

## Type WGK



External weather louvre made of aluminium sections, anodised

### WITH SMALL BLADE PITCH

External weather louvres as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings

- Maximum width of 1997 mm, maximum height of 1997 mm
- Low differential pressure due to aerofoil blades
- Low air-regenerated noise
- All aerodynamic data is measured in aerodynamics and acoustics laboratories
- Available in standard sizes and many intermediate sizes
- Simple and quick installation due to perimeter border

Optional equipment and accessories

- Installation subframe
- Insect screen
- Powder-coated or anodised



## APPLICATION

### Application

- External weather louvres of Type WGK, with small blade pitch, for the fresh air and exhaust air openings of air conditioning systems
- Protection against the direct ingress of rain as well as against leaves and birds
- Recommended face velocity for fresh air openings: 2 – 2.5 m/s max.

### Special characteristics

- Low differential pressure and low air-regenerated noise due to aerofoil blades
- Simple and quick installation due to perimeter border
- Free area of approx. 60 %, with insect screen approx. 45 %
- Silicone free

### Nominal sizes

- B: 97, 147, 197, 297, 397, 497, 597, 797, 997, 1197, 1397, 1597, 1797, 1997 mm (intermediate sizes 98 – 1996 mm in increments of 1 mm)
- H: 97, 147, 197, 247, 297, 347, 397, 447, 497, 597, 797, 997, 1197, 1397, 1597, 1797, 1997 mm (intermediate sizes 122 – 1972 mm in increments of 25 mm)

## DESCRIPTION

### Construction

#### Cover grille

- Wire mesh
- 1: With insect screen, galvanised steel
- 3: With insect screen, stainless steel

#### Border

- Border fixing holes
- U: Without fixing holes

### **Parts and characteristics**

- Border
- Regular blades and bottom blade
- Wire mesh
- Optional insect screen
- Visible stabilising mullion from B = 597 mm, two mullions from B = 1 198 mm, three mullions from B = 1797 mm

### **Accessories**

- Installation subframe: Installation subframe for the fast and simple installation of external weather louvres

### **Construction features**

- Border, material thickness 1.3 mm
- Blades, material thickness 1.35 mm
- Free area of approx. 60 %, with insect screen approx. 45 %
- Wire mesh at the rear, mesh aperture 6 × 6 × 0.63 mm
- Optional insect screen at the rear, mesh aperture 1.25 × 1.25 × 0.4 mm
- Border fixing holes

### **Materials and surfaces**

- Border, blades and stabilising mullions made of extruded aluminium sections, material no. EN AW-6060 T66, anodised to EURAS standard, E6-C-0, natural colour
- Wire mesh made of galvanised steel
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

