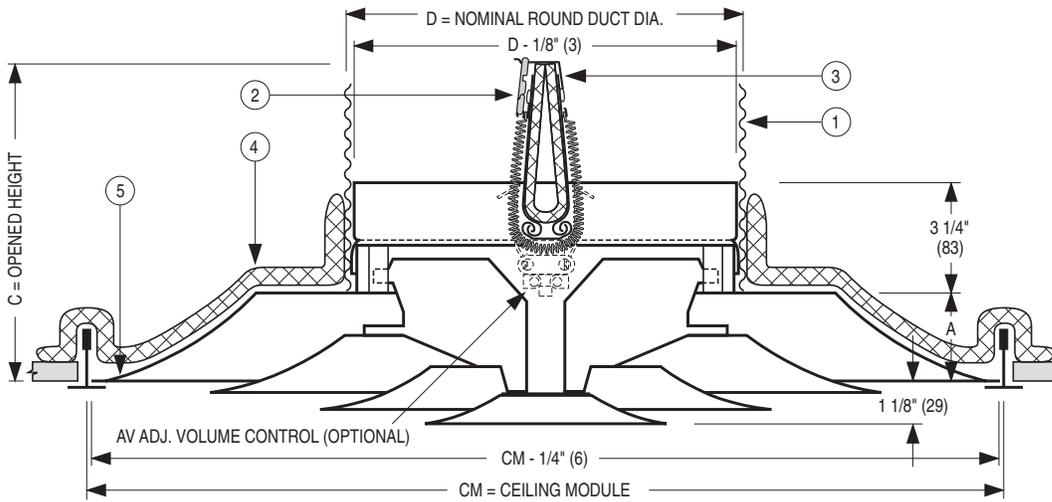




FIRE RATED CEILING DIFFUSER
FIXED PATTERN • LOUVERED FACE •
STEEL • ROUND NECK • 4 CONE
MODELS: 4010 AND 4020



CATEGORY BZZU



CATEGORY BZGUC



	Imperial Modules						Metric Modules		
	Imperial Units (inches)			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	1	5 1/2	152	25	140	152	25	140
	8		6 1/2	203		165	203		165
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 13/16	152		173	152		173
	8		7 13/16	203		198	203		198
	10	2 5/16	8 13/16	254	59	224	254	59	224
	12		9 13/16	305		249	305		249
	14		10 13/16	356		275	356		275

MODEL 4010
 12 x 12 (300 x 300) module
 Type L Lay-in Frame

MODEL 4020
 24 x 24 (600 x 600) module
 Type L Lay-in Frame

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel diffuser.

4. The diffuser consists of four die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes.
5. Standard finish is AW Appliance White.

DESCRIPTION:

1. All models 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.
2. A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
3. The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special

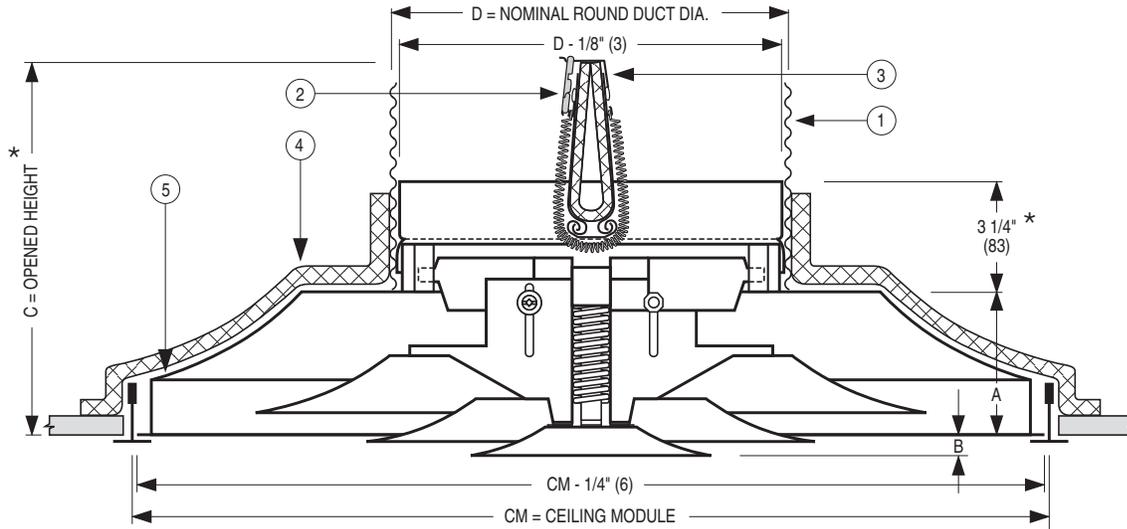
For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	11 - 24 - 16	4000	11 - 11 - 15	4000-3A



