



**ACOUSTIC LOUVRE,  
VARIANT NL-A**

## TYPE NL

### WITH SOUND REDUCTION CHARACTERISTICS

Acoustic 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 1800 mm, maximum height of 2250 mm
- Low differential pressure due to aerofoil blades
- Low air-regenerated noise
- All aerodynamic data is measured in aerodynamics and acoustics laboratories
- Absorption material faced with glass fibre fabric and retained by perforated sheet metal
- Double bank of louvre blades for demanding acoustic requirements
- Non-active section, without acoustic function, for a uniform appearance
- Multi-section constructions for large dimensions

Optional equipment and accessories

- Powder-coated

## Application



### Application

- Acoustic louvres of Type NL 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.
- Weather and noise protection with a compact-depth unit

### Special characteristics

- Two construction depths for normal and demanding acoustic requirements
- Aerofoil blades
- Absorption material retained by perforated sheet metal

### Nominal sizes

- B: 300, 450, 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800 mm
- Width subdivided: 1950, 2100, 2250, 2400, 2550, 2700, 2850, 3000, 3150, 3300, 3450, 3600 mm
- H: 450, 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950, 2100, 2250 mm
- Height subdivided: 2400, 2550, 2700, 2850, 3000, 3150, 3300, 3450, 3600, 3750, 3900, 4050, 4200, 4350, 4500 mm
- Any combination of B x H
- Other dimensions upon request

## Description



### Variants

- NL: Acoustic louvre
- NL-H: Double bank for demanding acoustic requirements
- NL-D: Non-active section for a uniform appearance

### Construction

- S: Galvanised sheet steel
- A: Aluminium

### Parts and characteristics

- Casing
- Sound absorbing blades (NL, NL-D)
- Bird mesh (NL, NL-D)
- Blades (NL-D)
- Rear blanking plate (NL-D)

### Construction features

- Aerofoil blades, 150 mm blade pitch
- Casing with fixing holes for wall installation
- Absorption material faced with glass fibre fabric and retained by perforated sheet metal (NL, NL-H)
- Bird mesh 12 × 12 × 1 mm (NL, NL-H)

### Materials and surfaces

- Casing and blades made of galvanised sheet steel (S) or aluminium (A)
- Perforated sheet metal to retain absorption material is made of galvanised sheet steel (NL, NL-H)
- Bird mesh made of galvanised steel (NL, NL-H)
- Absorption material is mineral wool (NL, NL-H)

### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

### Standards and guidelines

- Insertion loss and sound power level of air-regenerated noise tested to ISO 7235
- Sound reduction index determined according to EN ISO 10140-2 und EN ISO 717-1

### 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 ^

---

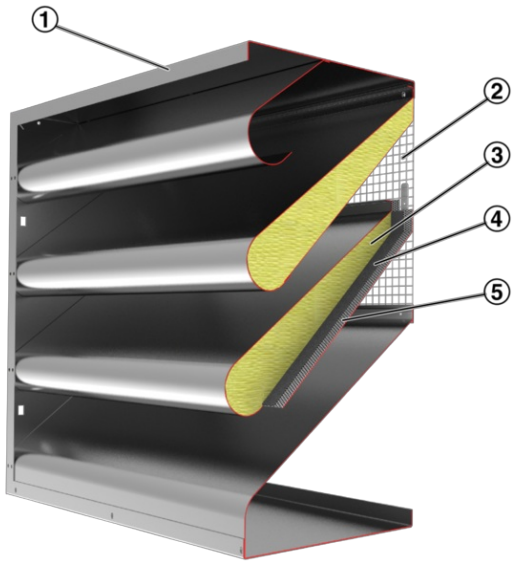
### Functional description

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 NL



- ① Casing
- ② Bird mesh
- ③ Absorption material
- ④ Glass fibre fabric
- ⑤ Perforated sheet metal

|                                                 |                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------|
| Nominal sizes                                   | 300 × 450 to 1800 × 2250 mm                                     |
| Width subdivided                                | Up to 3600 mm                                                   |
| Height subdivided                               | Up to 4500 mm                                                   |
| Volume flow rate range (undivided construction) | 120 – 9360 l/s or 432 – 33696 m <sup>3</sup> /h at max. 2.5 m/s |

