Weather-Resistant-Louvres

Type WG · WGE · AWG · AWK · WG-F

TROX® TECHNIK

TROX GmbH

Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn

Telephone +49/28 45/2 02-0
Telefax +49/28 45/2 02-2 65
e-mail trox@trox.de
www.troxtechnik.com

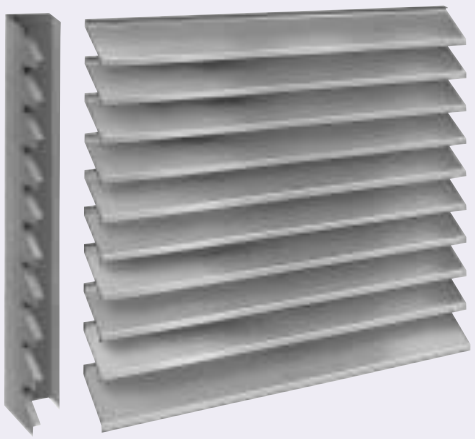
Contents · Description

WG · WGE · AWG

AWK

Weather-resistant louvres give good protection against the direct ingress of rain, leaves and birds. Because of their design, they cannot prevent the entry of slight quantities of water under certain conditions.

WG-F



Type WG · WGE · AWG · AWK

WG

- Frames and blades of formed, galvanised sheet steel
- Wire mesh screen from galvanised steel, mesh size 20 x 20 mm
- Flange drilled as standard

WGE

- Frames, blades and wire mesh screen (mesh size 20 x 20 mm) all in stainless steel, type No. 1.4301
- Flange drilled as standard

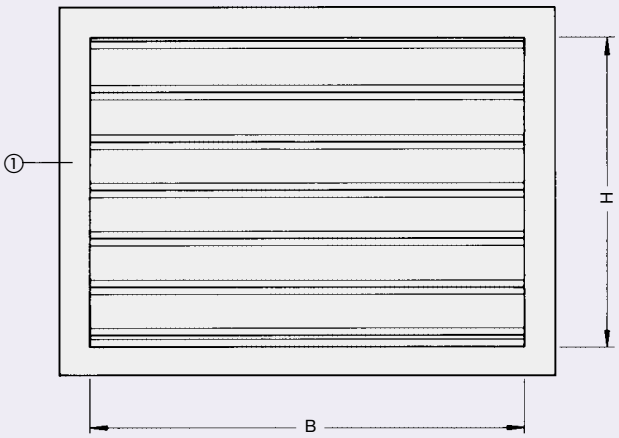
AWG

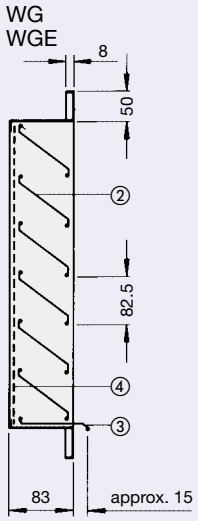
- Frames and blades of extruded aluminium sections
- Wire mesh screen from galvanised steel, mesh size 20 x 20 mm
- Flange drilled as standard

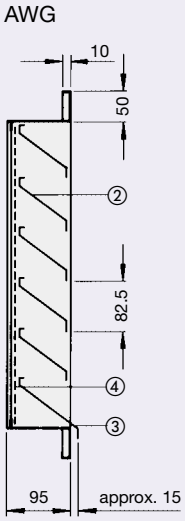
AWK

- Frames and blades of extruded aluminium sections, natural anodised (E6-C-0)
- Wire mesh screen of galvanised steel, mesh size 6 x 6 mm
- Flange drilled as standard

