

## 59N SERIES

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- SUPPLY AND SUPPLY/RETURN

### Supply Models:

**59N(I)** Horizontal Discharge

**59ND(I)** Horizontal/Vertical Discharge

### Supply/Return Models:

**59NR(I)** Horizontal Discharge

**59NDR(I)** Horizontal/Vertical Discharge

- Suffix 'I' adds internal insulation



The **59N Series Plenum Slot Diffusers** have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include an aerodynamic extruded aluminum pattern controller that provides a fixed horizontal discharge that produces a tight blanket of air into the room, maximizing coanda effect and induction of room air. In addition, **Models 59ND** and **59NDR** include a central down-blow section, which incorporates two pattern controllers that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on **Models 59NR** and **59NDR**.

### FEATURES:

- Choice of horizontal or horizontal/vertical discharge with either a supply or a supply/return combination.
- An aerodynamic pattern controller provides a fixed horizontal discharge.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.

- Standard unit size 9" (229) in height.

### Options:

- Internal insulation (add suffix 'I' to model number).
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- A full range of options and accessories are available, see page C53.

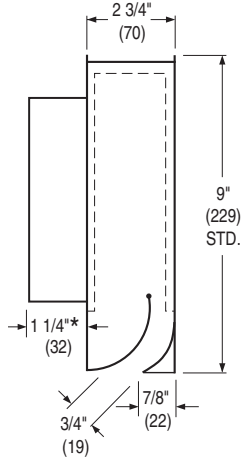
**Material:** Corrosion-resistant steel plenum. Extruded aluminum pattern controller.

**Finish:** BK Black pattern controllers and exposed edges.

## Dimensional Data

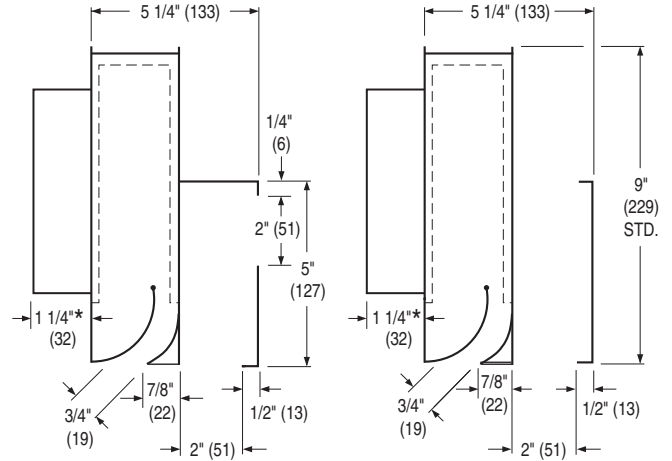
### Models 59N(I) and 59NR(I)

**Supply**



**Model 59N(I)**

**Supply/Return**



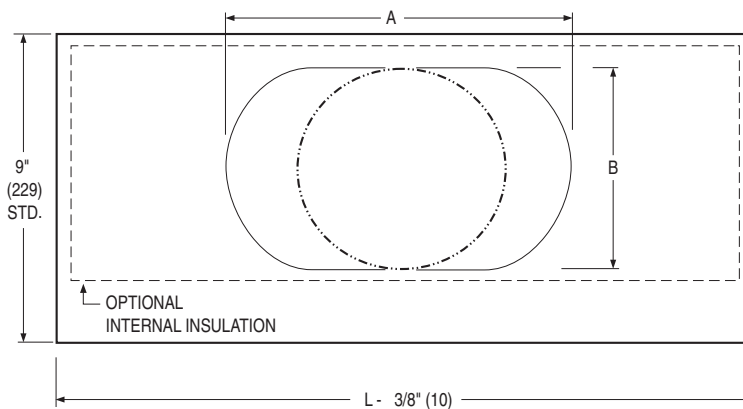
**Model 59NR(I)**

**SR (Standard)  
Side Inlet Return  
Illustrated**

**TR (Optional)  
Top Inlet Return  
Illustrated**

|          | Nominal Inlet Size |                 |                  |
|----------|--------------------|-----------------|------------------|
|          | 6 (152)<br>Round   | 8 (203)<br>Oval | 10 (254)<br>Oval |
| <b>A</b> | —                  | 9 (229)         | 12 1/8 (308)     |
| <b>B</b> | 5 7/8 (149)        | 5 7/8 (149)     | 5 7/8 (149)      |