#### Insertion loss

| Variant | Centre frequency fm [Hz] |     |     |     |      |      |      |      |
|---------|--------------------------|-----|-----|-----|------|------|------|------|
|         | 63                       | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| Variant | D <sub>e</sub>           |     |     |     |      |      |      |      |
|         | dB                       |     |     |     |      |      |      |      |
| NL      | 3                        | 4   | 7   | 8   | 13   | 15   | 13   | 15   |
| NL-H    | 3                        | 6   | 9   | 16  | 21   | 24   | 24   | 30   |

#### Sound reduction index

| Variant | Centre frequency fm [Hz] |     |     |     |      |      |      | R <sub>w</sub> |
|---------|--------------------------|-----|-----|-----|------|------|------|----------------|
|         | 63                       | 125 | 250 | 500 | 1000 | 2000 | 4000 |                |
| Variant | R                        |     |     |     |      |      |      |                |
|         | dB                       |     |     |     |      |      |      |                |
| NL      | –                        | 6   | 6   | 9   | 13   | 14   | –    | 12             |
| NL-H    | –                        | 7   | 9   | 16  | 25   | 27   | –    | 21             |

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<sub>WA</sub> apply to external weather louvres with a flow cross section of 1 m<sup>2</sup>.

**NL, width 300 – 1050 mm, volume flow rate at max. 2.5 m/s**

| Height | Width [mm] |      |      |      |      |       |      |       |      |       |      |       |
|--------|------------|------|------|------|------|-------|------|-------|------|-------|------|-------|
|        | 300        |      | 450  |      | 600  |       | 750  |       | 900  |       | 1050 |       |
| 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  |
| 450    | 120        | 432  | 180  | 648  | 240  | 864   | 300  | 1080  | 360  | 1296  | 420  | 1512  |
| 600    | 240        | 864  | 360  | 1296 | 480  | 1728  | 600  | 2160  | 720  | 2592  | 840  | 3024  |
| 750    | 360        | 1296 | 540  | 1944 | 720  | 2592  | 900  | 3240  | 1080 | 3888  | 1260 | 4536  |
| 900    | 480        | 1728 | 720  | 2592 | 960  | 3456  | 1200 | 4320  | 1440 | 5184  | 1680 | 6048  |
| 1050   | 600        | 2160 | 900  | 3240 | 1200 | 4320  | 1500 | 5400  | 1800 | 6480  | 2100 | 7560  |
| 1200   | 720        | 2592 | 1080 | 3888 | 1440 | 5184  | 1800 | 6480  | 2160 | 7776  | 2520 | 9072  |
| 1350   | 840        | 3024 | 1260 | 4536 | 1680 | 6048  | 2100 | 7560  | 2520 | 9072  | 2940 | 10584 |
| 1500   | 960        | 3456 | 1440 | 5184 | 1920 | 6912  | 2400 | 8640  | 2880 | 10368 | 3360 | 12096 |
| 1650   | 1080       | 3888 | 1620 | 5832 | 2160 | 7776  | 2700 | 9720  | 3240 | 11664 | 3780 | 13608 |
| 1800   | 1200       | 4320 | 1800 | 6480 | 2400 | 8640  | 3000 | 10800 | 3600 | 12960 | 4200 | 15120 |
| 1950   | 1320       | 4752 | 1980 | 7128 | 2640 | 9504  | 3300 | 11880 | 3960 | 14256 | 4620 | 16632 |
| 2100   | 1440       | 5184 | 2160 | 7776 | 2880 | 10368 | 3600 | 12960 | 4320 | 15552 | 5040 | 18144 |
| 2250   | 1560       | 5616 | 2340 | 8424 | 3120 | 11232 | 3900 | 14040 | 4680 | 16848 | 5460 | 19656 |

