

**Fire/Smoke Damper Airfoil Blade – Model 781 & 781-3 CLASS I**  
**\*781 (1-1/2 hr.) rated    \*781-3 (3 hr.) rated**

**Features** – U.L. rated for dynamic closure & leakage CLASS I @ 250°F (176°C), for use in a 1-1/2 hour (781 Model) or 3 hour (781-3 Model) wall or partition. Meets NFPA 90A & UL555 & UL555S. Seismic and Fragility tested. Meets California State Fire Marshal requirements.

**STANDARD CONSTRUCTION**

**FRAME**

4-5/16" (110) deep, 16 gauge (1.6) galvanized steel

**BLADES**

6 1/2" (165) wide, double wall 20 gauge (1.0) galvanized steel in airfoil shape, equivalent to a 14-gauge (1.9) single skin blade.  
 (Bottom blade width may vary depending on damper height)

**BLADE AXLES & BEARINGS**

AXLES – 7/16" (11) Plated hex mechanically fastened to blade  
 BEARINGS – Bronze oil impregnated

**LINKAGE**

Plated steel in opposed blade configuration, concealed inside the jamb.  
 Operator shaft is 1/2" (13) steel rod extending 4-1/2" (114) from damper side

**SEALS**

Extruded Silicone blade seals and stainless steel jamb seals

**MAXIMUM UL CLASSIFIED LEAKAGE CLASS I SIZES**

Single section assemblies:

**781, 781-3**    32"W x 48"H Vertical  
                   32"W x 36"H Horizontal

**MULTIPLE SECTIONS**

Multiple section assemblies: (made of sections no larger than above sizes)

**781**    (128" x 96") (3251 x 2438) vertical or horizontal mount  
**781-3** (128" x 48" max.) (3251 x 1219) vertical or horizontal mount

**MINIMUM UL CLASSIFIED LEAKAGE CLASS I SIZE**

12"W x 8"H (305 x 203)

**SLEEVE**

18 ga. x 16" (1.3 x 406) deep galvanized steel

**UNDERSIZED**

1/4" under ordered size unless specified Exact or Actual

**FINISH**

Galvanized

**HEAT SENSOR**

160° (73° C)

**OPERATOR**

Refer to UL approved actuator chart  
 (Specify external or internal mounting)

**OPTIONAL CONSTRUCTION**

HEAT SENSOR - 212°F, 250°F, or 350° F

**SPECIFIED MATERIAL** – Available in stainless steel

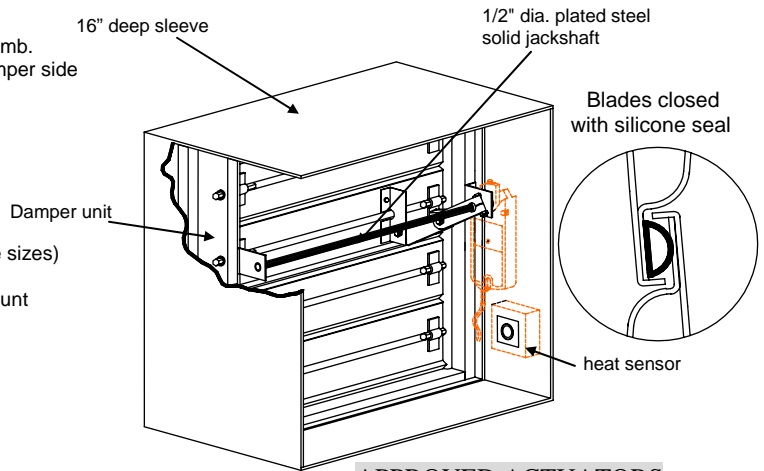
**SLEEVE AND DUCTWORK CONNECTION** – 10 ga.(3.5) to 20 ga. (1.0) galvanized steel to 30" (762) in length. – Transitions available in: round, oval, rectangular or custom. Factory can install access door, retaining angles, flange connections, or security bars

**SPECIAL PURPOSE CONSTRUCTION**

- Full welded corner assembly
- Security bars (mounted in sleeve)
- Filter Racks
- Face and Bypass dual mixing damper configuration



03225-0751-106



**APPROVED ACTUATORS**

	Honeywell	Siemens	Belimo
24 Vac -	ML 8115	GND121.1U	FSNF24 US*
	MS 8209	GND126.1U	
	MS 8120	GGD121.1U	
120 Vac -	ML 4115	GND221.1U	FSNF120 US*
	MS 4209	GND226.1U	
	MS 4120	GGD221.1U	
230 Vac -		GND321.1U	
		GGD321.1U	
Pneumatic -		331-2961	
		331-3060	
		331-4826	

\* Only for dampers up to 24" x 24"

**ACCESSORIES**

- Smoke Detector
- Indicator Switches
- Monitoring Station
- Dual Sensors

\* Dampers 11" (279) high and under will be single blade, and extend from the frame proportionately.

