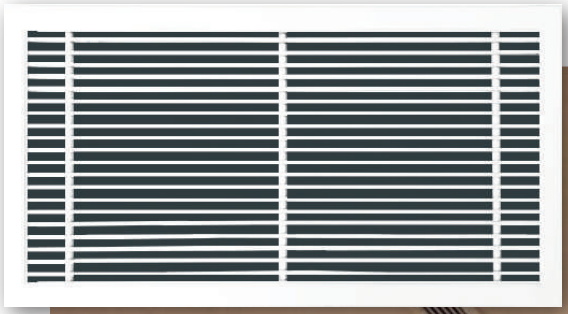
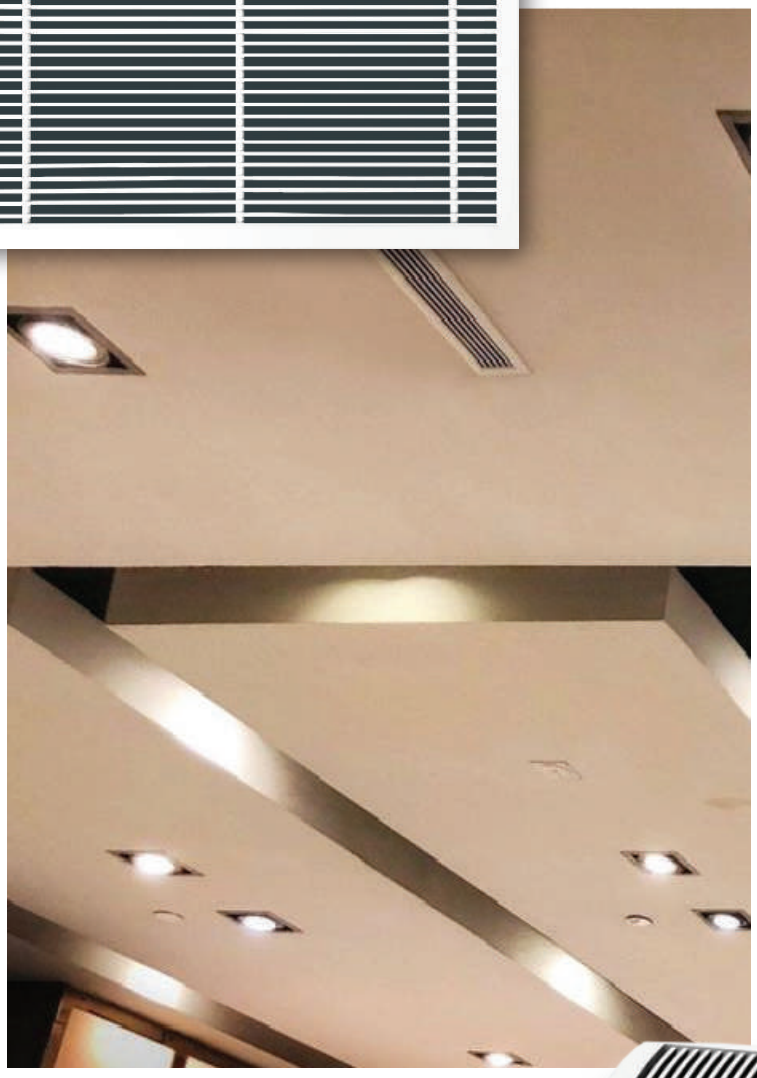
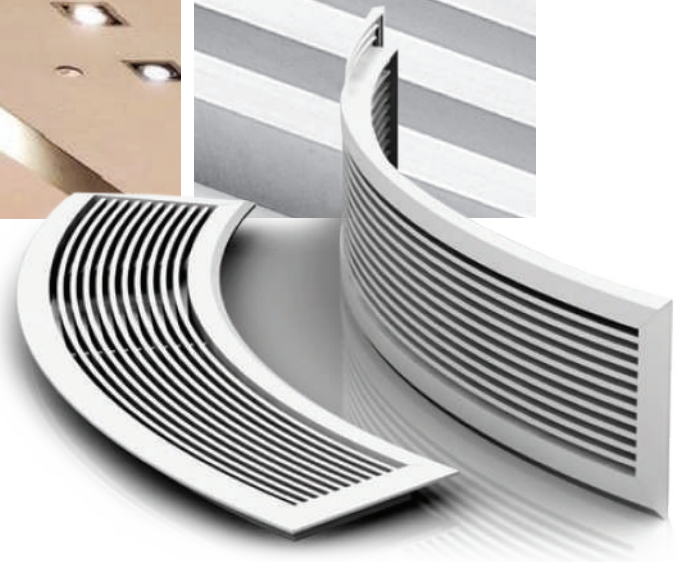
PrudentAire®







