Linear Slot Ceiling Diffusers • Extruded Aluminum - Return - 3/4" (19) Slot	B5
5075TZ	Linear Slot Ceiling Diffusers for TechZone™ Type Ceilings • 'Ice Tong' Pattern Controllers - Extruded Aluminum - Supply - 3/4" (19) Slot	B12
5075TZR	Linear Slot Ceiling Diffusers for TechZone™ Type Ceilings - Extruded Aluminum - Return - 3/4" (19) Slot	B12
5310	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1" (25) Slot	B27
5310I	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1" (25) Slot - Internal Insulation	B27
5310IMP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1" (25) Slot - Internal Insulation	B27
5310MP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1" (25) Slot	B27
5315	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1 1/2" (38) Slot	B27
5315I	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1 1/2" (38) Slot - Internal Insulation	B27
5315IMP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1 1/2" (38) Slot - Internal Insulation	B27
5315MP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1 1/2" (38) Slot	B27
5350	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1/2" (13) Slot	B27
5350I	Linear Slot Diffuser Plenums • Steel - Standard Performance - 1/2" (13) Slot - Internal Insulation	B27
5350IMP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1/2" (13) Slot - Internal Insulation	B27
5350MP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 1/2" (13) Slot	B27
5375	Linear Slot Diffuser Plenums • Steel - Standard Performance - 3/4" (19) Slot	B27
5375I	Linear Slot Diffuser Plenums • Steel - Standard Performance - 3/4" (19) Slot - Internal Insulation	B27
5375IMP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 3/4" (19) Slot - Internal Insulation	B27
5375MP	Linear Slot Diffuser Plenums • Steel - Modified Performance - 3/4" (19) Slot	B27
5375TZ	Linear Slot Diffuser Plenums for TechZone™ Type Ceilings • Steel - Standard Performance - 3/4" (19) Slot	B30
5375TZI	Linear Slot Diffuser Plenums for TechZone™ Type Ceilings • Steel - Standard Performance - 3/4" (19) Slot - Internal Insulation	B30
5375TZIMP	Linear Slot Diffuser Plenums for TechZone™ Type Ceilings • Steel - Modified Performance - 3/4" (19) Slot - Internal Insulation	B30
5375TZMP	Linear Slot Diffuser Plenums for TechZone™ Type Ceilings • Steel - Modified Performance - 3/4" (19) Slot	B30
	PLENUM SLOT & LIGHT TROFFER DIFFUSERS	C
5410	Light Troffer Diffusers • Supply - Single Side	C69
5410R	Light Troffer Diffusers • Return	C69
5420	Light Troffer Diffusers • Supply - Double Side	C69
5610	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Uninsulated	C38
5610-F	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Uninsulated	C40
5610I	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Insulated	C38
5610I-F	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Insulated	C40
5675	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C38
5675-F	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Uninsulated	C40
5675I	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C38
5675I-F	Curved Blade 'Flip-Flop' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Insulated	C40
5675R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C46
5675RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C46
5710	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Uninsulated	C6
5710-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1" (25) Slot - Uninsulated	C8
5710-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 1" (25) Slot - Uninsulated	C8
5710I	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Insulated	C6
5710I-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1" (25) Slot - Insulated	C8

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	PLENUM SLOT & LIGHT TROFFER DIFFUSERS (CONTINUED)	
5710I-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 1" (25) Slot - Insulated	C8
5710R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1" (25) Slot - Uninsulated	C46
5710R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Uninsulated	C48
5710R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1" (25) Slot - Uninsulated	C48
5710RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1" (25) Slot - Insulated	C46
5710RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Insulated	C48
5710RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1" (25) Slot - Insulated	C48
5715	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 1 1/2" (38) Slot - Uninsulated	C6
5715-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1 1/2" (38) Slot - Uninsulated	C8
5715-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 1 1/2" (38) Slot - Uninsulated	C8
5715I	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 1 1/2" (38) Slot - Insulated	C6
5715I-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1 1/2" (38) Slot - Insulated	C8
5715I-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 1 1/2" (38) Slot - Insulated	C8
5715R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1 1/2" (38) Slot - Uninsulated	C46
5715R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1 1/2" (38) Slot - Uninsulated	C48
5715R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1 1/2" (38) Slot - Uninsulated	C48
5715RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1 1/2" (38) Slot - Insulated	C46
5715RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1 1/2" (38) Slot - Insulated	C48
5715RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1 1/2" (38) Slot - Insulated	C48
5775	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C6
5775-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 3/4" (19) Slot - Uninsulated	C8
5775-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 3/4" (19) Slot - Uninsulated	C8
5775I	Adjustable 'Wiper Blade' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C6
5775I-F	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 3/4" (19) Slot - Insulated	C8
5775I-F2	Adjustable 'Wiper Blade' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face T-Bar - 3/4" (19) Slot - Insulated	C8
5775R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C46
5775R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Uninsulated	C48
5775R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 3/4" (19) Slot - Uninsulated	C48
5775RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C46
5775RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Insulated	C48
5775RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 3/4" (19) Slot - Insulated	C48
5810	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Uninsulated	C23
5810-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1" (25) Slot - Uninsulated	C25
5810-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 1" (25) Slot - Uninsulated	C25
5810I	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 1" (25) Slot - Insulated	C23
5810I-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1" (25) Slot - Insulated	C25
5810I-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 1" (25) Slot - Insulated	C25
5810R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1" (25) Slot - Uninsulated	C46
5810R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Uninsulated	C48
5810R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1" (25) Slot - Uninsulated	C48
5810RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1" (25) Slot - Insulated	C46
5810RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 1" (25) Slot - Insulated	C48
5810RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 1" (25) Slot - Insulated	C48
5850	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 1/2" (13) Slot - Uninsulated	C23
5850-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1/2" (13) Slot - Uninsulated	C25
5850-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 1/2" (13) Slot - Uninsulated	C25
5850I	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 1/2" (13) Slot - Insulated	C23
5850I-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 1/2" (13) Slot - Insulated	C25
5850I-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 1/2" (13) Slot - Insulated	C25
5850R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1/2" (13) Slot - Uninsulated	C46
5850R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - 1/2" (13) Slot - Uninsulated	C48
5850R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - 1/2" (13) Slot - Uninsulated	C48
5850RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 1/2" (13) Slot - Insulated	C46
5850RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Mount - 1/2" (13) Slot - Insulated	C48
5850RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face Center T-Bar - 1/2" (13) Slot - Insulated	C48
5875	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C23
5875-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 3/4" (19) Slot - Uninsulated	C25
5875-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 3/4" (19) Slot - Uninsulated	C25
5875I	Adjustable 'Ice Tong' Pattern Controller • Supply - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C23
5875I-F	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Straddle Mount - 3/4" (19) Slot - Insulated	C25
5875I-F2	Adjustable 'Ice Tong' Pattern Controller • Supply - Narrow Regressed T-Bar - Flat Face Center T-Bar - 3/4" (19) Slot - Insulated	C25