FIRE RATED CEILING DIFFUSER
ADJUSTABLE PATTERN • LOUVERED FACE
STEEL • ROUND NECK • 4 CONE
MODELS: 4010-1 AND 4020-1



CLASSIFIED
 CATEGORY
 BZZU



CLASSIFIED
 CATEGORY
 BZGUC



	Imperial Modules				Metric Modules				Imperial Modules				Metric Modules			
	Imperial Units (inches)				SI Units (mm)				SI Units (mm)				SI Units (mm)			
Listed Neck Size	CM = 12 x 12				CM = 305 x 305				CM = 300 x 300				CM = 300 x 300			
	D	A	B	C*	D	A	B	C*	D	A	B	C*	D	A	B	C*
6	6	2 1/4	0 to	6 3/4	152	57	0 to	171	152	57	0 to	171	152	57	0 to	171
8	8		1/2	7 3/4	203		13	197	203		13	197				
Listed Neck Size	CM = 24 x 24				CM = 610 x 610				CM = 600 x 600				CM = 600 x 600			
	D	A	B	C*	D	A	B	C*	D	A	B	C*	D	A	B	C*
6	6	3 3/4	to	8 1/4	152	95	to	210	152	95	to	210	152	95	to	210
8	8			9 1/4	203			0	235			203	0			235
10	10			10 1/4	254			10	260			254	10			260
12	12			11 1/4	305			10	286			305	10			286
14	14			12 1/4	356			10	311			356	10			311

MODEL 4010-1
 12 x 12 (300 x 300) module
 Type L Lay-in Frame

MODEL 4020-1
 24 x 24 (600 x 600) module
 Type L Lay-in Frame

* Plus 1 1/2" (38) with AV option.

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel diffuser.

DESCRIPTION:

1. All models 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.
2. The diffuser has a unique screw-type arrangement for quick and simple adjustment which can vary the air discharge pattern from horizontal to vertical by rotating the center cone and so moving the inner cone assembly up or down. A spring clip arrangement allows removal of the inner cone assembly.

3. The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.
4. The diffuser consists of four die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special

For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

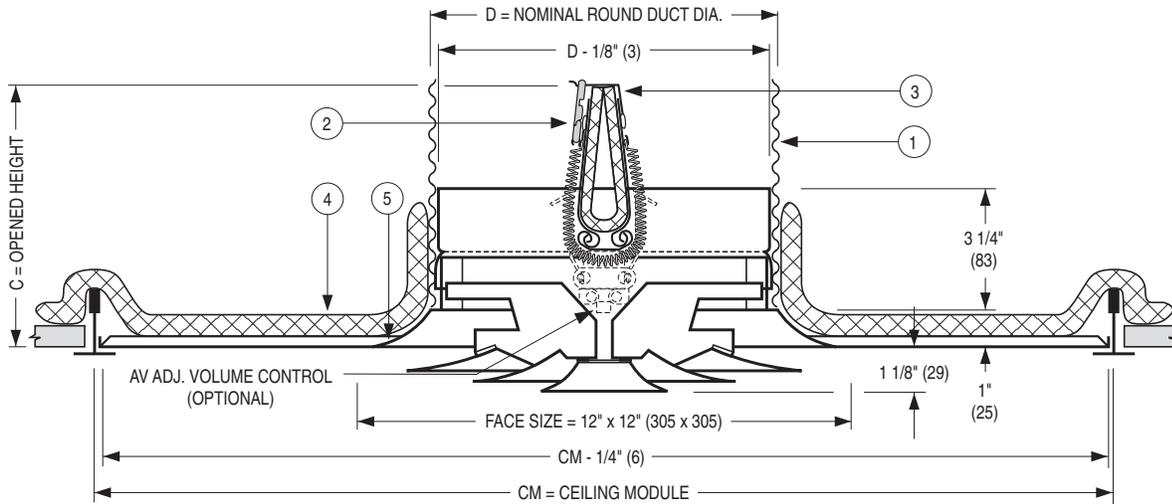
SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	4000	5 - 11 - 15	4000-3B