Type WG · WGE · AWG

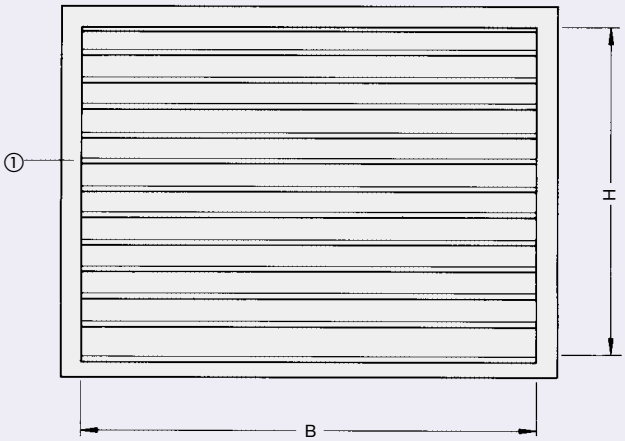


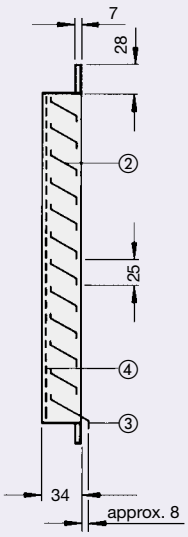




Free cross-section approx. 60 % (approx. 45 % on constructions with insect screen), based on B x (H - 0.085 m)

Type AWK





① Frame
② Blade
③ Bottom blade
④ Wire mesh screen

Free cross-section approx. 60 % (approx. 45 % on constructions with insect screen), based on B x (H - 0.028 m)

Construction

Type WG-F

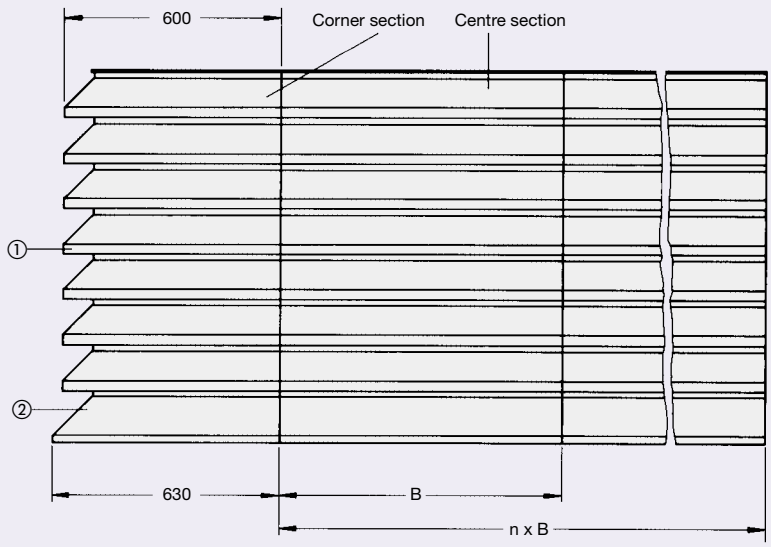
WG-F (steel construction)

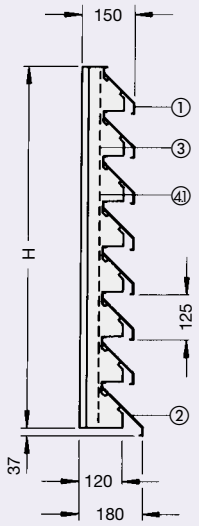
- Blades and support mullion in formed galvanised sheet steel; the mullion is also powder coated black (RAL 9005)
- Mullion is drilled at side and rear for connecting louvre sections together or connecting to site support structure
- Wire mesh screen from galvanised steel, mesh size 20 x 20 mm

WG-F (aluminium construction)

- Blades of extruded aluminium sections
- Mullion in formed galvanised sheet steel; powder coated black (RAL 9005)
- Mullion is drilled at side and rear for connecting louvre sections together or connecting to site support structure
- Wire mesh screen from galvanised steel, mesh size 20 x 20 mm

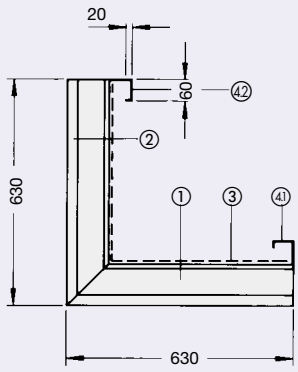
Type WG-F





n = Number of centre sections
Free cross-section approx. 50 %, based on B x (H - 0.125 m)