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	PLENUM SLOT & LIGHT TROFFER DIFFUSERS (CONTINUED)	
5875R	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Uninsulated	C46
5875R-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Uninsulated	C48
5875R-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 3/4" (19) Slot - Uninsulated	C48
5875RI	Plenum Slot Diffusers • Return - Lay-in T-Bar - 3/4" (19) Slot - Insulated	C46
5875RI-F	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Straddle Style - 3/4" (19) Slot - Insulated	C48
5875RI-F2	Plenum Slot Diffusers • Return - Narrow Regressed T-Bar - Flat Face T-Bar Style - 3/4" (19) Slot - Insulated	C48
59BS	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Premium Performance - Adjustable Vertical Discharge	C63
59BSI	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Premium Performance - Adjustable Vertical Discharge - Internal Insulation	C63
59BSR	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Premium Performance - Adjustable Vertical Discharge	C63
59BSRI	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Premium Performance - Adjustable Vertical Discharge - Internal Insulation	C63
59N	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Horizontal Discharge	C56
59ND	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Horizontal/Vertical Discharge	C56
59NDI	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Horizontal/Vertical Discharge - Internal Insulation	C56
59NDR	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Horizontal/Vertical Discharge	C56
59NDRI	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Horizontal/Vertical Discharge - Internal Insulation	C56
59NI	Plenum Slot Diffusers • Supply - Standard Lay-in T-Bar - Horizontal Discharge - Internal Insulation	C56
59NR	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Horizontal Discharge	C56
59NRI	Plenum Slot Diffusers • Supply/Return - Standard Lay-in T-Bar - Horizontal Discharge - Internal Insulation	C56
	CEILING DIFFUSERS	**D**
4250	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Round Neck Dampers	D258
4260	Eggcrate Return Ceiling Diffusers • Steel - Aluminum Eggcrate	D238
4260AA	Eggcrate Return Ceiling Diffusers • Aluminum - Aluminum Eggcrate	D238
4275	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Round Neck Dampers	D258
4293/QB	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Quadrant Blanks • For Models RNS3 and ARNS3	D266
4295/QB	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Quadrant Blanks • For Model Series RNS and RNSA	D267
4302	Perforated Return Ceiling Diffusers • Steel - Flush Face - Ductless Application	D235
4302A	Perforated Return Ceiling Diffusers • Aluminum - Flush Face - Ductless Application	D235
4302-DF	Perforated Return Ceiling Diffusers • Steel - Drop Face - Ductless Application	D235
4302-F	Perforated Return Ceiling Diffusers • Steel - Fineline® - Ductless Application	D235
4310A	Perforated Supply Ceiling Diffusers • All Aluminum Perforated Ceiling Diffusers - Supply - Round Neck	D222
4310AR	Perforated Return Ceiling Diffusers • All Aluminum Perforated Ceiling Diffusers - Return - Round Neck	D222
4320	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Flush Face	D156
4320A	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Flush Face	D156
4320AA	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum - Flush Face	D156
4320CB	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Steel - Flush Face	D166
4320CBA	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Aluminum Face - Flush Face	D166
4320CBAA	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Aluminum - Flush Face	D166
4320F	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Steel - Flush Face	D182
4320FA	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Aluminum Face - Flush Face	D182
4320FAA	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Aluminum - Flush Face	D182
4320M	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Flush Face - Square Neck	D188
4320MA	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Flush Face - Square Neck	D188
4320MR	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Flush Face - Round Neck	D192
4320MRA	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Flush Face - Round Neck	D192
4320S	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Steel - Flush Face - Square Neck	D198
4320SA	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Aluminum Face - Flush Face - Square Neck	D198
4320SAA	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Aluminum - Flush Face - Square Neck	D198
4325	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Drop Face	D156
4325A	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Drop Face	D156
4325AA	Perforated Supply Ceiling Diffusers • Deflectors - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum - Drop Face	D156
4325CB	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Steel - Drop Face	D166
4325CBA	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Aluminum Face - Drop Face	D166
4325CBAA	Perforated Supply Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Pattern - Aluminum - Drop Face	D166
4325F	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Steel - Drop Face	D182
4325FA	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Aluminum Face - Drop Face	D182
4325FAA	Perforated Supply Ceiling Diffusers • Fixed - 4-Way Pattern - Aluminum - Drop Face	D182
4325M	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Drop Face - Square Neck	D188
4325MA	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Drop Face - Square Neck	D188

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	CEILING DIFFUSERS (CONTINUED)	
4325MR	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Steel - Drop Face - Round Neck	D192
4325MRA	Perforated Supply Ceiling Diffusers • Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Drop Face - Round Neck	D192
4325S	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Steel - Drop Face - Square Neck	D198
4325SA	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Aluminum Face - Drop Face - Square Neck	D198
4325SAA	Perforated Supply Ceiling Diffusers • Adjustable 4-Way Star Pattern Controller - Aluminum - Drop Face - Square Neck	D198
4330	Perforated Supply Ceiling Diffusers • Premium Architectural - Steel Face - Flush Face - Adjustable Deflectors	D204
4330A	Perforated Supply Ceiling Diffusers • Premium Architectural - Aluminum Face - Flush Face - Adjustable Deflectors	D204
4330AA	Perforated Supply Ceiling Diffusers • Premium Architectural - Aluminum - Flush Face - Adjustable Deflectors	D204
4330CB	Perforated Supply Ceiling Diffusers • Premium Architectural - Steel Face - Curved Blade Pattern Controllers	D212
4330CBA	Perforated Supply Ceiling Diffusers • Premium Architectural - Aluminum Face - Curved Blade Pattern Controllers	D212
4330CBAA	Perforated Supply Ceiling Diffusers • Premium Architectural - Aluminum - Curved Blade Pattern Controllers	D212
4330R	Perforated Return Ceiling Air Diffusers • Return • Steel Model - Flush Face	D217
4330RA	Perforated Return Ceiling Air Diffusers • Return • Aluminum Face Model - Flush Face	D217
4340CB	Perforated Supply Ceiling Diffusers • Full Face - Curved Blade - 1, 2, 3 or 4-Way Pattern - Steel Face - Square Neck	D174
4340CBA	Perforated Supply Ceiling Diffusers • Full Face - Curved Blade - 1, 2, 3 or 4-Way Pattern - Aluminum - Square Neck	D174
4340M	Perforated Supply Ceiling Diffusers • Full Face - Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Steel Face - Square Neck	D176
4340MA	Perforated Supply Ceiling Diffusers • Full Face - Modular Core - 1, 2, 3 or 4-Way Adjustable Pattern - Aluminum Face - Square Neck	D176
4340R	Perforated Return Ceiling Diffusers • Steel Face - Flush Face - Square Neck	D178
4340RA	Perforated Return Ceiling Diffusers • Aluminum - Flush Face - Square Neck	D178
4350	Perforated Ceiling Diffusers • Supply and Return • Fiberglass Plenum • Supply	D225
4350R	Perforated Ceiling Diffusers • Supply and Return • Fiberglass Plenum • Return	D225
4360	Perforated Return Ceiling Diffusers • Steel - Flush Face	D228
4360A	Perforated Return Ceiling Diffusers • Aluminum Face - Flush Face	D228
4360AA	Perforated Return Ceiling Diffusers • Aluminum - Flush Face	D228
4365	Perforated Return Ceiling Diffusers • Steel - Drop Face	D228
4365A	Perforated Return Ceiling Diffusers • Aluminum Face - Drop Face	D228
4365AA	Perforated Return Ceiling Diffusers • Aluminum - Drop Face	D228
4675	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Round Neck Dampers	D258
4693/QB	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Quadrant Blanks • For Model UNI2	D265
4695/QB	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Quadrant Blanks • For Model Series UNI and AUNI	D264
5010CTD	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Flat T-Bar - Supply - 1" (25) Slot	D128
5010CTD-F	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Narrow T-Bar - Supply - 1" (25) Slot	D128
5010RCTD	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Flat T-Bar - Return - 1" (25) Slot	D128
5010RCTD-F	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Narrow T-Bar - Return - 1" (25) Slot	D128
5075CTD	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Flat T-Bar - Supply - 3/4" (19) Slot	D128
5075CTD-F	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Narrow T-Bar - Supply - 3/4" (19) Slot	D128
5075RCTD	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Flat T-Bar - Return - 3/4" (19) Slot	D128
5075RCTD-F	Architectural Square Ceiling Diffusers • Aluminum - Ceiling Tile Slot - For Narrow T-Bar - Return - 3/4" (19) Slot	D128
51CC	Curved Blade Ceiling Diffusers • Aluminum - 1, 2, 3 or 4-way Pattern	D250
51CCD	Curved Blade Ceiling Diffusers • Aluminum - 1 or 2-way Pattern w/Directional Vanes	D250
61CC	Curved Blade Ceiling Diffusers • Steel - 1, 2, 3 or 4-way Pattern	D250
61CCD	Curved Blade Ceiling Diffusers • Steel - 1 or 2-way Pattern w/Directional Vanes	D250
6200	Square and Rectangular Pattern Ceiling Diffusers • Aluminum - Fixed Pattern	D14
6200IV	Square and Rectangular Pattern Ceiling Diffusers • Aluminum - Fixed Pattern - Induction Vanes	D39
6200-MRI	Square and Rectangular Pattern Ceiling Diffusers • Aluminum • 100% Aluminum - MRI	D20
6250	Square and Rectangular Pattern Ceiling Diffusers • Aluminum - Adjustable Pattern	D14
6300R	Round Ceiling Diffusers • Aluminum - Fully Adjustable Horizontal/Vertical Pattern	D148
6400	Square and Rectangular Pattern Ceiling Diffusers • Aluminum - Fixed Pattern - Extra High Capacity	D46
6400IV	Square and Rectangular Pattern Ceiling Diffusers • Aluminum - Fixed Pattern - Extra High Capacity - Induction Vanes	D65
6500	Square and Rectangular Pattern Ceiling Diffusers • Steel - Fixed Pattern	D14
6500FP	Square and Rectangular Pattern Ceiling Diffusers • Steel - Fiberglass Plenum	D18
6500IV	Square and Rectangular Pattern Ceiling Diffusers • Steel - Fixed Pattern - Induction Vanes	D39
6550	Square and Rectangular Pattern Ceiling Diffusers • Steel - Adjustable Pattern	D14
6600	Architectural Square Ceiling Diffusers • Steel - Plaque Diffuser	D134
66UNI	Architectural Square Ceiling Diffusers • Steel - Plaque Diffuser with Perimeter Slots	D139
7200	Modular Core Ceiling Diffusers • Aluminum - 1, 2, 3 or 4-way Adjustable Pattern	D243
7500	Modular Core Ceiling Diffusers • Steel - 1, 2, 3 or 4-way Adjustable Pattern	D243