### **Maintenance**

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

## TECHNICAL INFORMATION

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

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### FUNCTION

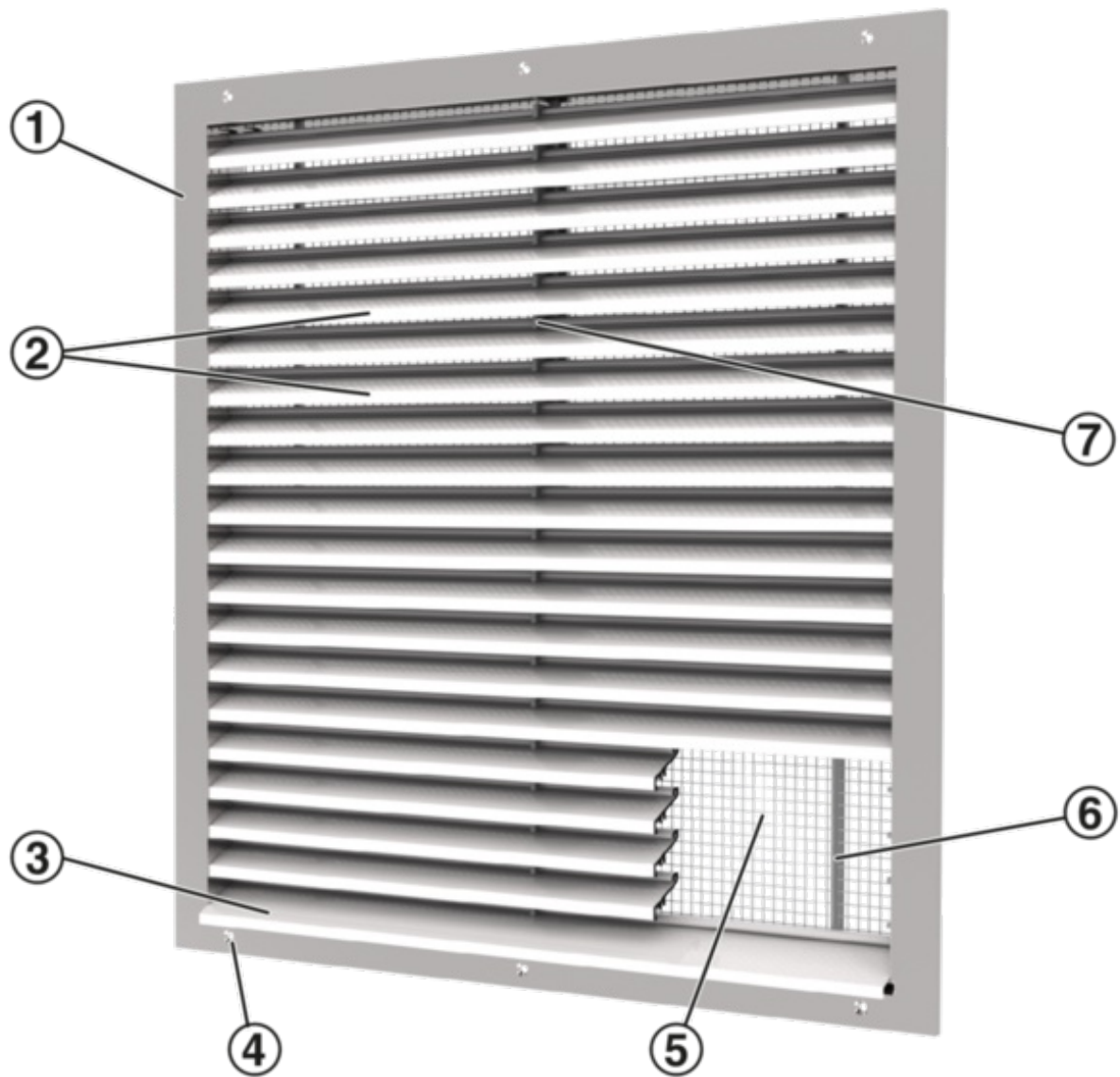
#### Functional description

External weather louvres are externally mounted air transfer devices for the fresh air and exhaust air of air conditioning systems. They are installed in external walls and façades. Their narrowly arranged blades give good protection against the direct ingress of rain as well as against leaves and birds.

Under certain unfavourable conditions, such as heavy rain, and depending on the airflow velocity it might happen that slight quantities of water enter together with the air.

This is why the airflow velocity in fresh air openings should not exceed 2 – 2.5 m/s.

Schematic illustration of WGK-AL



- ① Border
- ② Regular blades
- ③ Bottom blade
- ④ Fixing holes
- ⑤ Wire mesh; additional insect screen as an option
- ⑥ Reinforcing strut from H = 597
- ⑦ Stabilising mullion from B = 597

## TECHNICAL DATA

<b>Nominal sizes</b>	97 × 97 – 1997 × 997mm / 1197 × 1997 mm
<b>Volume flow rate range</b>	15 – 5890 l/s or 54 – 21204 m <sup>3</sup> /h at 2.5 m/s
<b>Free area</b>	Approx. 60 %, with insect screen approx. 45 %
<b>Total differential pressure – exhaust air</b>	30 Pa at 2.5 m/s
<b>Total differential pressure – fresh air</b>	35 Pa at 2.5 m/s

## QUICK SIZING

Quick sizing tables provide a good overview of the volume flow rates with an airflow velocity of 2.5 m/s. Values for intermediate widths can be interpolated. Precise intermediate values and volume flow rates for other airflow velocities can be calculated with our Easy Product Finder design programme.