FIRE RATED CEILING DIFFUSER
FIXED PATTERN • LOUVERED FACE
PANEL TYPE • STEEL • ROUND NECK • 4 CONE
MODELS: 4030 AND 4040



CLASSIFIED
 CATEGORY BZZU



CLASSIFIED
 CATEGORY BZGUC



	Imperial Modules				Metric Modules	
	Imperial Units (inches)		SI Units (mm)		SI Units (mm)	
Listed Neck Size	CM = 24 x 12		CM = 610 x 305		CM = 600 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
Listed Neck Size	CM = 24 x 24		CM = 610 x 610		CM = 600 x 600	
	D	C	D	C	D	C
6	6	5 1/2	152	140	152	140
8	8	6 1/2	203	165	203	165

MODEL 4030
 24 x 12 (600 x 300) module
 Type PL Panel Lay-in Frame

MODEL 4040
 24 x 24 (600 x 600) module
 Type PL Panel Lay-in Frame

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel panel diffuser.

4. The diffuser consists of four die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes set in a panel.
5. Standard finish is AW Appliance White.

DESCRIPTION:

1. All models 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.
2. A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
3. The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special

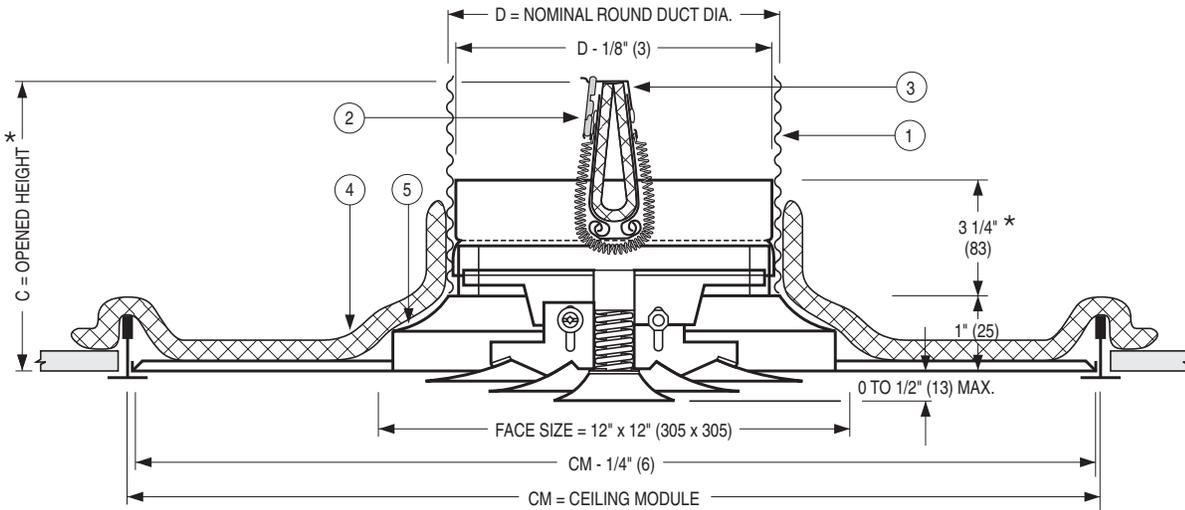
For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:			
PROJECT:			
ENGINEER:			
CONTRACTOR:			
DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	4000	11 - 11 - 15	4000-4A



FIRE RATED CEILING DIFFUSER
ADJUSTABLE PATTERN • LOUVERED FACE
PANEL TYPE • STEEL • ROUND NECK • 4 CONE
MODELS: 4030-1 AND 4040-1



CLASSIFIED
 UL
 CATEGORY
 BZZU



CLASSIFIED
 UL
 CATEGORY
 BZGUC



	Imperial Modules				Metric Modules	
	Imperial Units (inches)		SI Units (mm)		SI Units (mm)	
Listed Neck Size	CM = 24 x 12		CM = 610 x 305		CM = 600 x 300	
	D	C *	D	C *	D	C *
	6	6 3/4	152	171	152	171
	8	7 3/4	203	197	203	197
Listed Neck Size	CM = 24 x 24		CM = 610 x 610		CM = 600 x 600	
	D	C *	D	C *	D	C *
	6	6 3/4	152	171	152	171
	8	7 3/4	203	187	203	197

* Plus 1 1/2" (38) with AV option.

