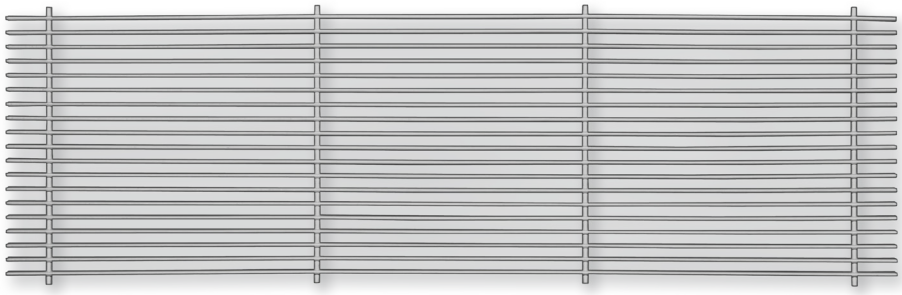
Ventilation grilles for installation into walls, sills or rectangular ducts

Type EF



Grille cores made of aluminium, with fixed horizontal blades

Grille cores with special profiled blades

- Nominal sizes 245 × 95 – 1245 × 445 mm
- Volume flow rate range 10 – 1235 l/s or 36 – 4446 m^3/h
- Grille core made of aluminium with anodised finish
- Straight (0°) or angled (15°) air discharge

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Application

Application
- Ventilation grille cores of Type EF 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 covering all types of openings

Special characteristics
- Fixed blades
- 0° or 15° air discharge
- Blade pitch 12.5 mm or 16.7 mm

Nominal sizes
- Nominal length: 245, 345, 445, 545, 645, 845, 1045, 1245 mm
- Nominal height: 95, 145, 245, 345, 445 mm

Other dimensions upon request

Description

Variants
- Blade pitch 12.5 mm
- G: Blade pitch 16.7 mm

Blade construction style
- 0: 0° discharge
- 15: 15° discharge

Parts and characteristics
- Fixed horizontal blades
- Two lateral mullions
- Vertical centre mullion (depending on length)

Construction features
- Transverse bars for clip-fixing the grille (bars snap into clips)

Materials and surfaces
- Blades made of aluminium
- Anodised blades, E6-C-0, natural colour
- P1: Blades powder-coated, RAL CLASSIC colour

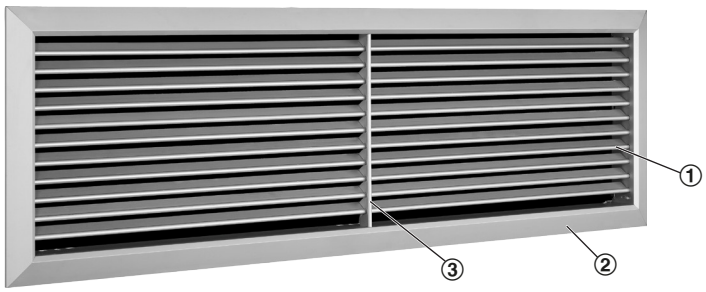
Standards and guidelines
- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Maintenance
- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

Functional description

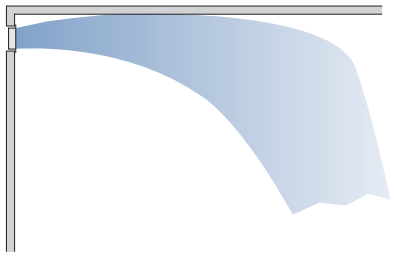
Ventilation grilles are air terminal devices for the supply air and extract air of ventilation and air conditioning systems. They direct the supply air into the room. Ventilation grilles with adjustable blades allow for adapting the discharge direction to the local conditions. The result is a mixed flow 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



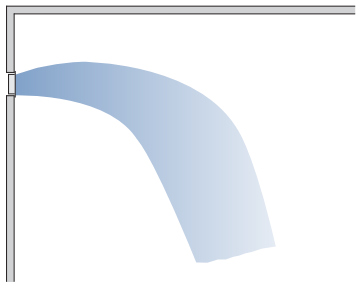
① Front border
② Longitudinal blades
③ Centre mullion