NL, width 1200 – 1800 mm, volume flow rate at max. 2.5 m/s

| Height | Width [mm] |       |      |       |      |       |      |       |      |       |
|--------|------------|-------|------|-------|------|-------|------|-------|------|-------|
|        | 1200       |       | 1350 |       | 1500 |       | 1650 |       | 1800 |       |
| mm     | l/s        | m³/h  | l/s  | m³/h  | l/s  | m³/h  | l/s  | m³/h  | l/s  | m³/h  |
| 450    | 480        | 1728  | 540  | 1944  | 600  | 2160  | 660  | 2376  | 720  | 2592  |
| 600    | 960        | 3456  | 1080 | 3888  | 1200 | 4320  | 1320 | 4752  | 1440 | 5184  |
| 750    | 1440       | 5184  | 1620 | 5832  | 1800 | 6480  | 1980 | 7128  | 2160 | 7776  |
| 900    | 1920       | 6912  | 2160 | 7776  | 2400 | 8640  | 2640 | 9504  | 2880 | 10368 |
| 1050   | 2400       | 8640  | 2700 | 9720  | 3000 | 10800 | 3300 | 11880 | 3600 | 12960 |
| 1200   | 2880       | 10368 | 3240 | 11664 | 3600 | 12960 | 3960 | 14256 | 4320 | 15552 |
| 1350   | 3360       | 12096 | 3780 | 13608 | 4200 | 15120 | 4620 | 16632 | 5040 | 18144 |
| 1500   | 3840       | 13824 | 4320 | 15552 | 4800 | 17280 | 5280 | 19008 | 5760 | 20736 |
| 1650   | 4320       | 15552 | 4860 | 17496 | 5400 | 19440 | 5940 | 21384 | 6480 | 23328 |
| 1800   | 4800       | 17280 | 5400 | 19440 | 6000 | 21600 | 6600 | 23760 | 7200 | 25920 |
| 1950   | 5280       | 19008 | 5940 | 21384 | 6600 | 23760 | 7260 | 26136 | 7920 | 28512 |
| 2100   | 5760       | 20736 | 6480 | 23328 | 7200 | 25920 | 7920 | 28512 | 8640 | 31104 |
| 2250   | 6240       | 22464 | 7020 | 25272 | 7800 | 28080 | 8580 | 30888 | 9360 | 33696 |

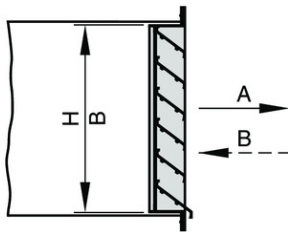
NL, differential pressure and sound power level

| v   | v <sub>t</sub> | Installation type |                 |                 |                 |                 |                 |                 |                 |
|-----|----------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|     |                | A                 |                 | B               |                 | C               |                 | D               |                 |
| v   | v <sub>t</sub> | Δp <sub>t</sub>   | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> |
| m/s |                | Pa                | dB(A)           | Pa              | dB(A)           | Pa              | dB(A)           | Pa              | dB(A)           |
| 1.5 | 0.2 – 0.4      | 2                 | <15             | 2               | <15             | 2               | <15             | 1               | <15             |
| 2   | 0.2 – 0.6      | 4                 | <15             | 4               | <15             | 4               | <15             | 4               | <15             |
| 4   | 0.4 – 1.2      | 18                | 32              | 14              | 28              | 18              | 29              | 14              | 27              |
| 6   | 0.7 – 1.7      | 40                | 44              | 30              | 40              | 40              | 41              | 28              | 39              |
| 8   | 0.9 – 2.3      | 70                | 52              | 50              | 48              | 65              | 49              | 50              | 47              |
| 10  | 1.1 – 2.9      | 110               | 58              | 80              | 54              | 105             | 55              | 75              | 53              |

**NL-H, Differential pressure and sound power level**

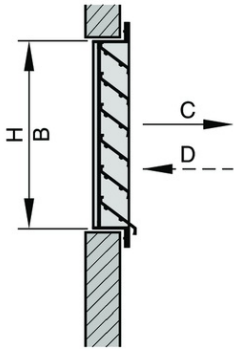
| v   | v <sub>t</sub> | Installation type |                 |                 |                 |                 |                 |                 |                 |
|-----|----------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|     |                | A                 |                 | B               |                 | C               |                 | D               |                 |
| v   | v <sub>t</sub> | Δp <sub>t</sub>   | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> | Δp <sub>t</sub> | L <sub>WA</sub> |
| m/s |                | Pa                | dB(A)           | Pa              | dB(A)           | Pa              | dB(A)           | Pa              | dB(A)           |
| 1   | 0.1 – 0.3      | 2                 | <15             | 2               | <15             | 2               | <15             | 2               | <15             |
| 2   | 0.2 – 0.6      | 8                 | 26              | 6               | 19              | 6               | 18              | 6               | 18              |
| 3   | 0.3 – 0.9      | 16                | 37              | 12              | 30              | 12              | 29              | 12              | 29              |
| 4   | 0.4 – 1.2      | 26                | 45              | 20              | 38              | 20              | 37              | 20              | 37              |
| 5   | 0.6 – 1.5      | 40                | 52              | 30              | 45              | 30              | 44              | 30              | 44              |
| 7   | 0.8 – 2.0      | 80                | 61              | 65              | 54              | 60              | 53              | 60              | 53              |

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

Rectangular acoustic louvres 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 wire mesh at the rear.

