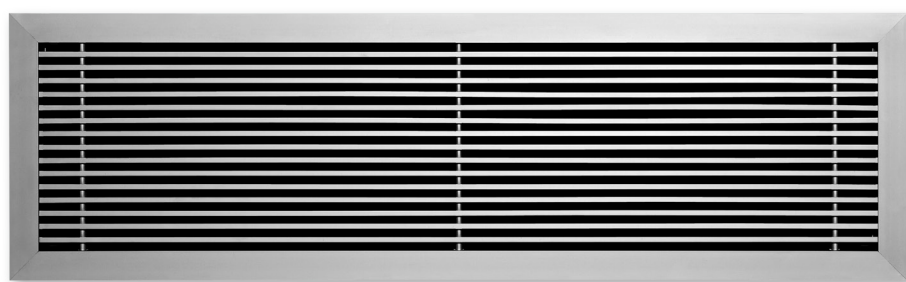


# Ventilation grilles for installation into walls, sills or rectangular ducts

## Type AH



### Ventilation grilles, made of aluminium, with fixed horizontal blades – also for horizontal runs

Single ventilation grilles and horizontal run sections with special profiled blades

- Nominal sizes 225 × 75 – 1225 × 425 mm and horizontal run sections
- Volume flow rate range 10 – 1235 l/s or 36 – 4446 m<sup>3</sup>/h
- Grille face made of aluminium with anodised finish
- Front border, 20 mm or 28 mm wide
- Straight (0°) or angled (15°) air discharge
- Concealed screw fixing

Optional equipment and accessories

- Grille face in RAL CLASSIC colours
- Installation subframe
- Installation subframe for fitting filter media
- Attachments for volume flow rate balancing and air direction control
- Spring clip fixing or countersunk holes (only for 28 mm wide front border)

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### Application

#### Application

- Ventilation grille of Type AH as supply air or extract air variant for comfort zones and industrial zones
- Directed supply air discharge for mixed flow ventilation
- Blades for straight (0°) or angled (15°) air discharge to meet different local requirements
- For variable and constant volume flows
- For supply air to room air temperature differences from –12 to +4 K
- For installation in walls, sills and rectangular ducts

#### Special characteristics

- Fixed blades
- Front border in two widths
- Concealed screw fixing, spring clip fixing or countersunk holes

- Also for continuous horizontal runs
- Optional installation subframe and casing for the fitting of filter media

#### Nominal sizes

##### Single grille

- Nominal length: 225, 325, 425, 525, 625, 825, 1025, 1225 mm
- Nominal height: 75, 125, 225, 325, 425, 525 mm

##### Horizontal run section

- Nominal length of end section: 960, 1130, 1310, 1490, 1670, 1850 mm
- Nominal length of middle section: 2000 mm
- Nominal height: 75, 125, 225, 325 mm

Other dimensions upon request

### Description

#### Variants

- AH: Single grille
- E-AH, M-AH: Horizontal run section

##### Front border

- 28 mm wide
- 20 mm wide

##### Fixing

- Concealed screw fixing
- E11: Concealed screw fixing (20 mm)
- A11: Countersunk holes (only 28 mm)
- B11: Spring clip fixing (28 mm)
- F11: Spring clip fixing (20 mm)

#### Parts and characteristics

- Rectangular profile border sections
- Fixed horizontal blades
- Vertical lateral mullions
- Factory fitted perimeter seal
- Vertical centre mullion for nominal lengths over 625 mm

#### Attachments

- AG, AS, D, DG: For volume flow rate balancing and for air direction control

#### Accessories

- Installation subframe: For the fast and simple installation of ventilation grilles
- Filter casing: Frame with filter element and spring clip fixing (only with 28 mm wide front border)

#### Construction features

- 20 mm or 28 mm wide border
- Blades for straight (0°) or angled (15°) air discharge

#### Materials and surfaces

- Border and blades made of aluminium
- Border and blades anodised, E6-C-0, natural colour
- P1: Border and blades powder-coated, RAL CLASSIC colour

#### Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

#### Maintenance

- Maintenance-free as construction and materials are not subject to wear

- Inspection and cleaning to VDI 6022

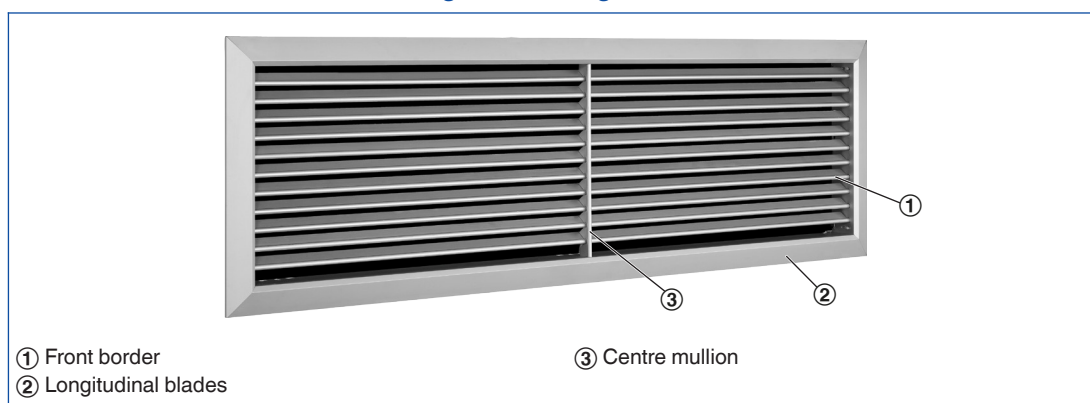
### Functional description

Ventilation grilles are air terminal devices for the supply air and extract air of ventilation and air conditioning systems. They direct the supply air into the room. Ventilation grilles with adjustable blades allow for adapting the discharge direction to the local conditions. The result is a mixed flow ventilation in comfort zones and industrial zones, with good overall room ventilation. Induction slows the airflow down, i.e. the airflow velocity decreases as the distance from the grille increases. The distance at which the airflow velocity reaches a certain defined value, e.g. 0.2 m/s, is called throw distance. The supply air jet from wall grilles that are installed near the ceiling

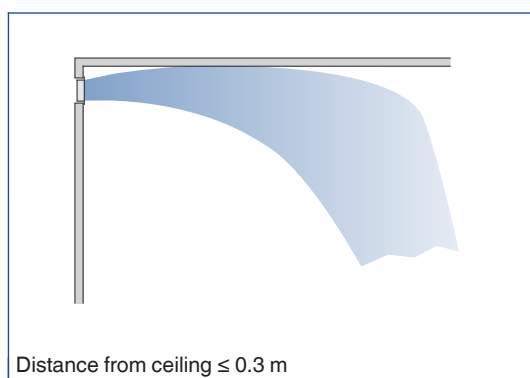
achieves a larger throw distance than a free jet (from a grille that is not installed near the ceiling). Single grilles, groups of grilles and continuous horizontal runs all achieve different throw distances.

In cooling mode it is necessary to take account of the jet deviation towards the occupied zone, which increases as the supply air to room air temperature difference increases and the discharge velocity decreases. In heating mode the supply air jet deviates towards the ceiling. This has no negative effect on the airflow velocity in the occupied zone, but it may affect the complete ventilation of the room.

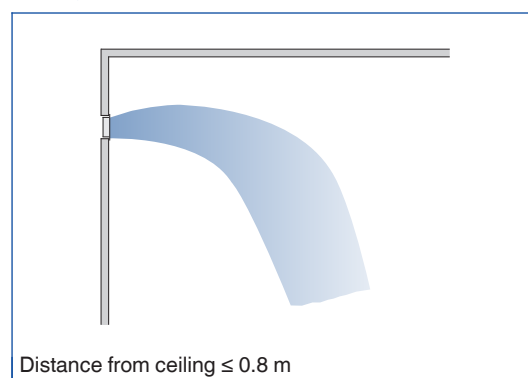
### Schematic illustration of a ventilation grille with longitudinal blades



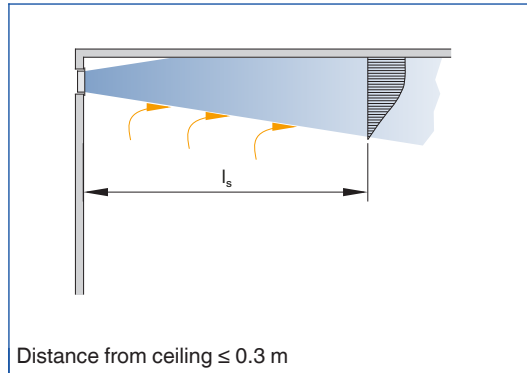
### Air pattern in cooling mode, with ceiling effect, sectional view



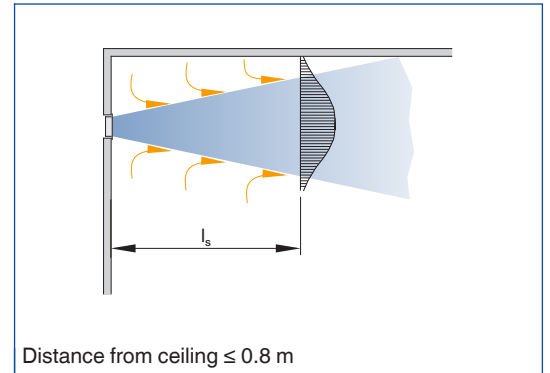
### Air pattern in cooling mode, without ceiling effect, sectional view



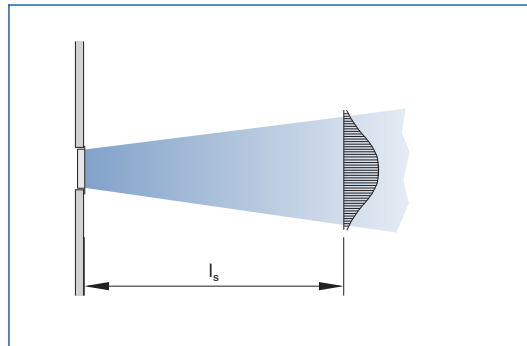
**Air pattern with ceiling effect, sectional view**



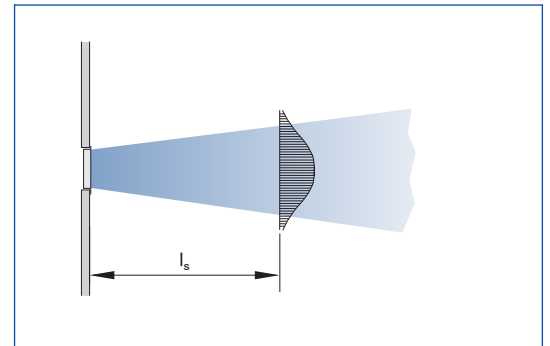
**Air pattern without ceiling effect, sectional view**



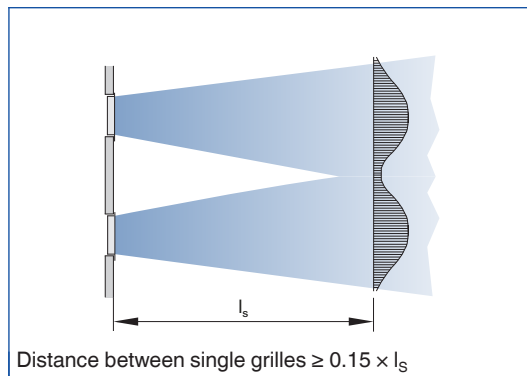
**Air pattern with ceiling effect, top view**



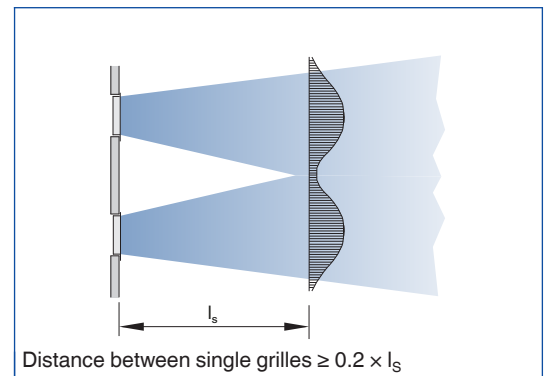
**Air pattern without ceiling effect, top view**



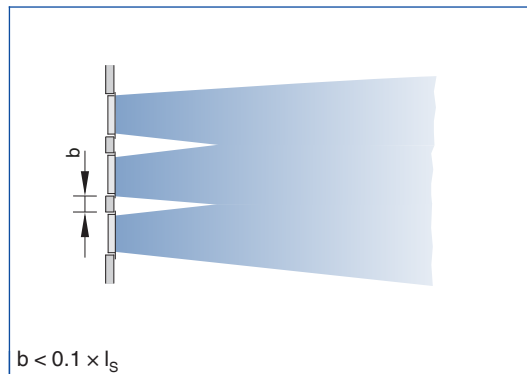
**Air pattern with ceiling effect, group of grilles, top view**



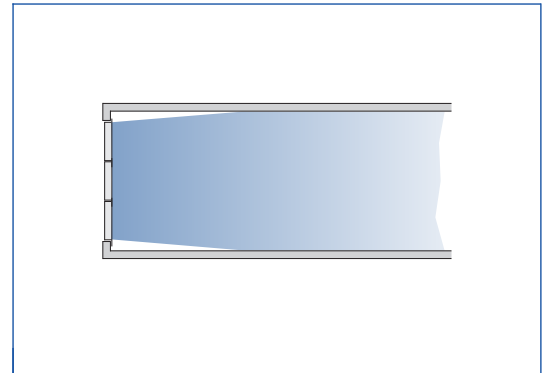
**Air pattern without ceiling effect, group of grilles, top view**



**Air pattern, group of grilles, top view**



**Air pattern, continuous horizontal run, top view**



Several single grilles arranged in a row and with not much distance between them have the same effect as a continuous horizontal run.

Nominal sizes	225 × 75 to 1225 × 425 mm
Horizontal run section	H: 75, 125, 225, 325 mm
Minimum volume flow rate	10 – 410 l/s or 36 – 1476 m³/h
Maximum volume flow rate, with L <sub>WA</sub> max. 40 dB(A) without attachments	55 – 1235 l/s or 198 – 4446 m³/h
Supply air to room air temperature difference	–12 to +4 K

Volumen flow rates for single grille for supply air.

### Geometric free area

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	A <sub>geo</sub> m²							
75	0.004	0.007	0.009	0.012	0.014	0.019	0.024	0.029
125	0.009	0.014	0.020	0.025	0.030	0.041	0.051	0.062
225		0.029	0.040	0.051	0.062	0.084	0.106	0.127
325			0.061	0.077	0.094	0.127	0.160	0.193
425						0.170	0.214	0.258

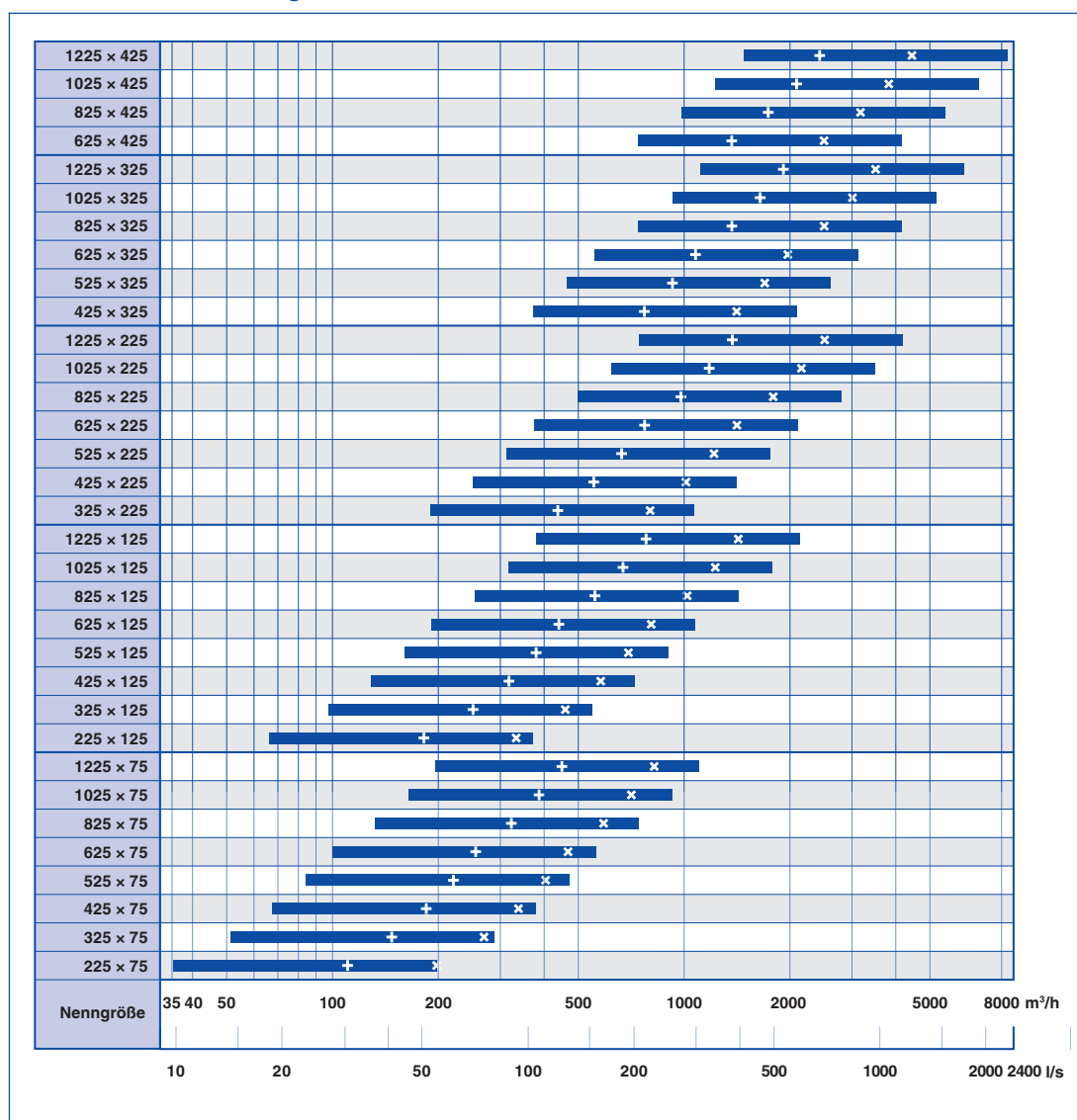
### Effective air discharge area (supply air)

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	A <sub>eff</sub> m²							
75	0.006	0.009	0.011	0.014	0.017	0.022	0.028	0.034
125	0.011	0.017	0.022	0.028	0.034	0.044	0.055	0.066
225		0.034	0.044	0.055	0.066	0.087	0.108	0.129
325			0.066	0.081	0.096	0.129	0.169	0.193
425					0.129	0.169	0.214	0.256

### Effective area of extract air grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	A <sub>eff</sub> m²							
75	0.004	0.006	0.009	0.011	0.013	0.017	0.021	0.026
125	0.009	0.013	0.017	0.021	0.026	0.033	0.041	0.049
225		0.026	0.033	0.041	0.049	0.066	0.082	0.090
325			0.049	0.060	0.072	0.095	0.120	0.140
425					0.095	0.122	0.155	0.185

### AH, volume flow rate ranges



×  $L_{WA} = 40 \text{ dB(A)}$  with unrestricted airflow+  $L_{WA} = 40 \text{ dB(A)}$  with airflow restricted by 50 %



This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Ventilation grilles, rectangular, made of aluminium, for supply and extract air. Rectangular profile border. Preferably for wall and sill installation but also suitable for rectangular ducts.

Ready-to-install component which consists of a border and fixed horizontal blades.

Concealed screw fixing, spring clip fixing or countersunk holes, for installation into an installation subframe or fixing onto an installation surface.

Sound power level of the air-regenerated noise measured according to EN ISO 5135.

### Special characteristics

- Fixed blades
- Front border in two widths
- Concealed screw fixing, spring clip fixing or countersunk holes
- Also for continuous horizontal runs
- Optional installation subframe and casing for the fitting of filter media

### Materials and surfaces

- Border and blades made of aluminium

- Border and blades anodised, E6-C-0, natural colour
- P1: Border and blades powder-coated, RAL CLASSIC colour

### Technical data

- Nominal sizes: 225 × 75 to 1225 × 425 mm
- Horizontal run section, height: 75 – 325 mm
- Minimum volume flow rate (supply air): 10 – 410 l/s or 36 – 1476 m<sup>3</sup>/h
- Maximum volume flow rate (supply air), at L<sub>WA</sub> max. 40 dB(A) without attachments: 55 – 1235 l/s or 198 – 4446 m<sup>3</sup>/h
- Supply air to room air temperature difference: –12 to +4 K

### Sizing data

- $\dot{V}$  \_\_\_\_\_  
[m<sup>3</sup>/h]
- $\Delta p_t$  \_\_\_\_\_  
[Pa]

Air-regenerated noise

- L<sub>WA</sub> \_\_\_\_\_  
[dB(A)]

AH as a single grille

AH – 0 – AG / 825x225 / A1 / B11 / P1 – RAL ...						
1	2	3	4	5	6	7

1 Type

**AH** Single grille

2 Blade construction style

**0** 0° blades (straight)

**15** 15° blades (angled)

3 Attachments

**A** Without (grille face only)

**AG** Damper unit, opposed action blades

**D** Air direction control, blades installed at 90° to the front blades, independently adjustable

**DG** D combined with AG

4 Nominal size [mm]

L × H

5 Installation subframe

No entry: none

**A1** For front border width F = 28 mm

**B1** For front border width F = 20 mm

**Order example: AH-15-AG/825x225/B1/E11**

6 Fixing

No entry: concealed screw fixing, F = 28 mm

**E11** Concealed screw fixing, F = 20 mm

**A11** Countersunk holes, F = 28 mm

**B11** Spring clip fixing, F = 28 mm

**F11** Spring clip fixing F = 20 mm

7 Exposed surface

No entry: anodised, E6-C-0, natural colour

**P1** Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

<b>Attachments</b>	Damper unit, opposed action blades
<b>Blade construction style</b>	15°
<b>Nominal size</b>	825 × 225 mm
<b>Installation subframe</b>	With installation subframe for 20 mm wide front border
<b>Fixing</b>	Concealed screw fixing
<b>Exposed surface</b>	Anodised, E6-C-0, natural colour



Order example: AH-EF-0-AS/1025x125/P1-RAL 9010

Blade construction style	0°
Attachments	Hit and miss damper
Nominal size	1025 x 125 mm
Exposed surface	Powder-coated RAL 9010, pure white

#### E-EF

E-EF / 825x225	
<div>1</div>	<div>2</div>

#### 1 Type

**E-EF** Replacement filter medium

#### 2 Nominal size [mm]

L x H

The weight table shows the available nominal sizes

### AH, 28 mm wide front border

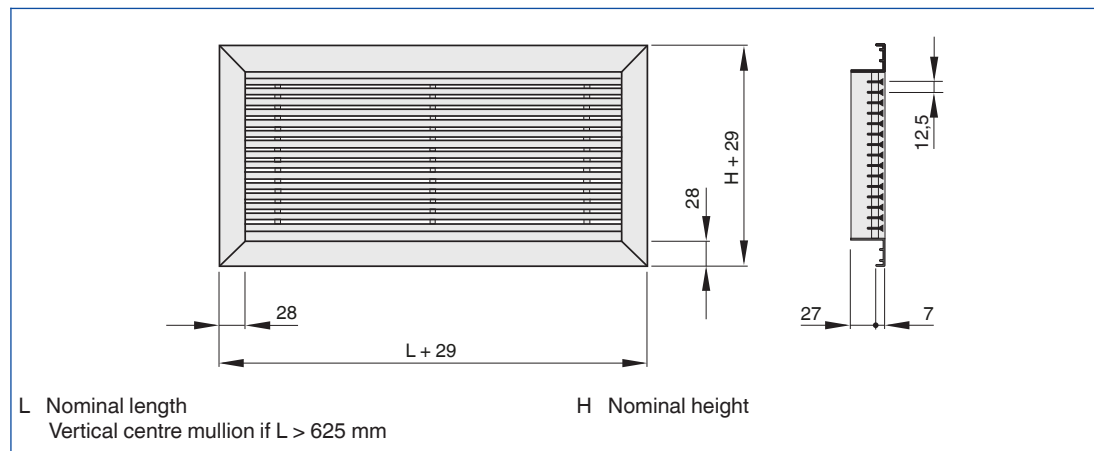


Illustration shows AH-0

### AH, 20 mm wide front border

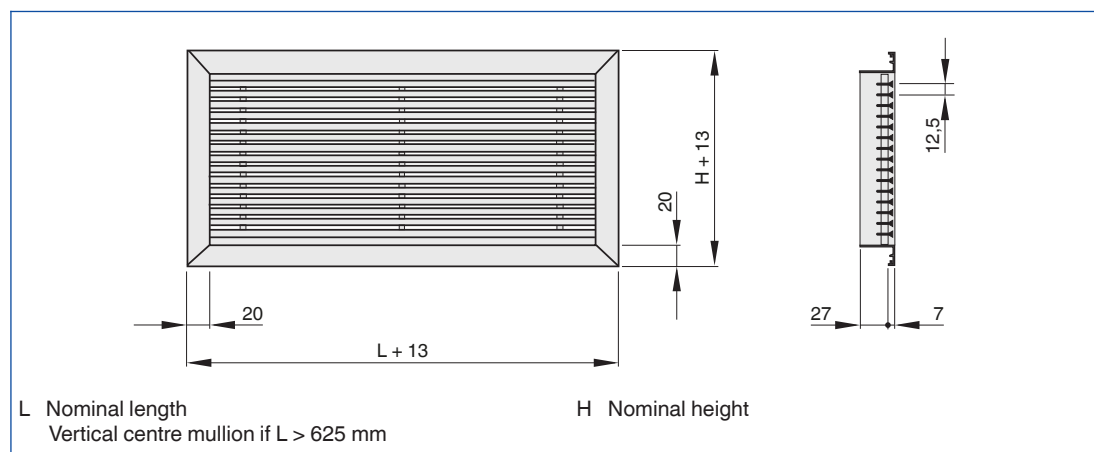


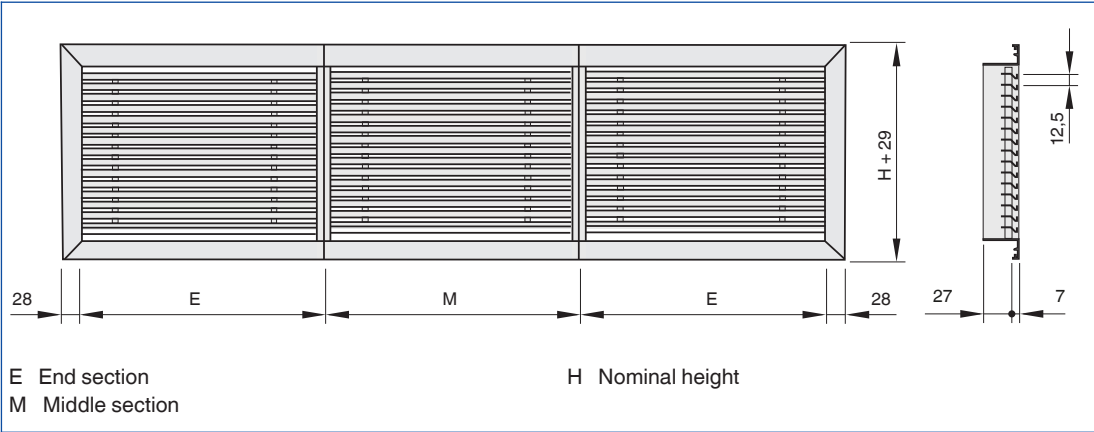
Illustration shows AH-0

### AH, single grille

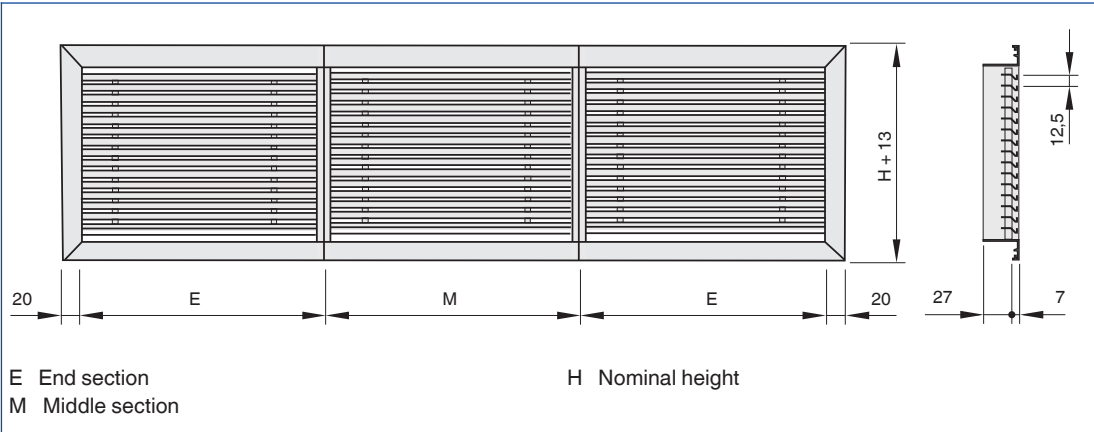
H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
	kg							
75	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.5
125	0.5	0.7	0.9	1.1	1.3	1.7	2.1	2.5
225		1.3	1.6	2.0	2.4	3.1	3.8	4.6
325			2.4	2.9	3.4	4.5	5.5	6.7
425					4.5	5.9	7.3	8.7

Weights apply to ventilation grilles without attachments

AH, 28 mm wide front border, horizontal run section



AH, 20 mm wide front border, horizontal run section

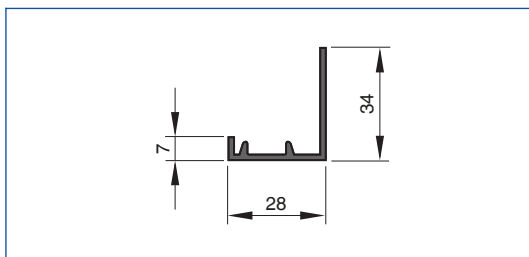


AH, horizontal run section

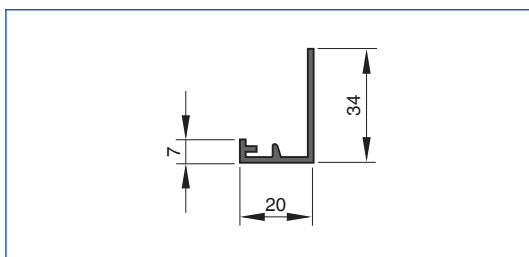
H	Section	
	E	M
mm	kg/m	kg
125	4.1	8.2
225	6.1	12.2
325	8.2	16.4

Middle section M: 2000 mm  
End section E: 950 – 2025 mm in increments of 1 mm  
Weights apply to sections without attachments

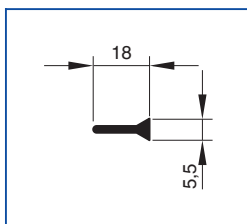
Front border, 28 mm



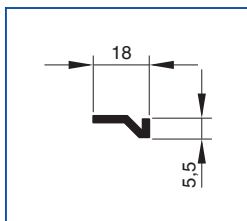
Front border AH/B1 (20 mm)



Blade \*-0



Blade \*-15



Wall installation



Nominal length over 625 mm: with vertical centre mullion

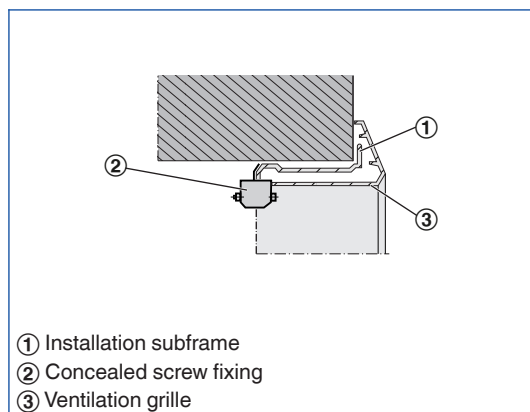


### Installation and commissioning

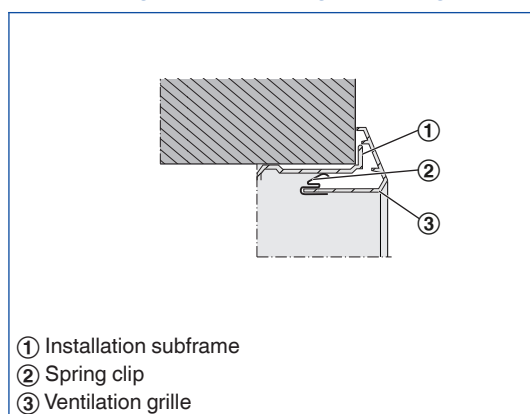
- Installation preferably in walls, sills and rectangular ducts
- Installation with installation subframe is recommended
- If no installation subframe is used, the border should be fixed with screws

These are only schematic diagrams to illustrate installation details.