Corner section



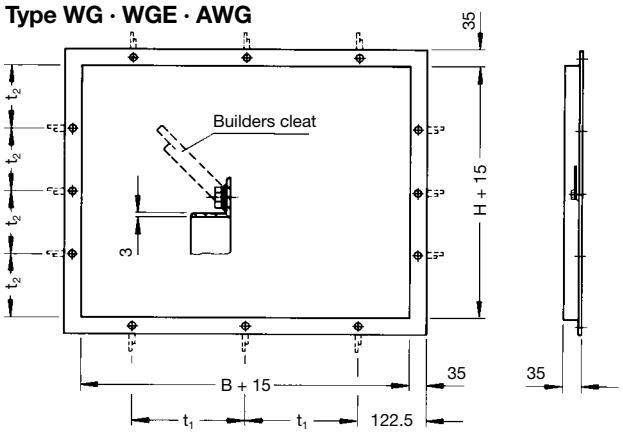
Dimensions = 600 x H

① Blade
② Bottom blade
③ Wire mesh screen
㊶ Right hand mullion
㊷ Left hand mullion

Components ① – ㊷ are supplied in kit form for site assembly.
Fixings are included in the scope of supply.

Masonry subframe

Type WG · WGE · AWG

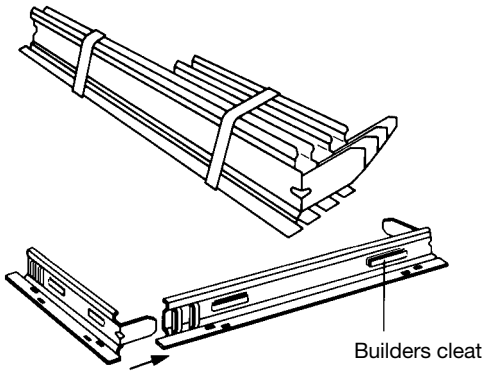


Interval t = flange hole pitch (page 7)
Materials:
Type WG · AWG: Galvanised steel
Type WGE: Stainless steel

Type AWK

As delivered

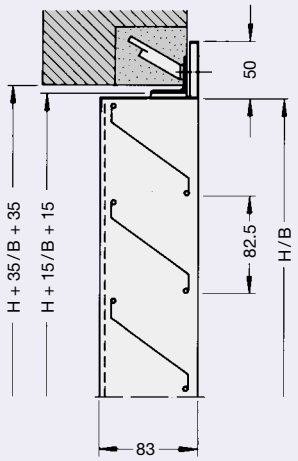
Assembly



Material: Formed, galvanised sheet steel

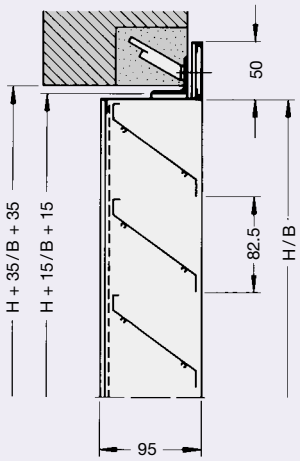
Installation dimensions

Type WG WGE



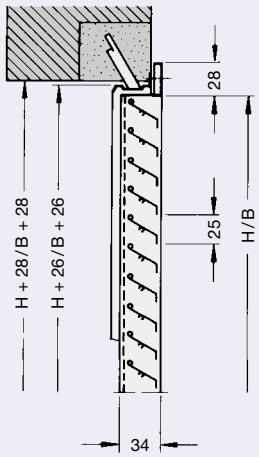
Opening size without masonry subframe B + 15/H + 15

Type AWG



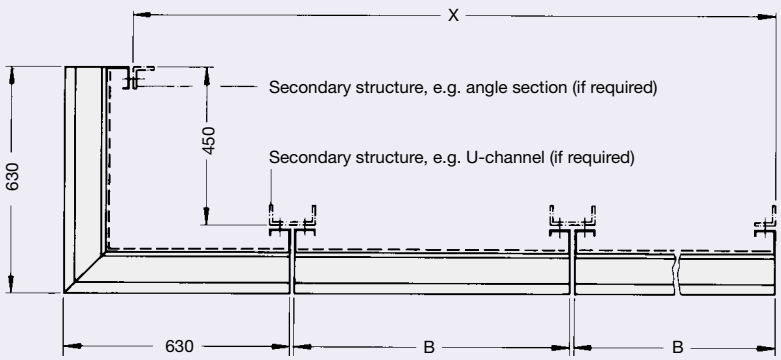
Opening size without masonry subframe B + 15/H + 15

Type AWK



Opening size without masonry subframe B + 10/H + 10

Type WG-F



x = (n x B) + 450

Installation Details

Type WG · WGE · AWG (split on B or H dimension)

If the B dimension is more than 2400 mm or the H dimension more than 2310 mm or the cross-section is more than 4 m^2, then the louvre is sub-divided into two sections which can then be mounted either side by side or one on top of the corner.