\* 4" (102) with optional ID Inlet Damper



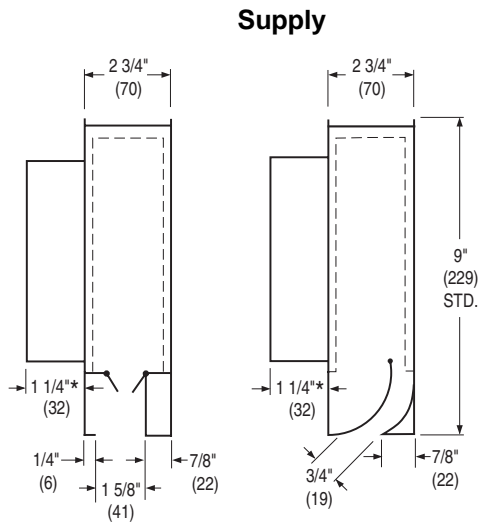
**Models 59N(I) and 59NR(I)**

| Nominal Length L                   |                           |
|------------------------------------|---------------------------|
| Imperial<br>Modules<br>inches (mm) | Metric<br>Modules<br>(mm) |
| 24 (610)                           | 600                       |
| 36 (914)                           | 900                       |
| 48 (1219)                          | 1200                      |
| 60 (1524)                          | 1500                      |

Dimensions are in inches (mm).

## Dimensional Data

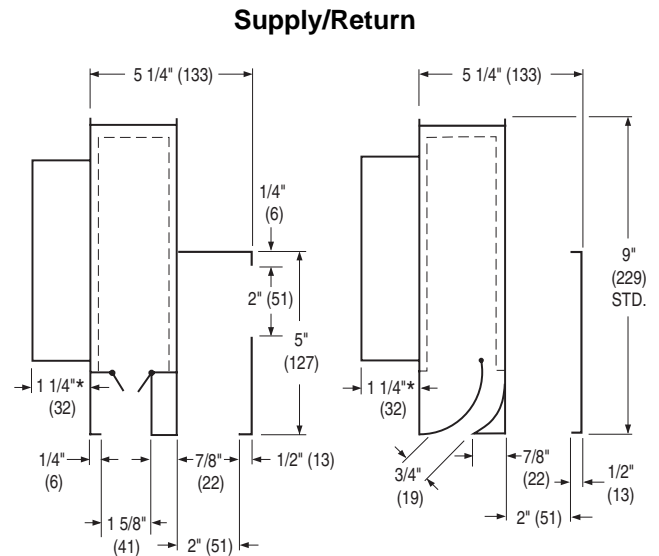
### Models 59ND(I) and 59NDR(I)



**Model 59ND(I)**

Section X-X

Section Y-Y



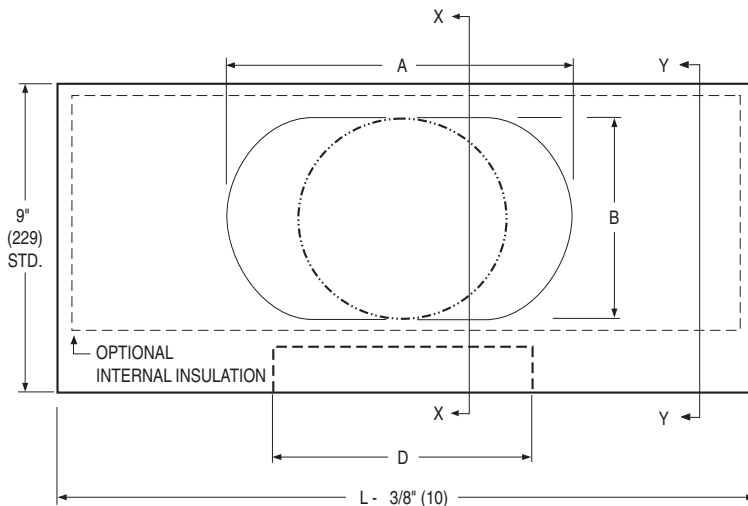
**Model 59NDR(I)**

Section X-X  
SR (Standard)  
Side Inlet Return Illustrated

Section Y-Y  
TR (Optional)  
Top Inlet Return Illustrated

|          | Nominal Inlet Size |                 |                  |
|----------|--------------------|-----------------|------------------|
|          | 6 (152)<br>Round   | 8 (203)<br>Oval | 10 (254)<br>Oval |
| <b>A</b> | —                  | 9 (229)         | 12 1/8 (308)     |
| <b>B</b> | 5 7/8 (149)        | 5 7/8 (149)     | 5 7/8 (149)      |

\*4" (102) with optional ID Inlet Damper



**Models 59ND(I) and 59NDR(I)**

| Nominal Length L                   |                           | Available<br>Down-Blow<br>Slot Dimension<br>D |
|------------------------------------|---------------------------|---|
| Imperial<br>Modules<br>inches (mm) | Metric<br>Modules<br>(mm) |   |
| 24 (610)                           | 600                       | 8, 12 (203, 305)                              |
| 36 (914)                           | 900                       | 12, 15 (305, 381)                             |
| 48 (1219)                          | 1200                      | 12, 15, 18 (305, 381, 457)                    |
| 60 (1524)                          | 1500                      | 15, 18, 21 (381, 457, 533)                    |

Dimensions are in inches (mm).

