LINEAR SLOT DIFFUSER PLENUMS FOR TECHZONE™ TYPE CEILINGS
Model Series 5300TZ Plenums are designed to fit the 5000TZ Series Slot Diffusers. The plenums are constructed from corrosion-resistant steel and are available in two different styles for an extensive performance range. Available choice of 1 to 4 slots are available to suit capacity requirements and three frame styles for Armstrong® TechZone™ and USG Logix™ ceiling systems. The standard constructed plenum is suited for applications that require longer throws and shorter spreads, whereas the modified plenum increases the spread and reduces the throw. Specially designed end caps can be turned up for continuous runs. All styles are offered with internal or external insulation.

Standard Performance (non-insulated) –
Model 5375TZ
Page B30

Standard Performance (internally insulated) –
Model 5375TZI
Page B30

Modified Performance (non-insulated) –
Models 5375TZMP
Page B30

Modified Performance (internally insulated) –
Models 5375TZIMP, 5310TZIMP, 5315TZIMP
Page B30

LINEAR BAR GRILLES
4900 Series provides an extruded aluminum bar grille that offers beautiful styling and efficient performance. Linear bar grilles offer a choice of fixed air patterns with 0°, 15° or 30° air deflection, a choice of bar widths and spacing and a wide choice of border/frame style combinations to suit most types of installation. They are available with an optional opposed blade damper for volume control. Linear bar grilles are recommended for supply air applications in floors, window sills, and high sidewall locations. They are not generally suited to ceiling mounted supply applications (other than for directional spot heating or cooling as an air curtain) as they are not designed for horizontal projection from the face.

Suffix ‘-O’ adds a steel OBD.

Page B47

LINEAR LOUVER DIFFUSERS
48LL Series Linear Louver (Vane) Diffusers are designed to provide a high capacity, architecturally pleasing linear diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. High quality, extruded aluminum angular discharge louvers are designed to create a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum flow rates and ensure optimal comfort conditions.

Models 48LL, 48LL2
Suffix ‘-O’ adds a steel OBD.
Suffix ‘-OA’ adds an aluminum OBD.

Page B66
LINEAR BAR GRILLES
- STANDARD OR HEAVY DUTY MODELS
- SUITABLE FOR CEILING, SIDEWALL, SILL OR FLOOR INSTALLATIONS
- FIXED BARS
- 7 CORE STYLES
- ALUMINUM CONSTRUCTION

1/2" (13) Bar Spacing Models:
- 49-240 • 1/4" (6) Bars • 0° Deflection • Pencil-Proof
- 49-241 • 1/4" (6) Bars • 15° Deflection • Pencil-Proof
- 49-243 • 1/4" (6) Bars • 30° Deflection • Pencil-Proof
- 49-280 • 1/8" (3) Bars • 0° Deflection
- 49-281 • 1/8" (3) Bars • 15° Deflection

1/4" (6) Bar Spacing Models:
- 49-480 • 1/8" (3) Bars • 0° Deflection
- 49-481 • 1/8" (3) Bars • 15° Deflection

- Suffix ‘O’ adds a steel opposed blade damper

Model Series 4900 Linear Bar Grilles have been specially designed to provide the precision quality appearance required for architectural excellence with crisply sculptured styling, careful workmanship and effective air distribution. Designed for heating and cooling applications, supply and return, the grilles are manufactured with precision mitered corners to maximize quality.

STANDARD FEATURES:
- Deflection bars are fixed and are parallel to the long dimension.
- Available in 7 core styles and a variety of frame and sub-frame options.
- Diffusers are supplied in lengths of up to 6 ft. (1829) in a single section.
- Standard incremental units of length are 1, 2, 3, 4, 5 and 6 ft. (305, 610, 914, 1219, 1524 and 1829 mm). However, the 4900 Series is available in any nominal length to suit engineering and architectural requirements.
- Ideal for continuous length applications.
- Multiple sections are provided with alignment strips on the frame and sub-frame to provide superior, positive field alignment.
- End caps are staked and mitered for a superior quality appearance.
- Standard duty models are available for ceiling, wall or sill installations. Heavy duty models are designed specifically for use in floor installations.

CONSTRUCTION MATERIAL:
- Extruded Aluminum.

FINISH OPTIONS:
- AW Appliance White frame is standard. Optional finish is AL Aluminum.
- Premium finishes are SA Satin (clear) Anodized or BC Brushed and Clear Coat lacquer.
- Other finishes are available.