The sound power levels  $L_{WA}$  apply to external weather louvres with a flow cross section of 1 m<sup>2</sup>.

**WGK, width 97 – 597 mm, volume flow rate at 2.5 m/s**

Height	Width [mm]													
	97		147		197		297		397		497		597	
mm	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h
97	15	54	25	90	35	126	50	180	70	252	85	306	105	378
147	30	108	45	162	60	216	90	324	120	432	150	540	180	648
197	40	144	60	216	85	306	125	450	170	612	210	756	250	900
247	55	198	80	288	110	396	165	594	215	774	270	972	325	1170
297	65	234	100	360	130	468	200	720	265	954	335	1206	400	1440
347	75	270	115	414	155	558	235	846	315	1134	395	1422	475	1710
397	90	324	135	486	180	648	275	990	365	1314	460	1656	550	1980
447	100	360	155	558	205	738	310	1116	415	1494	520	1872	625	2250
497	115	414	170	612	230	828	350	1260	465	1674	585	2106	700	2520
597	140	504	210	756	280	1008	420	1512	565	2034	705	2538	850	3060
797	185	666	285	1026	380	1368	570	2052	765	2754	955	3438	1150	4140
997	235	846	355	1278	475	1710	720	2592	960	3456	1205	4338	1445	5202
1197	285	1026	430	1548	575	2070	870	3132	1160	4176	1450	5220	1745	6282
1397	330	1188	505	1818	675	2430	1015	3654	1360	4896	1700	6120	2045	7362
1597	380	1368	575	2070	775	2790	1165	4194	1555	5598	1950	7020	2340	8424
1797	430	1548	650	2340	870	3132	1315	4734	1755	6318	2200	7920	2640	9504
1997	475	1710	725	2610	970	3492	1460	5256	1955	7038	2445	8802	2940	10584

WGK, width 797 – 1997 mm, volume flow rate at 2.5 m/s

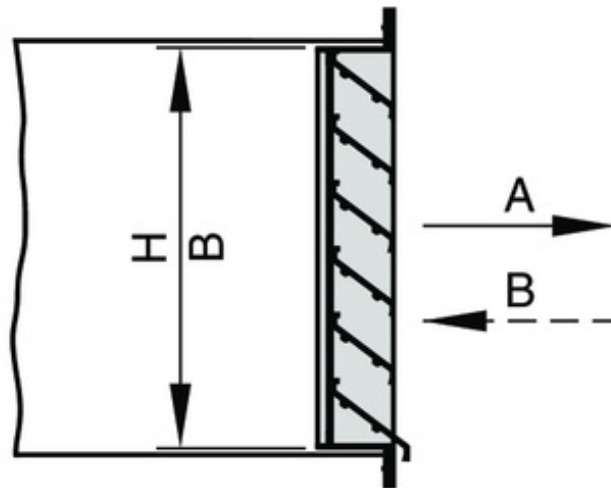
Height	Width [mm]													
	797		997		1197		1397		1597		1797		1997	
mm	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h
97	135	486	170	612	205	738	240	864	275	990	310	1116	345	1242
147	235	846	295	1062	355	1278	415	1494	475	1710	535	1926	595	2142
197	335	1206	420	1512	505	1818	590	2124	675	2430	760	2736	845	3042
247	435	1566	545	1962	655	2358	765	2754	875	3150	985	3546	1095	3942
297	535	1926	670	2412	805	2898	940	3384	1075	3870	1210	4356	1345	4842
347	635	2286	795	2862	955	3438	1115	4014	1275	4590	1435	5166	1595	5742
397	735	2646	920	3312	1105	3978	1290	4644	1475	5310	1660	5976	1840	6624
447	835	3006	1045	3762	1255	4518	1465	5274	1675	6030	1880	6768	2090	7524
497	935	3366	1170	4212	1405	5058	1640	5904	1870	6732	2105	7578	2340	8424
597	1135	4086	1420	5112	1705	6138	1985	7146	2270	8172	2555	9198	2840	10224
797	1530	5508	1915	6894	2300	8280	2685	9666	3070	11052	3455	12438	3840	13824
997	1930	6948	2415	8694	2900	10440	3385	12186	3870	13932	4355	15678	4840	17424
1197	2330	8388	2915	10494	3500	12600	4085	14706	4665	16794				
1397	2730	9828	3410	12276	4095	14742	4780	17208						
1597	3125	11250	3910	14076	4695	16902								
1797	3525	12690	4410	15876	5290	19044								
1997	3925	14130	4910	17676	5890	21204								