## HOW TO SPECIFY OR TO ORDER

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

### 'N Slot' Plenum Diffusers – Model Series 59N

**59NDRI - 48 x 1 - 08 - H9 - D15 - SR - - - -**

#### MODEL SERIES

- Supply 59N
- Supply/Return 59NR
- Supply with Downblow 59ND
- Supply/Return with Downblow 59NDR

#### INTERNAL INSULATION

- None —
- Internal Insulation I

#### NOMINAL LENGTH

- |                    |    |
|--------------------|----|
| <b>inches (mm)</b> |    |
| - 24 (600)         | 24 |
| - 36 (900)         | 36 |
| - 48 (1200)        | 48 |
| - 60 (1500)        | 60 |

#### NO. OF SLOTS

- 1 (default)

#### INLET SIZE (mm)

- |           |    |
|-----------|----|
| 6" (152)  | 06 |
| 8" (203)  | 08 |
| 10" (254) | 10 |

#### HEIGHT (mm)

- |                    |     |
|--------------------|-----|
| 9" (229) (default) | H9  |
| 7" (178)           | H7  |
| 11" (279)          | H11 |

#### ACCESSORIES

- None (default) —
- Plaster Frame PF
- Supplementary T-Bars
  - One (Inlet Side) T1
  - One (Opposite Inlet Side) TO
  - Two (One Each Side) T2
- T-Bar Mounting Clips (2) M1
- T-Bar Mounting Clips (4) M2
- External Foil Back Insulation EX
- Earthquake Tabs EQT

#### DAMPER

- None (default) —
- Supply Inlet Damper ID

#### RETURN INLET SELECTION

**(Models 59NR(I) and 59NDR(I) only)**

- Side Return (default) SR
- Top Return TR

#### DOWNBLOW SELECTION

**(Models 59ND(I) and 59NDR(I) only)**

- |            |               |
|------------|---------------|
| 24" (600)  | D8, D12       |
| 36" (900)  | D12, D15      |
| 48" (1200) | D12, D15, D18 |
| 60" (1500) | D15, D18, D21 |

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

#### Note:

1. If more than one accessory is desired, list in order.

**SUGGESTED SPECIFICATION:**

**Horizontal Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59N** or **59NI Horizontal Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NI shall be lined internally with insulation.

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

**Horizontal Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59NR** or **59NRI Horizontal Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot and a side inlet for connection to the supply air duct. The return air section shall have a rectangular return opening on the side that functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NRI shall be lined internally with insulation.

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

**Horizontal/Vertical Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59ND** or **59NDI Horizontal/Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot. The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NDI shall be lined internally with insulation.

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

**Horizontal/Vertical Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59NDR** or **59NDRI Horizontal/Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and integral return air section. The supply plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot opening, the end sections shall incorporate an extruded aluminum fixed horizontal pattern controller within a 3/4" (19) slot. The supply plenum shall include a side inlet for connection to the duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59NDRI shall be lined internally with insulation.

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



## Performance Data

### Models 59N(I) and 59NR(I) • Horizontal Pattern

#### 24"(610) Long

|                       |                  |           |           |            |            |            |            |            |            |
|-----------------------|------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| <b>6" Round Inlet</b> | Airflow, CFM     | <b>60</b> | <b>80</b> | <b>100</b> | <b>120</b> | <b>140</b> | <b>160</b> | <b>180</b> | <b>200</b> |
|                       | Total Pressure   | .039      | .070      | .110       | .158       | .215       | .281       | .355       | .439       |
|                       | Static Pressure  | .033      | .059      | .093       | .134       | .182       | .238       | .303       | .372       |
|                       | NC               | —         | —         | 22         | 27         | 31         | 34         | 36         | 39         |
|                       | Horizontal Throw | 3-5-13    | 5-9-15    | 6-11-17    | 8-12-19    | 10-15-20   | 11-14-21   | 12-16-23   | 13-17-24   |

|                      |                  |           |           |            |            |            |            |            |            |
|----------------------|------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b> | Airflow, CFM     | <b>60</b> | <b>80</b> | <b>100</b> | <b>120</b> | <b>140</b> | <b>160</b> | <b>180</b> | <b>200</b> |
|                      | Total Pressure   | .023      | .041      | .064       | .092       | .125       | .163       | .207       | .255       |
|                      | Static Pressure  | .021      | .038      | .059       | .084       | .115       | .150       | .190       | .234       |
|                      | NC               | —         | —         | —          | 23         | 26         | 29         | 31         | 34         |
|                      | Horizontal Throw | 3-5-13    | 5-9-15    | 6-11-17    | 8-12-19    | 10-15-20   | 11-14-21   | 12-16-23   | 9-17-24    |

