

"TWISTER" HIGH INDUCTION STAMPED FACE

The "Twister" diffuser is engineered to optimize air distribution effectiveness. This next generation diffuser has a high induction, 360° swirl pattern for a superior coanda effect. It is available for a 2' x 2' (600 x 600) ceiling module with a choice of five round neck sizes.

Steel Construction – High Induction

Fixed Pattern Model TWR "Twister" Swirl Pattern **Page D101**



Model TWR



Models UNI, 5000CTD, UNI-PD

ARCHITECTURAL SQUARE

Designed with the architect in mind, the diffusers in this series are fashioned to blend in with most ceiling types in order to create the ultimate in aesthetic looks. Nailor has accomplished this while still offering a variety of diffuser designs that provide flexibility in both style, selection and engineering performance.

Flat Panel

Steel Construction –	Model UNI	Page D104
Aluminum Construction –	Model AUNI	Page D104
Steel with Ceiling Tile –	Model UNI-RC	Page D106

Downblast –

Steel Fixed Perforated –	Model UNI-PD	Page D115
Steel Adjustable –	Model UNI-AD	Page D118
Steel Round Plaque Face –	Model UNI-RP	Page D121

Ceiling Tile Slot –

Supply	Model Series 5000CTD	Page D128
Return	Model Series 5000RCTD	Page D128

Plaque Face

Steel Construction –	Model UNI2	Page D112
Aluminum Construction –	Model AUNI2	Page D112
Steel Construction –	Model 6600	Page D134

Plaque Face with Perimeter Slots

Steel Construction –	Model 66UNI	Page D139
----------------------	-------------	------------------

ROUND

Nailor's round diffusers are available in steel or aluminum construction, with adjustable or fixed patterns. Included in this series of diffusers is a 'Plaque' style for architectural ceilings and a 'Downblast' type for high ceiling areas.

Adjustable Horizontal Pattern

Steel Construction –	Model RNR	Page D143
Aluminum Construction –	Model ARNR	Page D143

Adjustable Horizontal to Vertical Pattern

Steel Construction –	Model RNRA1	Page D146
Aluminum Construction –	Model ARNRA1	Page D146

Fully Adjustable Horizontal/Vertical Pattern

Aluminum Construction –	Model 6300R	Page D148
-------------------------	-------------	------------------

Plaque Face Horizontal Pattern

Steel Construction –	Model RUNI	Page D150
Aluminum Construction –	Model ARUNI	Page D150

Downblast Adjustable Horizontal/Vertical Pattern

Steel Construction –	Model RDB	Page D152
----------------------	-----------	------------------



Models RUNI, RNR, RDB

EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.

No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK

Models:

- UNI** Steel
AUNI Aluminum



Model UNI

Model Series 'UNI' Square Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI diffuser complements any decor, blending beautifully with virtually any architectural style or requirement. The UNI diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI diffusers are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Unique neck bracketry is virtually invisible from most angles.
- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

FINISH OPTIONS:

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

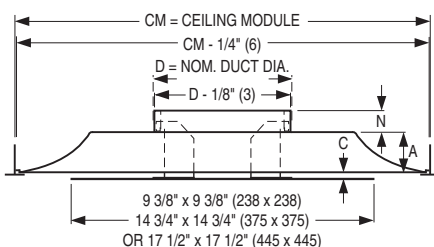
OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper
5" – 24" (127 – 610).
- 4675 Butterfly Damper
6" – 14" (152 – 356).

- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D264).
- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- EIC Extended Inlet Collar (2 1/4" [57] with bead (Model UNI only).
- EQT Earthquake Tabs
- RC Retaining Channel only
- RCCF Retaining Channel with Tile Cut and Fitted (see page D106).

For additional options and accessories; see page D255.

Type L Lay-in, T-Bar Frame



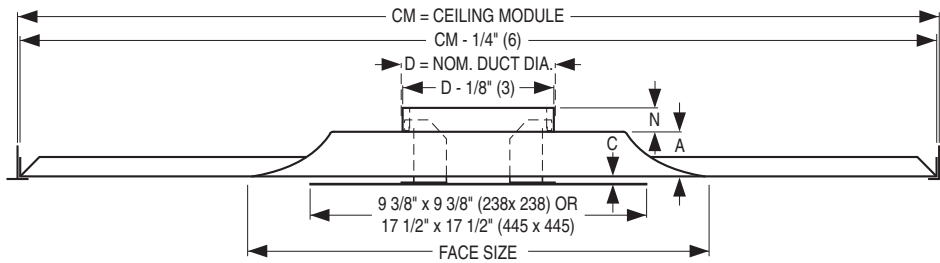
Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
20 x 20	500 x 500	6, 8, 10	1 1/4	2 1/4	18 1/2	7/16	N/A	152, 203, 254	32	57	470	11	N/A
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

* Supplied with a reducer.

DIMENSIONAL DATA AND FRAME TYPES: MODELS UNI AND AUNI

Type PL Panel Mounted Lay-in T-Bar

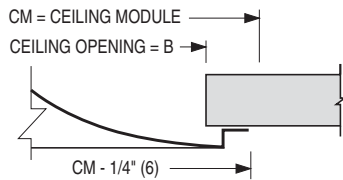


Dimensional Data

Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)					
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	5/8	300 x 300	102*	83	25	16
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 12	600 x 300		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4					127, 152, 178, 203		
24 x 24	600 x 600		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4					127, 152, 178, 203		
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	3/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	10
48 x 24	1200 x 600	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	3/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	10

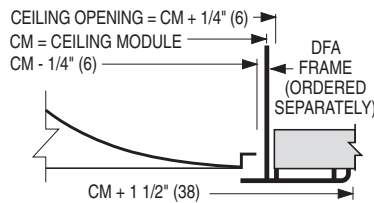
* Supplied with a reducer.

Type L Surface Mount



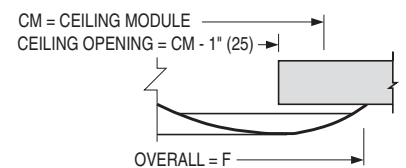
Hard duct connection recommended.

Type L Surface Mount with DFA



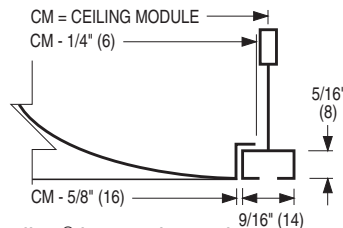
Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type S Surface Mount



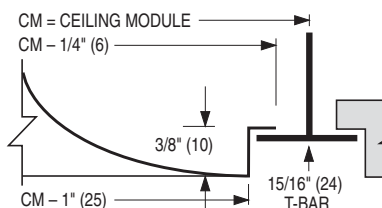
Aluminum model (AUNI) is only available in 12 x 12 (300 x 300) module for Type S. Hard duct connection recommended.

Type F Fineline®

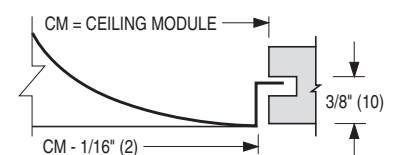


Fineline® is a registered trademark of USG Interiors Inc.