OPTIONS & ACCESSORIES:
- Heavy gauge steel opposed blade damper (add suffix ‘-O’).
- HC Heavy Duty Core.
- DV Rear directional control vanes.
- MC Mitered Corner Sections.
- AD Access Doors.
- BO Blank-offs.
DIMENSIONAL DATA:
STANDARD DUTY FRAME TYPES

**TYPE A**
1" (25) Border

- OVERALL = D + 1 1/2" (38)
- 1" (25)

Standard Frame

**TYPE B**
3/4" (19) Reduced Border

- OVERALL = D + 1" (25)
- 3/4" (19)

**TYPE C**
1" (25) Border and Sub-Frame

- OVERALL = D + 2 1/8" (54)
- 1" (25)

**TYPE D**
1" (25) Border

- OVERALL = D + 1 1/2" (38)
- 1" (25)

Deep Stack (permits DV option)

**TYPE E**
1/2" (13) Narrow Border

- OVERALL = D + 1/2" (13)
- 1/2" (13)

**TYPE F**
1" (25) Border Flange

- OVERALL = D + 1 5/8" (41)
- 1" (25)

Removable core with frame.

**TYPE G**
No Flange

- OVERALL = D
- 3/16" (5)

Removable core with frame.

**TYPE H**
3/4" (19) Bevelled Border

- OVERALL = D + 1 1/8" (29)
- 3/4" (19)

Removable core with frame.

HEAVY DUTY MOUNTING FRAMES FOR FLOOR INSTALLATIONS

**TYPE A**
1" (25) Border

- OVERALL = D + 1 1/2" (38)
- 1" (25)

Standard Frame

**TYPE B**
3/4" (19) Reduced Border

- OVERALL = D + 1" (25)
- 3/4" (19)

**TYPE C**
1" (25) Border and Sub-Frame

- OVERALL = D + 2 1/8" (54)
- 1" (25)

**TYPE D**
1" (25) Border

- OVERALL = D + 1 1/2" (38)
- 1" (25)

Deep Stack (permits DV option)

**TYPE E**
1/2" (13) Narrow Border

- OVERALL = D + 1/2" (13)
- 1/2" (13)

**TYPE F**
1" (25) Border Flange

- OVERALL = D + 1 5/8" (41)
- 1" (25)

Removable core with frame.

**TYPE G**
No Flange

- OVERALL = D
- 3/16" (5)

Removable core with frame.

**TYPE H**
3/4" (19) Bevelled Border

- OVERALL = D + 1 1/8" (29)
- 3/4" (19)

Removable core with frame.
LINEAR BAR GRILLES

DIMENSIONAL DATA:
OVERALL LENGTH AND WIDTH

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>D - 1/2&quot; (13)</td>
<td>D + 1 1/2&quot; (38)</td>
</tr>
<tr>
<td>B</td>
<td>D - 1/2&quot; (13)</td>
<td>D + 1&quot; (25)</td>
</tr>
<tr>
<td>D</td>
<td>D - 1/2&quot; (13)</td>
<td>D + 1 1/2&quot; (38)</td>
</tr>
<tr>
<td>E</td>
<td>D - 1/2&quot; (13)</td>
<td>D + 1/2&quot; (13)</td>
</tr>
<tr>
<td>F</td>
<td>D</td>
<td>D + 1 5/8&quot; (41)</td>
</tr>
<tr>
<td>G</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>H</td>
<td>D</td>
<td>D + 1 1/8&quot; (29)</td>
</tr>
</tbody>
</table>

Dimensions are for length or width.

STANDARD WIDTHS AND CORE

<table>
<thead>
<tr>
<th>Duct Width D</th>
<th>Opening Width A</th>
<th>Number of Bars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot; (38)</td>
<td>3/4&quot; (19)</td>
<td>2</td>
</tr>
<tr>
<td>2&quot; (51)</td>
<td>1 1/4&quot; (32)</td>
<td>4</td>
</tr>
<tr>
<td>2 1/2&quot; (64)</td>
<td>1 3/4&quot; (44)</td>
<td>6</td>
</tr>
<tr>
<td>3&quot; (76)</td>
<td>2 1/4&quot; (57)</td>
<td>8</td>
</tr>
<tr>
<td>3 1/2&quot; (89)</td>
<td>2 3/4&quot; (70)</td>
<td>10</td>
</tr>
<tr>
<td>4&quot; (102)</td>
<td>3 1/4&quot; (83)</td>
<td>12</td>
</tr>
<tr>
<td>5&quot; (127)</td>
<td>4 1/4&quot; (108)</td>
<td>16</td>
</tr>
<tr>
<td>6&quot; (152)</td>
<td>5 1/4&quot; (133)</td>
<td>20</td>
</tr>
</tbody>
</table>

For frames types F, G & H increase the number of bars by two.
Dimensions are in inches (mm).

