



AWT-A/825x225

## AWT

### BALL IMPACT RESISTANT VENTILATION GRILLE MADE OF ALUMINIUM, WITH FIXED HORIZONTAL BLADES

Ventilation grille with special profiled blades (rectangular cross section)

- Nominal sizes 325 × 125 – 1225 × 325 mm
- Volume flow rate range 17 – 950 l/s or 61 – 3420 m<sup>3</sup>/h
- Grille face made of aluminium with anodised finish
- Tested for installation in gymnasiums
- Front border with countersunk holes, 30 mm wide

Optional equipment and accessories

- Grille face in RAL CLASSIC colours
- Installation subframe

## Application



### Application

- Type AWT ventilation grille to be used for supply air or extract air
- For gymnasiums
- Meets the requirements for impact resistance of DIN 18032, part 3
- Directed supply air discharge for mixed flow ventilation
- 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
- Countersunk holes

### Nominal sizes

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

Other dimensions upon request

## Description



### Parts and characteristics

- Rectangular profile border sections with rounded edges
- Fixed horizontal blades
- 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

### Construction features

- Robust blades
- Front border with countersunk holes

### 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

## TECHNICAL INFORMATION

Function, Technical data, Quick sizing, Specification text, Order code



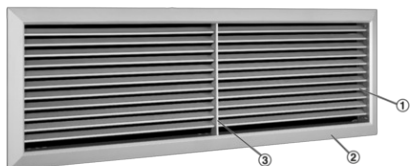
### Functional description

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.

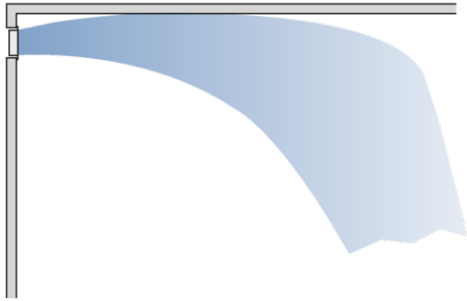
In cooling mode it is necessary to take account of the jet deviation towards the occupied zone, which increases as the supply air to room air temperature difference increases and the discharge velocity decreases. In heating mode the supply air jet deviates towards the ceiling. This has no negative effect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



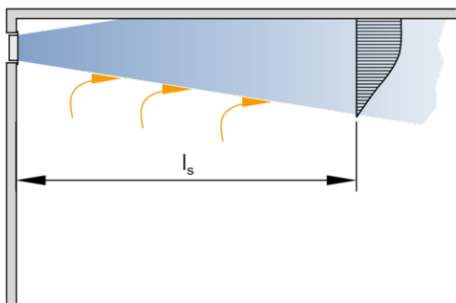
- ① Front border
- ② Longitudinal blades
- ③ Centre mullion

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



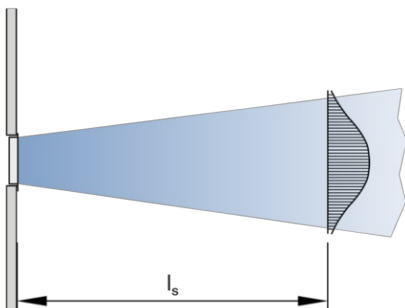
Distance from ceiling  $\leq 0.3$  m

Air pattern with ceiling effect, sectional view

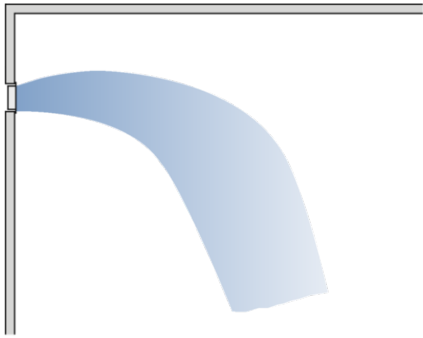


Distance from ceiling  $\leq 0.3$  m

Air pattern with ceiling effect, top view

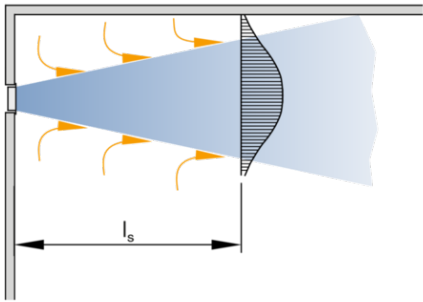


Air pattern in cooling mode, without ceiling effect, sectional view



Distance from ceiling  $\leq 0.8$  m

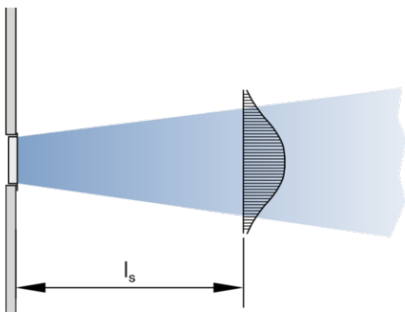
Air pattern without ceiling effect, sectional view



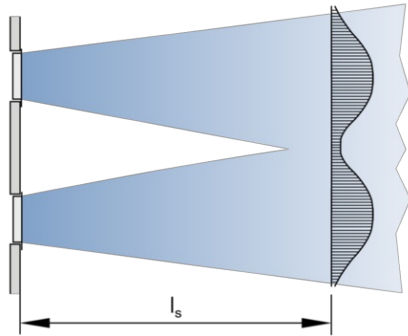
Distance from ceiling  $\leq 0.8$  m

Without a ceiling effect the way of the air jet is shorter than with a ceiling effect.

