

# Sound Attenuator

No. 777MB-07

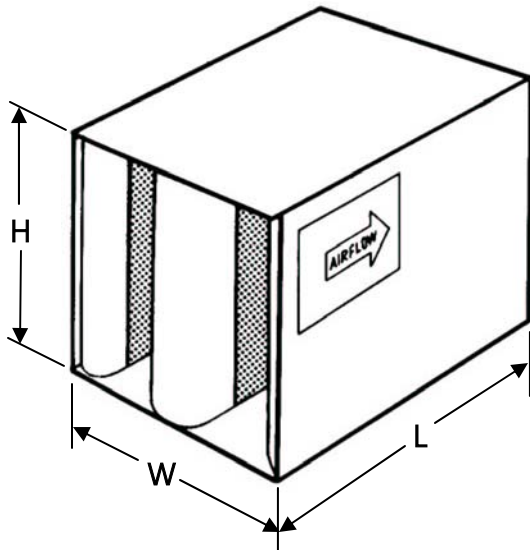


**Commercial Acoustics**  
5960 W. WASHINGTON STREET  
PHOENIX, ARIZONA 85043-3523  
(602) 233-2322 FAX 233-2033

A DIVISION OF METAL FORM MANUFACTURING

## ENGINEERING DATA SHEET

**Environmentally Friendly**



### MODEL LP-LF-MB

RECTANGULAR

**No  
Fiberglass  
Fill**

#### NOMENCLATURE EXAMPLE:

WIDTH	HEIGHT	LENGTH	MODEL
<b>24</b>	<b>24</b>	<b>36</b>	<b>LP-LF-MB</b>

Commercial Acoustics sound attenuators are engineered to achieve a maximum insertion loss and a minimum pressure drop. Commercial Acoustics sound attenuators feature airflow design for efficient aerodynamic performance. Galvanized steel construction and an acoustical fill that is an all natural material with each individual fiber having been treated, during manufacture, with an EPA registered anti-microbial agent for protection against mildew, mold, fungi, pests and for fire resistance 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)							
<b>3LP-LF-MB</b>	-2000	5	6	10	18	20	17	12	11
	-1000	5	6	9	16	19	17	13	12
	0	4	7	10	15	18	15	12	11
	+1000	4	6	9	14	17	16	13	12
	+2000	3	5	8	13	17	16	13	12
<b>5LP-LF-MB</b>	-2000	7	14	16	27	28	21	15	13
	-1000	7	13	15	25	27	22	14	13
	0	7	13	14	23	26	21	14	12
	+1000	7	12	14	22	25	21	15	13
	+2000	6	11	13	21	25	20	14	14
<b>7LP-LF-MB</b>	-2000	10	18	22	34	36	29	20	16
	-1000	10	17	21	32	35	29	21	17
	0	9	17	21	30	34	28	21	17
	+1000	8	16	19	28	34	27	21	12
	+2000	8	15	18	26	33	26	20	13
<b>10LP-LF-MB</b>	-2000	13	21	30	44	45	30	21	16
	-1000	13	20	30	43	45	30	22	17
	0	12	19	30	43	43	30	22	17
	+1000	11	19	29	42	42	29	22	16
	+2000	11	18	28	42	42	27	21	16

THESE TABLES CONTAIN BOTH FORWARD(+) AND REVERSE(-) FLOW ACOUSTIC AND AERODYNAMIC RATINGS BASED ON COMPARATIVE 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 LP-LF-MB

### ENGINEERING DATA

Environmentally Friendly

**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	3LP-LF-MB	0.07	0.14	0.21	0.32	0.48	0.66	0.82	0.98	1.23	1.48	1.64	1.80
	5LP-LF-MB	0.08	0.15	0.23	0.34	0.51	0.70	0.88	1.06	1.32	1.58	1.76	1.94
	7LP-LF-MB	0.09	0.17	0.26	0.39	0.58	0.80	1.00	1.20	1.50	1.80	2.00	2.20
	10LP-LF-MB	0.09	0.19	0.28	0.43	0.65	0.89	1.11	1.33	1.66	2.00	2.22	2.44
SIZE	Face Area	AIR FLOW IN CFM											
W x H													
6 x 12	0.5	457	646	791	976	1195	1398	1563	1712	1914	2097	2210	2318
6 x 24	1	913	1291	1581	1952	2390	2795	3125	3423	3827	4193	4419	4635
6 x 36	1.5	1370	1937	2372	2928	3585	4193	4688	5135	5741	6290	6629	6953
12 x 12	1	913	1291	1581	1952	2390	2795	3125	3423	3827	4193	4419	4635
12 x 24	2	1826	2582	3162	3904	4780	5590	6250	6846	7654	8386	8838	9270
12 x 30	2.5	2283	3228	3953	4880	5975	6988	7813	8558	9568	10483	11048	11588
12 x 36	3	2739	3873	4743	5856	7170	8385	9375	10269	11481	12579	13257	13905
12 x 48	4	3652	5164	6324	7808	9560	11180	12500	13692	15308	16772	17676	18540
24 x 18	3	2739	3873	4743	5856	7170	8385	9375	10269	11481	12579	13257	13905
24 x 24	4	3652	5164	6324	7808	9560	11180	12500	13692	15308	16772	17676	18540
24 x 30	5	4565	6455	7905	9760	11950	13975	15625	17115	19135	20965	22095	23175
24 x 36	6	5478	7746	9486	11712	14340	16770	18750	20538	22962	25158	26514	27810
24 x 42	7	6391	9037	11067	13664	16730	19565	21875	23961	26789	29351	30933	32445
24 x 45	7.5	6848	9683	11858	14640	17925	20963	23438	25673	28703	31448	33143	34763
24 x 48	8	7304	10328	12648	15616	19120	22360	25000	27384	30616	33544	35352	37080
48 x 30	10	9130	12910	15810	19520	23900	27950	31250	34230	38270	41930	44190	46350
48 x 36	12	10956	15492	18972	23424	28680	33540	37500	41076	45924	50316	53028	55620
48 x 42	14	12782	18074	22134	27328	33460	39130	43750	47922	53578	58702	61866	64890
48 x 45	15	13695	19365	23715	29280	35850	41925	46875	51345	57405	62895	66285	69525
48 x 48	16	14608	20656	25296	31232	38240	44720	50000	54768	61232	67088	70704	74160

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

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

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

#### STANDARD CONSTRUCTION FEATURES

Outer Casing — Solid 22GA G90 galvanized steel  
 Inner Partitions — Perforated 22GA G90 galvanized steel  
 Acoustical Fill — Mold resistant, all natural fiber meeting UL 723, ASTM E84  
 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 <sup>-12</sup> WATTS							
<b>ALL LENGTHS</b>	+2000	50	45	48	46	50	54	48	41
	+1000	43	36	39	38	35	36	27	27
	-1000	43	41	44	45	48	46	35	26
	-2000	50	49	52	53	54	58	53	46

#### 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 sec-

#### 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	+16