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	CEILING DIFFUSERS (CONTINUED)	
ARNR	Round Ceiling Diffusers • Aluminum - Adjustable Horizontal Pattern	D143
ARNRA1	Round Ceiling Diffusers • Aluminum - Adjustable Horizontal to Vertical Pattern	D146
ARNS	Stamped Square Ceiling Diffusers • Aluminum - Fixed Pattern 4 Cones	D87
ARNSA	Stamped Square Ceiling Diffusers • Aluminum - Adjustable Pattern 3 or 4 Cones	D91
ARNS3	Stamped Square Ceiling Diffusers • Aluminum • Non-Removable Core - Fixed Pattern 3 Cones	D95
ARUNI	Round Ceiling Diffusers • Aluminum - Architectural Plaque Face Horizontal Pattern	D150
AUNI	Architectural Square Ceiling Diffusers • Aluminum - Flat Panel	D104
AUNI2	Architectural Square Ceiling Diffusers • Aluminum • Square Plaque - Corner Posts	D112
DEGL	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Damper with Grid - Square or Rectangular Neck	D262
DEGR	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Damper with Grid - Round Neck	D261
DEGS	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Damper with Grid - Square or Rectangular Neck	D262
DFA	Ceiling Diffuser Options and Accessories • Mounting Frames	D256
DFS	Ceiling Diffuser Options and Accessories • Mounting Frames	D256
EGL	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Equalizing Grid - Square or Rectangular Neck	D261
EGR	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Equalizing Grid - Round Neck	D261
EGS	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Equalizing Grid - Square or Rectangular Neck	D261
EX	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Volume Extractors - 2" (51) Blade Spacing	D263
EXD	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Volume Extractors - 1" (25) Blade Spacing	D263
OBD	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Square & Rectangular Neck	D259
OBDD	Ceiling Diffuser Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Square & Rectangular Neck	D260
RDB	Round Ceiling Diffusers • Steel - Downblast Adjustable Horizontal/Vertical Pattern	D152
RNR	Round Ceiling Diffusers • Steel - Adjustable Horizontal Pattern	D143
RNRA1	Round Ceiling Diffusers • Steel - Adjustable Horizontal to Vertical Discharge Pattern	D146
RNS	Stamped Square Ceiling Diffusers • Steel - Fixed Pattern 4 Cones	D87
RNS2	Stamped Square Ceiling Diffusers • Steel - Fixed Pattern 2 Cones	D98
RNS3	Stamped Square Ceiling Diffusers • Steel • Non-Removable Core - Fixed Pattern 3 Cones	D95
RNSA	Stamped Square Ceiling Diffusers • Steel - Adjustable Pattern 3 or 4 Cones	D91
RUNI	Round Ceiling Diffusers • Aluminum - Architectural Plaque Face Horizontal Pattern	D150
TWR	Stamped Square Ceiling Diffusers • Steel - "Twister" Swirl Pattern • High Induction	D101
UNI	Architectural Square Ceiling Diffusers • Steel - Flat Panel	D104
UNI2	Architectural Square Ceiling Diffusers • Steel • Square Plaque - Corner Posts	D112
UNI-AD	Architectural Square Ceiling Diffusers • Steel - Downblast - Adjustable	D118
UNI-PD	Architectural Square Ceiling Diffusers • Steel - Downblast - Fixed Perforated	D115
UNI-RP	Architectural Square Ceiling Diffusers • Steel • Round Plaque Face - Round Neck	D121
UNI w/RC	Architectural Square Ceiling Diffusers • Steel - Flat Panel - Retaining Channel Option	D106
	FIRE RATED PRODUCTS	**E**
4010	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Fixed Pattern - Full Face	E13
4010	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Fixed Pattern - Full Face • Type S Surface Mount Module for Hard Ceilings	E16
4010-1	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Adjustable Pattern • Full Face	E19
4020	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Fixed Pattern • Full Face	E13
4020-1	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Adjustable Pattern • Full Face	E19
4030	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Fixed Pattern - Panel Type	E13
4030-1	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Adjustable Pattern - Panel Type	E19
4040	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Fixed Pattern - Panel Type	E13
4040-1	Fire Rated Stamped Square Ceiling Diffusers • Round Neck - Adjustable Pattern - Panel Type	E19
4070	Fire Rated Perforated Ceiling Diffusers • Round Neck • Supply - 1, 2, 3 or 4-Way Adjustable Discharge Pattern • Flush Face	E31
4070	Fire Rated Perforated Ceiling Diffusers • Round Neck • Supply - 1, 2, 3 or 4-Way Adjustable Discharge Pattern • Flush Face • Surface Mount	E34
4070CB	Fire Rated Perforated Ceiling Diffusers • Round Neck • Curved Blade • Supply - 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Flush Face	E37
4070R	Fire Rated Perforated Ceiling Diffusers • Round Neck • Return Models - Ducted • Flush Face	E31
4070R	Fire Rated Perforated Ceiling Diffusers • Round Neck • Return Model - Ducted - Flush Face • Surface Mount	E34
4075	Fire Rated Perforated Ceiling Diffusers • Supply - 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Drop Face	E31
4075CB	Fire Rated Perforated Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Adjustable Discharge Pattern Option - Drop Face	E37
4075R	Fire Rated Perforated Ceiling Diffusers • Return Models - Ducted - Drop Face	E31
4080	Fire Rated Perforated Ceiling Diffusers • Supply Models - 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Flush Face	E31
4080CB	Fire Rated Perforated Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Adjustable Discharge Pattern Option - Flush Face	E37
4080R	Fire Rated Perforated Ceiling Diffusers • Return Models - Ducted - Flush Face	E31
4085	Fire Rated Perforated Ceiling Diffusers • Supply - 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Drop Face	E31