BG Bar Grille

BG | Bar Grille

Introduction

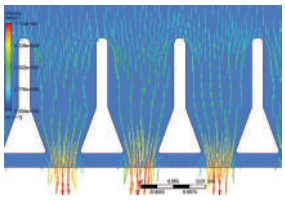
Making use of the extruded vanes side profiles & angle of deflection, Prudent Aire Bar Grille are able to manipulate the airflow orientation and thus creating the desired flow profile. Depending on the model type, the grilles can be wall mounted and windowsill mounted. For standard model, it has the free area of 61% can be further increased upon customer's request.

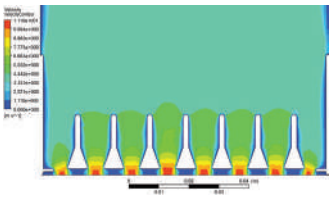
Available in highly customizable shape profile, Prudent Aire Bar Grille are one of the preferred choice for providing aesthetic value-added points. Thus, it is commonly found in facilities such as offices, shopping centers, hotels and airports etc. for both supply and exhaust purposes.

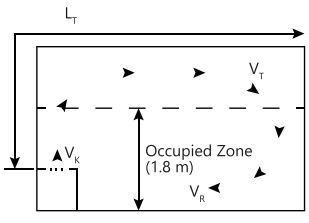
CONSTRUCTIONS & MATERIALS

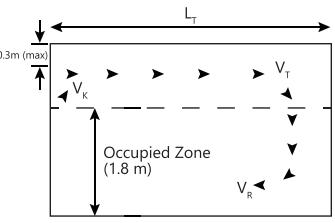
- Standard 61% free area
- 0° & 15° deflection configurations
- Customizable deflection angles
- Highly customizable shape profiles
- Optional removable core vanes
- Standard vanes pitch is 12mm
- Stainless Steel & Aluminium construction available
- Grille Sizing :
  i) Minimum size : BS. 150 x 150 mm
  ii) Maximum size : BS. 3000 x 1400 mm

Frame Construction	Vanes Construction	Surface Finishing	
AL 1.1mm	AL 5.0x1.8 mm	RAL 9010 SG	HY 1001/ A127
Extruded Aluminium	Extruded Aluminium	White (Matt) Customizable Colors	White (Matt)

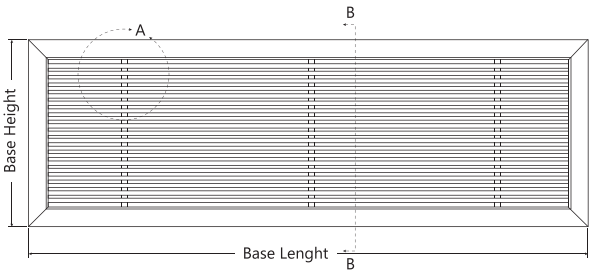


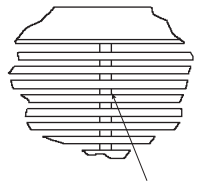






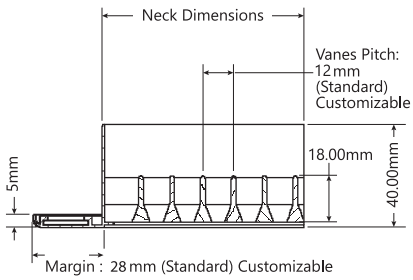
DIMENSIONS





Hollow Bar : 12 mm Spacing

DETAIL A



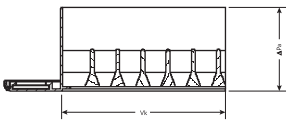
SECTION B-B

Correction Factors

Conditions	15° Deflection
Effective Area (m^2)	x 0.95
V_k	x 1.05
Pressure Lost (Pa)	x 1.0
NR	+0

PRUDENTAIRE®

Supply

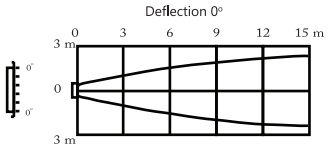


* Diffuser performance data factored in Coanda effect & fully opened Radial OBD conditions.