CROSS-BAR SPACING

Standard Core: S = 12" (305) maximum support bar spacing. Frame Types A, B, C, D and E.
Optional HC Heavy Duty Core: S = 8" (203) maximum.
Standard for floor models with frame types F, G, and H which also include secondary reinforcing support bars.
### DIMENSIONAL DATA:
**TYPICAL FRAME/CORE ASSEMBLIES**

<table>
<thead>
<tr>
<th>CORE WITH FRAME</th>
<th>CORE WITH FRAME &amp; SUB-FRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type A Frame</strong></td>
<td><strong>Type C Frame</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CORE WITH HEAVY DUTY MOUNTING FRAME</th>
<th>CORE ONLY NO FRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type F Heavy Duty Mounting Frame</strong></td>
<td><strong>Type CO No Frame</strong></td>
</tr>
</tbody>
</table>

#### FASTENINGS

<table>
<thead>
<tr>
<th>TYPE A • COUNTERSUNK SCREW HOLES</th>
<th>TYPE B • FRICTION SPRING CLIP</th>
<th>TYPE C • CONCEALED MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>For ceiling, side wall, sill or floor. Frame Types A, B, C, D, F.</td>
<td>For sill installations. Frame Types A, B, D, E, F, G, H.</td>
<td>For ceiling, side wall, sill or floor. Frame Types A, B, C, D, E. Not recommended for use with cores with 1/4&quot; (6) bar spacing.</td>
</tr>
</tbody>
</table>
DIMENSIONAL DATA:
MITERED CORNER SECTIONS

<table>
<thead>
<tr>
<th>Duct Width D</th>
<th>Duct Length D'</th>
<th>A, D</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot; – 4&quot;</td>
<td>12&quot;</td>
<td>12 3/4&quot; (324)</td>
<td>12 1/2&quot; (318)</td>
<td>13 1/16&quot; (332)</td>
<td>12 1/4&quot; (311)</td>
<td>12 13/16&quot; (325)</td>
<td>12&quot; (305)</td>
<td>12 9/16&quot; (319)</td>
</tr>
<tr>
<td>4 1/2&quot; – 12&quot;</td>
<td>18&quot;</td>
<td>18 3/4&quot; (476)</td>
<td>18 1/2&quot; (470)</td>
<td>19 1/16&quot; (484)</td>
<td>18 1/4&quot; (464)</td>
<td>18 13/16&quot; (478)</td>
<td>18&quot; (457)</td>
<td>18 9/16&quot; (471)</td>
</tr>
</tbody>
</table>

Production mitered corner section for floor, ceiling or wall is 90°. Other angles are available.

SPECIAL MITERED CORNERS:
*Available from 45° – 179° as SPL. (A detailed sketch is required for co-ordination with installing contractors).

End sections with single end caps and deflecting cores must be specified and ordered with the desired core deflection direction.

End cap configurations (mitered end cap one end and open opposite end):
Type 'MO' = 0° deflection
Type 'MU' = 15° or 30°
Type 'MD' = 15° or 30°
## DIMENSIONAL DATA:
### TYPICAL OPENING PREPARATIONS

<table>
<thead>
<tr>
<th>CEILING 1</th>
<th>FLOOR OR SILL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Types A, B, D, or E</td>
<td>Frame Types F or H</td>
</tr>
<tr>
<td>![Diagram of CEILING 1 with Duct, Plaster Stop, and Finished Plaster Ceiling]</td>
<td>![Diagram of FLOOR OR SILL 1 with Duct, Finished Floor, Sill, or Curb]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLOOR OR SILL 2</th>
<th>RAISED SILL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Type G</td>
<td>Core Only</td>
</tr>
<tr>
<td>![Diagram of FLOOR OR SILL 2 with Duct, Finished Floor, Sill, or Curb]</td>
<td>![Diagram of RAISED SILL 1 with Metal Enclosure and Core Support]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RAISED SILL 2</th>
<th>SIDE WALL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Types A, B, D, or E</td>
<td>Frame Types A, B, D, or E</td>
</tr>
<tr>
<td>![Diagram of RAISED SILL 2 with Duct, Finished Sill-Marble, Terrazo, Concrete, Vinyl Tile, etc.]</td>
<td>![Diagram of SIDE WALL 1 with Duct and Finished Wood Paneling]</td>
</tr>
</tbody>
</table>
ACCESSORIES:
MODEL SERIES 4900

