Light Troffer Diffusers
The Nailor Light Troffer Diffusers have been 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

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.

For Supply and Return Plenums  
See page C57
LIGHT TROFFER DIFFUSERS

• SINGLE OR DOUBLE SIDE
• SUPPLY AND RETURN

Models:
Supply:
5410  Single Side
5420  Double Side
Return:
5410R Single Side

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

The 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.

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.

Options:
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).

Material: Corrosion-resistant steel.
Finish: BK Black on exposed surfaces.
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:

<table>
<thead>
<tr>
<th>TROFFER SIZE (CEILING MODULE)</th>
<th>IMPERIAL MODULES (INCHES)</th>
<th>METRIC MODULES (MM)</th>
</tr>
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<tr>
<td>FIXTURE NOM. LENGTH</td>
<td>A</td>
<td>FIXTURE NOM. LENGTH</td>
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<tr>
<td>24</td>
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<td>36</td>
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<td>1200</td>
</tr>
<tr>
<td>60</td>
<td>49 3/4</td>
<td>1500</td>
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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 5420 • Supply • Double Side

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

STANDARD DIMENSIONAL DATA:

<table>
<thead>
<tr>
<th>TROFFER SIZE (CEILING MODULE)</th>
<th>IMPERIAL MODULES (INCHES)</th>
<th>METRIC MODULES (MM)</th>
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<tr>
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<td>W x L</td>
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<tr>
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<td>36 x 36</td>
<td>25 3/4</td>
<td>900 x 900</td>
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</table>

SPECIFY:
- ‘B’ dimension (always required unless TE Telescopic adjustable cross-over option specified) ________ .
- ‘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:

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<th>TROFFER SIZE (CEILING MODULE)</th>
<th>IMPERIAL MODULES (INCHES)</th>
<th>METRIC MODULES (MM)</th>
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<td>1200</td>
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<tr>
<td>60</td>
<td>49 3/4</td>
<td>1500</td>
</tr>
</tbody>
</table>

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).
## Light Troffer Diffusers – Model Series 5400

### 5420 - S6 - 24 x 48 - TE

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<thead>
<tr>
<th>MODEL</th>
<th>5410</th>
<th>5420</th>
<th>5410R</th>
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<td></td>
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<tr>
<td>Double Side</td>
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<td></td>
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</tr>
<tr>
<td>Return</td>
<td>Single Side</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### INLET TYPE/SIZE (Supply)

#### Side Inlet:
- 4" Oval: S4
- 5" Oval: S5
- 6" Oval: S6
- 8" Oval: S8

#### Top Inlet:
- 4" Round: T4
- 5" Round: T5
- 6" Round: T6
- 7" Round: T7
- 8" Round: T8

(Returns are non-ducted)

### OPTIONS AND ACCESSORIES

- Internal Insulation: IN
- External Insulation: EX
- High Clearance: HC
- Regressed Slot Light Fixture: RS
- Telescopic Cross-Over (double side/side inlet models only): TE
- Inlet Damper (side inlet only): ID

### CEILING MODULE SIZE

#### Double Side

- Imperial (inches):
  - 12 x 48, 20 x 60, 24 x 24,
  - 24 x 48, 30 x 30, 36 x 36
- Metric (mm):
  - 300 x 1200, 500 x 1500, 600 x 600,
  - 600 x 1200, 750 x 750, 900 x 900

#### Single Side

- Imperial (inches):
  - 24, 36, 48, 60
- Metric (mm):
  - 600, 900, 1200, 1500

### Notes:

1. If non-standard overall length is required 'A' dimension is to be specified.
2. For double side units, specify 'B' dimension unless TE Telescopic Cross-Over has been selected.
3. In all cases the light fixture manufacturer should supply an approved fully dimensioned drawing to ensure compatibility. In some cases (recommended), a sample light fixture will be required to be sent to the factory.
4. Double side (saddle) units are shipped knocked-down for field assembly.
SUGGESTED SPECIFICATION:

Single Side, Supply
Furnish and install Nailor Model 5410 Light Troffer Supply 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 include a side inlet. The slot opening shall incorporate a piano-type hinge pattern controller. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

Double Side, Supply
Furnish and install Nailor Model 5420 Double Side Light Troffer Supply 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 include a top or side inlet as specified. The slot openings shall incorporate piano-type hinge pattern controllers. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

Single Side Return
Furnish and install Nailor Model 5410R Single Side Light Troffer Return 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 a rectangular return opening. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). All exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer return diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.
**Performance Data**  
**Model 5410**  

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

<table>
<thead>
<tr>
<th>Airflow, CFM</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
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<td>.10</td>
<td>.13</td>
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<td>.05</td>
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<td>7-12</td>
<td>8-13</td>
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**Single Side • 36" Long Light Troffer • 5" Oval Inlet**

<table>
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<tr>
<th>Airflow, CFM</th>
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<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
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<td>SP</td>
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<td>.23</td>
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<tr>
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<td>3-7</td>
<td>4-8</td>
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<td>6-12</td>
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**Single Side • 48" and 60" Long Light Troffer • 6" Oval Inlet**

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<th>Airflow, CFM</th>
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<th>70</th>
<th>80</th>
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<td>7-12</td>
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<td>9-16</td>
</tr>
</tbody>
</table>

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**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. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

---

**CFM** - cubic feet per minute  
**TP** - total pressure - inches w.g.  
**SP** - static pressure - inches w.g.  
**T**  - throw in feet under isothermal conditions  
**NC** - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.
## Performance Data

### Model 5420

**Double Side • 24" Long Light Troffer • 5" Round Inlet • Top Inlet**

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<th>100</th>
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**Double Side • 48" and 60" Long Light Troffer • 8" Round Inlet • Top Inlet**

<table>
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<th>70</th>
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<th>100</th>
<th>120</th>
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**Double Side • 24" Long Light Troffer • 6" Oval Inlet • Side Inlet**

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**Double Side • 48" and 60" Long Light Troffer • 6" Oval Inlet • Side Inlet**

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</tbody>
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**CFM** - cubic feet per minute  
**TP** - total pressure - inches w.g.  
**SP** - static pressure - inches w.g.  
**T** - throw in feet under isothermal conditions  
**NC** - Noise Criteria (values) based on 10 dB room absorption, re 10^-12 watts.

---

### 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. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

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**Length in feet** | **Ak Factor per foot**  
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