



RECTANGULAR REACTIVE NO FIBER SILENCER MODEL PRLL

3900 Dr. Greaves Rd., Kansas City, MO 64030 • Phone (816) 761-7476 • FAX (816) 763-0986 • Email: info@ruskinsound.com • Website: ruskinsound.com

NET INSERTION LOSS RATINGS (SEE NOTES 1, 2 AND 3)										
MODEL PRLL	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)										
PRLL3	-2000	0.44	1	8	15	12	9	9	6	7
	-1000	0.11	1	6	13	10	7	7	5	5
	0	0	2	4	10	18	11	11	10	10
	1000	0.11	1	4	11	8	6	7	5	5
	2000	0.44	2	6	13	10	8	9	7	7
PRLL6	-2000	0.52	4	5	21	19	14	9	9	7
	-1000	0.13	3	5	22	17	12	9	7	7
	0	0	2	3	17	16	12	10	8	7
	1000	0.13	3	4	20	15	13	11	7	6
	2000	0.52	4	4	21	18	15	9	8	6
PRLL9	-2000	0.56	9	11	26	21	17	10	9	9
	-1000	0.14	8	8	25	17	14	12	10	7
	0	0	5	6	21	17	15	11	9	8
	1000	0.14	6	6	23	18	16	12	10	8
	2000	0.56	7	8	25	21	16	15	12	8



AIRFLOW-GENERATED SOUND POWER LEVELS (See Note 5)									
MODEL PRLL	FACE VELOCITY	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
		1	2	3	4	5	6	7	8
		63	125	250	500	1000	2000	4000	8000
PRLL3	-2000	47	49	52	61	61	60	63	51
	-1000	35	40	43	45	48	49	42	33
	1000	38	36	40	45	49	45	37	33
	2000	52	48	52	52	57	59	64	55
PRLL6	-2000	52	55	56	54	56	62	63	56
	-1000	41	51	47	48	51	48	40	27
	1000	54	43	37	42	48	49	43	24
	2000	60	58	55	55	54	66	69	59
PRLL9	-2000	52	55	56	54	56	62	63	58
	-1000	41	51	47	48	51	48	40	27
	1000	54	43	37	42	48	49	43	24
	2000	60	58	55	55	54	66	69	59

FACE AREA ADJUSTMENT FACTORS								
Self Generated Power Levels listed above require adjustments for silencer or silencer banks with face area other than 2.5 sq. ft. Add or subtract the following factors to all octave bands.								
Face Area (sq ft)	1.25	2.5	5	10	20	40	80	160
Adjustment Factor (decibels)	-3	0	+3	+6	+9	+12	+15	+18

AIRFLOW PERFORMANCE

RUSKIN MODEL			STATIC PRESSURE LOSS (INCHES WG)											
TOTAL WEIGHTS PER MODULAR SILENCER (LBS) (SEE NOTE 6)	PRLL9		0.008	0.035	0.078	0.14	0.219	0.315	0.429	0.56	0.709	0.875		
	PRLL6		0.007	0.028	0.062	0.11	0.172	0.248	0.337	0.44	0.557	0.688		
	PRLL3		0.008	0.033	0.073	0.13	0.203	0.293	0.398	0.52	0.658	0.813		
		Face Velocity (fpm)	250	500	750	1000	1250	1500	1750	2000	2250	2500		
	Size (W x H)	Face Area (Sq. Ft.)	Airflow (cfm)											
80	53	27	15 x 9	0.94	235	470	705	940	1175	1410	1645	1880	2115	2350
90	60	30	15 x 12	1.25	313	625	938	1250	1563	1875	2188	2500	2813	3125
101	67	34	15 x 15	1.56	390	780	1170	1560	1950	2340	2730	3120	3510	3900
112	75	37	15 x 18	1.88	470	940	1410	1880	2350	2820	3290	3760	4230	4700
123	82	41	15 x 21	2.19	548	1095	1643	2190	2738	3285	3833	4380	4928	5475
134	89	45	15 x 24	2.50	625	1250	1875	2500	3125	3750	4375	5000	5625	6250
144	97	48	15 x 27	2.81	703	1405	2108	2810	3513	4215	4918	5620	6323	7025
155	104	52	15 x 30	3.13	783	1565	2348	3130	3913	4695	5478	6260	7043	7825
166	111	55	15 x 33	3.44	860	1720	2580	3440	4300	5160	6020	6880	7740	8600
177	118	59	15 x 36	3.75	938	1875	2813	3750	4688	5625	6563	7500	8438	9375
138	92	46	30 x 9	1.88	470	940	1410	1880	2350	2820	3290	3760	4230	4700
153	102	51	30 x 12	2.50	625	1250	1875	2500	3125	3750	4375	5000	5625	6250
168	112	56	30 x 15	3.13	783	1565	2348	3130	3913	4695	5478	6260	7043	7825
184	123	61	30 x 18	3.75	938	1875	2813	3750	4688	5625	6563	7500	8438	9375
199	133	66	30 x 21	4.38	1095	2190	3285	4380	5475	6570	7665	8760	9855	10950
215	143	71	30 x 24	5.00	1250	2500	3750	5000	6250	7500	8750	10000	11250	12500
230	153	77	30 x 27	5.63	1408	2815	4223	5630	7038	8445	9853	11260	12668	14075
245	164	82	30 x 30	6.25	1563	3125	4688	6250	7813	9375	10938	12500	14063	15625
261	174	87	30 x 33	6.88	1720	3440	5160	6880	8600	10320	12040	13760	15480	17200
276	184	92	30 x 36	7.50	1875	3750	5625	7500	9375	11250	13125	15000	16875	18750

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 15 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. 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 2.5 square feet.
5. Insertion Loss Data does not account for break out noise. Therefore to

achieve insertion loss in excess of 50 dB duct lagging is suggested.

6. **Weights and Modular sizes shown on the Airflow Performance chart do not represent a complete list of sizes available (widths are specific in 15" increments).** 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	0.00047	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: $sp_1/sp_2 = (cfm_1/cfm_2)^{1/2}$.

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).**