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	FIRE RATED PRODUCTS (CONTINUED)	
4085CB	Fire Rated Perforated Ceiling Diffusers • Curved Blade - 1, 2, 3 or 4-Way Adjustable Discharge Pattern Option - Drop Face	E37
4085R	Fire Rated Perforated Ceiling Diffusers • Return Models - Ducted - Drop Face.	E31
4111, 4112, 4113	Fire Rated Ductless Return Grilles • Perforated Face	E44
4114, 4115, 4116	Fire Rated Ductless Return Grilles • Eggcrate Core	E44
4117, 4118, 4119	Fire Rated Ductless Return Grilles • Open Face (grille by others)	E44
4121, 4122, 4123	Fire Rated Ductless Return Filter Grilles • Filter Grille - Louvered Face	E47
4124, 4125, 4126	Fire Rated Ductless Return Filter Grilles • Filter Grille - Eggcrate Face	E47
4127, 4128, 4129	Fire Rated Ductless Return Ceiling Dampers • Raised Type - Optional Grilles	E50
4410	Fire Rated Stamped Square Ceiling Diffusers • 2 Cone • Round Neck - Fixed Pattern - Full Face	E22
4410-UNI	Fire Rated Architectural Square Ceiling Diffusers • Round Neck - Flat Panel - Full Face.	E25
4410-UNI	Fire Rated Architectural Square Ceiling Diffusers • Square Plaque • Round Neck - Type S Surface Mount for Hard Ceilings	E28
4420	Fire Rated Stamped Square Ceiling Diffusers • 2 Cone • Round Neck - Fixed Pattern - Full Face	E22
4420-UNI	Fire Rated Architectural Square Diffusers • Round Neck - Flat Panel - Full Face.	E25
4430	Fire Rated Stamped Square Ceiling Diffusers • 2 Cone • Round Neck - Fixed Pattern - Panel Type.	E22
4430-UNI	Fire Rated Architectural Square Diffusers • Round Neck - Flat Panel - Panel Type	E25
4440	Fire Rated Stamped Square Ceiling Diffusers • 2 Cone • Round Neck - Fixed Pattern - Panel Type.	E22
4440-UNI	Fire Rated Architectural Square Diffusers • Round Neck - Flat Panel - Panel Type	E25
5200L	Fire Rated Open Face Plenum Diffusers • Turned In Leg	E53
5200S	Fire Rated Open Face Plenum Diffusers • Hemmed Leg	E53
5510R	Fire Rated Plenum Slot Diffusers • Return Model - 1" (25) Slot	E62
5510T	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Ice Tong' Pattern Controller - 1" (25) Slot	E59
5510WB	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Wiper Blade' Pattern Controller - 1" (25) Slot	E56
5515R	Fire Rated Plenum Slot Diffusers • Return Model - 1 1/2" (38) Slot	E62
5515WB	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Wiper Blade' Pattern Controller - 1 1/2" (38) Slot	E56
5550R	Fire Rated Plenum Slot Diffusers • Return Model - 1/2" (13) Slot	E62
5550T	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Ice Tong' Pattern Controller - 1/2" (13) Slot	E59
5550WB	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Wiper Blade' Pattern Controller - 1/2" (13) Slot	E56
5575	Fire Rated Plenum Slot Diffusers • Supply - 'Flip-Flop' Pattern Controller - 3/4" (19) Slot	E62
5575R	Fire Rated Plenum Slot Diffusers • Return Model - 3/4" (19) Slot	E62
5575T	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Ice Tong' Pattern Controller - 3/4" (19) Slot	E59
5575WB	Fire Rated Plenum Slot Diffusers • Slot Diffuser - 'Wiper Blade' Pattern Controller - 3/4" (19) Slot	E56
6500FRD	Fire Rated Pattern Ceiling Diffusers • Fixed Pattern - Square Neck	E7
6500IVFRD	Fire Rated Pattern Ceiling Diffusers • Fixed Pattern - Square Neck - Induction Vanes	E7
6505FRD	Fire Rated Pattern Ceiling Diffusers • Fixed Pattern - Round Neck	E10
6505IVFRD	Fire Rated Pattern Ceiling Diffusers • Fixed Pattern - Round Neck - Induction Vanes	E10
6550FRD	Fire Rated Pattern Ceiling Diffusers • Adjustable Pattern - Square Neck	E7
6555FRD	Fire Rated Pattern Ceiling Diffusers • Adjustable Pattern - Round Neck	E10
7500FRD	Fire Rated Modular Core Diffusers • 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Square Neck	E40
7505FRD	Fire Rated Modular Core Diffusers • 1, 2, 3 or 4-Way Adjustable Discharge Pattern - Round Neck	E40
	GRILLES AND REGISTERS	**F**
45DL1	Drum Louver Supply Grilles • Aluminum - Supply - Single Vanes	F170
45DL2	Drum Louver Supply Grilles • Aluminum - Supply - Split Vanes	F170
45DLC1	Spiral Duct Drum Louver Supply Grilles • Aluminum - Supply - Single Vanes	F168
45DLC2	Spiral Duct Drum Louver Supply Grilles • Aluminum - Supply - Split Vanes	F168
5130H-HD	Heavy Duty Bar Return Grilles • Aluminum - Return - Gymnasium - 30° Blade Deflection - Horizontal	F144
5130V-HD	Heavy Duty Bar Return Grilles • Aluminum - Return - Gymnasium - 30° Blade Deflection - Vertical	F144
5145F	Louvered Face Grilles and Registers • Aluminum • Fineline® - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection.	F31
5145H	Louvered Face Grilles and Registers • Aluminum - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F28
5145HC	Curved Spiral Duct Grilles • Aluminum - 45° Deflection - Fixed Blades - Return - 3/4" (19) Spacing - Horizontal Front Blades.	F53
5145V	Louvered Face Grilles and Registers • Aluminum - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection- Vertical	F28
5155H	Louvered Face Grilles and Registers • Aluminum - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F32
5155HC	Curved Spiral Duct Grilles • Aluminum - 45° Deflection - Fixed Blades - Return - 1/2" (13) Spacing - Horizontal Front Blades.	F53
5155V	Louvered Face Grilles and Registers • Aluminum - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection - Vertical	F32
51C	Curved Blade Grilles and Registers • Aluminum - One and Two-Way Discharge Pattern - Supply	F86
51C	Curved Blade Grilles and Registers • Aluminum - Three and Four-Way Discharge Pattern - Supply.	F87
51CD	Curved Blade Grilles and Registers • Aluminum - One and Two-Way Discharge Pattern - Supply	F86