#### 36"(914) Long

|                       |                  |           |            |            |            |            |            |            |            |
|-----------------------|------------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| <b>6" Round Inlet</b> | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                       | Total Pressure   | .057      | .101       | .157       | .227       | .309       | .403       | .511       | .630       |
|                       | Static Pressure  | .044      | .078       | .121       | .174       | .237       | .310       | .393       | .484       |
|                       | NC               | —         | —          | 24         | 27         | 30         | 33         | 37         | 41         |
|                       | Horizontal Throw | 4-8-16    | 7-11-18    | 8-13-21    | 11-16-23   | 12-17-25   | 13-18-26   | 15-19-27   | 16-20-29   |

|                      |                  |           |            |            |            |            |            |            |            |
|----------------------|------------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b> | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                      | Total Pressure   | .035      | .062       | .096       | .139       | .189       | .247       | .312       | .386       |
|                      | Static Pressure  | .030      | .053       | .082       | .118       | .161       | .211       | .267       | .329       |
|                      | NC               | —         | —          | 20         | 23         | 26         | 29         | 33         | 37         |
|                      | Horizontal Throw | 4-8-16    | 7-11-18    | 8-13-21    | 11-16-23   | 12-17-25   | 13-18-26   | 15-19-27   | 16-20-29   |

#### 48" (1219) Long

|                      |                  |            |            |            |            |            |            |            |            |
|----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b> | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                      | Total Pressure   | .039       | .069       | .107       | .155       | .211       | .275       | .348       | .430       |
|                      | Static Pressure  | .030       | .053       | .083       | .119       | .162       | .211       | .268       | .330       |
|                      | NC               | —          | —          | 20         | 24         | 29         | 33         | 36         | 40         |
|                      | Horizontal Throw | 5-9-18     | 8-13-22    | 10-15-24   | 13-18-26   | 16-20-28   | 17-21-30   | 18-22-32   | 20-24-33   |

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                       | Total Pressure   | .028       | .050       | .079       | .113       | .154       | .201       | .255       | .315       |
|                       | Static Pressure  | .024       | .042       | .066       | .095       | .130       | .169       | .214       | .264       |
|                       | NC               | —          | —          | —          | 22         | 27         | 30         | 33         | 37         |
|                       | Horizontal Throw | 5-9-18     | 8-13-22    | 10-15-24   | 13-18-26   | 16-20-28   | 17-21-30   | 18-22-32   | 20-24-33   |

#### 60" (1524) Long

|                      |                  |            |            |            |            |            |            |            |            |
|----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b> | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                      | Total Pressure   | .048       | .085       | .133       | .191       | .260       | .340       | .430       | .532       |
|                      | Static Pressure  | .034       | .060       | .094       | .135       | .184       | .241       | .305       | .376       |
|                      | NC               | —          | —          | 22         | 26         | 31         | 35         | 38         | 42         |
|                      | Horizontal Throw | 8-12-20    | 10-15-24   | 13-19-26   | 14-20-29   | 18-22-31   | 19-23-33   | 20-25-35   | 22-27-36   |

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                       | Total Pressure   | .034       | .061       | .095       | .137       | .187       | .244       | .309       | .381       |
|                       | Static Pressure  | .027       | .048       | .075       | .108       | .148       | .193       | .244       | .301       |
|                       | NC               | —          | —          | 20         | 24         | 29         | 32         | 35         | 39         |
|                       | Horizontal Throw | 8-12-20    | 10-15-24   | 13-19-26   | 14-20-29   | 18-22-31   | 19-23-33   | 20-25-35   | 22-27-36   |

#### Return Section

|                 |                          |           |           |           |           |           |           |           |            |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| <b>R Models</b> | Airflow, CFM/FT.         | <b>30</b> | <b>40</b> | <b>50</b> | <b>60</b> | <b>70</b> | <b>80</b> | <b>90</b> | <b>100</b> |
|                 | Negative Static Pressure | -.01      | -.018     | -.027     | -.038     | -.050     | -.063     | -.079     | -.098      |

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.

- Tested with one-way fixed horizontal discharge in the direction of the inlet. Straight flexible duct connection.
- NC values (Noise Criteria) are based on a room absorption of 10 dB, re

- 10<sup>-12</sup> watts. Dash (—) in space denotes an NC level less than 20.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.

## Performance Data

### Models 59ND(I) and 59NDR(I) • Horizontal/Vertical Pattern

#### 24"(610) Long with 8" (203) Down-Blow

|                       |                  |           |           |            |            |            |            |            |            |
|-----------------------|------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| <b>6" Round Inlet</b> | Airflow, CFM     | <b>60</b> | <b>80</b> | <b>100</b> | <b>120</b> | <b>140</b> | <b>160</b> | <b>180</b> | <b>200</b> |
|                       | Total Pressure   | .038      | .067      | .105       | .152       | .207       | .270       | .342       | .422       |
|                       | Static Pressure  | .032      | .057      | .089       | .128       | .175       | .228       | .289       | .357       |
|                       | NC               | —         | —         | —          | 23         | 27         | 30         | 35         | 39         |
|                       | Horizontal Throw | 2-5-12    | 4-7-15    | 7-11-19    | 9-15-22    | 11-17-24   | 13-18-25   | 14-19-26   | 15-20-28   |
|                       | Vertical Throw   | 2-5-6     | 3-4-7     | 5-7-10     | 6-8-11     | 7-9-12     | 7-10-13    | 8-10-13    | 9-10-14    |
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>60</b> | <b>80</b> | <b>100</b> | <b>120</b> | <b>140</b> | <b>160</b> | <b>180</b> | <b>200</b> |
|                       | Total Pressure   | .023      | .042      | .065       | .094       | .128       | .167       | .211       | .260       |
|                       | Static Pressure  | .021      | .038      | .059       | .084       | .115       | .150       | .190       | .235       |
|                       | NC               | —         | —         | —          | —          | 23         | 26         | 31         | 35         |
|                       | Horizontal Throw | 2-5-12    | 4-7-15    | 7-11-19    | 9-15-22    | 11-17-24   | 13-18-25   | 14-19-26   | 15-20-28   |
|                       | Vertical Throw   | 2-5-6     | 3-4-7     | 5-7-10     | 6-8-11     | 7-9-12     | 7-10-13    | 8-10-13    | 9-10-14    |

