

CONTROL DAMPERS
Heavy Duty 16 Ga. Steel Blade

OPPOSED BLADE - PARALLEL BLADE DAMPER

Suggested Specifications:

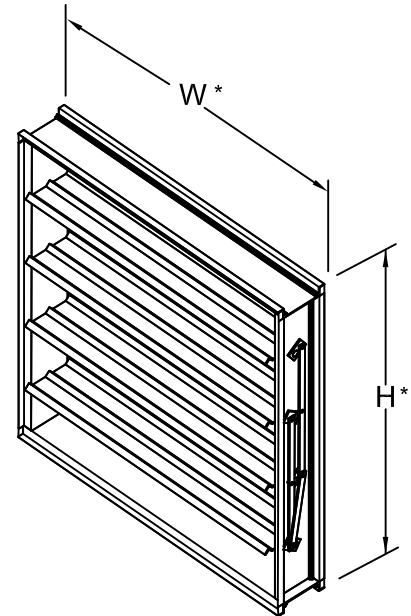
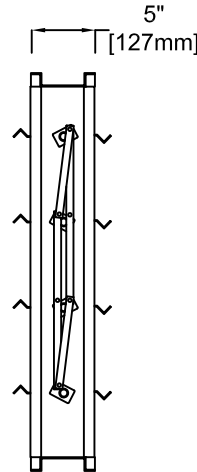
Furnish and install at location shown on drawing or in accordance with schedules dampers meeting the following specifications: Rectangular damper shall have 16 gauge galvanized steel blades with galvanized steel rollformed frames. Damper to be equal to United Enertech MODEL CD-110 or CD-111.

Ratings:

Pressure - up to 4" [102mm] w.g.

FPM Table

12" wide	- 3500 FPM
24"	- 2800
36"	- 2300
48"	- 2100



Standard Features:

Frame: Rollformed Galvanized Steel

Blades: 4"-7" [102mm - 178mm]wide,
 16ga. Galvanized Steel

Bearing: Nylon

Linkage: Concealed in frame

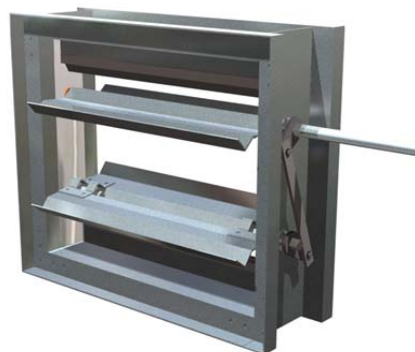
Axles: 3/8" [9.52mm] square plated steel

Control Shaft: Ø1/2" x 4-1/2" [13mm x 114mm] long shaft supplied with all single section dampers for field mounted actuators. Factory-installed jackshaft supplied with all multiple section dampers

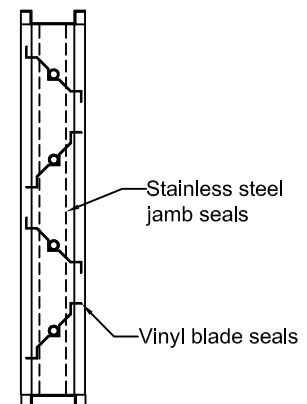
*Undersized 1/4" [6.35mm]
 Minimum Size: 6"w x 6"h [152mm x 152mm]
 Maximum Size: 48"w x 60"h [1219mm x 1524mm] (single section)
 9" [229mm]h and under - single blade
 Maximum multi-section: unlimited

Options:

- Blade Seals PVC (180° F) [82° C]
- Compression Jamb Seals (stainless steel)
- Header Plates (end flange)
- Hand Quadrant
- Stand Off Bracket, 2" [51mm]
- Factory Installed Pneumatic or Electric Actuators (see cat. sheet H-1)
- Face and Bypass Damper
- Chain Operator
- Position Switch
- Heresite coated (air dry)
- Epoxy coated (powder coated) (*epoxy coated linkage)
- Flange frame (one side)



OPTIONAL:



