

"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
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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
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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
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Models RUNI, RNR, RDB

ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

Models:

- RNR Steel
ARNR Aluminum



Model RNR

Model Series RNR Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° radial horizontal pattern and produce excellent performance in variable air volume systems.

Models RNR and ARNR feature infinite horizontal discharge patterns that allow the diffusers to accommodate different flow rate conditions. Position A (cones down) provides maximum capacity at minimum NC levels while Position B (cones up) provides higher induction and more air movement.

STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.

- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

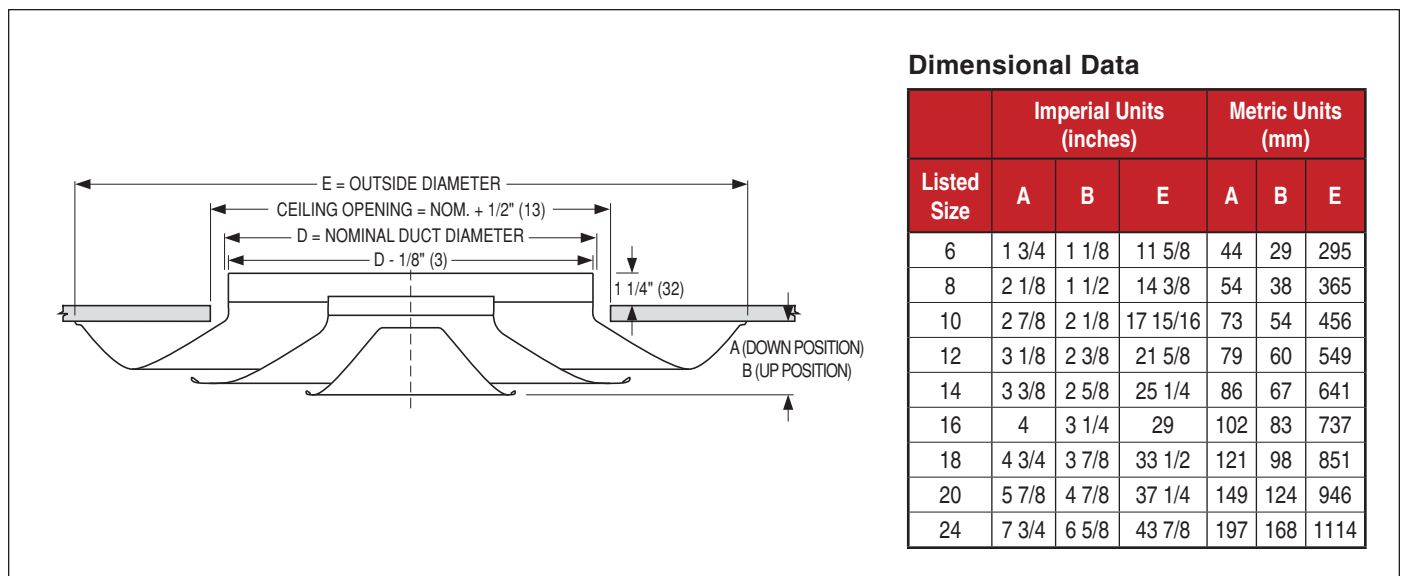
FINISH OPTIONS:

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

OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

Listed Size	Imperial Units (inches)			Metric Units (mm)		
	A	B	E	A	B	E
6	1 3/4	1 1/8	11 5/8	44	29	295
8	2 1/8	1 1/2	14 3/8	54	38	365
10	2 7/8	2 1/8	17 15/16	73	54	456
12	3 1/8	2 3/8	21 5/8	79	60	549
14	3 3/8	2 5/8	25 1/4	86	67	641
16	4	3 1/4	29	102	83	737
18	4 3/4	3 7/8	33 1/2	121	98	851
20	5 7/8	4 7/8	37 1/4	149	124	946
24	7 3/4	6 5/8	43 7/8	197	168	1114

PERFORMANCE DATA:

MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090
6" Dia.	Total Pressure, Position A	.024	.038	.055	.074	.097	.123	.152	.184	.219
	Total Pressure, Position B	.039	.061	.088	.119	.156	.197	.243	.294	.350
	Airflow, CFM	79	98	118	137	157	177	196	216	236
	Noise Criteria, Position A	—	—	15	20	24	28	31	34	37
	Noise Criteria, Position B	—	16	21	26	30	34	37	40	43
	Throw, Position A	2-2-4	2-3-5	2-4-5	3-4-6	3-4-7	3-5-8	4-5-8	4-6-9	4-6-10
	Throw, Position B	3-3-5	3-4-6	3-5-6	4-5-7	4-5-8	4-6-9	5-6-9	5-7-10	5-7-12
8" Dia.	Total Pressure, Position A	.031	.048	.069	.094	.123	.156	.193	.233	.278
	Total Pressure, Position B	.049	.077	.111	.151	.198	.250	.309	.374	.445
	Airflow, CFM	140	175	209	244	279	314	349	384	419
	Noise Criteria, Position A	—	—	18	23	27	31	34	37	40
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	2-3-6	3-4-7	3-5-8	3-5-9	4-6-10	4-7-11	5-8-12	5-9-13	6-9-14
	Throw, Position B	3-4-7	4-5-8	4-6-9	4-6-10	5-7-12	5-8-13	6-9-14	6-10-15	7-10-16
10" Dia.	Total Pressure, Position A	.026	.040	.058	.079	.103	.130	.161	.194	.231
	Total Pressure, Position B	.041	.064	.093	.126	.165	.209	.257	.311	.371
	Airflow, CFM	218	273	327	382	436	491	545	600	654
	Noise Criteria, Position A	—	—	17	22	26	30	33	36	39
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	3-4-7	3-5-8	4-5-9	4-6-10	4-7-12	5-8-13	5-9-14	6-10-16	7-11-17
	Throw, Position B	4-5-9	4-6-10	5-6-11	5-7-12	5-9-14	6-10-15	6-11-16	7-12-18	8-13-19
12" Dia.	Total Pressure, Position A	.025	.039	.056	.076	.100	.126	.156	.189	.225
	Total Pressure, Position B	.040	.063	.090	.123	.160	.203	.250	.303	.360
	Airflow, CFM	314	393	471	550	628	707	785	864	942
	Noise Criteria, Position A	—	—	16	21	25	29	32	35	38
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	3-5-9	4-6-10	4-7-11	5-8-13	5-8-14	6-10-16	7-11-18	8-12-19	9-13-21
	Throw, Position B	4-6-10	5-7-12	5-8-13	6-9-15	6-10-17	7-12-18	8-13-21	9-14-22	10-15-24
14" Dia.	Total Pressure, Position A	.034	.053	.077	.105	.137	.173	.214	.259	.308
	Total Pressure, Position B	.055	.086	.123	.168	.219	.278	.343	.415	.494
	Airflow, CFM	428	535	641	748	855	962	1069	1176	1283
	Noise Criteria, Position A	—	16	22	27	31	35	38	41	44
	Noise Criteria, Position B	—	22	27	32	36	40	43	46	49
	Throw, Position A	4-6-10	4-7-12	5-8-14	6-9-16	7-10-18	8-12-20	9-13-22	10-15-24	10-16-26
	Throw, Position B	5-7-11	5-8-14	6-9-16	7-10-18	8-11-20	9-13-22	10-15-25	11-17-27	12-18-30
16" Dia.	Total Pressure, Position A	.031	.049	.071	.096	.125	.159	.196	.237	.282
	Total Pressure, Position B	.050	.079	.113	.154	.201	.254	.314	.380	.452
	Airflow, CFM	559	698	838	977	1117	1257	1396	1536	1676
	Noise Criteria, Position A	—	15	21	25	29	33	36	39	42
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	4-7-12	5-8-14	6-9-16	7-11-18	8-12-20	9-13-22	10-14-24	11-16-26	12-17-28
	Throw, Position B	5-7-13	6-9-16	7-10-18	8-12-20	9-13-22	10-14-24	11-15-26	12-18-29	13-19-31
18" Dia.	Total Pressure, Position A	.028	.045	.064	.087	.114	.144	.178	.215	.256
	Total Pressure, Position B	.046	.071	.103	.140	.183	.231	.286	.346	.411
	Airflow, CFM	707	884	1060	1237	1414	1590	1767	1944	2121
	Noise Criteria, Position A	—	—	19	24	28	32	35	38	41
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	5-7-13	6-9-16	7-11-18	8-12-20	9-14-23	10-15-25	12-17-27	13-18-29	14-20-31
	Throw, Position B	6-8-15	7-10-18	8-12-20	9-13-22	10-15-25	11-17-29	13-19-30	14-20-32	15-21-34
20" Dia.	Total Pressure, Position A	.028	.044	.063	.086	.112	.142	.175	.212	.252
	Total Pressure, Position B	.045	.070	.101	.138	.180	.228	.281	.340	.405
	Airflow, CFM	873	1091	1309	1527	1745	1963	2182	2400	2618
	Noise Criteria, Position A	—	—	20	25	29	33	36	39	42
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	5-9-15	7-10-18	8-12-20	9-14-23	10-15-26	12-17-28	13-19-30	14-21-33	15-23-35
	Throw, Position B	6-10-17	8-11-20	9-13-22	10-15-25	11-16-28	13-18-30	14-20-32	15-22-35	16-25-38

For performance notes, see D145.

