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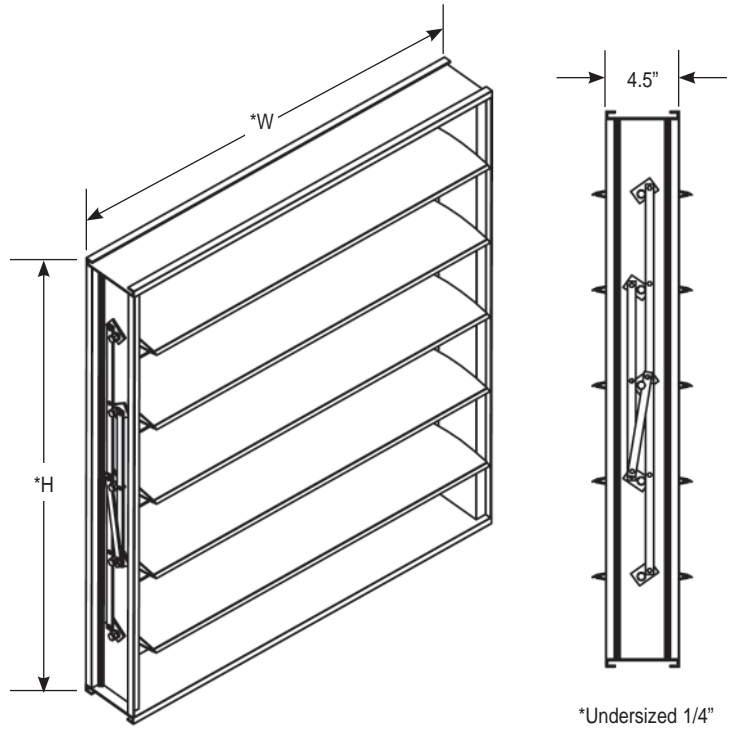
Model FAAA & FABA

Standard Specifications

- Frame:** .081 extruded aluminum (6063-T5)
- Blades:** hollow airfoil with .375" thick end nose (6063-T5) extruded aluminum
- Extended Shaft:** 1/2" diameter
- Bearing:** bronze oilite
- Linkage:** concealed in frame
- Pivot Axels:** zinc with thrust bushings
- Blade Seals:** removable EPDM (250°F)
- Jamb Seals:** stainless steel (compression)

Options

- Channel Frame (standard)
- Flange Frame
- Insulated (Foam-filled Blades)
- Header Plates (End Flange)
- Hand Quadrant
- Factory Actuators
- Stand Off Bracket, 2"
- Face and By-pass Damper
- Chain Operator
- Stainless Steel Bearings
- Air Dry Heresite Coated
- Powder Coated - Epoxy



Minimum Size: 8"w x 8"h
 Maximum Size: 60"w x 72"h (single section)
 Maximum Multi-Section: Unlimited

Tag	Qty.	Size		Frame	Variations
		Width	Height		

Project
Arch./Engr.
Representative

Location
Contractor
Date

Model FAAA & FAB A Performance Data

Imperial Units (Forward Flow)

Damper Width x Height	1 in. w.g. Class	4 in. w.g. Class	8 in. w.g. Class	*Torque (per sq. ft.)
12" x 12"	Class I	Class II	Class II	15 lbs-in
24" x 24"	Class I	Class I	Class I	12.59 lbs-in
36" x 36"	Class I	Class I	Class I	15 lbs-in
12" x 48"	Class III	Class III	Class II	12.59 lbs-in
48" x 12"	Class I	Class I	Class I	12.59 lbs-in
60" x 36"	Class II	Class II	Class II	15 lbs-in

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

*Torque applied to hold damper in closed position.

Imperial Units (Back Flow)

Damper Width x Height	1 in. w.g. Class	4 in. w.g. Class	8 in. w.g. Class	*Torque (per sq. ft.)
12" x 12"	Class II	Class III	Class III	15 lbs-in
24" x 24"	Class I	Class I	Class II	12.59 lbs-in
36" x 36"	Class II	Class III	Class III	15 lbs-in
12" x 48"	Class III	Class III	Class III	12.59 lbs-in
48" x 12"	Class II	Class II	Class II	12.59 lbs-in
60" x 36"	Class III	Class III	Class II	15 lbs-in

*Torque applied to hold damper in closed position.