Type AWG (linear construction)

Type AWG louvres are available in linear construction if the B dimension is more than 2400 mm. The width of the separating mullions is 2 x 20 mm.

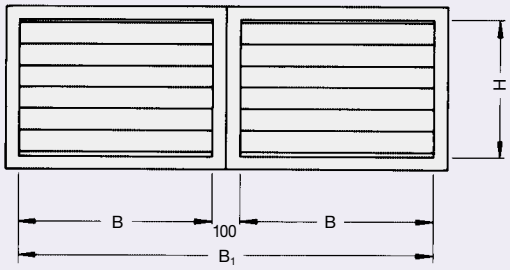
Linear louvre construction for B ≤ 4000 mm consists of two end sections.

Linear louvres construction for B > 4000 mm consists of two end sections and any number of centre sections.

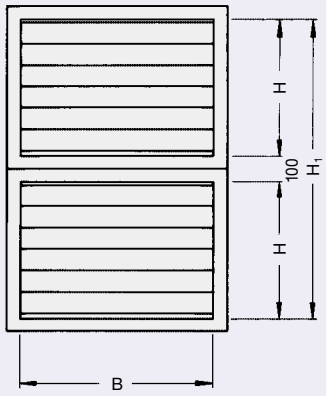
Masonry subframes may be used for installation if required.

Type WG · WGE · AWG

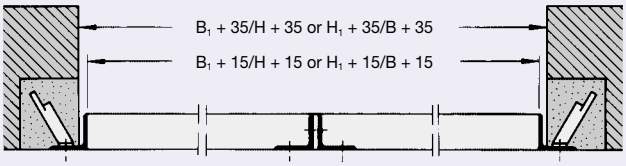
Split on B dimension (B_1 = 2 B + 100)



Split on H dimension (H_1 = 2 H + 100)



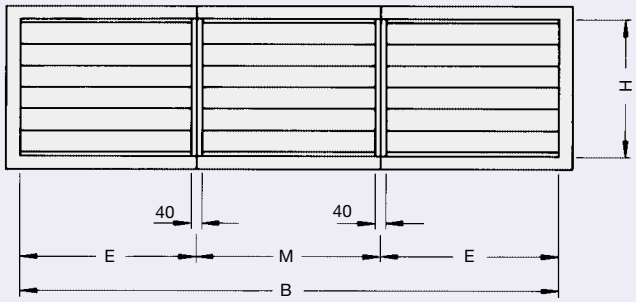
Special masonry subframe
shown split on B dimension



Opening size without masonry subframe
B_1 + 15/H + 15 or H_1 + 15/B + 15

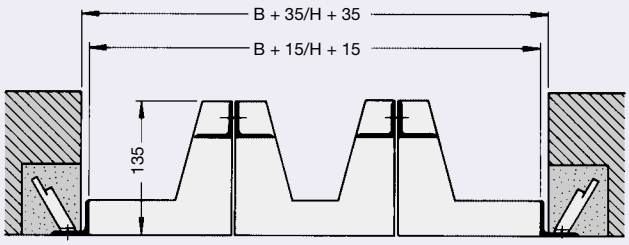
Type AWG

Linear construction



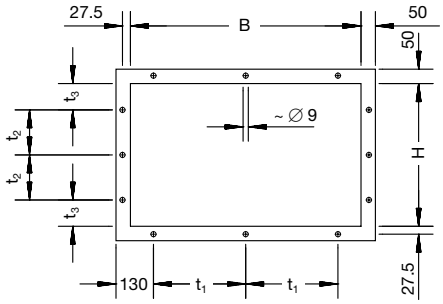
E = End section = 1000-2000 mm in increments of 100
M = Centre section = 2000 mm