#### 36"(914) Long with 15" (381) Down-Blow

|                       |                  |           |            |            |            |            |            |            |            |
|-----------------------|------------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| <b>6" Round Inlet</b> | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                       | Total Pressure   | .025      | .046       | .074       | .101       | .151       | .200       | .261       | .322       |
|                       | Static Pressure  | .019      | .036       | .058       | .078       | .120       | .160       | .210       | .259       |
|                       | NC               | —         | —          | 22         | 28         | 32         | 36         | 39         | 43         |
|                       | Horizontal Throw | 1-3-12    | 2-5-15     | 3-7-17     | 6-11-21    | 9-13-22    | 10-16-24   | 11-17-25   | 12-18-26   |
|                       | Vertical Throw   | 4-6-10    | 5-8-12     | 7-10-14    | 8-10-15    | 9-11-16    | 10-12-17   | 10-13-18   | 11-14-19   |
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                       | Total Pressure   | .026      | .045       | .071       | .102       | .139       | .182       | .230       | .284       |
|                       | Static Pressure  | .020      | .036       | .056       | .081       | .110       | .145       | .185       | .228       |
|                       | NC               | —         | —          | —          | 21         | 25         | 30         | 34         | 38         |
|                       | Horizontal Throw | 1-3-12    | 2-5-15     | 3-7-17     | 6-11-21    | 9-13-22    | 10-16-24   | 11-17-25   | 12-18-26   |
|                       | Vertical Throw   | 4-6-10    | 5-8-12     | 7-10-14    | 8-10-15    | 9-11-16    | 10-12-17   | 10-13-18   | 11-14-19   |

#### 48" (1219) Long with 15" (381) Down-Blow

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                       | Total Pressure   | .043       | .077       | .121       | .174       | .236       | .309       | .391       | .482       |
|                       | Static Pressure  | .038       | .067       | .105       | .151       | .206       | .269       | .340       | .420       |
|                       | NC               | —          | —          | —          | 25         | 30         | 34         | 38         | 44         |
|                       | Horizontal Throw | 3-5-16     | 4-7-18     | 4-9-20     | 5-11-22    | 6-13-24    | 7-14-26    | 10-15-28   | 12-17-29   |
|                       | Vertical Throw   | 5-7-10     | 6-8-11     | 7-9-12     | 8-10-13    | 9-10-14    | 9-11-15    | 10-12-16   | 11-12-16   |
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                       | Total Pressure   | .034       | .060       | .094       | .135       | .183       | .239       | .303       | .374       |
|                       | Static Pressure  | .229       | .252       | .081       | .117       | .159       | .207       | .262       | .324       |
|                       | NC               | —          | —          | —          | 22         | 27         | 31         | 35         | 41         |
|                       | Horizontal Throw | 3-5-16     | 4-7-18     | 4-9-20     | 5-11-22    | 6-13-24    | 7-14-26    | 10-15-28   | 12-17-29   |
|                       | Vertical Throw   | 5-7-10     | 6-8-11     | 7-9-12     | 8-10-13    | 9-10-14    | 9-11-15    | 10-12-16   | 11-12-16   |

#### 60" (1524) Long with 15" (381) Down-Blow

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                       | Total Pressure   | .049       | .087       | .136       | .196       | .267       | .349       | .442       | .546       |
|                       | Static Pressure  | .031       | .058       | .090       | .130       | .182       | .240       | .310       | .390       |
|                       | NC               | —          | —          | 23         | 29         | 34         | 38         | 43         | 45         |
|                       | Horizontal Throw | 2-5-16     | 3-8-20     | 5-11-22    | 6-12-25    | 7-12-26    | 8-14-28    | 8-15-29    | 9-16-30    |
|                       | Vertical Throw   | 5-7-10     | 6-8-11     | 7-9-12     | 8-10-13    | 9-11-15    | 10-11-15   | 11-12-16   | 12-13-17   |
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                       | Total Pressure   | .035       | .062       | .097       | .139       | .190       | .248       | .313       | .387       |
|                       | Static Pressure  | .028       | .049       | .077       | .111       | .151       | .197       | .249       | .308       |
|                       | NC               | —          | —          | 20         | 26         | 31         | 35         | 40         | 42         |
|                       | Horizontal Throw | 2-5-16     | 3-8-20     | 5-11-22    | 6-12-25    | 7-12-26    | 8-14-28    | 8-15-29    | 9-16-30    |
|                       | Vertical Throw   | 5-7-10     | 6-8-11     | 7-9-12     | 8-10-13    | 9-11-15    | 10-11-15   | 11-12-16   | 12-13-17   |