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

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

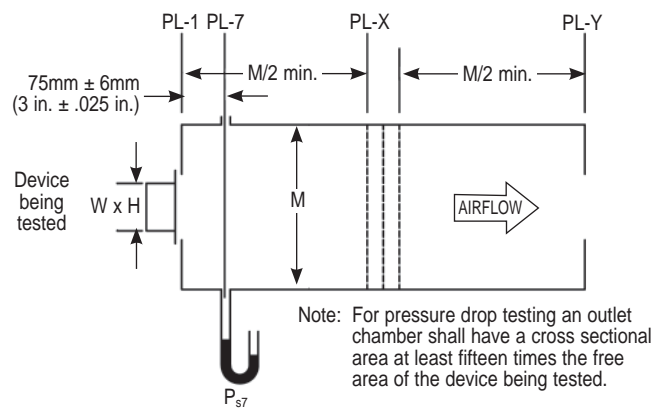


Figure 5.4 - Test Device Setup with Outlet Chamber

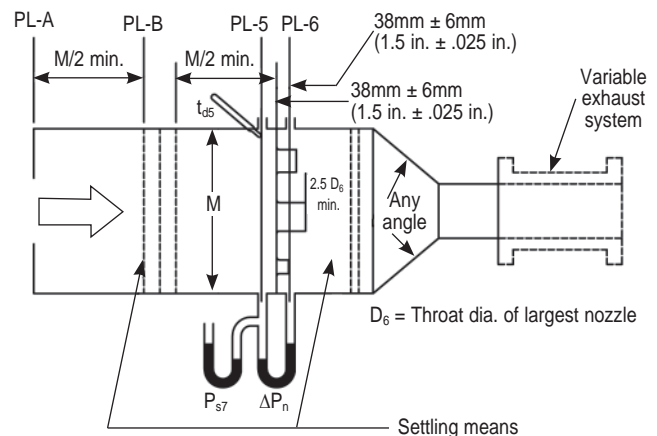


Figure 6.3 - Airflow Rate Measurement Setup - Multiple Nozzle Chamber on Fan Inlet

Model FAAA & FAB A Performance Data

Standard International Units (Forward Flow)

Damper Width x Height (mm)	250 Pa Class	1 kPa Class	2 kPa Class	*Torque
305 x 305	Class I	Class II	Class II	2,679 grams-cm
610 x 610	Class I	Class I	Class I	2,248 grams-cm
915 x 915	Class I	Class I	Class I	2,679 grams-cm
305 x 1220	Class III	Class III	Class II	2,248 grams-cm
1220 x 305	Class I	Class I	Class I	2,248 grams-cm
1525 x 915	Class II	Class II	Class II	2,679 grams-cm

Air leakage is based on operation between 10°C to 40°C. All data corrected to represent air density of 1.201 kg/m³

*Torque applied to hold damper in closed position.

Standard International Units (Back Flow)

Damper Width x Height (mm)	250 Pa Class	1 kPa Class	2 kPa Class	*Torque
305 x 305	Class II	Class III	Class III	2,679 grams-cm
610 x 610	Class I	Class I	Class II	2,248 grams-cm
915 x 915	Class II	Class III	Class III	2,679 grams-cm
305 x 1220	Class III	Class III	Class III	2,248 grams-cm
1220 x 305	Class II	Class II	Class II	2,248 grams-cm
1525 x 915	Class III	Class III	Class II	2,679 grams-cm

*Torque applied to hold damper in closed position.

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

FRAME CONSTRUCTION OPTIONS

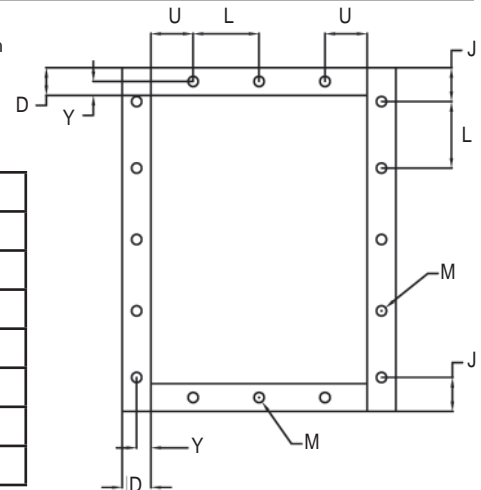
Flange (D Dim.): Standard- 2"
Optional- 1-1/2" - 4"

Bolt Holes: (Standard does not include bolt holes)
Optional - Carnes recommended standard pattern
7/16" dia. holes (M dimension)
Spaced 6" C-C (L dimension)

Web (C Dim.): Standard- 8"
Optional- 8" - 12"

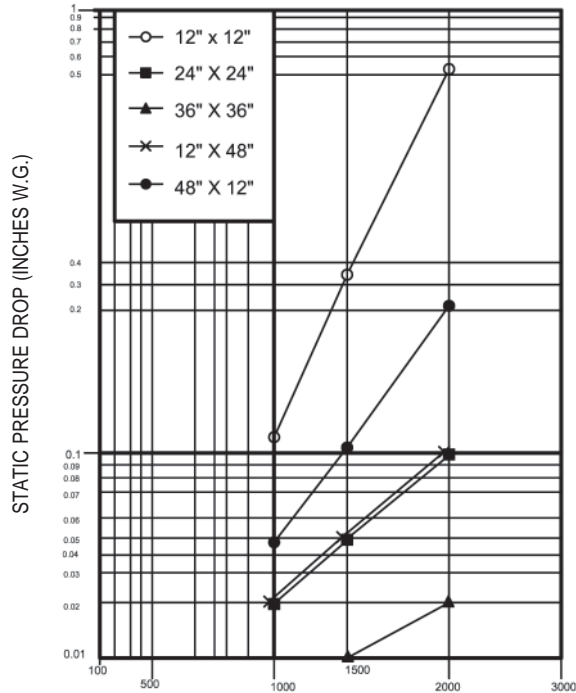
Optional - Customer may specify within limits shown in table below.

