

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

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Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Aluminum – Model 51EC-MRI

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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

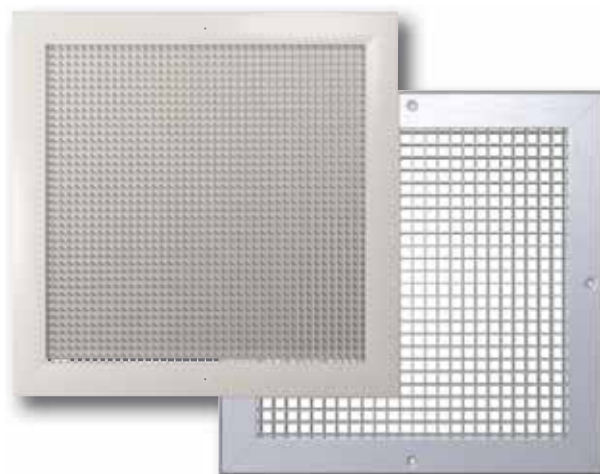
Steel – Fineline® – Model 61ECF

Page F104

Stainless Steel – Model 67EC

Page F105

Suffix '-O' adds a stainless steel OBD.



Models 51EC45, 67EC

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

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Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Model 61PR

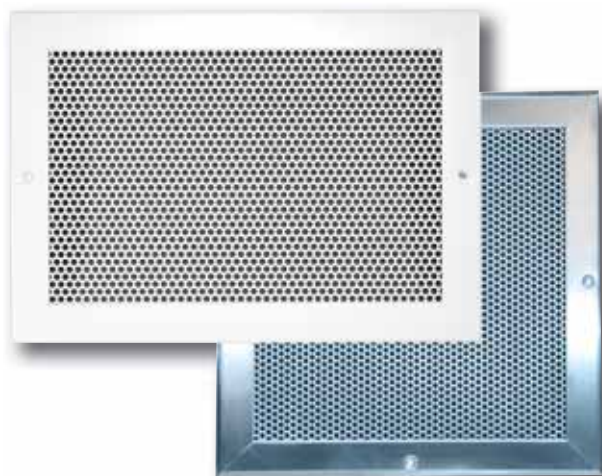
Page F114

Suffix '-O' adds a steel OBD

Stainless Steel – Model 67PR

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Suffix '-O' adds a steel OBD



Models 51PR, 67PR

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

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Aluminum – Models 51FB45, 51FB55, 51FB5

Steel – Models 61FB45, 61FB55, 61FB5

Stainless Steel – 67FB45, 67FB55

• Eggcrate

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Aluminum – Model 51FE

Aluminum – Model 51FE45

Steel – Model 61FE

• Perforated

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Aluminum – Model 51FP

Steel – Model 61FP



Models 51FB5, 51FB55, 67FB45

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.

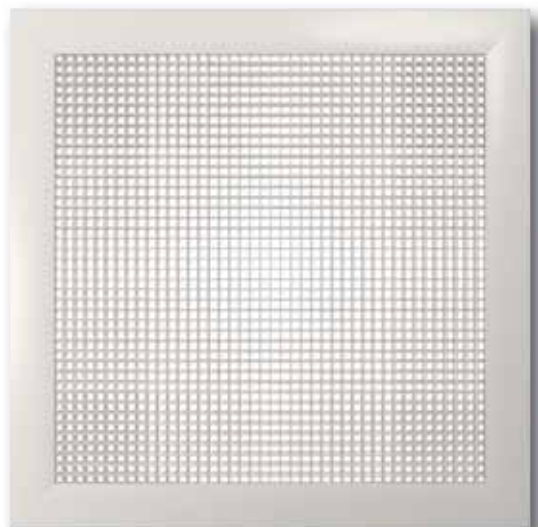
ALUMINUM EGGCRATE GRILLES AND REGISTERS

• 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

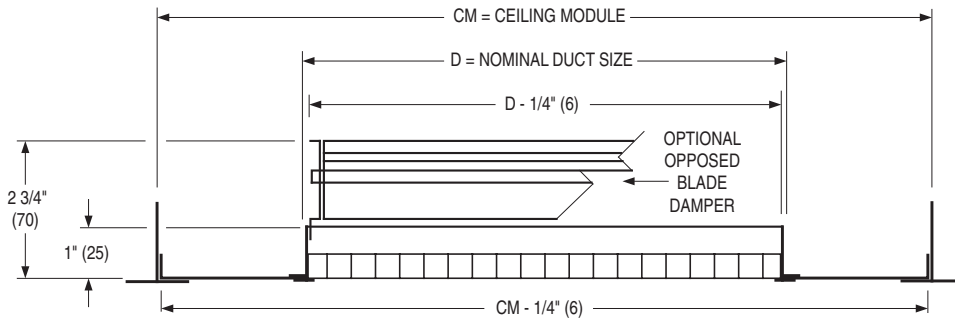
Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type A – Concealed Angle Frame

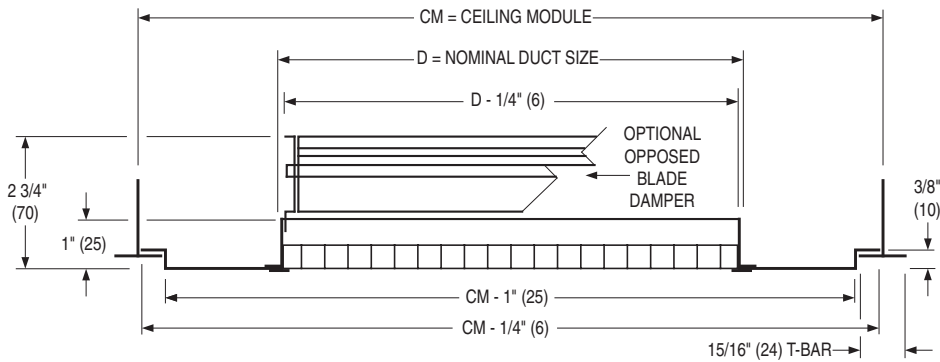
Frame/Border Type C – Core Only

DIMENSIONAL DATA:

51EC SERIES EGGCRATE RETURN AND EXHAUST



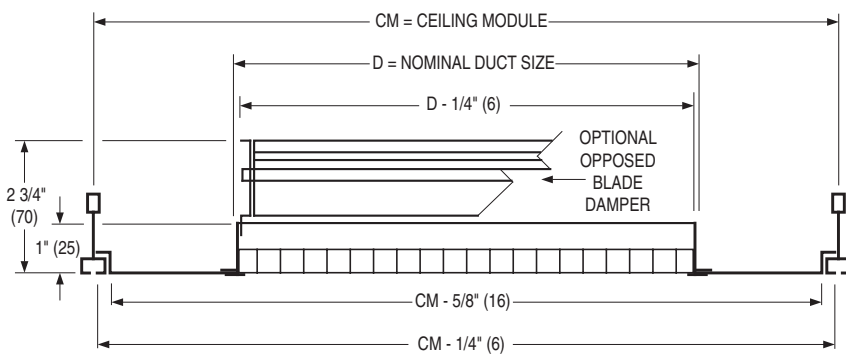
Frame/Border Type PLS or PLA – Panel Mounted – Lay-in T-Bar Type



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

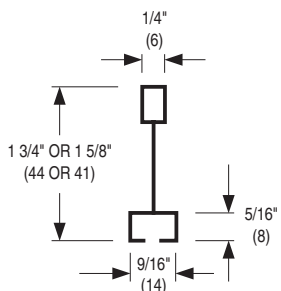
Max. Duct/Neck Size D = Ceiling Module – 3" (76)

Frame/Border Type TPS or TPA – Tegular Panel Mounted – Lay-in T-Bar Type



Frame/Border Type FPS or FPA – 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