PERFORMANCE DATA:

MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
24" Dia.	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090
	Total Pressure, Position A	.025	.039	.056	.076	.099	.125	.154	.187	.222
	Total Pressure, Position B	.040	.062	.089	.121	.158	.200	.247	.299	.356
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3456	3770
	Noise Criteria, Position A	—	15	21	26	30	34	37	40	43
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	6-10-18	8-12-20	9-14-24	10-16-27	11-17-29	13-20-33	15-22-36	17-25-39	18-27-42
	Throw, Position B	7-11-19	9-13-22	10-16-26	11-18-29	12-19-31	14-22-35	16-24-39	18-27-42	20-30-46

Performance Notes:

- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Performance data as shown is for ceiling mounted diffusers. For exposed duct mounting, multiply the throw values by 0.70.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10⁻¹² watts. Dash (—) in spaces indicates an Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Down)
6	0.114	0.097
8	0.163	0.126
10	0.316	0.245
12	0.478	0.323
14	0.536	0.420
16	0.758	0.594
18	0.998	0.761
20	1.254	0.987
24	2.058	1.625

ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

Models:

- RNRA1 Steel
 ARNRA1 Aluminum



Model RNRA1

Model Series RNRA1 and ARNRA1 Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° air diffusion pattern and produce excellent performance in variable air volume systems.

Models RNRA1 and ARNRA1 are designed for both heating and cooling applications. The air discharge pattern is fully adjustable between horizontal and vertical. The discharge pattern is adjusted by sliding the core up or down. In the "down" setting, capacity is maximized and throw is horizontal. In the "up" setting, air projects vertically down from the diffuser.

STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.

- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

FINISH OPTIONS:

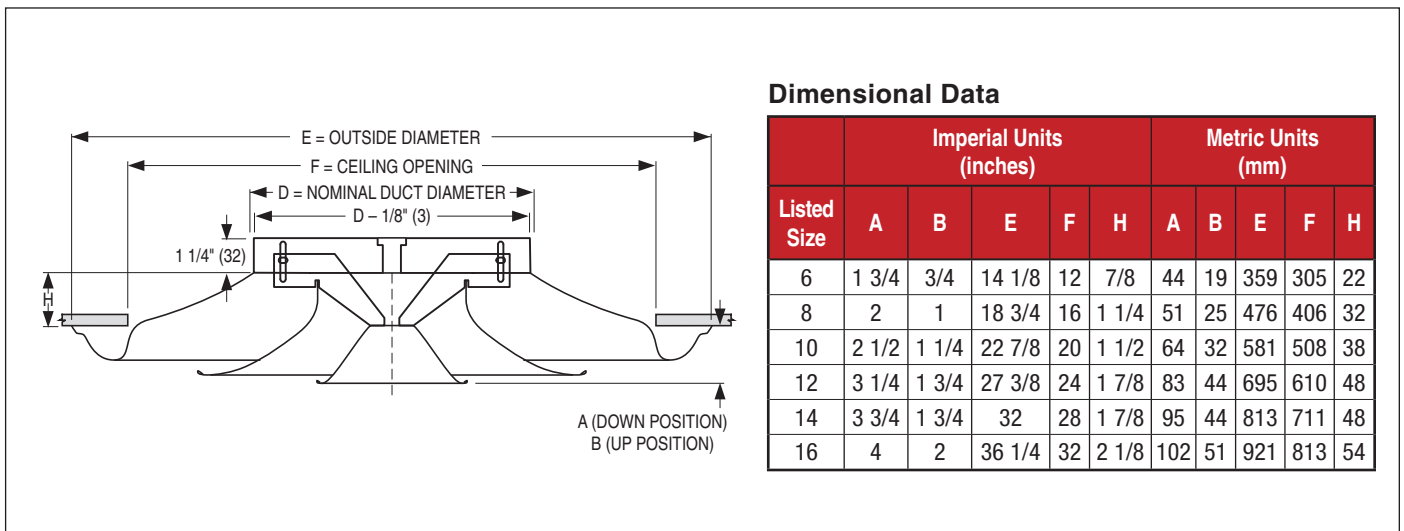
AW Appliance White finish is standard. Other finishes are available.

OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper
5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

D
CEILING DIFFUSERS



PERFORMANCE DATA:

MODELS RNRA1 AND ARNRA1 • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure, Horizontal	.017	.030	.041	.058	.076	.096	.125	.149	.181	.246
	Total Pressure, Vertical	.025	.044	.064	.089	.123	.158	.200	.245	.294	.400
	Airflow, CFM	79	98	118	137	157	177	196	216	236	275
	Noise Criteria, Horizontal	—	—	—	—	15	22	31	35	39	44
	Noise Criteria, Vertical	—	—	—	15	26	33	38	42	44	49
	Throw, Horizontal	2-4-9	3-5-10	3-6-11	4-6-12	5-7-14	5-8-14	6-9-15	7-10-16	8-11-17	9-13-19
	Throw, Vertical	1-1-1	1-1-2	1-2-3	2-3-4	2-3-5	3-4-6	3-5-7	4-6-9	5-8-11	5-9-12
8" Dia.	Total Pressure, Horizontal	.016	.026	.038	.053	.070	.090	.112	.136	.162	.225
	Total Pressure, Vertical	.034	.057	.081	.116	.150	.194	.242	.291	.347	.472
	Airflow, CFM	140	175	209	244	279	314	349	384	419	489
	Noise Criteria, Horizontal	—	—	15	18	23	30	35	39	41	46
	Noise Criteria, Vertical	—	—	18	24	29	33	36	39	42	47
	Throw, Horizontal	2-5-10	3-6-11	4-7-12	4-8-13	5-9-14	6-9-15	7-10-16	8-11-16	9-12-17	11-14-18
	Throw, Vertical	10-17-24	12-19-27	14-20-29	16-22-32	17-24-34	19-25-36	21-27-38	22-28-40	24-29-42	27-32-45
10" Dia.	Total Pressure, Horizontal	.016	.027	.041	.056	.073	.093	.117	.142	.237	.272
	Total Pressure, Vertical	.029	.049	.075	.126	.145	.168	.210	.276	.330	.449
	Airflow, CFM	218	273	327	382	436	491	545	600	654	764
	Noise Criteria, Horizontal	—	—	15	18	23	29	33	37	41	46
	Noise Criteria, Vertical	—	—	16	23	26	31	35	38	40	45
	Throw, Horizontal	3-5-11	4-16-13	5-7-14	5-9-16	6-10-17	7-11-18	8-12-19	9-13-20	10-14-22	11-16-24
	Throw, Vertical	18-21-30	20-24-34	21-26-37	23-28-40	25-30-43	26-32-45	28-34-48	29-35-50	30-37-52	33-40-56
12" Dia.	Total Pressure, Horizontal	.015	.025	.037	.053	.069	.089	.109	.138	.163	.232
	Total Pressure, Vertical	.029	.048	.071	.101	.127	.162	.206	.254	.306	.417
	Airflow, CFM	314	393	471	550	628	707	785	864	942	1100
	Noise Criteria, Horizontal	—	—	—	15	20	24	28	33	36	42
	Noise Criteria, Vertical	—	—	15	20	25	30	34	38	40	46
	Throw, Horizontal	3-7-13	4-8-15	6-9-16	7-10-17	8-12-19	9-13-20	10-14-21	11-15-22	12-16-23	14-18-25
	Throw, Vertical	18-23-32	21-25-35	23-27-38	24-30-41	26-32-44	27-33-47	29-35-49	30-37-51	32-38-54	34-41-58
14" Dia.	Total Pressure, Horizontal	.019	.031	.044	.061	.077	.104	.129	.156	.190	.259
	Total Pressure, Vertical	.038	.058	.086	.116	.156	.193	.237	.279	.342	.465
	Airflow, CFM	428	535	641	748	855	962	1069	1176	1283	1497
	Noise Criteria, Horizontal	—	—	—	15	21	25	30	33	36	42
	Noise Criteria, Vertical	—	—	—	17	25	30	34	37	40	46
	Throw, Horizontal	4-8-15	5-10-16	7-11-18	8-12-19	9-13-20	10-15-21	11-16-22	13-17-23	14-18-24	16-20-26
	Throw, Vertical	20-25-35	23-28-39	25-30-43	27-33-46	29-35-49	30-37-52	32-39-55	34-41-58	35-43-60	38-46-65
16" Dia.	Total Pressure, Horizontal	.023	.040	.057	.079	.109	.137	.173	.212	.251	.358
	Total Pressure, Vertical	.047	.078	.103	.149	.195	.246	.308	.370	.450	.612
	Airflow, CFM	559	698	838	977	1117	1257	1396	1536	1676	1955
	Noise Criteria, Horizontal	—	—	—	16	23	28	32	35	38	44
	Noise Criteria, Vertical	—	—	19	25	30	34	38	41	44	50
	Throw, Horizontal	7-10-15	8-12-17	9-13-18	10-14-20	11-15-21	12-16-22	13-17-23	14-17-25	15-18-26	17-20-28
	Throw, Vertical	26-32-44	29-35-49	32-38-54	34-41-58	36-44-62	38-47-65	40-49-69	42-52-72	44-54-75	48-58-81

D
CEILING DIFFUSERS

Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner cones in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.
- Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner cones in fully up position B). For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Up)
6	0.14	0.11
8	0.25	0.19
10	0.45	0.29
12	0.61	0.59
14	0.85	0.57
16	0.89	0.68

ROUND CEILING DIFFUSERS

- ADJUSTABLE HORIZONTAL / VERTICAL AIRFLOW PATTERN
- ROUND NECK
- ALUMINUM

Model:
6300R Continuous Rotary Adjustment



Model 6300R

Model Series 6300 Round Ceiling Diffusers are available in a comprehensive range of sizes with a capacity ranging from 50 to 5000 cfm (24 – 2360 l/s). They are suitable for both cooling and heating applications. With three concentric cones in all sizes they offer the same balanced appearance when different sizes are used in the same zone. They feature a 360° air diffusion pattern and provide excellent performance in variable air volume systems.

