



**SoundChek
STRAIGHT POD RECTANGULAR
DISSIPATIVE SILENCER
MODEL LLF**

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NET INSERTION LOSS RATINGS (SEE NOTES 1, 2 AND 3)										
MODEL LLF	FACE VELOCITY (FPM)	STATIC PRESSURE DROP (WG)	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)										
LLF-36	-4000	1.057	4	7	11	18	19	13	12	9
	-2000	0.264	4	7	11	17	19	13	11	9
	0	–	3	7	10	16	19	14	12	10
	2000	0.264	1	6	8	14	18	15	12	11
	4000	1.057	1	6	7	13	18	16	12	11
LLF-60	-4000	1.179	4	11	17	28	26	17	14	12
	-2000	0.295	4	10	17	27	25	17	14	13
	0	–	3	9	15	26	26	18	15	13
	2000	0.295	2	8	13	25	26	19	15	13
	4000	1.179	2	8	13	24	26	19	14	13
LLF-84	-4000	1.302	5	14	24	38	32	22	16	16
	-2000	0.325	5	14	23	37	32	22	16	16
	0	–	4	12	21	37	33	22	18	16
	2000	0.325	3	10	19	36	33	22	19	16
	4000	1.302	3	10	18	35	33	23	19	17
LLF-120	-4000	1.484	7	20	33	53	42	29	20	21
	-2000	0.371	7	19	33	52	42	29	20	22
	0	–	6	16	30	52	45	29	23	22
	2000	0.371	4	13	27	52	47	28	25	21
	4000	1.484	4	13	27	51	46	28	25	21



AIRFLOW-GENERATED SOUND POWER LEVELS (See Note 5)									
MODEL LLF	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)								
FACE VELOCITY	1	2	3	4	5	6	7	8	
	63	125	250	500	1000	2000	4000	8000	
-4000	84	79	78	73	69	84	80	57	
-2000	67	63	61	57	56	61	54	43	
2000	67	60	56	52	52	53	48	40	
4000	84	75	73	68	68	74	78	65	

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

AIRFLOW PERFORMANCE

RUSKIN MODEL				STATIC PRESSURE LOSS (INCHES WG)															
TOTAL WEIGHTS PER MODULAR SILENCER (LBS) (SEE NOTE 6)	LLF-120				0.023	0.052	0.093	0.145	0.209	0.284	0.371	0.470	0.580	0.701	0.835	0.980	1.136	1.304	
	LLF-84				0.020	0.046	0.081	0.127	0.183	0.249	0.325	0.411	0.508	0.614	0.731	0.858	0.995	1.143	
	LLF-60				0.018	0.041	0.074	0.115	0.166	0.226	0.295	0.373	0.461	0.558	0.664	0.779	0.903	10.37	
	LLF-36				0.017	0.037	0.066	0.103	0.149	0.202	0.264	0.334	0.413	0.499	0.594	0.697	0.809	0.928	
			Face Velocity (fpm)		500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	
		Size (W x H)	Face Area (Sq. Ft.)	Airflow (cfm)															
55	39	28	18	9 x 12	0.75	375	563	750	938	1125	1313	1500	1688	1875	2063	2250	2438	2625	2813
71	50	36	22	12 x 12	1.00	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750
119	83	61	38	12 x 24	2.00	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
142	101	73	45	12 x 30	2.50	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875	7500	8125	8750	9375
166	117	85	52	12 x 36	3.00	1500	2250	3000	3750	4500	5250	6000	6750	7500	8250	9000	9750	10500	11250
80	56	40	25	15 x 12	1.25	625	938	1250	1563	1875	2188	2500	2813	3125	3438	3750	4063	4375	4688
133	94	72	45	18 x 24	3.00	1500	2250	3000	3750	4500	5250	6000	6750	7500	8250	9000	9750	10500	11250
144	101	78	48	21 x 24	3.50	1750	2625	3500	4375	5250	6125	7000	7875	8750	9625	10500	11375	12250	13125
151	106	82	50	24 x 18	3.00	1500	2250	3000	3750	4500	5250	6000	6750	7500	8250	9000	9750	10500	11250
186	131	101	62	24 x 24	4.00	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
221	156	120	74	24 x 30	5.00	2500	3750	5000	6250	7500	8750	10000	11250	12500	13750	15000	16250	17500	18750
256	181	140	86	24 x 36	6.00	3000	4500	6000	7500	9000	10500	12000	13500	15000	16500	18000	19500	21000	22500
197	139	104	66	27 x 24	4.50	2250	3375	4500	5625	6750	7875	9000	10125	11250	12375	13500	14625	15750	16875
131	92	69	43	30 x 12	2.50	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875	7500	8125	8750	9375
207	146	110	68	30 x 24	5.00	2500	3750	5000	6250	7500	8750	10000	11250	12500	13750	15000	16250	17500	18750
245	173	130	81	30 x 30	6.25	3125	4688	6250	7813	9375	10938	12500	14063	15625	17188	18750	20313	21875	23438
283	200	151	94	30 x 36	7.50	3750	5625	7500	9375	11250	13125	15000	16875	18750	20625	22500	24375	26250	28125
257	182	137	85	33 x 30	6.88	3438	5156	6875	8594	10313	12031	13750	15469	17188	18906	20625	22344	24063	25781
188	132	100	61	36 x 18	4.50	2250	3375	4500	5625	6750	7875	9000	10125	11250	12375	13500	14625	15750	16875
228	161	122	75	36 x 24	6.00	3000	4500	6000	7500	9000	10500	12000	13500	15000	16500	18000	19500	21000	22500
269	191	144	89	36 x 30	7.50	3750	5625	7500	9375	11250	13125	15000	16875	18750	20625	22500	24375	26250	28125
310	220	165	102	36 x 36	9.00	4500	6750	9000	11250	13500	15750	18000	20250	22500	24750	27000	29250	31500	33750

- 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.
- 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.
- 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.
- Insertion Loss Data does not account for break out noise. Therefore to achieve insertion loss in excess of 50 dB duct lagging is suggested.
- 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.

- 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.
- 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 ³ /sec)
fpm	0.00508	meters per second (m/s)
in	25.4	millimeters (mm)
WG*	249.1	Newton per square meter (n/M ²)
ft	0.3048	meters (m)
ft ²	0.0929	square meters (m ²)
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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