

## OPTIONS AND ACCESSORIES

Nailor offers a wide range of accessories and options for plenum slot diffusers. Inlet dampers, plaster frames, mounting clips, supplementary T-Bars and cross-notching are available.

**5800, 5700, 5600 Series • Supply**

**5800R, 5700R, 5600R Series • Return**

**59N, 59BS Series • Supply and Return**

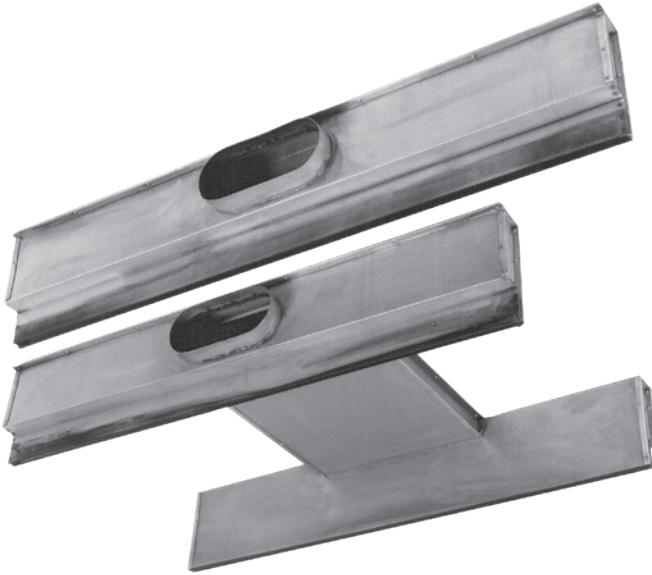
**Page C61**

**Page C61**

**Page C79**



**Model 5715 48" 1 Slot-10-ID-CN-EX-M2**



**Models 5410 and 5420**

## LIGHT TROFFER DIFFUSERS SUPPLY OR RETURN AIR

Nailor's Light Troffer Diffusers are designed to attach easily to standard air handling fluorescent light troffers. They provide an inconspicuous appearance with high engineering performance. Nailor manufactures both a single side or a double side diffuser.

### Supply Air –

Single Side – Model 5410

Double Side – Model 5420

### Return Air –

Single Side – Model 5410R

**Page C80**

**Page C80**

**Page C80**

**HOW TO ORDER OR TO SPECIFY**

**MODEL SERIES: 59N 'N-SLOT' AND 59BS 'BS-SLOT' PLENUM SLOT DIFFUSERS**

**EXAMPLE: 59NDR - 48 - 08 - H9 - D15 - SR - -**

**1. Model Series**

- 59N(I) Supply
  - 59NR(I) Supply/Return
  - 59ND(I) Supply with Down Blow
  - 59NDR(I) Supply/Return with Down Blow
  - 59NDR-SPL Supply/Return with Down Blow
  - 59BS(I) Supply
  - 59BSR(I) Supply/Return
- (Add suffix "I" for optional internal insulation)

**2. Nominal Length**

- Imperial Sizes**  
 inches (mm's)  
 24, 36, 48, 60  
 (610, 914, 1219, 1524)
- Metric Sizes**  
 (mm's)  
 (600, 900, 1200, 1500)

**3. Inlet Size**

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

**4. Height**

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

**5. Down Blow (Length) Selection**

- (Models 59ND(I) and 59NDR(I) only)**
- D8, D12 24" (600)
  - D12, D15 36" (900)
  - D12, D15, D18 48" (1200)
  - D15, D18, D21 60" (1500)

**6. Return Inlet Selection**

- (Models 59NR(I), 59NDR(I), 59BSR(I) only)**
- SR Side Return (default)
  - TR Top Return

**7. Options and Accessories**

- None (default)
  - ID Inlet Damper
  - PF Plaster Frame
- Supplementary T-Bars**
- T1 One (inlet side)
  - T0 One (opposite inlet side)
  - T2 Two (both sides)
- M1 T-Bar Mounting Clips (2)  
 M2 T-Bar Mounting Clips (4)
- EX External Foil Back Insulation
- EQT Earthquake Tabs
- EC Extended Inlet Collar with Bead 3" (76)
- FS Diamond Flow Sensor with Extended Inlet Collar and Bead\*
- RBK Return section painted black internally

**Internal Insulation**

- ("I" models only)
- FGI 1/4" (6.35) Coated fiberglass (default)
  - FFI 3/8" (9.53) Fiber-free foam