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	GRILLES AND REGISTERS (CONTINUED)	
51D15H-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 15° Blade Deflection - Horizontal	F139
51D15V-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 15° Blade Deflection - Vertical	F139
51D30H-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 30° Blade Deflection - Horizontal	F139
51D30V-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 30° Blade Deflection - Vertical	F139
51DFH-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 0° Blade Deflection - Horizontal	F139
51DFV-HD	Heavy Duty Bar Grilles and Registers • Aluminum - Supply - 0° Blade Deflection - Vertical	F139
51DGD	Door/Transfer Grilles • Aluminum - Double Flange	F129
51DGS	Door/Transfer Grilles • Aluminum - Single Flange	F129
51DH	Louvered Face Grilles and Registers • Aluminum - Double Deflection - Supply - Horizontal	F14
51DHC	Curved Spiral Duct Grilles • Aluminum - Double Deflection - Supply - Horizontal Front Blades	F50
51DV	Louvered Face Grilles and Registers • Aluminum - Double Deflection - Supply - Vertical	F14
51DVC	Curved Spiral Duct Grilles • Aluminum - Double Deflection - Supply - Vertical Front Blades	F50
51EC	Eggcrate Grilles and Registers • Aluminum - Return and Exhaust	F96
51EC45	Eggcrate Grilles and Registers • Aluminum - Return and Exhaust - 45° Sight Proof Deflection	F100
51EC-MRI	Eggcrate Grilles and Registers • 100% Aluminum - Return and Exhaust • MRI	F99
51FB45	Filter Grilles • Aluminum - Exhaust and Return - 3/4" (19) Spacing - Fixed - 45° Blade Deflection	F122
51FB55	Filter Grilles • Aluminum - Exhaust and Return - 1/2" (13) Spacing - Fixed - 45° Blade Deflection	F122
51FBS	Filter Grilles • Aluminum - Exhaust and Return - 3/4" (19) Spacing - Fixed - 0° Blade Deflection	F122
51FE	Filter Grilles • Aluminum - Exhaust and Return - Eggcrate Grid Core	F122
51FE45	Filter Grilles • Aluminum - Exhaust and Return - Eggcrate Grid Core, 45° Sight Proof Deflection	F122
51FH	Louvered Face Grilles and Registers • Aluminum - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection - Horizontal	F28
51FH-HD	Heavy Duty Bar Return Grilles • Aluminum - Return - Gymnasium - 0° Blade Deflection - Horizontal	F144
51FP	Filter Grilles • Aluminum - Exhaust and Return - Perforated Face Core	F122
51FV	Louvered Face Grilles and Registers • Aluminum - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection- Vertical	F28
51FV-HD	Heavy Duty Bar Return Grilles • Aluminum - Return - Gymnasium - 0° Blade Deflection - Vertical	F144
51LG	Lattice Grilles • Aluminum	F189
51PR	Perforated Grilles and Registers • Aluminum - Return	F114
51PRC	Curved Spiral Duct Grilles • Aluminum - Perforated Face - Supply and Return	F52
51RC	Reversible Core Grilles and Registers • Aluminum - Supply and Return	F134
51RCD	Reversible Core Grilles and Registers • Aluminum - Supply and Return - Rear Directional Vanes	F134
51SH	Louvered Face Grilles and Registers • Aluminum - Single Deflection - Supply - Horizontal	F15
51SHC	Curved Spiral Duct Grilles • Aluminum - Single Deflection - Supply - Horizontal Front Blades	F51
51SV	Louvered Face Grilles and Registers • Aluminum - Single Deflection - Supply - Vertical	F15
51SVC	Curved Spiral Duct Grilles • Aluminum - Single Deflection - Supply - Vertical Front Blades	F51
6145F	Louvered Face Grilles and Registers • Steel • Fineline® - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection	F36
6145H	Louvered Face Grilles and Registers • Steel - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F34
6145H-HD	Heavy Duty Return Grille • Steel - Return - Gymnasium - 45° Deflection Horizontal Blades	F158
6145HC	Curved Spiral Duct Grilles • Steel - 45° Deflection - Fixed Blades - Return - 3/4" (19) Spacing - Horizontal Front Blades	F57
6145V	Louvered Face Grilles and Registers • Steel - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection - Vertical	F34
6145V-HD	Heavy Duty Return Grille • Steel - Return - Gymnasium - 45° Deflection Vertical Blades	F158
6155H	Louvered Face Grilles and Registers • Steel - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F37
6155HC	Curved Spiral Duct Grilles • Steel - 45° Deflection - Fixed Blades - Return - 1/2" (13) Spacing - Horizontal Front Blades	F57
6155V	Louvered Face Grilles and Registers • Steel - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection - Vertical	F37
61C	Curved Blade Grilles and Registers • Steel - One-Way & Two-Way Discharge Pattern - Supply	F88
61C	Curved Blade Grilles and Registers • Steel - Three and Four-Way Discharge Pattern - Supply	F89
61CD	Curved Blade Grilles and Registers • Steel - One-Way & Two-Way Discharge Pattern - Supply	F88
61DGC	Door/Transfer Grilles • Steel - Core Only	F130
61DGD	Door/Transfer Grilles • Steel - Double Flange	F130
61DGD-FR	Door/Transfer Grilles • Fire Rated	F131
61DGS	Door/Transfer Grilles • Steel - Single Flange	F130
61DH	Louvered Face Grilles and Registers • Steel - Double Deflection - Supply - Horizontal	F16
61DH-HD	Heavy Duty Grilles and Registers • Steel - Supply - Double Deflection - Gymnasium - Horizontal	F150
61DHC	Curved Spiral Duct Grilles • Steel - Double Deflection - Supply - Horizontal Front Blades	F54
61DV	Louvered Face Grilles and Registers • Steel - Double Deflection - Supply - Vertical	F16
61DV-HD	Heavy Duty Grilles and Registers • Steel - Supply - Double Deflection - Gymnasium - Vertical	F150
61DVC	Curved Spiral Duct Grilles • Steel - Double Deflection - Supply - Vertical Front Blades	F54
61EC	Eggcrate Grilles and Registers • Steel - Return and Exhaust	F101
61ECF	Eggcrate Grilles and Registers • Steel - Fineline® • Return and Exhaust	F104