* The effective area given is to the best estimation & knowledge of Prudentaire's engineers at the point of entry.

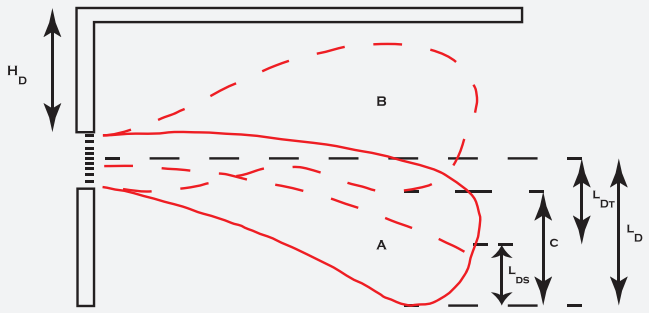
Grille Neck Size, mm	Neck Area (Eff. Area) m²	Unit Volume Flowrate, m³/hr Unit Volume Flowrate, l/s	250 70	300 84	400 112	500 140	600 168	800 224	1000 280	1400 392	1600 448
			NR25	NR35	NR40			NR45			
150 x 250	0.0375 (0.020)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	6.0 3.7 9.5 23	7.0 4.4 14 30	9.0 5.8 23 36	12 7.3 40 43	14 8.8 55 45	- - - -	- - - -	- - - -	- - - -
150 x 300	0.045 (0.024)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	5.5 3.0 7 25	6.2 3.6 10 27	8.5 4.8 16 34	11 6.0 27 37	13 7.2 40 42	17 9.7 65 >45	- - - -	- - - -	- - - -
150 x 400	0.06 (0.032)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	5.0 2.2 <4 23	6.0 2.7 5 25	8.0 3.6 9 32	9.5 4.5 14 36	11 5.4 22 38	16 7.2 40 45	- - - -	- - - -	- - - -
150 x 500	0.075 (0.040)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	5 2.2 <4 20	7 2.9 7 26	8.5 3.7 9.5 31	9.5 4.4 14 33	14 5.8 25 40	17 7.3 40 43	- - - -	- - - -
150 x 600	0.09 (0.048)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	6.0 2.4 <4 22	7.5 3.0 7 27	9.0 3.5 9 30	12 4.7 16 36	15 5.9 25 41	20 8.3 50 >45	- - - -
150 x 800	0.12 (0.064)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	6.8 2.2 <4 23	7.5 2.6 5 25	10.5 3.5 9 32	13 4.4 14 37	17 6.2 27 42	20 7.1 40 45
150 x 1000	0.15 (0.080)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	6.5 2.1 <4 23	9.5 2.8 6 30	12 3.6 9 34	15 5.0 18 40	18 5.7 25 42
					NR25		NR35	NR40	NR45		
200 x 400	0.08 (0.042)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	6.5 2.6 5 24	8.0 3.3 8 28	9.0 4.0 12 32	12.5 5.3 20 37	16 6.6 30 42	21 9.3 65 >45	- - - -
200 x 500	0.10 (0.052)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	5.5 2.1 <4 21	7 2.6 5 25	8.5 3.1 7 28	11.5 4.2 12 35	14 5.2 19 40	18.5 7.3 40 45	- - - -

