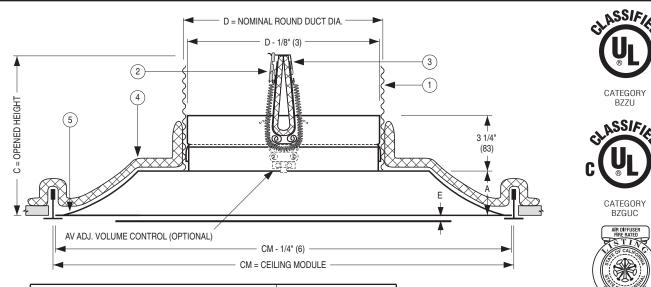


FIRE RATED CEILING DIFFUSER

ARCHITECTURAL • UNI
STEEL • SQUARE FACE • ROUND NECK
MODELS: 4410-UNI AND 4420-UNI



			lmp	erial		Metric Modules						
			perial Units (inches)				Units (mm)			SI (
Listed		CM =	12 x 12		CM =	305 x 305			CM =	300 x 300		
Neck Size	D	Α	С	Е	D	Α	С	Е	D	Α	С	Е
6	6	1	5 1/2	E /O	152	25	140	16	152	25	140	16
8	8		6 1/2	5/8	203	20	165	10	203	20	165	10
Listed		CM =	24 x 24		$CM = 610 \times 610$				$CM = 600 \times 600$			
Neck Size	D	Α	С	Е	D	Α	С	Е	D	Α	С	Е
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	3/8	254	59	224	10	254	59	224	10
12	12		9 13/16		305		249		305		249	
14	14		10 13/16		356		275		356		275	

■ MODEL 4410-UNI

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

■ MODEL 4420-UNI

 $24 \times 24 \pmod{x 600}$ 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.

DESCRIPTION:

- 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.
- The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.
- 4. The diffuser consists of stamped one-piece outer-cone which eliminates

mitered corners and a double-skinned inner face panel with a hemmed edge for strength and a clean appearance.

- 5. Fixed ceiling radiation damper is standard. The adjustable model with volume control for balancing is optional.
- 6. Standard finish is AW Appliance White.

OPTIONS:

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

☐ SP	Special	
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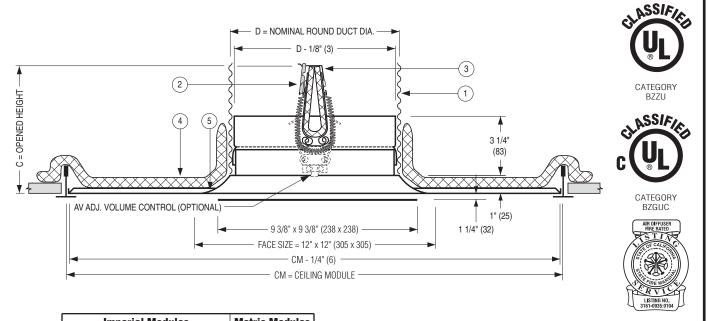
For installation instructions, see IOM-FRDSINST or IOM-FRDFINST.

SCHEDULE TYPE:	Di	maneione ar	e in inches (m	ım)
PROJECT:		inchisions are	e iii iiiciies (iii	
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO
CONTRACTOR:	11 - 24 - 16	4400	5 - 11 - 15	4400-3



FIRE RATED CEILING DIFFUSER

ARCHITECTURAL • UNI • PANEL TYPE STEEL • SQUARE FACE • ROUND NECK MODELS: 4430-UNI AND 4440-UNI



		Imperial	Modules	•	Metric I	Viodules	
		al Units hes)		nits m)	SI Units (mm)		
Listed	CM = 2	24 x 12	CM = 6	10 x 305	CM = 60	00 x 300	
Neck Size	D	С	D	С	D	С	
6	6	5 1/2	152	140	152	140	
8	8	6 1/2	203	165	203	165	
Listed	CM = 2	24 x 24	CM = 6	10 x 610	CM = 60	00 x 600	
Neck Size	D	С	D	С	D	С	
6	6	5 1/2	152	140	152	140	
8	8	6 1/2	203	165	203	165	

☐ MODEL 4430-UNI

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

■ MODEL 4440-UNI

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:

- 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.
- The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems.
- 4. The diffuser consists of a stamped one-piece outer cone extended panel which eliminates mitered corners and a double skinned inner face panel

- with a hemmed edge for strength and a clean appearance.
- Fixed ceiling radiation damper is standard.
 The adjustable model with adjustable volume control for balancing is optional.
- 6. Standard finish is AW Appliance White.