Model 6300R provides 3/4" (19) adjustability through utilization of a threaded mechanism. The "UP" position of the core provides vertical throw, and the "DOWN" position provides horizontal throw. The core is easily adjusted by rotating the center cone. An optional round opposed blade damper is screwdriver-operated through the face of the unit. Model 6300R has a fully adjustable core to guide vertical or horizontal projection of the air.

CONSTRUCTION MATERIAL:

Spun aluminum.

FINISH OPTIONS:

AW Appliance White finish is standard.
 AL Aluminum is optional. Special finishes are available.

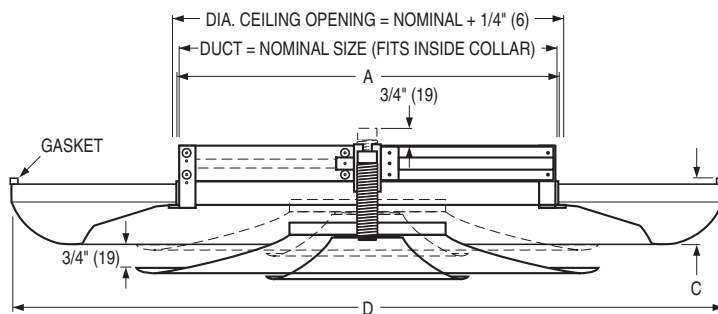
OPTIONS & ACCESSORIES:

- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain

For additional options and accessories; see page D255.

D

CEILING DIFFUSERS



6300R

Notes:

- 1/4" (6) oversize duct fits outside collar, if desired.
- A = Inside diameter of diffuser neck.
- C = Projection of diffuser outer cone below ceiling.
- D = Overall diameter of diffuser.

Dimensional Data

Listed Size	Imperial Units (inches)			Metric Units (mm)		
	A	C	D	A	C	D
6	6 1/8	3/4	12 1/8	156	19	308
8	8 1/8	1	15 1/2	206	25	394
10	10 1/8	1 1/4	18 7/8	257	32	479
12	12 1/8	1 3/8	22 1/4	308	35	565
14	14 1/8	1 9/16	25 5/8	359	40	651
16	16 1/8	1 3/4	29	410	44	737
18	18 1/8	1 15/16	32 3/8	460	49	822
20	20 1/8	2 1/8	35 3/4	511	54	908
24	24 1/8	2 1/2	42 1/2	613	64	1080

PERFORMANCE DATA:

MODEL 6300R • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.024	.037	.056	.071	.092	.112	.138	.197	.272	.345
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Radius of Diffusion, ft.	2-5	3-5	4-6	4-7	5-7	6-8	6-9	6-9	7-10	7-10
	Noise Criteria	—	—	12	17	21	25	28	34	39	41
8" Dia.	Total Pressure	.033	.049	.068	.095	.122	.155	.192	.270	.362	.470
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Radius of Diffusion, ft.	3-7	4-8	5-8	6-9	7-10	8-10	9-11	8-12	9-13	10-14
	Noise Criteria	—	—	14	19	23	27	30	36	41	44
10" Dia.	Total Pressure	.041	.062	.098	.121	.157	.200	.245	.350	.477	.610
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Radius of Diffusion, ft.	4-9	5-10	7-11	8-11	9-12	9-13	10-14	11-15	11-16	12-17
	Noise Criteria	—	10	16	21	25	29	32	38	43	46
12" Dia.	Total Pressure	.043	.066	.093	.127	.165	.206	.249	.355	.482	.620
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Radius of Diffusion, ft.	5-10	7-12	8-13	9-14	10-15	11-16	12-16	13-18	14-19	15-21
	Noise Criteria	—	12	18	23	27	31	34	40	45	48
16" Dia.	Total Pressure	.043	.060	.093	.127	.153	.206	.252	.350	.482	.580
	Airflow, CFM	560	700	840	980	1120	1260	1400	1680	1960	2240
	Radius of Diffusion, ft.	6-12	7-13	9-15	10-16	12-17	13-18	13-18	14-20	16-22	18-24
	Noise Criteria	—	16	22	27	31	35	38	44	49	52
18" Dia.	Total Pressure	.044	.068	.097	.130	.167	.214	.253	.370	.492	.630
	Airflow, CFM	710	885	1060	1240	1420	1590	1770	2120	2480	2830
	Radius of Diffusion, ft.	7-16	10-18	12-19	14-21	16-22	17-23	18-24	19-27	21-29	22-31
	Noise Criteria	—	17	23	28	32	36	39	45	50	53
20" Dia.	Total Pressure	.045	.069	.099	.135	.170	.215	.262	.375	.512	.645
	Airflow, CFM	875	1100	1310	1530	1750	1970	2190	2610	3060	3500
	Radius of Diffusion, ft.	8-18	11-19	14-21	15-23	17-24	18-26	19-27	21-30	23-32	24-34
	Noise Criteria	10	18	24	29	33	37	40	46	51	54
24" Dia.	Total Pressure	.043	.066	.095	.131	.170	.215	.267	.360	.407	.660
	Airflow, CFM	1260	1570	1880	2200	2510	2820	3140	3770	4400	5020
	Radius of Diffusion, ft.	10-21	13-23	16-25	18-28	21-29	22-31	25-36	25-36	28-39	29-42
	Noise Criteria	12	19	25	30	34	38	41	47	52	55

D
CEILING DIFFUSERS

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Radius of diffusion values are given at 100 and 50 fpm terminal velocities under isothermal conditions.
3. Performance data as shown is for the diffuser only, with the cones in the "down" position. Performance for the cones in the "up" position can be approximated by multiplying the total pressures by 1.6, adding 5 Noise Criteria to the sound levels, and multiplying the radius of diffusion by .90.

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

Neck Size Dia. in Inches	Ak Factor
6	0.120
8	0.200
10	0.310
12	0.440
14	0.570
16	0.785
18	0.990
20	1.220
24	1.770

ROUND CEILING DIFFUSERS

- ARCHITECTURAL PLAQUE FACE
- ADJUSTABLE HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- ALUMINUM FACE
- ROUND NECK

Models:

- RUNI** Steel
ARUNI Aluminum



Model RUNI

Model Series RUNI and ARUNI Round Plaque Ceiling Air Diffuser has been designed to provide both the appearance required for architectural excellence as well as high engineering performance. These diffusers are suitable for both architectural ceilings and exposed duct applications.

The diffusers deliver the air in a true 360° air pattern and provide excellent performance in variable air volume systems. The discharge setting is simply adjusted by sliding the inner face plaque assembly up or down. The diffuser provides higher induction and more air movement in the higher position while maximum capacity at minimum NC levels can be obtained in the lower position.

STANDARD FEATURES:

- Smooth heavy duty face plaque is 1/8" (0.125) thick aluminum for strength and lightness.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- The core is retained by a spring loaded friction arrangement. There are no screws to reposition.
- An optional radial opposed blade damper with an operating arm to adjust the damper

without removing the core is available.

- Available for duct sizes 6" – 16" (152 – 406) diameter.
- High neck collars for solid connection.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel outer cone and bracketry with an aluminum face or aluminum outer cone with corrosion-resistant steel neck bracketry and aluminum face.

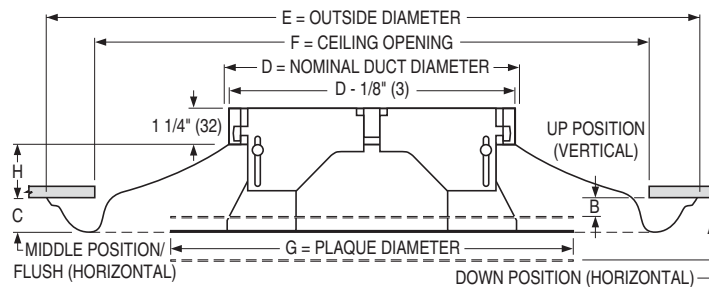
FINISH OPTIONS:

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

OPTIONS & ACCESSORIES:

- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.