Supply

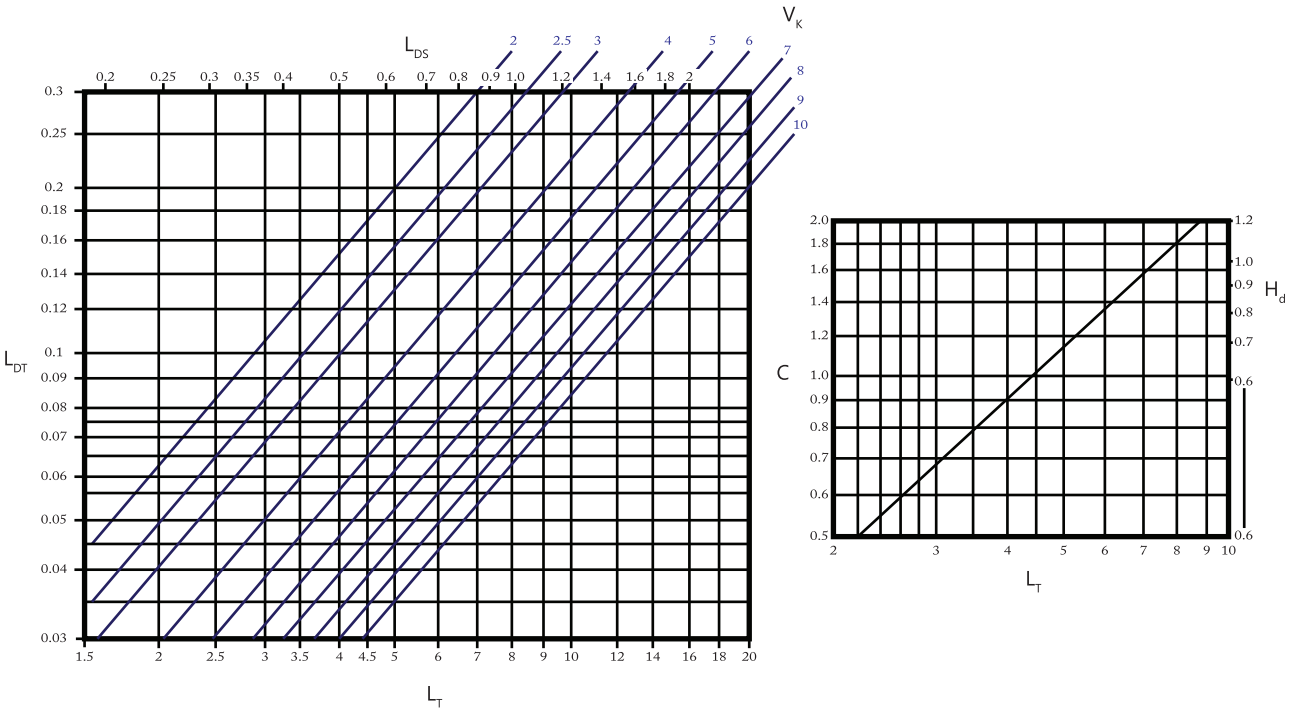


Grille Neck Size, mm	Neck Area (Eff. Area) m²	Unit Volume Flowrate, m³/hr Unit Volume Flowrate, l/s	250 70	300 84	400 112	500 140	600 168	800 224	1000 280	1400 392	1600 448
								NR25	NR35	NR40	NR50
200 x 600	0.12 (0.064)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	6.8 2.2 <4 23	7.5 2.6 5 25	10.5 3.5 9 32	13 4.4 14 37	17 6.2 27 42	20 7.1 40 45
200 x 800	0.16 (0.085)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	7.0 2.0 <4 21	9.5 2.6 5 27	11.5 3.3 8 32	16 4.6 15 37	17 5.3 22 40
200 x 1000	0.2 (0.106)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	- - - -	8 2.1 <4 24	10 2.6 5 28	14 3.6 9.5 34	14.5 4.1 12 36
								NR25	NR35	NR40	NR50
300 x 500	0.15 (0.080)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	7.0 2.0 <4 21	9.5 2.6 5 27	11.5 3.3 8 32	16 4.6 15 37	17 5.3 22 40
300 x 600	0.18 (0.095)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	- - - -	9.0 2.2 <4 25	11 2.8 5.5 30	14 3.9 12 36	16 4.5 14 37
300 x 800	0.24 (0.127)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	9.5 2.1 <4 25	13 2.9 6 32	14 3.3 8 34
300 x 1000	0.3 (0.159)	Throw Distance (0.25 m/s), m Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	8.5 1.7 <4 22	11 2.3 <4 27	12.5 2.7 5 30

Drop Correction



Label	Description
A	Envelope of non-isothermal air stream without drop correction
B	Envelope of a non-isothermal air stream with drop correction
L_{DS}	Distance between the centre of an air current and the lowest point of the envelope
L_{DT}	Distance between the centre of the grille core and the air current centerline
C	Correction factor, m
L_T	Throw distance, m
H_d	Grilles-Ceiling height, m



Airstream Drop

The total drop is the maximum vertical distance between the centre of a grille core and the lowest point of a specified enveloper, determined by the envelope velocity V_T.