Differential pressure and sound power level



v	Installation type			
	A and C		B and D	
v	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$
m/s	Pa	dB(A)	Pa	dB(A)
1.5	10	32	14	34
2	20	41	25	43
2.5	30	48	35	50
3	45	54	55	56
4	75	63	95	66
5	115	70	145	73
6	170	76	210	79

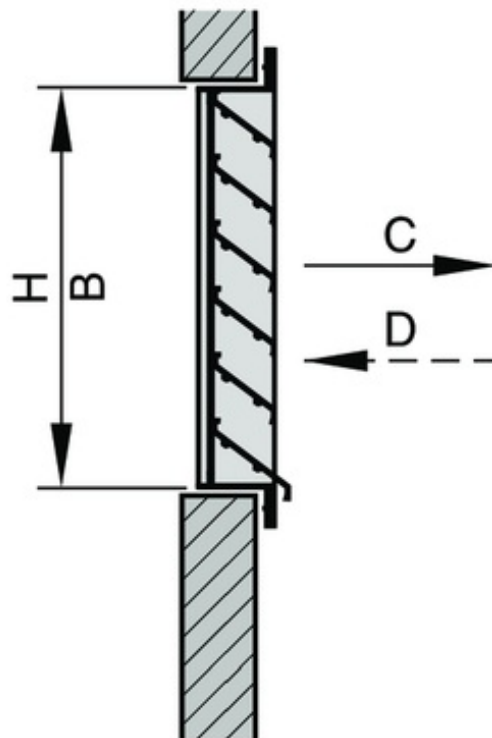
Installation into rectangular ducts (installation types A and B)



A Exhaust air

B Fresh air

Plenum installation (installation types C and D)



C Exhaust air

D Fresh air

## SPECIFICATION TEXT

Rectangular external weather louvre as a protection of air conditioning systems against the direct ingress of rain, leaves and birds into fresh air and exhaust air openings.

Ready-to-install component which consists of a border, aerofoil rain defence blades, and a bird mesh at the rear.

### Special characteristics

- Low differential pressure and low air-regenerated noise due to aerofoil blades

- Simple and quick installation due to perimeter border
- Free area of approx. 60 %, with insect screen approx. 45 %
- Silicone free

### Materials and surfaces

- Border, blades and stabilising mullions made of extruded aluminium sections, material no. EN AW-6060 T66, anodised to EURAS standard, E6-C-0, natural colour
- Wire mesh made of galvanised steel
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

### Construction

#### Cover grille

- Wire mesh
- 1: With insect screen, galvanised steel
- 3: With insect screen, stainless steel

#### Border

- Border fixing holes
- U: Without fixing holes

### Technical data

- Nominal sizes: 97 × 97 – 1997 × 997 mm / 1197 × 1997 mm
- Volume flow rate range: 15 – 5890 l/s or 54 – 21204 m<sup>3</sup>/h at 2.5 m/s
- Free area: approx. 60 %, with insect screen approx. 45 %
- Total differential pressure – exhaust air: 30 Pa at 2.5 m/s
- Total differential pressure – fresh air: 35 Pa at 2.5 m/s

### Sizing data

- V \_\_\_\_\_ [m<sup>3</sup>/h]
- Δp<sub>t</sub> \_\_\_\_\_ [Pa]

#### Air-regenerated noise

- $L_{WA}$  \_\_\_\_\_ [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 CODE

Order example: WGK-AL-1/997×1622/P1-RAL 9006

Material	Aluminium
Construction	Insect screen, galvanised steel
Nominal size	997×1622 mm
Installation subframe	Without
Surface	Powder-coated, RAL 9006, white aluminium



