



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 @ 350°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.

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 32"W x 48"H Vertical

32"W x 36"H Horizontal

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 48") (3658 x 1219) vertical or horizontal mount

781-3 (32" x 48" max.) (813 x 1219) single section assembly only

Available also in 128"w x 96"h (3658 x 2438) (Static Rated)

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

120 VAC, 165°(73° C) to 350° (176° 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

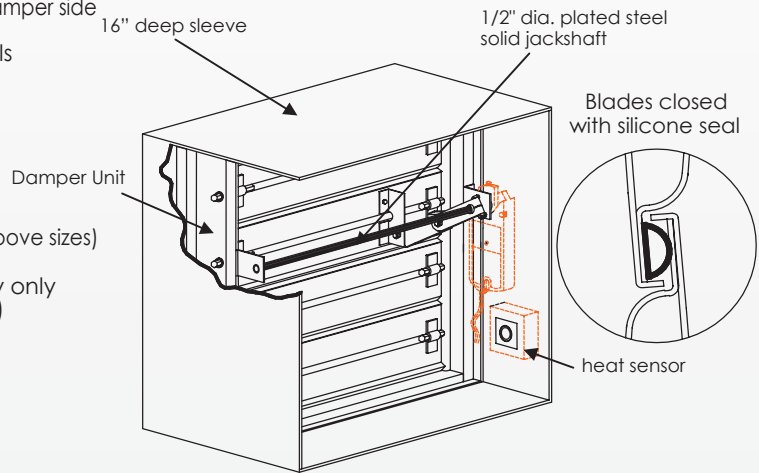
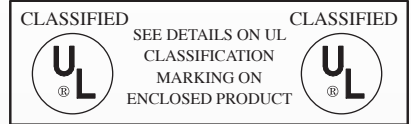
SPECIAL PURPOSE CONSTRUCTION

Full welded corner assembly

Security bars (mounted in sleeve)

Filter Racks

Face and Bypass dual mixing damper configuration



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.

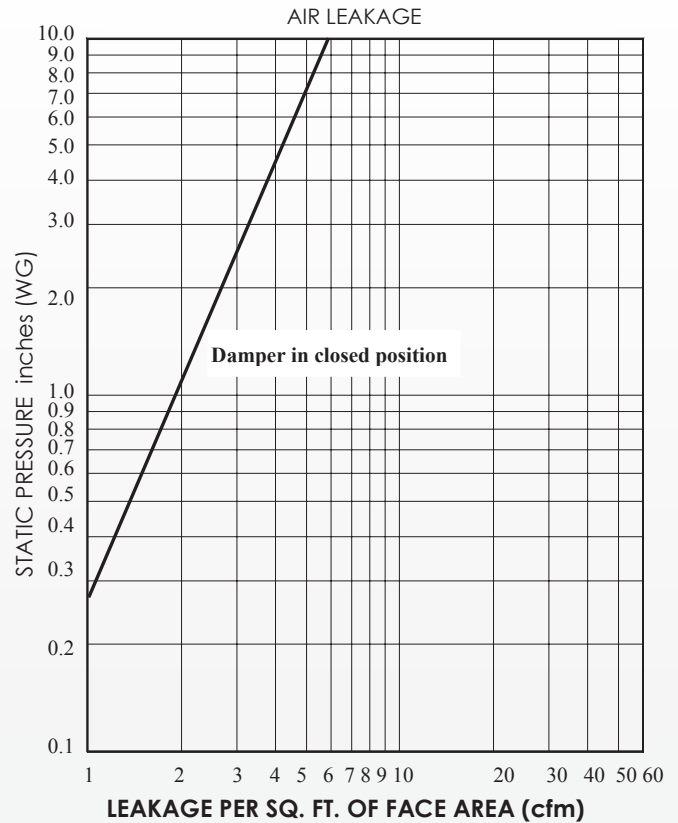
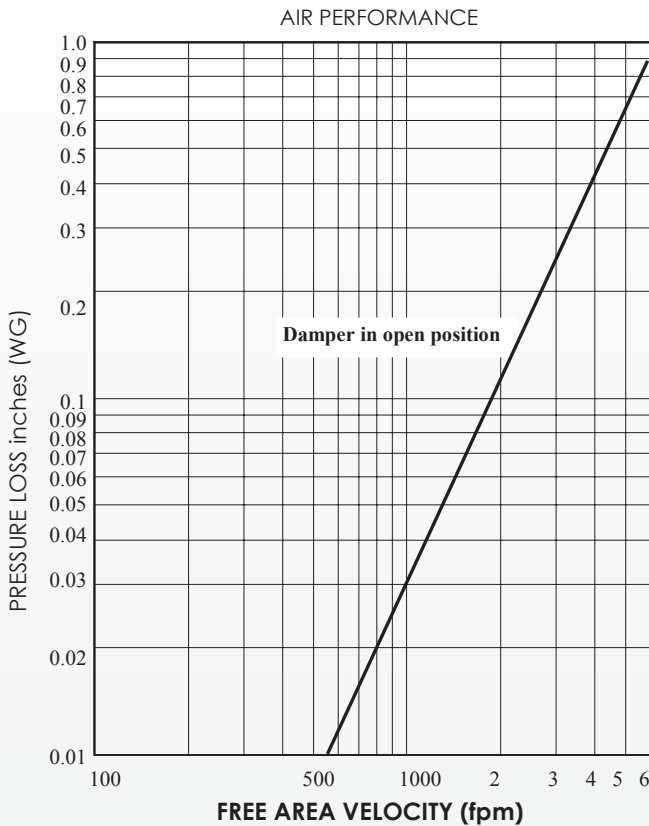
APPROVED ACTUATORS

	Honeywell	Siemens	Belimo
24 Vac -	ML 8115	GND121.1U	FSNF24 US *
	MS 4309	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"



781 & 781-3 PERFORMANCE



LEAKAGE PER SQ. FT. OF FACE AREA (cfm)

32" x 48" sample was tested with blade and jamb seals

CALCULATING PRESSURE LOSS:

Based upon a given flow rate (in CFM), the flowing pressure loss maybe 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 (914 x 1219) 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	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	