**Fineline T-Bar\*\***

- (Only available on 24" & 48" lengths)
- FNLA 1 3/4" (44) High
  - FNLC 1 5/8" (41) High
  - FNLD 1 25/32" (45) High

**Notes:**

1. **Model 59NDR-SPL** is a special application design. 13 1/2" (343) high with insulated cross-talk return. No height options on this model. No return inlet option.
2. \*FS Diamond Flow Sensor is only available with 6" (152) and 8" (203) round inlet sizes. Requires H11 11" (279) high plenum option. FS option is not available on internally insulated (I) models. Not available when ID Inlet Damper is selected.
3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.
4. \*\*Fineline® T-Bar options are not available with supplementary T-Bars T1, T0, T2 or mounting clips M1 or M2.

**PLENUM SLOT AND LIGHT TROFFER DIFFUSERS**

**MODELS 59BS(I) AND 59BSR(I) • 'BS SLOT' PLENUM DIFFUSERS**

**SUGGESTED SPECIFICATION:**

**Vertical Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59BS** or **59BSI Adjustable 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 an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening. 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 59BSI 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 70–2006.

**Vertical Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59BSR** or **59BSRI 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 return air section. The supply plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening and a side inlet for connection to the supply air 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 59BSRI 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 70–2006.

**HOW TO SPECIFY**

**MODELS 59N(I), 59NR(I), 59ND(I) AND 59NDR(I) • 'N SLOT' PLENUM DIFFUSERS**

**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 70–2006.

**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 70–2006.

**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 70–2006.

**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 70–2006.

**Options and Accessories**

**MODEL SERIES: 59N AND 59BS**

**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.

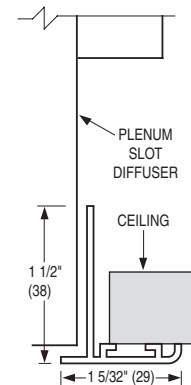
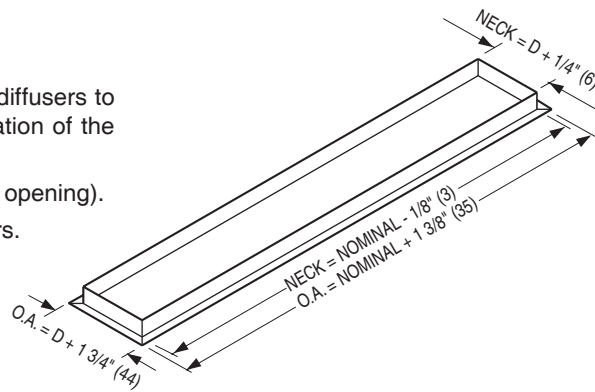
(**Note:** Diffuser will not fit through a plaster frame opening).

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

Recommended Ceiling Opening dimensions:

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

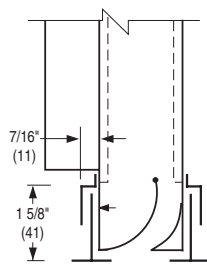
Length = Nominal Diffuser Length + 1/4" (6)



**MOUNTING CLIPS**

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

**M2** Both sides (4)



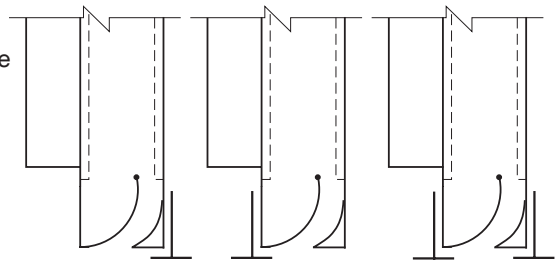
**SUPPLEMENTARY T-BARS**

**T1** One on inlet side

**T0** One opposite inlet side

**T2** Two on both sides

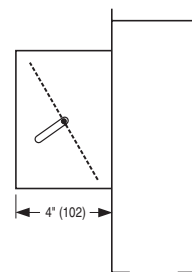
**Note:** Center T-Bars are supplied by Nailor as standard.



**ID INLET DAMPER**

(Supply models only)

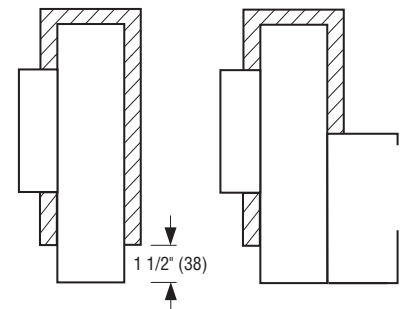
The single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



**EXTERNAL FOIL BACK INSULATION**

**EX** 1/2" (13) thick

1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-craft (FSK) facing, providing a vapor barrier.