#### Return Section

|                 |                          |           |           |           |           |           |           |           |            |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| <b>R Models</b> | Airflow, CFM/FT.         | <b>30</b> | <b>40</b> | <b>50</b> | <b>60</b> | <b>70</b> | <b>80</b> | <b>90</b> | <b>100</b> |
|                 | Negative Static Pressure | -0.1      | -0.18     | -0.27     | -0.38     | -0.50     | -0.63     | -0.79     | -0.98      |

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.

- Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection
- NC values (Noise Criteria) are based

- on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes an NC level less than 20.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.

## Performance Data

### Models 59ND(I) and 59NDR(I) • Horizontal/Vertical Pattern

#### 36"(914) Long with 18" (457) Down-Blow

|                       |                  |           |            |            |            |            |            |            |            |
|-----------------------|------------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| <b>6" Round Inlet</b> | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                       | Total Pressure   | .025      | .044       | .069       | .100       | .136       | .178       | .225       | .278       |
|                       | Static Pressure  | .019      | .034       | .054       | .077       | .105       | .138       | .174       | .215       |
|                       | NC               | —         | —          | 23         | 28         | 32         | 36         | 39         | 44         |
|                       | Horizontal Throw | 4-7-14    | 6-10-16    | 7-12-19    | 10-14-21   | 11-15-23   | 12-16-23   | 14-17-24   | 14-18-26   |
|                       | Vertical Throw   | 2-6-7     | 3-4-8      | 6-8-11     | 7-9-12     | 8-10-13    | 8-11-14    | 9-11-14    | 10-11-15   |
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>90</b> | <b>120</b> | <b>150</b> | <b>180</b> | <b>210</b> | <b>240</b> | <b>270</b> | <b>300</b> |
|                       | Total Pressure   | .022      | .039       | .061       | .088       | .120       | .157       | .199       | .245       |
|                       | Static Pressure  | .017      | .030       | .047       | .068       | .093       | .121       | .153       | .189       |
|                       | NC               | —         | —          | —          | 22         | 26         | 31         | 35         | 38         |
|                       | Horizontal Throw | 1-3-11    | 2-5-14     | 3-6-15     | 5-10-19    | 8-12-20    | 9-14-22    | 10-15-23   | 11-16-23   |
|                       | Vertical Throw   | 4-7-11    | 6-9-13     | 8-11-15    | 9-11-17    | 10-12-18   | 11-13-19   | 11-14-20   | 12-15-21   |

#### 48" (1219) Long with 18" (457) Down-Blow

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                       | Total Pressure   | .040       | .070       | .110       | .158       | .216       | .282       | .356       | .440       |
|                       | Static Pressure  | .034       | .060       | .094       | .136       | .185       | .242       | .306       | .378       |
|                       | NC               | —          | —          | 20         | 26         | 31         | 35         | 39         | 45         |
|                       | Horizontal Throw | 3-5-14     | 4-6-16     | 4-8-18     | 5-10-20    | 5-12-22    | 6-13-23    | 9-14-25    | 11-15-26   |
|                       | Vertical Throw   | 6-8-11     | 7-9-12     | 8-10-13    | 9-11-14    | 10-11-15   | 10-12-17   | 11-13-18   | 12-13-18   |
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>120</b> | <b>160</b> | <b>200</b> | <b>240</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> |
|                       | Total Pressure   | .031       | .055       | .085       | .123       | .168       | .219       | .277       | .342       |
|                       | Static Pressure  | .026       | .047       | .073       | .105       | .143       | .187       | .237       | .292       |
|                       | NC               | —          | —          | —          | 23         | 28         | 32         | 36         | 42         |
|                       | Horizontal Throw | 3-5-14     | 4-6-16     | 4-8-18     | 5-10-20    | 5-12-22    | 6-13-23    | 9-14-25    | 11-15-26   |
|                       | Vertical Throw   | 6-8-11     | 7-9-12     | 8-10-13    | 9-11-14    | 10-11-15   | 10-12-17   | 11-13-18   | 12-13-18   |

