E4DS - 4" DEEP 45 DEGREE DRAINABLE D BLADE EXTRUDED ALUMINUM STATIONARY LOUVER

SECTION VIEW

ELEVATION VIEW

<table>
<thead>
<tr>
<th>CONSTRUCTION</th>
<th>FRAME STYLE</th>
<th>STIFFENER</th>
<th>VERTICAL MULLION</th>
<th>HORIZONTAL MULLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD</td>
<td>CHANNEL &quot;C&quot; FRAME</td>
<td>EXTERIOR BLADE SUPPORT BRACKETS</td>
<td>EXTERIOR MULLION COVER ENTIRE HEIGHT</td>
<td>EXPOSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STIFFENER (EVERY 60&quot; WIDTH MAX)</td>
<td></td>
<td>EXPOSED</td>
</tr>
<tr>
<td>OPTIONAL</td>
<td>FLANGE &quot;F&quot; FRAME</td>
<td>EXTERIOR BLADE SUPPORT BRACKETS</td>
<td>EXTERIOR BLADE SUPPORT BRACKETS</td>
<td>HIDDEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STIFFENER (SIZE TO MEET WIND LOADS)</td>
<td>STIFFENERS (JOINED BY INSTALLED)</td>
<td>HIDDEN</td>
</tr>
</tbody>
</table>

ARCHITECTURAL LOUVERS
266 W Mitchell Ave - Cincinnati, OH 45232
PH: (888) 568-8371  Fax: (888) 568-8370

ARCHITECTURAL SHAPES (SEE SPECIAL SHAPES TECH SHEET)
HIGHER WIND LOAD RATINGS
ARCHITECTURAL FINISHES
VARIOUS SCREENS

OPTIONS:
MOUNTING FOR VARIOUS OPENING TYPES (SEE FRAME STYLES BELOW)
ARCHITECTURAL SHAPES (SEE SPECIAL SHAPES TECH SHEET)
HIGHER WIND LOAD RATINGS
ARCHITECTURAL FINISHES
VARIOUS SCREENS

- SEE MOUNTING OPTIONS TECHNICAL SHEET FOR MORE FRAME STYLES:
  1. J-CHANNEL FOR SIDING OR STUCCO
  2. G-CHANNEL FOR GLAZING INTO STOREFRONT OR CURTAINWALL

ARCHITECTURAL LOUTERS

ARCHITECTURAL LOUTERS

DRAWN BY: JRR  DATE: 08/2007  DRAWING TYPE: TECHNICAL SHEET  DRAWING TITLE: E4DS

COPYRIGHT 2007
Harary, LLC dba Architectural Louvers
The Architectural Louvers Model E4DS is tested in accordance with AMCA 500-L Laboratory Methods of Testing Air Louvers for Rating. The data presented are the results of these tests. Tested louver size is 48" wide x 48" high and does not include the effects of bird screen.

Airflow Resistance
(Std Air Density - .075 lb/ft³) - Test Figure 5.5-6.5

Free Area Velocity (ft/min)
Static Pressure Drop (inches wg.)
Intake

Architectural Louvers certifies that model E4DS louver shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance ratings and water penetration ratings only.

Model: E4DS resistance to airflow
Free area velocities (shown left) are higher than average face velocity or duct velocity.
See louver application information.

Water Penetration
(Std Air Density - .075 lb/ft³ - Test Duration 15 Minutes)

Free Area Velocity (ft/min)
Water Penetration (oz/ft²)
The AMCA Water Penetration Test provides a method for comparing various louver models and designs as to their efficiency in resisting the penetration of rainfall under specific laboratory test conditions. The point of zero water penetration is defined as that velocity where the water penetration curve projects through .01 oz. of water (penetration) per sq. ft. of louver free area. The beginning point of water penetration for this Model E4DS is 930 fpm free area velocity. These performance ratings do not guarantee a louver to be weatherproof or stormproof and should be used in combination with other factors in selecting louvers (i.e. prevailing wind direction, weather patterns for the building location area, desired safety factor, etc.).