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



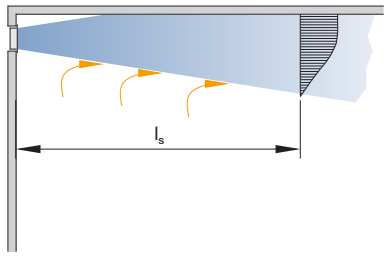
Distance from ceiling ≤ 0.3 m

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



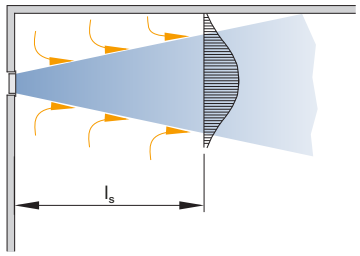
Distance from ceiling ≤ 0.8 m

Air pattern with ceiling effect, sectional view



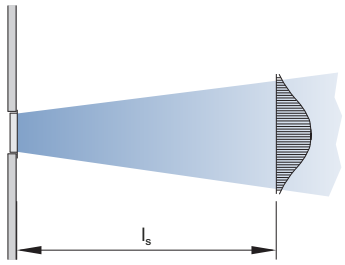
Distance from ceiling ≤ 0.3 m

Air pattern without ceiling effect, sectional view

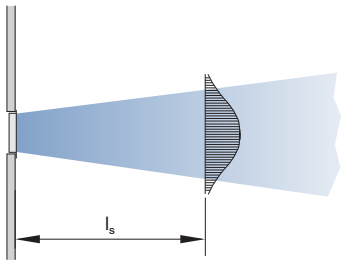


Distance from ceiling ≤ 0.8 m

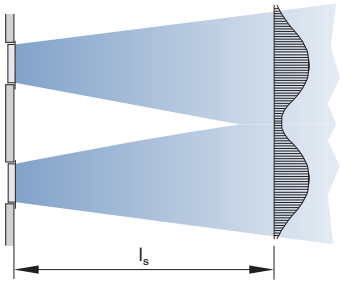
Air pattern with ceiling effect, top view



Air pattern without ceiling effect, top view

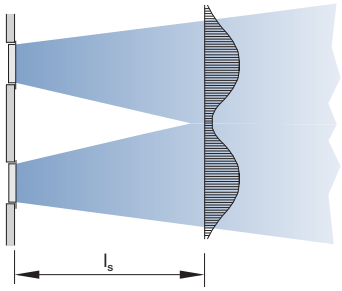


Air pattern with ceiling effect, group of grilles, top view



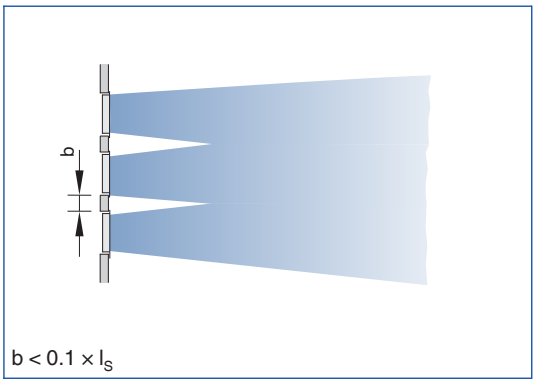
Distance between single grilles ≥ 0.15 × l_S

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



Distance between single grilles ≥ 0.2 × l_S

Air pattern, group of grilles, 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	245 × 95 to 1245 × 445 mm
Minimum volume flow rate	10 – 410 l/s or 36 – 1476 m^3/h
Maximum volume flow rate, with L_{WA} max. 40 dB(A) without attachments	55 – 1235 l/s or 198 – 4446 m^3/h
Supply air to room air temperature difference	–12 to +4 K

