

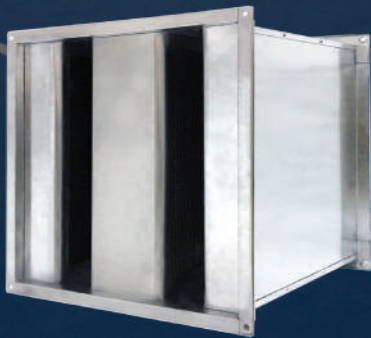


RS *Rectangular Silencer*





Introduction



Prudent Aire's Rectangular Silencer are designed for silencing noise transmitted through ductwork, utilize sound absorbing media to reduce sound levels. As the discharge noise passes through the silencer, the acoustic energy enters the baffles through the holes in the internal perforated plate. This perforated plate protects the acoustic media from being eroded by the air at high velocities, but have a large enough free are to be acoustically transparent. Once inside the baffle, the acoustic energy interacts with the absorptive media, the friction between the acoustic energy and the fiber glass converts the acoustic energy into heat, thereby reducing the amount of acoustic energy and decreasing sound levels at discharge of the silencer.

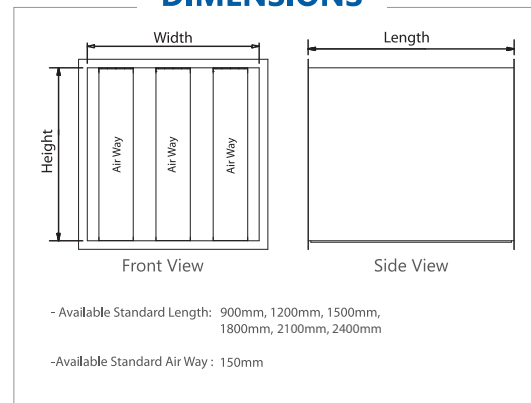
CONSTRUCTIONS & MATERIALS

- Silencing discharge noise pass through ductwork.
- Baffle designed to reduce the pressure drop
- Preforated plate applied at baffle to minimized acoustic media being eroded and leak out to the system.
- Standard with TDC joint.
- Maximum Size available for single module : 2400 (W) x 1800 (H) x 3000 (L)
- Baffle Infill : Acoustic media



Prudent Aire shown herein are Licensed to bear AMCA seal. Sound Attenuators are certified by AMCA to ASTM standard E477-13e1 and comply with requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to dynamic insertion loss & Airflow generated sound power level.

DIMENSIONS



Casing



Galvanised Steel
(Size Dependant)

Baffle



Galvanised Steel
(Size Dependant)

Casing & Baffle



Stainless Steel
(Size Dependant)

Body of the silencer :

- Exterior casing in galvanized steel, stainless steel or other welded material.
- Exterior casing in steel with minimum 0.8mm thickness with structural steel.
- Additional reinforcements (frame, angle, etc)
- Special paint finishes for certain environment condition.
- Holes on flange for lifting and connection.

Special assembly :

- In case of concentrated smoke or accumulated dust, it is possible to opt for periodic cleaning or replacement of baffles.

Baffles :

- Choice of wool types (rockwool, fibreglas, etc)
- Choice of wool thickness and density.
- Polyester film, black matt finished, glass cloth, etc to protect the acoustic media from oil, water, fiber erosion, etc.
- Hexagon profile for flow entry and taper end for flow discharge to limit turbulence and pressure drop.
- Perforated galvanized steel, stainless steel or other material.
- Baffles assemble with internal structure.

Connecting flanges :

- Angle iron or TDC/TDF flanges to connect to the ventilation duct system.

PERFORMANCE DATA

NET INSERTION LOSS RATINGS										
MODEL LENGTH (mm)	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)										
900 (AMCA Certified)	-2000	0.62	4	5	15	22	27	28	18	11
	-1500	0.34	3	6	14	22	27	27	18	11
	-1000	0.15	3	5	14	21	26	27	18	12
	-500	0.04	2	5	13	20	25	27	18	13
	0	-	2	5	12	20	25	27	18	13
	500	0.04	1	5	12	19	25	27	18	13
	1000	0.15	1	4	12	19	24	26	19	13
	1500	0.34	1	4	11	18	23	26	19	13
1200	2000	0.62	0	3	11	18	23	26	19	13
	-2000	0.87	5	6	18	23	29	30	22	16
	-1500	0.48	5	7	18	25	30	29	22	14
	-1000	0.21	3	8	17	25	29	29	21	15
	-500	0.06	3	6	16	24	28	29	19	14
	0	-	3	7	15	26	30	29	20	16
	500	0.06	2	6	15	26	29	36	22	15
	1000	0.21	2	6	16	27	30	36	21	15
1500	1500	0.48	3	5	15	28	32	35	22	16
	2000	0.87	1	4	18	27	31	35	21	15
	-2000	1.22	6	7	22	35	38	31	28	19
	-1500	0.67	6	8	22	38	39	32	28	19
	-1000	0.29	3.6	10	20	38	38	33	27	18
	-500	0.08	3.6	7	19	36	36	32	26	18
	0	-	4	10	19	34	37	30	21	18
	500	0.08	3	9	19	35	36	31	28	19
1800	1000	0.29	3	9	20	36	37	33	27	19
	1500	0.67	4	8	19	36	36	33	28	18
	2000	1.22	2	7	21	35	38	32	26	19
	-2000	1.70	6	11	26	48	45	33	25	21
	-1500	0.93	6	13	26	49	45	34	25	21
	-1000	0.41	7	12	24	51	46	35	26	22
	-500	0.11	5	13	23	50	47	35	26	22
	0	-	6	14	25	49	46	34	27	20
2100	500	0.11	5	11	23	52	45	34	25	21
	1000	0.41	6	12	26	51	48	35	26	19
	1500	0.93	6	13	24	48	46	34	26	22
	2000	1.70	6	12	23	48	46	34	25	21
	-2000	2.38	8	17	30	53	51	33	25	21
	-1500	1.31	8	17	31	54	51	34	26	21
	-1000	0.58	9	19	32	55	53	35	25	21
	-500	0.15	9	19	31	55	50	35	25	20
2400	0	-	10	18	33	56	52	36	24	20
	500	0.15	9	19	31	55	50	34	25	21
	1000	0.58	9	17	33	55	53	35	26	22
	1500	1.31	8	18	32	54	51	34	25	21
	2000	2.38	8	17	30	53	51	34	25	19
	-2000	3.33	11	21	35	64	59	40	29	23
	-1500	1.83	11	22	35	64	61	41	29	23
	-1000	0.81	12	23	36	66	62	42	31	24
2400	-500	0.22	13	22	36	64	60	40	30	25
	0	-	12	23	37	65	60	41	29	25
	500	0.22	13	22	36	64	61	42	29	24
	1000	0.81	12	23	35	65	62	43	30	24
	1500	1.83	11	22	35	64	61	40	30	23
	2000	3.33	11	21	35	64	60	40	29	23