### 1 Type

WGK External weather louvre with small blade pitch

### 5 Nominal size [mm]

B × H

### 2 Material

AL Anodised aluminium

### 6 Installation subframe

No entry: None

ER With (not for construction without fixing holes)

### 3 Construction

No entry: wire mesh, galvanised steel

1 Insect screen, galvanised steel

3 Insect screen, stainless steel

### 7 Surface

No entry: anodised to EURAS standard, E6-C-0, S3, natural colour

P1 Powder-coated, RAL Classic colour

PS Powder-coated, DB colour

S2 Anodised to EURAS standard, E6-C-... (31 to 35)

### 4 Border

No entry: With fixing holes

U Without fixing holes

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

## Dimensions and weight, Product details

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### DIMENSIONS AND WEIGHT

Flow cross section to calculate the airflow velocity

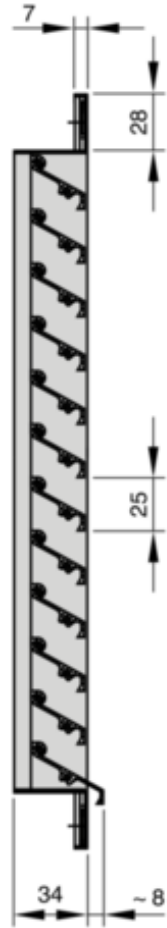
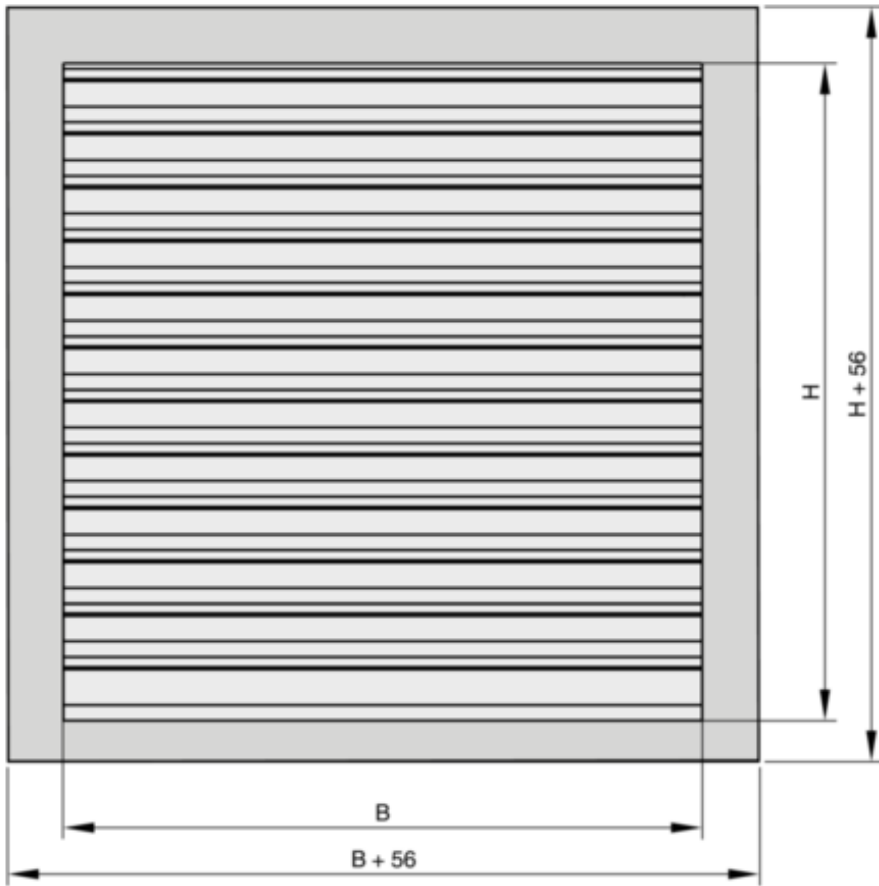
- $A = B \times (H - 0.028)$