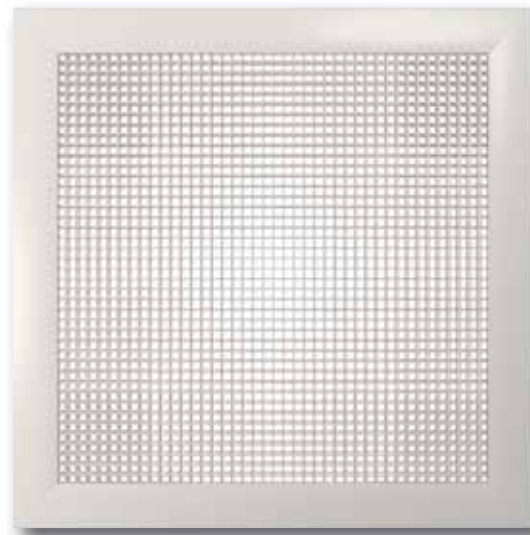


REGRESSED T-BAR DETAIL

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:

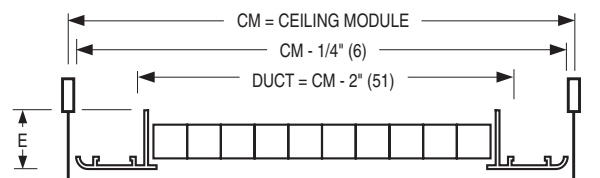
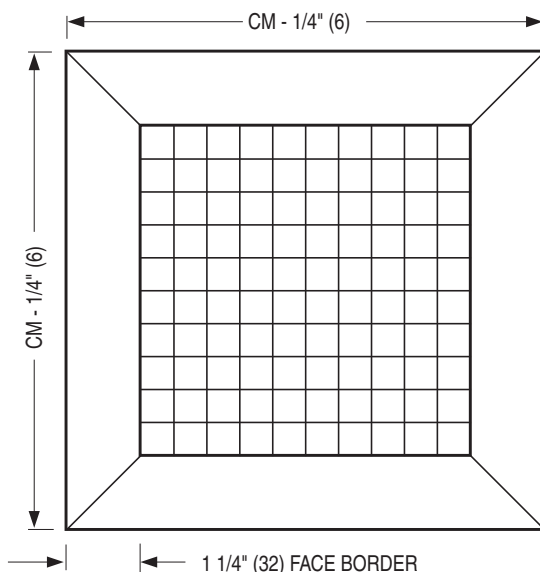
- Frame/Border Type L has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

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 free 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

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.

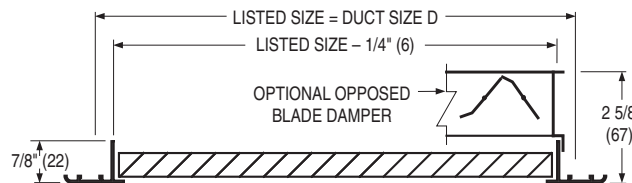
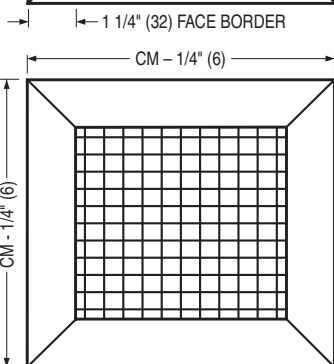
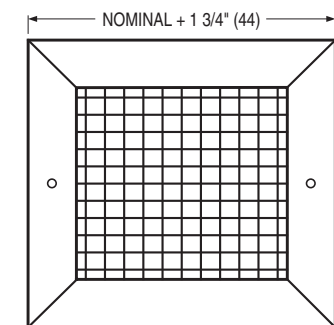
FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

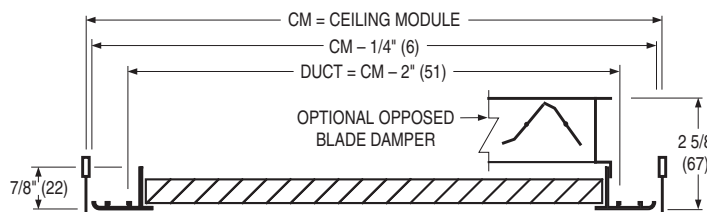
OPTIONS AND ACCESSORIES:

- 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)

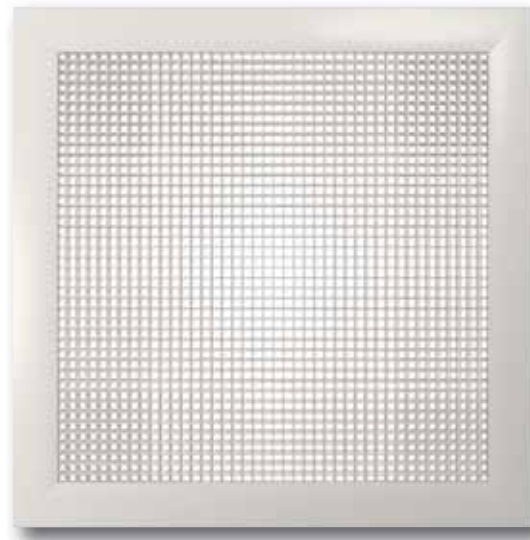
STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- 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:

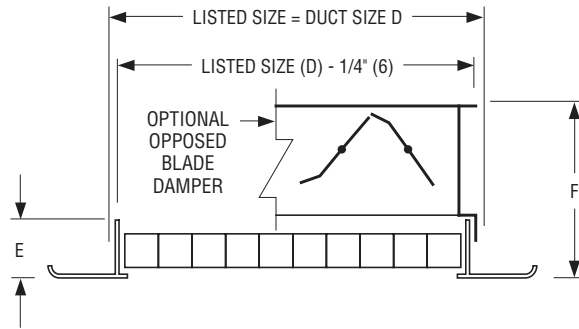
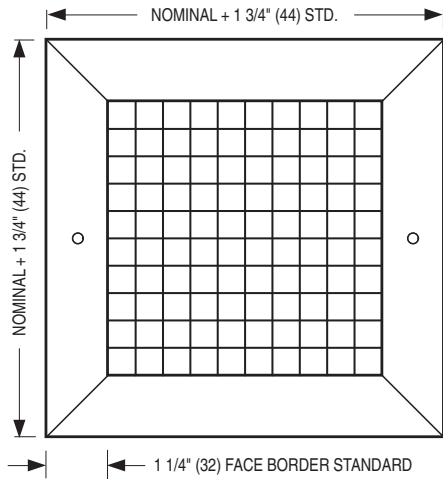
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

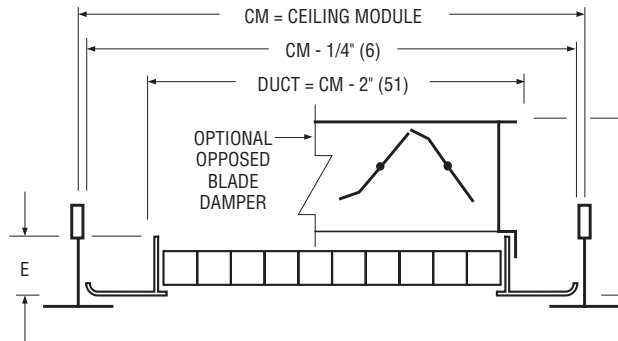
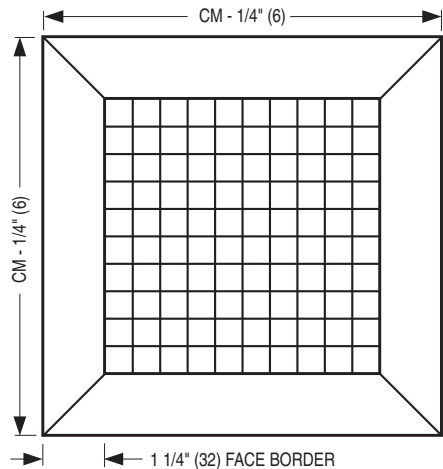
DIMENSIONAL DATA:

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

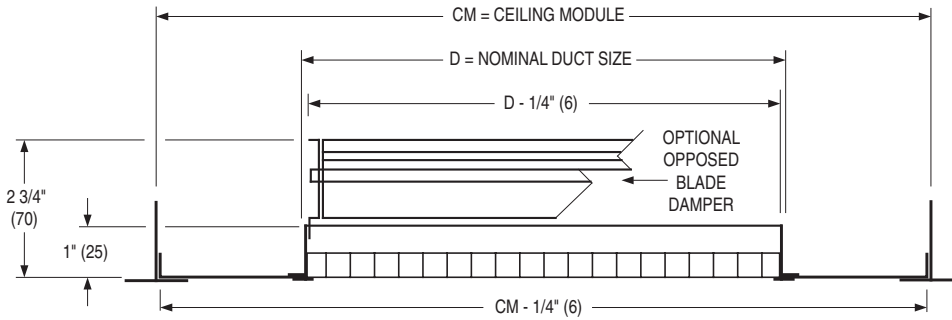


Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

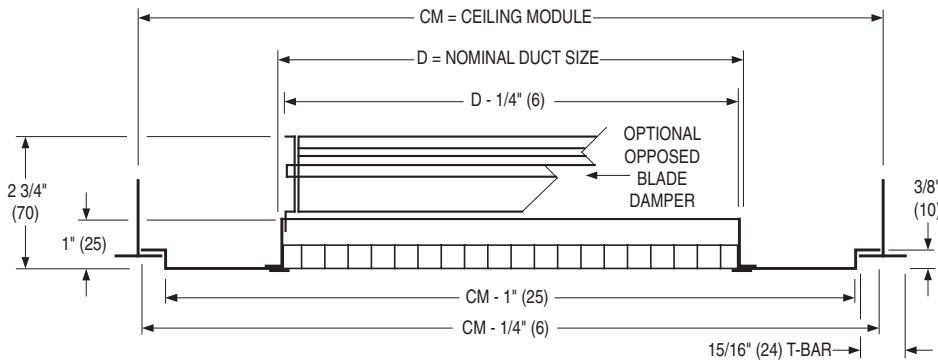
Frame/Borders Type L – Lay-in T-Bar

DIMENSIONAL DATA:

61EC SERIES STEEL EGGCRATE RETURN AND EXHAUST



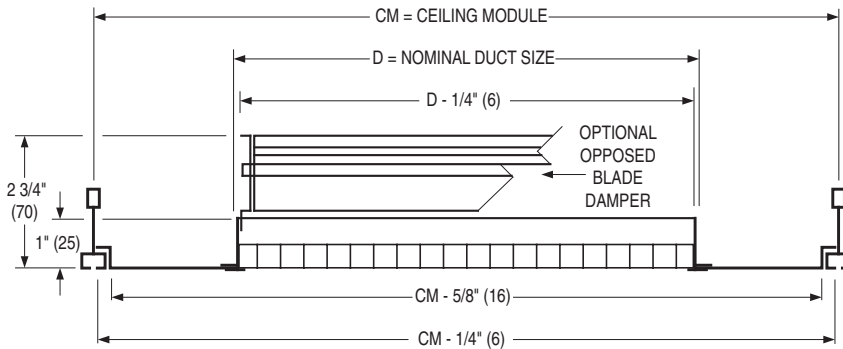
Frame/Border Type PLS – Panel Mounted – Lay-in T-Bar Type



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

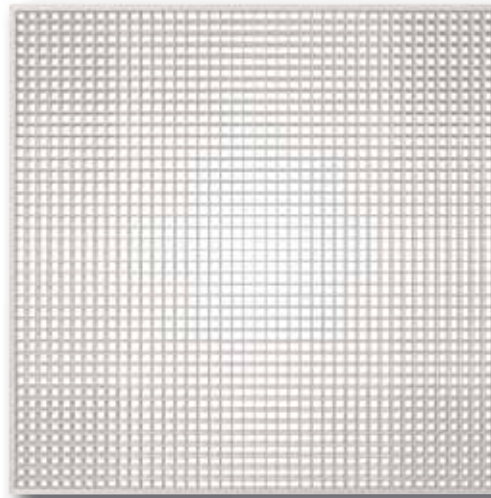
STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- 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.

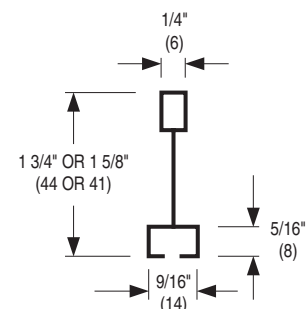
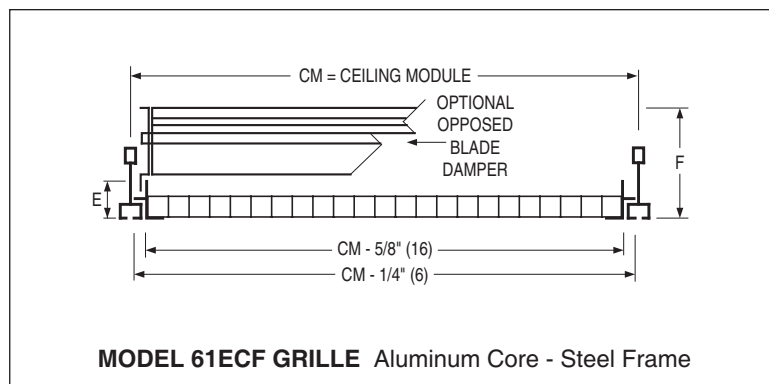
OPTIONS AND ACCESSORIES:

- 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



REGRESSED T-BAR DETAIL

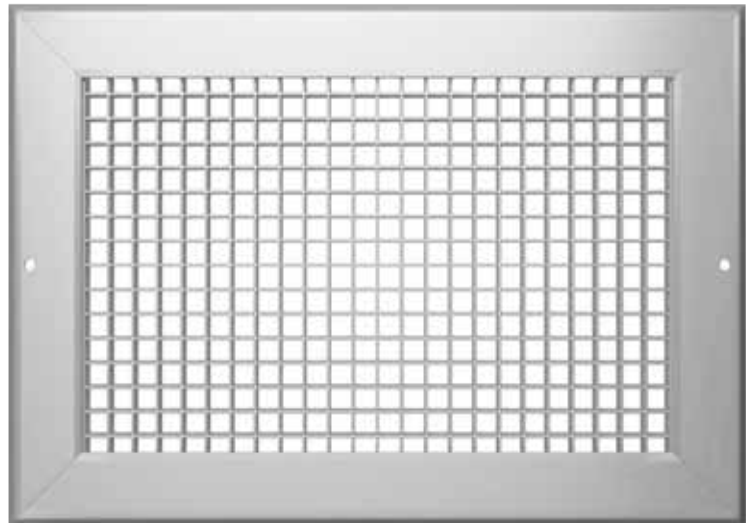
STAINLESS STEEL EGGCRATE GRILLES AND REGISTERS

- 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:

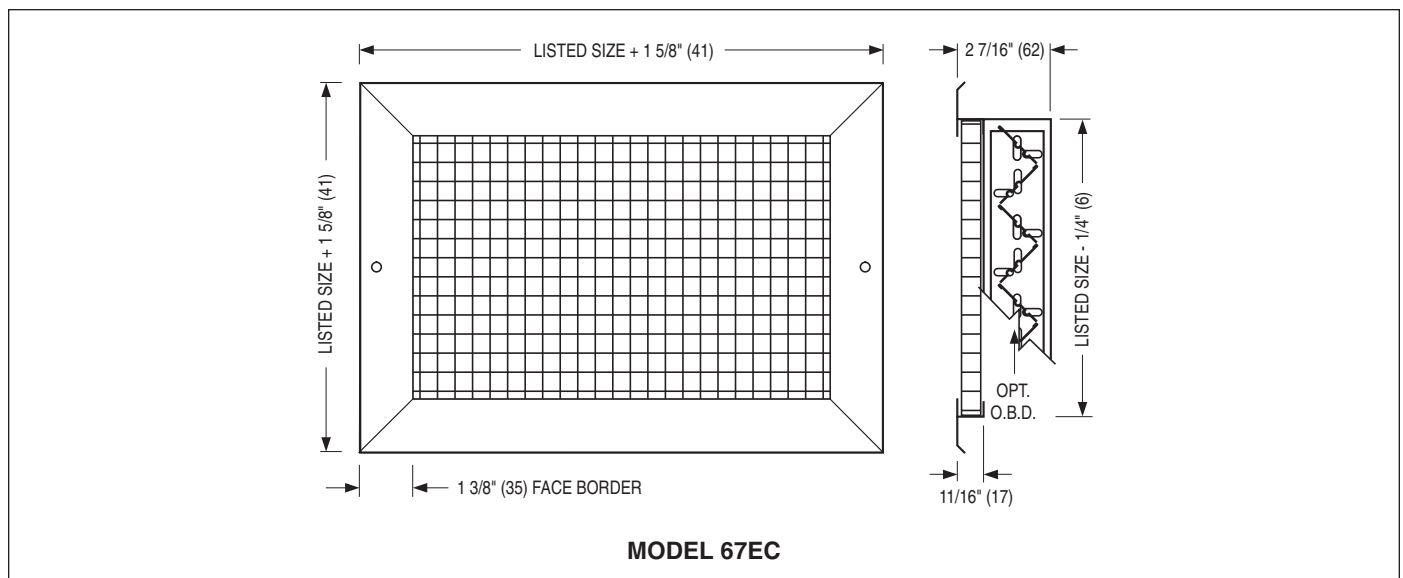
- Type 304 stainless steel construction.
- Optional dampers – roll-formed stainless steel opposed blade design with a screwdriver slot operator.

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



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	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.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	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.122 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	7.0	CFM	2052	2736	3420	4104	4788	5472	6156	6840	8208	9576
				Noise Criteria	—	—	15	20	26	30	34	37	44	49
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.92	CFM	2307	3076	3845	4614	5383	6152	6921	7690	9228	10776
				Noise Criteria	—	—	16	21	26	30	35	38	44	49
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.91	CFM	2607	3476	4345	5214	6083	6952	7821	8690	10428	12166
				Noise Criteria	—	—	16	22	27	31	35	38	44	49
38 x 38	42 x 34 48 x 30 44 x 34	9.70	9.93	CFM	2910	3880	4850	5820	6790	7760	8730	9700	11640	13580
				Noise Criteria	—	—	16	22	27	31	36	39	45	50
40 x 40	42 x 36 48 x 32 46 x 34	10.77	11.00	CFM	3231	4308	5385	6462	7539	8616	9693	10770	12924	15078
				Noise Criteria	—	—	16	22	28	32	37	40	46	51
42 x 42	44 x 40 48 x 36 46 x 38	11.89	12.13	CFM	3567	4756	5945	7134	8323	9512	10701	11890	14260	16646
				Noise Criteria	—	—	17	23	28	32	37	40	46	51
44 x 44	46 x 42	13.07	13.31	CFM	3921	5228	6535	7842	9149	10456	11763	13070	15684	18298
				Noise Criteria	—	—	17	23	28	33	37	40	46	51
46 x 46		14.30	14.55	CFM	4290	5720	7150	8580	10010	11440	12870	14300	17160	20020
				Noise Criteria	—	—	18	24	29	33	37	40	46	52
48 x 48		15.59	15.84	CFM	4677	6236	7795	9354	10913	12472	14031	15590	18708	21826
				Noise Criteria	—	—	18	24	29	33	37	40	46	52

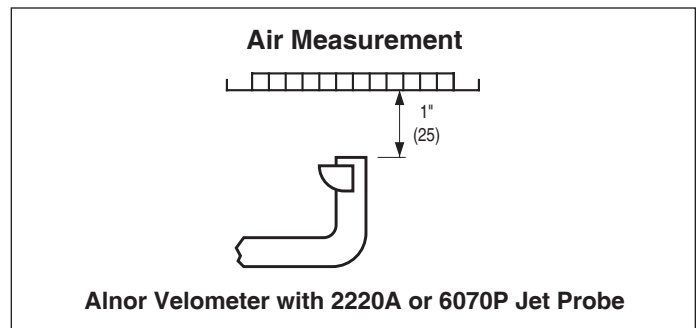
Performance Notes:

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 – 2006.



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.

$$\text{Airflow (CFM)} = \text{Average velocity (Vk)} \times \text{Ak}$$

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	250	300	350	400	450	500	550	600	650
			.002 .016	.004 .025	.006 .037	.008 .050	.010 .065	.013 .082	.016 .101	.019 .123	.022 .146	.026 .171
10 x 10	0.69	Airflow, CFM	139	174	208	243	278	313	347	382	417	451
		Noise Criteria	–	–	16	20	24	27	30	33	35	37
22 x 10	1.53	Airflow, CFM	306	382	458	535	611	688	764	840	917	993
		Noise Criteria	–	–	18	22	26	30	33	36	38	41
22 x 22	3.36	Airflow, CFM	672	840	1008	1176	1344	1513	1681	1849	2017	2185
		Noise Criteria	–	16	22	27	31	34	38	41	43	46
46 x 22	7.03	Airflow, CFM	1406	1757	2108	2460	2811	3163	3514	3865	4217	4568
		Noise Criteria	21	26	30	34	37	40	42	45	47	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 – 2006.

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 Finline® Panel
 FPA Aluminum Finline® 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 – 2006.

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 – 2006.

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 – 2006.

HOW TO ORDER

MODEL SERIES: 61EC

STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61EC - O - 24 x 12 - S - — - AW - DMI - A - CA - —

- | | | |
|--|---|---|
| <p>1. Models
61EC Aluminum</p> <p>2. Damper (OBD)
(model suffix)
O Steel
— None</p> <p>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</p> <p>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 *</p> <p>Panel Mount: **
PLS Steel Lay-in T-Bar Panel
FPS Steel Finline® Panel
SPS Steel Spline Panel
MPS Steel Metal Pan Panel
TPS Steel Tegular Panel</p> <p>5. Ceiling Module Size
Panel Size
(Use only for panel mounting, frame/border Types PLS, SPS, MPS, FPS and TPS)
— None (default)</p> | <p>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</p> <p>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</p> <p>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</p> <p>7. Opposed Blade Damper Finish
DMI Mill (default)
DBK Painted Black
— None</p> <p>8. Fastening
(only for frame/border Types S)
A Screw Holes (default)
C Concealed Mounting Straps
N None</p> | <p>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"</p> <p>OPTIONS & ACCESSORIES:
— None</p> <p>10. Insect Screen
IS Insect Screen</p> <p>11. Plaster Sub-Frame
PF Plaster Sub-Frame</p> <p>12. Gaskets
GK Foam Gasket</p> <p>13. Earthquake Tabs
EQT Earthquake Tabs</p> <p>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).</p> |
|--|---|---|

GRILLES AND REGISTERS

F

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 – 2006.

HOW TO ORDER

MODEL SERIES: 61ECF

STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61ECF - O - 24 x 12 - AW - DMI - CA - —

- | | | |
|---|---|--|
| <p>1. Model
61ECF Finline® Steel Frame</p> <p>2. Damper (OBD)
(model suffix)
O Steel (standard)
— None</p> <p>3. Ceiling Module Size
Imperial (inches)
24 x 12, 24 x 24
Metric (mm)
600 x 300, 600 x 600</p> | <p>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</p> <p>5. Opposed Blade Damper Finish
DMI Mill (default)
DBK Painted Black
— None</p> <p>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"</p> | <p>OPTIONS & ACCESSORIES:
— None</p> <p>7. Insect Screen
IS Insect Screen</p> <p>8. Earthquake Tabs
EQT Earthquake Tabs</p> |
|---|---|--|

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 Finline® 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 – 2006.