Dimensional Data

Listed Size	Imperial Units (inches)							Metric Units (mm)						
	A	B	C	E	F	G	H	A	B	C	E	F	G	H
6	1 3/4	1/4	3/4	14 1/8	12	9	7/8	44	6	19	359	305	229	22
8	2	1/2	1	18 3/4	16	12	1 1/4	51	13	25	476	406	305	32
10	2 1/4	11/16	1 3/16	22 3/4	20	15	1 1/2	57	17	30	578	508	381	38
12	2 3/4	15/16	1 11/16	27 3/8	24	18	1 7/8	70	24	43	695	610	457	48
14	3	1	1 3/4	32	28	21	1 7/8	76	25	44	813	711	533	48
16	3 3/8	1	2	36 1/4	32	24	2 1/8	86	25	51	921	813	610	54

PERFORMANCE DATA:

MODELS RUNI AND ARUNI

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
6" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.034	0.053	0.076	0.104	0.135	0.171	0.211	0.304	0.414	0.541
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Noise Criteria, Horizontal	—	—	—	—	—	16	18	26	31	34
	Noise Criteria, Vertical	—	—	—	—	—	19	22	29	34	37
	Throw, Horizontal	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-12	5-8-13	6-10-14	7-11-15
	Throw, Vertical	8-12-23	10-15-25	12-18-26	14-21-27	16-23-28	18-24-29	20-25-30	23-26-31	24-27-32	25-28-33
8" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.038	0.059	0.085	0.116	0.151	0.191	0.236	0.340	0.463	0.605
	Airflow, CFM	140	175	209	244	279	314	349	419	489	558
	Noise Criteria, Horizontal	—	—	—	—	—	16	20	28	32	35
	Noise Criteria, Vertical	—	—	—	—	15	21	28	31	36	42
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-19	9-14-22	11-16-24	12-18-26
	Throw, Vertical	15-22-31	18-24-34	20-27-37	22-29-40	24-31-43	26-32-46	28-34-48	31-37-53	34-40-57	38-43-61
10" Dia.	Total Pressure, Horizontal	0.017	0.027	0.039	0.053	0.070	0.088	0.109	0.157	0.214	0.279
	Total Pressure, Vertical	0.033	0.051	0.073	0.100	0.131	0.165	0.204	0.294	0.400	0.522
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	—	16	21	28	32	35
	Noise Criteria, Vertical	—	—	—	—	19	23	28	32	38	43
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-20	9-14-22	11-16-24	12-19-27
	Throw, Vertical	15-22-31	18-25-35	20-27-38	22-29-41	24-31-44	26-33-47	28-35-49	32-38-54	36-41-58	39-44-62
12" Dia.	Total Pressure, Horizontal	0.019	0.030	0.044	0.059	0.078	0.098	0.121	0.175	0.238	0.311
	Total Pressure, Vertical	0.042	0.065	0.094	0.128	0.167	0.211	0.261	0.375	0.511	0.667
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	—	15	18	21	29	34	39
	Noise Criteria, Vertical	—	—	—	—	18	24	29	29	40	45
	Throw, Horizontal	4-6-14	5-7-16	6-9-17	7-10-19	8-12-20	9-13-21	10-15-22	12-17-24	14-20-26	16-23-28
	Throw, Vertical	23-28-39	25-31-43	28-34-47	30-36-51	32-39-55	34-41-58	36-43-61	39-47-67	42-51-72	45-55-77
14" Dia.	Total Pressure, Horizontal	0.021	0.033	0.047	0.064	0.084	0.106	0.131	0.189	0.257	0.336
	Total Pressure, Vertical	0.042	0.066	0.095	0.129	0.168	0.213	0.263	0.378	0.515	0.673
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	—	19	22	31	35	41
	Noise Criteria, Vertical	—	—	—	19	21	28	31	39	44	49
	Throw, Horizontal	4-7-16	5-8-19	7-10-20	8-11-22	9-13-24	10-15-26	11-16-27	13-20-30	15-23-33	17-26-35
	Throw, Vertical	24-29-41	26-32-45	29-35-50	31-38-54	33-41-57	35-43-61	37-45-64	41-50-70	44-54-75	47-57-81
16" Dia.	Total Pressure, Horizontal	0.021	0.033	0.048	0.065	0.085	0.107	0.132	0.191	0.259	0.339
	Total Pressure, Vertical	0.045	0.071	0.102	0.139	0.181	0.229	0.283	0.408	0.555	0.725
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	—	18	22	25	33	37	41
	Noise Criteria, Vertical	—	—	19	21	24	30	33	40	45	50
	Throw, Horizontal	5-7-16	6-9-19	7-11-22	8-12-25	9-14-27	11-16-30	12-18-32	14-21-36	17-25-41	19-28-45
	Throw, Vertical	25-31-43	28-34-48	31-38-53	33-40-57	35-43-61	38-46-64	40-48-68	43-53-74	47-57-80	50-61-86

D
CEILING DIFFUSERS

Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner plaque in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.
- Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner plaque in fully up position B). For non-isothermal conditions, use the following

correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor
	Position A (Cone Down)
6	0.12
8	0.21
10	0.33
12	0.51
14	0.70
16	0.88

ROUND DOWNBLAST DIFFUSER

- HEAVY DUTY
- ADJUSTABLE VERTICAL TO HORIZONTAL DISCHARGE PATTERN
- "FIBONACCI" SPIRAL
- ROUND NECK

Models:

RDB Steel



Model RDB

Model Series RDB Round Downblast Diffusers have been designed for industrial and commercial applications. The unique contemporary design features a "Fibonacci spiral" adjustable aperture. The discharge pattern can be adjusted from full horizontal to full vertical. At the full vertical setting, the diffuser forces approximately 75% of the air in a long downward projection. This results in effective spot cooling or heating from high mounting locations.

This style of diffuser is suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other applications where ceilings are high and conditions are variable.

STANDARD FEATURES:

- Unique "Fibonacci spiral" adjustable aperture damper.
- Horizontal mode provides a uniform 360° discharge pattern.
- Vertical setting provides effective spot cooling or heating in high mounting locations.
- Included is an easily adjustable ring operator that allows for pole adjustment.
- High neck collars for solid connection.

- Optional round opposed blade damper is screwdriver operated and adjusted through the aperture.

CONSTRUCTION MATERIAL:

Heavy gauge corrosion-resistant steel.

FINISH OPTIONS:

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

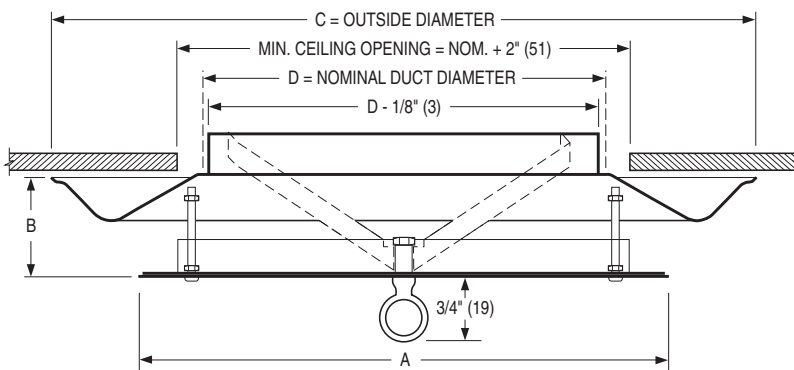
OPTIONS & ACCESSORIES:

- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

D

CEILING DIFFUSERS



Dimensional Data

Listed Size	Imperial Units (inches)			Metric Units (mm)		
	A	C	D	A	C	D
8	11 11/16	2 1/4	14 3/8	297	57	365
10	14	2 9/16	17 15/16	356	65	456
12	16 1/4	3	21 5/8	413	76	549
14	18 5/8	3 3/8	25 1/4	473	86	641
16	20 7/8	4	29	530	102	737
18	23 1/4	4 1/2	33 1/2	591	114	851
20	25 1/2	5 7/16	37 1/4	648	138	946
24	30 3/16	6 1/2	43 7/8	767	165	1114

PERFORMANCE DATA:

MODEL RDB • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
8" Dia.	Total Pressure, Horizontal	.027	.042	.062	.073	.115	.140	.175	.258	.335	.421
	Total Pressure, Vertical	.014	.024	.035	.049	.053	.071	.088	.122	.176	.235
	Airflow, CFM	140	175	209	244	279	314	349	419	489	559
	Noise Criteria, Horizontal	—	—	—	21	23	25	31	33	37	39
	Noise Criteria, Vertical	—	—	—	—	—	—	20	22	28	31
	Throw, Horizontal	0-1-2	1-2-4	1-2-5	1-2-7	1-3-9	2-4-10	2-4-11	3-5-12	4-6-13	6-7-15
	Throw, Vertical	8	10	16	19	24	31	34	37	43	48
10" Dia.	Total Pressure, Horizontal	.036	.056	.082	.111	.145	.185	.230	.335	.462	.570
	Total Pressure, Vertical	.016	.026	.037	.051	.066	.083	.103	.149	.204	.265
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	21	23	27	33	39	41
	Noise Criteria, Vertical	—	—	—	—	—	—	20	25	32	35
	Throw, Horizontal	0-1-3	1-2-5	1-2-7	1-3-8	2-4-10	2-4-11	3-5-12	4-7-13	6-8-15	7-10-16
	Throw, Vertical	12	13	22	26	29	34	37	40	48	50
12" Dia.	Total Pressure, Horizontal	.047	.073	.107	.149	.195	.245	.307	.445	.612	.800
	Total Pressure, Vertical	.018	.029	.042	.058	.076	.095	.118	.170	.232	.305
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	33	27	31	35	39	43	46
	Noise Criteria, Vertical	—	—	—	—	—	—	22	25	28	37
	Throw, Horizontal	3-6-	4-7-13	5-8-15	6-10-17	7-11-18	8-12-19	9-13-20	12-16-22	15-18-23	18-20-25
	Throw, Vertical	15	17	28	36	46	50	55	60	67	75
14" Dia.	Total Pressure, Horizontal	.039	.062	.090	.127	.165	.209	.262	.380	.542	.700
	Total Pressure, Vertical	.016	.027	.038	.054	.070	.088	.111	.162	.224	.295
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	22	25	29	37	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	29	35	38
	Throw, Horizontal	1-6-12	2-7-14	3-8-16	4-10-17	5-11-18	7-12-19	8-13-20	11-16-22	15-18-23	19-21-25
	Throw, Vertical	21	25	31	39	48	53	57	63	70	89
16" Dia.	Total Pressure, Horizontal	.053	.069	.110	.181	.232	.292	.367	.535	.737	.965
	Total Pressure, Vertical	.020	.032	.045	.061	.083	.104	.132	.189	.261	.342
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	22	25	31	37	42	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	27	35	41
	Throw, Horizontal	6-10-18	7-11-20	7-13-21	8-16-22	9-17-24	11-19-25	13-20-26	14-21-27	15-22-28	16-23-29
	Throw, Vertical	25	27	34	41	50	55	59	67	85	94
18" Dia.	Total Pressure, Horizontal	.071	.114	.162	.226	.300	.375	.472	.690	.942	1.230
	Total Pressure, Vertical	.023	.037	.053	.073	.096	.120	.150	.217	.298	.390
	Airflow, CFM	707	884	1060	1237	1414	1590	1767	2121	2474	2827
	Noise Criteria, Horizontal	—	—	22	34	37	41	44	52	57	62
	Noise Criteria, Vertical	—	—	—	—	—	24	27	33	37	41
	Throw, Horizontal	8-13-21	10-14-22	11-16-23	12-17-24	14-18-25	15-19-26	16-20-27	18-22-28	21-23-29	23-25-30
	Throw, Vertical	29	34	39	44	55	57	63	74	85	100
20" Dia.	Total Pressure, Horizontal	.074	.116	.162	.221	.289	.365	.442	.630	.862	1.12
	Total Pressure, Vertical	.022	.035	.05	.069	.09	.115	.142	.206	.284	.373
	Airflow, CFM	873	1091	1309	1527	1745	1963	2182	2618	3054	3491
	Noise Criteria, Horizontal	—	25	31	34	38	42	45	53	58	62
	Noise Criteria, Vertical	—	—	—	—	23	27	31	36	42	46
	Throw, Horizontal	10-14-20	12-16-23	14-19-26	16-21-29	18-23-31	20-25-32	22-27-34	25-30-37	29-34-39	32-37-41
	Throw, Vertical	36	42	48	53	58	63	69	81	90	105
24" Dia.	Total Pressure, Horizontal	.047	.073	.104	.141	.182	.229	.281	.400	.540	.700
	Total Pressure, Vertical	.010	.016	.022	.030	.040	.050	.062	.090	.122	.159
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3770	4398	5027
	Noise Criteria, Horizontal	25	30	34	36	42	47	53	62	70	73
	Noise Criteria, Vertical	—	—	—	24	27	33	38	44	47	51
	Throw, Horizontal	12-16-22	14-19-26	17-21-30	18-23-32	20-25-33	23-27-36	25-31-37	29-35-40	33-38-42	34-40-47
	Throw, Vertical	43	47	50	58	64	69	87	95	99	113

D
CEILING DIFFUSERS

Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions with the face fully closed.
- Vertical throw (projection) is given at 50 fpm terminal velocity under isothermal conditions with the face fully open. For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling Isothermal	x 1.40
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

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

Criteria of less than 20. Values shown are for the horizontal discharge pattern (center closed) and vertical discharge pattern (center fully open).

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Nominal Neck Size Dia. in Inches	Ak Factor
6	0.13
8	0.25
10	0.51
12	0.56
14	1.08
18	1.36
20	1.60

HOW TO ORDER

ROUND CEILING DIFFUSERS

MODEL SERIES RNR, RNRA1, RUNI, RDB, ARNR, ARNRA1, ARUNI AND 6300R

EXAMPLE: RNR - 12 - AW - -

1. **Models**

Steel

- RNR Adjustable (Horizontal)
- RNRA1 Adjustable (Horizontal/Vertical)
- RUNI Plaque, Adjustable (Horizontal/Vertical)
- RDB Downblast, Adjustable

Aluminum

- ARNR Adjustable (Horizontal)
- ARNRA1 Adjustable (Horizontal/Vertical)
- ARUNI Plaque, Adjustable (Horizontal/Vertical)
- 6300R Rotating Fully Adjustable (Horizontal to Vertical)

2. **Neck Size** (inches)

- 06, 08, 10, 12, 14, 16, 18, 20, 24 (RNRA1, RUNI, ARNRA1 and ARUNI available 06 to 16 only)
- (RDB available 08 to 24 only)

3. **Finish ***

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

OPTIONS & ACCESSORIES:

4. **Damper ****

- None (default)
- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"

5. **Safety Chain**

- None (default)
- SC Safety Chain

6. **Gasket**

- GK Foam Gasket (Not applicable on 6300R)

7. **Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs (Not applicable on 6300R)

OTHER OPTIONS & ACCESSORIES:

- None

8. **Air Balancing Devices**

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

Notes:

1. *Model 6300R is available as standard only in AW (default) or AL finish. For availability of custom colors, contact factory.
2. **Model 4250 is not compatible with RUNI, ARUNI or 6300R diffusers.
3. Vinyl bulb gasket standard on 6300R.

D

CEILING DIFFUSERS

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNR and ARNR – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNR** (steel) or **ARNR** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have three round spun cones. The inner core assembly shall be removable and slide up or down to attain infinite horizontal discharge pattern adjustment. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper, without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RNRA1 and ARNRA1 – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNRA1** (steel) or **ARNRA1** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel or aluminum and have three round spun cones. The inner cones shall be removable. The core shall be adjustable to achieve a horizontal or vertical discharge pattern. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

6300R – Rotating Fully Adjustable

Furnish and install **Nailor Model 6300R Aluminum Adjustable Round Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be all aluminum construction and incorporate three round cones that have been spun. The diffuser shall be easily adjusted by rotating the inner core either in an up or down position. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RUNI and ARUNI – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RUNI** (steel) or **ARUNI** (aluminum) **Round Architectural Plaque Face Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RUNI shall have a round outer cone that is spun from corrosion-resistant steel. Model ARUNI shall have a round, aluminum outer cone with corrosion-resistant steel neck bracketry. The inner core shall have a round plaque face that is heavy gauge aluminum, and shall be smooth and flat in appearance. A removable inner core assembly shall slide up or down to attain infinite horizontal discharge patterns. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RBD – Steel

Furnish and install **Nailor Model RDB Round Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of heavy gauge corrosion-resistant spun steel and incorporate a round outer cone. A removable flat inner cone assembly shall have a "Fibonacci spiral" aperture damper that is adjusted by a ring (pole) operator, which extends below the face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).

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



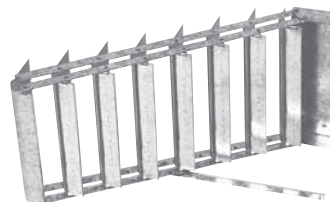
Model OBDD
Opposed Blade Damper
Steel, Duct Mount



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.