**FINELINE/BOLT-SLOT T-BAR CEILING CONSTRUCTION**

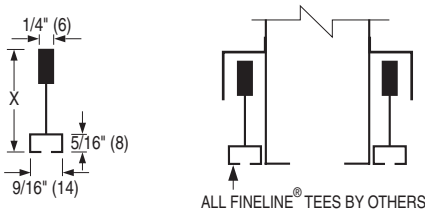
(24" [610] and 48" [1219] Nominal length only)

Plenum length = Nominal - 5/8" (16)

**FNLA** Armstrong Silhouette

**FNLC** Chicago Metallic Ultraline

**FNLD** Donn Finline



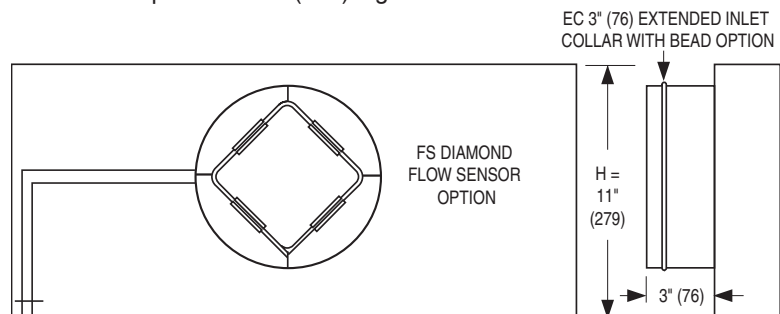
T-Bar Type (Manufacturer)	X
FNLA Armstrong Silhouette	1 3/4" (44)
FNLC Chicago Metallic Ultraline	1 5/8" (41)
FNLD Donn Finline	1 25/32" (45)

**EC EXTENDED INLET COLLAR WITH BEAD**

**FS DIAMOND FLOW SENSOR WITH EXTENDED INLET COLLAR AND BEAD**

Optional multi-point Diamond Flow sensor provides accurate field balancing. Gauge taps are conveniently located flush in the slot face eliminating the need for ceiling access. Includes 3" (76) extended inlet collar. 6" (152) and 8" (203) round inlet sizes only.

Units with FS option are 11" (279) high.



Finline® is a registered trademark of USG Interiors Inc.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## LIGHT TROFFER DIFFUSERS

- SINGLE OR DOUBLE SIDE
- SUPPLY AND RETURN

### Models:

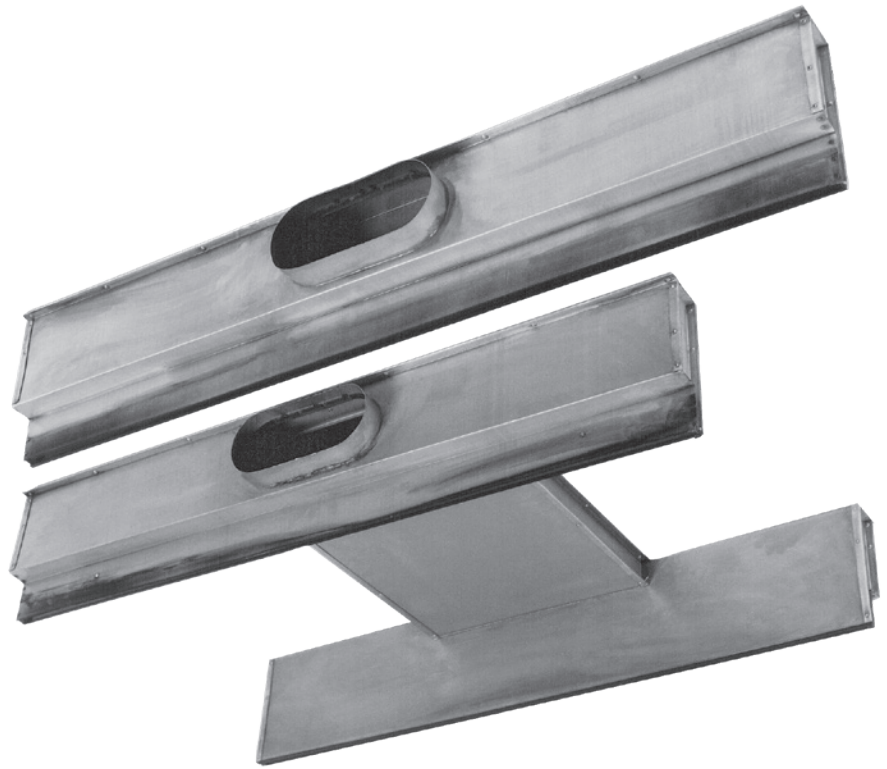
### Supply:

5410 Single Side

5420 Double Side

### Return:

5410R Single Side



Models 5410 and 5420

Model Series 5400 Light Troffer Diffusers have been designed to provide an inconspicuous appearance with high engineering performance.

