

Airfoil Damper

APPLICATION

The CRD-VCD(AF) is a low leakage rated control damper used in low to high pressure and velocity system. The CRD-VCD(AF) damper is constructed with triple V-groove shape for velocities up to 3000 fpm (15.24 m/s) and 10 in w.g. (2.5 kPa). The CRD-VCD(AF) may be installed vertically or horizontally position and a wide range of electric or handed actuators are available for these models.



Ratings

Pressure: 0 to 2.5 kPa (0 to 10 in. wg) pressure differential.

Velocity: 0 to 15.24 m/s (0 to 3000 fpm)

Leakage: Class 1A @ 0.25 kPa (1 in. wg)

Class 1 @ 1.0 kPa (4 in. wg)

Class 1 @ 2.5 kPa (10 in. wg)

Temperature: 0 to 49 °C (32 to 120 °F)

STANDARD CONSTRUCTION

FRAME : .

Galvanized Steel

Blade

Aluminum Steel

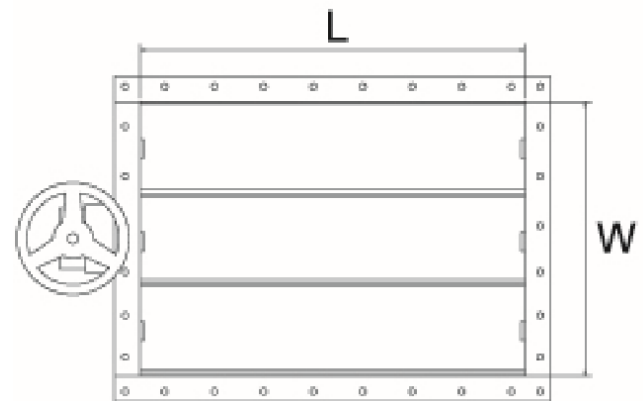
DAMPER SIZES

MINIMUM SIZE

12"W x 12"H (305 x 305 mm).

MAXIMUM SIZE

59"W x 36"H (1500 x 914 mm)



AMCA LICENSED AIR LEAKAGE AND PERFORMANCE DATA



Chern Dar Enterprise Co., Ltd. certifies that the CRD-VCD(AF) show 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 Leakage and Air Performance Ratings.

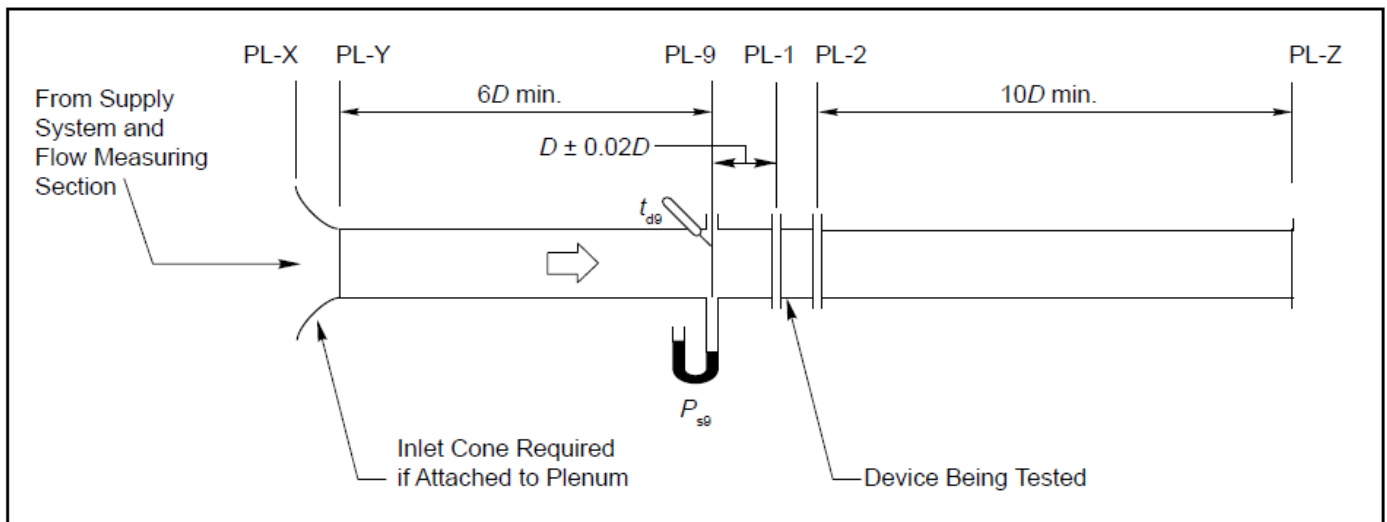


Figure 5.3 Test Device Setup with Inlet and Outlet Ducts

CRD-VCD(AF) Air performance of Actual Test Results from Individual Sizes

305mm × 305mm		610mm × 610mm		914mm × 914mm	
Pressure Drop (Pa)	Velocity (m/s)	Pressure Drop (Pa)	Velocity (m/s)	Pressure Drop (Pa)	Velocity (m/s)
15.9	12.00	9.9	12.01	7.5	12.00
11.2	10.01	7.0	10.01	5.6	10.01
7.7	8.00	4.6	8.01	3.7	8.01
4.6	6.01	2.9	6.02	2.1	6.00
2.5	4.02	1.5	4.01	0.9	4.01

