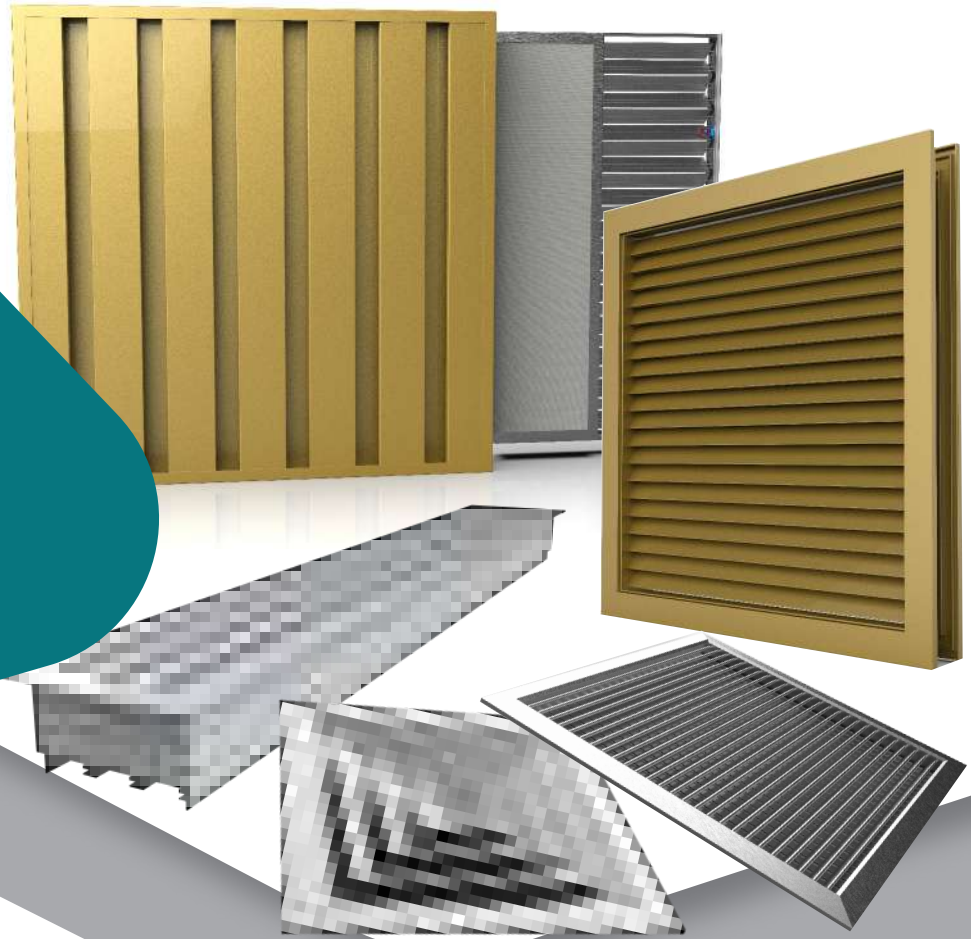




CASTLE
ENGINEERING
INDUSTRIES



AIR OUTLETS

AIR OUTLETS

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Linear Bar Grill

Chapter 3

Table Of Content:

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- Unit Assemblies
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- Fixing Details
- Engineering and Performance Data
- General Selection Diagram
- Ordering Data

Supply Linear Bar Grilles:

Description:

Our LBG Series of linear bar grilles are meticulously crafted for a diverse array of settings, including residential, commercial, and industrial environments. Designed with versatility in mind, these grilles can seamlessly integrate into sidewalls or plenum boxes, providing optimal airflow distribution. When exposed air ducts are necessary, our grilles can be effortlessly attached to duct collars for a streamlined installation process. Engineered to excel in cooling, heating, and ventilation applications, they are adept at managing varying airflow volumes and temperature differentials while ensuring superior air diffusion for enhanced comfort in any occupied space.

Standard Construction Materials:

Our linear bar grilles feature frames and blades constructed from high-quality extruded aluminium alloy profiles, ensuring durability and longevity.

The extruded aluminium blades are precisely mounted within the frame to offer varying degrees of air deflection, including 0° and 15° options, providing flexibility to meet specific airflow requirements.

Damper:

Constructed from the same robust extruded aluminium alloy profiles as the frame and blades, our grilles can easily accommodate volume control dampers if necessary. These dampers can be effortlessly attached to the top side of the grille using locking clips.

Air volume can be conveniently regulated by adjusting the damper blades directly from the face of the grille using a screwdriver, allowing for precise control over airflow.