**TYPE DV DIRECTIONAL VANES**
For widths 3” (76) and larger. Fully adjustable extruded aluminum blades on 3/4” (19) centers perpendicular to length.

Requires Frame Type D (deep stack), F or G.

**TYPE HC HEAVY DUTY CORE**
Standard with Heavy duty mounting frame types F and G. Optional heavy duty core has cross bars on 8” (203) maximum centers (standard duty core is 12” (305)).

**TYPE BO STEEL BLANK-OFF**
For all available widths. Supplied in 6’ (1829) lengths for field cutting. Steel, painted black.

(Not available with Heavy Duty Frame/Border Types F, G or H).

**ACCESS DOORS**
For widths 3” (76) and larger. Fully adjustable extruded aluminum blades on 3/4” (19) centers perpendicular to length.

For all available widths. Supplied in 6’ (1829) lengths for field cutting. Steel, painted black.

**CENTER SECTION:**
Type AD3L  Type AD3R (not shown)
Specify ‘X’ dim.: (distance from end of grille frame): ________.
Access door is a 6” (152) core section hinged on one side. When selected with a deflected core, specify deflection:
- Sill - To the front
- Floor - To the rear
- Wall - Up
- Wall - Down

**ALIGNMENT STRIPS**
Supplied as standard on multiple-section assemblies to provide positive and accurate field alignment, except frame G which uses alignment pins.

Type AD1L (left side)
Type AD1R (right side)
HEAVY DUTY MAXIMUM FLOOR LOADING:
FRAMES F, G, H · ALUMINUM REMOVABLE CORE

### Description:
1. Test results are based on standard construction heavy duty bar grilles with frame types F, G or H and with the standard core types as shown in the table. Support bars are spaced on maximum 8" (203) centers and units tested are with a maximum nominal duct width of 12" (305).
2. The maximum recommended load values shown in the chart represent the load that can be applied to the product without permanent deflection of the grille bars. The required load for actual structure failure is generally 2 to 5 times greater.
3. Concentrated load test is in accordance with NFPA 90B. Units were tested with a concentrated load on a 2" (51) diameter disk applied to the most critical area of the exposed face of the bar grille. In accordance with the standard the tests were conducted at an elevated temperature of 165° F (74° C). The standard requires the grilles to resist, without structural failure a concentrated load of 200 lbs (90.7 kg).
4. Rolling load test is in accordance with European Standard prEN 13264. Units were tested at the load shown with a 6" (152) diameter 1.5" (38) wide nylon wheel, traversed across the grille and supporting structure at 66 fpm (0.33 m/s) a minimum of 25 times in both the horizontal and vertical directions without structural failure.

### Maximum Recommended Floor Loading

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Concentrated Load lbs (kg)</th>
<th>Rolling Load lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>49-480, 49-481</td>
<td>500 (227)</td>
<td>350 (159)</td>
</tr>
<tr>
<td>49-240, 49-241, 49-243</td>
<td>500 (227)</td>
<td>300 (136)</td>
</tr>
<tr>
<td>49-280, 49-281</td>
<td>300 (136)</td>
<td>250 (113)</td>
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</tbody>
</table>

### Notes:
- **Frame Type**
  - F: 1" (25)
  - G: 3/16" (5)
  - H: 3/4" (19)
**PERFORMANCE DATA:**

**MODEL 49-240 • 1/2” (13) SPACING • 1/4” (6) BARS • 0° DEFLECTION**

<table>
<thead>
<tr>
<th>Free Area Square Feet Per Lineal Foot</th>
<th>Nominal Duct Width (Inches)</th>
<th>TP</th>
<th>.010</th>
<th>.022</th>
<th>.039</th>
<th>.062</th>
<th>.087</th>
<th>.119</th>
<th>.156</th>
<th>.198</th>
<th>.245</th>
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<td>12-12-12</td>
<td>13-13-13</td>
</tr>
</tbody>
</table>

**Performance Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities.

2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C). For other lengths, use the correction factor table above.