1220mm × 305mm		305mm × 1220mm			
Pressure Drop (Pa)	Velocity (m/s)	Pressure Drop (Pa)	Velocity (m/s)		
12.6	12.00	37.5	12.1		
9.1	10.01	25.5	10.0		
6.3	8.01	16.8	8.1		
4.0	6.00	9.4	6.0		
2.0	4.01	4.5	4.0		

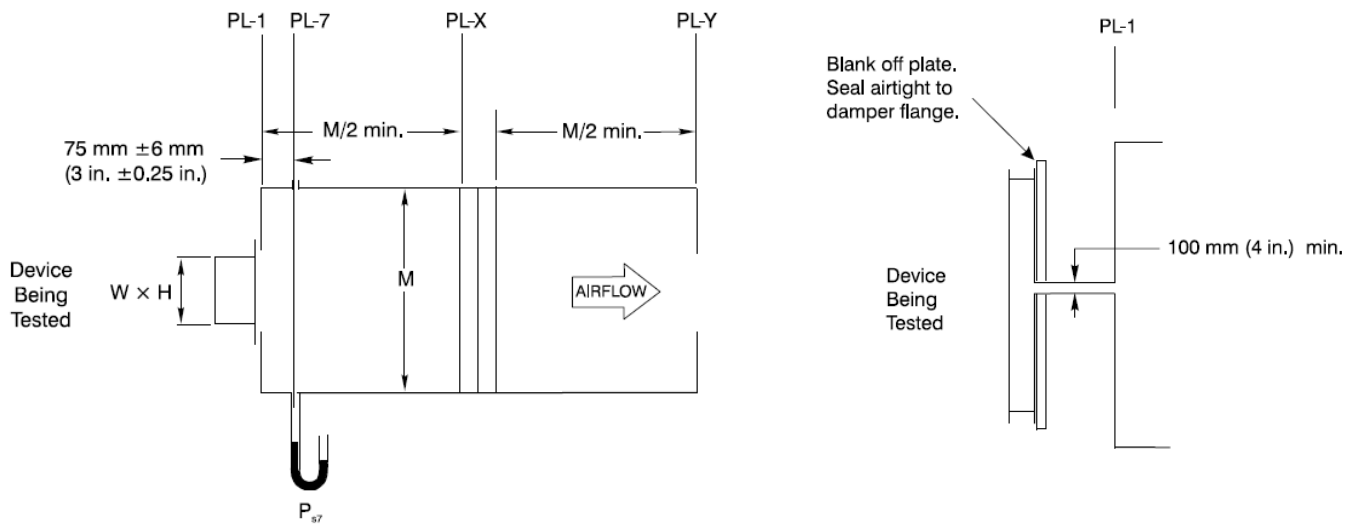


Figure 5.4 Test Damper Setup with Outlet Chamber

CRD-VCD(AF) Leakage Class of Actual Test Results from Individual Sizes

Damper Size (in.)	Maximum Allowable Leakage, cfm/ft ²				
	1 in. wg	4 in. wg	6 in. wg	8 in. wg	10 in. wg
305mm × 1220mm Torque = 82 N · m/m ²	1A	I	I	I	I
1500mm × 914mm Torque = 43.8 N · m/m ²	1 in. wg	2 in. wg	3 in. wg	4 in. wg	6 in. wg
	NA	I	I	I	II

Air Leakage testing conducted in accordance with ANSI/AMCA 500-D, Figure 5.4 Alternate. Data are based on a torque of 82 N · m/m² applied to close and seat the damper during the test. Air leakage is based on operation between 0°C - 49°C (32°F - 120°F)

AMCA Allowable Air Leakage to Achieve Classification

Pressure / Class	Maximum Allowable Leakage, cfm/ft ²				
	1 in. wg	4 in. wg	6 in. wg	8 in. wg	10 in. wg
1A	3	N/A	N/A	N/A	N/A
I (1)	4	8	9.8	11	12.6
II (2)	10	20	24.5	28	31.6
III (3)	40	80	98	112	126.5