Special masonry subframe

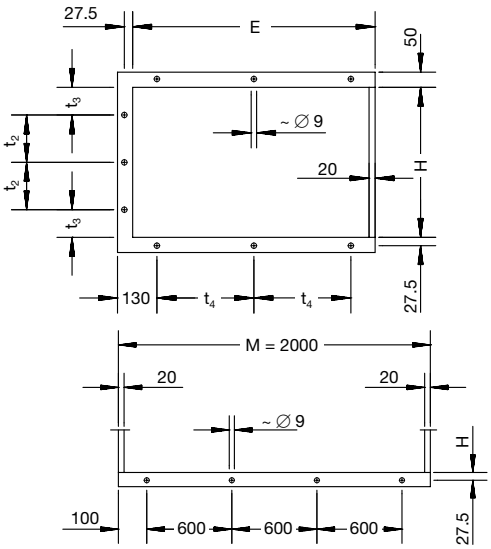


Opening size without masonry subframe B + 15/H + 15

Type WG · WGE · AWG



Type AWG (linear construction)



Dimensional range type WG · WGE · AWG

H in mm	B in mm 400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2900	3300	3700	4100	4500	4900
330																	
495																	
660																	
825																	
990																	
1155					undivided								split on B dimension				
1320																	
1485																	
1650																	
1815																	
1980																	
2145																	
2310																	
2740																	
3070																	
3400																	
3730				split on H dimension													
4060																	
4390																	
4720																	

Dimensional range type AWG (linear construction)

H in mm	E in mm 1000	1200	1400	1600	1800	2000	M in mm 2000
330							
495							
660							
825							
990							
1155							
1320							
1485							
1650							
1815							
1980							

Type WG · WGE · AWG

B in mm	B_1 in mm (split on B dim.)	Number of holes per B-side (single louvre)	≈ t_1 in mm	H in mm	H_1 in mm (split on H dim.)	Number of holes per H-side (single louvre)	≈ t_2 in mm	≈ t_3 in mm
400		2	240	330		–	–	–
600		2	440	495		–	–	–
800		2	640	660		1	–	330
	1800	3	345	825		1	–	413
	2000	3	395	990		1	–	495
1000		3	420	1155		1	–	578
	2200	3	468	1320	2740	2	445	437
	2400	3	495	1485	3070	2	500	492
1200		3	520	1650	3400	2	555	547
1400	2900	3	620	1815	3730	2	610	602
1600	3300	4	480	1980	4060	3	499	491
1800	3700	4	547	2145	4390	3	540	533
2000	4100	4	613	2310	4720	3	581	574
2200	4500	5	510					
2400	4900	5	560					

B- and H-intermediate dimensions available.

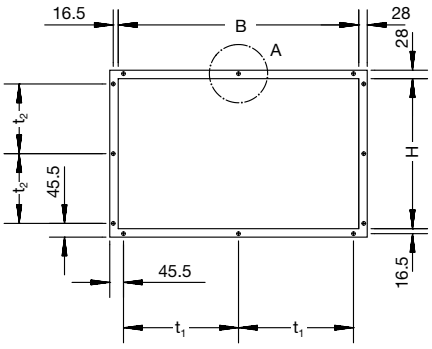
Type AWG (linear construction)

E in mm	Number of holes per E-side	≈ t_4 in mm	H in mm	Number of holes per H-side	≈ t_2 in mm	≈ t_3 in mm
1000	3	410	330	–	–	–
1200	3	510	495	–	–	–
1400	4	407	660	1	–	330
1600	4	473	825	1	–	413
1800	4	540	990	1	–	495
2000	4	607	1155	1	–	578
			1320	2	445	437
			1485	2	500	492
			1650	2	555	547
			1815	2	610	602
			1980	3	499	491

B- and H-intermediate dimensions available.

Standard Sizes · Drilling Details

Type AWK



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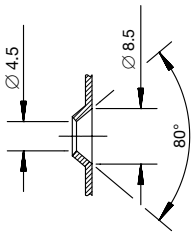


Dimensional range type AWK

H in mm	B in mm													
	97	147	197	297	397	497	597	797	997	1197	1397	1597	1797	1997
97														
147														
197														
247														
297														
347														
397														
447														
497														
597														
797														
997														
1197														
1397														
1597														
1797														
1997														

Dimensional range type WG-F

H in mm	B in mm						Corner piece 90° in mm
	1000	1200	1400	1600	1800	2000	600 / 600
500							
625							
750							
875							
1000							
1250							
1500							
1750							
2000							
2250							
2500							

Type AWK

B in mm	Number of holes per B-side	≈ t_1 in mm	H in mm	Number of holes per H-side	≈ t_2 in mm
97	1	arranged on centre	97	–	–
147	1	arranged on centre	147	–	–
197	1	arranged on centre	197	–	–
297	2	262	247	–	–
397	2	362	297	–	–
497	3	231	347	–	–
597	3	281	397	–	–
797	3	381	447	–	–
997	4	321	497	–	–
1197	4	387	597	3	281
1397	5	341	797	3	381
1597	5	391	997	4	321
1797	6	352	1197	4	387
1997	6	392	1397	5	341
			1597	5	391
			1797	6	352
			1997	6	392

B- and H-intermediate dimensions available – in 25 mm divisions.