HOW TO ORDER

MODEL SERIES: 67EC

STAINLESS STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 67EC - O - 24 x 12 - S - #4 - A - 304

- | | |
|--|--|
| <p>1. Models
67EC Stainless Steel Eggcrate</p> <p>2. Damper (OBD)
(model suffix)
O Stainless Steel
— None</p> <p>3. Nominal Width x Height
inches (mm)</p> <p>4. Frame/Border Type
S Surface Mount
Border 1 3/8" (35) (default)</p> <p>5. Finish
#4 Brushed Satin Polished
(default)
AW Appliance White
SP Special Custom Color</p> | <p>6. Fastening
A Screw Holes (standard)(default)
N None</p> <p>OPTIONS & ACCESSORIES:</p> <p>7. Construction
304 Type 304 Stainless Steel
(default)
316 Type 316 Stainless Steel</p> <p>8. Plaster Sub-Frame
PFS Stainless Steel Plaster Sub-
Frame</p> |
|--|--|

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 – 2006.

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

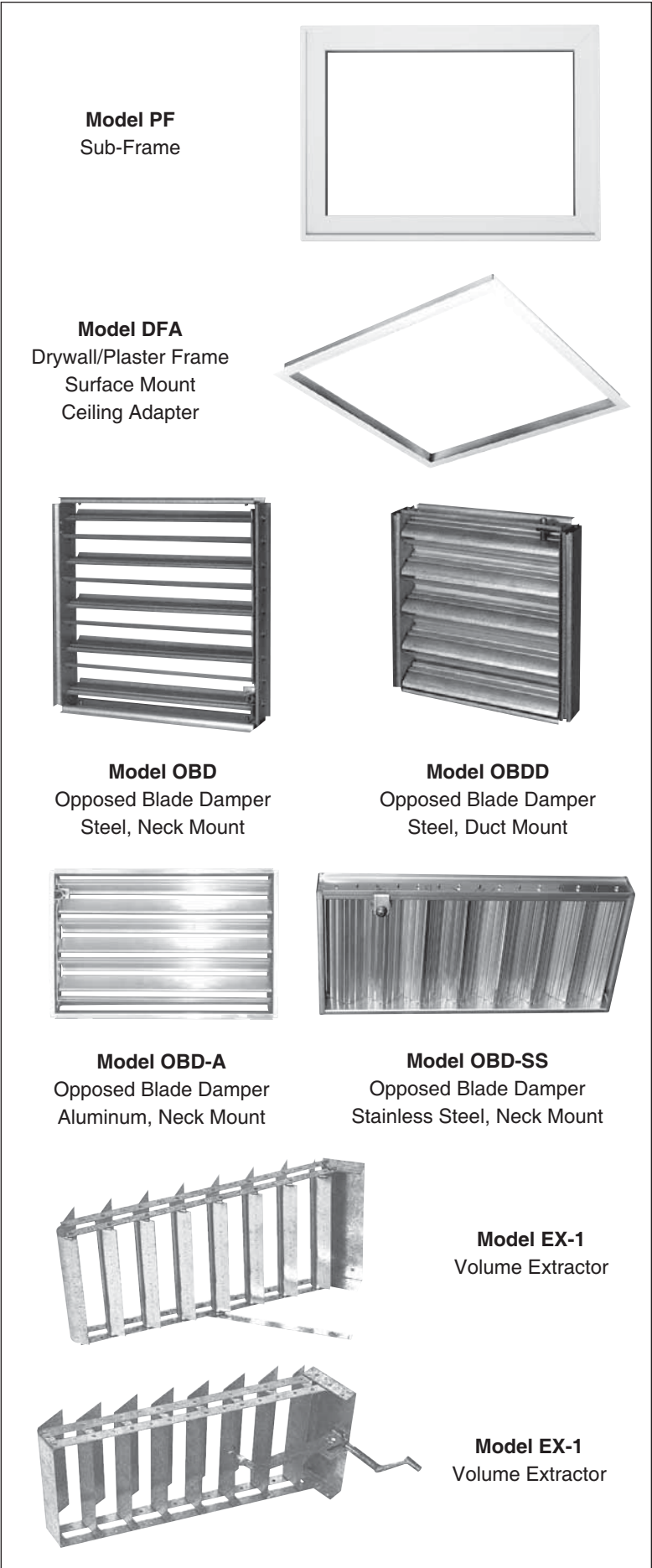
- Opposed blade dampers for every application.
- Volume extractors.

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



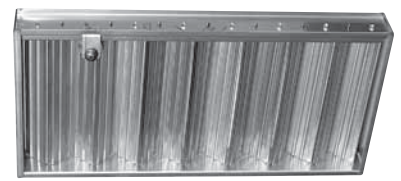
Model OBD
Opposed Blade Damper
Steel, Neck Mount



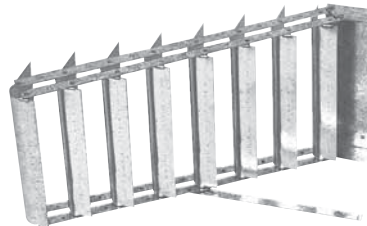
Model OBDD
Opposed Blade Damper
Steel, Duct Mount



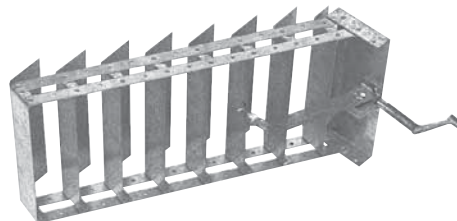
Model OBD-A
Opposed Blade Damper
Aluminum, Neck Mount



Model OBD-SS
Opposed Blade Damper
Stainless Steel, Neck Mount



Model EX-1
Volume Extractor



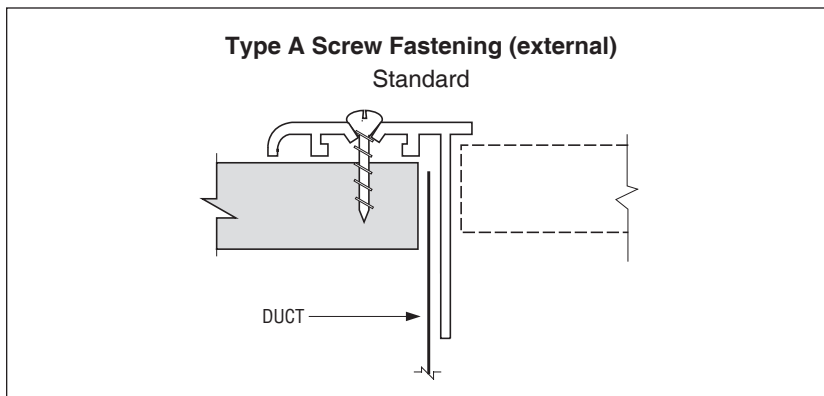
Model EX-1
Volume Extractor

Fastening and Border Frames

Type A Screw Fastening (External)

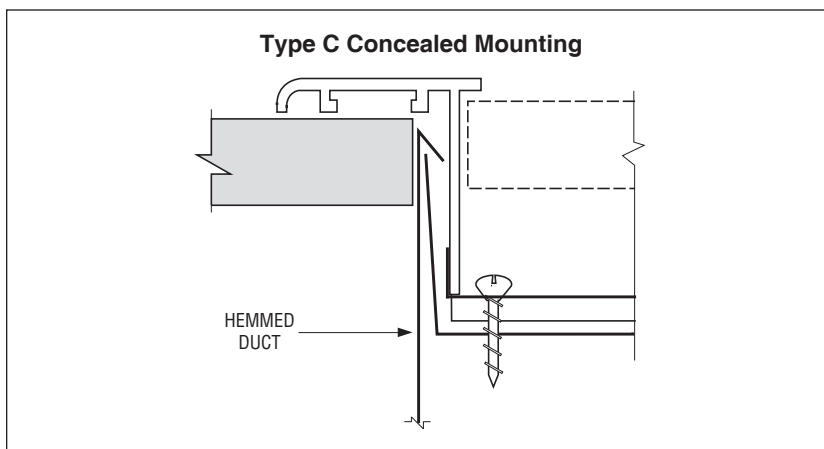
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

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.



