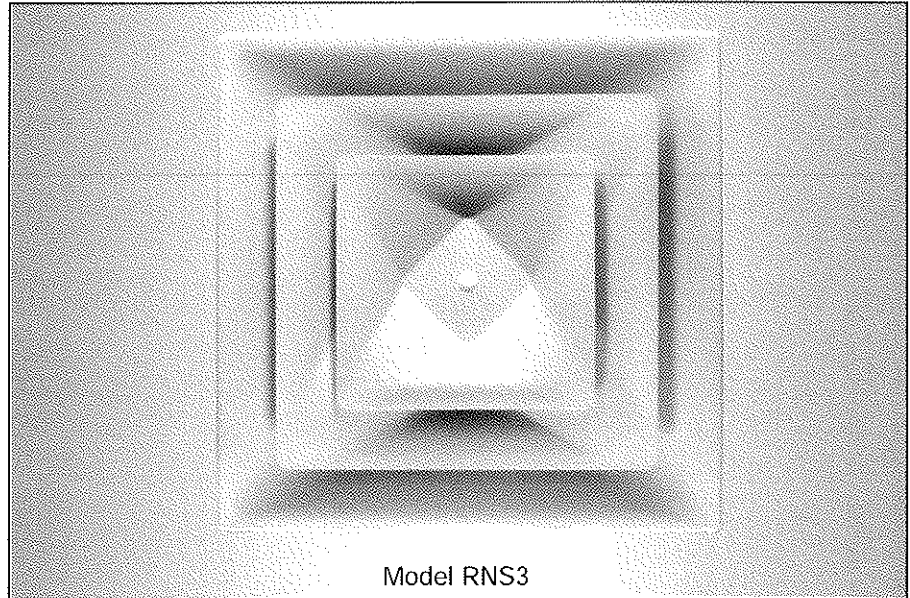


STAMPED SQUARE CEILING DIFFUSERS

- FIXED AIR PATTERN
- SQUARE FACE
- ROUND NECK
- 3 CONE

Model:

RNS3 Steel



The **Nailor RNS3 Series Square Ceiling Air Diffusers** have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the **RNS3 Series** diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems.

The diffusers are available with a frame/border design to suit a lay-in T-bar ceiling and can also be surface mounted using the optional drywall diffuser frame. 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.

FEATURES:

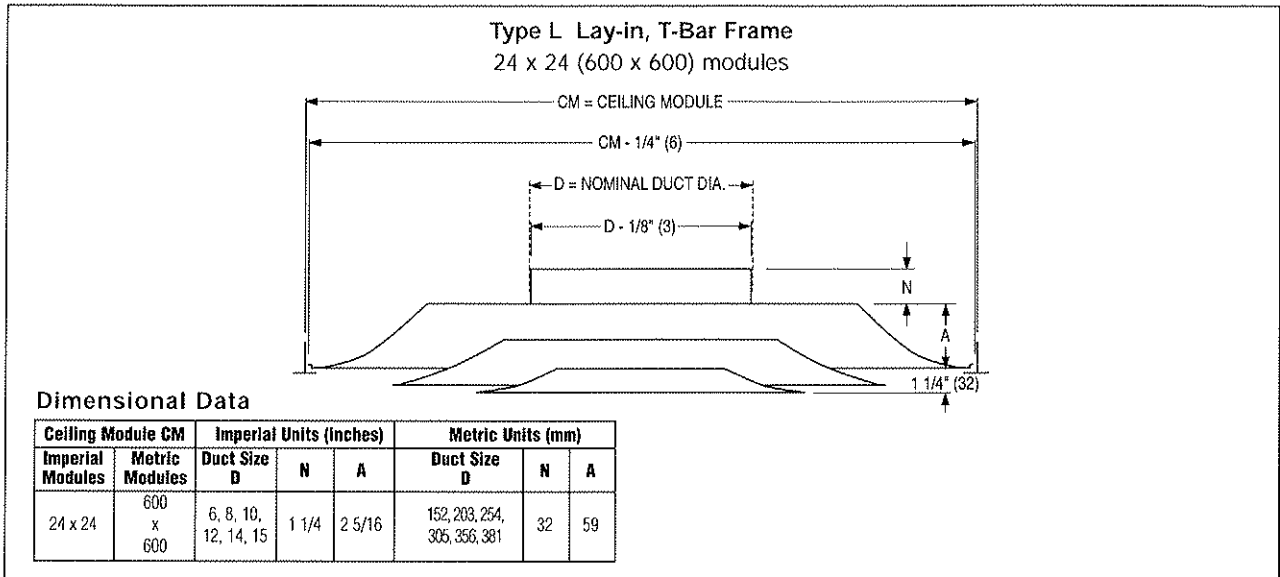
- Features three cones in all neck sizes, providing a uniform and balanced appearance.
- Engineered air diffusion pattern.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Non-removable core.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.
- Optional QB Quadrant Blanks for 1, 2 and 3-way blow.