Type TL Tegular Lay-in

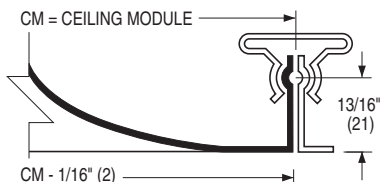


Type SP Spline



Steel models only. For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Type M Metal Pan (Snap-in) Steel models only



Directional Blow Option • QB Quadrant Blanks

- Converts **UNI** from standard 4-way (360°) blow pattern to 1, 2 or 3-way.
- Supplied factory installed when specified or available loose for simple field installation.
- Installs between outer cone and face panel and locates between neck bracketry.
- Positive full depth blank-off follows neck circumference; see page D264.

Blow Patterns



ARCHITECTURAL OPTION

Model:
UNI with optional
RC (retaining angle)



Model UNI-RC

For a unique 'custom' appearance, specify the UNI diffuser with the optional RC Retaining Channel. The retaining channel is shipped separately for field installation of a ceiling tile. Simply cut the tile to size and install it directly on the face panel assembly.

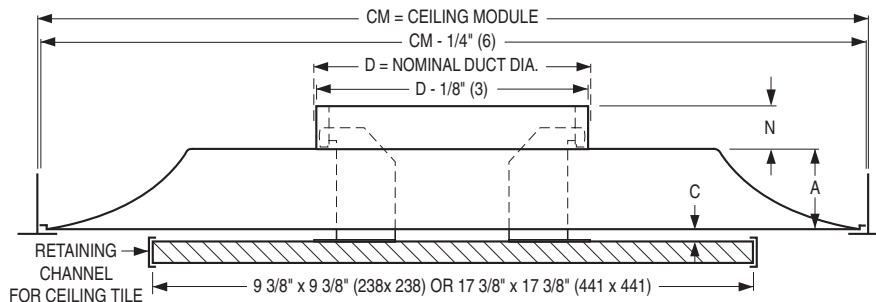
The RC Retaining Channel is supplied in two pieces with pop rivets for field assembly as standard.

The result is a high performance diffuser that blends harmoniously with the specified architectural ceiling design.

Tiles (supplied by others) can also be factory installed at additional cost.

D
CEILING DIFFUSERS

*Type L Lay-in T-Bar Frame



Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

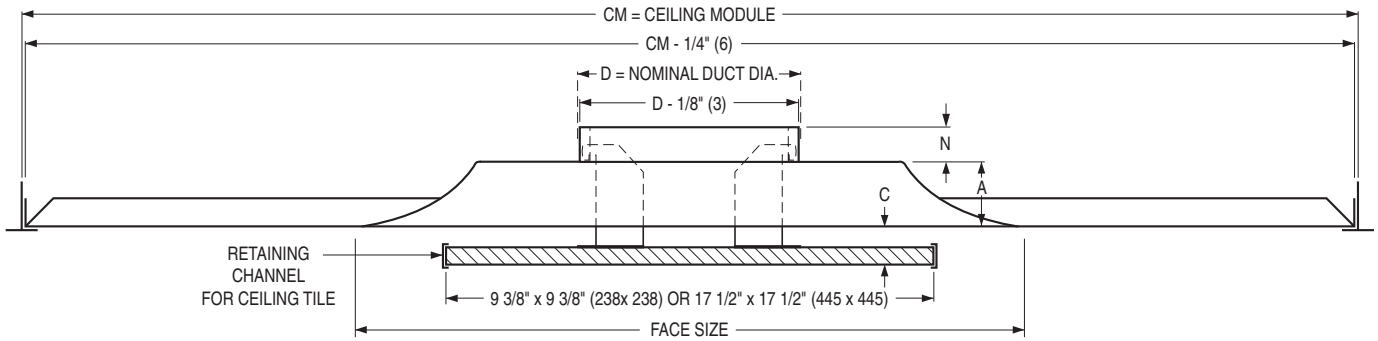
* Supplied with a reducer.

* Refer to previous page for other frame types and installations.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI WITH OPTIONAL RC & UNI TYPE PL

*Type PL Panel Mounted, Lay-in T-Bar with RC Retaining Channel for Ceiling Tile



Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	1 3/8	300 x 300	102*	83	25	35
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 12	600 x 300		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 24	600 x 600		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	1 1/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	29
48 x 24	1200 x 600	24	6, 8, 10, 12, 14, 15					152, 203, 254, 305, 356, 381			

* Supplied with a reducer.

PERFORMANCE DATA:

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

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
4" Dia.	Total Pressure	.023	.036	.051	.070	.091	.115	.142	.205	.279	.364
	Airflow, CFM	35	45	50	60	70	80	85	105	120	140
	Throw	1-2-3	1-2-4	2-2-5	2-3-6	2-3-6	2-4-7	3-4-7	3-5-7	4-6-7	5-7-8
	Noise Criteria	—	—	—	13	17	21	24	30	35	40
5" Dia.	Total Pressure	.027	.043	.061	.083	.109	.138	.170	.245	.334	.436
	Airflow, CFM	55	70	80	95	110	125	135	165	190	220
	Throw	2-2-4	2-3-5	2-3-6	3-4-7	3-5-8	4-6-9	4-7-9	4-8-10	5-8-10	6-9-11
	Noise Criteria	—	—	—	14	18	22	25	31	36	41
6" Dia.	Total Pressure	.033	.052	.074	.101	.131	.166	.205	.295	.402	.525
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	2-3-5	3-4-6	3-5-7	4-5-8	5-6-9	5-7-10	5-8-10	6-9-11	7-10-12	7-10-13
	Noise Criteria	—	—	10	15	19	23	26	32	37	42
7" Dia.	Total Pressure	.056	.089	.127	.172	.225	.285	.352	.506	.689	.900
	Airflow, CFM	105	135	160	190	215	240	265	320	375	430
	Throw	3-4-6	3-5-7	4-6-9	4-7-10	5-8-10	6-8-11	6-9-12	7-10-13	8-11-14	9-12-15
	Noise Criteria	—	—	11	16	20	24	27	33	38	43
8" Dia.	Total Pressure	.067	.105	.160	.205	.268	.340	.418	.600	.821	1.070
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	3-5-7	4-6-9	5-7-10	6-8-11	6-9-12	7-9-13	7-10-14	8-11-15	9-12-16	9-12-17
	Noise Criteria	—	—	12	17	21	25	28	34	39	44

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

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.014	.021	.031	.042	.055	.070	.086	.124	.168	.220
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-5	2-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.019	.029	.042	.057	.074	.094	.116	.167	.227	.296
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.049	.071	.096	.126	.159	.196	.283	.385	.503
	Airflow, CFM	220	270	330	380	435	490	545	655	765	875
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	6-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46

Performance Notes:

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

Use the following correction factors with the supply data.

Noise Criteria = + 3 Noise Criteria (NC)

Negative Static Pressure = Total Pressure x .45

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates a Noise Criteria of less than 10.

