

Sound Attenuator

No. 757-11

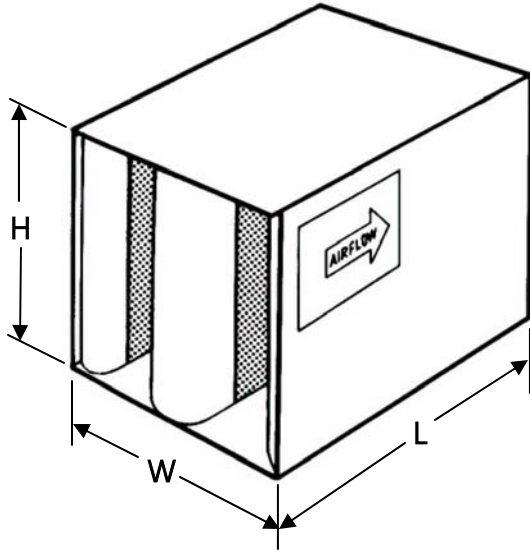


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A DIVISION OF METAL FORM MANUFACTURING

ENGINEERING DATA SHEET

Supersedes No. 757-89



MODEL MP

RECTANGULAR

NOMENCLATURE EXAMPLE:

WIDTH HEIGHT LENGTH MODEL
24 24 36 MP

Commercial Acoustics sound attenuators are engineered to achieve a maximum insertion loss and a minimum pressure drop. Commercial Acoustics sound attenuators feature airfoil design for efficient aerodynamic performance. Galvanized steel construction and an absorbent, inorganic mineral glass fiber acoustical fill; guarantee excellent reliability and performance.

MODEL NO.	OCTAVE BANDS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CENTER FREQUENCY (Hz)	63	125	250	500	1000	2000	4000	8000
	FACE VELOCITY, fpm	DYNAMIC INSERTION LOSS IN DECIBELS (dB)							
3MP	-1500	1	5	12	23	32	27	14	8
	-1000	0	4	12	22	32	27	13	8
	0	1	4	11	21	31	28	15	10
	+1000	0	4	10	20	29	29	16	11
	+2000	0	3	9	19	28	29	17	10
5MP	-1500	2	8	19	39	46	48	19	11
	-1000	3	7	18	37	48	40	20	11
	0	3	5	16	35	49	42	22	14
	+1000	3	5	15	33	47	43	23	14
	+2000	2	5	14	31	45	42	23	15
7MP	-1500	3	16	31	43	45	41	31	18
	-1000	3	14	28	45	50	48	34	18
	0	3	12	25	45	55	45	37	22
	+1000	2	11	23	43	53	46	39	23
	+2000	2	11	22	41	52	46	40	25
10MP	-1500	4	16	38	46	49	44	36	18
	-1000	4	14	37	47	54	55	37	18
	0	8	14	29	42	56	60	43	23
	+1000	8	14	28	42	55	62	46	26
	+2000	5	11	31	44	53	51	46	26

THIS TABLE CONTAINS BOTH FORWARD(+) AND REVERSE(-) FLOW ACOUSTIC AND AERODYNAMIC RATINGS BASED ON TEST RESULTS MEASURED IN ACCORDANCE WITH APPLICABLE PORTIONS OF ASTM E477. COPIES OF CERTAIN TEST REPORTS CAN BE FURNISHED UPON REQUEST.

Sound Attenuator

RECTANGULAR MODEL MP

ENGINEERING DATA

AIR FLOW RATINGS FOR THE 12 x 12 SIZE, SHADED, REPRESENTS BOTH CFM AND FACE VELOCITY IN fpm. USE THIS TO GET THE RATING FOR SILENCER SIZES NOT SHOWN AND FOR MULTIPLE MODULE SILENCER BANKS.