Material: Heavy gauge, corrosion-resistant steel.

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

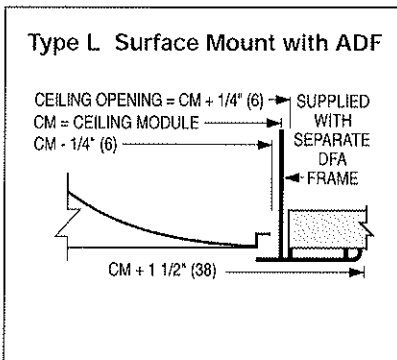
Dimensional Data and Frame Types

Model RNS3



D

CEILING DIFFUSERS

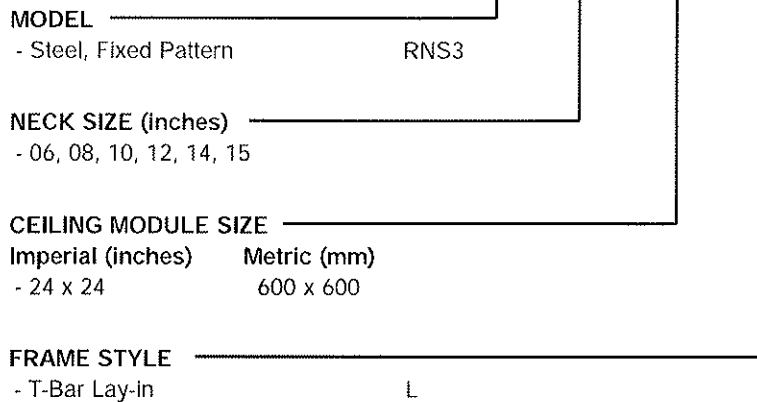


HOW TO SPECIFY OR TO ORDER

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

Stamped Square Ceiling Diffusers – Model RNS3

RNS3 - 08 - 24 x 24 - L - AW - -

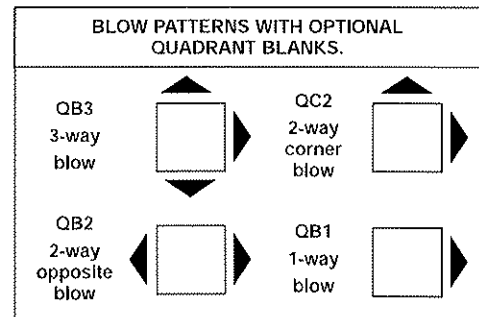


- ACCESSORIES**
- None (default) _____
 - External Foil Back Insulation EX
 - Earthquake Tabs EQT
 - Quadrant Blanks
 - 3-Way Blow QB3
 - 2-Way Opposite Blow QB2
 - 2-Way Corner Blow QC2
 - 1-Way Blow QB1

- AIR BALANCING DEVICES**
- Radial Sliding Blade Damper 4250
 - Radial Opposed Blade Damper 4275

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

| Nominal Round Neck (Duct) Size | Ceiling Module |
|--|------------------------|
| 6, 8, 10, 12, 14, 15 (152, 203, 254, 305, 356, 381) | 24 x 24 (600 x 600) |



Notes:

1. Consult text as to limitations of material, module size and frame style combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model RNS3 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 have three die-formed concentric cones in all sizes. 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 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 – 2006.

