



**RECTANGULAR REACTIVE  
NO FIBER SILENCER  
MODEL PRSL**

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 PRSL	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)										
PRSL3	-1500	1.13	2	10	18	25	17	12	10	10
	-1000	0.5	3	8	16	24	15	11	11	11
	0	0	2	4	10	18	11	11	10	10
	1000	0.5	2	6	14	21	13	12	9/	9
	1500	1.13	4	8	16	21	14	13	10	9
PRSL6	-1500	1.31	8	15	25	33	23	22	13	8
	-1000	0.58	8	15	26	30	19	20	12	9
	0	0	2	7	19	22	19	20	13	11
	1000	0.58	8	9	26	27	23	19	14	10
	1500	1.31	6	11	26	29	22	20	13	12
PRSL9	-1500	1.58	15	23	35	41	31	24	15	11
	-1000	0.7	10	19	31	34	25	22	16	12
	0	0	6	11	22	26	23	23	16	14
	1000	0.7	10	15	30	33	27	24	15	16
	1500	1.58	9	15	29	35	28	27	17	15



AIRFLOW-GENERATED SOUND POWER LEVELS (See Note 5)									
MODEL PRSL	FACE VELOCITY	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
		1	2	3	4	5	6	7	8
		63	125	250	500	1000	2000	4000	8000
PRSL3	-1500	50	54	45	60	61	66	68	59
	-1000	45	41	53	49	57	57	59	46
	1000	49	38	41	47	52	57	53	56
	1500	55	51	58	56	53	64	61	59
PRSL6	-1500	61	57	55	62	59	63	69	64
	-1000	52	51	56	56	58	61	62	50
	1000	61	57	53	44	56	59	59	53
	1500	69	70	69	63	60	61	65	67
PRSL9	1500	61	57	55	62	59	63	69	64
	-1000	52	51	56	56	58	61	62	50
	1000	61	57	53	44	56	59	59	53
	1500	69	70	69	63	60	61	65	67

FACE AREA ADJUSTMENT FACTORS								
Self Generated Power Levels listed above require adjustments 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)	1	2	4	8	16	32	64	128
Adjustment Factor (decibels)	-6	-3	0	+3	+6	+9	+12	+15

# AIRFLOW PERFORMANCE

RUSKIN MODEL			STATIC PRESSURE LOSS (INCHES WG)											
TOTAL WEIGHTS PER MODULAR SILENCER (LBS) (SEE NOTE 6)	PRSL9		0.05	0.1	0.18	0.27	0.39	0.7	0.89	1.09	1.32	1.58		
	PRSL6		0.04	0.08	0.15	0.23	0.33	0.58	0.73	0.91	1.09	1.31		
	PRSL3		0.03	0.07	0.12	0.19	0.28	0.5	0.63	0.78	0.94	1.13		
		Face Velocity (fpm)	250	375	500	625	750	1000	1125	1250	1375	1500		
	Size (W x H)	Face Area (Sq. Ft.)	Airflow (cfm)											
64	43	21	12 x 9	0.75	188	281	375	469	563	750	844	938	1031	1125
75	50	25	12 x 12	1.00	250	375	500	625	750	1000	1125	1250	1375	1500
86	58	29	12 x 15	1.25	313	469	625	781	938	1250	1406	1563	1719	1875
98	65	33	12 x 18	1.50	375	563	750	938	1125	1500	1688	1875	2063	2250
109	73	36	12 x 21	1.75	468	656	875	1094	1313	1750	1969	2188	2406	2625
120	80	40	12 x 24	2.00	500	750	1000	1250	1500	2000	2250	2500	2750	3000
132	88	44	12 x 27	2.25	563	844	1125	1406	1688	2250	2531	2813	3094	3375
143	95	48	12 x 30	2.50	625	938	1250	1563	1875	2500	2813	3125	3438	3750
154	103	51	12 x 33	2.75	688	1031	1375	1719	2063	2750	3094	3438	3781	4125
165	110	55	12 x 36	3.00	750	1125	1500	1875	2250	3000	3375	3750	4125	4500
107	72	35	24 x 9	1.50	375	563	750	938	1125	1500	1688	1875	2063	2250
123	83	41	24 x 12	2.00	500	750	1000	1250	1500	2000	2250	2500	2750	3000
139	93	46	24 x 15	2.50	625	938	1250	1563	1875	2500	2813	3125	3438	3750
155	104	51	24 x 18	3.00	750	1125	1500	1875	2250	3000	3375	3750	4125	4500
171	115	57	24 x 21	3.50	875	1313	1750	2188	2625	3500	3938	4375	4813	5250
188	125	62	24 x 24	4.00	1000	1500	2000	2500	3000	4000	4500	5000	5500	6000
204	136	68	24 x 27	4.50	1125	1688	2250	2813	3375	4500	5063	5625	6188	6750
220	147	73	24 x 30	5.00	1250	1875	2500	3125	3750	5000	5825	6250	6875	7500
236	157	78	24 x 33	5.50	1375	2063	2750	3438	4125	5500	6188	6875	7563	8250
252	138	84	24 x 36	6.00	1500	2250	3000	3750	4500	6000	6750	7500	8250	9000

- 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.
- 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.
- Insertion Loss Data does not account for break out noise. Therefore to

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

- Weights and Modular sizes shown on the Airflow Performance chart do not represent a complete list of sizes available (widths are specific in 12" increments). 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	0.00047	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:  $sp_1/sp_2 = (cfm_1/cfm_2)^{1/2}$ .

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)**.