OPTIONS:

- AV Fusible link adjustable volume control (Model 0722A damper)
- 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:
 DATE
 B SERIES
 SUPERSEDES
 DRAWING NO.

 CONTRACTOR:
 11 - 24 - 16
 4400
 11 - 11 - 15
 4400-4

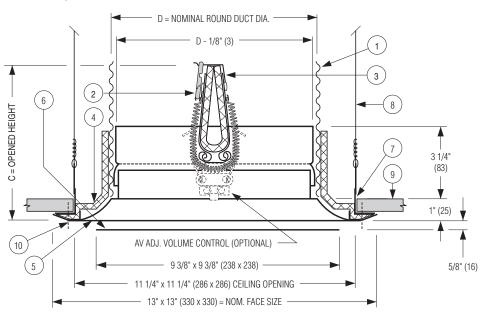


FIRE RATED CEILING DIFFUSER

ARCHITECTURAL • UNI • SURFACE MOUNT STEEL • SQUARE FACE • ROUND NECK

MODEL: 4410-UNI TYPE S

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



		Imperial	Modules	3	Metric Modules			
		al Units hes)		nits m)	SI Units (mm)			
Listed	CM =	12 x 12	CM = 3	05 x 305	$CM = 300 \times 300$			
Neck Size	D	С	D	С	D	С		
6	6	5 1/2	152	140	152	140		
8	8	6 1/2	203	165	203	165		

■ MODEL 4410-UNI

12 x 12 (300 x 300) module Type S Surface Mount 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.
- 6. Plaque face.
- 7. Mounting support frame.
- 8. Hanger wires (by others).
- 9. Ceiling membrane.
- 10. Mounting screws.

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.

2. A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.

CATEGORY B7GUC

- 3. The diffuser delivered air in a true 360° streamline patern. Excellent for VAV systems.
- 4. The diffuser consists of a stamped one piece outer cone and a plaque inner face panel with a hemmed edge for strength and a clean appearance.
- 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-FRDSMINST.

SCHEDULE TYPE:	Dimensions are in inches (mm).				
PROJECT:		nensions are	; iii iiioiio3 (ii		
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.	
CONTRACTOR:	11 - 11 - 15	4400	5 - 11 - 15	4400-7	



STANDARD AND OPTIONAL FINISHES FOR GRILLES AND DIFFUSERS

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

NAILOR POWDER COAT PROPERTIES

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

ELECTROCOATING PROPERTIES

FILM THICKNESS	.8 to 1.2 mils
HARDNESS	нв то н
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.