### Ventilation grille with concealed screw fixing



### Ventilation grille with spring clip fixing



### Volume flow rate balancing

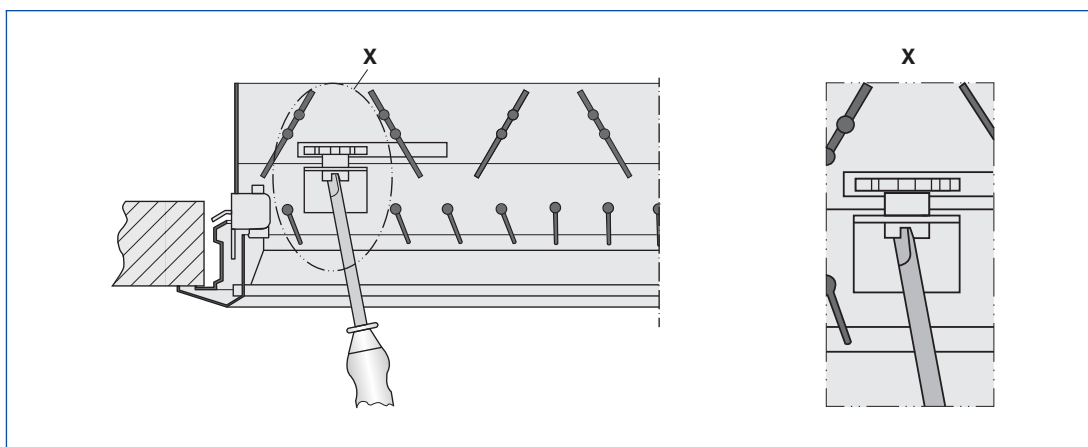
When several ventilation grilles are installed on the same duct, it may be necessary to balance the volume flow rates.

- AG: Damper unit with opposed action blades, adjustable, secured with a locking screw
- AS: Damper unit with hit and miss damper, adjustable, secured with a locking screw

### Air pattern

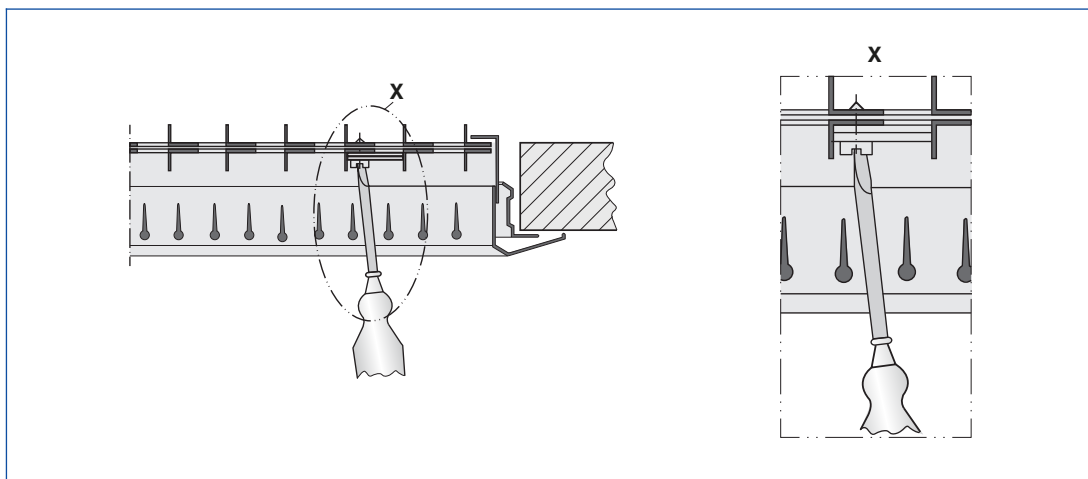
- Adjustable blades: Set the air control blades individually or together and depending on the local conditions
- D, DG: Air control blades, fitted at 90° to the front blades, can be adapted to the local conditions

### Volume flow rate balancing -\*G



Attachments -AG, -DG and Types AGW, DGW

### Volume flow rate balancing -S



Attachments -AS, -KS, -RS and Type ASW

**Principal dimensions**

**L [mm]**

Nominal length of the ventilation grille

**H [mm]**

Nominal height of the ventilation grille

**m [kg]**

Weight

**Nomenclature**

**L<sub>WA</sub> [dB(A)]**

Sound power level of the air-regenerated noise

**$\dot{V}$  [m<sup>3</sup>/h] and [l/s]**

Volume flow rate

**$\Delta p_t$  [Pa]**

Total differential pressure

**l<sub>s</sub> [m]**

Distance from single grille or horizontal run section (throw distance)