Dim.	Standard (Min./Max.)	Description
J	(D/2 min.)	First/Last Space in Jamb
F	(1 min.)	No. of Holes in Jamb
L	6" (2"/12")	Hole Spacing
M	7/16" (1/4"/11"/16")	Mounting Hole Diameter
U	(3/4" min.)	First/Last Space in Head/Sill
V	(1 min.)	No. Holes in Head/Sill
Y	D/2M (3/4"/D-3/4")	Centerline of Bolt Hole from Inside Edge of Frame



Model FAAA & FAB A Performance Data

Pressure Drop



FACE AREA VELOCITY (ft/min)
 Based on standard air -.075 lbs per cu ft
 FAAA & FAB A sizes: 12x12, 24x24, 48x12, 12x48, 36x36
 (305x305, 610x610, 1219x305, 305x1219, 914x914)

Pressure Limitations

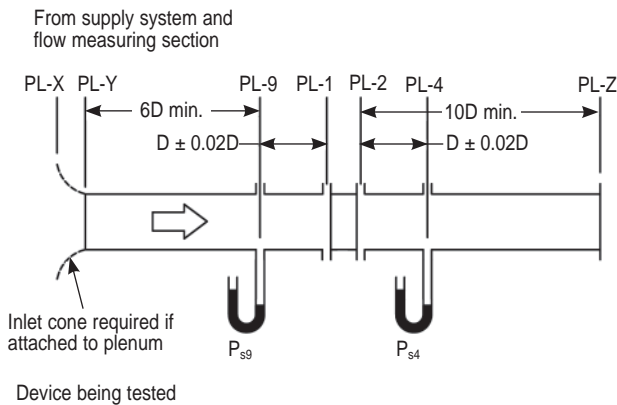
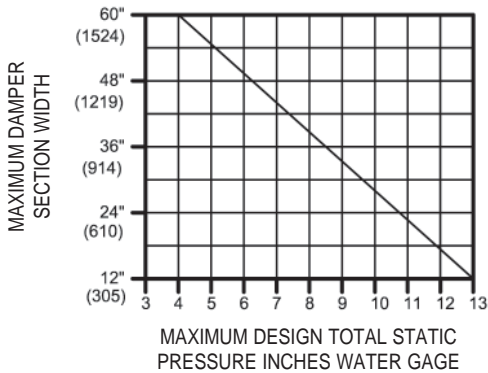


Figure 5.3 - Test Device Setup with Outlet Chamber

12" x 12" (305mm x 305mm)

Face Velocity ft./min. (m/s)	Pressure Drop in w.g. (Pa)
1000 (5.08)	0.14 (35)
1500 (7.62)	0.32 (79)
2000 (10.16)	0.53 (132)

24" x 24" (610mm x 610mm)

Face Velocity ft./min. (m/s)	Pressure Drop in w.g. (Pa)
1000 (5.08)	0.02 (5)
1500 (7.62)	0.05 (12)
2000 (10.16)	0.10 (25)

48" x 12" (1219mm x 305mm)

Face Velocity ft./min. (m/s)	Pressure Drop in w.g. (Pa)
1000 (5.08)	0.05 (12)
1500 (7.62)	0.13 (32)
2000 (10.16)	0.22 (55)

12" x 48" (305mm x 1219mm)

Face Velocity ft./min. (m/s)	Pressure Drop in w.g. (Pa)
1000 (5.08)	0.02 (5)
1500 (7.62)	0.05 (12)
2000 (10.16)	0.10 (25)

36" x 36" (914mm x 914mm)

Face Velocity ft./min. (m/s)	Pressure Drop in w.g. (Pa)
1000 (5.08)	0.007 (2)
1500 (7.62)	0.01 (3)
2000 (10.16)	0.02 (5)

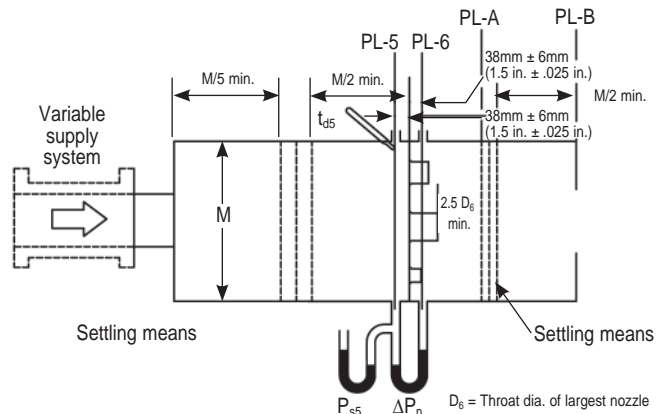


Figure 6.5 - Airflow Rate Measurement Setup - Multiple Nozzle Chamber on Fan Inlet