D
CEILING DIFFUSERS

STAMPED SQUARE CEILING DIFFUSERS



Performance Data

Model RNS3 • 24 x 24 (600 x 600) Face Size

| Nominal Neck Size | Neck Velocity, FPM | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------------|--------------------|--------|--------|--------|---------|---------|----------|----------|----------|----------|----------|
| | VP | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 |
| 6" Dia. | TP | .015 | .023 | .035 | .045 | .060 | .076 | .095 | .135 | .186 | .240 |
| | Airflow, CFM | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 |
| | T | 1-1-4 | 1-2-5 | 1-2-6 | 1-3-7 | 2-4-9 | 2-5-9 | 3-6-11 | 3-6-12 | 4-7-14 | 6-8-15 |
| | NC | — | — | — | 13 | 17 | 21 | 24 | 27 | 32 | 36 |
| 8" Dia. | TP | .021 | .033 | .047 | .063 | .082 | .105 | .128 | .183 | .245 | .325 |
| | Airflow, CFM | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 |
| | T | 1-1-5 | 1-2-6 | 1-3-8 | 2-4-8 | 3-5-10 | 3-6-10 | 4-6-13 | 5-8-13 | 6-8-16 | 7-10-17 |
| | NC | — | — | 13 | 17 | 20 | 25 | 28 | 33 | 37 | 40 |
| 10" Dia. | TP | .024 | .037 | .047 | .074 | .097 | .123 | .150 | .215 | .293 | .372 |
| | Airflow, CFM | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 |
| | T | 1-3-6 | 2-4-8 | 3-5-9 | 4-6-12 | 5-6-12 | 5-7-14 | 6-9-15 | 6-10-15 | 8-13-17 | 9-13-18 |
| | NC | — | 11 | 16 | 20 | 23 | 28 | 31 | 36 | 40 | 43 |
| 12" Dia. | TP | .026 | .039 | .057 | .075 | .097 | .127 | .150 | .245 | .310 | .410 |
| | Airflow, CFM | 315 | 390 | 470 | 550 | 630 | 705 | 785 | 990 | 1100 | 1255 |
| | T | 2-3-7 | 3-4-9 | 3-5-10 | 4-6-13 | 5-7-13 | 5-8-15 | 5-8-16 | 7-9-18 | 9-11-18 | 10-12-19 |
| | NC | — | 13 | 18 | 21 | 24 | 29 | 32 | 37 | 41 | 44 |
| 14" Dia. | TP | .030 | .050 | .070 | .100 | .110 | .160 | .200 | .240 | .390 | .490 |
| | Airflow, CFM | 425 | 530 | 635 | 745 | 850 | 955 | 1060 | 1270 | 1490 | 1695 |
| | T | 3-4-9 | 4-5-11 | 4-7-13 | 5-7-16 | 6-9-16 | 7-11-16 | 7-11-19 | 9-13-19 | 11-16-19 | 11-16-27 |
| | NC | — | 14 | 19 | 22 | 25 | 29 | 32 | 37 | 42 | 45 |
| 15" Dia. | TP | .033 | .054 | .072 | .100 | .127 | .163 | .204 | .280 | .395 | .500 |
| | Airflow, CFM | 490 | 615 | 735 | 860 | 985 | 1110 | 1230 | 1470 | 1720 | 1970 |
| | T | 5-7-10 | 6-8-11 | 7-9-14 | 8-10-17 | 8-13-18 | 10-15-19 | 11-16-22 | 12-18-27 | 13-20-32 | 15-22-34 |
| | NC | — | 15 | 20 | 23 | 26 | 30 | 33 | 38 | 43 | 46 |

D
CEILING DIFFUSERS

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

given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and NC, use correction factors as shown for 4-way blow values.

| Neck Size Diameter in Inches | Nominal Overall Face Size | Ak Factor |
|------------------------------|---------------------------|-----------|
| 6 | 24 x 24 | 0.180 |
| 8 | 24 x 24 | 0.227 |
| 10 | 24 x 24 | 0.331 |
| 12 | 24 x 24 | 0.450 |
| 14 | 24 x 24 | 0.511 |
| 15 | 24 x 24 | 0.625 |

Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.
- The addition of quadrant blanks reduces the effective area and for a

| Quadrant Blanks (Blow) | % Increase in Air Volume for Throw Determination | % Increase in Static Pressure Drop | NC Sound Level Increase |
|------------------------|--|------------------------------------|-------------------------|
| 1 (3-way) | 35 | 125 | 8 |
| 2 (2-way) | 100 | 450 | 19 |