Model Series 5400 Diffusers attach easily to standard air handling fluorescent light troffers. Custom fabrication is available to suit individual light troffer designs. Lighting and air distribution are provided through a single ceiling opening. The air opening is an unobtrusive slot at the side of the light troffer.

### STANDARD FEATURES:

- Diffusers are available in single or double side configurations.
- Standard design is for use with flush slot type (non-regressed) light troffers and fits most models.
- Custom fabrication is available to suit individual light troffer designs.
- Available to suit light troffer lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) for both imperial and metric ceiling grids.
- Adjustable piano-type hinge pattern controllers.

- Top inlet or low profile side inlet models.
- Inlet collars are sized for nominal duct connection.
- Return models are available.
- Available with adjustable telescopic cross-over for field sizing to suit light troffer (low profile models only).
- Units are shipped knocked down for field assembly.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel construction.

### FINISH OPTIONS:

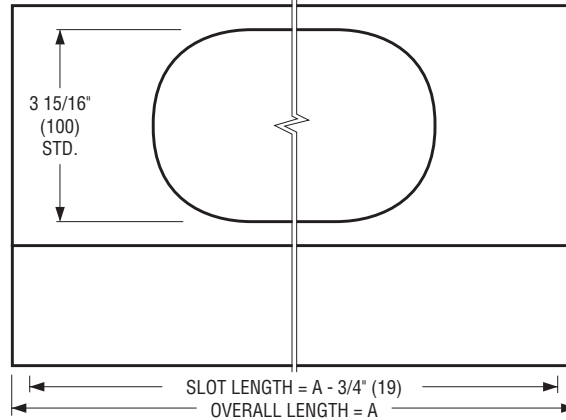
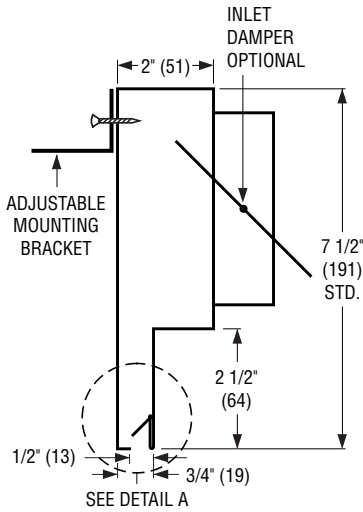
BK Black on exposed surfaces.

### OPTIONS AND ACCESSORIES:

- RS Regressed slot option (pattern controller and horizontal lip are reversed).
- IN Internal insulation.
- EX External foil back insulation.
- HC High clearance option on double side units.
- TE Telescopic adjustable cross-over.
- ID Inlet damper (side inlets only).

## DIMENSIONAL DATA:

MODEL: 5410 • SUPPLY • SINGLE SIDE

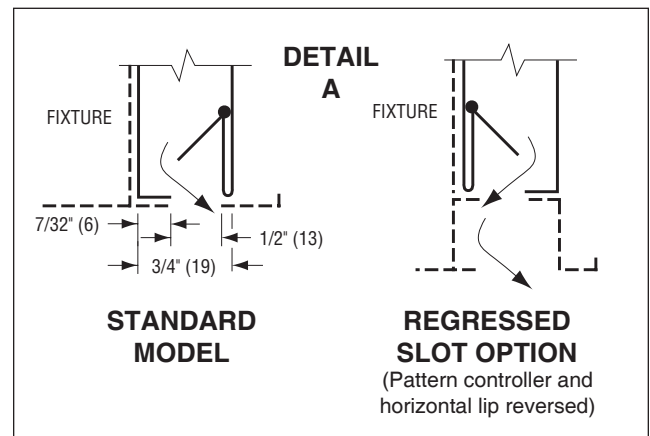


### INLET SELECTION:

- Side Inlet
- S4 4" (102) Round
- S5 5" (127) Oval
- S6 6" (152) Oval

### Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Nominal L	A	Fixture Nominal L	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264



### SPECIFY:

'A' dimension  
(if non-standard) \_\_\_\_\_ .

