

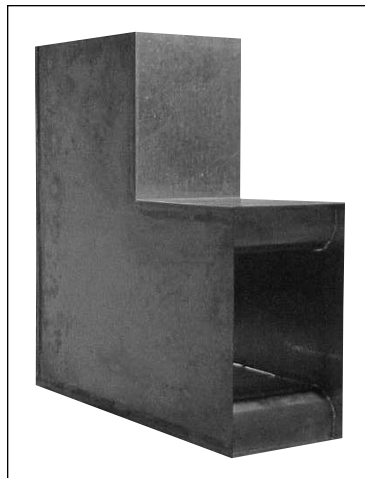


**SoundChek  
RECTANGULAR ELBOW SILENCER  
MODEL ELBSP**

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NET INSERTION LOSS RATINGS (SEE NOTES 1, 2 & 3)										
MODEL ELBSP	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)										
ELBSP5 all configurations	-1500	reverse	7	15	23	33	33	29	24	19
	-1000	reverse	7	15	23	33	32	29	24	19
	0	-	6	14	21	31	32	29	25	19
	1000	forward	5	14	21	31	32	28	25	21
	1500	forward	5	12	20	30	32	28	25	20
ELBSP7 all configurations	-1500	reverse	8	18	27	38	40	36	27	24
	-1000	reverse	8	18	26	38	40	37	28	24
	0	-	7	16	25	37	40	37	32	26
	1000	forward	6	15	24	36	40	37	32	27
	1500	forward	6	15	23	34	40	37	32	27
ELBSP10 all configurations	-1500	reverse	12	24	36	45	50	44	33	28
	-1000	reverse	11	24	36	45	49	45	34	28
	0	-	10	22	35	44	49	44	37	30
	1000	forward	8	22	34	44	49	43	38	33
	1500	forward	8	22	33	44	49	43	39	33

STATIC PRESSURE CONFIGURATION COMPARISON (SEE NOTE 3)									
MODEL	CONFIGURATION	FACE VELOCITY (FPM)							
		upstream/downstream	-2000	-1500	-1000	-500	500	1000	1500
ELBSP5	3' 4" up, 1' 8" down	2.32	1.31	0.58	0.15	0.15	0.58	1.31	2.32
	2' 6" up, 2' 6" down	1.50	0.84	0.38	0.09	0.09	0.38	0.84	1.50
	1' 8" up, 3' 4" down	1.56	0.88	0.39	0.10	0.10	0.39	0.88	1.56
ELBSP7	4' 8" up, 2' 4" down	1.50	0.84	0.38	0.09	0.09	0.38	0.84	1.50
	3' 6" up, 3' 6" down	0.76	0.43	0.19	0.05	0.05	0.19	0.43	0.76
	2' 4" up, 4' 8" down	0.90	0.51	0.23	0.06	0.06	0.23	0.51	0.90
ELBSP10	6' 8" up, 3' 4" down	1.26	0.707	0.314	0.079	0.079	0.31	0.71	1.26
	5' up, 5' down	0.91	0.51	0.23	0.06	0.06	0.23	0.51	0.91
	3' 4" up, 6' 8" down	1.28	0.72	0.32	0.08	0.08	0.32	0.72	1.28



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

AIRFLOW-GENERATED SOUND POWER LEVELS (SEE NOTE 5)									
MODEL ELBSP	FACE VELOCITY	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
		1	2	3	4	5	6	7	8
		63	125	250	500	1000	2000	4000	8000
ELBSP5 all configurations	- 1500	75	61	47	46	51	54	52	43
	-1000	64	50	42	44	46	45	38	31
	1000	65	55	45	44	48	51	46	37
	1500	82	69	56	54	55	59	59	51
ELBSP7 all configurations	- 1500	72	55	46	44	47	50	44	35
	-1000	59	49	37	37	42	39	30	29
	1000	57	50	40	40	43	43	35	29
	1500	68	60	51	49	50	54	50	42
ELBSP10 all configurations	- 1500	71	57	47	46	51	53	47	36
	-1000	65	54	42	44	46	42	33	30
	1000	63	55	45	43	46	46	39	31
	1500	75	66	55	51	53	56	54	45

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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