- 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

PERFORMANCE DATA:

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

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Return Applications:
Use the following correction factors with the supply data.
Noise Criteria = + 3 Noise Criteria (NC)
Negative Static Pressure = Total Pressure x .45

- 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.
- 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

PERFORMANCE DATA:

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

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

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

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

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the 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 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

PERFORMANCE DATA:

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

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

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

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

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the 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 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

ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- CORNER POSTS

Model:

UNI2 Steel

AUNI2 Aluminum



Model UNI2

Model 'UNI2' Square Plaque Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and engineering performance. The diffuser delivers a tight 360° radial horizontal pattern allowing high turn down ratios with no dumping. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI2 diffusers complements any decor, blending beautifully with virtually any architectural style or requirement. The diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI2 diffusers are available to suit multiple applications such as Lay-in T-Bar as well as surface mount where hard duct connection is required and Drywall/Plaster frame recommended for flexible duct connection and ceiling access. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Hemmed edge mechanically captures the hanger brackets and the design eliminates welding, ensuring a clean, smooth and blemish free painted finish.

- Face panel is held in place by four hook corner posts that positively engage into slots in the back pan.
- Panel is removable from the backpan for diffuser installation and access to provide optional inlet damper.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

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

OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper
5" – 24" (127 – 610).
- 4675 Butterfly Damper
6" – 14" (152 – 356).
- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D265).
- EX External Foil-Back Insulation (installed) – R-4.2.
- EXB External Foil-Back Insulation (loose) – R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- EIC Extended Inlet Collar (2 1/4" [57] with bead (Model UNI2 only).
- MRI 100% Aluminum Construction (MRI room compatible) (Model AUNI2 only).
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI2 AND AUNI2

Type L Lay-in T-Bar

Dimensional Data

CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	Duct Size D	N	A	B	C
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	152, 203, 254, 305, 356, 381	32	59	559	10

Type L Surface Mount

Hard duct connection recommended.

Type L Surface Mount with DFA

Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

Type F Fineline®

PERFORMANCE DATA:

Models UNI2 and AUNI2 • 24 x 24 (600 x 600) Face Size • 4-Way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-13	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the 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 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	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

ARCHITECTURAL SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- ROUND PLAQUE FACE
- ROUND NECK

Models:

UNI-RP Steel



Model UNI-RP

Model Series 'UNI-RP' Architectural Square Ceiling Diffusers have been designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the round inner face panel provide a clean appearance.

Model 'UNI-RP' diffusers offer an aesthetically pleasing design that suits virtually any architectural style or requirement. The 'UNI-RP' diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

'UNI-RP' diffusers are available to suit many applications including surface mount, lay-in T-Bar and panel types. A variety of neck sizes are available to suit various system designs. The collar is a full 1 1/4" (32) in height for easy, secure connection.

STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- Round Plaque Face.
- High neck collars for solid connection.
- Round Neck.
- Removable inner core.
- Unique neck bracketry is virtually invisible from a normal viewing position.
- No visible corner posts for aesthetics.

- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

FINISH OPTIONS:

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

OPTIONS & ACCESSORIES:

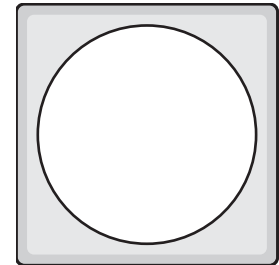
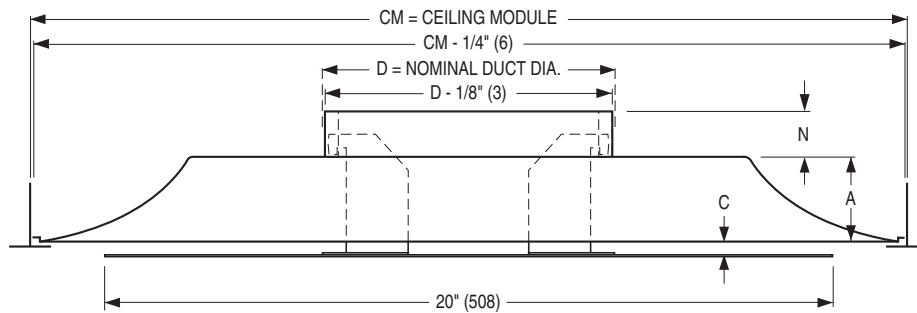
- 4250 Radial Sliding Blade Damper
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper
5" – 24" (127 – 610).
- 4675 Butterfly Damper
6" – 14" (152 – 356).
- EX External Foil-Back Insulation
(installed) -R-4.2.
- EXB External Foil-Back Insulation
(loose) -R-4.2.
- MIB Molded Insulation Blanket - R-6.0.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

DIMENSIONAL DATA AND FRAME TYPES:

MODELS UNI-RP

Type L Lay-in, T-Bar Frame

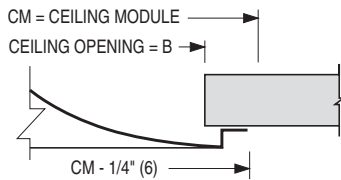


FACE VIEW

Dimensional Data

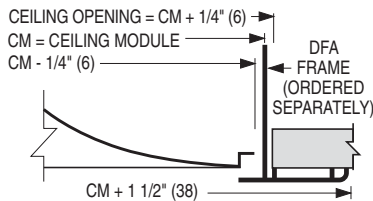
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

Type L Surface Mount



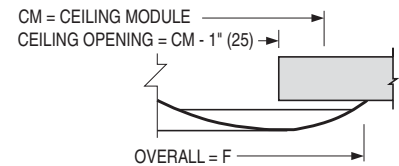
Hard duct connection recommended.

Type L Surface Mount with DFA

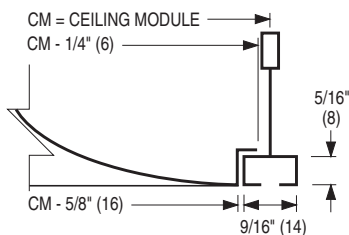


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

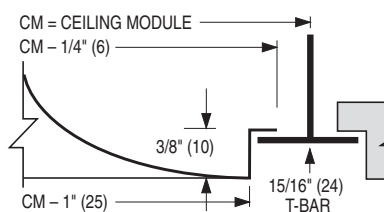
Type S Surface Mount



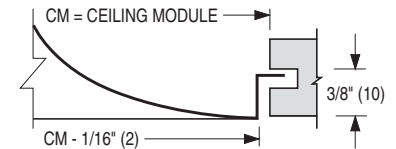
Type F Fineline®



Type TL Tegular Lay-in



Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

PERFORMANCE DATA:

Models UNI-RP • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure	.019	.028	.040	.052	.067	.084	.102	.122	.147	.193
	Airflow, CFM	80	100	120	135	155	175	195	215	235	275
	Throw	1-1-4	1-2-5	2-2-5	2-3-5	2-3-6	2-3-7	2-4-7	3-4-7	3-5-8	4-6-8
	Noise Criteria	—	—	—	15	20	24	28	31	34	37
8" Dia.	Total Pressure	.023	.035	.047	.066	.085	.106	.132	.161	.190	.258
	Airflow, CFM	140	175	210	245	280	315	350	385	420	490
	Throw	2-3-7	2-4-7	3-4-8	3-5-9	4-6-9	4-6-10	5-7-11	5-8-11	6-8-12	7-10-13
	Noise Criteria	—	—	—	16	20	25	29	32	35	39
10" Dia.	Total Pressure	.030	.047	.066	.092	.120	.152	.186	.225	.267	.365
	Airflow, CFM	220	275	325	380	435	490	545	600	655	765
	Throw	3-4-9	3-5-10	4-6-11	5-7-12	5-8-13	6-8-14	6-9-15	7-10-15	8-11-16	9-13-17
	Noise Criteria	—	—	15	20	22	26	31	35	38	43
12" Dia.	Total Pressure	.045	.075	.103	.140	.184	.233	.283	.339	.411	.552
	Airflow, CFM	315	395	470	550	630	705	785	865	940	1100
	Throw	3-5-11	4-6-13	5-7-14	5-8-15	6-9-16	7-10-17	8-11-18	8-12-19	9-13-20	10-16-21
	Noise Criteria	—	19.000	22	25	30	35	38	42	45	51
14" Dia.	Total Pressure	.069	.111	.159	.211	.278	.352	.426	.516	.616	.842
	Airflow, CFM	430	535	640	750	855	960	1070	1175	1285	1495
	Throw	4-6-12	5-8-14	6-9-15	7-11-16	8-12-17	9-13-18	10-14-19	11-15-20	12-16-21	14-18-23
	Noise Criteria	15	21	24	30	35	39	42	46	49	56
15" Dia.	Total Pressure	.077	.134	.186	.260	.343	.436	.532	.646	.773	1.075
	Airflow, CFM	490	615	735	860	980	1105	1225	1350	1475	1720
	Throw	5-7-13	6-9-15	7-10-16	8-11-18	9-12-19	11-15-20	12-16-21	13-17-22	14-18-23	16-20-26
	Noise Criteria	17	23	26	32	38	41	45	48	51	60

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the 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 – 2006.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

HOW TO ORDER

STAMPED SQUARE CEILING DIFFUSERS

MODEL SERIES RNS, ARNS, UNI, AUNI AND TWR

EXAMPLE: RNS - 08 - 24 x 24 - L - AW - -

1. Models

Louvered Face

- RNS Steel, Fixed, 4 Cone
- RNS3 Steel, Fixed, 3 Cone
- RNS2 Steel, Fixed, 2 Cone
- RNSA1 Steel, Adjustable, Sliding Type
- RNSA2 Steel, Adjustable, Rotating Type

- ARNS Aluminum, Fixed
- ARNS3 Aluminum, Fixed, 3 Cone, Non-removable
- ARNSA Aluminum, Adjustable

Architectural

- UNI Steel, Concealed Bracketry
- UNI2 Steel, Corner Posts
- UNI-RP Steel, Round Plaque
- AUNI Aluminum, Concealed Bracketry
- AUNI2 Aluminum, Four Corner Posts

Downblast

- UNI-AD Adjustable
- UNI-PD Fixed, Perforated

High Induction

- TWR Twister

2. Neck Size (inches)

- 04, 05, 06, 07, 08, 10, 12, 14, 15

3. Ceiling Module Size

Imperial (inches)

- 12 x 12, 20 x 20, 24 x 12, 24 x 24 (default), 30 x 30, 48 x 24

Metric (mm)

- 300 x 300, 500 x 500, 600 x 300, 600 x 600, 750 x 750, 1200 x 600

4. Frame Type

- L Lay-in T-Bar/Surface Mount
- S Surface Mount
- PL Panel Lay-in T-Bar
- SP Spline
- M Metal Pan
- F Fineline®
- TL Tegular Lay-in

5. Finish

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- PPA Paint Prepared Aluminum
- SP Special Custom Color

OPTIONS & ACCESSORIES:

(Default is none unless noted otherwise)

6. MRI Option (AUNI2 only)*

- MRI MRI Compatible (100% Aluminum)

7. Damper

- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"
- 4675 Butterfly, 6" - 14"

8. Quadrant Blanks

- QB3 3-way blow
- QB2 2-way opposite blow
- QC2 2-way corner blow
- QB1 1-way blow

9. External Insulation

- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket R-6.0

10. Extended Inlet Collar **

- EIC Extended Inlet Collar (2.25") with bead

11. Earthquake Tabs

- EQT Earthquake Tabs

OTHER OPTIONS & ACCESSORIES:

Ceiling Tile Option:

- (UNI, AUNI only)
- RC Retaining Channel only
- RCCF Retaining Channel + Tile Cut & Fitted

Air Balancing Devices

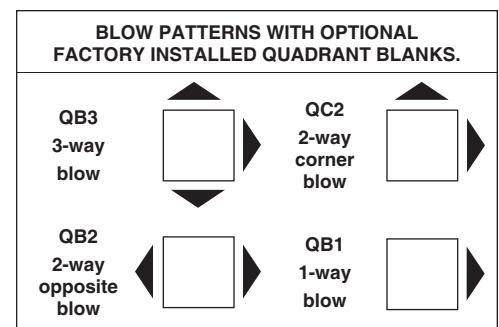
- (order separately)
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

Notes:

1. Consult price pages as to limitations of module, frame type, neck size and accessories combinations.
2. Face size 20" x 20" (500 x 500) is available only in Frame Type L.
3. MIB Molded Insulation Blanket is not available on Models RNSA1, RNSA2, and ARNSA.
4. Butterfly damper (4675) is not compatible with Model RNSA.
5. PPA Finish is available on Aluminum models only.
6. *Dampers are not available on Model AUNI2 when MRI option is selected.
7. **Extended Inlet Collar is available for steel models RNS, RNS3, UNI and UNI2 only.

D
CEILING DIFFUSERS

NOMINAL ROUND NECK (DUCT) SIZE	FACE SIZE	CEILING MODULE
4, 5, 6, 7, 8	12 x 12	12 x 12 20 x 20 24 x 12 24 x 24
6, 8, 10	20 x 20	20 x 20
6, 8, 10, 12, 14, 15	24 x 24	24 x 24 30 x 30 48 x 24



HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNS3 and ARNS3 – Steel or Aluminum Construction

Furnish and install **Nailor Model** (select one) **RNS3** (steel) or **ARNS3** (aluminum) **Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RNS3 shall be manufactured from corrosion-resistant steel and have three die-formed concentric cones in all sizes. Model ARNS3 shall be manufactured from aluminum with corrosion-resistant steel bracketry. The inner cone assembly is to be non-removable. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

RNS2 – Steel Construction

Furnish and install **Nailor Model RNS2 Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and incorporate two die-formed concentric cones. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

TWR 'Twister' – Steel Construction

Furnish and install **Nailor Model TWR 'Twister' Ceiling Swirl Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from heavy gauge corrosion-resistant steel. Radial induction vanes shall be one-piece stamped construction. The diffuser is to be sizes to suit a 24" x 24" (600 x 600) ceiling suspension system. The round duct connection collar shall be an integral part of the diffuser assembly and be not less than 1 1/4" (32) high. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

UNI – Steel Construction

Furnish and install **Nailor Model UNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

AUNI – Aluminum Construction

Furnish and install **Nailor Model AUNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge aluminum, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

UNI2 – Steel Construction

Furnish and install **Nailor Model UNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of corrosion-resistant steel and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

AUNI2 – Aluminum Construction

Furnish and install **Nailor Model AUNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of aluminum with corrosion-resistant steel bracketry and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

UNI-PD – Perforated Downblast

Furnish and install **Nailor Model UNI-PD Square Perforated Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate that includes perforated holes in a spherical pattern. The perforations shall be 3/8" (10) diameter holes on 5/8" (16) centers. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

UNI-AD – Adjustable Downblast

Furnish and install **Nailor Model UNI-AD Square Adjustable Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate and includes a round, easily adjustable radial vane in the center. The radial vane shall have a ring operator that allows for pole operation. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

SUGGESTED SPECIFICATION:

UNI-RP – Steel Construction

Furnish and install **Nailor Model UNI-RP Square Ceiling Diffuser with Round Plaque Face Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece outer cone. The inner core shall have a round plaque style face. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR CEILING DIFFUSERS

MOUNTING FRAMES

- Surface mount adapter frames for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.