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	GRILLES AND REGISTERS (CONTINUED)	
61FB45	Filter Grilles • Steel - Exhaust and Return - 3/4" (19) Spacing - Fixed - 45° Blade Deflection	F122
61FB55	Filter Grilles • Steel - Exhaust and Return - 1/2" (13) Spacing - Fixed - 45° Blade Deflection	F122
61FBS	Filter Grilles • Steel - Exhaust and Return - 3/4" (19) Spacing - Fixed - 0° Blade Deflection	F122
61FE	Filter Grilles • Steel - Exhaust and Return - Eggcrate Grid Core	F122
61FH	Louvered Face Grilles and Registers • Steel - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection - Horizontal	F34
61FH-HD	Heavy Duty Return Grille • Steel - Return - Gymnasium - 0° Deflection Horizontal Blades	F158
61FP	Filter Grilles • Steel - Exhaust and Return - Perforated Face Core	F122
61FV	Louvered Face Grilles and Registers • Steel - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection - Vertical	F34
61FV-HD	Heavy Duty Return Grille • Steel - Return - Gymnasium - 0° Deflection Vertical Blades	F158
61L50C	Curved Spiral Duct Grilles • Linear Slot Face - 1/2" (13) Slot - Supply	F67
61L75C	Curved Spiral Duct Grilles • Linear Slot Face - 3/4" (19) Slot - Supply	F67
61L10C	Curved Spiral Duct Grilles • Linear Slot Face - 1" (25) Slot - Supply	F67
61LG	Lattice Grilles • Steel	F189
61PR	Perforated Grilles and Registers • Steel - Return	F114
61PRC	Curved Spiral Duct Grilles • Steel - Perforated Face - Supply and Return	F56
61SH	Louvered Face Grilles and Registers • Steel - Single Deflection - Supply - Horizontal	F17
61SH-HD	Heavy Duty Grilles and Registers • Steel - Supply - Single Deflection - Gymnasium - Horizontal	F150
61SHC	Curved Spiral Duct Grilles • Steel - Single Deflection - Supply - Horizontal Front Blades	F55
61SV	Louvered Face Grilles and Registers • Steel - Single Deflection - Supply - Vertical	F17
61SV-HD	Heavy Duty Grilles and Registers • Steel - Supply - Single Deflection - Gymnasium - Vertical	F150
61SVC	Curved Spiral Duct Grilles • Steel - Single Deflection - Supply - Vertical Front Blades	F55
6745H	Louvered Face Grilles and Registers • Stainless Steel - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F39
6745V	Louvered Face Grilles and Registers • Stainless Steel - 3/4" (19) Spacing - Fixed Blades - Return - 45° Blade Deflection - Vertical	F39
6755H	Louvered Face Grilles and Registers • Stainless Steel - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection - Horizontal	F40
6755H-HD	Heavy Duty Grilles and Registers • Stainless Steel - Return - 1/2" (13) Spacing - 45° Deflection Horizontal Blades	F159
6755V	Louvered Face Grilles and Registers • Stainless Steel - 1/2" (13) Spacing - Fixed Blades - Return - 45° Blade Deflection- Vertical	F40
6755V-HD	Heavy Duty Grilles and Registers • Stainless Steel - Return - 1/2" (13) Spacing - 45° Deflection Vertical Blades	F159
67DH	Louvered Face Grilles and Registers • Stainless Steel - Double Deflection - Supply - Horizontal	F18
67DV	Louvered Face Grilles and Registers • Stainless Steel - Double Deflection - Supply - Vertical	F18
67EC	Eggcrate Grilles and Registers • Stainless Steel - Return and Exhaust	F105
67FB45	Filter Grilles • Stainless Steel - Exhaust and Return - 3/4" (19) Spacing - Fixed - Surface Mount - 45° Blade Deflection	F122
67FB55	Filter Grilles • Stainless Steel - Exhaust and Return - 1/2" (13) Spacing - Fixed - Surface Mount - 45° Blade Deflection	F122
67FH	Louvered Face Grilles and Registers • Stainless Steel - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection - Horizontal	F39
67FV	Louvered Face Grilles and Registers • Stainless Steel - 3/4" (19) Spacing - Fixed Blades - Return - 0° Blade Deflection- Vertical	F39
67LG	Lattice Grilles • Stainless Steel	F189
67PR	Perforated Grilles and Registers • Stainless Steel - Return	F116
67SH	Louvered Face Grilles and Registers • Stainless Steel - Single Deflection - Supply - Horizontal	F19
67SV	Louvered Face Grilles and Registers • Stainless Steel - Single Deflection - Supply - Vertical	F19
7145H	Airfoil Blade Grilles and Registers • Aluminum - Fixed Blades - Return - 45° Blade Deflection - Horizontal Blades	F79
7145V	Airfoil Blade Grilles and Registers • Aluminum - Fixed Blades - Return - 45° Blade Deflection - Vertical Blades	F79
71DH	Airfoil Blade Grilles and Registers • Aluminum - Double Deflection - Supply - Horizontal Front Blades	F71
71DV	Airfoil Blade Grilles and Registers • Aluminum - Double Deflection - Supply - Vertical Front Blades	F71
71FH	Airfoil Blade Grilles and Registers • Aluminum - Fixed Blades - Return - 0° Blade Deflection - Horizontal Blades	F79
71FV	Airfoil Blade Grilles and Registers • Aluminum - Fixed Blades - Return - 0° Blade Deflection - Vertical Blades	F79
71SH	Airfoil Blade Grilles and Registers • Aluminum - Single Deflection - Supply - Horizontal Blades	F72
71SV	Airfoil Blade Grilles and Registers • Aluminum - Single Deflection - Supply - Vertical Blades	F72
813DH	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 3" (76) Spacing - Horizontal Blades	F177
813DV	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 3" (76) Spacing - Vertical Blades	F177
813SH	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 3" (76) Spacing - Horizontal Blades	F177
813SV	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 3" (76) Spacing - Vertical Blades	F177
81DH	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 1 1/2" (38) Spacing - Horizontal Blades	F177
81DV	Industrial Supply Grilles and Registers • Aluminum - Double Deflection - 1 1/2" (38) Spacing - Vertical Blades	F177
81GDH	Industrial Supply Grilles and Registers • Aluminum - Gang Operated - 1 1/2" (38) Spacing - Horizontal Front Blades	F177
81GDV	Industrial Supply Grilles and Registers • Aluminum - Gang Operated - 1 1/2" (38) Spacing - Vertical Front Blades	F177
81MG1	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - One Module	F184
81MG2	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Two Modules	F184
81MG3	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Three Modules	F184
81MG4	Industrial Supply Grilles and Registers • Aluminum - Modular Frame - Double Deflection - 1 1/2" (38) Spacing - Four Modules	F184