Volume flow rates apply to supply air

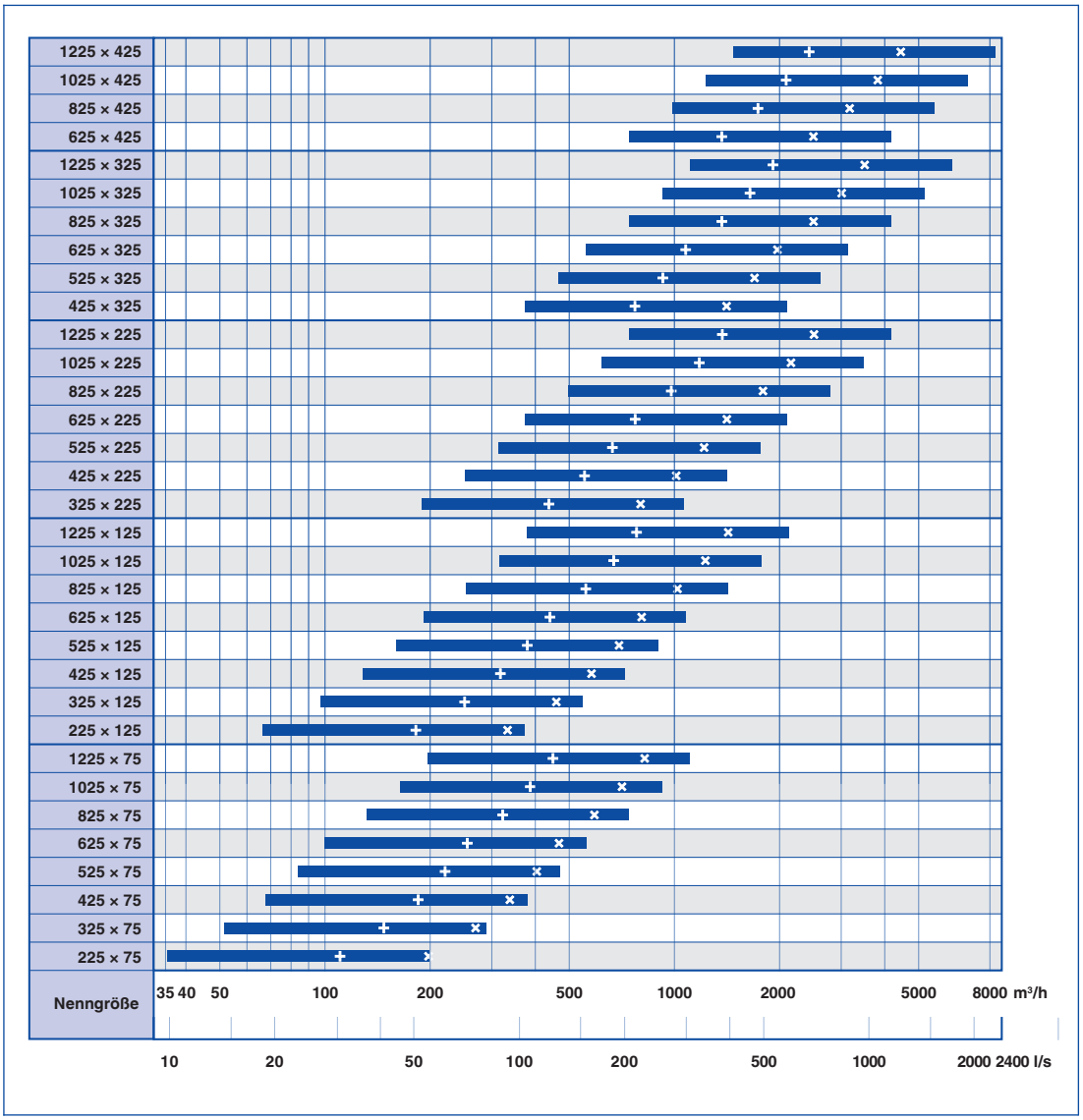
EF, geometric free area

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	A_{geo}							
mm	m^2							
95	0.015	0.021	0.028	0.034	0.040	0.052	0.064	0.076
145	0.022	0.031	0.040	0.049	0.058	0.075	0.093	0.111
245		0.050	0.065	0.080	0.094	0.121	0.151	0.180
345			0.090	0.110	0.130	0.168	0.208	0.249
445					0.166	0.215	0.266	0.318