OPTIONS

- A selection of optional items that are available on ceiling diffusers.

FINISHES

- Selection of standard and non-standard finishes to choose from.
- Baked enamel paint in custom colors to suit architect.

AIR BALANCING DEVICES

- Dampers for round and square necks.
- Equalizing grids.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be ordered or specified as diffuser accessories.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.

Model DFA
Drywall/Plaster Frame
Surface Mount
Ceiling Adapter



Model 4275
Radial Opposed
Blade Damper



Model 4250
Radial Sliding Blade Damper



Model 4675
Butterfly Damper



Model OBD
Opposed Blade Damper
Steel, Neck Mount



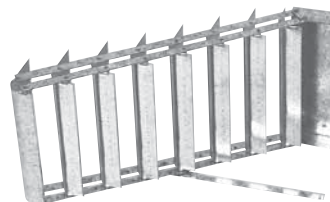
Model OBDD
Opposed Blade Damper
Steel, Duct Mount



Model EGR
Equalizing Grid



Model DEGR
Damper with Equalizing Grid



Model EX-1
Volume Extractor

Mounting Frames

DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized.

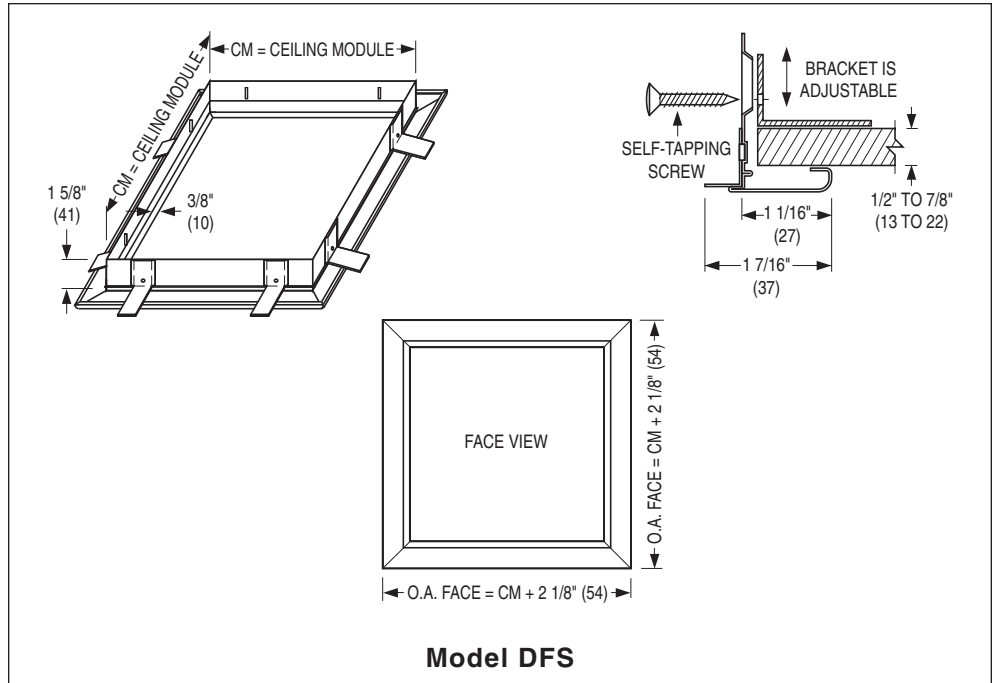
A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

Standard Finish: AW Appliance White. Other finishes are available.

Model DFS is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

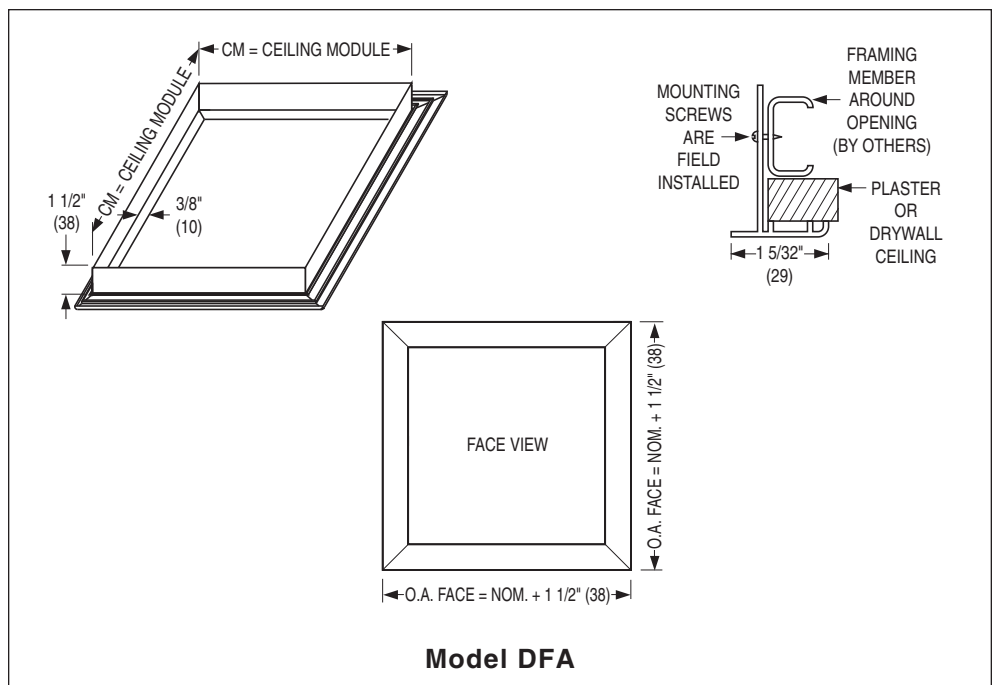
Ceiling opening = CM + 1/4" (6)



Model 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)



Options and Finishes

OPTIONS:

EQT Earthquake Tabs

Earthquake (seismic) retaining safety tabs are available; factory installed on diffusers when required by local building code that units be independently restrained and safety wired to supporting structure.

SC Safety Chain

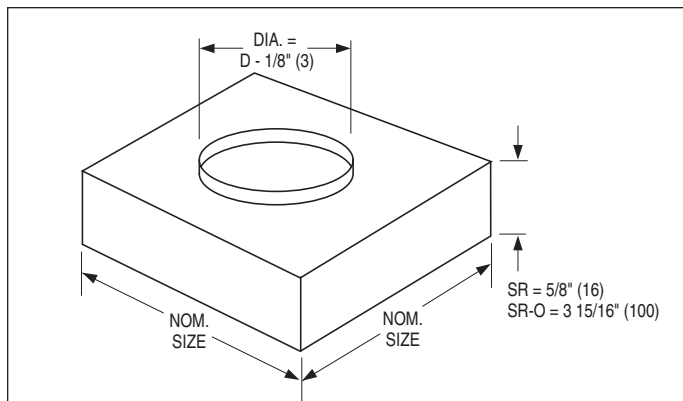
An optional safety chain is available on all of Nailor's round ceiling diffusers.