INDEX BY SECTION AND NAILOR MODEL NUMBER

MODEL	SECTION AND DESCRIPTION	PAGE NO.
	GRILLES AND REGISTERS (CONTINUED)	
81SH	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 1 1/2" (38) Spacing - Horizontal Blades	F177
81SV	Industrial Supply Grilles and Registers • Aluminum - Single Deflection - 1 1/2" (38) Spacing - Vertical Blades	F177
A Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Screw Fastening (External)	F192
C Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Concealed Mounting	F192
D Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Screw Fastening (Concealed)	F192
DFA	Grilles and Registers Options and Accessories • Drywall/Plaster Mounting Frames - Aluminum	F193
DFS	Grilles and Registers Options and Accessories • Drywall/Plaster Mounting Frames - Steel	F193
EQT	Grilles and Registers Options and Accessories • Options - Earthquake Tabs	F195
EX	Grilles and Registers Options and Accessories • Air Balancing Devices - Volume Extractors - 2" (51) Blade Spacing	F200
EXD	Grilles and Registers Options and Accessories • Air Balancing Devices - Volume Extractors - 1" (25) Blade Spacing	F200
FP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Narrow Regressed T-Bar (Fineline®)	F194
GK	Grilles and Registers Options and Accessories • Options - Gasket	F195
IS	Grilles and Registers Options and Accessories • Options - Insect Screen	F195
MP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Metal Pan/Snap-in	F194
NF Type	Grilles and Registers Options and Accessories • Fastenings and Border Frames - Narrow Frame	F192
OBD	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Steel - Grille Mount	F197
OBD-A	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Aluminum - Grille/Duct Mount	F197
OBD-SS	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Stainless Steel - Duct Mount	F199
OBDD	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Steel - Duct Mount	F198
OBDD-A	Grilles and Registers Options and Accessories • Air Balancing Devices - Opposed Blade Dampers - Aluminum - Duct Mount	F198
PF Model	Grilles and Registers Options and Accessories • Plaster/Mounting Frames	F193
PL Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Lay-in T-Bar	F194
RACA	Grilles and Registers Options and Accessories • Return Air Crosstalk Attenuator • Steel • Return Air Grilles	F196
SP Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Spline	F194
TL Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Tegular Type T-Bar	F194
	SECURITY PRODUCTS	G
SG-280	Minimum Security Bar Grilles and Registers • Aluminum - Fixed Bars - 0° Deflection • 1/2" (13) Spacing	G15
SG-480	Minimum Security Bar Grilles and Registers • Aluminum - Fixed Bars - 0° Deflection • 1/4" (6) Spacing	G15
SG-5145H	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G20
SG-5145V	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G20
SG-51DH	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G18
SG-51DV	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G18
SG-51FH	Minimum Security Louvered Return Grilles and Registers • 0° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G21
SG-51FV	Minimum Security Louvered Return Grilles and Registers • 0° Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G21
SG-51SH	Minimum Security Louvered Supply Grilles and Registers • Single Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G19
SG-51SV	Minimum Security Louvered Supply Grilles and Registers • Single Deflection - 3/4" (19) Spacing - Lattice Face • Aluminum	G19
SG-6145H	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G20
SG-6145V	Minimum Security Louvered Return Grilles and Registers • 45° Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G20
SG-61DH	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G18
SG-61DV	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G18
SG-61FH	Minimum Security Louvered Return Grilles and Registers • 0° Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G21
SG-61FV	Minimum Security Louvered Return Grilles and Registers • 0° Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G21
SG-61SH	Minimum Security Louvered Supply Grilles and Registers • Single Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G19
SG-61SV	Minimum Security Louvered Supply Grilles and Registers • Single Deflection - 3/4" (19) Spacing - Lattice Face • Steel	G19
SG-6200	Minimum Security Diffusers • Louvered Pattern • Lattice Face - 1, 2, 3, or 4-way blow - Aluminum	G13
SG-6500	Minimum Security Diffusers • Louvered Pattern • Lattice Face - 1, 2, 3, or 4-way blow - Steel	G13
SG-67DH	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Stainless Steel	G17
SG-67DV	Minimum Security Louvered Supply Grilles and Registers • Double Deflection - 3/4" (19) Spacing - Lattice Face • Stainless Steel	G17
SG-BM4	Medium/Minimum Security Bar Grilles and Registers • Steel - Fixed Bars - 40° Deflection	G11
SG-BMZ	Medium/Minimum Security Bar Grilles and Registers • Steel - Fixed Bars - 0° Deflection	G11
SG-LGA	Minimum Security Lattice Face Grilles • 13/16" (21) Square Holes on 1" (25) Centers - 12 gauge material - Aluminum	G22
SG-LGS	Minimum Security Lattice Face Grilles • 13/16" (21) Square Holes on 1" (25) Centers - 12 gauge material - Steel	G22
SG-LM	Maximum Security Grilles and Registers • Steel - Square Lattice - Wire Mesh Screen	G5
SG-PR	Maximum Security Grilles and Registers • Steel - Round Perforated Face	G8

NOTES:

NAILOR WOODGRAIN FINISHES • A NEW WAVE OF ARCHITECTURAL VERSATILITY

Woodgrain finishes offer a cosmetically appealing, environmentally friendly solution for many Nailor Air Distribution products such as Architectural Square Plaque Ceiling Diffusers, Linear Bar Grilles, Slot Diffusers and Flowline.
Woodgrain finishes can be applied to extrusions in almost any length and to most flat steel or aluminum panels and cabinets. Ideally suited for applications where architects prefer not to see the HVAC equipment, the finishes blend beautifully with wood floors, ceilings or panels, offering a very congenial, sophisticated appearance.
These highly durable products are easy to clean, scratch and chip resistant and do not require the high maintenance upkeep of real wood. They can be used for interior, exterior and high traffic architectural applications, offering high resistance toward all atmospheric agents and are resistant to heat, acids, humidity, salt, detergents and UV.
Available in a broad range of color selections, the standard is a textured finish which closely resembles “real wood” or an optional smooth coating finish that is glossy and shiny. Unlike any other finish in our industry, woodgrain redefines beauty and elegance.

HOW DOES IT WORK?

PREPARATION

Pretreatment is the initial step in the preparation process, in which the raw, unfinished product undergoes a 5 stage wash system, allowing for greater adhesion of the powder during the heat transfer.

COATING

Next, the product is coated with a 2.5 mils layer of nonhazardous dry powder paint that is applied electrostatically. It is then cured under a temperature of 400° F for several minutes, creating a strong base coat for the final product, adding durability and protection from light, weather, abrasion, corrosion and humidity. After cooling down from coating, the product is then wrapped with a preprinted transfer film consisting of organic photosensitive pigments and cellulose resin. Air is vacuumed from the inside in order to make the film fully adhere to the product. The film-wrapped product is then moved to a special oven where the sublimation process occurs (the ink pigments used will turn from a solid to gas and are transferred from the film into the coating layer of the object). Finally, the product is taken out of the oven and the transfer film is removed.

DECORATION

The result is a beautifully decorated workpiece so natural looking, you have to touch it to tell the difference between real wood.

ARCHITECTURAL SQUARE PLAQUE DIFFUSERS (MODELS: UNI, AUNI, UNI2, AUNI2, UNI-PD)

LINEAR BAR GRILLES (MODELS: 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481)

LINEAR SLOT DIFFUSERS (MODELS: 5050, 5075, 5010, 5015, 5050R, 5075R, 5010R, 5015R)

6318

NAILOR WOODGRAIN FINISHES • FOR DIFFUSERS, LINEAR BAR GRILLES AND LINEAR SLOT DIFFUSERS

Standard finish is textured.
*Also available in a smooth gloss finish.

American Nut WG01

American Oak WG02

American Walnut WG03

Barnwood WG04

Black Walnut WG05

Cherry WG06

Cinnamon Red WG07

Cordoba Cherry WG08

Dark Knotty Pine WG09

Dark National Walnut WG10

English Walnut* WG11

Fine Wenge WG12

Fonthill WG13

Honey Cherry WG14

Lighter Maple WG15

Light National Walnut WG16

Mahogany 1406 WG17

Maple WG18

Mediterranean WG19

Oak WG20

Rustic Cherry WG21

Straight Cherry WG22

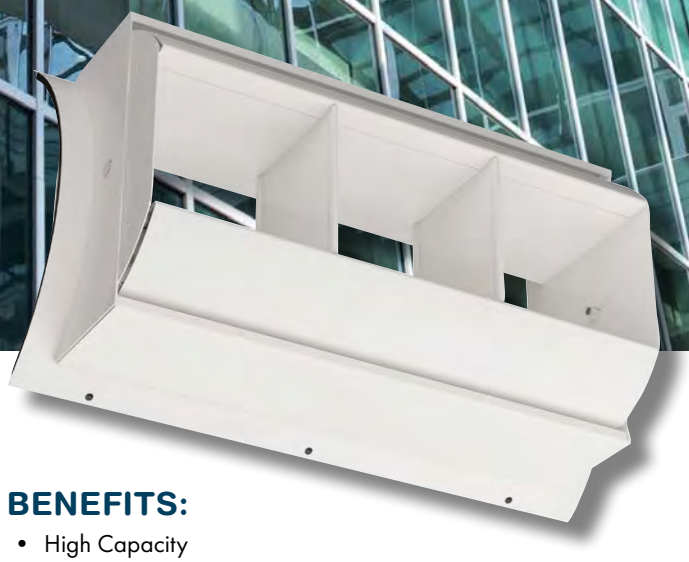
Table Walnut WG23

Wide Grain WG24

Nailor® Industries Inc.