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel panel diffuser.

DESCRIPTION:

1. All models 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.
2. The diffuser has a unique screw-type arrangement for quick and simple adjustment which can vary the air discharge pattern from horizontal to vertical by rotating the center cone and so moving the inner cone assembly up or down. A spring clip arrangement allows removal of the inner cone assembly.

- MODEL 4030-1**
 24 x 12 (600 x 300) module
 Type PL Panel Lay-in Frame

- MODEL 4040-1**
 24 x 24 (600 x 600) module
 Type PL Panel Lay-in Frame

3. The diffuser delivered air in a true 360° stream-line pattern. Excellent for VAV systems.
4. The diffuser consists of four die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes set in a panel.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special

For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

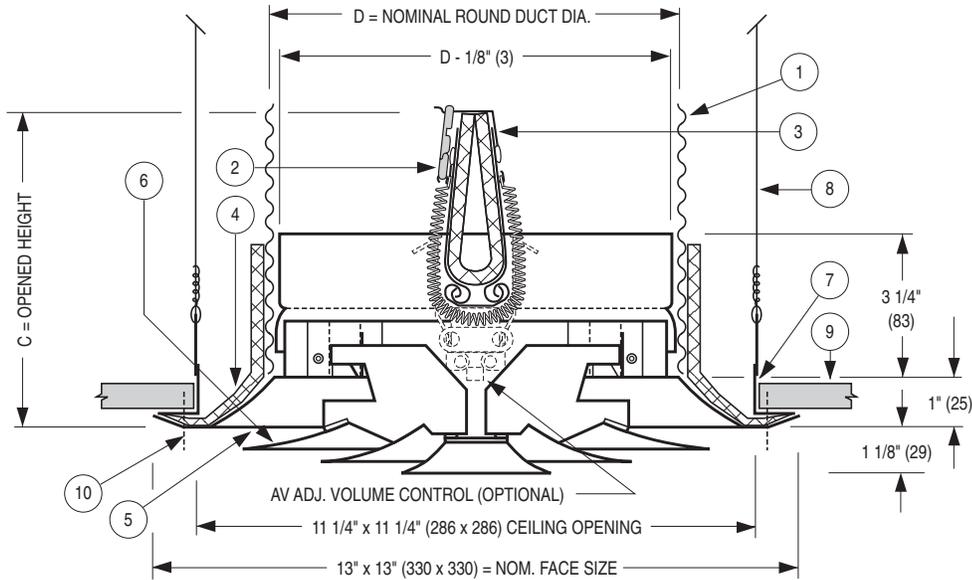
Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:				
CONTRACTOR:				
DATE	B SERIES	SUPERSEDES	DRAWING NO.	
11 - 24 - 16	4000	5 - 11 - 15	4000-4B	



FIRE RATED CEILING DIFFUSER
LOUVERED FACE • SURFACE MOUNT •
STEEL • ROUND NECK • FIXED PATTERN
MODEL: 4010 TYPE S

12 x 12 (300 x 300) SURFACE MOUNT MODULE FOR HARD CEILINGS.



	Imperial Modules		Metric Modules			
	Imperial Units (inches)	SI Units (mm)	SI Units (mm)	SI Units (mm)		
Listed Neck Size	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

MODEL 4010

12 x 12 (300 x 300) module
 Type S Surface Mount Frame

ITEMS:

- Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
- U.L. Listed fusible link. 212°F (100°C) standard.
- Ceiling radiation damper/fire stop flap.
- Ceramic fibre thermal blanket.
- Corrosion resistant steel diffuser.
- Louvered deflector cones.
- Mounting support frame.
- Hanger wires (by others).
- Ceiling membrane.
- Mounting screws.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.
- The diffuser consists of four die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes.
- Standard finish is AW Appliance White.

DESCRIPTION:

1. 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.

OPTIONS:

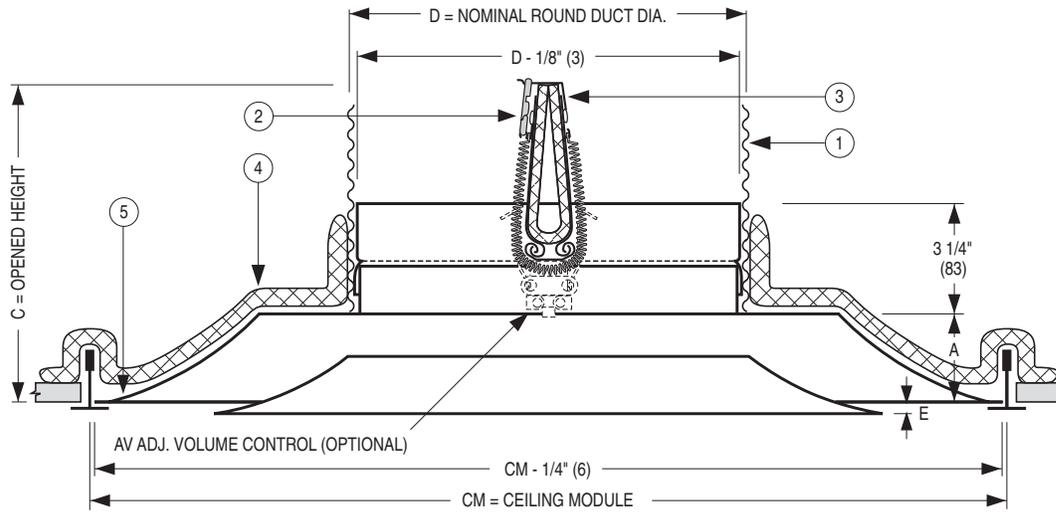
- AV Fusible link adjustable volume control (Model 0722A damper).
- Non-standard temperature U.L. Listed fusible link.
 - 165°F (74°C)
- Finish:
 - SP Special

For installation instructions, see IOM-FRDSMINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:				
CONTRACTOR:				
	DATE	B SERIES	SUPERSEDES	DRAWING NO.
	11 - 11 - 15	4000	5 - 11 - 15	4000-8



FIRE RATED CEILING DIFFUSER
STAMPED SQUARE •
STEEL • ROUND NECK • 2 CONE
MODELS: 4410 AND 4420



CATEGORY
BZZU



CATEGORY
BZGUC



	Imperial Modules								Metric Modules				
	Imperial Units (inches)				SI Units (mm)				SI Units (mm)				
Listed Neck Size	CM = 12 x 12				CM = 305 x 305				CM = 300 x 300				
	D	A	C	E	D	A	C	E	D	A	C	E	
	6	6	1	5 1/2	1-1/4	152	25	140	32	152	25	140	32
	8	8	6 1/2		203	25	165	32	203	25	165	32	
Listed Neck Size	CM = 24 x 24				CM = 610 x 610				CM = 600 x 600				
	D	A	C	E	D	A	C	E	D	A	C	E	
	6	6		6 13/16		152		173		152		173	
	8	8		7 13/16		203		198		203		198	
	10	10	2 5/16	8 13/16	7/8	254	59	224	22	254	59	224	22
	12	12		9 13/16		305		249		305		249	
14	14		10 13/16		356		275		356		275		

MODEL 4410
 12 x 12 (300 x 300) module
 Type L Lay-in Frame

MODEL 4420
 24 x 24 (600 x 600) module
 Type L Lay-in Frame

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel diffuser.

4. The diffuser consists of two die-formed concentric cones which eliminate mitered corners and provide uniform appearance in all neck sizes.
5. Standard finish is AW Appliance White.

DESCRIPTION:

1. All models 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.
2. The inner core assembly is fixed and has a removable button for access to the ceiling radiation damper when the option AV is specified.
3. The diffuser delivers air in a true 360° streamline pattern. Excellent for VAV systems.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special _____ .

For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

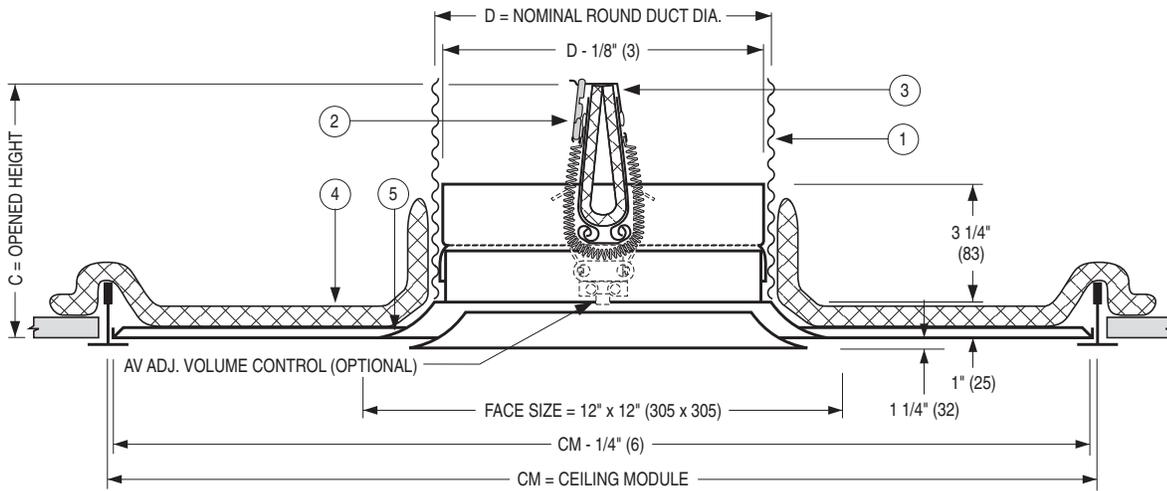
CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 24 - 16	4400	5 - 11 - 15	4400-1



FIRE RATED CEILING DIFFUSER
FIXED PATTERN • LOUVERED FACE
PANEL TYPE • STEEL • ROUND NECK • 4 CONE
MODELS: 4430 AND 4440



CLASSIFIED
 UL
 CATEGORY
 BZZU



CLASSIFIED
 UL
 CATEGORY
 BZGUC



	Imperial Modules				Metric Modules	
	Imperial Units (inches)		SI Units (mm)		SI Units (mm)	
Listed Neck Size	CM = 24 x 12		CM = 610 x 305		CM = 600 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
Listed Neck Size	CM = 24 x 24		CM = 610 x 610		CM = 600 x 600	
	D	C	D	C	D	C
6	6	5 1/2	152	140	152	140
8	8	6 1/2	203	165	203	165

MODEL 4430
 24 x 12 (600 x 300) module
 Type PL Panel Lay-in Frame

MODEL 4440
 24 x 24 (600 x 600) module
 Type PL Panel Lay-in Frame

ITEMS:

1. Flexible air duct (UL/ULC Class 0 or 1) connector or steel duct.
2. U.L. Listed fusible link. 212°F (100°C) standard.
3. Ceiling radiation damper/fire stop flap.
4. Ceramic fibre thermal blanket.
5. Corrosion resistant steel panel diffuser.

DESCRIPTION:

1. All models 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.
2. The inner core assembly is fixed and has a removable button for access to the ceiling radiation damper when the option AV is specified.
3. The diffuser delivers air in a true 360° streamline pattern. Excellent for VAV systems.
4. The diffuser consists of two die-formed concentric cones in all sizes which eliminate mitered corners and provide uniform appearance in all neck sizes set in a panel.
5. Standard finish is AW Appliance White.

OPTIONS:

1. AV Fusible link adjustable volume control (Model 0722A damper)
2. Non-standard temperature U.L. Listed fusible link.
 165°F (74°C)
3. Finish:
 SP Special _____ .

