

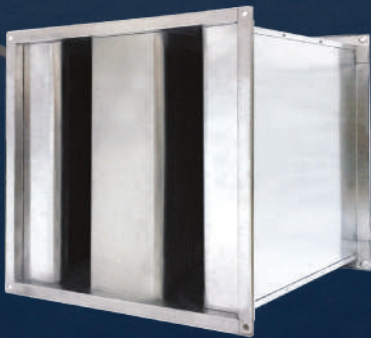


RS *Rectangular Silencer*





Introduction



Prudent Aire 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 area 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 : Rockwool (40 kg/m³), fiber glass with black tissues and perforated galvanized steel

Casing



Galvanised Steel
(Size Dependant)

Baffle

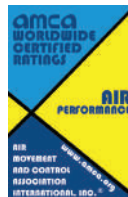


Aluminium Extrusion

Casing & Baffle

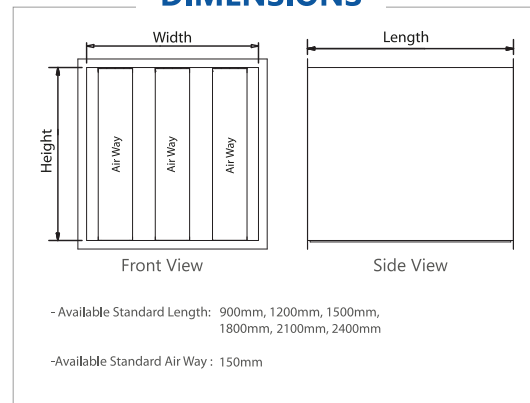


Stainless Steel
(Size Dependant)



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



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, fiberglass, 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 |
| 2000 | 0.62 | 0 | 3 | 11 | 18 | 23 | 26 | 19 | 13 | |
| 1200 | -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 | 0.48 | 3 | 5 | 15 | 28 | 32 | 35 | 22 | 16 |
| 2000 | 0.87 | 1 | 4 | 18 | 27 | 31 | 35 | 21 | 15 | |
| 1500 | -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 |
| | 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 | |
| 1800 | -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 |
| | 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 | |
| 2100 | -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 |
| | 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 | |
| 2400 | -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 |
| | -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

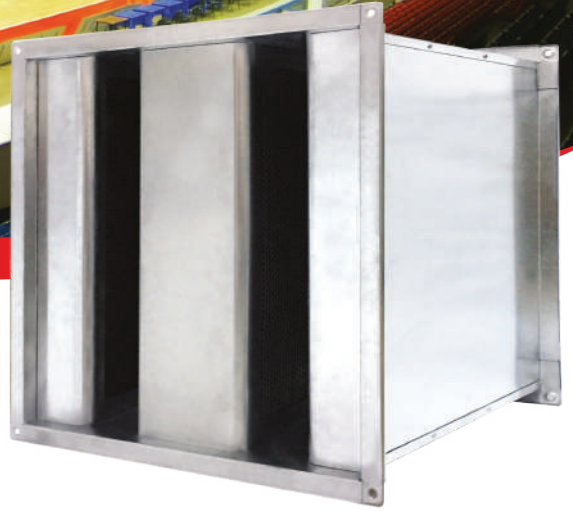
For given face areas, add or subtract the relevant values from all Octave band frequencies to adjust airflow generated sound power levels.

| | | | | | | | | | | |
|------------------------|-----|----|----|---|----|----|----|-----|-----|-----|
| 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.



RS | Rectangular Silencer

Products Range

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



Prudent Aire Engineering Sdn Bhd 657301-P
 Lot 2102, Jalan KPB12, Off Jalan Suria Park 1, Kg Baru Balakong,
 43300 Seri Kembangan, Selangor Darul Ehsan, Malaysia
 Tel : +603-9100 3858 (HL) / 9101 3869 / 9101 5868
 Fax : +603-9100 4868 Email : sales@prudentaire.com

www.prudentaire.com