Type WG-F

B in mm	H in mm
1000	500
1200	625
1400	750
1600	875
1800	1000
2000	1250
	1500
	1750
	2000
	2250
	2500

B- and H-intermediate dimensions available – in 125 mm divisions.

Product range

Type		Construction	Wall frame	Surface P1 powder-coated	Surface S2/S3 anodised
WG [2]	**Steel construction**	Basic construction	11	●	
WG 1 [2]		WG plus insect screen in galvanised steel	11	●	
WG-BM		Basic construction, split on B dimension	12	●	
WG 1-BM		WG-BM plus insect screen in galvanised steel	12	●	
WG-HM		Basic construction, split on H dimension	13	●	
WG 1-HM		WG-HM plus insect screen in galvanised steel	13	●	
AWG [2]	**Aluminium construction**	Basic construction	11	●	●
AWG 1 [2]		AWG plus insect screen in galvanised steel	11	●	●
AWG 2 [2]		AWG but with wire mesh screen in stainless steel 1.4301	11	●	●
AWG 3 [2]		AWG but with wire mesh screen and insect screen in stainless steel 1.4301	11	●	●
AWG-BM		Basic construction, split on B dimension	12	●	●
AWG 1-BM		AWG-BM plus insect screen in galvanised steel	12	●	●
AWG 2-BM		AWG-BM but with wire mesh screen in stainless steel 1.4301	12	●	●
AWG 3-BM		AWG-BM but with wire mesh screen and insect screen in stainless steel 1.4301	12	●	●
AWG-HM		Basic construction, split on H dimension	13	●	●
AWG 1-HM		AWG-HM plus insect screen in galvanised steel	13	●	●
AWG 2-HM		AWG-HM but with wire mesh screen in stainless steel 1.4301	13	●	●
AWG 3-HM		AWG-HM but with wire mesh screen and insect screen in stainless steel 1.4301	13	●	●
AWG-B		Linear construction	14	●	●
AWG 1-B		AWG-B plus insect mesh in galvanised steel	14	●	●
AWG 2-B		AWG-B but with wire mesh screen in stainless steel 1.4301	14	●	●
AWG 3-B		AWG-B but with wire mesh screen and insect screen in stainless steel 1.4301	14	●	●
WGE	**Stainless steel construction**	Basic construction	15		
WGE 1		WGE plus insect screen in stainless steel 1.4301	15		
WGE-BM		Basic construction, split on B dimension	16		
WGE 1-BM		WGE-BM plus insect screen in stainless steel 1.4301	16		
WGE-HM		Basic construction, split on H dimension	17		
WGE 1-HM		WGE-HM plus insect screen in stainless steel 1.4301	17		
AWK	**Aluminium construction**	Basic construction	18		E6-C-0
AWK 1		AWK but with insect screen in galvanized steel	18		E6-C-0
AWK 3		AWK but with insect screen in stainless steel 1.4301	18		E6-C-0
WG-F-E	**Steel construction**	Basic construction, corner section		● [1]	
WG-F-T		Basic construction, centre section		● [1]	
WG-F-E-AL	**Aluminium construction**	Basic construction, corner section		● [1]	●
WG-F-E-AL 2		WG-F-E-AL but with wire mesh screen in stainless steel 1.4301		● [1]	●
WG-F-T-AL		Basic construction, centre section		● [1]	●
WG-F-T-AL 2		WG-F-T-AL but with wire mesh screen in stainless steel 1.4301		● [1]	●

1) Mullion only in RAL 9005

2) Louvre also for use in combination with multileaf and pressure relief dampers (see leaflet No. 3/4/EN/..)