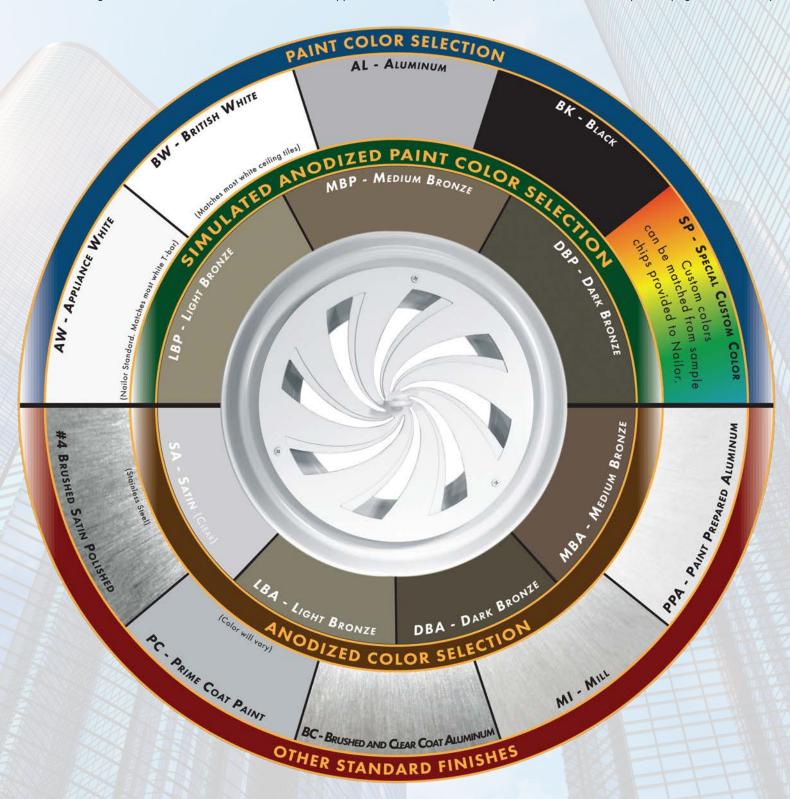
MILL FINISH

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



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.

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	Total Pressure	.023	.036	.051	.07	.091	.115	.142	.205	.279	.364
4"	Airflow, CFM	35	45	50	60	70	80	85	105	120	140
Dia.	Throw	1-2-3	1-2-4	2-2-5	2-3-6	2-3-6	2-4-7	3-4-7	3-5-7	4-6-7	5-7-8
	Noise Criteria	_	_	_	13.000	17	21	24	30	35	40
	Total Pressure	0	0	0	0	0	0	0	0	0	0
5"	Airflow, CFM	55	70	80	95	110	125	135	165	190	220
Dia.	Throw	2-2-4	2-3-5	2-3-6	3-4-7	3-5-8	4-6-9	4-7-9	4-8-10	5-8-10	6-9-11
	Noise Criteria	_	_	_	14	18	22	25	31	36	41
	Total Pressure	.033	.052	.074	.101	.131	.166	.205	.295	.402	.525
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	Throw	2-3-5	3-4-6	3-5-7	4-5-8	5-6-9	5-7-10	5-8-10	6-9-11	7-10-12	7-10-13
	Noise Criteria	_	_	1.000	15	19	23	26	32	37	42
	Total Pressure	.056	.089	.127	.172	.225	.285	.352	.506	.689	.900
7"	Airflow, CFM	105	135	160	190	215	240	265	320	375	430
Dia.	Throw	3-4-6	3-5-7	4-6-9	4-7-10	5-8-10	6-8-11	6-9-12	7-10-13	8-11-14	9-12-15
	Noise Criteria	_	_	11	16	20	24	27	33	38	43
	Total Pressure	.067	.105	.160	.205	.268	.340	.418	.600	.821	1.070
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	Throw	3-5-7	4-6-9	5-7-10	6-8-11	6-9-12	7-9-13	7-10-14	8-11-15	9-12-16	9-12-17
	Noise Criteria	_	_	12	17	21	25	28	34	39	44

Models UNI and AUNI • 20 x 20 (500 x 500) Face Size • 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	Total Pressure	.014	.021	.031	.042	.055	.070	.086	.124	.168	.220
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	Throw	1-3-5	2-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	_	_	_	_	14	18	22	28	34	39
	Total Pressure	0	0	0	0	0	0	0	0	0	0
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	_	_	_	13	18	22	26	32	38	43
	Total Pressure	. 031	.049	.071	.096	.126	.159	.196	.283	.385	.503
10"	Airflow, CFM	220	270	330	380	435	490	545	655	765	875
Dia.	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	6-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	_	_	10	16	21	25	29	35	41	46

Performance Notes:

- 1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
- 3. Return Applications:

Use the following correction factors with the supply data.

Noise Criteria = + 3 Noise Criteria (NC) Negative Static Pressure = Total Pressure x .45

- 4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 10.
- 5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
Neck Size	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
	Total Pressure	.01	.02	.03	.041	.053	.068	.084	.12	.164	.214
6"	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
Dia.	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	_	_	_	_	14	18	22	28	34	39
	Total Pressure	0	0	0	0	0	0	0	0	0	0
8"	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
Dia.	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	_	_	_	13	18	22	26	32	38	43
	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
10"	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
Dia.	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	_	_	1.000	16	21	25	29	35	41	46
	Total Pressure	.04	.063	.09	.123	.161	.203	.251	.361	.492	.643
12"	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
Dia.	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	_	_	13	19	24	28	32	38	44	49
	Total Pressure	.054	.083	.12	.163	.214	.27	.334	.481	.655	.855
14"	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
Dia.	Throw	5-7-14	6-9-16	43292	44117	45245	45247	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	_	_	15	21	26	30	34	40	46	51
	Total Pressure	.065	.102	.147	.2	.26	.33	.408	.588	.799	1.044
15"	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
Dia.	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria		_	16	22	27	31	35	41	47	52

Performance Notes:

- 1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
- 3. Return Applications:

Use the following correction factors with the supply data.