GK Foam Gaskets

Foam gasket is available on a selection of surface mount diffusers.

SR Square to Round Transition Collar

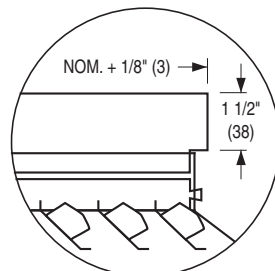
Transition collars are for use on Nailor square neck diffusers where a round duct connection is required. Round necks are sized for flexible or hard duct connection. SR's are shipped loose for field installation and are supplied with barbed S clips.



Square Neck Size (inches)	Round Neck Size D (inches)
6 x 6	4, 5, 6
8 x 8	4, 5, 6, 7, 8
9 x 9	6, 7, 8, 9
10 x 10	6, 7, 8, 9, 10
12 x 12	6, 8, 9, 10, 12
14 x 14	6, 8, 9, 10, 12, 14
15 x 15	6, 8, 10, 12, 14, 15
16 x 16	6, 8, 10, 12, 14, 15, 16
18 x 18	6, 8, 10, 12, 14, 15, 16, 18
20 x 20	6, 8, 10, 12, 14, 15, 16, 18, 20
21 x 21	6, 8, 10, 12, 14, 15, 16, 18, 20
22 x 22	6, 8, 10, 12, 14, 16, 18, 20
24 x 24	6, 8, 10, 12, 14, 15, 16, 18, 20, 24

ONA Offset Neck Adaptor

Fits outside duct (if a damper is required; order separately for remote mount. See Model OBDD).



EXTERNAL FOIL BACK INSULATION

EX External Insulation Blanket - Factory Installed

An optional 1 1/2" thick foil back insulation is available installed on a majority of Nailor ceiling diffusers. The insulation has an R value of 4.2.

EXB External Insulation Blanket - Ships Loose

This insulation is the same as above but is shipped loose for field installation.

MIB Molded Insulation Blanket - Factory Installed

The molded insulation is available as an option on various 24" x 24" square diffusers. The insulation has an R value of 6.0.

FINISHES:

AW Appliance White (standard)

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

AL Aluminum

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

BW British White

Matches most white ceiling tiles. (No additional cost)

BK Black

This black has a matte finish. (Additional cost)

BA Black Interior/Appliance White Face

Optional on perforated diffusers. AW Appliance White is applied on the perforated face and BK Black is applied on the interior of the backpan for a discreet appearance. (No additional cost)

SP Special

The Nailor range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

ALSO AVAILABLE:

MI Mill Finish

(No additional cost).

PPA Paint Prepared Aluminum (Washed only)

Aluminum models only. (No additional cost).

PC Prime Coat Paint

(Additional cost).

Air Balancing Devices

Radial Opposed Blade Damper

A unique method of controlling volume through a diffuser providing premium design quality and performance. The multi-blade perimeter design offers true radial flow at any setting.

A screwdriver slot, accessible through the diffuser, requires only a half turn to adjust from fully closed to fully open. The damper is designed to fit directly on the neck of the diffuser. Simple, convenient and accurate installation and operation.

Available with an optional operator arm. **Model 4275-OA** allows damper adjustment on the **UNI Diffusers** without removing the inner cone assembly.

Model 4275

	Nominal size (inches)							Nominal Size (mm)								
	5	6	8	10	12	14	15	16	127	152	203	254	305	356	381	406
A	4 7/8	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	14 7/8	15 7/8	124	149	200	251	302	352	378	403
B	1 1/8	1 5/8	2 1/2	2 1/4	2 7/8	3 3/8	3 3/4	4 3/8	29	41	64	57	73	86	95	111
C	1 5/8			2 1/2				41				64				

Radial Sliding Blade Damper

The **Model 4250** is a neck mounted radial sliding blade damper used in round neck diffuser applications to provide fine volume control. Gang operated radial blades slide at right angles to the duct with minimal protrusion above the diffuser neck; allowing the damper to work effectively in flexible duct applications.

Available in sizes 6", 8", 10", 12" and 14" (152, 203, 254, 305 and 356).

Model 4250

Butterfly Damper

The **Model 4675 Butterfly Damper** is an economical damper for volume balancing in round neck diffusers. Adjustable friction pivots hold the blades at the required setting. Adjusted from the face of the diffuser.

Not recommended for use with flexible duct.

Model 4675

	Nominal Size (inches)					Nominal size (mm)				
	6	8	10	12	14	152	203	254	305	356
A	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	149	200	251	302	352
B	2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	64	89	114	140	165

D

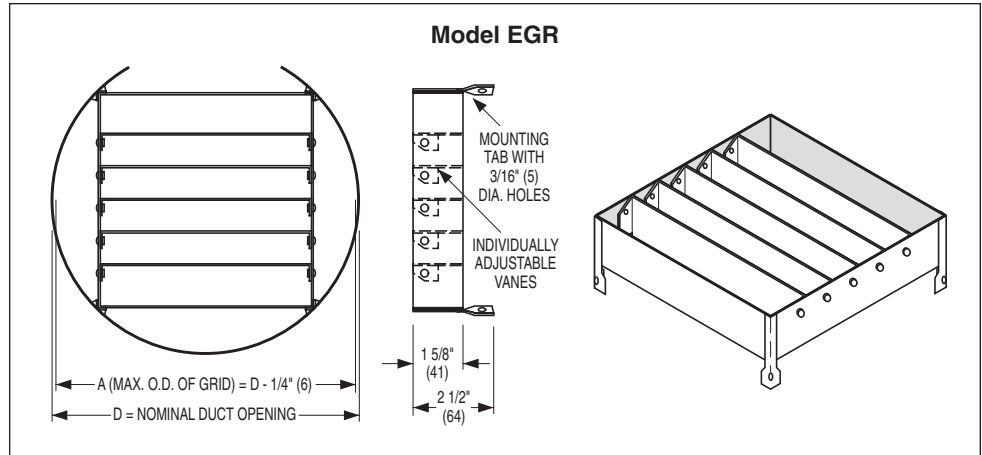
CEILING DIFFUSERS

Air Balancing and Directional Control Devices

Equalizing Grid for Round Necks

The **Model EGR** is a duct mounted grid that equalizes the airflow into the branch duct or diffuser neck and provides directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