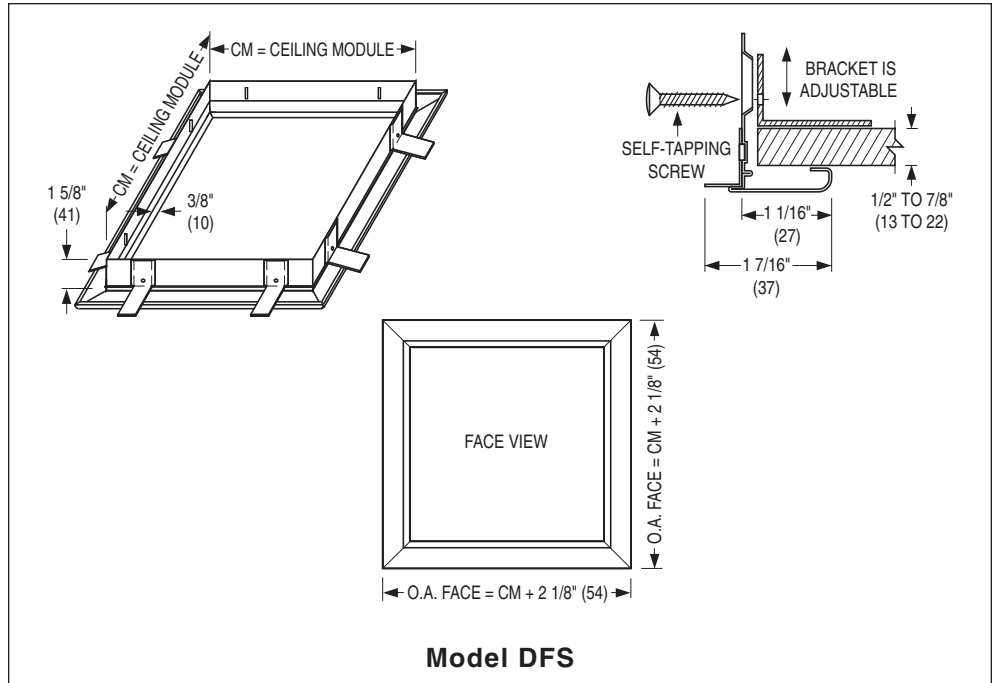
A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

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

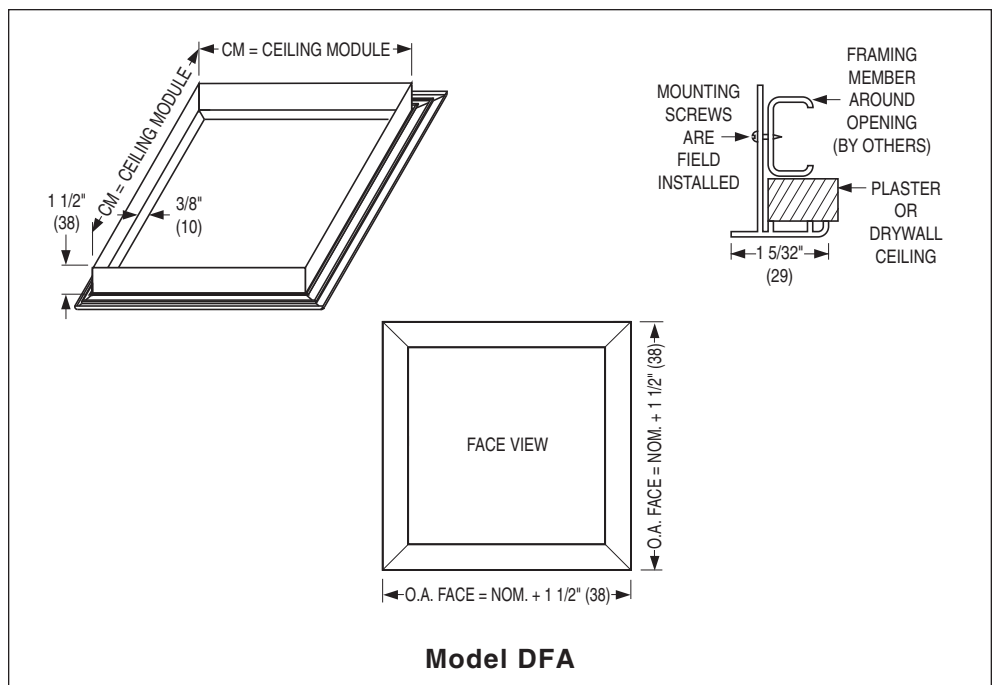
Ceiling opening = CM + 1/4" (6)



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

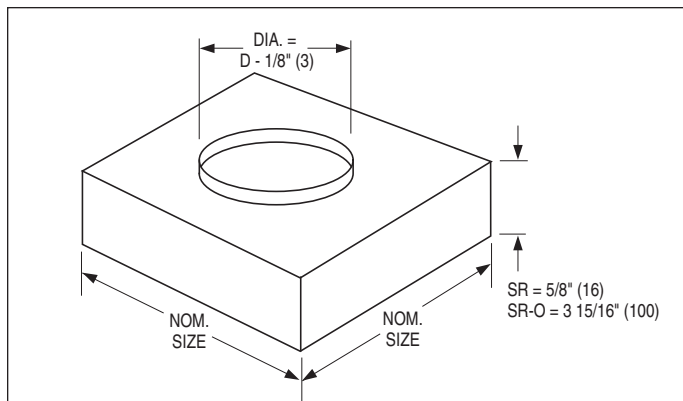
An optional safety chain is available on all of Nailor's round ceiling diffusers.

GK Foam Gaskets

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

SR Square to Round Transition Collar

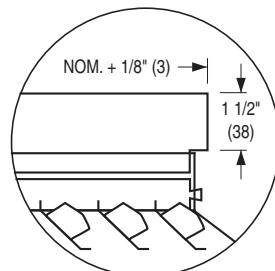
Transition collars are for use on Nailor square neck diffusers where a round duct connection is required. Round necks are sized for flexible or hard duct connection. SR's are shipped loose for field installation and are supplied with barbed S clips.



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

Air Balancing Devices

OPPOSED BLADE DAMPERS

Nailor Opposed Blade Dampers feature heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components. Mill finish.

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

DIFFUSER MOUNT MODELS:

OBD Steel

OBD-A Aluminum

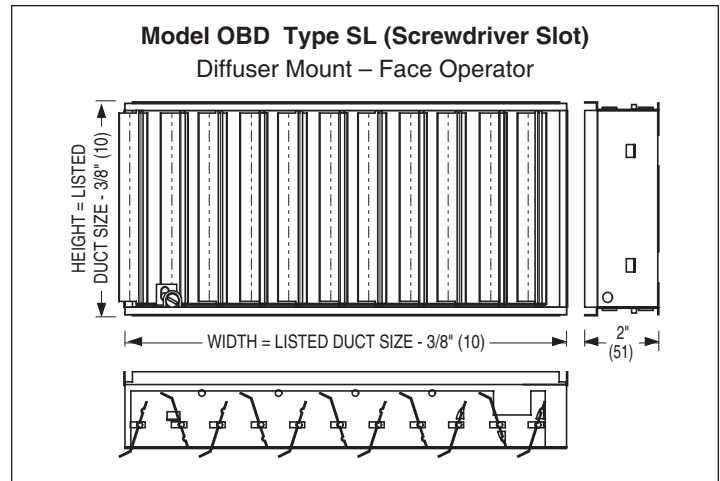
This style of damper mounts directly on the neck and are sized to suit most **Nailor** diffusers. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL).

Can be specified as an integral part of the diffuser model by adding a - O (steel) or - OA (aluminum) suffix to the diffuser model.

Available with Type DL Lever Operator for use with 6200, 6400 and 6500 Series Pattern Diffusers and 6600 Series Plaque Diffusers. Permits balancing without removing the diffuser inner core assembly.

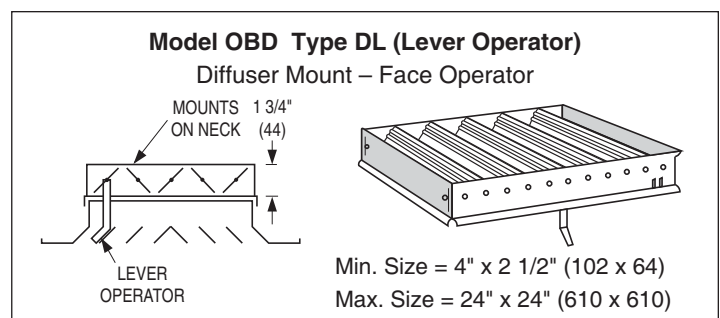
Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the diffuser. This operator is the standard supplied when ordered separately.



Type DL Operator

The DL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the diffuser face.



Air Balancing Devices

DUCT MOUNT MODELS:

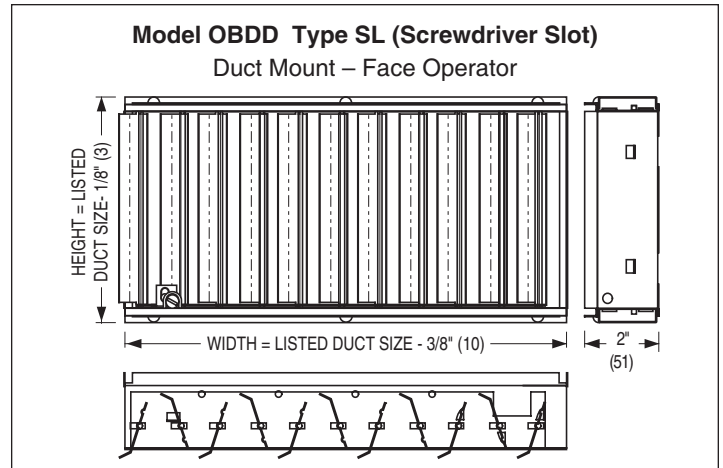
OBDD Steel

OBDD-A Aluminum

Designed to be field mounted independently in the duct, separate from and behind the diffuser. They are sized to suit and offer a friction fit in nominally sized ducts. They are secured with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Min. Size = 4" x 2 1/2" (102 x 64). Max. Size = 24" x 24" (610 x 610).