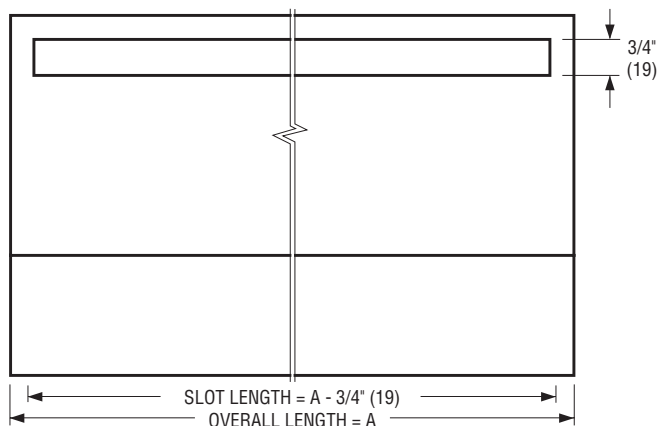
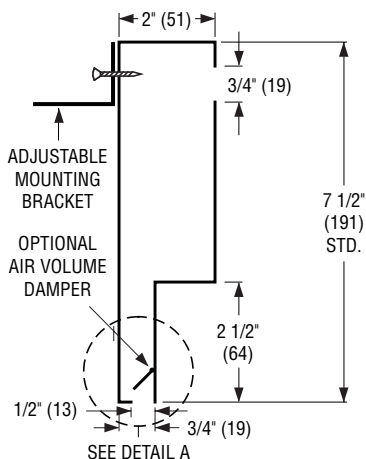
### NOTE:

The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

Dimensions are in inches (mm).

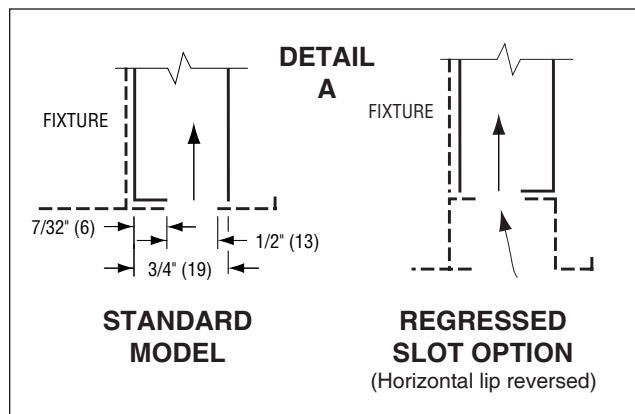
## DIMENSIONAL DATA:

MODEL: 5410R • RETURN • SINGLE SIDE



### Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W	A	Fixture Size W	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264



### SPECIFY:

'A' dimension  
(if non-standard) \_\_\_\_\_ .

### NOTE:

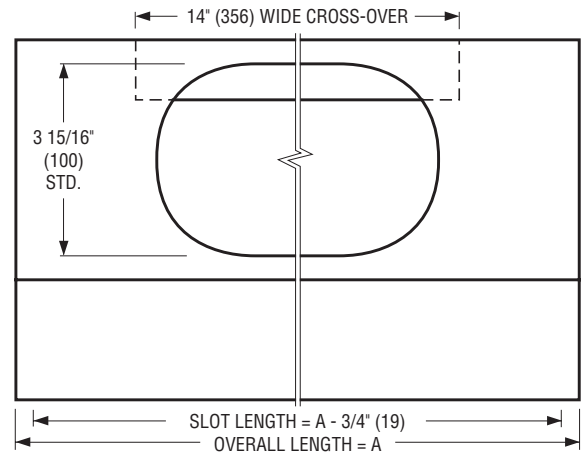
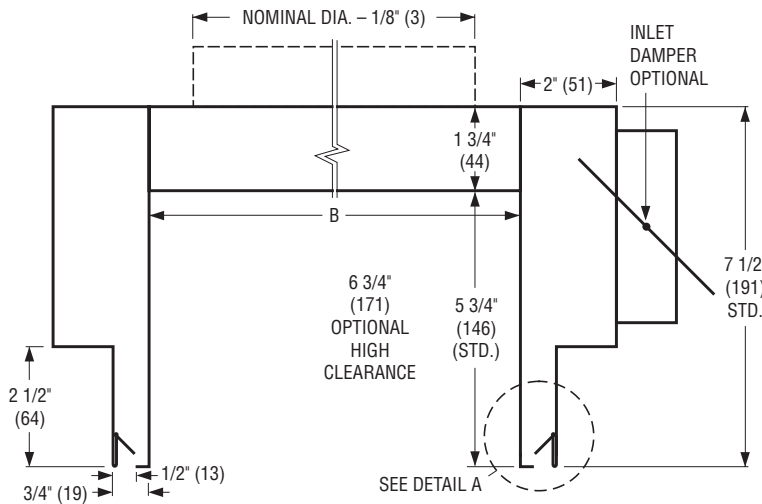
The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

Dimensions are in inches (mm).

