

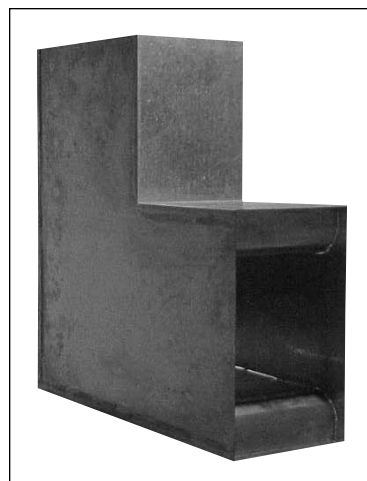


**SoundChek  
RECTANGULAR ELBOW SILENCER  
MODEL ELBMP**

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NET INSERTION LOSS RATINGS (SEE NOTES 1, 2 & 3)										
MODEL ELBMP	FACE VELOCITY (FPM)	DIRECTION	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
			1	2	3	4	5	6	7	8
			63	125	250	500	1000	2000	4000	8000
INSERTION LOSS (dB)										
<b>ELBMP5</b> all configurations	-2000	reverse	4	9	17	26	25	24	21	16
	-1000	reverse	4	9	17	26	25	24	20	16
	0	-	3	8	16	25	25	24	22	17
	1000	forward	4	8	16	25	25	24	21	17
	2000	forward	4	8	15	25	24	23	21	17
<b>ELBMP7</b> all configurations	-2000	reverse	7	13	23	33	35	31	26	20
	-1000	reverse	7	12	23	32	34	32	26	20
	0	-	6	11	22	31	34	31	26	21
	1000	forward	5	11	21	31	34	31	27	22
	2000	forward	4	10	20	30	33	31	27	21
<b>ELBMP10</b> all configurations	-2000	reverse	9	18	33	44	32	41	31	26
	-1000	reverse	9	17	32	43	46	41	31	26
	0	-	7	16	30	42	45	40	34	28
	1000	forward	7	15	29	42	45	39	34	29
	2000	forward	6	15	28	41	45	39	34	29

STATIC PRESSURE CONFIGURATION COMPARISON (SEE NOTE 3)									
MODEL	CONFIGURATION	FACE VELOCITY (FPM)							
		-2000	-1500	-1000	-500	500	1000	1500	2000
<b>ELBMP5</b>	3' 4" up, 1' 8" down	1.40	0.79	0.35	0.09	0.09	0.35	0.79	1.40
	2' 6" up, 2' 6" down	0.90	0.51	0.23	0.06	0.06	0.23	0.51	0.90
	1' 8" up, 3' 4" down	0.82	0.46	0.21	0.05	0.05	0.21	0.46	0.82
<b>ELBMP7</b>	4' 8" up, 2' 4" down	0.99	0.56	0.25	0.06	0.06	0.25	0.56	0.99
	3' 6" up, 3' 6" down	0.79	0.44	0.20	0.05	0.05	0.20	0.44	0.79
	2' 4" up, 4' 8" down	0.56	0.32	0.14	0.04	0.04	0.14	0.32	0.56
<b>ELBMP10</b>	6' 8" up, 3' 4" down	0.95	0.54	0.24	0.06	0.06	0.24	0.54	0.95
	5' up, 5' down	0.57	0.32	0.14	0.04	0.04	0.14	0.32	0.57
	3' 4" up, 6' 8" down	0.61	0.35	0.15	0.04	0.04	0.15	0.35	0.61



**NOTE:** Short leg configuration upstream (towards fan) allows for less static pressure loss.

AIRFLOW-GENERATED SOUND POWER LEVELS (SEE NOTE 5)									
MODEL ELBMP	FACE VELOCITY	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
		1	2	3	4	5	6	7	8
		63	125	250	500	1000	2000	4000	8000
ELBMP5 all configurations	-2000	77	63	50	47	48	50	52	40
	-1000	63	49	35	35	34	32	24	28
	1000	62	52	42	41	43	43	35	29
	2000	77	68	60	58	56	59	59	51
ELBMP7 all configurations	-2000	72	62	52	49	50	53	49	42
	-1000	61	51	39	40	38	34	30	31
	1000	62	52	39	39	41	40	35	33
	2000	74	66	55	53	54	58	57	50
ELBMP10 all configurations	-2000	74	63	53	49	51	54	49	41
	-1000	64	51	39	40	38	33	28	30
	1000	72	59	48	45	46	47	45	41
	2000	77	67	55	52	53	57	52	50

FACE AREA ADJUSTMENT FACTORS											
Self Generated Power Levels listed above require adjustment for silencer or silencer banks with face area other than 4 sq. ft. Add or subtract the following factors to all octave bands.											
Face Area (sq ft)	0.5	1	2	4	8	16	32	64	128	256	512
Adjustment Factor (decibels)	-9	-6	-3	0	+3	+6	+9	+12	+15	+18	+21

1. SoundChek silencers have been tested in accordance with ASTM E-477 standard (Standard Method of Testing Duct Liner Materials and Prefabricated Silencers for Acoustical and Airflow Performance) for 24 inch by 24 inch modular sizes.
2. Product performance associated with airflow has been rated for both forward and reverse flow conditions. Forward flow occurs when air flows in the same direction as the noise (typically supply side system). Reverse flow occurs when air flows opposite the noise flow direction.
3. Static Pressure Drop values have been measured in accordance with ASTM E-477 testing standard. This standard relies on specific length ductwork up and down stream of the silencer. Therefore the data presented is for laminar flow and includes static regain. If the silencer is to be used under conditions that vary from laminar flow, adjustments must be made to the system calculations. The data presented has been tested under standard conditions with air density of 0.075 pounds mass per cubic foot. Systems moving gases or air of sufficiently different density must allow for a different static pressure drop.
4. Insertion Loss Data does not account for break out noise. Therefore to achieve insertion loss in excess of 50 dB duct lagging is suggested.
5. Airflow Generated Sound Power Levels should be reviewed when low acoustical design goals are required. This data has been measured per the ASTM E-477 testing standard in enough detail to allow representation for a variety of airflow levels. The face area adjustment factors are

to be used by octave band on the Airflow Generated Power Levels for face areas that differ from 4 square feet.

6. **Weights and Modular sizes shown on the Airflow Performance chart do not represent a complete list of sizes available.** It is only intended to provide the designer with enough information to accurately calculate the specifics for the projects requirements.
7. Silencer sizes are defined width by height. This defines the baffle arrangement. Consult your local representative if other than up/down baffle arrangement is required.

#### Useful Conversions and Formulas

Multiply	by	To Obtain
cfm	.0004719	cubic meters per second (m <sup>3</sup> /sec)
fpm	0.00508	meters per second (m/s)
in	25.4	millimeters (mm)
WG"	249.1	Newton per square meter (n/M <sup>2</sup> )
ft	0.3048	meters (m)
ft <sup>2</sup>	0.0929	square meters (m <sup>2</sup> )
lb	0.4535	kilogram (kg)

To calculate the exact static pressure for airflow not shown on the Airflow Performance Chart use the following ratio:  $\sqrt{(sp^1/sp^2)} = (cfm^1/cfm^2)$ .

Silencer Face Area is defined as the total inlet area of the silencer. This is not the same as the free area. **CFM = (Face Area sq. ft.) x (fpm).**

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for a Noisy World!**

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