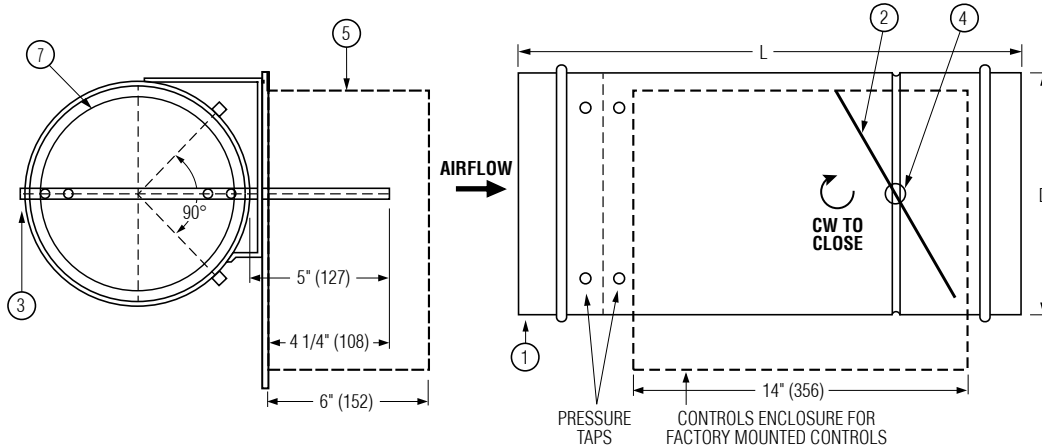




**ROUND LABORATORY EXHAUST TERMINAL UNIT  
WITH ORIFICE RING FLOW SENSOR**  
DIGITAL CONTROL • PRESSURE INDEPENDENT  
VARIABLE AIR VOLUME  
**MODEL: D36VRL**



**Dimensional Data**

Unit Size	Airflow Range cfm (l/s)	D	L	Duct Area (Sq. ft.)	K-Factor (cfm)	Velocity (fpm)	F-Factor (amp.)
4	0 – 225 (0 – 106)	3 7/8 (98)	18 (457)	–	–	–	–
5	0 – 400 (0 – 189)	4 7/8 (124)	18 (457)	0.136	447.9	3293	1.48
6	0 – 550 (0 – 260)	5 7/8 (149)	18 (457)	0.196	497.1	2536	2.49
7	0 – 800 (0 – 378)	6 7/8 (175)	18 (457)	0.267	835.6	3130	1.64
8	0 – 1100 (0 – 579)	7 7/8 (200)	18 (457)	0.349	1015.0	2908	1.90
9	0 – 1400 (0 – 661)	8 7/8 (225)	20 (508)	0.442	1182.5	2675	2.24
10	0 – 1840 (0 – 868)	9 7/8 (251)	20 (508)	0.545	1569.0	2879	1.94
12	0 – 2500 (0 – 1081)	11 7/8 (302)	20 (508)	0.785	2106.5	2683	2.23
14	0 – 3370 (0 – 1590)	13 7/8 (352)	22 (559)	1.069	3208.9	3002	1.78
16	0 – 4525 (0 – 2135)	15 7/8 (403)	22 (559)	1.395	3883.2	2784	2.07

**Equations:**

$$Q = K \times \Delta P \quad \Delta P = \left(\frac{Q}{K}\right)^2 \quad F = \left(\frac{4005 \times A}{K}\right)^2$$

**Where:**

Q = Airflow Rate (cfm)  
 $\Delta P$  = Sensor Differential Pressure ("w.g.)  
 K = K-Factor Calibration Constant (standard air)  
 F = Amplification Factor (sensor gain)  
 A = Nom. Duct Area (sq. ft.)  
 The K-Factors tabulated in the table are the airflow required to produce a 1.0" w.g. differential pressure at the Diamond Flow Sensor.

**Standard Construction:**

- Casing: 20 ga. (0.91), Type 316 stainless steel with stiffening beads.
- Blade: Two layers of 22 ga. (0.76), Type 316 stainless steel laminated together with Teflon peripheral gasket for tight shut-off. 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 3" w.g. (750 pa.) and less than 2% at 6" w.g. (1500 pa.) as tested in accordance with ANSI / ASHRAE Standard 130.
- Bearings: Teflon.
- Drive Shaft/Axles: 1/2" (13) diameter Type 316 stainless steel, double-bolted to blades. Indicator mark on the end of the shaft to show damper position.
- Type 304 stainless steel controls enclosure mounting bracket.
- Full NEMA 1 type controls enclosure for factory mount controls.
- Orifice ring flow sensor to measure airflow. The orifice sensor features 2 upstream and 2 downstream averaging

pressure taps which minimizes particulate collection in contaminant exhaust applications. UL rated FR 3/16" (4.76) I. D. pneumatic flow sensor tubing (not shown). Supplied with brass balancing/calibration tees.

- Right-hand control location is standard (as shown) when looking in direction of airflow. Left-hand is optional.

**Controls:**

- Digital (by others).
- See separate submittal.

**Options and Accessories:**

- 24 VAC Control transformer.
- Toggle disconnect switch.
- Controls enclosure 22 ga. (0.85), galvanized steel.
- Controls enclosure. 22 ga. (0.76), Type 304 S.S.
- Removable Type 304 S.S. multi-point averaging Diamond Flow Sensor (in lieu of orifice plate).
- Special features \_\_\_\_\_.

<b>SCHEDULE TYPE:</b>	Dimensions are in inches (mm)			
<b>PROJECT:</b>				
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR:</b>	10 - 12 - 21	3600	NEW	36VRL-1