Spiral Duct Mount Drum Louvers
Models: 45DLC1 & 45DLC2

Nailor 45DLC Spiral Duct Drum Louvers have been specially designed to handle large air capacities and provide long throws. These high capacity supply grilles are constructed of aluminum and ideally suited for large conditioned spaces such as shopping malls, industrial plants and stadiums where ductwork cannot be brought close to the occupants.



BENEFITS:

- High Capacity
- Long throws
- Accurate directional control of primary air
- Curved frame mounts directly to spiral ducts without the use of duct taps, reducing installation time and costs
- Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes
- Felt seal around the drum minimizes air leakage and holds the drum securely in the selected position

STANDARD FEATURES:

- High quality, extruded aluminum construction
- Rotating adjustable cylindrical drums
- Mounting holes and perimeter frame gasket
- Felt seal around drum to minimize leakage
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the drum opening
- Sizes available 6"- 15" in height and 9"- 60" in width
- Standard Appliance White with optional finishes

OPTIONS:

- Damper/Extractor (Air Scoop)
- Pole Operator

Nailor® Industries Inc.

"Complete Air Control and Distribution Solutions"

International Group Locations:

International and United States Headquarters, Sales, Manufacturing, Research and Development and Test Laboratory:

Nailor Industries of Texas Inc.
4714 Winfield Rd.,
Houston, Texas 77039
U.S.A.
Tel: (281) 590-1172
Fax: (281) 590-3086
info@nailor.com
www.nailor.com

Canadian Headquarters, Sales and Manufacturing:

Nailor Industries Inc.
98 Toryork Drive,
Toronto, Ontario M9L 1X6
Canada
Tel: (416) 744-3300
Fax: (416) 744-3360

European Sales and Marketing Center, Manufacturing:
(also responsible for exports to the Middle East, Asia and Australia):

Advanced Air (UK) Ltd.
Burrell Way,
Thetford, Norfolk
IP24 3QU
England
Tel: (0) 1842 765657
Fax: (0) 1842 762032
info@advancedair.co.uk
www.advancedair.co.uk

Regional Sales and Manufacturing Facilities:

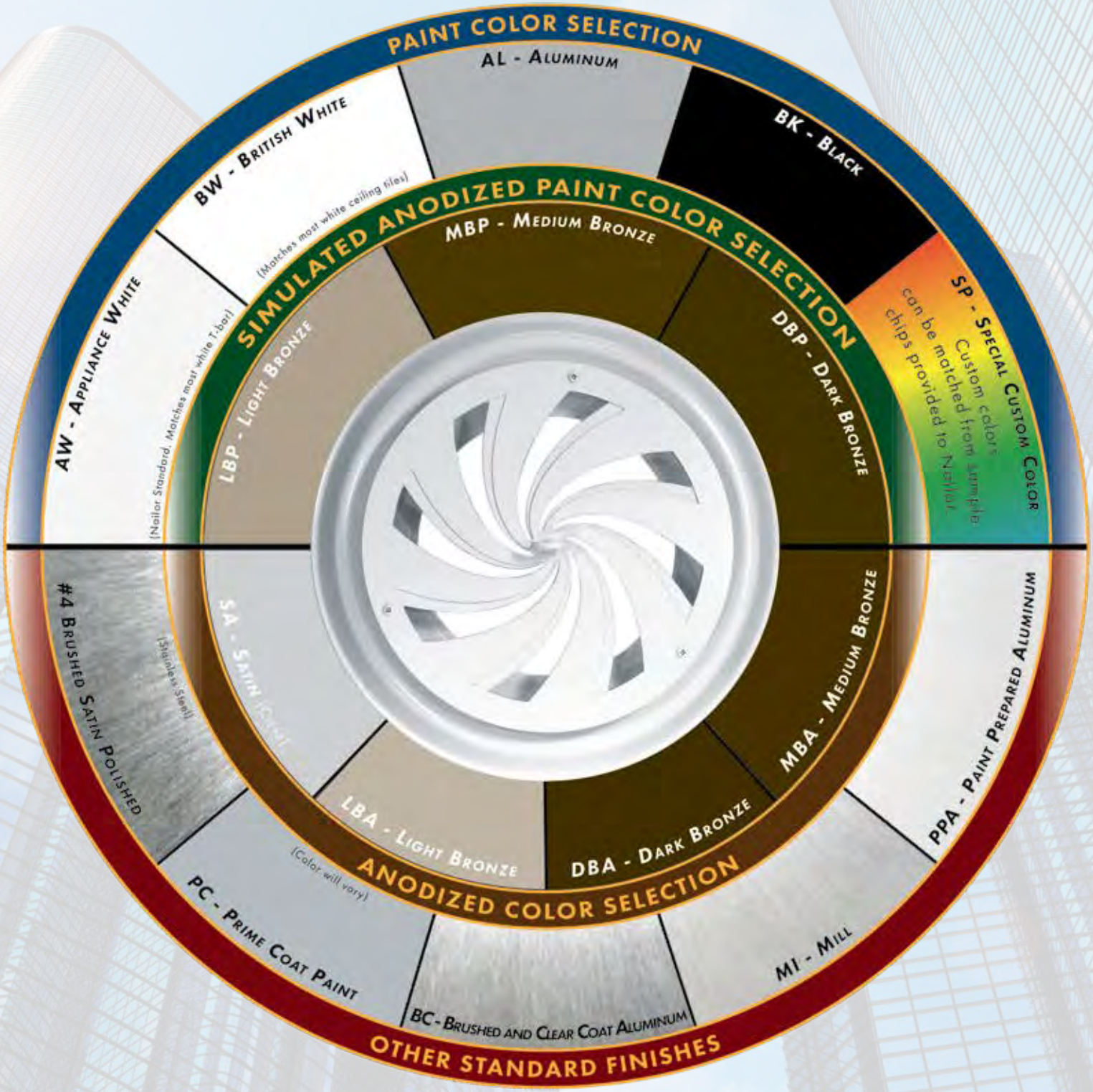
Nailor Industries Inc. (Western U.S.A.)
3730 Civic Center Drive,
North Las Vegas, NV 89030
U.S.A.
Tel: (702) 648-5400
Fax: (702) 638-0400

Nailor Industries (Western) Inc.
Unit F, 4427 - 72nd Avenue S.E.,
Calgary, Alberta T2C 2G5
Canada
Tel: (403) 279-8619
Fax: (403) 279-5035

Nailor® Industries Inc.

Standard and Optional Finishes For Grilles and Diffusers

The following standard colors and finishes are available on applicable Nailor air distribution products. Consult individual product pages for availability.



The pictured finishes have been represented as best as possible within printing limitations. However, actual finish may vary. Contact your Nailor representative for a color chip sample on the material specified for a more accurate representation.

DBK - Black (for registers ordered with factory mounted dampers) - ***BA*** - Perforated Diffusers (4300 series only) Appliance White (AW) face with black back pan and pattern controllers.

Terminal Units:
- Single Duct
- Dual Duct
- Fan Powered
- Bypass
- Retrofit

Air Control Products:
- Louvers
- Control & Backdraft Dampers
- Curtain Fire Dampers
- Multi-Blade Fire Dampers
- Smoke Dampers
- Combination Fire/Smoke Dampers
- Ceiling Dampers
- Access Doors

Green Building Products:
- Underfloor Air Distribution Systems
- Displacement Ventilation

Electric Duct Heaters:
- Slip-in/Insert Mount
- Flanged Mount
- Round Duct Connection

Fan Coil Units:
- Vertical Hi-Rise & Closet
- Horizontal Fan Coil Units
- Vertical Sill Fan Coil Units

WADCB

Complete Air Control and Distribution Solutions

For the most up to date catalog information go to
www.**nailor**.com

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