3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

4. Return Air Applications:
   - NC value is increased by + 4.
   - Neg. SP = 0.8 x TP.

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

**CFM** - cubic feet per minute.

**FPM** - feet per minute velocity.

**TP** - total pressure - inches w.g.

**T** - throw in feet.

**NC** - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

**Throw Correction for Length**

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PERFORMANCE DATA:
MODEL 49-241 • 1/2" (13) SPACING • 1/4" (6) BARS • 15° DEFLECTION

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**Performance Notes:**

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**Throw Correction for Length**

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<th>Active Length, ft.</th>
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**NC Correction for Length**

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<td>1 ft.</td>
<td>150 fpm 100 fpm 50 fpm</td>
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<td>1 ft. +</td>
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</table>

| 1 1/2"           | .041  .037 |
| 2"               | .058  .051 |
| 2 1/2"           | .076  .066 |
| 3"               | .095  .080 |
| 3 1/2"           | .115  .098 |
| 4"               | .137  .113 |
| 5"               | .177  .148 |
| 6"               | .230  .189 |
### Performance Data:

**Model 49-243 • 1/2" (13) Spacing • 1/4" (6) Bars • 30° Deflection**

<table>
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<th>Free Area Square Feet Per Lineal Foot</th>
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<td>234</td>
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</tr>
</tbody>
</table>

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

### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ∆T of 20°F (11°C).
   For other lengths, use the correction factor table above.
3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

### Correction for Length

<table>
<thead>
<tr>
<th>Active Length, ft.</th>
<th>Correction Factor</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>10</th>
<th>15</th>
<th>20</th>
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<tbody>
<tr>
<td>-10</td>
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<td>-1</td>
<td>-1</td>
<td>-1</td>
<td>-1</td>
<td>+2</td>
<td>+3</td>
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</table>

### Throw Correction for Length

<table>
<thead>
<tr>
<th>Active Length</th>
<th>Terminal Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150 fpm</td>
</tr>
<tr>
<td>1 ft.</td>
<td>0.5</td>
</tr>
<tr>
<td>10 ft. +</td>
<td>1.6</td>
</tr>
</tbody>
</table>

### Noise Criteria (values)

NC value is increased by + 4.
Neg. SP = 0.8 x TP.
NC Correction for Length

<table>
<thead>
<tr>
<th>Nominal Width</th>
<th>Ak Factor per foot</th>
<th>Supply</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>.041</td>
<td>.037</td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td>.058</td>
<td>.051</td>
<td></td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>.076</td>
<td>.066</td>
<td></td>
</tr>
<tr>
<td>3&quot;</td>
<td>.095</td>
<td>.080</td>
<td></td>
</tr>
<tr>
<td>3 1/2&quot;</td>
<td>.115</td>
<td>.098</td>
<td></td>
</tr>
<tr>
<td>4&quot;</td>
<td>.137</td>
<td>.113</td>
<td></td>
</tr>
<tr>
<td>5&quot;</td>
<td>.177</td>
<td>.148</td>
<td></td>
</tr>
<tr>
<td>6&quot;</td>
<td>.230</td>
<td>.189</td>
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</tbody>
</table>
### PERFORMANCE DATA:

**MODEL 49-281 • 1/2" (13) SPACING • 1/8" (3) BARS • 15° DEFLECTION**

<table>
<thead>
<tr>
<th>Free Area Square Feet Per Lineal Foot</th>
<th>Nominal Duct Width (Inches)</th>
<th>TP</th>
<th>0.09</th>
<th>0.20</th>
<th>0.35</th>
<th>0.56</th>
<th>0.78</th>
<th>1.07</th>
<th>1.40</th>
<th>1.78</th>
<th>2.20</th>
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</thead>
<tbody>
<tr>
<td>1-1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFM per Foot</td>
<td>16</td>
<td>23</td>
<td>31</td>
<td>39</td>
<td>47</td>
<td>55</td>
<td>62</td>
<td>70</td>
<td>78</td>
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</tr>
<tr>
<td>Sill or Floor</td>
<td>1-1-1</td>
<td>33</td>
<td>33</td>
<td>38</td>
<td>43</td>
<td>47</td>
<td>50</td>
<td>53</td>
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</tr>
<tr>
<td>Side Wall</td>
<td>2-4-6</td>
<td>5-5-5</td>
<td>8-8-9</td>
<td>11-11-12</td>
<td>13-14-15</td>
<td>15-16-18</td>
<td>17-19-21</td>
<td>20-22-23</td>
<td>22-22-23</td>
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</tr>
<tr>
<td>NC</td>
<td>1-2</td>
<td>20</td>
<td>26</td>
<td>31</td>
<td>36</td>
<td>40</td>
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<td></td>
</tr>
<tr>
<td>Throw Correction for Length</td>
<td>150 fpm</td>
<td>100 fpm</td>
<td>50 fpm</td>
<td>100 fpm</td>
<td>150 fpm</td>
<td>200 fpm</td>
<td>250 fpm</td>
<td>300 fpm</td>
<td>350 fpm</td>
<td>400 fpm</td>
<td>450 fpm</td>
</tr>
<tr>
<td>NC Correction for Length</td>
<td>-10</td>
<td>-7</td>
<td>-4</td>
<td>-1</td>
<td>+2</td>
<td>+3</td>
<td></td>
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</tbody>
</table>

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

### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm in accordance with ANSI/ASHRAE Standard 70 – 2006.

2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C). For other lengths, use the correction factor table above.

3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

4. Return Air Applications:
   - NC value is increased by + 4.
   - Neg. SP = 0.8 x TP

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

**MODEL 49-480 • 1/4" (6) SPACING • 1/8" (3) BARS • 0° DEFLECTION**

<table>
<thead>
<tr>
<th>Free Area Square Feet Per Lineal Foot</th>
<th>Nominal Duct Width (Inches)</th>
<th>TP</th>
<th>.011</th>
<th>.024</th>
<th>.043</th>
<th>.068</th>
<th>.096</th>
<th>.130</th>
<th>.171</th>
<th>.218</th>
<th>.269</th>
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</tbody>
</table>

**NC Correction for Length**

<table>
<thead>
<tr>
<th>Active Length, ft.</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>10</th>
<th>15</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction Factor</td>
<td>-10</td>
<td>-7</td>
<td>-4</td>
<td>-1</td>
<td>0</td>
<td>+2</td>
<td>+3</td>
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</table>

**Throw Correction for Length**

<table>
<thead>
<tr>
<th>Terminal Velocity</th>
<th>150 fpm</th>
<th>100 fpm</th>
<th>50 fpm</th>
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<tbody>
<tr>
<td>1 ft.</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>10 ft.</td>
<td>1.6</td>
<td>1.4</td>
<td>1.2</td>
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</table>

<table>
<thead>
<tr>
<th>Nominal Width</th>
<th>Ak Factor per foot</th>
<th>Supply</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>.041</td>
<td>.034</td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td>.056</td>
<td>.048</td>
<td></td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>.074</td>
<td>.064</td>
<td></td>
</tr>
<tr>
<td>3&quot;</td>
<td>.092</td>
<td>.078</td>
<td></td>
</tr>
<tr>
<td>3 1/2&quot;</td>
<td>.111</td>
<td>.098</td>
<td></td>
</tr>
<tr>
<td>4&quot;</td>
<td>.131</td>
<td>.111</td>
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<tr>
<td>6&quot;</td>
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<td>.173</td>
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</tbody>
</table>

**Performance Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ∆T of 20°F (11°C). For other lengths, use the correction factor table above.
3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.
4. Return Air Applications:
   - NC value is increased by + 4.
   - Neg. SP = 0.8 x TP.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.
### PERFORMANCE DATA:

#### MODEL 49-481 • 1/4" (6) SPACING • 1/8" (3) BARS • 15° DEFLECTION

<table>
<thead>
<tr>
<th>Free Area Square Feet Per Lineal Foot</th>
<th>Nominal Duct Width (Inches)</th>
<th>TP</th>
<th>.012</th>
<th>.026</th>
<th>.049</th>
<th>.077</th>
<th>.109</th>
<th>.148</th>
<th>.195</th>
<th>.247</th>
<th>.304</th>
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<tbody>
<tr>
<td>1.4</td>
<td>0.059</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Performance Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C).
   For other lengths, use the correction factor table above.
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### NC Correction for Length