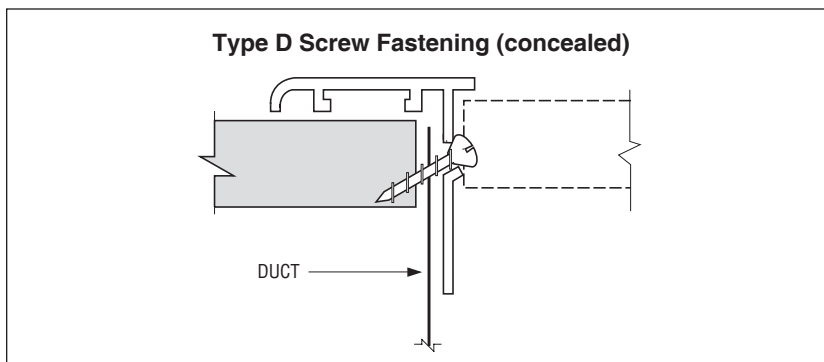
Type C Concealed Mounting

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 air grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).



Type D Screw Fastening (Concealed)

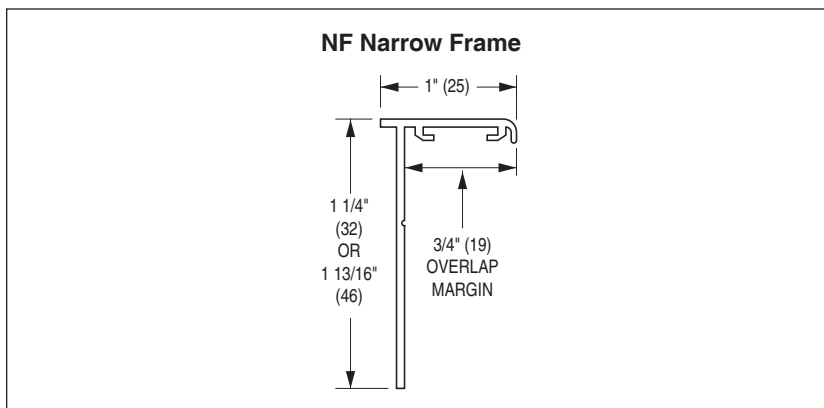
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must 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 NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

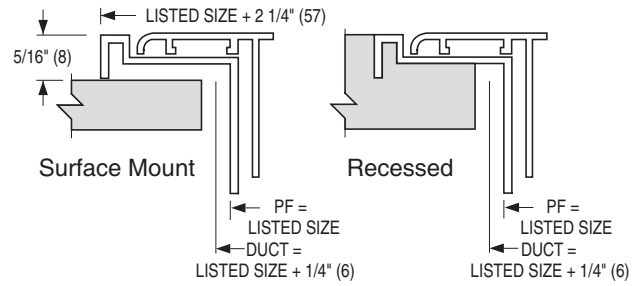
See individual models for availability.



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.

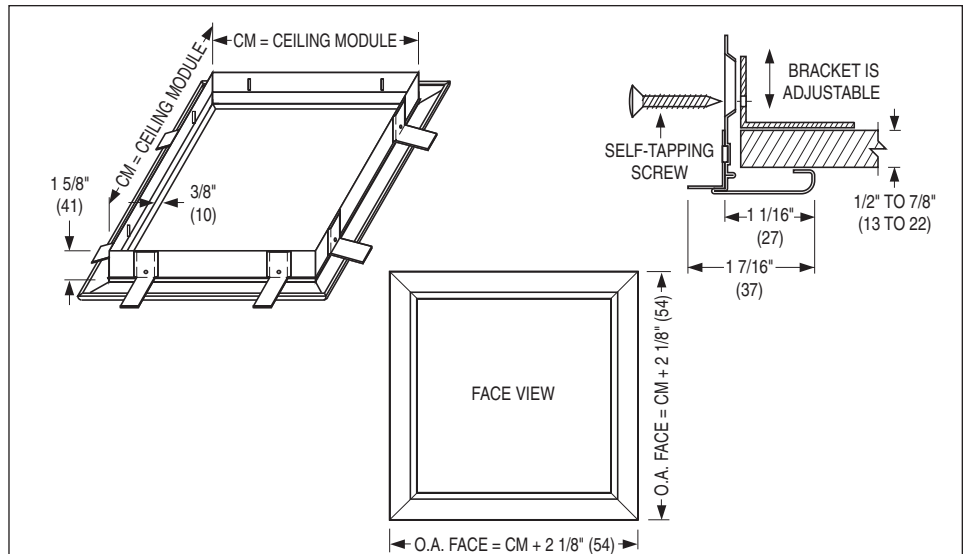
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access 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)

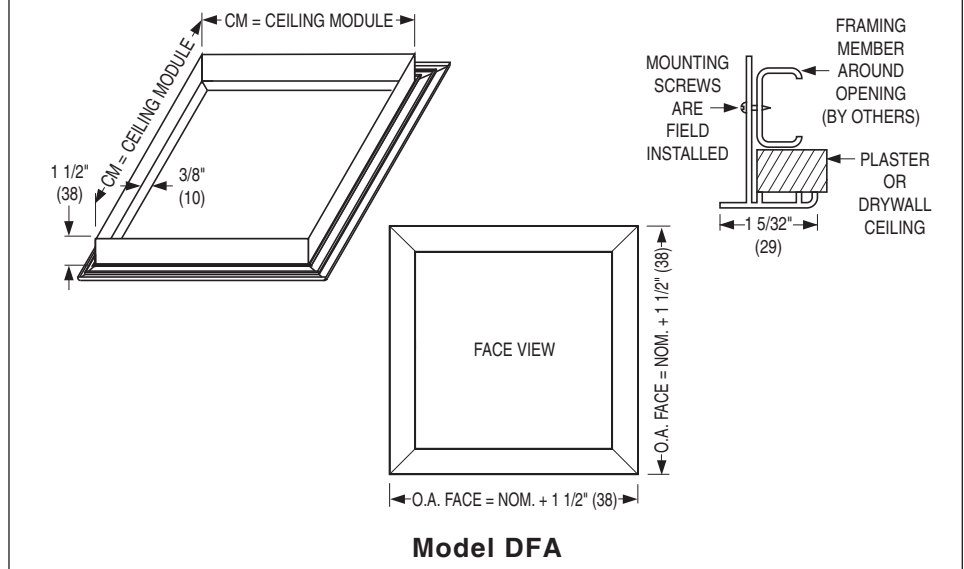


Model DFS

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.

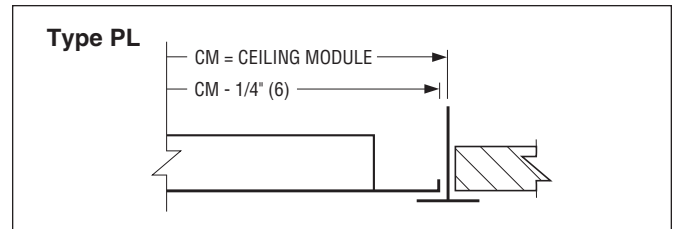
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

Available Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	Metric Units (mm)
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
48 x 12	1200 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

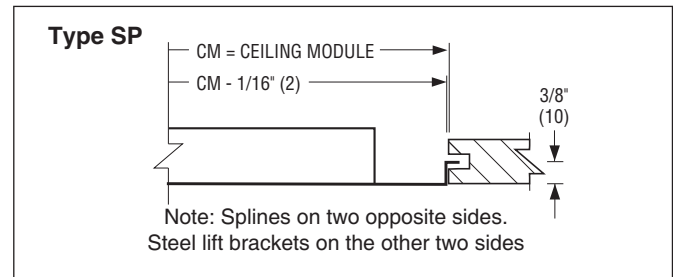
Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.