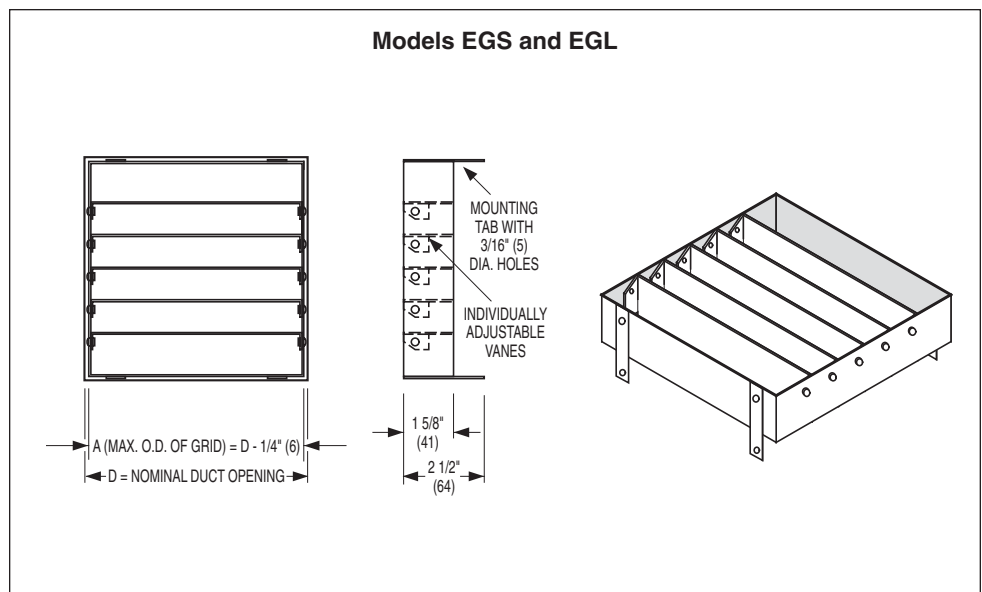


Equalizing Grid for Square and Rectangular Necks

The **Models EGS and EGL** are duct mounted grids that equalize the airflow into the branch duct or diffuser neck and provide directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.



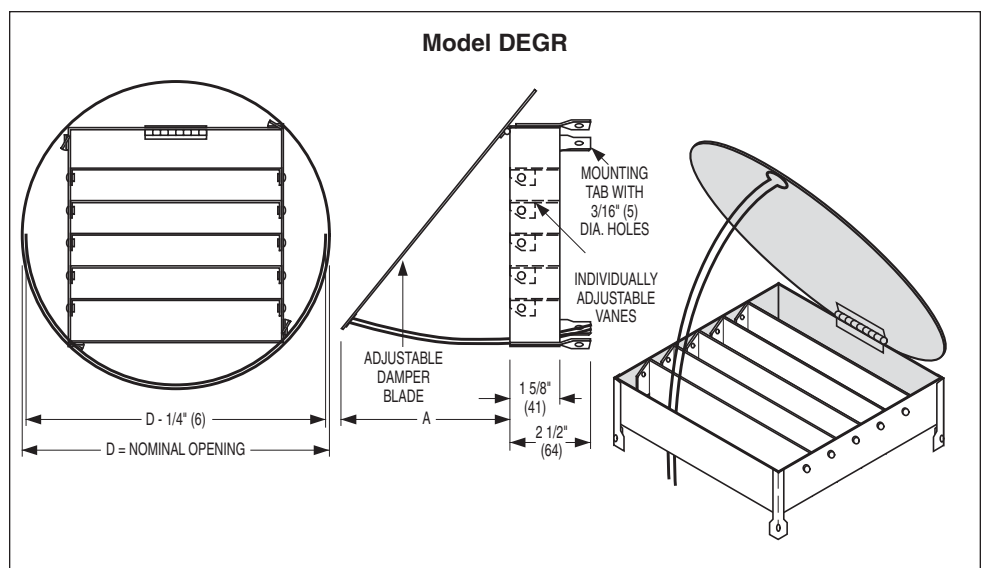
Damper with Equalizing Grid for Round Necks

The **Model DEGR** is a duct mounted combination damper with equalizing grid.

It performs as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.



Air Balancing and Directional Control Devices

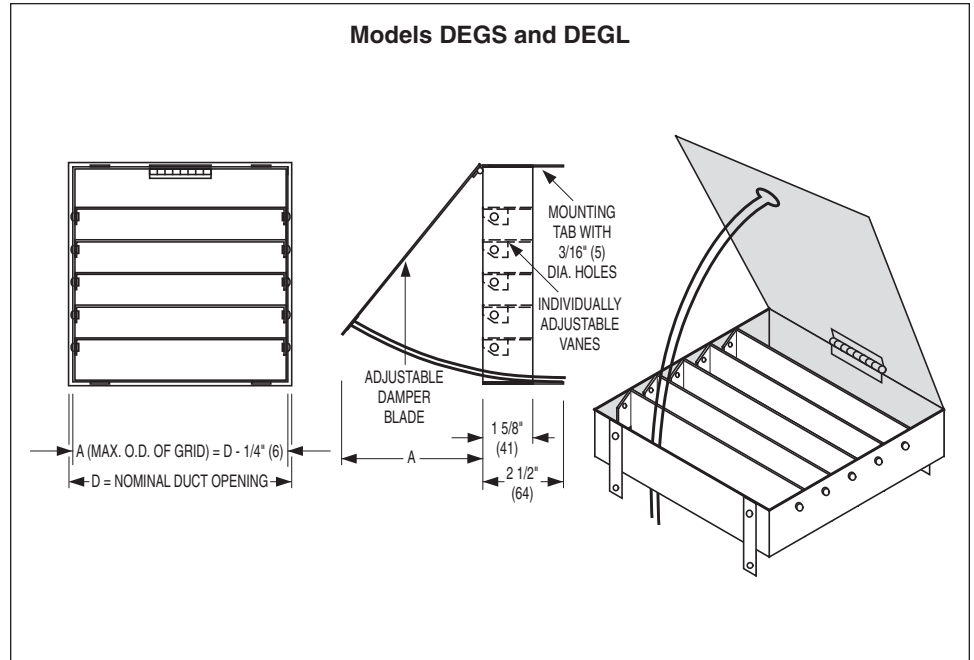
Damper with Equalizing Grid for Square and Rectangular Necks

The **Models DEGS** and **DEGL** are duct mounted combination dampers with equalizing grids. They perform as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.



D

CEILING DIFFUSERS

Volume Extractors

MODEL SERIES

EX Blades on 2" centers

EXD Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

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

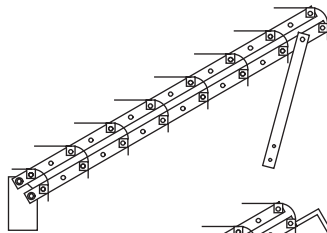
FEATURES:

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

Operator Types

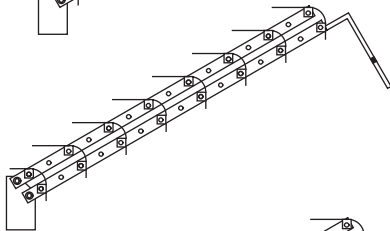
EX/EXD-1

Standard unit with adjusting strap.



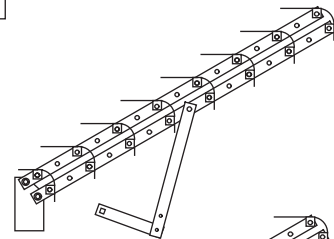
EX/EXD-1-R

Rod operator for external operation.



