Sound attenuator grilles

GDBV-140/45

Type GDBV-140/45
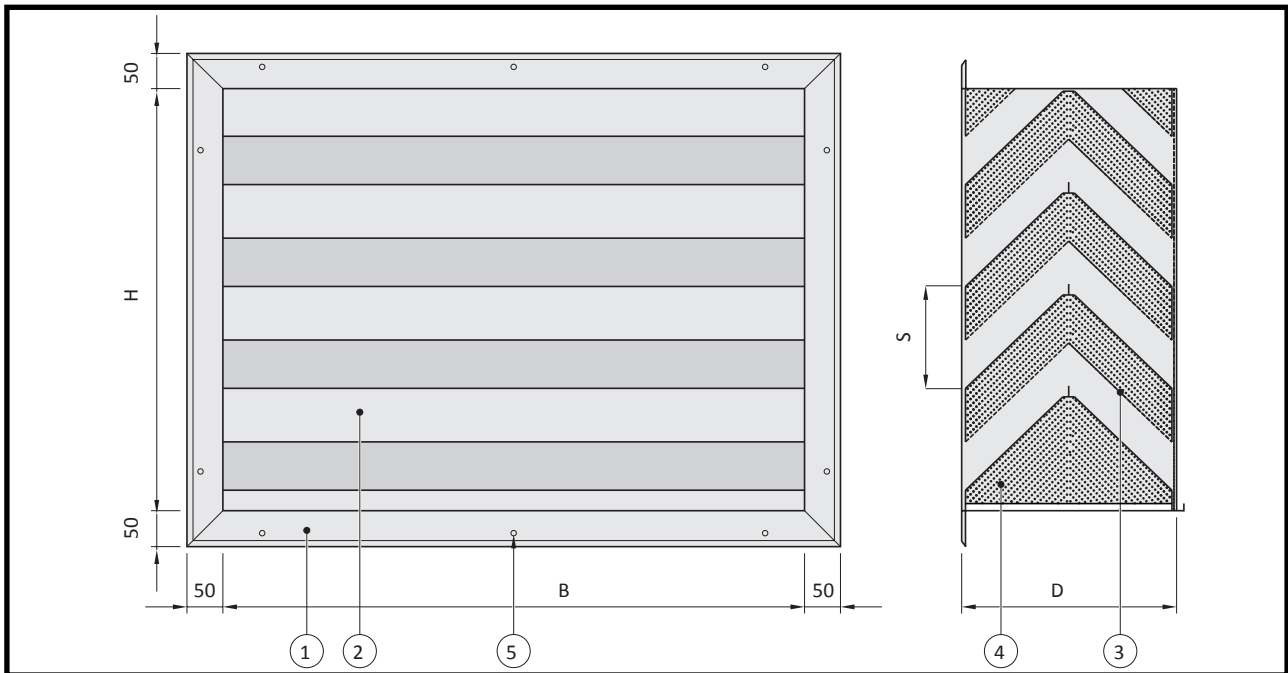
1 Housing
2 Sound- and rainscreening slats
3 Perforated sheet
4 Glass wool
5 Borehole (optional)

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Specifications

Applications	The soundproofing exterior grilles are suitable for insertion in cooling motor units, unit spaces from airconditioning systems, boiler rooms, engine rooms and roof central units.	
Advantages	Combination of rainproof grille and damper in 1 product.	
Dimensions	Slat distance	140 mm.
	Depth	300 mm.
	Flange width	50 mm undrilled (default)
	Free cross-section	V.D. = approx. 32 % (depends on height)
Dimensions	• All dimensions in height and width are available. • The grille is separated if the width or height measurement is bigger than 2200 mm (powder-coated grilles bigger than 2000 mm). See page 5 for a separation example. • The grille is separated if the width and/or height measurement is bigger than 2800 mm. See page 5 for a separation example. • Flange widths can be delivered smaller or bigger than standard against additional cost. • The minimum dimensions are 300 x 380 mm (B x H).	
Version	The default housing has a coupling flange on the front. This housing has 50 mm thick sound- and rainscreen slats.	
Material	Housing	Sendzimir galvanised sheet steel. DX51D Z275-MA quality. 1.5 mm thickness.
	Soundproofing slats	Composed of: Sendzimir galvanised steel 1 mm thick. DX51D Z275-MA quality. Perforated Sendzimir galvanised sheet 1 mm thick
	Filling	Glass wool with glass fleece.
	Mesh	Spot welded galvanised mes. 19 x 19 mm mesh size. 1.45 mm wire diameter.
Different material	• Aluminium quality, EN AW-5754 H12/H22 (corrosion resistant against seawater). • Stainless steel, quality AISI 304, active ingredient no. 1.4301. • Stainless steel, quality AISI 316, active ingredient no. 1.4401.	
Post-treatments	Internal and external powder-coating with polyester powder (T.G.I.C. free) in a RAL colour to be specified. Single-layer thickness of layer is 60 - 80 micrometer, double layer thickness of layer is at least 90 micrometer. Guarantee with gradual reduction on powdercoating to be consulted.	
Mounting	See page 5 for mounting examples. • Grilles are deliverd by default with undrilled flanges and fit openings with dimensions (B + 25) x (H + 25) mm. • Drilled flanges can be deleverd against additional charge.	