<table>
<thead>
<tr>
<th>Active Length, ft.</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>10</th>
<th>15</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction Factor</td>
<td>-10</td>
<td>-7</td>
<td>-4</td>
<td>-1</td>
<td>0</td>
<td>+2</td>
<td>+3</td>
</tr>
</tbody>
</table>

### Throw Correction for Length

<table>
<thead>
<tr>
<th>Active Length</th>
<th>Terminal Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150 fpm</td>
</tr>
<tr>
<td>1 ft.</td>
<td>0.5</td>
</tr>
<tr>
<td>10 ft.</td>
<td>1.6</td>
</tr>
</tbody>
</table>

**Nominal Width**

<table>
<thead>
<tr>
<th>Nominal Width</th>
<th>Ak Factor per Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>Return</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>.045</td>
</tr>
<tr>
<td>2&quot;</td>
<td>.059</td>
</tr>
<tr>
<td>2 1/2&quot;</td>
<td>.074</td>
</tr>
<tr>
<td>3&quot;</td>
<td>.091</td>
</tr>
<tr>
<td>3 1/2&quot;</td>
<td>.108</td>
</tr>
<tr>
<td>4&quot;</td>
<td>.126</td>
</tr>
<tr>
<td>5&quot;</td>
<td>.161</td>
</tr>
<tr>
<td>6&quot;</td>
<td>.195</td>
</tr>
</tbody>
</table>
LINEAR BAR GRILLES – MODEL SERIES 4900
MODELS 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481

EXAMPLE: 49 - 240 - O - 60" x 4" - B - AW - C - MM - —

1a. Models
   49-240  1/2" (13) spacing, 1/4" (6) bars, 0° deflection
   49-241  1/2" (13) spacing, 1/4" (6) bars, 15° deflection
   49-243  1/2" (13) spacing, 1/4" (6) bars, 30° deflection
   49-280  1/2" (13) spacing, 1/8" (3) bars, 0° deflection
   49-281  1/2" (13) spacing, 1/8" (3) bars, 15° deflection
   49-480  1/4" (6) spacing, 1/8" (3) bars, 0° deflection
   49-481  1/4" (6) spacing, 1/8" (3) bars, 15° deflection

Blank-off
   49-BO  Steel – 6 ft. long

1b. Damper
   (model suffix)
   —    None (default)
   O    Steel Opposed Blade Damper

2. Nominal Length
   inches or mm’s

3. Width
   inches or mm’s

4. Frame/Border Type
   A   1" (25) Flange
   B   3/4" (19) Flange
   C   1" (25) Flange and Sub-frame
   D   1" (25) Flange with Deep Stack
   E   1/2" (13) Flange
   CO  Core only

Heavy Duty Frame/Border Type
   F   1" (25) Flange, Heavy Duty (Floor)
   G   No Flange, Heavy Duty (Floor)
   H   3/4" (19) Beveled Flange, Heavy Duty (Floor)

5. Finish
   AW  Appliance White (default)
   AL  Aluminum
   BK  Black
   BW  British White
   MI  Mill
   PC  Prime coat paint
   PPA Paint prepared aluminum
   SP  Special custom color
   SA  Satin (clear) anodized
   LBA Light Bronze anodized
   MBA Medium Bronze anodized
   DBA Dark Bronze anodized
   BC  Brushed and clear coat lacquer
   LBP Light Bronze paint
   MBP Medium Bronze paint
   DBP Dark Bronze paint

6. Fastening
   N   None (default)
   A   Screw Holes
   B   Spring Clips
   C   Concealed mounting

7. End Cap Configuration
   (Not applicable on Frame/Border Type CO)
   MM  Mitered Mitered (default)
   MO  Open Open
   MU  Mitered Open, Deflection up (15°, 30°)
   MD  Mitered Open, Deflection down (15°, 30°)

OTHER OPTIONS AND ACCESSORIES:

8. Access Door
   AD1L Left Side
   AD1R Right Side
   AD3L Center, opens from Left Side
   AD3R Center, opens from Right Side

   Specify ‘X’ Dimension (in. [mm])

9. Heavy Duty Core
   HC  Heavy Duty Core

10. Deflector Vanes
     DV  Directional Vanes (D, F, G or H Frame only)

11. Angle Cut
    —    None (default)
    AC1 One end, Specify Angle
    AC2 Both ends, Specify Angle

Notes:
1. Type A fastening is not available on Frame Types E, G or H.
2. Access door not available with Frame/Border Types F, G or H
   or when damper is required. AD1L and AD1R require mitered end
   cap same side.
3. Blank-offs are supplied in 6 ft. sections for field trimming. Specify
   width only.
4. Angle cut AC1 is not applicable with end cap MM. AC2 requires
   OO end cap. If AC1 or AC2 is selected with Frame/Border Type
   CO then end cap will not apply.
# HOW TO ORDER