#### 60" (1524) Long with 18" (457) Down-Blow

|                       |                  |            |            |            |            |            |            |            |            |
|-----------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>8" Oval Inlet</b>  | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                       | Total Pressure   | .047       | .083       | .130       | .187       | .254       | .332       | .420       | .519       |
|                       | Static Pressure  | .033       | .058       | .091       | .131       | .178       | .232       | .294       | .363       |
|                       | NC               | —          | —          | 24         | 30         | 35         | 39         | 44         | 46         |
|                       | Horizontal Throw | 2-5-15     | 3-8-19     | 5-10-21    | 6-11-24    | 7-11-25    | 8-13-27    | 8-14-28    | 9-15-29    |
|                       | Vertical Throw   | 5-7-11     | 6-8-12     | 7-9-13     | 8-11-14    | 9-12-16    | 11-12-16   | 12-13-17   | 13-14-18   |
| <b>10" Oval Inlet</b> | Airflow, CFM     | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> | <b>450</b> | <b>500</b> |
|                       | Total Pressure   | .033       | .059       | .092       | .132       | .180       | .235       | .297       | .366       |
|                       | Static Pressure  | .026       | .046       | .072       | .103       | .141       | .184       | .233       | .287       |
|                       | NC               | —          | —          | 21         | 27         | 32         | 36         | 41         | 43         |
|                       | Horizontal Throw | 2-5-15     | 3-8-19     | 5-10-21    | 6-11-24    | 7-11-25    | 8-13-27    | 8-14-28    | 9-15-29    |
|                       | Vertical Throw   | 5-7-11     | 6-8-12     | 7-9-13     | 8-11-14    | 9-12-16    | 11-12-16   | 12-13-17   | 13-14-18   |

#### Return Section

|                 |                          |           |           |           |           |           |           |           |            |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| <b>R Models</b> | Airflow, CFM/FT.         | <b>30</b> | <b>40</b> | <b>50</b> | <b>60</b> | <b>70</b> | <b>80</b> | <b>90</b> | <b>100</b> |
|                 | Negative Static Pressure | -.01      | -.018     | -.027     | -.038     | -.050     | -.063     | -.079     | -.098      |

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.

- Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
- NC values (Noise Criteria) are based on a room absorption of 10 dB, re

- 10<sup>-12</sup> watts. Dash (—) in space denotes an NC level less than 20.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.

## Options and Accessories

### Model Series: 5700, 5800, 5600, 59N

#### PF Slot Diffuser Plaster Frame

Slot diffuser mounting frames allow plenum slot diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

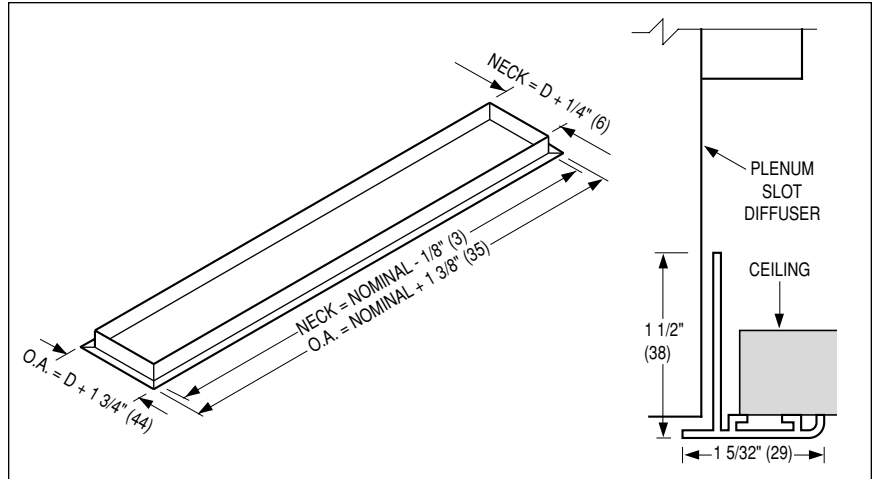
**(Note:** Diffuser will not fit through a plaster frame opening).

**Material:** Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

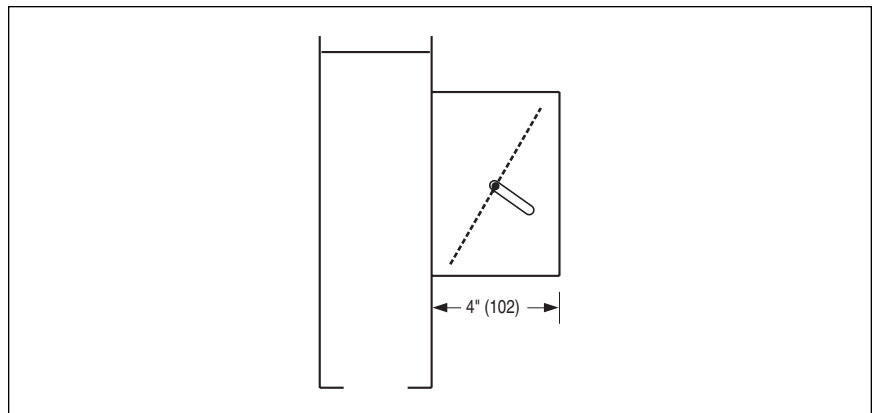
Width = Diffuser Width (D) + 1/2" (13)