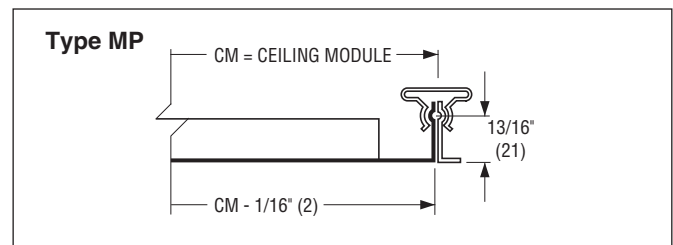
Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.



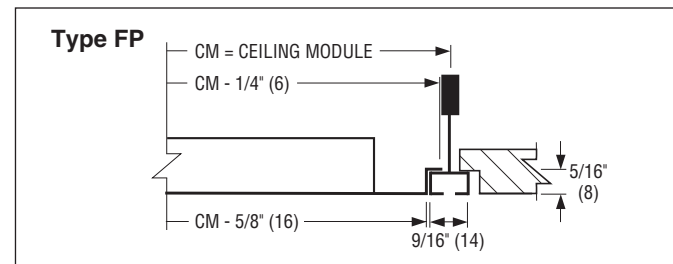
Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.



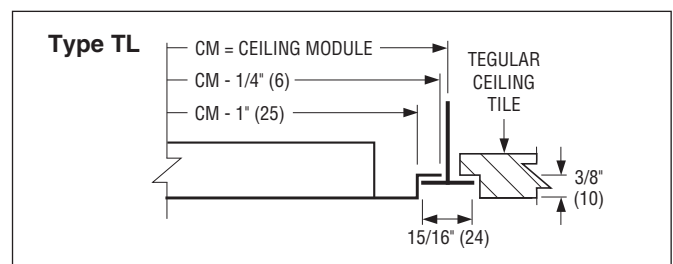
Border Type FP: Narrow Regressed T-Bar (Fineline®)

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

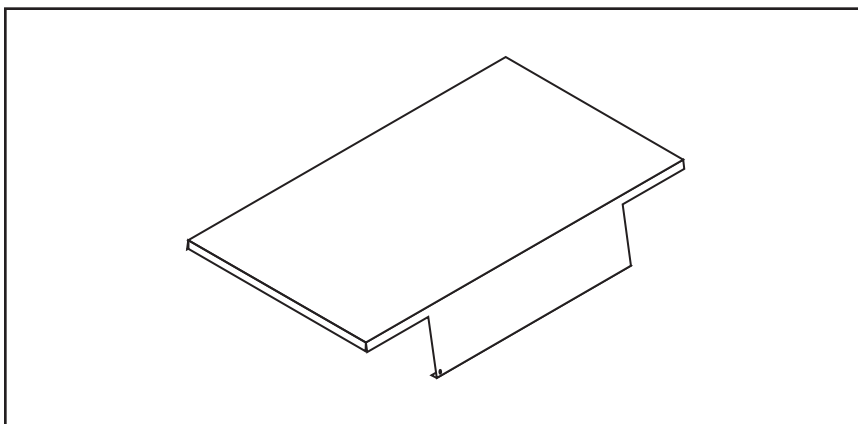
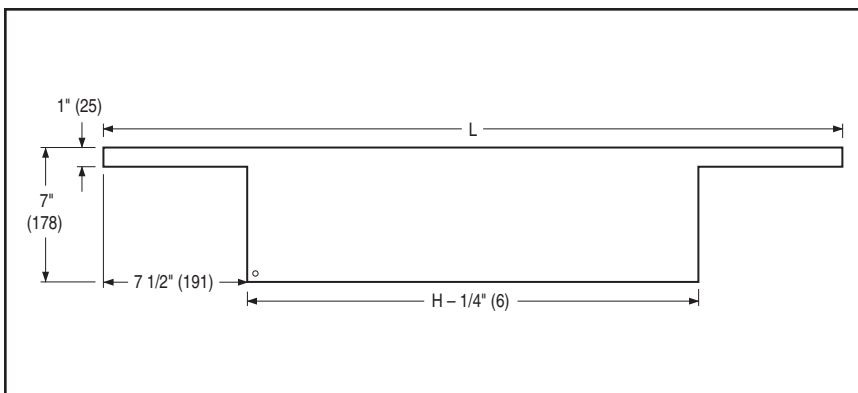
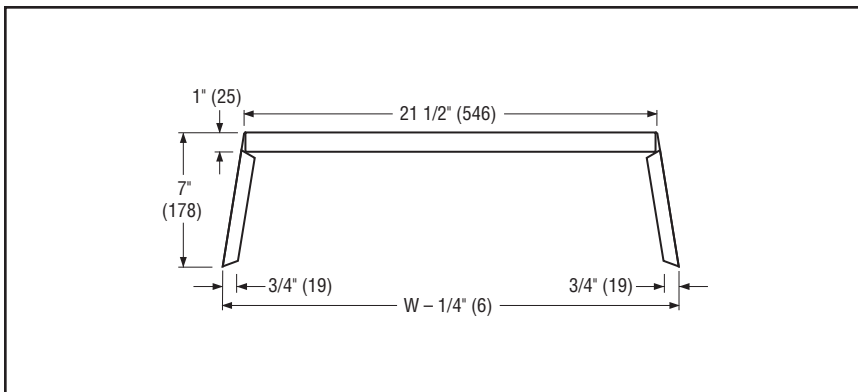
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to 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)



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

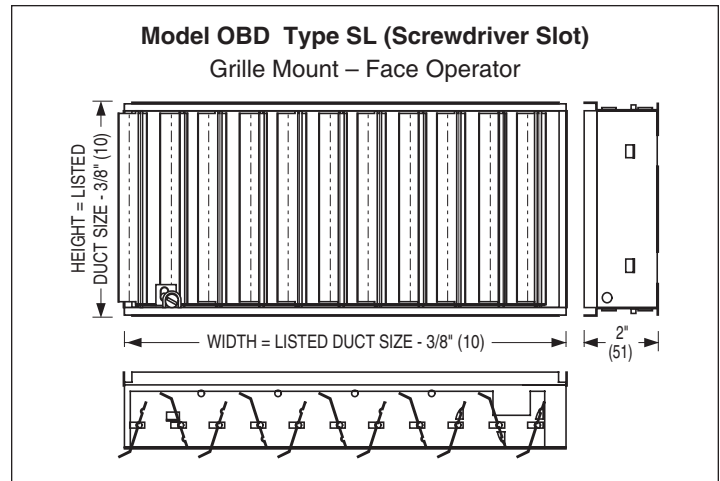
OBD-A Aluminum

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).

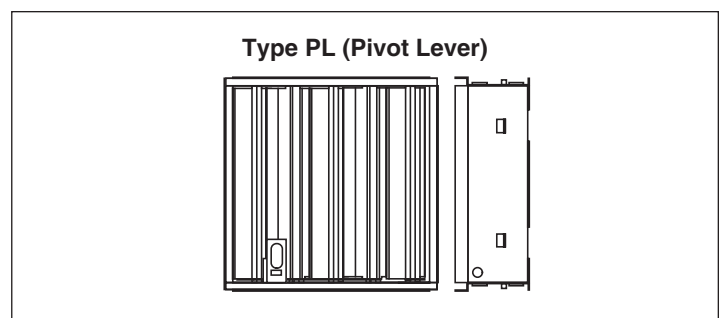
Type SL Operator

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.



