STAMPED SQUARE "TWISTER" CEILING DIFFUSERS

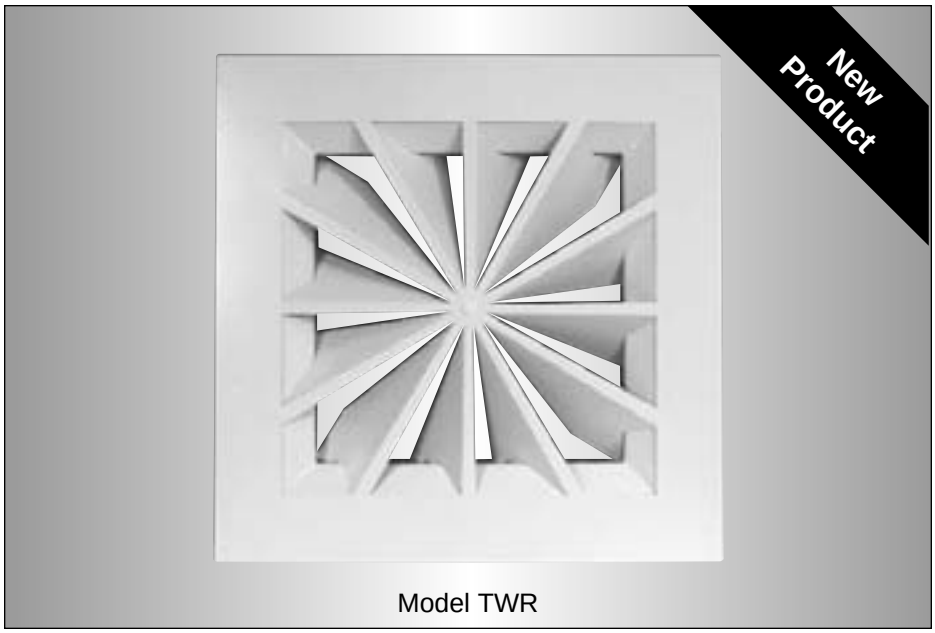
Nailor

"TWISTER" STAMPED CEILING SWIRL DIFFUSER

- **HIGH PERFORMANCE**
- **HIGH INDUCTION**
- **ROUND NECK**

Model:

TWR Steel



Model TWR

The **Nailor Model Series TWR "Twister" Stamped Square Ceiling Diffuser** is a high performance ceiling diffuser that is ideal for VAV applications. The name "Twister" is given to this diffuser because of its tight horizontal 360° swirl air pattern. The contemporary architectural radial vane design produces an unmatched high induction swirl pattern engineered to optimize occupant comfort by minimizing stratification over a wide range of air volumes. The "Twister's" superior coanda effect air pattern eliminates dumping and is ideal for VAV applications.

The diffuser features the popular 2' x 2' (600 x 600) module size and is available with frame/border styles to suit all ceiling systems. The round neck design includes a full 1 1/4" (32) high collar for an easy, secure connection.

FEATURES:

- Constructed from heavy gauge corrosion-resistant steel.
- Stamped face design allows for uniformity of the radial vanes.
- Superior coanda effect air pattern, eliminates dumping and is ideal for VAV applications.
- 24" x 24" (600 x 600) ceiling module size available with frame/border types to suit all ceiling systems.
- Engineered 'swirl' air diffusion pattern.
- Designed for 60 – 750 cfm; available in five neck sizes 6" – 14" (152 – 356).
- High neck collars for solid connection.
- Removable plug for screwdriver adjustment of the optional damper from below the face.

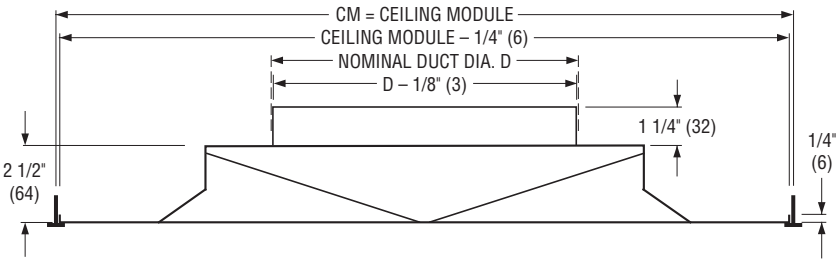
Material: Heavy gauge, corrosion-resistant steel.

