Application and Design

Iris Dampers are unique because they provide both a tool to control and measure airflow. The blade configuration always keeps the flow in the middle of the duct, reducing both turbulence and noise. Built-in static pressure measuring ports on each side of the damper allow for direct measurement of pressure drop, which can be converted to airflow and/or velocity. To adjust airflow simply position the calibrated control lever.

- Precise airflow measurement
- Accurate air balancing
- Single station measurement and control
- Quiet by design
- Galvanized steel construction
- Fully retractable blades for duct cleaning
- EPDM gasket for leakproof, airtight duct design

<table>
<thead>
<tr>
<th>Nominal</th>
<th>Ød Pipe Diameter</th>
<th>ØD Overall Diameter</th>
<th>A</th>
<th>L</th>
<th>Weight lbs</th>
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</table>
The Iris damper features two measuring ports. One is on each side of the aperture. A manometer connected across the ports will measure differential pressure (pressure drop). If you know the orifice configuration and the pressure drop, airflow (CFM) can be calculated.

The formula is:
\[
\text{Flow(L/sec)} = K \times \sqrt{\text{pressure drop (pascals)}}
\]

K is a constant derived experimentally from the orifice configuration and cataloged in the K table below.

Follow these steps:
1. Find the damper settings along the outside edge of the damper to the right of the measurement ports. **The Damper Setting is __________**
2. Measure the pressure drop - connect a manometer to both measurement ports. **Pressure Drop = __________**
   If your instrument is calibrated in pascals then you may proceed with the calculations, if not then convert InWC into pascals. **1 pascal = .004 InWC. __________ InWC / .004 = __________ pa**
3. Look up K in the table below. Enter the table with the damper diameter and go right to the damper setting. **K = __________**
4. Substitute known values into the equation: \((K) \text{ ________} \times (\sqrt{\text{Press. drop (pa)})} = \text{Flow (liters/sec)}\)
5. **Flow (l/s) __________ x 2.119 CFM/(l/s) = __________ CFM**

Alternatively: [www.youngregulator.com/Iris](http://www.youngregulator.com/Iris) as a link to a spreadsheet that automates these calculations.

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<th>mm</th>
<th>Inches</th>
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<td>12.8</td>
<td>10.9</td>
<td>8.9</td>
</tr>
</tbody>
</table>
Performance Curves

4" Iris

5" Iris

6" Iris

8" Iris

10" Iris

CFM

Pressure Drop in WC

q (l/s)

CFM

L_{1/2} (dB[A])