Finish:

Our standard coating finish for the linear bar grilles is a high-quality polyester powder coating in white color RAL 9010 (Code: Z0), providing both durability and aesthetic appeal.

For volume control dampers, the coating finish is polyester powder coating in black color, ensuring consistency and functionality.

Optional Finish:

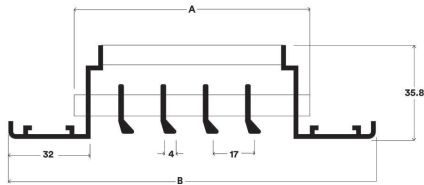
Natural anodized aluminium finish (Code: Z1) is available as an optional finish, providing a sleek and modern appearance.

Powder coating can be customized to any color upon request, allowing for seamless integration with specific design requirements (Code: Z2).

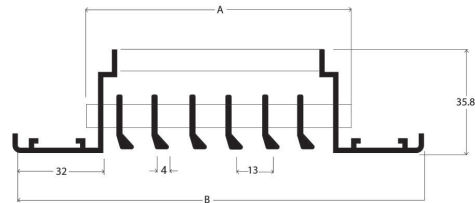
Models Available:

1) One Way Deflection

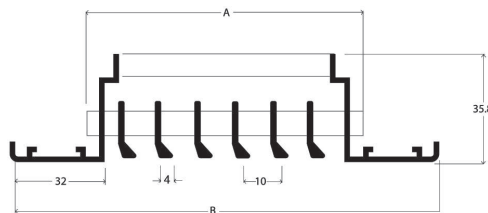
- linear Bar Grille 15° 1way pitch 17 (LBG117)
Spacing=12



- linear Bar Grille 15° 1way pitch 13 (LBG113)
Spacing=9

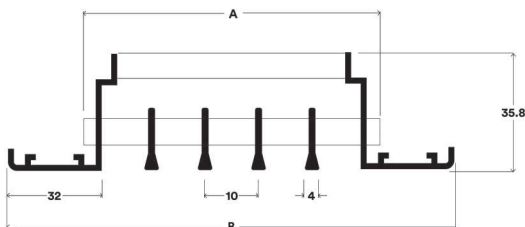


- linear Bar Grille 15° 1way pitch 10 (LBG110) Spacing=6

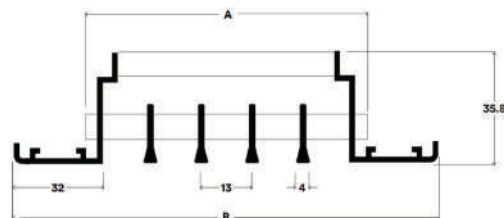


2) Two Way Deflection

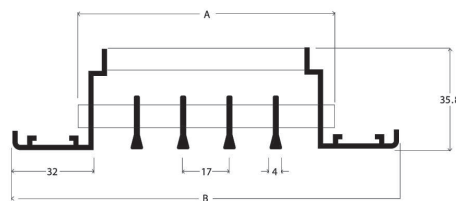
- linear Bar Grille 15° 2way pitch 10 (LBG210)
Spacing=6



- linear Bar Grille 15° 2way pitch 13 (LBG213)
Spacing=9



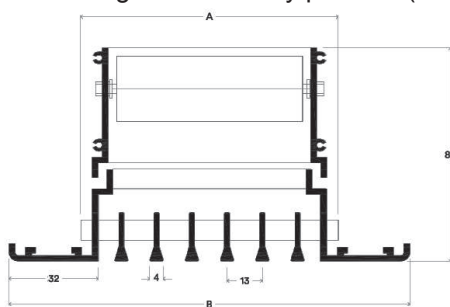
- linear Bar Grille 15° 2way c17 (LBG217)
Spacing=12



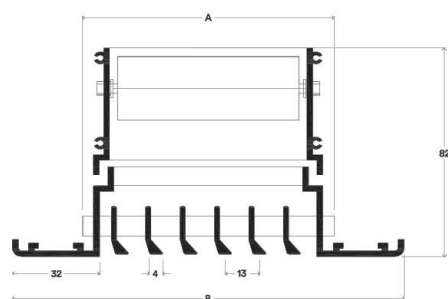
3) In The models with Rear Blades, we will add S before the code

4) In The models with damper, we will replace G with R on the model code such as:

- linear Bar Register 15° 2way pitch 13 (LBR213)



- linear Bar Register 15° 1way pitch 13 (LBR113)