Unit of measure for B and H: mm

**WGK, weight**

H	B [mm]																				
	97	147	197	297	397	497	597	697	797	897	997	1097	1197	1297	1397	1497	1597	1697	1797	1897	1997
mm	kg																				
97	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3
147	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	4	4	4
197	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	5
247	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
297	1	1	1	2	2	2	3	3	3	3	4	4	4	5	5	5	6	6	6	6	7
347	1	1	1	2	2	3	3	3	4	4	4	4	5	5	5	6	6	6	7	7	8
397	1	1	2	2	2	3	3	4	4	4	5	5	6	6	6	7	7	8	8	8	9
447	1	1	2	2	3	3	4	4	4	5	5	6	6	7	7	8	8	9	9	9	10
497	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
597	1	2	2	3	3	4	5	5	6	6	7	8	8	9	9	10	11	11	12	12	13
797	1	2	3	4	4	5	6	7	8	8	9	10	11	12	12	13	14	15	16	16	17
997	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1197	2	3	4	5	6	8	9	10	11	12	14	15	16	17	18	20	21	22			
1397	2	3	5	6	7	9	10	12	13	14	16	17	19	20	21	23					
1597	2	4	5	7	8	10	12	13	15	16	18	20	21	23							
1797	2	4	6	8	9	11	13	15	17	18	20	22									
1997	2	4	6	8	10	12	14	16	18	20	22										

WGK



## PRODUCT DETAILS

WGK, standard sizes, width, dimensions



Width	No. of holes		
B	n	T <sub>1</sub>	T <sub>2</sub>
mm		mm	
97	1	–	B/2
147	1	–	B/2
197	1	–	B/2
297	2	262	17.5
397	2	362	17.5
497	3	231	17.5
597	3	281	17.5
797	3	381	17.5
997	4	321	17.5
1197	4	387	17.5
1397	5	341	17.5
1597	5	391	17.5
1797	6	352	17.5
1997	6	392	17.5

WGK, standard sizes. Height, dimensions

Height	No. of holes		
H	n	T <sub>3</sub>	T <sub>4</sub>
mm		mm	
97	0	–	–
147	0	–	–
197	0	–	–
297	0	–	–
397	0	–	–
497	0	–	–
597	3	281	17.5
797	3	381	17.5
997	4	321	17.5
1197	4	387	17.5
1397	5	341	17.5
1597	5	391	17.5
1797	6	352	17.5
1997	6	392	17.5

WGK, intermediate sizes, width, dimensions

Width	No. of holes		
B	n	T <sub>1</sub>	T <sub>2</sub>
mm		mm	
97 – 296	1	–	B/2
298 – 396	2	B – 35	17.5
398 – 796	3	(B – 35)/2	17.5
798 – 1396	4	(B – 35)/3	17.5
1398 – 1796	5	(B – 35)/4	17.5
1798 – 1996	6	(B – 35)/5	17.5

**WGK, intermediate sizes, height, dimensions**

Height	No. of holes		
H	n	T <sub>3</sub>	T <sub>4</sub>
mm		mm	
122 – 572	0	–	–
622 – 772	3	(H – 35)/2	17.5
822 – 1372	4	(H – 35)/3	17.5
1422 – 1772	5	(H – 35)/4	17.5
1822 – 1972	6	(H – 35)/5	17.5

**Border fixing holes – WGK**

## Installation details, Basic information and nomenclature

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### INSTALLATION DETAILS

#### Installation and commissioning

- Installation with or without installation subframe

#### Wall installation without installation subframe



### BASIC INFORMATION AND NOMENCLATURE

#### Nomenclature

##### $L_{WA}$ [dB(A)]

A-weighted sound power level of air-regenerated noise for the louvre

##### $A$ [m<sup>2</sup>]

Upstream cross section

##### $v$ [m/s]

Airflow velocity based on the upstream cross section

##### $v_t$ [m/s]

Airflow velocity based on the upstream cross section (type NL)

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

Volume flow rate

##### $\Delta p_t$ [Pa]

Total differential pressure

All sound power levels are based on 1 pW.

#### Principal dimensions

**B [mm]**

Duct width

**B<sub>1</sub> [mm]**

Duct width for subdivided louvres

**H [mm]**

Duct height

**H<sub>1</sub> [mm]**

Duct height for subdivided louvres

**n [ ]**

Number of flange screw holes

**m [kg]**

Weight

**TROX GmbH**

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