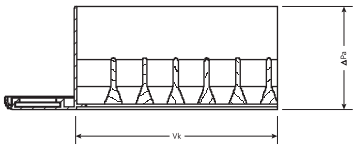
The total drop consist of two elements :

$$L_D = L_{DS} + L_{DT}$$

Drop Correction L_D

Drop correction is possible by projecting the air current upward, with supply grille having adjustable horizontal bars. The drop effect can be significantly corrected if the air is projected upward 15° to 20°, as shown in the drop correction diagram. The correction factors "C" in the diagram are only valid if the minimum distance Hd between the centre of the grille and the ceiling is maintained.

Exhaust



* The effective area given is to the best estimation & knowledge of Prudentaire's engineers at the point of entry.

* For 15° deflector vanes, air flow rate will be reduced by 5% at listed pressure lost and NR values.

Grille Neck Size, mm	Neck Area (Eff. Area) m^2	Unit Volume Flowrate, m^3/hr Unit Volume Flowrate, l/s	250 70	300 84	400 112	500 140	600 168	800 224	1000 280	1500 420	2000 560
			NR25	NR35	NR40	NR45					
150 x 250	0.0375 (0.014)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	5.0 4 25	6.0 6.0 30	7.7 9.0 40	- - -	- - -	- - -	- - -	- - -	- - -
150 x 300	0.045 (0.017)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	4.0 2.5 <20	4.7 4.0 25	6.5 7.0 34	8.2 10 42	9.8 14 47	- - -	- - -	- - -	- - -
150 x 400	0.06 (0.023)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	3.0 <1 <20	3.6 2.5 <20	4.8 3.5 20	6.0 6.0 27	7.2 8.0 37	9.7 14 47	- - -	- - -	- - -
150 x 500	0.075 (0.028)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	3.0 <1 <20	4.0 2.5 20	5.0 4 27	6.0 6.0 33	7.9 10 42	9.9 15 52	- - -	- - -
150 x 600	0.09 (0.035)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	3.2 1.5 <20	4.0 2.5 20	4.8 3.5 26	6.3 7.0 36	7.9 10 45	11.9 22 >55	- - -
150 x 800	0.12 (0.047)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	3.0 <1 <20	3.5 2 20	4.7 4.0 30	5.9 6.0 37	8.9 13 50	- - -
			NR25	NR35	NR40	NR50					
200 x 400	0.08 (0.031)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	3.6 2.5 <20	4.5 3.0 24	5.4 5.0 30	7.2 8.0 40	- - -	- - -	- - -
200 x 500	0.1 (0.039)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	3.6 2.5 <20	4.3 3.0 24	5.7 5.5 34	7.1 8.0 40	- - -	- - -
200 x 600	0.12 (0.047)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	3.0 <1 <20	3.5 2 20	4.7 4.0 30	5.9 6.0 37	8.9 13 50	- - -
			NR25	NR35	NR40	NR45					
200 x 800	0.16 (0.063)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	3.5 2.0 20	4.3 4.0 28	6.5 7.0 40	8.7 13 52
200 x 1000	0.2 (0.080)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	- - -	3.5 2.0 22	5.2 4.5 34	6.9 8.0 45
			NR25	NR35	NR40	NR45					
300 x 500	0.15 (0.063)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	3.5 2.0 20	4.3 4.0 28	6.5 7.0 40	8.7 13 52
300 x 600	0.18 (0.074)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	3.0 <1 <20	3.8 2.5 24	5.6 5.0 36	7.5 9.0 47
300 x 800	0.24 (0.099)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	- - -	2.8 <1 <20	4.2 3.0 28	5.6 5.0 37
300 x 1000	0.3 (0.125)	Face Velocity, m/s Total Pressure Loss, Pa Noise Rating (NR)	- - -	- - -	- - -	- - -	- - -	- - -	- - -	3.3 <1 23	4.4 4.0 32

BAR GRILLE TECHNICAL SPECIFICATION

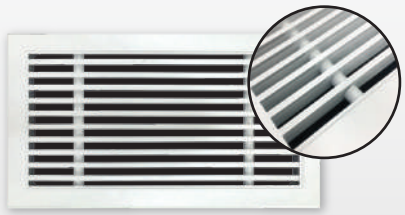
Frame Construction
1. Frame to be in extruded aluminium. Frame thickness should be in minimum 1.1mm thick.
2. The margin to be in 28mm from the neck height to the edge.
3. Frame height to be in 40mm.
4. The corner of the frame should pressed with a 90° corner piece to ensure the frames are in 90°.