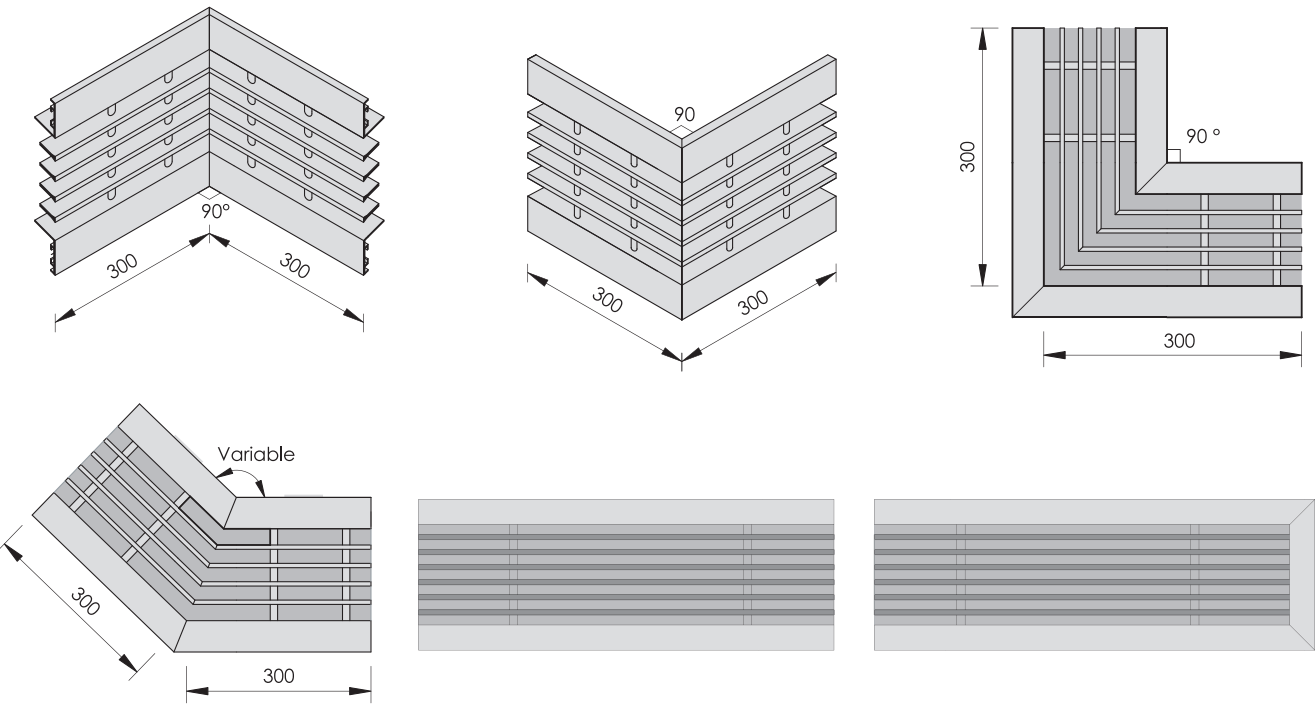


Quick selection table

WITH VERTICAL REAR BLADES					W/O REAR BLADES				
Standard Heights		Length	CFM Range		Standard Heights		Length	CFM Range	
mm	Inch				mm	Inch			
4"	100	1000	350	800	4"	100	1000	500	1100
6"	150		550	1250	6"	150		725	1650
8"	200		725	1700	8"	200		950	2100
10"	250		850	2000	10"	250		1250	2500
12"	300		1080	2300	12"	300		1450	3400
4"	100	1500	550	1250	4"	100	1500	700	1600
6"	150		800	1850	6"	150		1075	2350
8"	200		1080	2300	8"	200		1425	3150
10"	250		1300	2600	10"	250		1875	3750
12"	300		1600	3700	12"	300		2175	5100
4"	100	2000	750	1600	4"	100	2000	1000	2200
6"	150		1100	2500	6"	150		1450	3300
8"	200		1450	3400	8"	200		1900	4200
10"	250		1700	4000	10"	250		2500	5000
12"	300		2160	4600	12"	300		2900	6800

CFM Values Based on Noise Level Ranging From 15 to 35 (DB)

Unit Assemblies:



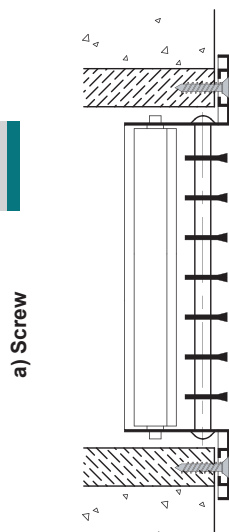
ACCESSORIES:

• Opposed Blade Damper

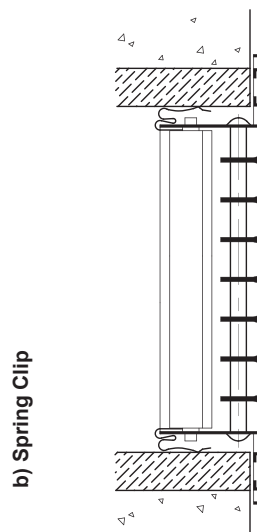
• Rubber Gasket



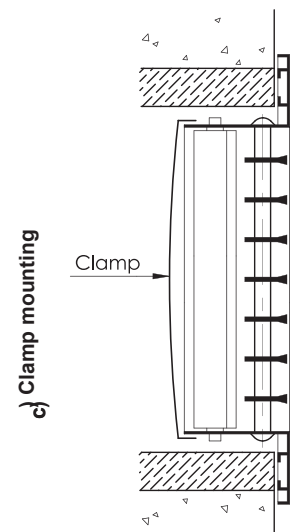
Fixing Details:



Fixing type S
With $\varnothing 4$ mm holes on flange for self-tapping screw. Self-tapping screw by others



Fixing type C
With fixing outer frame with spring on the wall



Fixing type B
With fixing bracket and without holes on flange.

Engineering and Performance Data:

EFFECTIVE AREA VALUES FOR LINEAR BAR GRILLES / REGISTERS WITH VERTICAL REAR BLADES

MODELS SLBR and SLBG.

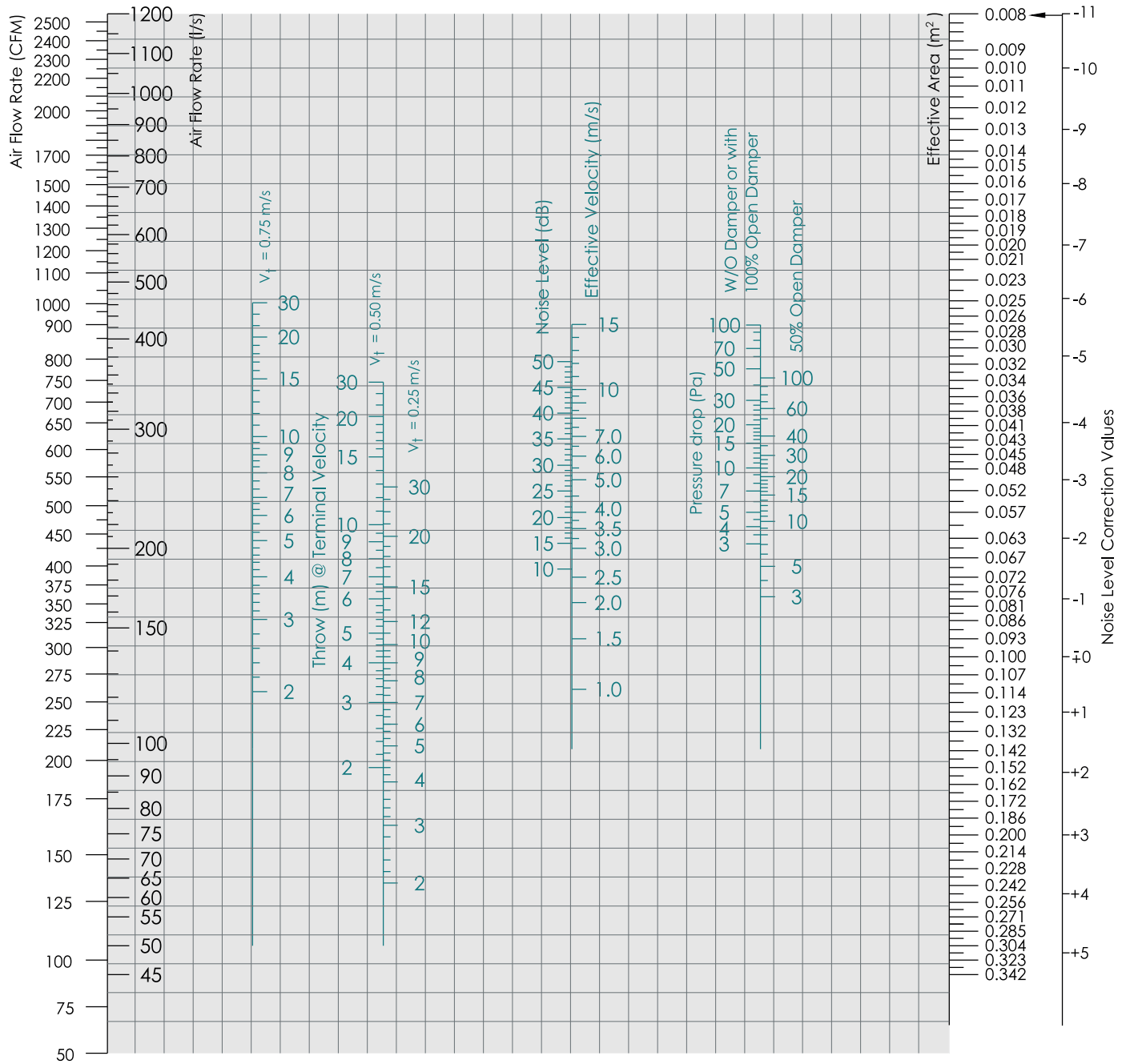
Heights		Bar Spacing		
mm	Inch	@ 12 mm	@ 9 mm	@ 6 mm
2"	50	0.023	0.023	0.019
3"	75	0.038	0.034	0.030
4"	100	0.049	0.045	0.038
6"	150	0.076	0.068	0.057
8"	200	0.102	0.094	0.079
10"	250	0.128	0.117	0.098
12"	300	0.155	0.140	0.117
14"	350	0.185	0.170	0.143
16"	400	0.215	0.200	0.170
18"	450	0.246	0.230	0.196
20"	500	0.276	0.261	0.223
22"	550	0.306	0.291	0.249
24"	600	0.337	0.321	0.276