Length = Nominal Diffuser Length + 1/4" (6)



#### ID Inlet Damper

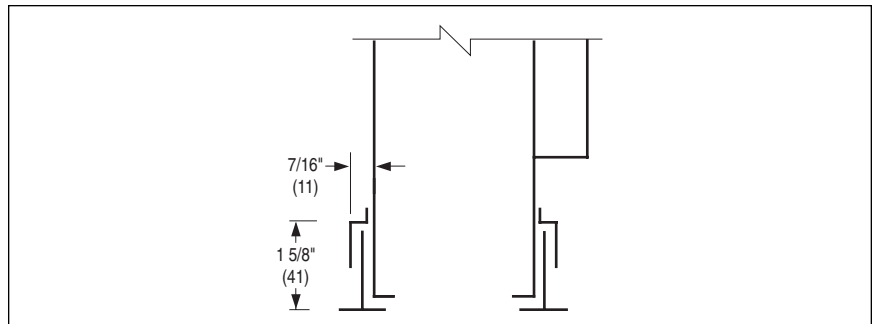
(Supply only)



#### Mounting Clips

**M1** One Side  
(2 opposite inlet side)

**M2** Both sides (4)



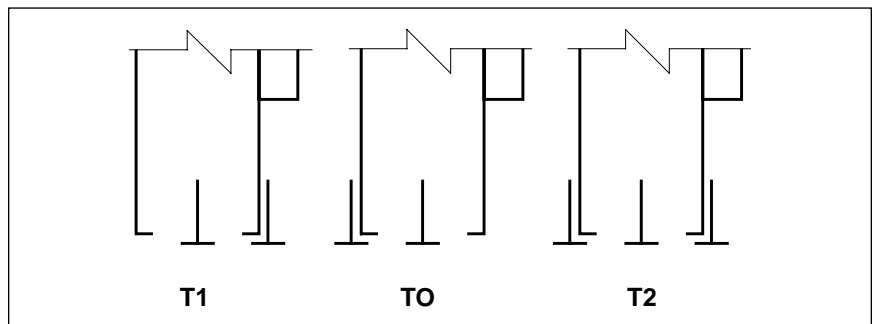
#### Supplementary T-Bars

**T1** One on inlet side

**TO** One opposite inlet side

**T2** Two on both sides

**Note:** Center T-Bars are supplied by Nailor as standard.



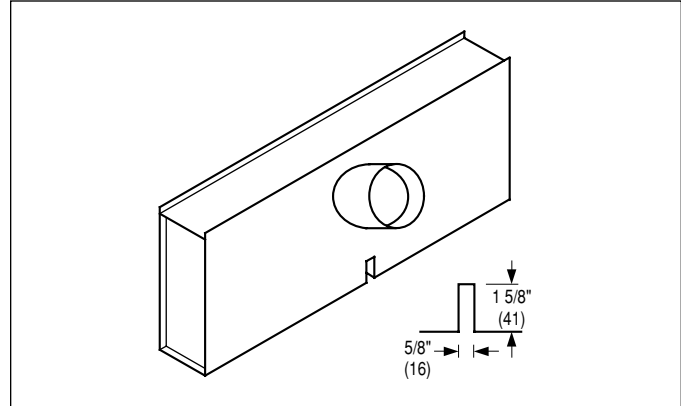
PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## Options and Accessories

### CN Cross Notch

Allows a 48" (1200) unit to be installed in a 24" x 24" (600 x 600) ceiling grid. Available on both supply and return models.

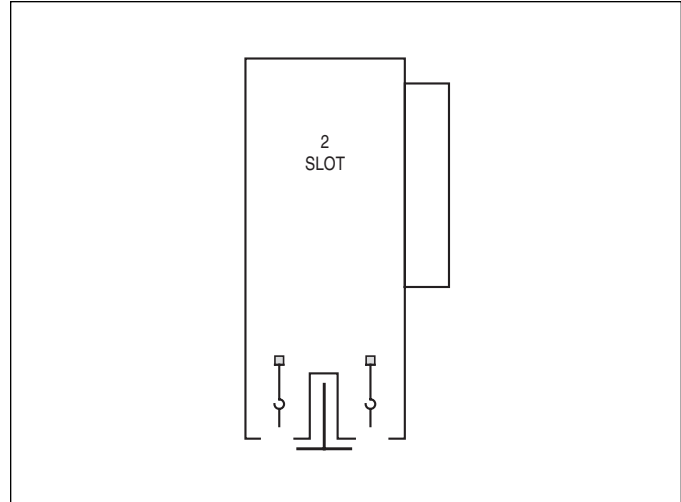
- This option is not available on the 59N Series.



### ST Straddle T-Bar

Center channel supplied with 2 or 4 slot unit. (T-Bar is supplied by others).

- This option is not available on the 59N Series.



### EX External Foil Back Insulation

This option is offered on all non-insulated models. The insulation has a foil backing.