Vanes Construction
1. Vanes to be in extruded aluminium. Vanes thickness should be 1.8mm thick at the tail and 5.0mm at the surface.
2. Height of the vanes to be in 18mm only.
3. Vanes pitch to be in 12mm, unless otherwise stated.
4. All the vanes to be support with minimum 2 support bar.

Finishing
1. White powder coated, oven baked as standard. RAL 9010 SG or HY 1001/A127. Others available upon request.

Performance
1. Free area of the grill to be in 61%.
2. Standard vanes deflection configuration to be 0°, unless otherwise stated.
3. Bar Grille are designed to be wall mounted and windowsill mounted.

AVAILABLE TYPES



Fixed Type - Hollow Bar

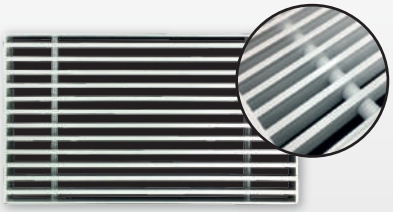
Fixed Type - Slot In

Double Margin

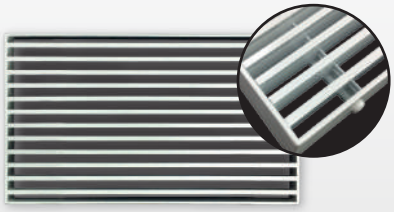
Removable Type

Clip On

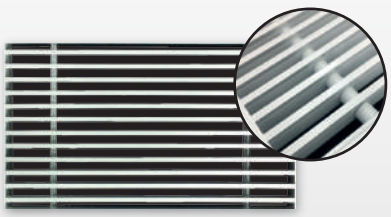
Removable Type



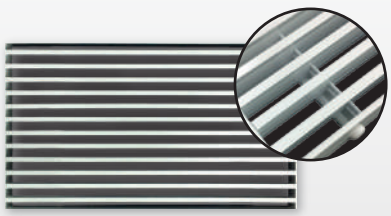
Box Type - Hollow Bar



Box Type - Slot In



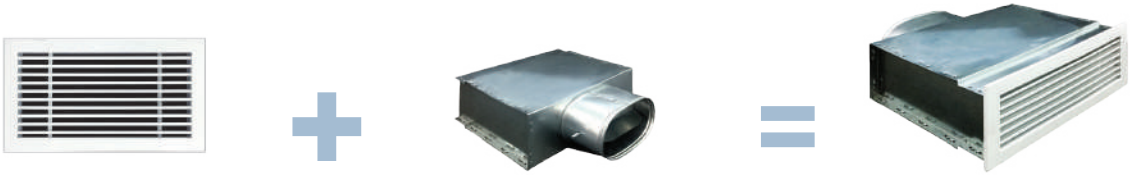
Frameless - Hollow Bar



Frameless - Slot In

GRILLE + ACCESSORIES COMBINATION

A BG PB Side Opening

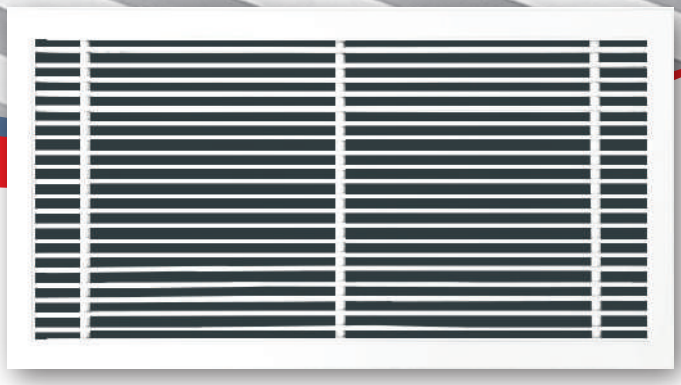


B BG PB Top Opening

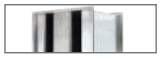
C BG Square OBD

D BG PB 2 Colar

BG | Bar Grille



Products Range

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

PrudentAire®

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