Insertion loss measured according to ISO 7235, sound reduction index measured according to EN ISO 10140-2.

#### Special characteristics

- Two construction depths for normal and demanding acoustic requirements
- Aerofoil blades
- Absorption material retained by perforated sheet metal

#### Materials and surfaces

- Casing and blades made of galvanised sheet steel (S) or aluminium (A)
- Perforated sheet metal to retain absorption material is made of galvanised sheet steel (NL, NL-H)
- Bird mesh made of galvanised steel (NL, NL-H)
- Absorption material is mineral wool (NL, NL-H)

#### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

#### Construction

- S: Galvanised sheet steel
- A: Aluminium

#### Technical data

- Nominal sizes: 300 × 450 to 1800 × 2250 mm
- Width subdivided: up to 3600 mm
- Height subdivided: Up to 4500 mm
- Volume flow rate range (undivided construction): 120 – 9360 l/s or 432 – 33696 m<sup>3</sup>/h at 2.5 m/s
- Total differential pressure – exhaust air (single louvre): 30 – 100 Pa (depending on height) at 1.75 m/s
- Total differential pressure – fresh air (single louvre): 25 – 75 Pa (depending on height) at 1.75 m/s

#### Sizing data

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

#### Air-regenerated noise

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

#### Weighted sound reduction index

- R<sub>W</sub> \_\_\_\_\_ [dB]

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: NL-H-S/1050x750

|                      |                       |
|----------------------|-----------------------|
| Acoustic performance | High                  |
| Material             | Galvanised steel      |
| Nominal size         | 1050x750 mm           |
| Surface              | Standard construction |

**NL – H – A / 1800x2250 / P1 – RAL ...**



**1** Type

NL Acoustic louvre

**4** Nominal size [mm]

B x H

**2** Acoustic performance

No entry: standard requirement, single louvre  
H High, double bank  
D Non-active section

**5** Surface

No entry: standard construction  
P1 Powder-coated, RAL Classic colour

**3** Material

S Galvanised steel  
A Raw aluminium

Gloss level  
RAL 9010 50 %  
RAL 9006 30 %  
All other RAL colours 70 %

Variants, Dimensions and weight



NL

Variant

- Acoustic louvre

Parts and characteristics

- Casing
- Sound absorbing blades
- Bird mesh

Construction features

- Aerofoil blades, 150 mm blade pitch
- Casing with fixing holes for wall installation
- Absorption material faced with glass fibre fabric and retained by perforated sheet metal
- Bird mesh 12 x 12 x 1 mm

Materials and surfaces

- Casing and blades made of galvanised sheet steel (S) or aluminium (A)
- Perforated sheet metal to retain absorption material is made of galvanised sheet steel
- Bird mesh made of galvanised steel
- Absorption material is mineral wool

#### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

#### NL-H

##### Variant

- High performance acoustic louvre (double bank)

##### Parts and characteristics

- Casing
- Sound absorbing blades
- Bird mesh

##### Construction features

- Aerofoil blades, 150 mm blade pitch
- Casing with fixing holes for wall installation
- Absorption material faced with glass fibre fabric and retained by perforated sheet metal
- Bird mesh 12 × 12 × 1 mm

##### Materials and surfaces

- Casing and blades made of galvanised sheet steel (S) or aluminium (A)
- Perforated sheet metal to retain absorption material is made of galvanised sheet steel
- Bird mesh made of galvanised steel
- Absorption material is mineral wool

#### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

#### NL-D

##### Variant

- Non-active section for a uniform appearance

##### Parts and characteristics

- Casing
- Blades
- Rear blanking plate

##### Construction features

- Aerofoil blades, 150 mm blade pitch
- Casing with fixing holes for wall installation

##### Materials and surfaces

- Casing and blades made of galvanised sheet steel (S) or aluminium (A)

## Materials

| Part                                                 | Order code detail | Material               | Notes         |
|------------------------------------------------------|-------------------|------------------------|---------------|
| Casing and blades                                    | S                 | Galvanised sheet steel |               |
|                                                      | A                 | Aluminium              |               |
| Perforated sheet metal to retain absorption material | –                 | Galvanised sheet steel | Only NL, NL-H |
| Bird mesh                                            | –                 | Galvanised steel       | Only NL, NL-H |
| Absorption material                                  | –                 | Mineral wool           | Only NL, NL-H |