For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	11 - 24 - 16	4400	5 - 11 - 15	4400-2

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

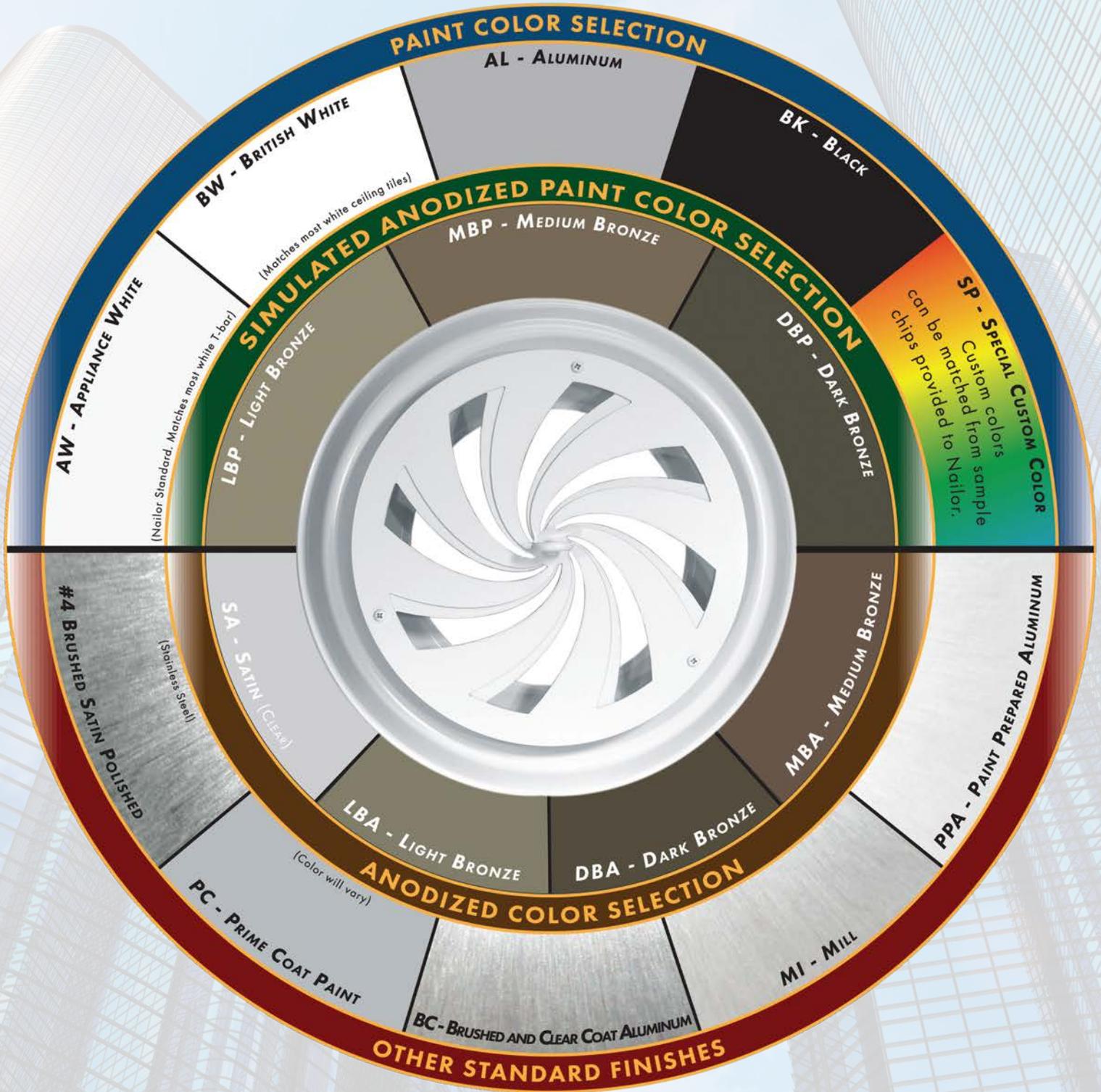
Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.



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.

"Complete Air Control and Distribution Solutions."

WGDSOF2015

www.nailor.com

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:

- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- All pressures are in inches w.g..
- 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.

- Noise Criteria (NC) are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes an Noise Criteria level less than 10.
- 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 an 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

D
CEILING DIFFUSERS

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 velocity pressure from the total pressure.

3. 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.

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

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:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g..
- Horizontal throws are with ceiling coanda effect. For exposed duct mounting, multiply table values by x 0.7. Vertical throw is a free jet.
- Noise Criteria (NC) are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes an Noise Criteria level less than 10.
- 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 an Noise Criteria level less than 10.

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