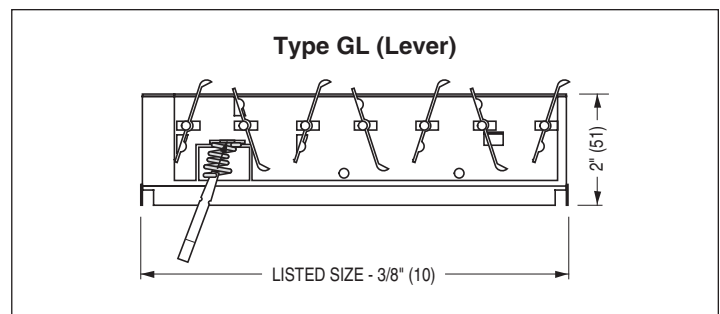
Type PL Operator

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 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.



Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

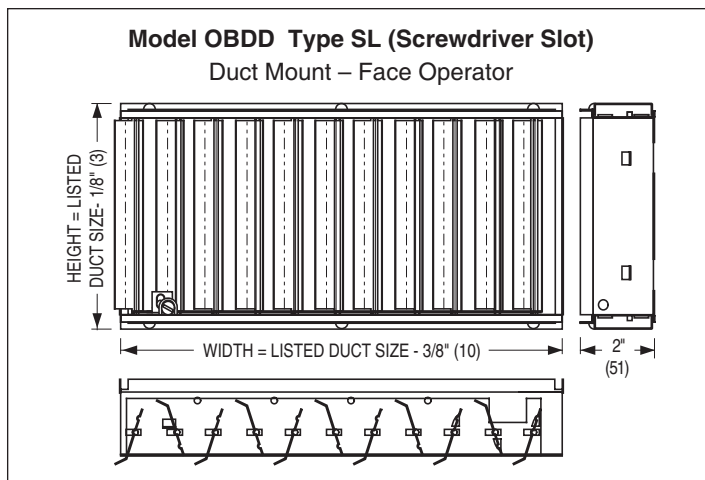
OBDD-A Aluminum

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)

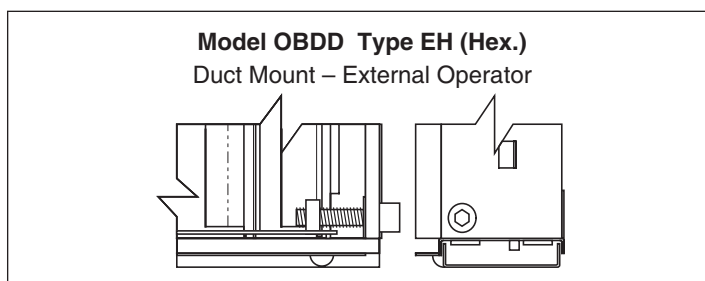
Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the grille.



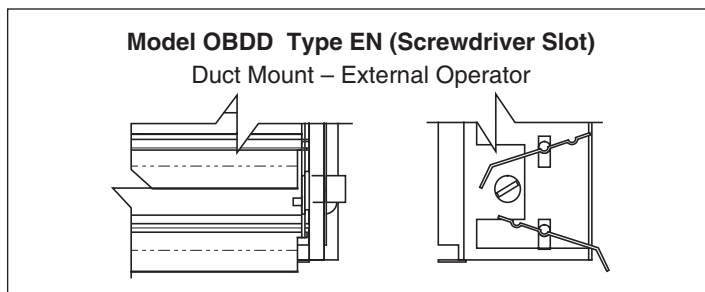
Type EH Operator

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).



Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.



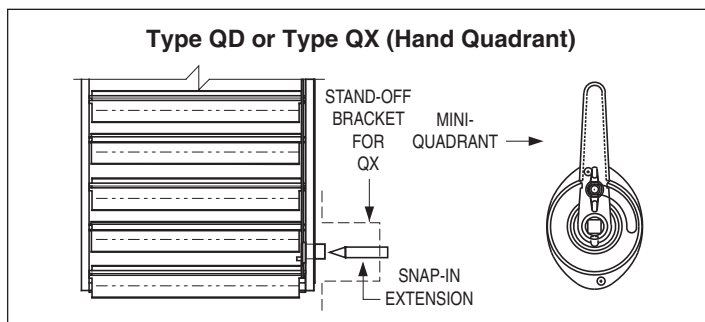
Type QD Operator *

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



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.

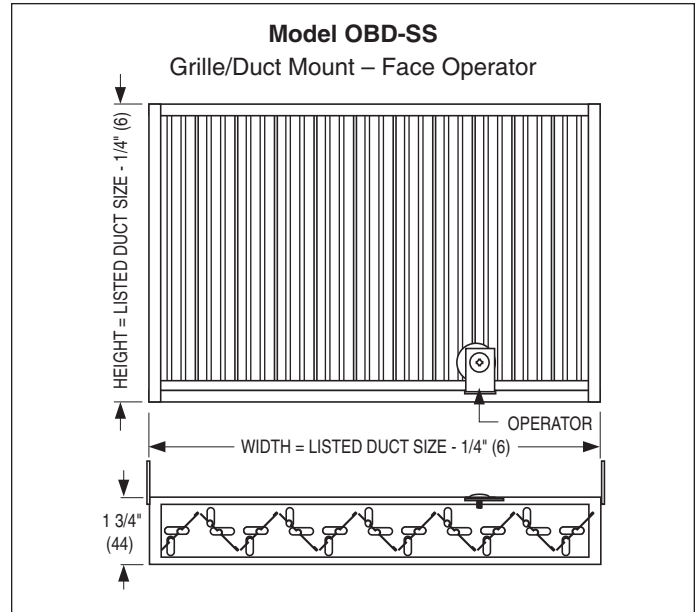
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

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.



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.

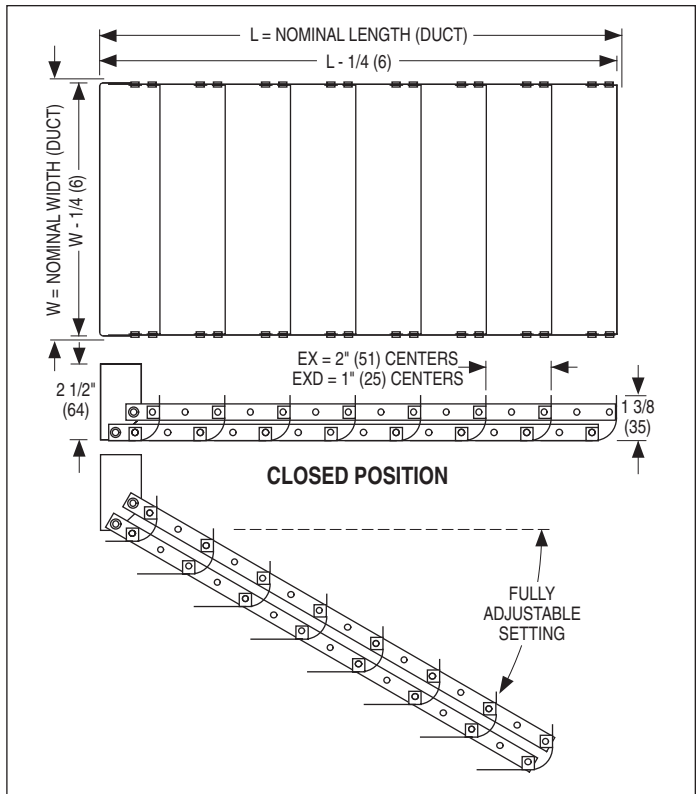
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

Operator Types

<p>EX/EXD-1 Standard unit with adjusting strap.</p>	
<p>EX/EXD-1-R Rod operator for external operation.</p>	
<p>EX/EXD-2 Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.</p>	
<p>EX/EXD-3 Screw gear operator. Adjusts with 3/16" (48) wrench (by others).</p>	



Optional Accessories

<p>RLD Locking device for Models EX/EXD-1-R.</p>	
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