DATE	ARCHITECT			ENGINEER
PROJECT				
ITEM	QTY	W	H	DESCRIPTION



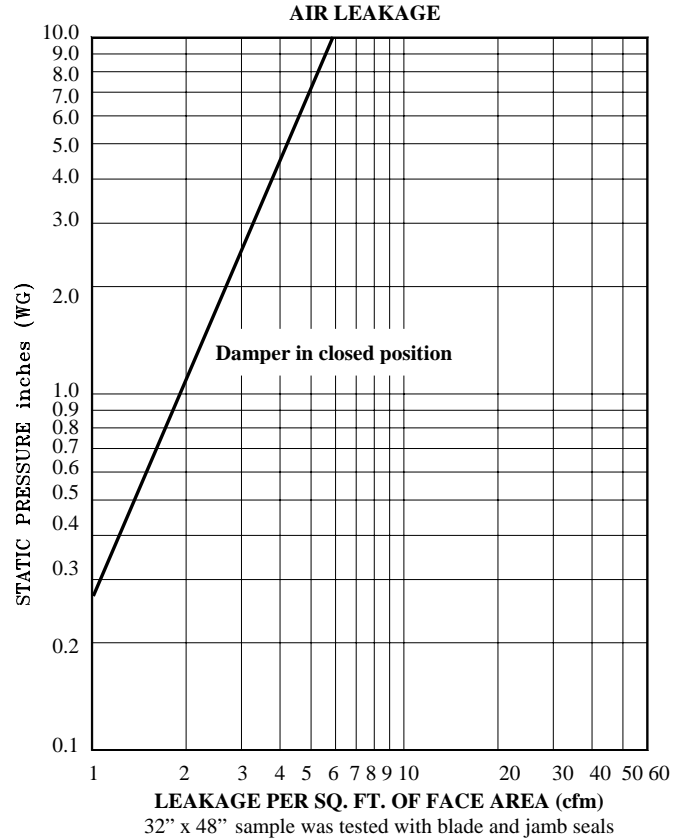
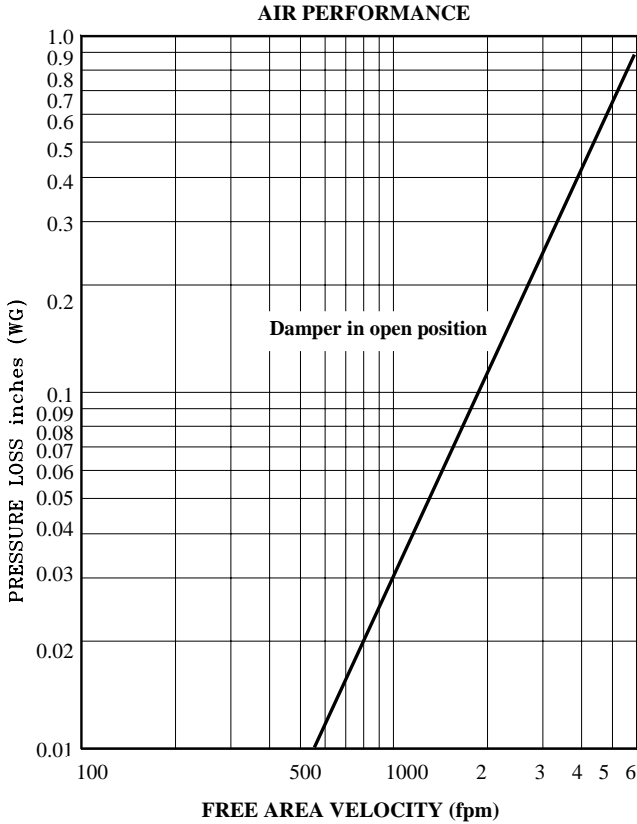
DEPENDABLE PRODUCTS SINCE 1955

**SAFE-AIR OF ILLINOIS, INC.**

*Engineering and General Offices*

1855 South 54th Avenue, Cicero, Illinois 60804

Phone 708-652-9100 FAX 708-652-9158



**CALCULATING PRESSURE LOSS:**

Based upon a given flow rate (in CFM), the flowing pressure loss may be determined from the "air performance graph, knowing the sq. ft. of free area of the damper. Alternately, the free area may be determined based upon a volumetric flow rate and a maximum pressure loss. Utilizing the "air performance" graph.

\_\_\_\_\_ in. W.C. Max. Pressure Loss Intake or Exhaust  
 \_\_\_\_\_ FPM (Free Area Velocity From "Air Performance" Graph)  
 \_\_\_\_\_ CFM / \_\_\_\_\_ FPM Free Area Velocity = \_\_\_\_\_ Sq. Ft. Free Area

**U. L. CLASSIFIED DYNAMIC CLOSURE RATING**

Our maximum recommended operating for this damper is 2000 fpm @ 4" static pressure. This damper has been tested in accordance with the U.L. requirements for closure under installed " system in operation " conditions, (Dynamic closure). Single sections 32"w x 48"h have been tested capable to close, mounted either vertical or horizontal, at 3000 fpm. @ 8" static pressure.

**FREE AREA CALCULATIONS IN SQ. FT.**

		WIDTH					
		12	16	20	24	28	32
HEIGHT	Inches	12	16	20	24	28	32
	12	0.58	0.81	1.03	1.26	1.49	1.72
	16	0.86	1.20	1.54	1.88	2.22	2.56
	20	1.09	1.53	1.96	2.39	2.82	3.26
	24	1.33	1.86	2.38	2.91	3.43	3.96
	28	1.61	2.25	2.89	3.52	4.16	4.80
	32	1.85	2.58	3.31	4.04	4.77	5.50
	36	2.08	2.91	3.73	4.55	5.38	6.20
	40	2.37	3.30	4.23	5.17	6.10	7.04
44	2.60	3.63	4.66	5.68	6.71	7.74	
48	2.84	3.96	5.08	6.20	7.32	8.44	