EF-G, geometric free area

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	A_{geo}							
mm	m^2							
95	0.018	0.025	0.033	0.040	0.047	0.061	0.076	0.090
145	0.026	0.037	0.047	0.058	0.069	0.089	0.110	0.131
245		0.060	0.077	0.095	0.112	0.145	0.179	0.214
345			0.107	0.131	0.155	0.201	0.249	0.297
445					0.198	0.256	0.318	0.379

EF, volume flow rate ranges



× L_{WA} = 40 dB(A) with unrestricted airflow+ L_{WA} = 40 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 grille cores, rectangular, made of aluminium, for supply and extract air.
Ready-to-install component which consists of fixed horizontal blades, two lateral mullions, and possibly a vertical centre mullion (depending on length).
Preferably for installation into an installation subframe provided by others.
Sound power level of the air-regenerated noise measured according to EN ISO 5135.

Special characteristics
- Fixed blades
- 0° or 15° air discharge
- Blade pitch 12.5 mm or 16.7 mm

Materials and surfaces
- Blades made of aluminium
- Anodised blades, E6-C-0, natural colour
- P1: Blades powder-coated, RAL CLASSIC colour

Technical data
- Nominal sizes: 245 × 95 to 1245 × 445 mm
- Minimum volume flow rate (supply air): 10 – 410 l/s or 36 – 1476 m^3/h
- Maximum volume flow rate (supply air), at L_{WA} max. 40 dB(A) without attachments: 55 – 1235 l/s or 198 – 4446 m^3/h
- Supply air to room air temperature difference: –12 to +4 K

Sizing data
- $\dot{V}$ _____ _____ $[m^3/h]$
- Δp_t _____ _____ [Pa]

Air-regenerated noise
- L_{WA} _____ _____ [dB(A)]

EF

EF – G – 0 / 845×245 / P1 – RAL ...
1 2 3 4 5

1 Type
EF Grille core

2 Blade pitch
No entry: 12.5 mm
G 16.7 mm

3 Blade construction style
0 0° blades (straight)
15 15° blades (angled)

4 Nominal size [mm]
L × H

Order example: EF-G-0/645×245

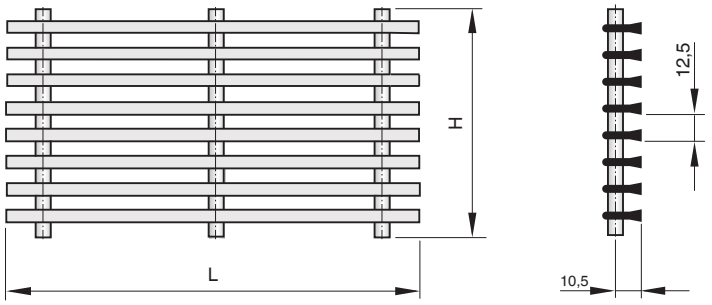
Blade pitch	16.7 mm
Blade construction style	0°
Nominal size	645 × 245 mm
Exposed surface	Anodised, E6-C-0, natural colour