November 2007
MODEL: E4DS  
Louver Application Guide

Application of air louvers involves selecting an airflow velocity through the louver free area (free area velocity in fpm) that produces an acceptable pressure drop and for intake applications minimizes carry-over of normally occurring rain. Architectural Louvers does not warrant our louvers to prevent water penetration under all combinations of wind and rain. Water penetration through Model E4DS begins at 930 fpm free area velocity. Intake air louver selection using a free area velocity below 930 fpm is recommended. Louver selection involves the following steps, and depending on the information provided, either step may come first.

**Select Free Area Velocity - Fan Forced Intake:**
Using the Airflow Resistance Chart, select a free area velocity that produces an acceptable pressure drop with minimal water penetration. (Water penetration is not typically considered when selecting exhaust louvers.)

**Determine Louver Free Area:**
Using the free area velocity from previous step and total cfm, determine the louver Free Area required. Using louver Free Area Chart, select a louver with the required free area. If louver size is given, determine free area from chart and work backwards to determine maximum airflow. See examples below.

### Free Area Chart (ft²)

<table>
<thead>
<tr>
<th>Louver Height (Inches)</th>
<th>12</th>
<th>24</th>
<th>36</th>
<th>48</th>
<th>60</th>
<th>72</th>
<th>84</th>
<th>96</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0.38</td>
<td>0.82</td>
<td>1.26</td>
<td>1.70</td>
<td>2.13</td>
<td>2.52</td>
<td>2.95</td>
<td>3.39</td>
</tr>
<tr>
<td>24</td>
<td>0.89</td>
<td>1.90</td>
<td>2.92</td>
<td>3.94</td>
<td>4.95</td>
<td>5.84</td>
<td>6.86</td>
<td>7.87</td>
</tr>
<tr>
<td>48</td>
<td>2.02</td>
<td>4.34</td>
<td>6.65</td>
<td>8.96</td>
<td>11.27</td>
<td>13.30</td>
<td>15.61</td>
<td>17.92</td>
</tr>
<tr>
<td>60</td>
<td>2.53</td>
<td>5.42</td>
<td>8.31</td>
<td>11.20</td>
<td>14.09</td>
<td>16.62</td>
<td>19.51</td>
<td>22.41</td>
</tr>
<tr>
<td>84</td>
<td>3.54</td>
<td>7.59</td>
<td>11.64</td>
<td>15.68</td>
<td>19.73</td>
<td>23.27</td>
<td>27.32</td>
<td>31.37</td>
</tr>
<tr>
<td>96</td>
<td>4.17</td>
<td>8.94</td>
<td>13.70</td>
<td>18.47</td>
<td>23.24</td>
<td>27.41</td>
<td>32.17</td>
<td>36.94</td>
</tr>
</tbody>
</table>

### Louver Selection Examples - Fan Forced Intake:

**Example 1:**
Airflow given as 6000 cfm (fan volume)– select louver size.

A. Determine louver free area by dividing airflow by free area velocity (do not exceed 930 fpm on intake louver applications).

\[
\text{cfm / fpm} = \text{ft}^2 \\
6000 / 930 = 6.45
\]

B. Select a louver with at least the required louver free area from Free Area Chart above.

- Width x Height = Free Area from Chart
- 48 x 36 = 6.63

(Other selections available – See Free Area Chart above)

C. Calculate Free Area Velocity

\[
fpm = \frac{\text{cfm}}{\text{ft}^2 \text{ free area of louver}} \\
905 = 6000 / 6.63
\]

D. Check the pressure drop of the selected louver at the calculated airflow (Airflow Resistance Chart on Page 2).

\[
\text{in w.g.} = 0.127 \text{ at } 905 \text{ fpm free area velocity}
\]

**Example 2:**
Louver size given as 96 W x 48 H – determine maximum airflow.

A. Use Free Area Chart to obtain ft² for given size

\[
\text{Free Area} = 17.92 \text{ sq ft}
\]

B. Multiply Free Area x Airflow Area Velocity (Do not exceed 930 fpm on intake louver applications).

\[
\text{ft}^2 \times \text{fpm} = \text{cfm} \\
17.92 \times 930 = 16670
\]

C. Check the pressure drop of the selected louver at the calculated airflow (Airflow Resistance Chart on Page 2).

\[
\text{in w.g.} = 0.127 \text{ at } 930 \text{ fpm free area velocity}
\]

November 2007