PERFORMANCE DATA

AIRFLOW -GENERATED SOUND POWER LEVELS								
FACE VELOCITY (fpm)	OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
	1	2	3	4	5	6	7	8
	63	125	250	500	1000	2000	4000	8000
-2000	72	64	63	60	57	57	55	48
-1500	69	60	57	54	53	52	49	39
-1000	65	50	46	46	45	39	32	22
-500	64	46	36	33	25	18	18	21
500	59	44	33	28	24	18	18	21
1000	62	50	46	46	44	38	31	22
1500	66	61	55	55	54	52	48	39
2000	72	68	62	61	60	59	57	50

FACE AREA ADJUSTMENT FACTORS

For given face areas, add or subtract the relevant values from all Octave band frequencies to adjust airflow generated sound power levels.

Face Area (sq ft)	0.5	1	2	4	8	16	32	64	128	256
Adjustment Factor (dB)	-9	-6	-3	0	+3	+6	+9	+12	+15	+18

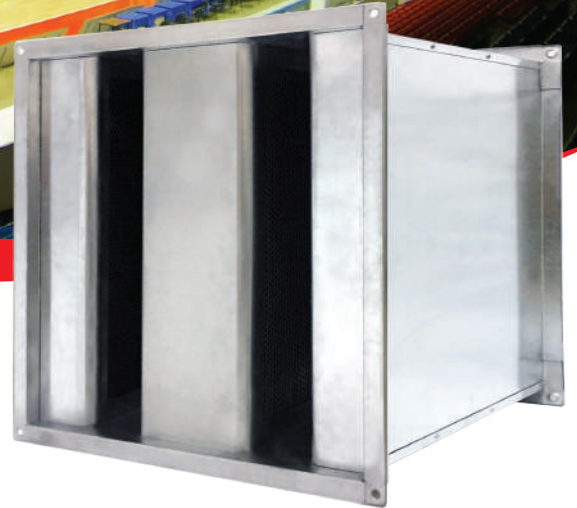
AIRFLOW PERFORMANCE

FACE VELOCITY (fpm)		400	800	1000	1200	1400	1600	1800	2000	2200	2400
SIZE (W x H)	FACE AREA (Sq. Ft.)	AIRFLOW (cfm)									
14 x 12	1.17	467	933	1167	1400	1633	1867	2100	2333	2567	2800
14 x 24	2.33	933	1867	2333	2800	3267	3733	4200	4667	5133	5600
14 x 30	2.92	1167	2333	2917	3500	4083	4667	5250	5833	6417	7000
14 x 36	3.5	1400	2800	3500	4200	4900	5600	6300	7000	7700	8400
28 x 12	2.33	933	1867	2333	2800	3267	3733	4200	4667	5133	5600
28 x 24	4.67	1867	3733	4667	5600	6533	7467	8400	9333	10267	11200
28 x 30	5.83	2333	4667	5833	7000	8167	9333	10500	11667	12833	14000
28 x 36	7	2800	5600	7000	8400	9800	11200	12600	14000	15400	16800
30 x 12	2.5	1000	2000	2500	3000	3500	4000	4500	5000	5500	6000
30 x 24	5	2000	4000	5000	6000	7000	8000	9000	10000	11000	12000
30 x 30	6.25	2500	5000	6250	7500	8750	10000	11250	12500	13750	15000
30 x 36	7.5	3000	6000	7500	9000	10500	12000	13500	15000	16500	18000
36 x 12	3	1200	2400	3000	3600	4200	4800	5400	6000	6600	7200
36 x 24	6	2400	4800	6000	7200	8400	9600	10800	12000	13200	14400
36 x 30	7.5	3000	6000	7500	9000	10500	12000	13500	15000	16500	18000
36 x 36	9	3600	7200	9000	10800	12600	14400	16200	18000	19800	21600






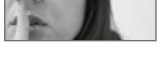

1. Sound check silencers have been tested in accordance with ASTM E-477-13 standard (Standard method of testing duct liner materials and perforated silencer for acoustical and airflow performance) for 28 inch by 24 inch modular sizes.
2. Airflow generated sound power levels should be reviewed when low acoustical design goals are required. This data has been measured per the ASTM E-477-13 testing standard in enough detail to allow representation for a variety of airflow levels.



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Products Range

- Grilles 
- Diffusers 
- Dampers 
- Fire & Smoke Protection 
- VAV 
- Others 
- Accessories 



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