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 %

The weight table shows the available nominal sizes

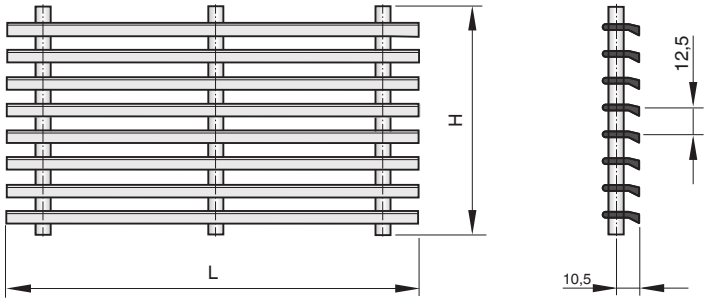
EF-0



L Nominal length
Vertical centre mullion if L > 625 mm

H Nominal height

EF-15



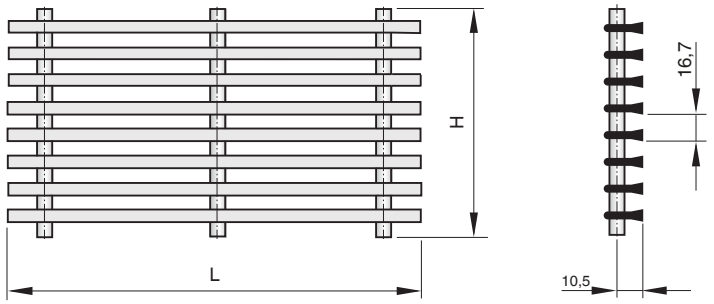
L Nominal length
Vertical centre mullion if L > 625 mm

H Nominal height

EF

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	m							
mm	kg							
95	0.3	0.5	0.6	0.7	0.9	1.2	1.4	1.7
145	0.5	0.7	1.0	1.2	1.4	1.8	2.3	2.7
245	0.9	1.3	1.7	2.0	2.4	3.1	3.9	4.6
345	1.3	1.8	2.4	2.9	3.4	4.5	5.5	6.6
445	1.7	2.4	3.1	3.7	4.4	5.8	7.2	8.5

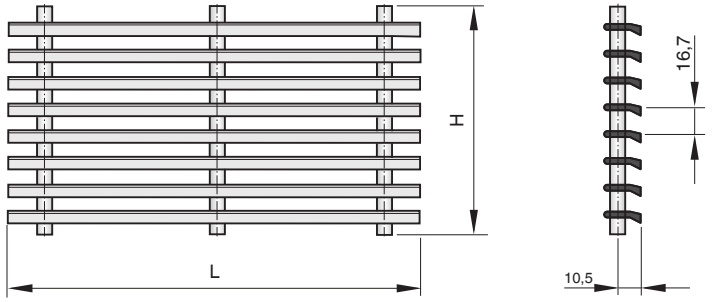
EF-G-0



L Nominal length
Vertical centre mullion if L > 625 mm

H Nominal height

EF-G-15



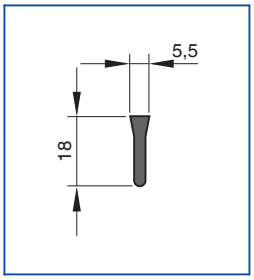
L Nominal length
Vertical centre mullion if L > 625 mm

H Nominal height

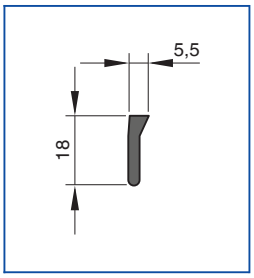
EF-G

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	m							
mm	kg							
95	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
145	0.4	0.5	0.7	0.9	1.0	1.3	1.6	2.0
245	0.7	0.9	1.2	1.5	1.8	2.3	2.9	3.4
345	1.0	1.4	1.7	2.1	2.5	3.3	4.1	4.9
445	1.2	1.8	2.3	2.8	3.3	4.3	5.3	6.3

Blade *-0



Blade *-15



Principal dimensions

L [mm]
Nominal length of the ventilation grille

H [mm]
Nominal height of the ventilation grille

m [kg]
Weight

Nomenclature

L_{WA} [dB(A)]
Sound power level of the air-regenerated noise

$\dot{V}$ [m³/h] and [l/s]
Volume flow rate

Δp_t [Pa]
Total differential pressure

l_S [m]
Distance from single grille or horizontal run section (throw distance)