MODEL	3MP	0.09	0.16	0.23	0.31	0.46	0.61	0.76	0.92	1.15	1.38	1.54	1.69
	5MP	0.10	0.20	0.27	0.37	0.54	0.73	0.91	1.09	1.37	1.64	1.82	2.00
	7MP	0.17	0.34	0.52	0.69	1.06	1.41	1.76	2.11	2.64	3.17	3.52	3.87
	10MP	0.14	0.28	0.41	0.55	0.83	1.11	1.39	1.67	2.09	2.50	2.78	3.06
SIZE	Face Area	AIR FLOW IN CFM											
W x H													
6 x 12	0.5	500	707	866	1000	1225	1414	1581	1732	1937	2122	2236	2345
6 x 24	1	1000	1414	1732	2000	2449	2828	3162	3464	3873	4243	4472	4690
6 x 36	1.5	1500	2121	2598	3000	3674	4242	4743	5196	5810	6365	6708	7035
12 x 12	1	1000	1414	1732	2000	2449	2828	3162	3464	3873	4243	4472	4690
12 x 24	2	2000	2828	3464	4000	4898	5656	6324	6928	7746	8486	8944	9380
12 x 36	3	3000	4242	5196	6000	7347	8484	9486	10392	11619	12729	13416	14070
18 x 12	1.5	1500	2121	2598	3000	3674	4242	4743	5196	5810	6365	6708	7035
18 x 18	2.25	2250	3182	3897	4500	5510	6363	7115	7794	8714	9547	10062	10553
18 x 30	3.75	3750	5303	6495	7500	9184	10605	11858	12990	14524	15911	16770	17588
18 x 36	4.5	4500	6363	7794	9000	11021	12726	14229	15588	17429	19094	20124	21105
18 x 48	6	6000	8484	10392	12000	14694	16968	18972	20784	23238	25458	26832	28140
24 x 24	4	4000	5656	6928	8000	9796	11312	12648	13856	15492	16972	17888	18760
24 x 36	6	6000	8484	10392	12000	14694	16968	18972	20784	23238	25458	26832	28140
24 x 48	8	8000	11312	13856	16000	19592	22624	25296	27712	30984	33944	35776	37520
30 x 24	5	5000	7070	8660	10000	12245	14140	15810	17320	19365	21215	22360	23450
30 x 36	7.5	7500	10605	12990	15000	18368	21210	23715	25980	29048	31823	33540	35175
30 x 48	10	10000	14140	17320	20000	24490	28280	31620	34640	38730	42430	44720	46900
36 x 36	9	9000	12726	15588	18000	22041	25452	28458	31176	34857	38187	40248	42210
36 x 42	10.5	10500	14847	18186	21000	25715	29694	33201	36372	40667	44552	46956	49245
36 x 48	12	12000	16968	20784	24000	29388	33936	37944	41568	46476	50916	53664	56280

Helpful Equations: Face Area = (Width in inches x Height in inches) ÷ 144

Face Velocity = CFM ÷ Face Area in Sq.Ft.

Silencer S.P. Loss = $\left(\frac{\text{Face Velocity}}{\text{Tabled Velocity}}\right)^2 \times \text{Tabled S.P. Loss}$

STANDARD CONSTRUCTION FEATURES

Outer Casing — Solid 22GA G90 galvanized steel
 Inner Partitions — Perforated 22GA G90 galvanized steel
 Acoustical Fill — Inorganic mineral glass fiber meeting NFPA 90A, UL 723, and ASTM E84 of sufficient density and packed under at least 5% compression to eliminate voids and to obtain cataloged ratings
 Maximum Differential Pressure — 8 in. wc. as tested in accordance with UL 181, Section 17

Octave Band	1	2	3	4	5	6	7	8	
Frequency, Hz	63	125	250	500	1k	2k	4k	8k	
Length	Face Velocity	Self-Generated Sound Power Ratings (PWL) dB re 10 ⁻¹² WATTS							
ALL LENGTHS	+2000	59	56	52	48	46	47	48	44
	+1000	48	39	38	34	29	27	25	27
	-1000	50	51	50	47	51	52	43	36
	-2000	57	61	59	60	61	63	64	55

When adding any two decibel levels together to an accuracy of 1 dB

Difference between two dB levels	Add to the higher dB level
0 or 1 dB	3 dB
2 or 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0 dB

Air flow ratings shown include static regain. Therefore, if silencers are installed immediately before or after elbows, transitions, at the intake or discharge of the system, or without duct, allowance to compensate for such conditions must be included when calculating the operating static pressure loss across the silencer. Failure to make allowances for these conditions can add several velocity heads to the static pressure loss of the system. All acoustic and aerodynamic performance obtained on a 24" x 24" cross section production unit.

Self-Generated Sound Power, Face Area Adjustment Factors

Face Area	0.50	1	2	4	8	16	32	64	128
Adjustment Factor, dB	-9	-6	-3	0	+3	+6	+9	+12	+15