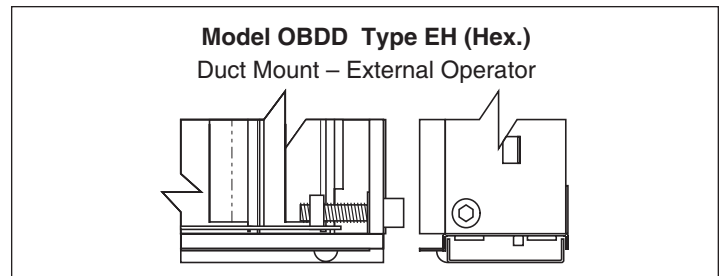
Type SL Operator

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



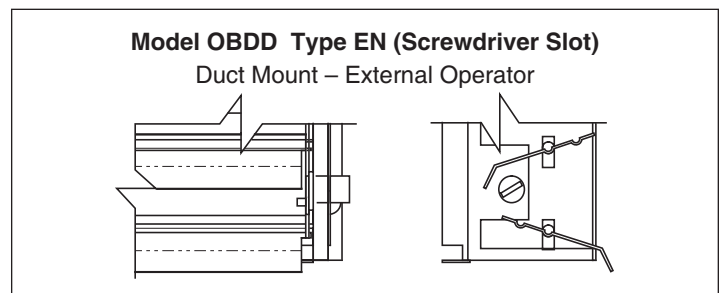
Type EH Operator

These duct mount models feature an external 3/16" (5) hex operator accessible from outside the duct; from the side of the duct when blades run vertically and from underneath the duct when blades run horizontally.



Type EN Operator

These duct mount models feature an external glass-filled nylon screwdriver slot operator accessible from outside the duct; from underneath the duct when blades run vertically, and from the side of the duct when blades run horizontally.



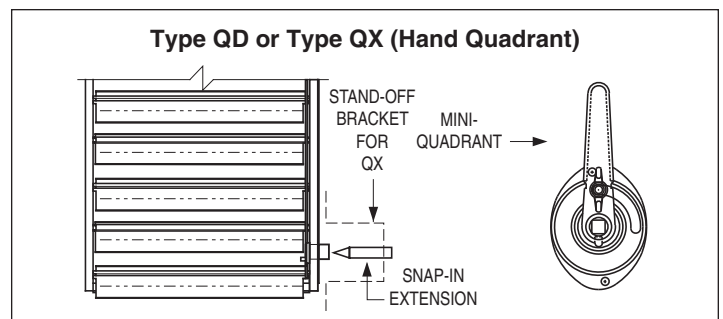
Type QD Operator *

A snap-in shaft extension with 'mini' hand locking quadrant is available as an optional accessory.

Type QX Operator *

A snap-in shaft extension with 'mini' hand locking quadrant and 2" (51) stand-off bracket for externally insulated ducts. Order damper with blades parallel to horizontal duct dimension to ensure quadrant is located on vertical side of the duct.

*Not available on Model OBDD-A

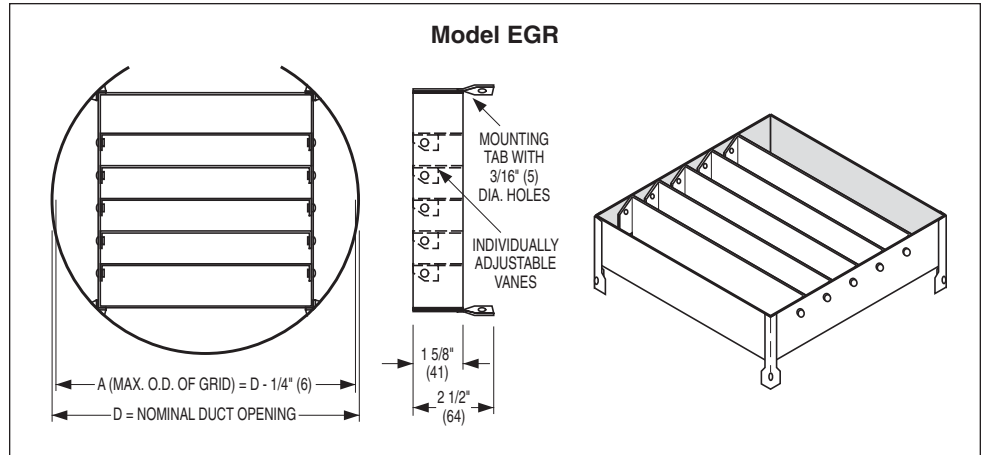


Air Balancing and Directional Control Devices

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.

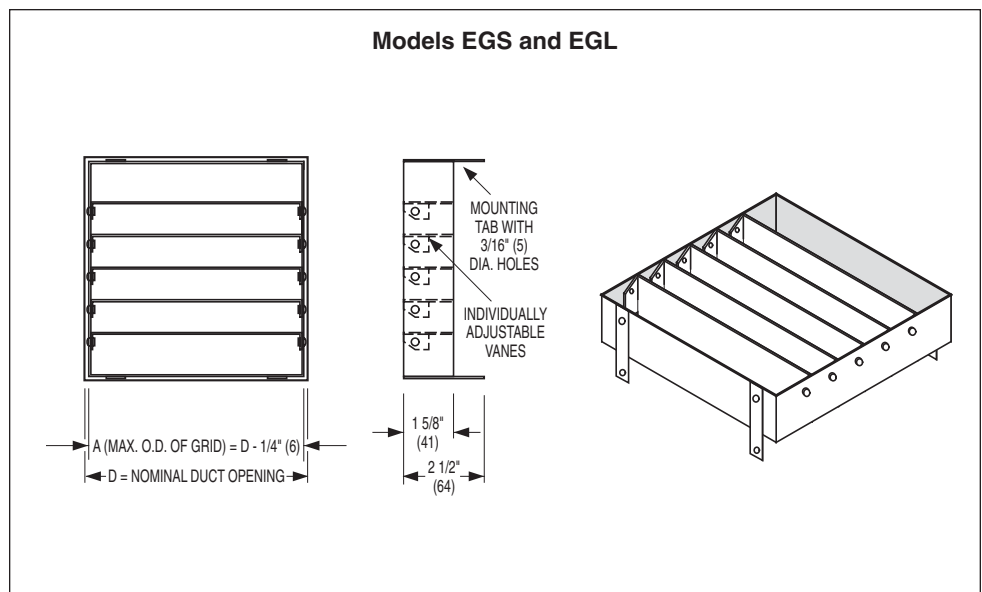


Equalizing Grid for Square and Rectangular Necks

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.



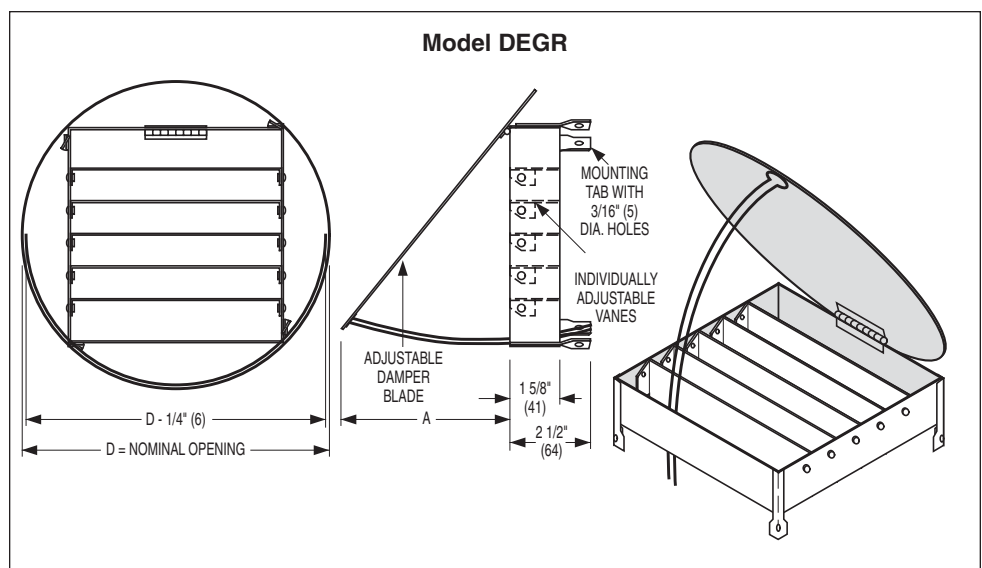
Damper with Equalizing Grid for Round Necks