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## DIMENSIONAL DATA:

### MODEL: 5420 • SUPPLY • DOUBLE SIDE (SADDLE)

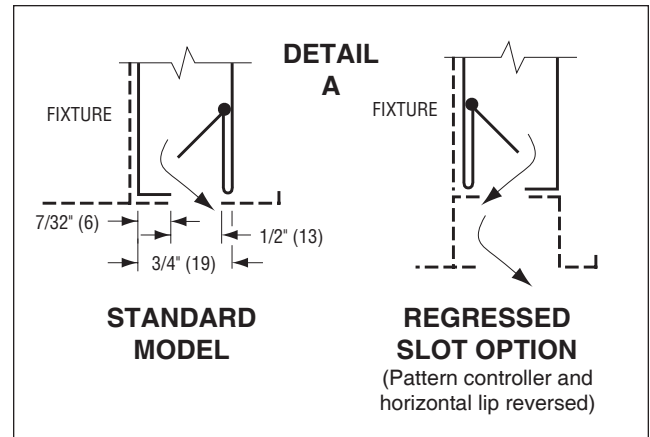


### INLET SELECTION:

Side Inlet		Top Inlet	
S4	4" (102) Round	T4	4" (102) Round
S5	5" (127) Oval	T5	5" (127) Round
S6	6" (152) Oval	T6	6" (152) Round
S8	8" (203) Oval	T7	7" (178) Round
		T8	8" (203) Round

### Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W x L	A	Fixture Size W x L	A
12 x 48	41 1/2	300 x 1200	1054
20 x 60	41 1/2	500 x 1500	1054
24 x 24	17 1/2	600 x 600	445
24 x 48	41 1/2	600 x 1200	1054
30 x 30	23 1/2	750 x 750	597
36 x 36	25 3/4	900 x 900	654



### SPECIFY:

'B' dimension (always required unless TE Telescopic adjustable cross-over option specified) \_\_\_\_\_ .

'A' dimension (if non-standard) \_\_\_\_\_ .

### TE Telescopic Option:

Unit Width	"B" Dimension Adjustment
20" (500)	15" – 18" (381 – 457)
24" (600)	19" – 22" (483 – 559)
30" (750)	25" – 28" (635 – 711)
36" (900)	31" – 34" (787 – 864)

### NOTE:

The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.



PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



## PERFORMANCE DATA:

### MODEL: 5410

#### Single Side • 24" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	30	40	50	60	70	80	90
Total Pressure	.040	.060	.100	.130	.170	.220	.360
Static Pressure	.030	.050	.090	.120	.150	.200	.330
Noise Criteria	15	23	29	34	38	43	46
Throw	2-5	3-7	4-8	5-10	6-11	7-12	8-13

#### Single Side • 36" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110
Total Pressure	.050	.070	.110	.140	.180	.220	.260	.320
Static Pressure	.040	.060	.100	.120	.160	.190	.230	.280
Noise Criteria	–	20	25	29	33	37	40	43
Throw	3-6	3-7	4-8	5-10	6-12	6-14	8-15	9-16

#### Single Side • 48" and 60" Long Light Troffer • 6" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110	120
Total Pressure	.030	.060	.080	.110	.130	.160	.220	.280	.300
Static Pressure	.030	.050	.070	.100	.120	.150	.200	.260	.280
Noise Criteria	–	–	17	21	25	29	34	36	40
Throw	2-5	3-7	4-7	5-9	6-11	7-12	7-14	8-15	9-16

#### Performance Notes:

1. Performance data is based on typical samples of light troffers. Performance may vary with other makes and models of light troffers.
2. Throws are given at 150 and 50 fpm terminal velocities, under isothermal conditions.
3. All pressures are in inches w.g..
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Length in feet	Ak Factor per foot	
	Single	Double
2	.057	.093
3	.089	.145
4	.120	.197