## Surfaces

| Part              | Order code detail | Surface                               | Notes |
|-------------------|-------------------|---------------------------------------|-------|
| Casing and blades | –                 | Untreated                             |       |
|                   | P1-RAL ...        | Powder-coated, RAL colour ... CLASSIC |       |

## NL-S, Weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 7      | 10  | 13  | 16  | 19  | 23   | 26   | 29   | 32   | 36   | 39   |
| 600  | 9      | 13  | 17  | 22  | 26  | 30   | 35   | 39   | 43   | 48   | 52   |
| 750  | 11     | 16  | 22  | 27  | 32  | 38   | 43   | 49   | 54   | 59   | 65   |
| 900  | 13     | 19  | 26  | 32  | 39  | 45   | 52   | 58   | 65   | 71   | 78   |
| 1050 | 15     | 23  | 30  | 38  | 45  | 53   | 61   | 68   | 76   | 83   | 91   |
| 1200 | 17     | 26  | 35  | 43  | 52  | 61   | 69   | 78   | 86   | 95   | 104  |
| 1350 | 19     | 29  | 39  | 49  | 58  | 68   | 78   | 88   | 97   | 107  | 117  |
| 1500 | 22     | 32  | 43  | 54  | 65  | 76   | 86   | 97   | 108  | 119  | 130  |
| 1650 | 24     | 36  | 48  | 59  | 71  | 83   | 95   | 107  | 119  | 131  | 143  |
| 1800 | 26     | 39  | 52  | 65  | 78  | 91   | 104  | 117  | 130  | 143  | 156  |
| 1950 | 28     | 42  | 56  | 70  | 84  | 98   | 112  | 126  | 140  | 154  | 169  |
| 2100 | 30     | 45  | 61  | 76  | 91  | 106  | 121  | 136  | 151  | 166  | 181  |
| 2250 | 32     | 49  | 65  | 81  | 97  | 113  | 130  | 146  | 162  | 178  | 194  |

## NL-A, weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 5      | 7   | 10  | 12  | 14  | 17   | 19   | 21   | 24   | 26   | 28   |
| 600  | 6      | 10  | 13  | 16  | 19  | 22   | 25   | 28   | 32   | 35   | 38   |
| 750  | 8      | 12  | 16  | 20  | 24  | 28   | 32   | 35   | 39   | 43   | 47   |
| 900  | 10     | 14  | 19  | 24  | 28  | 33   | 38   | 43   | 47   | 52   | 57   |
| 1050 | 11     | 17  | 22  | 28  | 33  | 39   | 44   | 50   | 55   | 61   | 66   |
| 1200 | 13     | 19  | 25  | 32  | 38  | 44   | 50   | 57   | 63   | 69   | 76   |
| 1350 | 14     | 21  | 28  | 35  | 43  | 50   | 57   | 64   | 71   | 78   | 85   |
| 1500 | 16     | 24  | 32  | 39  | 47  | 55   | 63   | 71   | 79   | 87   | 95   |
| 1650 | 17     | 26  | 35  | 43  | 52  | 61   | 69   | 78   | 87   | 95   | 104  |
| 1800 | 19     | 28  | 38  | 47  | 57  | 66   | 76   | 85   | 95   | 104  | 113  |
| 1950 | 21     | 31  | 41  | 51  | 61  | 72   | 82   | 92   | 102  | 113  | 123  |
| 2100 | 22     | 33  | 44  | 55  | 66  | 77   | 88   | 99   | 110  | 121  | 132  |
| 2250 | 24     | 35  | 47  | 59  | 71  | 83   | 95   | 106  | 118  | 130  | 142  |

NL-H-S, weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 13     | 19  | 26  | 32  | 39  | 45   | 52   | 58   | 65   | 71   | 78   |
| 600  | 17     | 26  | 35  | 43  | 52  | 61   | 69   | 78   | 86   | 95   | 104  |
| 750  | 22     | 32  | 43  | 54  | 65  | 76   | 86   | 97   | 108  | 119  | 130  |
| 900  | 26     | 39  | 52  | 65  | 78  | 91   | 104  | 117  | 130  | 143  | 156  |
| 1050 | 30     | 45  | 61  | 76  | 91  | 106  | 121  | 136  | 151  | 166  | 181  |
| 1200 | 35     | 52  | 69  | 86  | 104 | 121  | 138  | 156  | 173  | 190  | 207  |
| 1350 | 39     | 58  | 78  | 97  | 117 | 136  | 156  | 175  | 194  | 214  | 233  |
| 1500 | 43     | 65  | 86  | 108 | 130 | 151  | 173  | 194  | 216  | 238  | 259  |
| 1650 | 48     | 71  | 95  | 119 | 143 | 166  | 190  | 214  | 238  | 261  | 285  |
| 1800 | 52     | 78  | 104 | 130 | 156 | 181  | 207  | 233  | 259  | 285  | 311  |
| 1950 | 56     | 84  | 112 | 140 | 169 | 197  | 225  | 253  | 281  | 309  | 337  |
| 2100 | 61     | 91  | 121 | 151 | 181 | 212  | 242  | 272  | 302  | 333  | 363  |
| 2250 | 65     | 97  | 130 | 162 | 194 | 227  | 259  | 292  | 324  | 356  | 389  |