MODELS LBR and LBG.

Heights		Bar Spacing		
mm	Inch	@ 12 mm	@ 9 mm	@ 6 mm
2"	50	0.031	0.031	0.027
3"	75	0.051	0.047	0.043
4"	100	0.067	0.063	0.055
6"	150	0.103	0.095	0.084
8"	200	0.139	0.132	0.116
10"	250	0.176	0.164	0.145
12"	300	0.212	0.197	0.174
14"	350	0.252	0.237	0.210
16"	400	0.292	0.277	0.246
18"	450	0.332	0.317	0.282
20"	500	0.372	0.357	0.319
22"	550	0.412	0.397	0.355
24"	600	0.452	0.437	0.391

- Values are in mm and per one meter of running length.
- Damper at full open position.

General Selection Diagram:



Always draw a straight horizontal line from Effective Area point in direction to Noise Level correction line on right side to obtain it's correction value

Correction Multipliers / Values:

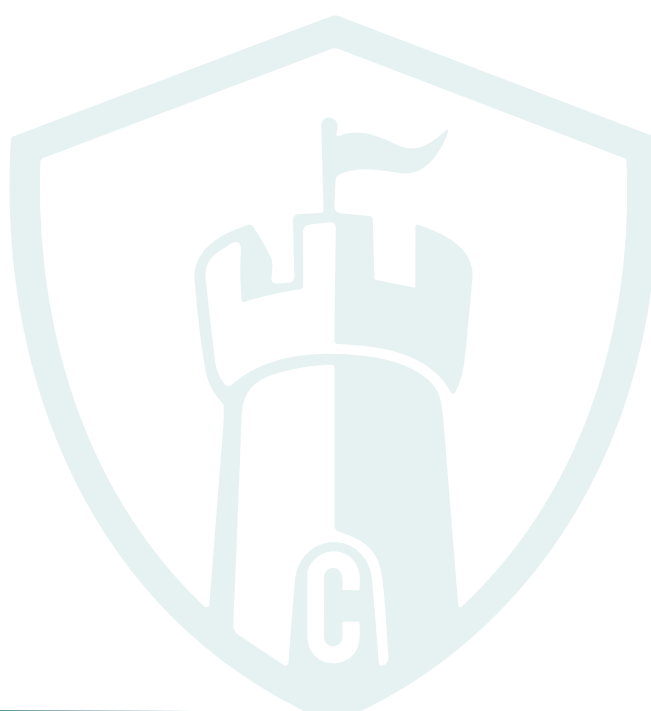
Blades Deflection	22.5°	45°
Velocity	×1.2	×1.4
Pressure Drop	×1.3	×1.6
Throw	×0.8	×0.6
Noise Level	+2.0	+3.0

How to use this Diagram?

Look On Ceiling Diffuser Chapter

Ordering Data:

- Model code.
- Grille or Register Dimensions.
- Surface Finishes for Linear Bar Grilles and Registers.
- Natural/Matt Silver Anodized.
- Powder Coating (standard 9010/9016) Other Colours Are Optional.
- Aluminium In Mill Finish.
- Other Special Finish Is on Request If Available.





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