Surface finish

Powder coating P1

Standard RAL shades: RAL 9010-GE50*, RAL 9006-GE30*, RAL 9001, RAL 9002, RAL 9003, RAL 9005, RAL 9016, RAL 7001, RAL 7035 – all GE70*

Other shades on request

* GE = Gloss level

Anodizing

S2/S3 = anodised to Euras-standard (coating thickness approx. 20 µm)
Finish: surface etched (E6)

Shade: C- 0 = Natural
C-31 = Pale bronze
C-32 = Light bronze
C-33 = Medium bronze
C-34 = Dark bronze
C-35 = Black

S2 = e.g. E6-C-33
S3 = E6-C-0

Technical Data

Nomenclature

v	in m/s:	Air velocity based on cross section A
A	in m²:	Flow cross section: WG · WGE · AWG: B x (H – 0.085 m) AWK: B x (H – 0.028 m) WG-F: B x (H – 0.125 m) (use B and H dimensions in m)
Δp_t	in Pa:	Total pressure drop
$L_W = L_{WO} + K$	in dB/Oct.:	Octave sound power level related to A
L_{WO}	in dB/Oct.:	As before, but related to A = 1.0 m²
$L_{WA} = L_{WAO} + K$	in dB(A):	A-weighted sound power level related to A
L_{WAO}	in dB(A):	As before, but related to A = 1.0 m²
$L_{WNC} = L_{WNCO} + K$	:	NC rating of sound power level related to A
L_{WNCO}	:	As before, but related to A = 1.0 m²
K	:	Sound power level correction for octave, dB(A) or NC values at flow cross section greater than or smaller than 1.0 m²
f	in Hz:	Octave band centre frequency

Example

Data given: Louvre type WG, installation type B
B = 600 mm, H = 495 mm, A ≈ 0.25 m²
v = 3 m/s

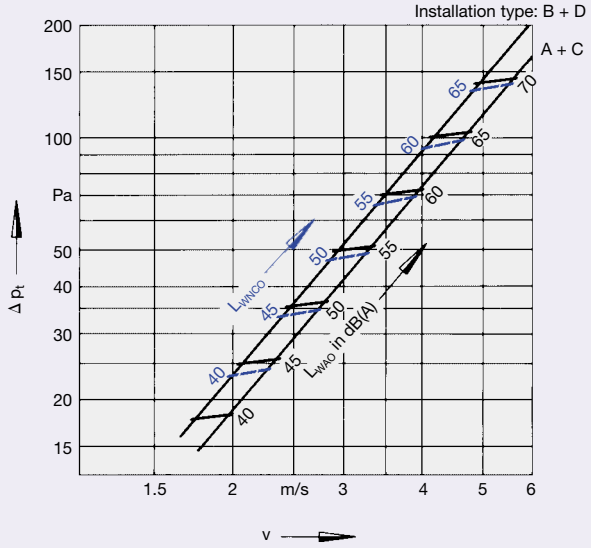
Required:
- Total pressure drop — Δp_t
- A-weighted sound power level — L_{WA}
- Octave band sound power level of regenerated noise — L_W
- NC rating of sound power spectrum — L_{WNC}

Result:
Δp_t = 50 Pa (from diagram)
L_{WA} = 55 – 6 = 49 dB(A)

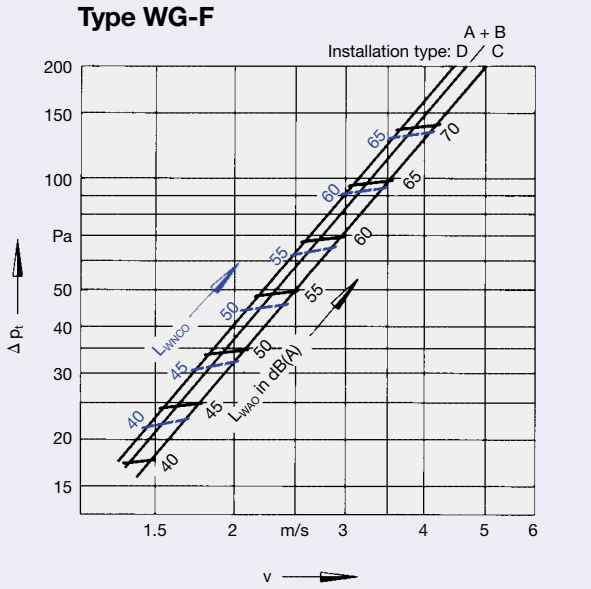
f in Hz	63	125	250	500	1000	2000	4000	8000
L_W in dB/Oct.	44	46	48	48	48	41	34	24