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

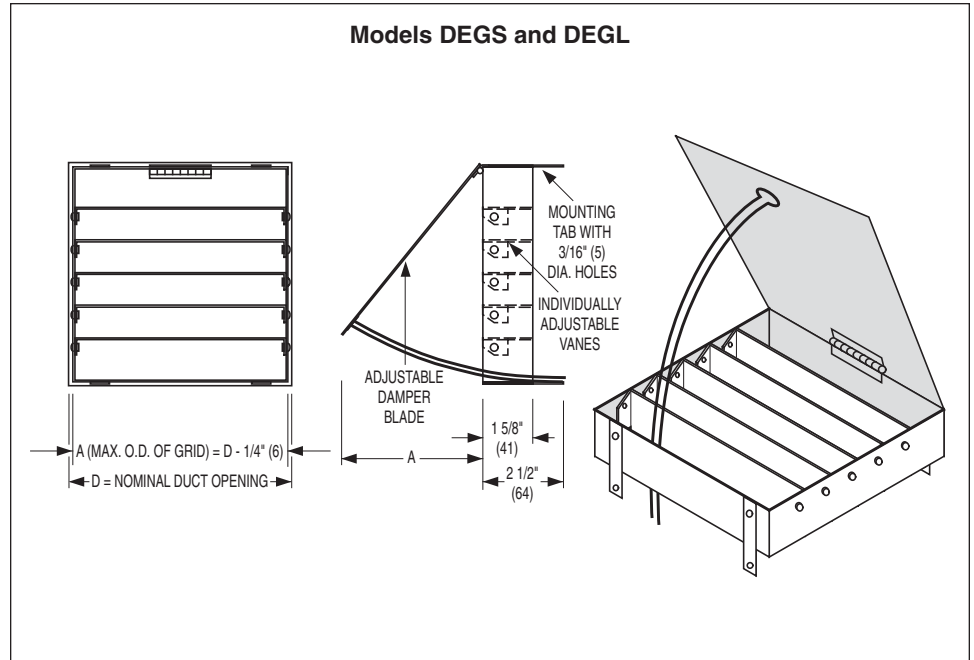
Damper with Equalizing Grid for Square and Rectangular Necks

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).

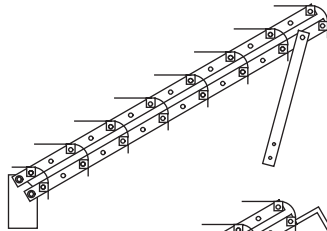
FEATURES:

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

Operator Types

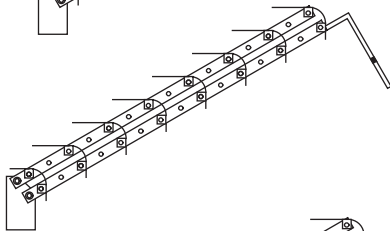
EX/EXD-1

Standard unit with adjusting strap.



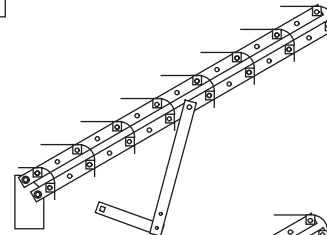
EX/EXD-1-R

Rod operator for external operation.



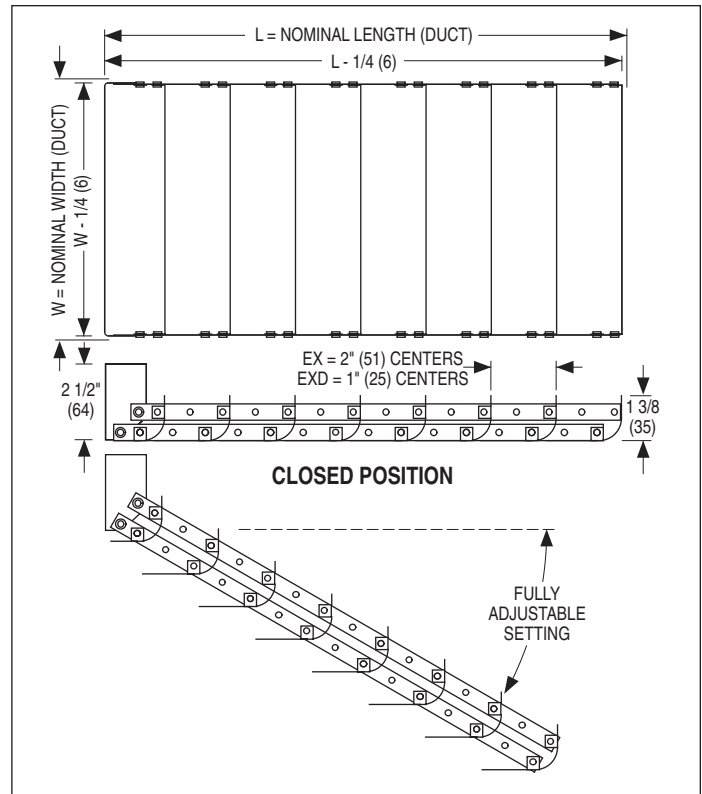
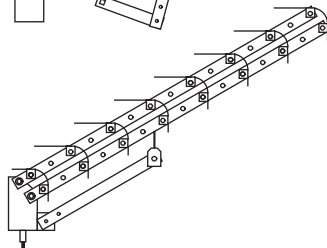
EX/EXD-2

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



EX/EXD-3

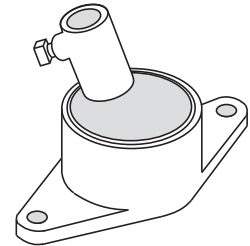
Screw gear operator. Adjusts with 3/16" (5) wrench (by others).



Optional Accessories

RLD

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



HOW TO ORDER

ROUND CEILING DIFFUSERS

MODEL SERIES RNR, RNRA1, RUNI, RDB, ARNR, ARNRA1, ARUNI AND 6300R

EXAMPLE: RNR - 12 - AW - -

1. **Models**

Steel

- RNR Adjustable (Horizontal)
- RNRA1 Adjustable (Horizontal/Vertical)
- RUNI Plaque, Adjustable (Horizontal/Vertical)
- RDB Downblast, Adjustable

Aluminum

- ARNR Adjustable (Horizontal)
- ARNRA1 Adjustable (Horizontal/Vertical)
- ARUNI Plaque, Adjustable (Horizontal/Vertical)
- 6300R Rotating Fully Adjustable (Horizontal to Vertical)

2. **Neck Size** (inches)

- 06, 08, 10, 12, 14, 16, 18, 20, 24 (RNRA1, RUNI, ARNRA1 and ARUNI available 06 to 16 only)
- (RDB available 08 to 24 only)

3. **Finish ***

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

OPTIONS & ACCESSORIES:

4. **Damper ****

- None (default)
- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"

5. **Safety Chain**

- None (default)
- SC Safety Chain

6. **Gasket**

- GK Foam Gasket (Not applicable on 6300R)

7. **Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs (Not applicable on 6300R)

OTHER OPTIONS & ACCESSORIES:

- None

8. **Air Balancing Devices**

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

Notes:

1. *Model 6300R is available as standard only in AW (default) or AL finish. For availability of custom colors, contact factory.
2. **Model 4250 is not compatible with RUNI, ARUNI or 6300R diffusers.
3. Vinyl bulb gasket standard on 6300R.

D

CEILING DIFFUSERS

HOW TO SPECIFY

SUGGESTED SPECIFICATION:

RNR and ARNR – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNR** (steel) or **ARNR** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have three round spun cones. The inner core assembly shall be removable and slide up or down to attain infinite horizontal discharge pattern adjustment. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper, without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RNRA1 and ARNRA1 – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RNRA1** (steel) or **ARNRA1** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel or aluminum and have three round spun cones. The inner cones shall be removable. The core shall be adjustable to achieve a horizontal or vertical discharge pattern. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

6300R – Rotating Fully Adjustable

Furnish and install **Nailor Model 6300R Aluminum Adjustable Round Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be all aluminum construction and incorporate three round cones that have been spun. The diffuser shall be easily adjusted by rotating the inner core either in an up or down position. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RUNI and ARUNI – Steel or Aluminum

Furnish and install **Nailor Model** (select one) **RUNI** (steel) or **ARUNI** (aluminum) **Round Architectural Plaque Face Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RUNI shall have a round outer cone that is spun from corrosion-resistant steel. Model ARUNI shall have a round, aluminum outer cone with corrosion-resistant steel neck bracketry. The inner core shall have a round plaque face that is heavy gauge aluminum, and shall be smooth and flat in appearance. A removable inner core assembly shall slide up or down to attain infinite horizontal discharge patterns. The finish shall be AW Appliance White (optional finishes are available).

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

SUGGESTED SPECIFICATION:

RBD – Steel

Furnish and install **Nailor Model RDB Round Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of heavy gauge corrosion-resistant spun steel and incorporate a round outer cone. A removable flat inner cone assembly shall have a "Fibonacci spiral" aperture damper that is adjusted by a ring (pole) operator, which extends below the face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).

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