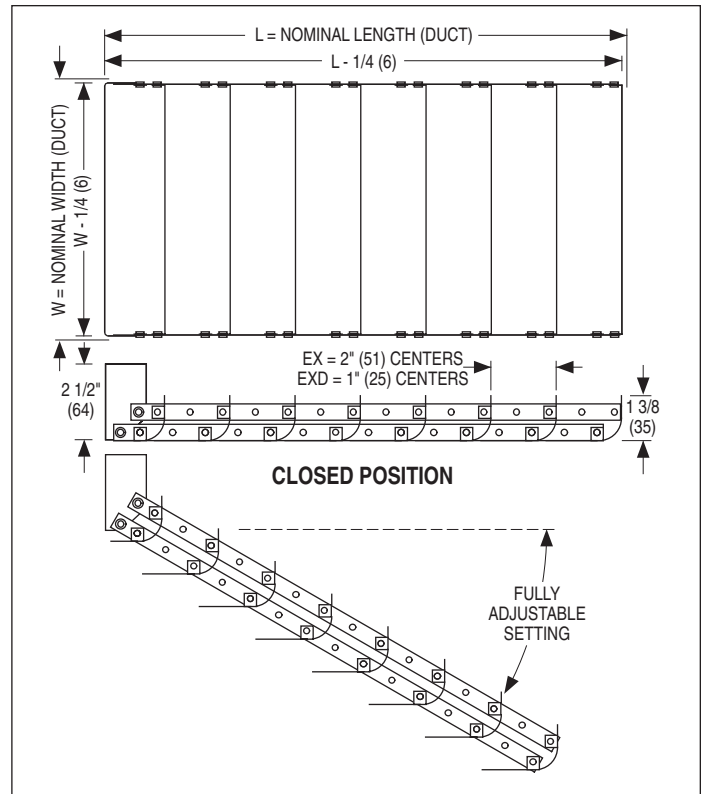
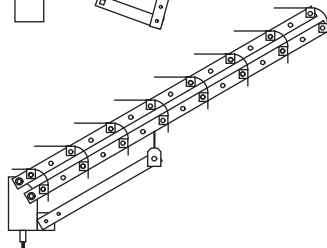
EX/EXD-2

Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.



EX/EXD-3

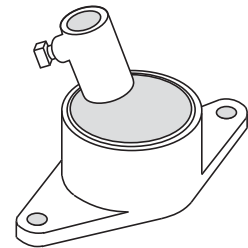
Screw gear operator. Adjusts with 3/16" (5) wrench (by others).



Optional Accessories

RLD

Locking device for Models **EX/EXD-1-R**.



Quadrant Blanks for Models UNI and AUNI Round Neck Plaque Diffusers



Model/Accessory: 4695/QB

Model 4695 Quadrant Blanks are specifically designed for use with the UNI Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of aluminum and the "notched" appearance of the flange features pre-cut grooves that form around the concealed neck bracketry in the diffuser to provide 1, 2, or 3-way discharge as required. The Quadrant Blanks are available for all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

****Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser****

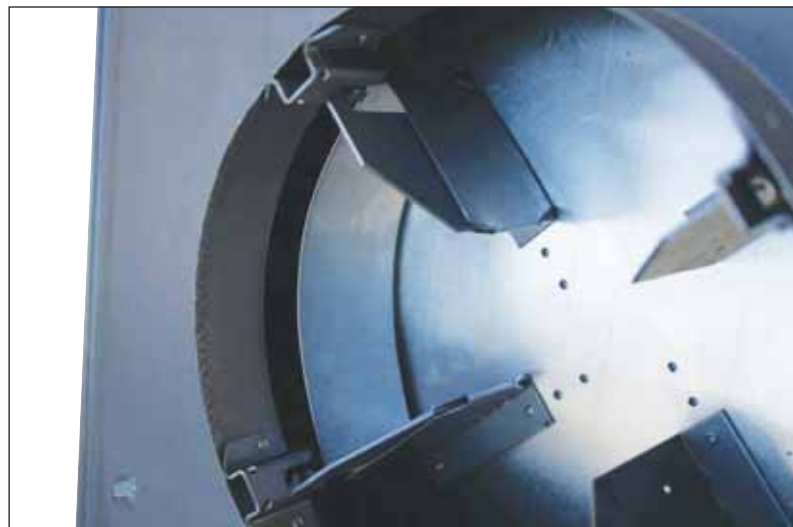
Pre-Installation (Required Items)

1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

Installation Instructions

1. A Quadrant Blank is a notched aluminum flange that is shipped loose from the factory and installed in the field (by others).
2. Prior to installation, gently bend the center of the Quadrant Blank flange to 90°, additionally bending the end notches to 90° for trouble-free installation.
3. Once the Quadrant Blank flange is formed properly, position the flange behind the neck bracketry, closest to the round inlet (in the desired location for directional blow). Prior to fastening into place, make sure that the flange is even on both sides of the neck bracketry and flush to the bottom of the backpan.
4. Installing one side at a time, form the end of the notch around the neck bracketry (once completed, repeat on the opposite side).

Note: To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!

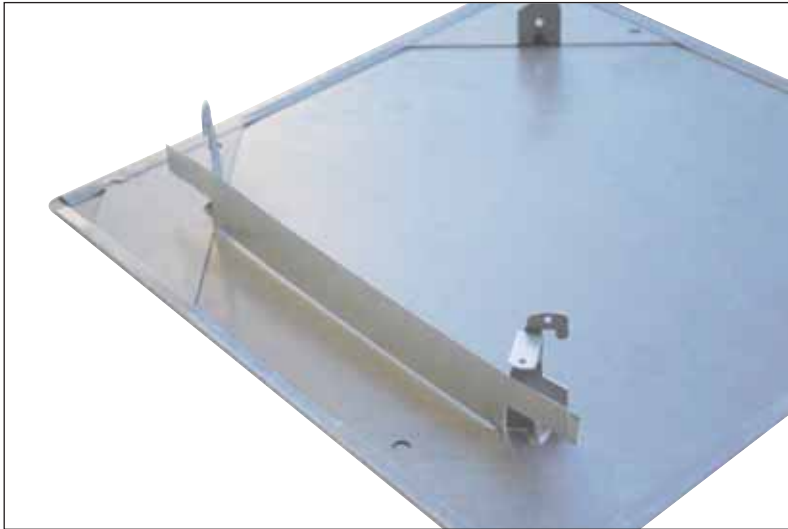


Quadrant Blanks

4695 QB for Models UNI, AUNI Round Neck Plaque Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow

Quadrant Blanks for Model UNI2 Square Plaque Diffusers



Model/Accessory: 4693/QB

Model 4693 Quadrant Blanks are designed specifically for use with the UNI2 Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of an aluminum T-shaped flange that forms around the corner post bracketry, providing 1, 2, or 3-way discharge as required. Quadrant Blanks are available in all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field (by others).

****Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser****

Required Items

1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

Installation Instructions

1. The Quadrant Blank is shipped loose from the factory and shall be installed in the field (by others).
2. Prior to installation, position and center the T-shaped flange on the outside of the corner posts so that the extension ears are on top and the base of the flange is on the bottom, resting flush against the back of the plaque face. Flange ears shall be equal distance apart before folding around the corner post bracketry.
3. Carefully bend one side of the flange ears around the corner post bracketry (repeat on the opposite side of the post).
4. If installed properly, the base of the flange shall rest flush against the plaque face, ensuring that the airflow is restricted in that area. The ears of the flange shall be securely fastened around the corner post bracketry, equal distance apart on both sides, nearly touching the center of the corner post.

Note: To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!

Quadrant Blanks

4693 for Model UNI2 Square Plaque Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow