

CURVED BLADE DIFFUSERS

- 1, 2, 3 OR 4-WAY DISCHARGE PATTERNS AVAILABLE

Steel Models:

- 61CC 1, 2, 3 or 4-Way
- 61CCD 1 or 2-Way with Rear Directional Vanes

Aluminum Models:

- 51CC 1, 2, 3 or 4-Way
- 51CCD 1 or 2-Way with Rear Directional Vanes

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper (available on aluminum models only)



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CEILING DIFFUSERS

The **Nailor 61CC and 51CC Series Curved Blade Diffusers** are similar in design and construction to the **Nailor 61C and 51C Series Curved Blade Grilles** with the addition of a modular sized panel to integrate with various types of ceiling systems. Available with the choice of a 1, 2, 3 or 4-way discharge pattern.

They also feature individually adjustable friction pivoted curved blades on 1" (25) centers that positively control the airflow. Blades are adjustable from the face, regulating the angle of discharge from a horizontal through to a full down-blow vertical pattern as required. Blades can also regulate air volume as they are closed off.

Available in a comprehensive range of square duct sizes to suit a large range of air volumes, these diffusers, when adjusted correctly, produce a tight horizontal ceiling pattern and work extremely well in variable air volume applications.

The **Nailor 61CCD and 51CCD Series**, available in a 1 or 2-way discharge pattern are similar to the above but incorporate a set of rear vanes on 3/4" (19) centers that are individually adjustable, thus providing complete directional control and airflow equalization.

FEATURES:

- Extruded aluminum blades are formed to an engineered curved and streamlined cross-section. Formed with tenons at each end to fit snugly into side margin, friction loaded to firmly hold deflection setting.
- Adjustable angle of discharge from horizontal to vertical.
- Choice of one, two, three or four-way discharge patterns.
- Optional steel or aluminum opposed blade dampers have a screwdriver slot operator accessible through the face of the diffuser.
- A variety of frame/border styles to suit most ceiling systems.
- Available in square neck sizes 6" x 6" (152 x 152) through 21" x 21" (533 x 533) for standard 24" x 24" (600 x 600) ceiling modules.
- For non-listed rectangular sizes, see the **61C and 51C Series** in this catalog and add a module sized extended panel (PL).

Material: Extruded aluminum blades with corrosion-resistant steel or aluminum panel construction, depending on model selection.

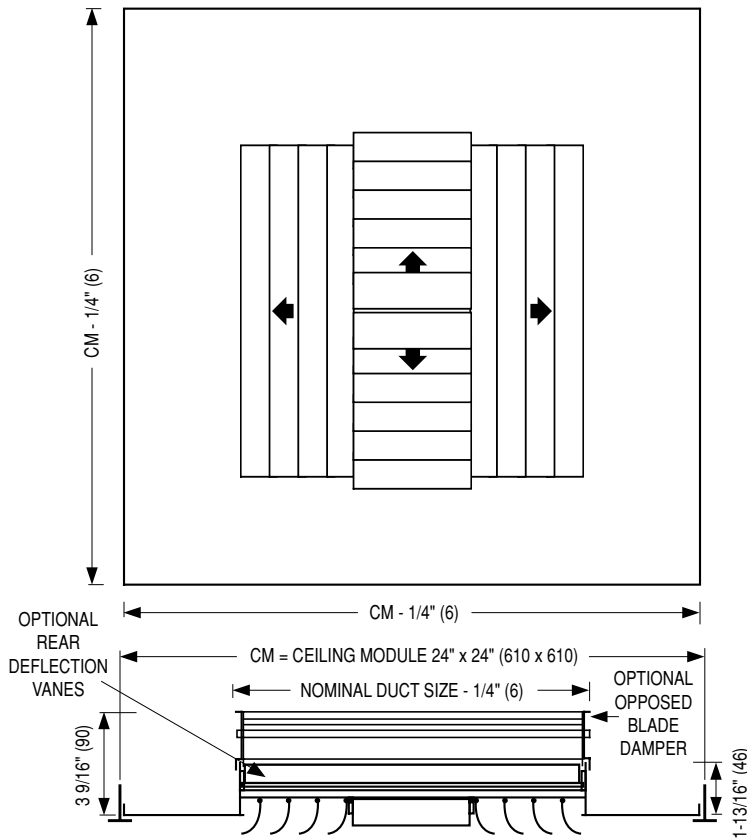
Finish: AW Appliance White baked enamel finish is standard. Other finishes are available.

Dimensional Data and Frame Types

Models 61CC and 51CC

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CEILING DIFFUSERS

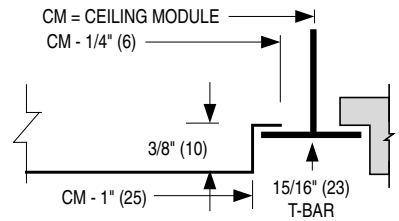
Type PL Panel Lay-in T-Bar



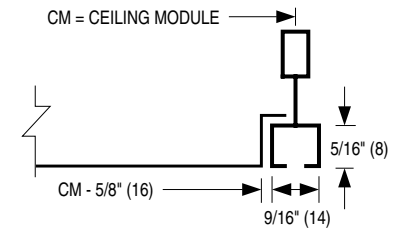
Standard Duct Sizes for 24 x 24 (600 x 600) Ceiling Module

Imperial Units (inches)				Metric Units (mm)			
6 x 6	10 x 10	15 x 15	21 x 21	152 x 152	254 x 254	381 x 381	553 x 553
8 x 8	12 x 12	16 x 16		203 x 203	305 x 305	406 x 406	
9 x 9	14 x 14	18 x 18		229 x 229	356 x 356	457 x 457	

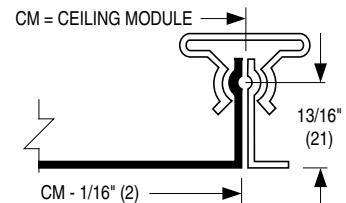
Type TL Tegular Lay-in



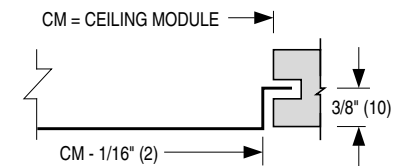
Type F Fineline®



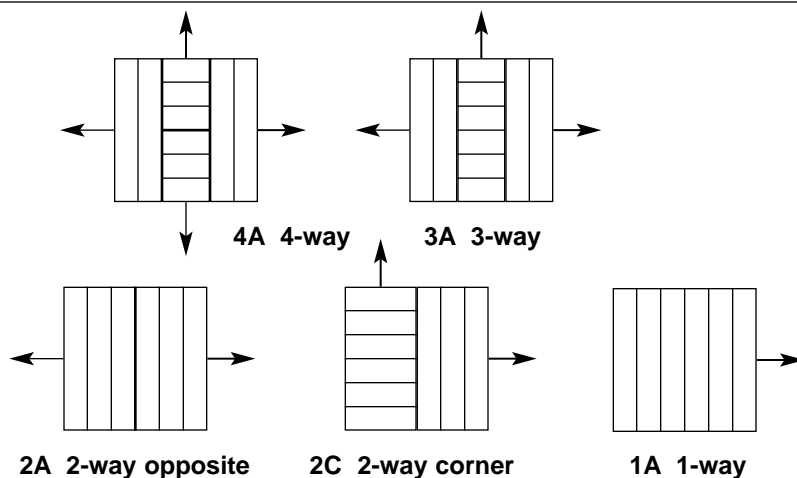
Type M Metal Pan (Snap-in)



Type SP Spline



Available Discharge Patterns:



61CC and 51CC Diffusers may be ordered in any of the discharge patterns illustrated above.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Curved Blade Ceiling Diffusers – Model Series 51CC and 61CC

51CC - O - 12 x 12 - 24 x 24 - PL - AW - 4A - -

MODEL

- Aluminum 51CC
- Aluminum w/Rear Vanes 51CCD
- Steel 61CC
- Steel w/Rear Vanes 61CCD

DAMPER

- No Damper (default) —
- Opposed Blade (steel) O
- Opposed Blade (aluminum) OA
(available on aluminum models only)

NECK SIZE (inches)

6 x 6, 8 x 8, 9 x 9, 10 x 10,
12 x 12, 14 x 14, 15 x 15,
16 x 16, 18 x 18, 21 x 21

CEILING MODULE SIZE

Standard Module

Imperial (in.) Metric (mm)

24 x 24 (default) 600 x 600

FRAME TYPE

- Panel Lay-in T-Bar (default) PL
- Tegular TL
- Finline® F
- Metal Pan Snap-in M
- Spline SP

ACCESSORIES

- None (default) —
- External Foil Back Insulation EX
- Earthquake Tabs EQT
- Square to Round Transition Collar (04 thru 20 specify) SR

AIR BALANCING DEVICES

Square Neck

- Equalizing Grid EGL
- Damper/Equalizing Grid DEGL

Round Neck

- Radial Sliding Blade Damper 4250
- Radial Opposed Blade Damper 4275
- Butterfly Damper 4675
- Equalizing Grid EGR
- Damper/Equalizing Grid DEGR

BLOW PATTERN

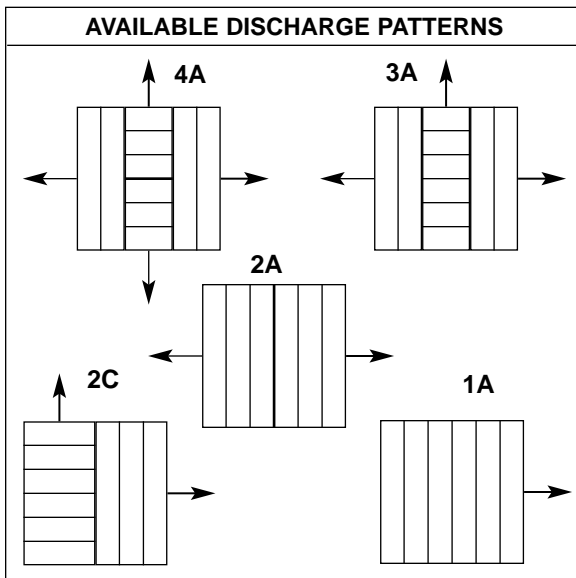
- 4-Way 4A
- 3-Way 3A
- 2-Way Corner 2C
- 2-Way Opposite 2A
- 1-Way 1A

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special SP

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CEILING DIFFUSERS



Notes:

1. Consult text as to limitations of panel, neck size and core style combinations.
2. If more than one accessory is required, list in order.

SUGGESTED SPECIFICATION:

Models 51CC, 51CCD – Aluminum

Furnish and install **Nailor Model** (select one) **51CC** or **51CCD** (with deflector vanes) **Aluminum Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an aluminum panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional), operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Models 61CC, 61CCD – Steel

Furnish and install **Nailor Model** (select one) **61CC** or **61CCD** (with deflector vanes) **Steel Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Models: 61CC, 61CCD
51CC, 51CCD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM		100	200	300	400	500	600	700	800	900	1000	
		TP		.003	.015	.032	.058	.094	.136	.182	.234	.302	.369	
.20	6 x 6	CFM			60	80	100	120	140	160	180	200		
		NC			—	15	21	26	29	32	35	38		
		T	4-Way			4-6-9	5-8-13	6-9-15	7-10-16	8-11-17	9-13-20	10-15-23	11-16-26	12-17-28
			3-Way			4-6-10	6-9-14	6-9-15	7-10-16	8-12-19	10-14-22	11-16-25	12-17-28	13-19-31
			2-Way			5-7-11	6-9-15	8-11-17	9-14-21	10-16-24	12-17-28	13-19-31	15-21-39	
1-Way				6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41			
.38	8 x 8	CFM		75	115	150	190	230	265	305	340	380		
		NC		—	—	17	23	28	31	35	37	40		
		T	4-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-16-24	12-17-27	13-18-30	14-20-33	
			3-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	14-18-29	14-20-32	15-22-36	
			2-Way		4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	14-20-32	15-22-36	16-25-40	
1-Way			4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48			
.61	10 x 10	CFM	60	120	185	245	305	365	430	490	550	610		
		NC	—	—	13	20	26	30	34	37	40	43		
		T	4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39	
			3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42	
			2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46	
1-Way	2-4-6		5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55			
.90	12 x 12	CFM	90	180	270	360	450	540	630	720	800	900		
		NC	—	—	14	21	27	31	35	38	41	44		
		T	4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42	
			3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46	
			2-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51	
1-Way	3-4-7		6-9-14	8-12-19	11-16-25	13-19-30	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62			
1.24	14 x 14	CFM	125	250	375	500	620	745	870	995	1120	1240		
		NC	—	—	15	23	29	33	37	40	43	46		
		T	4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46	
			3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49	
			2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55	
1-Way	3-5-8		6-9-15	9-14-20	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67			

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

- Pressures are expressed in inches of water gauge.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential (ΔT) of 20°F and are based on surface mount units benefiting from the coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, that have the outer blades closest to the frame set with an opening of 1/8" (3) and progressively wider spacing between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).

- Blades in the full open position
 - reduce the NC by 6.
 - multiply the total pressure x 0.3.
- The NC values are based on a room absorption of 10 dB, re 10⁻¹² watts.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Models: 61CC, 61CCD
51CC, 51CCD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000	
		TP	003	015	032	058	094	136	182	234	302	369	
1.44	15 x 15	CFM	145	290	430	575	720	860	1005	1150	1290	1435	
		NC	—	—	15	23	29	33	37	40	43	46	
		T	4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
			3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
1-Way	3-5-8		6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68		
1.64	16 x 16	CFM	165	330	490	655	820	985	1150	1315	1480	1640	
		NC	—	—	16	24	29	34	38	41	44	47	
		T	4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
			3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
1-Way	3-5-8		7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-49	26-40-63	29-45-71		
2.10	18 x 18	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100	
		NC	—	—	17	25	30	35	39	42	45	48	
		T	4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48	22-33-53
			3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
			2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57	27-40-64
1-Way	4-6-9		7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68	32-49-78		
2.88	21 x 21	CFM	290	575	865	1155	1440	1730	2020	2305	2595	2885	
		NC	—	—	19	27	32	37	41	44	47	50	
		T	4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53	25-38-60
			3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57	27-40-64
			2-Way	3-5-8	7-10-16	10-15-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63	29-45-71
1-Way	4-6-10		8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77	36-54-86		

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CEILING DIFFUSERS

- CFM - cubic feet per minute
- FPM - feet per minute velocity
- TP - total pressure - inches w.g.
- T - throw in feet
- NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Pressures are expressed in inches of water gauge.
2. Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential (ΔT) of 20°F and are based on surface mount units benefiting from the coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, that have the outer blades closest to the frame set with an opening of 1/8" (3) and progressively wider spacing between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).
3. Blades in the full open position
 - reduce the NC by 6.
 - multiply the total pressure x 0.3.
4. The NC values are based on a room absorption of 10 dB, re 10⁻¹² watts.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.