Air pattern without ceiling effect, top view

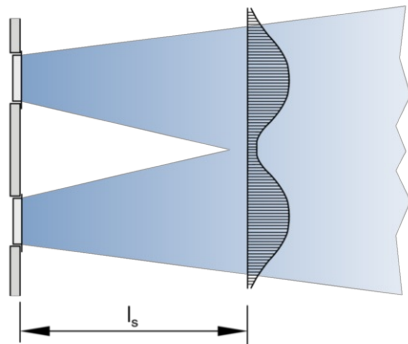


Air pattern with ceiling effect, group of grilles, top view



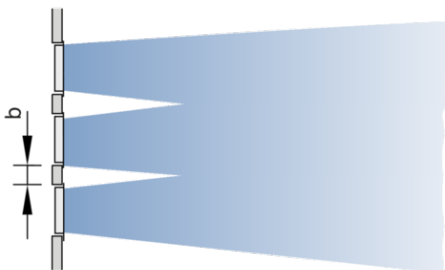
Distance between single grilles  $\geq 0.15 \times l_s$

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



Distance between single grilles  $\geq 0.2 \times l_s$

Air pattern, group of grilles, top view



$b < 0.1 \times l_s$

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	325 × 125 to 1225 × 325 mm
Minimum volume flow rate	17 – 275 l/s or 61 – 990 m³/h
Maximum volume flow rate, with L <sub>WA</sub> max. 40 dB(A) without attachments	95 – 950 l/s or 342 – 3420 m³/h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

**Geometric free area**

H	L [mm]						
	325	425	525	625	825	1025	1225
H	A <sub>geo</sub>						
mm	m²						
125	0.013	0.018	0.023	0.028	0.037	0.047	0.057
225	0.031	0.042	0.054	0.065	0.087	0.109	0.132
325		0.066	0.084	0.102	0.136	0.171	0.206

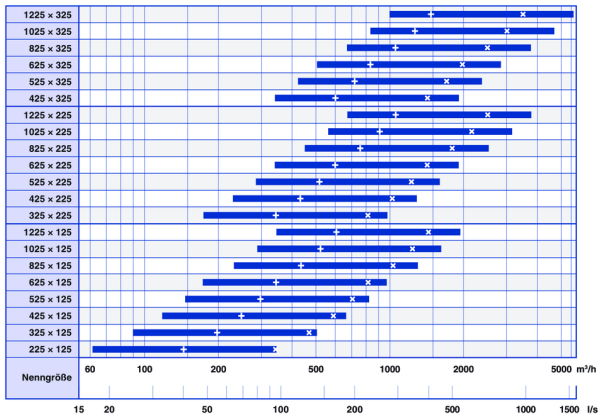
**Effective air discharge area (supply air)**

H	L [mm]						
	325	425	525	625	825	1025	1225
H	A <sub>eff</sub>						
mm	m²						
125	0.015	0.020	0.025	0.031	0.040	0.050	0.060
225	0.031	0.040	0.050	0.060	0.078	0.097	0.116
325		0.060	0.073	0.086	0.116	0.152	0.174

**Effective area of extract air grille**

H	L [mm]						
	325	425	525	625	825	1025	1225
H	A <sub>eff</sub>						
mm	m²						
125	0.011	0.015	0.018	0.023	0.029	0.036	0.043
225	0.023	0.029	0.036	0.043	0.057	0.071	0.078
325		0.043	0.052	0.063	0.083	0.104	0.122

AWT, volume flow rate ranges



× L<sub>WA</sub> = 40 dB(A) with unrestricted airflow+ L<sub>WA</sub> = 40 dB(A) with airflow restricted by 50 %

Ball impact resistant ventilation grilles, rectangular, made of aluminium, for supply and extract air. Rectangular profile border sections with rounded edges 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.

Countersunk holes for fixing the grille to the installation surface.

Meets the requirements of DIN 18032, part 3.