L_{WNC} ≈ 52 – 6 = 46

Type WG · WGE · AWG · AWK



Type WG-F



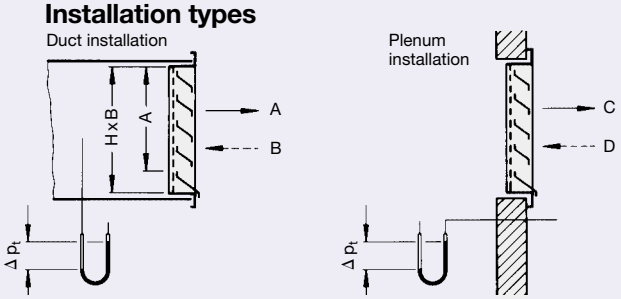
Sound power level spectra

Type		WG · WGE AWG · AWK								WG-F							
Installation type	v in m/s	Sound power level (L_{WO} in dB/Oct., $N_O = 10^{-12}$ W)															
		f = 63	125	250	500	1000	2000	4000	8000	f = 63	125	250	500	1000	2000	4000	8000
A	1	26	23	22	19	11	–	–	–	29	26	29	27	18	–	–	–
	2	45	44	42	40	37	30	18	12	52	48	45	48	46	37	25	13
	3	54	55	54	51	50	43	35	20	63	62	57	57	59	54	44	31
	4	59	63	62	60	58	56	48	36	70	70	66	63	66	64	56	43
	6	63	72	73	72	69	68	61	53	75	81	80	75	75	77	72	62
B	1	26	23	22	19	11	–	–	–	29	26	29	27	18	–	–	–
	2	41	43	44	44	39	31	22	10	51	48	45	48	46	37	25	13
	3	50	52	54	54	54	47	40	30	63	62	57	57	59	54	44	31
	4	55	59	62	62	62	57	49	40	70	70	66	63	66	64	56	43
	6	63	68	70	72	72	72	65	60	75	81	80	75	75	77	72	62
C	1	26	23	22	19	11	–	–	–	27	24	27	25	16	–	–	–
	2	45	44	41	40	37	29	18	11	50	46	43	46	44	35	23	11
	3	54	55	54	51	50	43	35	20	60	59	54	54	56	52	41	28
	4	59	63	62	60	58	56	48	36	67	68	64	61	64	62	53	41
	6	63	72	73	72	69	68	61	53	73	79	77	73	72	75	69	60
D	1	26	23	22	19	11	–	–	–	35	35	35	31	23	14	–	–
	2	41	43	44	44	39	31	22	10	50	53	53	53	49	41	31	19
	3	50	52	54	54	54	47	40	30	59	62	63	64	63	57	49	37
	4	55	59	62	62	62	57	49	40	65	68	70	71	71	67	59	49
	6	63	68	70	72	72	72	65	60	72	77	80	81	82	81	75	67

Sound power level correction values

A in m²	0.10	0.12	0.25	0.30	0.40	0.50	0.60	1.00	1.25	1.60	2.00	3.00	4.00
K	–10	–9	–6	–5	–4	–3	–2	0	+1	+2	+3	+5	+6

Installation types



All technical details refer to the basic design.

Order code

These codes do not need to be completed for standard products

AWG / **600 x 1155** / **11** / **0** / **S2** / **E6-C-31**

Type
(see page 9)
WG
WGE
AWG
AWK
WG-F

Standard sizes
B x H in mm
B_1 x H in mm
B x H_1 in mm
600 x H in mm
(see pages 7 and 8)

Shade (see page 9)
RAL ... or E6-C-...

Surface (see page 9)
P1 = Powder-coated to RAL...
S2 = Anodised to Euras-standard E6-C-31 to C-35
S3 = Anodised to Euras-standard E6-C-0

Not used

Masonry subframe (see page 9)
11 to 18
0 = without subframe

Specification text

Weather resistant louvres for protection against direct ingress of rain, leaves and birds into the intake and discharge openings of air conditioning systems; essentially comprising border frame with inset, rain resistant blade sections and wire mesh screen on rear.

Construction and materials:
See pages 3 and 4

Masonry subframe and construction variations,
e.g. linear construction anodised finish:
See page 9

Make: TROX

Type: See page 9

Order example

Make: TROX
Type: AWG / 600 x 1155 / 11 / 0 / S2 / E6-C-31
Qty.: 4