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

Dimensional Data and Frame Types

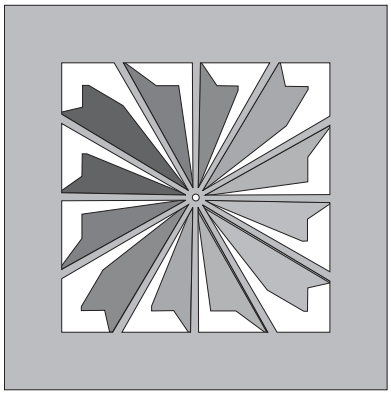
Model TWR

Type L Lay-in T-Bar Frame



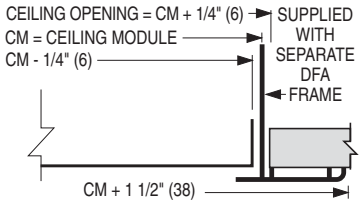
DIMENSIONAL DATA:

CEILING MODULE CM		NOMINAL DUCT SIZE D	
Imperial Modules (in.)	Metric Modules (mm)	Imperial Units (in.)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14	152, 203, 254, 305, 356



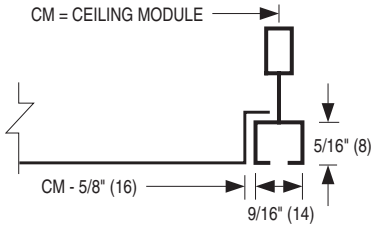
FACE VIEW

Type L Surface Mount with DFA

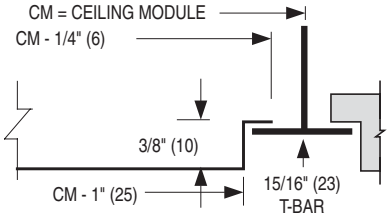


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

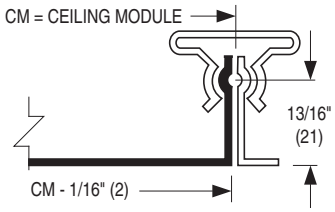
Type F Fineline®



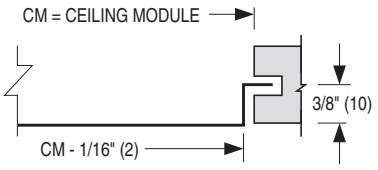
Type TL Tegular Lay-in



Type M Metal Pan (Snap-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.

D

CEILING DIFFUSERS

HOW TO SPECIFY OR TO ORDER

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

"Twister" Stamped Square Ceiling Swirl Diffuser – Model TWR

TWR - 08 - 24 x 24 - L - AW - –

MODEL

- Steel Construction	TWR

NECK SIZE (inches)

- 06, 08, 10, 12, 14

CEILING MODULE SIZE

Imperial (inches)	Metric (mm)
- 24 x 24	600 x 600

FRAME STYLE

- T-Bar Lay-in	L
- Spline	SP
- Metal Pan Snap-In	M
- Fineline®	F
- Tegular	TL

ACCESSORIES

- None (default)	—
- External Foil Back Insulation	EX
- Earthquake Tabs	EQT

AIR BALANCING DEVICES

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

FINISH

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

SUGGESTED SPECIFICATION:

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 sized 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" (38) high. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper. The finish shall be AW Appliance White baked enamel (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 – 1991.

Performance Data

Model TWR "Twister" • 24 x 24 (600 x 600) Module

Nominal Neck Size	Neck Velocity, fpm	300	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.014	.026	.041	.058	.079	.102	.131	.162	.212	.315	.413
	Airflow, cfm	60	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-3	1-2-4	2-3-5	2-3-6	2-4-7	3-4-8	3-5-9	4-5-10	4-6-11	5-7-11	5-8-12
	NC	—	—	—	—	—	16	20	24	30	35	38
8" Dia.	Total Pressure	.015	.027	.042	.060	.082	.107	.136	.168	.242	.329	.430
	Airflow, cfm	105	140	175	210	245	280	315	350	420	490	560
	Throw	2-3-5	2-4-7	3-5-9	4-5-10	4-6-11	5-7-11	5-8-12	6-9-12	7-10-14	8-10-15	9-11-16
	NC	—	—	—	—	17	22	25	29	34	38	40
10" Dia.	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173	.266	.340	.443
	Airflow, cfm	165	220	270	330	380	435	490	545	655	765	870
	Throw	3-5-9	4-5-10	5-7-11	6-8-12	6-9-13	7-10-14	8-10-16	8-11-18	9-11-19	10-12-20	12-16-22
	NC	—	—	—	16	22	27	31	34	39	44	48
12" Dia.	Total Pressure	.016	.028	.043	.063	.086	.113	.142	.176	.280	.346	.451
	Airflow, cfm	235	315	390	470	550	630	705	785	990	1100	1255
	Throw	4-6-10	5-7-12	6-8-14	7-10-16	8-11-18	9-12-18	10-13-20	11-14-21	13-17-24	15-20-27	17-23-30
	NC	—	—	—	20	25	30	34	37	43	48	53
14" Dia.	Total Pressure	.016	.028	.043	.064	.088	.116	.145	.180	.299	.354	.461
	Airflow, cfm	320	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-12	7-9-15	8-10-17	9-12-18	10-14-21	12-16-22	13-17-24	15-21-27	17-24-31	19-28-35	21-31-40
	NC	—	17	24	30	34	38	41	44	50	54	57

Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

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

3. NC (Noise Criteria) values are based on 10 dB room absorption, re 10^{-12} watts. Dash (-) in spaces indicates an NC level of less 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

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.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.181
8	24 x 24	0.264
10	24 x 24	0.330
12	24 x 24	0.458
14	24 x 24	0.521