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

**Special characteristics**

- Fixed blades
- Countersunk holes

**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: 325 × 125 to 1225 × 325 mm
- Minimum volume flow rate (supply air): 17 – 275 l/s or 61 – 990 m³/h
- Maximum volume flow rate (supply air), at L<sub>WA</sub> max. 40 dB(A) without attachments: 95 – 950 l/s or 342 – 3420 m³/h
- Supply air to room air temperature difference: –12 to +4 K

**Sizing data**

- V \_\_\_\_\_ [m³/h]
- Δp<sub>t</sub> \_\_\_\_\_ [Pa]

**Air-regenerated noise**

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

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

Order example: AWT-AG/625x225/A1

Attachments	Damper unit, opposed action blades
Nominal size	625 x 225 mm
Installation subframe	With installation subframe
Exposed surface	Anodised, E6-C-0, natural colour

## AWT – AG / 825x225 / A1 / P1 – RAL ...



### 1 Type

AWT Single grille

### 2 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

### 3 Nominal size [mm]

L x H

### 4 Installation subframe

No entry: none  
 A1 With

### 5 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 %

## Dimensions and weight, Product details



The weight table shows the available nominal sizes

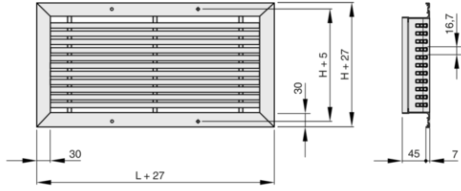
### AWT

H	L [mm]						
	325	425	525	625	825	1025	1225
H	m						
mm	kg						
125	1.3	1.6	2.0	2.3	3.0	3.6	4.3
225	1.9	2.4	2.9	3.4	4.4	5.4	6.4
325	3.2	3.8	4.5	5.8	7.1	8.5	

Weights apply to ventilation grilles without attachments

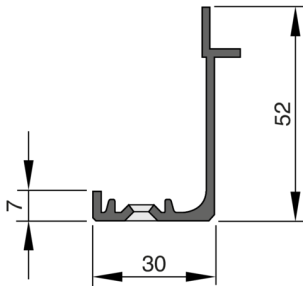
AT, 30 mm wide front border

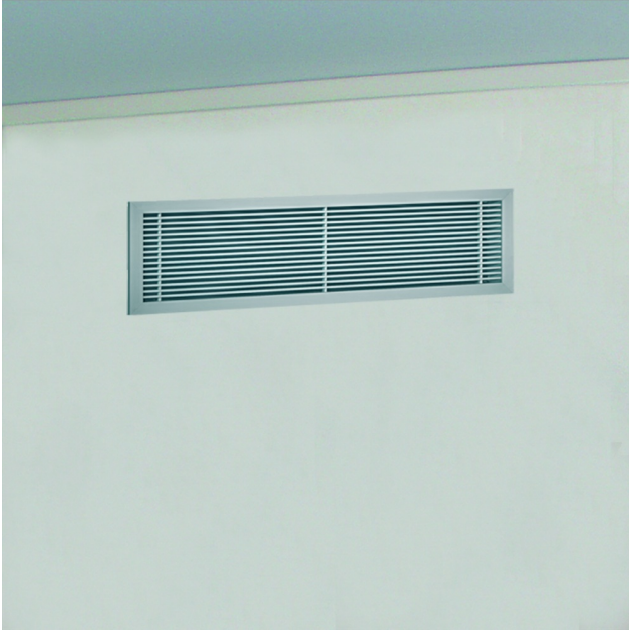




L Nominal length Vertical centre mullion if  $L > 625$  mm  
 H Nominal height

Front border, 30 mm





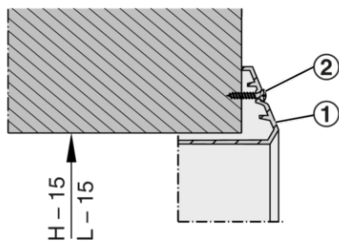
Nominal length over 625 mm: with vertical centre mullion

#### 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 screw fixing



- ① Ventilation grille
- ② Fixing screw (by others)

### Volume flow rate balancing

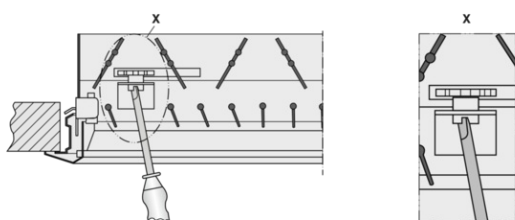
When several ventilation grilles are installed on the same duct, it may be necessary to balance the volume flow rates.

- 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

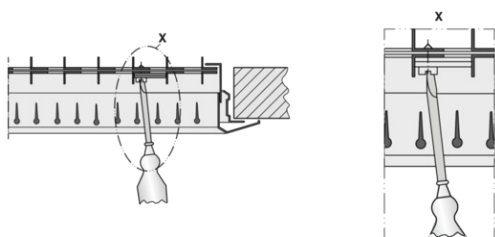
- Adjustable blades: Set the air control blades individually or together and depending on the local conditions
- D, DG: Air control blades, fitted at 90° to the front blades, can be adapted to the local conditions

### 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

**V [m<sup>3</sup>/h] and [l/s]**

Volume flow rate

**Δp<sub>t</sub> [Pa]**

Total differential pressure

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

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