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Details	Possible versions	• Walls.
		• Round version.
		• Trapezoidal version.
		• Oval version.
		• Rhombic.
	Different mesh	• Stainless steel mesh.
		• Stainless steel gauze.
		• Aluminium mesh.
Order example	Please state the following information in your order:	
	Type	GDBV-145/45
	Number	2
	Dimensions	800 X 1000 (B x H)
	Details	Coated in RAL-7011
	Shipping address	including postal code and contact person

Mounting examples
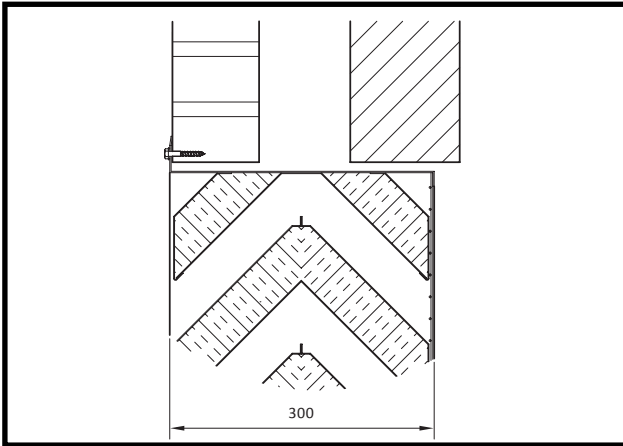
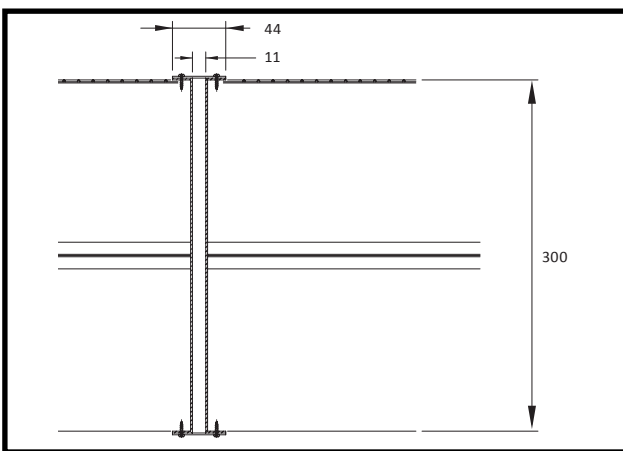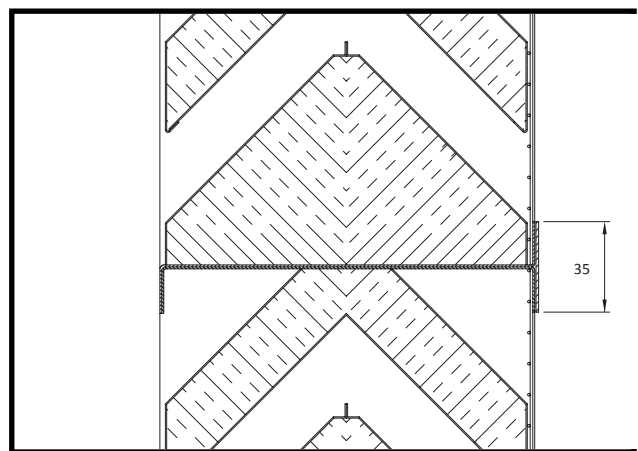
Picture 1: Mounting with IR
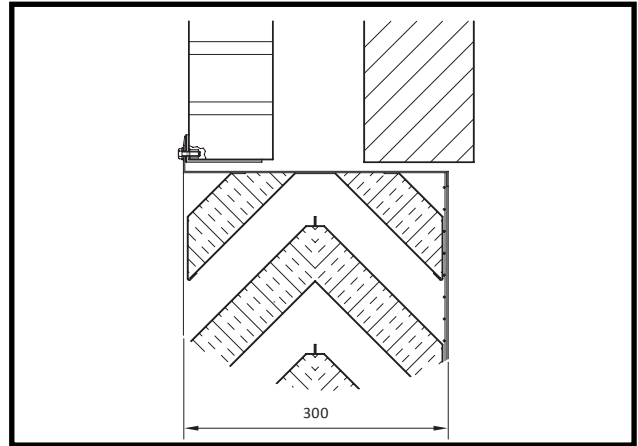
Picture 2: Mounting without IR

Separations

Picture 3: A width separation

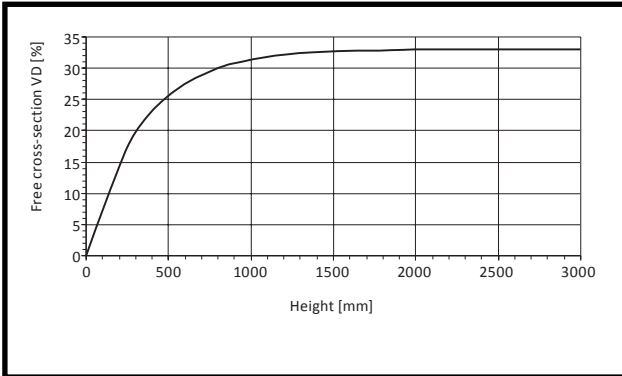Picture 4: A height separation

Charts

Chart to determine the free cross-section V.D. in %.

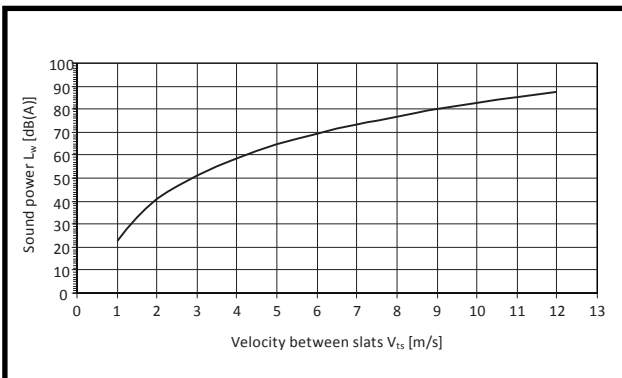The free cross-section V.D. of a grille depends on the height measurement

Chart to determine the sound power L_w in dB(A).

The following chart represents the relationship between the air velocity between the slats V_{ts} and the sound power L_w, based on an inlet cross-section A = 1 m².

The relationship between the inlet cross-section velocity V_{as} and the velocity between the slats is given by:

$$V_{ts} = V_{as} * \frac{100}{V.D.} \quad [m/s] \tag{1}$$

$$V_{as} = \frac{\varnothing \, [m^3/s]}{B[m] * H[m]} \quad [m/s] \tag{2}$$

oFor inlet cross-sections other than 1m² the reading for Lw must be corrected by correction factor C according to the following table, with

A = B x H

A [m²]	0.5	1	1.5	2	2.5	3	3.5	4
C	-3	0	+1.8	+3	+4	+4.8	+5.4	+6

$L_{WC} = L_W + C$

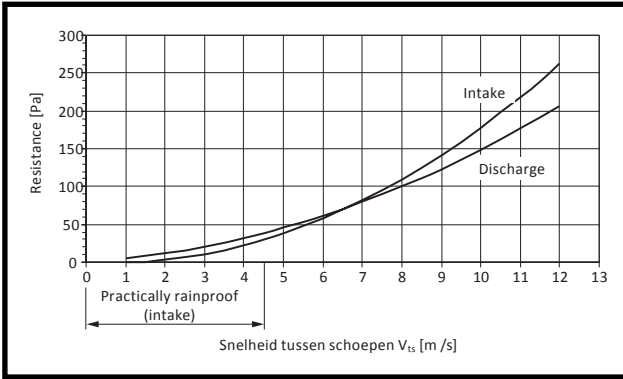(The tested grille is mounted on a height of 1135 mm, dimensions grille 800 * 800 mm.)

Chart to determine the resistance in Pa.

The following chart represents the relationship between air velocity between the slats (V_a) and the resistance. Vts can be determined via formulas (1) and (2).

The resistance is determined for grilles connected to an air-duct system. when the grilles are not directly connected to an air-duct system, the resistance can be considerably lower, depending on the situation
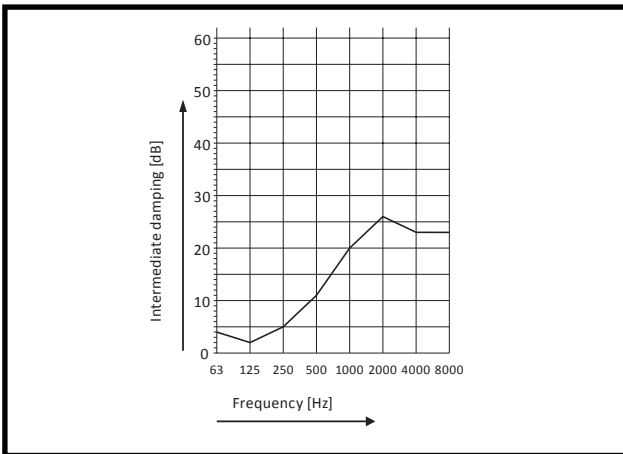

Chart to determine the intermediate damping.

Options

Combination examples

The sound-insulating exterior grilles can be combined with the following products

- Multileaf dampers
- Self-closing valves
- (Flat) filters
- Fire Block