Noise Criteria = + 3 Noise Criteria (NC)

Negative Static Pressure = Total Pressure x .45

- 4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 10.
- 5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 3-way Blow

Nominal	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
Neck Size	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
	Total Pressure	.035	.061	.096	.138	.188	.245	.311	.383	.529	.725
6"	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
Dia.	Throw	2-4-6	3-6-9	5-7-9	5-8-10	6-9-12	7-9-13	7-10-14	8-11-15	8-12-16	9-13-17
	Noise Criteria	_	_	12	18	23	27	31	34	40	45
	Total Pressure	.076	.135	.211	.304	.414	.540	.684	.844	1.215	1.654
8"	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
Dia.	Throw	3-5-7	5-7-10	5-8-11	6-9-12	7-10-13	7-10-14	8-11-15	9-12-16	9-12-17	10-13-18
	Noise Criteria	_	_	14	20	25	29	33	36	42	47

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 3-Way Blow

Nominal	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
Neck Size	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
	Total Pressure	.010	.018	.028	.041	.055	.072	.091	.113	.155	.213
6"	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
Dia.	Throw	1-3-4	1-3-4	2-4-5	2-5-6	3-4-7	4-5-8	4-6-9	4-6-10	5-6-10	6-7-11
	Noise Criteria	_	_	_	11	17	22	26	30	36	42
	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173	.249	.339
8"	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
Dia.	Throw	2-2-4	2-3-6	3-4-8	3-5-8	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13	9-11-14
	Noise Criteria	_	_	_	15	21	26	30	34	40	46
	Total Pressure	.032	.057	.085	.127	.169	.221	.281	.347	.501	.684
10"	Airflow, CFM	165	220	270	330	380	435	490	545	655	765
Dia.	Throw	3-4-7	3-5-9	4-6-10	5-7-11	5-8-12	7-10-13	8-11-15	9-12-16	11-13-18	12-14-19
	Noise Criteria	_	_	_	18	24	29	33	37	43	49
	Total Pressure	.043	.077	.118	.171	.235	.308	.386	.478	.686	.939
12"	Airflow, CFM	235	315	390	470	550	630	705	785	940	1100
Dia.	Throw	4-5-10	5-7-13	6-9-15	8-11-17	9-13-18	10-14-19	11-15-20	13-16-22	16-18-25	18-21-28
	Noise Criteria	_	_	12	21	27	32	36	40	46	52
	Total Pressure	.060	.106	.165	.237	.326	.425	.536	.661	.949	1.306
14"	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490
Dia.	Throw	5-7-14	6-9-16	9-12-19	11-15-23	12-18-24	14-19-26	16-21-28	19-21-30	20-24-33	21-26-35
	Noise Criteria	_	_	14	23	29	34	38	42	48	54
	Total Pressure	.074	.130	.205	.293	.401	.526	.668	.820	1.172	1.604
15"	Airflow, CFM	370	490	615	735	860	985	1110	1230	1470	1720
Dia.	Throw	6-9-17	8-12-20	11-16-24	14-19-26	14-20-27	17-22-31	19-24-33	22-25-35	23-27-38	24-29-40
	Noise Criteria	_	_	15	24	30	35	39	43	49	55

Performance Notes:

- 1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
- 3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 10.
- 4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor			
6	12 x 12	.079			
8	12 x 12	.098			
6	24 x 24	.155			
8	24 x 24	.186			
10	24 x 24	.236			
12	24 x 24	.288			
14	24 x 24	.328			
15	24 x 24	.364			

Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 2-way Blow

Nominal	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	1200
Neck Size	Velocity Pressure	.003	.006	.010	.016	.023	.031	.040	.051	.063	.090
	Total Pressure	.032	.071	.126	.198	.284	.387	.506	.640	.790	1.091
6"	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
Dia.	Throw	2-4-6	4-6-9	5-8-10	6-9-12	7-9-13	8-11-15	8-12-16	9-12-17	9-13-18	10-13-19
	Noise Criteria	_	_	16	22	25	30	34	38	41	47
	Total Pressure	.074	.166	.294	.460	.662	.902	1.178	1.491	1.840	2.650
8"	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
Dia.	Throw	3-5-7	5-7-10	6-9-12	7-10-14	8-11-15	9-12-16	9-12-17	10-12-18	10-13-19	11-14-20
	Noise Criteria	_	11	18	24	27	32	36	40	43	49

Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 2-Way Blow

Nominal	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
Neck Size	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
	Total Pressure	.007	.016	.028	.043	.063	.085	.111	.141	.174	.240
6"	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
Dia.	Throw	1-3-4	2-4-5	2-5-6	3-4-7	4-6-9	4-6-10	5-6-10	6-7-11	6-8-12	7-9-13
	Noise Criteria	_	_	_	12	18	24	29	33	37	43
	Total Pressure	.013	.028	.050	.078	.113	.153	.200	.253	.313	.450
8"	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
Dia.	Throw	2-2-4	2-3-7	3-5-9	5-7-9	6-8-11	7-9-12	8-10-13	9-11-14	10-12-15	11-13-17
	Noise Criteria	_	_	_	16	22	28	33	37	41	47
	Total Pressure	.029	.065	.115	.174	.259	.344	.451	.572	.707	1.022
10"	Airflow, CFM	110	165	220	270	330	380	435	490	545	655
Dia.	Throw	3-4-7	3-5-10	5-7-13	7-9-14	8-11-15	10-12-17	11-13-18	11-14-18	12-15-19	13-17-22
	Noise Criteria	_	_	12	19	25	31	36	41	44	50
	Total Pressure	.042	.09	.162	.248	.36	.493	.647	.811	1.005	1.441
12"	Airflow, CFM	160	235	315	390	470	550	630	705	785	940
Dia.	Throw	4-5-10	5-8-14	8-11-17	10-14-19	11-15-20	14-17-23	16-18-25	16-19-25	18-21-27	19-22-29
	Noise Criteria	_	_	15	22	28	34	39	43	47	53
	Total Pressure	.056	.130	.229	.356	.511	.704	.916	1.156	1.425	2.045
14"	Airflow, CFM	210	320	425	530	635	745	850	955	1060	1270
Dia.	Throw	5-7-14	7-11-18	11-15-23	14-19-26	16-21-28	19-22-31	20-24-33	20-26-33	23-28-36	25-30-38
	Noise Criteria	_	_	17	24	30	36	41	45	49	55
	Total Pressure	.071	.161	.283	.446	.637	.872	1.144	1.453	1.784	2.548
15"	Airflow, CFM	245	370	490	615	735	860	985	1110	1230	1470
Dia.	Throw	6-9-17	9-13-21	14-19-26	16-21-30	19-24-33	23-26-35	23-27-38	23-28-39	25-29-42	28-31-42
	Noise Criteria	_	10	18	25	31	37	42	46	50	56

Performance Notes:

- 1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocitiy pressure from the total pressure.
- 3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 10.
- 4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.053
8	12 x 12	.065
6	24 x 24	.103
8	24 x 24	.124
10	24 x 24	.158
12	24 x 24	.192
14	24 x 24	.219
15	24 x 24	.243

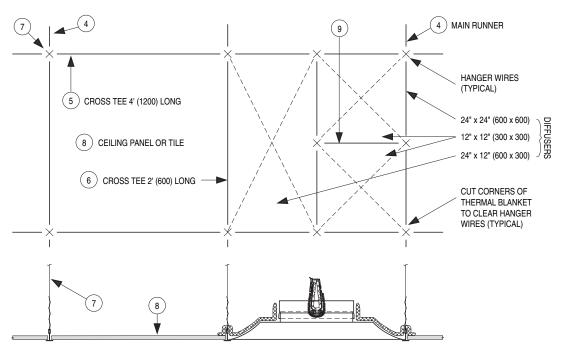


FIRE RATED CEILING AIR DIFFUSERS

INSTALLATION INSTRUCTIONS FLEXIBLE AIR DUCT

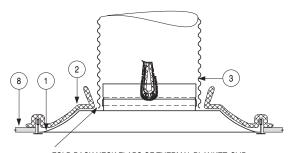
FLEXIBLE AIR DUCT

MODEL SERIES: 4000 & 4400





STEP 1: CEILING GRID LAYOUT



FOLD BACK NECK FLAPS OF THERMAL BLANKET. SLIP FLEXIBLE DUCT OVER THE NECK OF THE DIFFUSER.

REPLACE THE NECK FLAPS OF THERMAL BLANKET OVER DUCT AND FASTEN DUCT TO NECK OVER BLANKET USING 18 SWG MIN. STEEL WIRE OR STEEL CLAMP IN ACCORDANCE WITH DUCT MANUFACTURER'S INSTALLATION INSTRUCTIONS. DO NOT USE BOLTS, SCREWS OR RIVETS.

STEP 3: THERMAL BLANKET INSTALLATION

STEP 2: FLEXIBLE DUCT

- 1. Series 4000 or 4400 Diffuser
- 2. Ceramic fiber thermal blanket*
- 3. Flexible duct
- 4. Main T-Bar runner
- *Caution: Replace thermal blanket if it is damaged during shipping or installation.
- 5. 4'-0" (1200) cross T-Bar
- 6. 2'-0" (600) cross T-Bar
- 7. Hanger wires
- 8. Ceiling panel or tile
- 9. 1'-0 (300) cross T-Bar. See note 9.

Dimensions are in inches (mm).

9/09 IOM-FRDFINST

Page 1 of 2

Page 5.020

- 1. Follow carefully steps 1, 2 and 3.
- 2. Before installing, open damper blades and install link between spring loaded wire clips. Do not bend or deform clips after assembly. If dampers are provided with link tabs instead of wire clips, install link and bend tabs to secure link in position
- 3. The Flexible Air Duct Connector shall be Class 0 or Class 1 bearing the UL/ULC Classification marking. See the UL "Gas and Oil Equipment Directory" or ULC "List of Equipment and Materials". The maximum length of the flexible duct shall not exceed 14'-0" (4267) in length. No portion of the duct shall rest on the back surface of the ceiling panels or tiles and a minimum of 4" (102) clearance must be maintained. Where the flexible duct must be supported, use steel straps and 12 swg steel hanger wires.
- 4. The end tabs of the 2'-0" (600) Cross T-bar shall be bent back against the web of the 4'-0" (1200) Cross T-bar. The 4'-0" (1200) Cross T-bars must have slots in the web for connection of the 2'-0" (600) Cross T-bar.
- Use 12 swg galvanized steel hanger wires to independently support the ceiling T-bars to the structural members of the floor or roof above at the four corners of the diffuser. Ensure hanger wires are plumb and straight.
- 6. Maximum neck size of Series 4000 and 4400 Ceiling Air Diffuser is 14" (356) diameter.
- 7. Caution should be observed so that the Flexible Air Duct Connector does not interfere with the operation of the Integral Classified Ceiling Damper of the Ceiling Air Diffuser Assembly.
- 8. No diffusers shall be located in an adjacent 24" x 48" (600 x 1200) ceiling grid module.
- 9. Series 4000 and 4400 Ceiling Air Diffuser Assemblies are for use in lieu of the hinged blade, sheet metal damper in steel ducts with steel diffusers or grilles as specified in the "Design Information Section General" and in the individual floor and roof ceiling design(s) being used, as illustrated and described in the current U.L. "Fire Resistance Directory" or ULC "List of Equipment and Materials".
- Fire resistive designs must cover UL/ULC Classified Ceiling Grid Members with appropriate cross tee sizes and slots in cross tees.

The following manufacturers currently supply 1'-0" (300) long cross tees that are UL and/or ULC Classified:

- Armstrong World Industries Inc.
- CGC Interiors, Division of CGC Inc.
- Chicago Metallic Corp.
- USG Interiors Inc.

Cartons of Grid Members shall be of the same type and bear the UL and/or ULC Classification marking.

Dimensions are in inches (mm).

Page 2 of 2

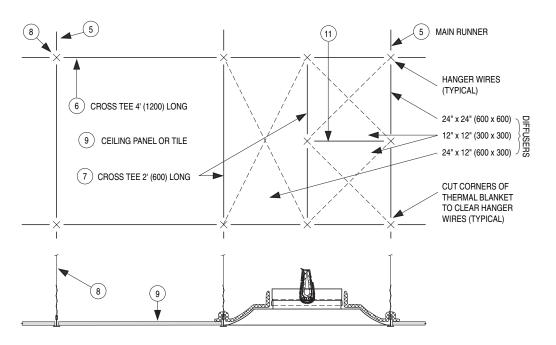


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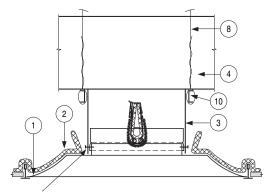
FIRE RATED CEILING AIR DIFFUSERS INSTALLATION INSTRUCTIONS STEEL AIR DUCT

MODEL SERIES: 4000 & 4400





STEP 1: CEILING GRID LAYOUT



FOLD BACK NECK FLAPS OF THERMAL BLANKET, SLIP ON STEEL DUCT DROP AND FASTEN TO DIFFUSER NECK WITH FOUR #8 SHEET METAL SCREWS. SCREWS MUST NOT INTERFERE WITH THE CLOSING OF THE INTEGRAL DAMPER BLADES.

2 3

FASTEN NECK FLAPS OF THERMAL BLANKET USING 18 SWG STEEL WIRE.

STEP 3: THERMAL BLANKET INSTALLATION

STEP 2: DUCT DROP INSTALLATION

- 1. Series 4000 or 4400 Diffuser
- 2. Ceramic fiber thermal blanket*
- 3. Steel duct drop
- 4. Steel duct
- 5. Main T-Bar runner
- *Caution: Replace thermal blanket if it is damaged during shipping or installation.
- 6. 4'-0" (1200) cross T-Bar
- 7. 2'-0" (600) cross T-Bar
- 8. Hanger wires
- 9. Ceiling panel or tile
- 10. Support channels
- 11. 1'-0 (300) cross T-Bar. See note 9.

Dimensions are in inches (mm).

Page 1 of 2

9/09 IOM-FRDSINST Page 5.010

- 1. Follow carefully steps 1, 2 and 3.
- Before installing, open damper blades and install link between spring loaded wire clips. Do not bend or deform clips after assembly. If dampers are provided with link tabs instead of wire clips, install link and bend tabs to secure link in position
- Use 12 swg galvanized steel hanger wires to independently support the T-bar grid members and the support channels to the structural members of the floor or roof above at the four corners of the diffuser. Ensure hanger wires are plumb and straight.
- 4. When installing the Ceiling Air Diffuser in duct drop, use #8 by 1/2" (13) long sheet metal screws 4 per diffuser. The screws shall not interfere with the closing of the Integral Classified Ceiling Damper of the Ceiling Air Diffuser Assembly.
- 5. Support the duct with 2 16 gauge cold rolled steel support channels, 1 1/2" (38) deep with 1/2" (13) flanges. Place the support channels at the bottom of the duct adjacent to both sides of the duct drop.
- 6. Maximum neck size of Series 4000 and 4400 Ceiling Air Diffuser is 14" (356) diameter.
- 7. The clearance between the Ceiling Air Diffuser neck and the duct drop shall be 1/8" (3) maximum.
- 8. No diffusers shall be located in an adjacent 24" x 48" (600 x 1200) ceiling grid module.
- 9. Series 4000 and 4400 Ceiling Air Diffuser Assemblies are for use in lieu of the hinged blade, sheet metal damper in steel ducts with steel diffusers or grilles as specified in the "Design Information Section General" and in the individual floor and roof ceiling design(s) being used, as illustrated and described in the current UL "Fire Resistance Directory" or ULC "List of Equipment and Materials".
- 10. Fire resistive designs must cover UL/ULC Classified Ceiling Grid Members with appropriate cross tee sizes and slots in cross tees.

The following manufacturers currently supply 1'- 0" (300) long cross tees that are UL and/or ULC Classified:

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- CGC Interiors, Division of CGC Inc.
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Cartons of Grid Members shall be of the same type and bear the UL and/or ULC Classification marking.

Dimensions are in inches (mm).

Page 2 of 2



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