Job Name:	<input type="checkbox"/> MODEL CD-110 (Opposed)		
Location:	<input type="checkbox"/> MODEL CD-111 (Parallel)		
Architect:	DRAWN BY:	DATE:	REV. DATE:
Engineer:	CLJ	12-10-01	12-23-13
Contractor:	REV. NO.	APPROVED BY:	DWG. NO.:
	49	BGT	A-3

MODEL CD-110, 111 PERFORMANCE DATA

Imperial Units (Forward Flow)

Damper Width X Height	1 in. w.g. Class	4 in. w.g. Class	8 in. wg Class	*Torque (per sq. ft.)
36" x 36"	Class III	Class III	Class III	5.55 lbs-in

*Torque applied to hold damper in closed position

Air leakage is based on operation between 50°F to 104°F. All data corrected to represent air density of 0.075 lbs/ft.³

Imperial Units (Back Flow)

Damper Width X Height	1 in. w.g. Class	4 in. w.g. Class	8 in. wg Class	*Torque (per sq. ft.)
36" x 36"	Class III	Class III	Class III	5.55 lbs-in

*Torque applied to hold damper in closed position

Standard International Units (Forward Flow)

Damper Width X Height (mm)	250 Pa Class	1 KPa Class	2 KPa Class	*Torque
915 X 915	Class III	Class III	Class III	6,394 grams-cm

*Torque applied to hold damper in closed position



Air leakage is based on operation between 10°C to 40°C. All data corrected to represent air density of 1.201 kg/m.³

Standard International Units (Back Flow)

Damper Width X Height (mm)	250 Pa Class	1 KPa Class	2 KPa Class	*Torque
915 X 915	Class III	Class III	Class III	6,394 grams-cm

*Torque applied to hold damper in closed position

Pressure Class	Leakage, ft ³ /min /ft ²			
	Required Rating		Extended Ranges (optional)	
	1"	4"	8"	12"
I	4	8	11	14
II	10	20	28	35
III	40	80	112	140

Pressure Class	Leakage, L/s /m ²			
	Required Rating		Extended Ranges (optional)	
	0.25 kPa	1.0 kPa	2.0 kPa	3.0 kPa
I	20.3	40.6	55.9	71.1
II	50.8	102	142	178
III	203	406	569	711

All data corrected to represent standard air at a density of 0.075 lbs/ft.³

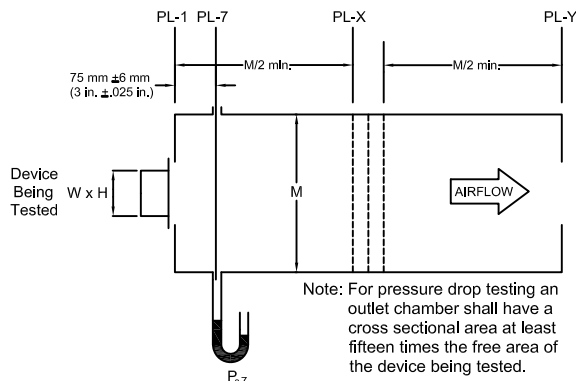


Figure 5.4- Test Device Setup with Outlet Chamber

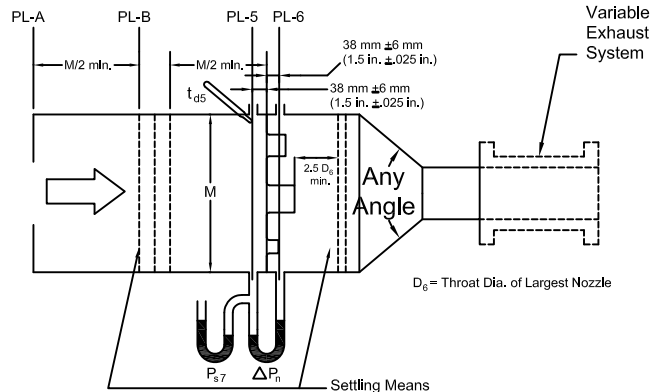
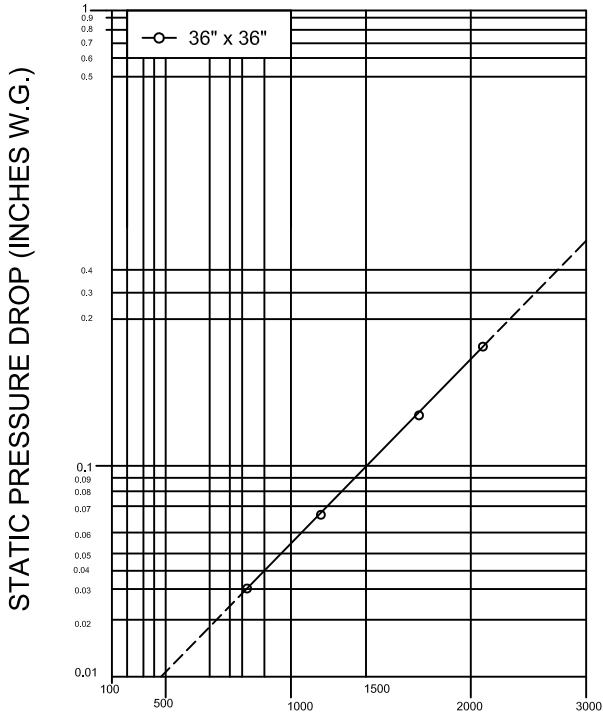


Figure 6.3- Airflow Rate Measurement Setup- Multiple Nozzle Chamber on Fan Inlet

MODEL CD-110, 111 PERFORMANCE DATA

PRESSURE DROP



Face Velocity (FT/MIN)

Based on STANDARD AIR- .075 lb. per cubic foot.

CD-110, 111 sizes: 36x36
(915x915)

36 x 36

Face Velocity ft/min (m/s)	Pressure Drop in. w.g. (Pa)
1000 (5.08)	0.055
1500 (7.62)	0.100
2000 (10.16)	0.175

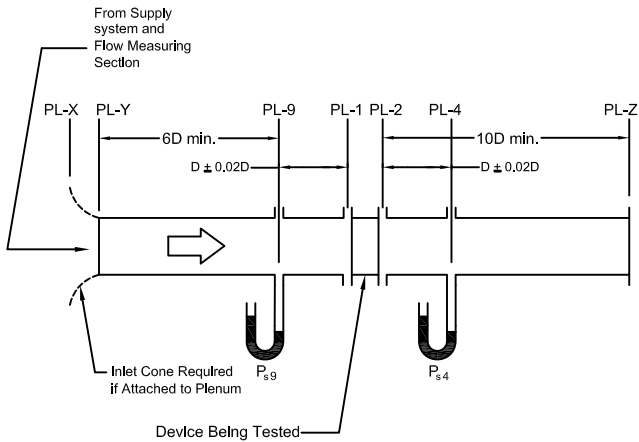


Figure 5.3- Test Device Setup with Inlet and Outlet Ducts

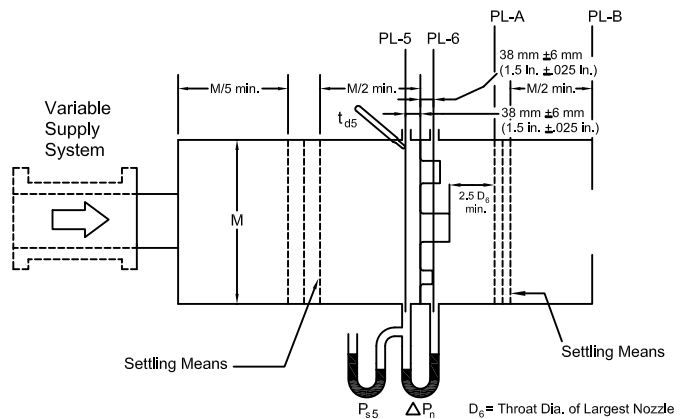


Figure 6.5- Airflow Rate Measurement Setup- Multiple Nozzle Chamber on Fan Outlet