## MITERED CORNER SECTION LINEAR BAR GRILLES – MODEL SERIES 4900


**EXAMPLE:** 49 - 240MC - 4" - 12 - B - AW - C - FO - 90

1. **Models**
   - 49-240MC  1/2" (13) spacing, 1/4" (6) bars, 0° deflection
   - 49-241MC  1/2" (13) spacing, 1/4" (6) bars, 15° deflection
   - 49-243MC  1/2" (13) spacing, 1/4" (6) bars, 30° deflection
   - 49-280MC  1/2" (13) spacing, 1/8" (3) bars, 0° deflection
   - 49-281MC  1/2" (13) spacing, 1/8" (3) bars, 15° deflection
   - 49-480MC  1/4" (6) spacing, 1/8" (3) bars, 0° deflection
   - 49-481MC  1/4" (6) spacing, 1/8" (3) bars, 15° deflection

2. **Width**
   - inches or mm's

3. **Duct Length - Overall Dimension**
   - inches or mm's
   - 12 12" (305) (Default if width is ≤ 4" [102])
   - 18 18" (457) (Default if width is > 4" [102])

4. **Frame/Border Type**
   - A 1" (25) Flange
   - B 3/4" (19) Flange
   - C 1" (25) Flange and Sub-frame
   - D 1" (25) Flange with Deep Stack
   - E 1/2" (13) Flange

   **Heavy Duty Frame/Border Type**
   - F 1" (25) Flange, Heavy Duty (Floor)
   - G No Flange, Heavy Duty (Floor)
   - H 3/4" (19) Beveled Flange, Heavy Duty (Floor)

5. **Finish**
   - AW Appliance White (default)
   - AL Aluminum
   - BK Black
   - BW British White
   - MI Mill
   - PC Prime coat paint
   - PPA Paint prepared aluminum
   - SP Special custom color
   - SA Satin (clear) anodized
   - LBA Light Bronze anodized
   - MBA Medium Bronze anodized
   - DBA Dark Bronze anodized
   - BC Brushed and clear coat lacquer
   - LBP Light Bronze paint
   - MBP Medium Bronze paint
   - DBP Dark Bronze paint

6. **Fastening**
   - N None
   - A Screw Holes
   - B Spring Clips
   - C Concealed mounting

7. **Application/Pattern**
   - **0° Deflection Cores:**
     - FO Floor, Ceiling, Sill (Flat)
   - **15° and 30° Deflection Cores:**
     - FA Floor, Ceiling, Sill; Deflection Inside
     - FB Floor, Ceiling, Sill; Deflection Outside

8. **Mitered Angle**
   - 90 90° (default)
   - 135 135°
   - AN Degree of Angle (Specify angle = _____ )

**Notes:**

1. Damper not available.
2. Type A fastening is not available on Frame Types E, G or H.
SUGGESTED SPECIFICATION:
Furnish and install Nailor Model (select one) 49-240 (1/2" [13] spacing, 1/4" [6] bars, 0° deflection); 49-241 (1/2" [13] spacing, 1/4" [6] bars, 15° deflection); 49-243 (1/2" [13] spacing, 1/4" [6] bars, 30° deflection); 49-280 (1/2" [13] spacing, 1/8" [3] bars, 0° deflection); 49-281 (1/2" [13] spacing, 1/8" [3] bars, 15° deflection); 49-480 (1/4" [6] spacing, 1/8" [3] bars, 0° deflection); 49-481 (1/4" [6] spacing, 1/8" [3] bars, 15° deflection) Linear Bar Grilles of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) shall be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous grille sections together. All frame types shall be extruded aluminum and include fastening as specified. A grille with a frame selection of A, B, C, D or E shall have a non-removable core that has fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 12" (305) centers. A grille with a heavy duty floor frame selection of F, G or H shall have a removable core that attaches with core clips. The core shall have fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 8" (203) centers. The finish is to be AW Appliance White (optional finishes are available).
(Optional) A damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided on all units.
The manufacturer shall provide published performance data for the linear bar grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.