NL-H-A, weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 10     | 14  | 19  | 24  | 28  | 33   | 38   | 43   | 47   | 52   | 57   |
| 600  | 13     | 19  | 25  | 32  | 38  | 44   | 50   | 57   | 63   | 69   | 76   |
| 750  | 16     | 24  | 32  | 39  | 47  | 55   | 63   | 71   | 79   | 87   | 95   |
| 900  | 19     | 28  | 38  | 47  | 57  | 66   | 76   | 85   | 95   | 104  | 113  |
| 1050 | 22     | 33  | 44  | 55  | 66  | 77   | 88   | 99   | 110  | 121  | 132  |
| 1200 | 25     | 38  | 50  | 63  | 76  | 88   | 101  | 113  | 126  | 139  | 151  |
| 1350 | 28     | 43  | 57  | 71  | 85  | 99   | 113  | 128  | 142  | 156  | 170  |
| 1500 | 32     | 47  | 63  | 79  | 95  | 110  | 126  | 142  | 158  | 173  | 189  |
| 1650 | 35     | 52  | 69  | 87  | 104 | 121  | 139  | 156  | 173  | 191  | 208  |
| 1800 | 38     | 57  | 76  | 95  | 113 | 132  | 151  | 170  | 189  | 208  | 227  |
| 1950 | 41     | 61  | 82  | 102 | 123 | 143  | 164  | 184  | 205  | 225  | 246  |
| 2100 | 44     | 66  | 88  | 110 | 132 | 154  | 176  | 199  | 221  | 243  | 265  |
| 2250 | 47     | 71  | 95  | 118 | 142 | 165  | 189  | 213  | 236  | 260  | 284  |

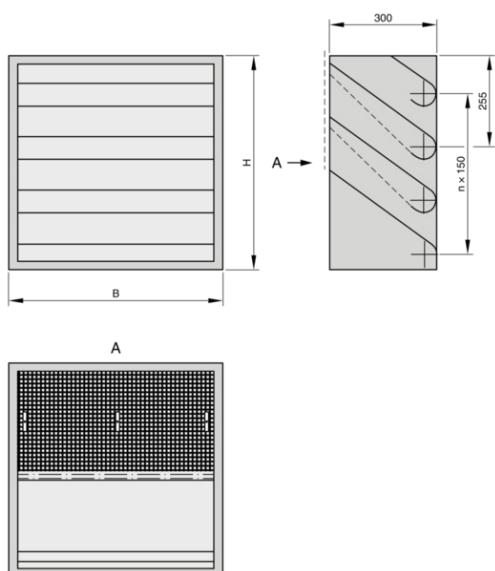
NL-D-S, weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 3      | 5   | 7   | 8   | 10  | 11   | 13   | 15   | 16   | 18   | 19   |
| 600  | 4      | 7   | 9   | 11  | 13  | 15   | 17   | 19   | 22   | 24   | 26   |
| 750  | 5      | 8   | 11  | 14  | 16  | 19   | 22   | 24   | 27   | 30   | 32   |
| 900  | 7      | 10  | 13  | 16  | 19  | 23   | 26   | 29   | 32   | 36   | 39   |
| 1050 | 8      | 11  | 15  | 19  | 23  | 27   | 30   | 34   | 38   | 42   | 45   |
| 1200 | 9      | 13  | 17  | 22  | 26  | 30   | 35   | 39   | 43   | 48   | 52   |
| 1350 | 10     | 15  | 19  | 24  | 29  | 34   | 39   | 44   | 49   | 54   | 58   |
| 1500 | 11     | 16  | 22  | 27  | 32  | 38   | 43   | 49   | 54   | 59   | 65   |
| 1650 | 12     | 18  | 24  | 30  | 36  | 42   | 48   | 54   | 59   | 65   | 71   |
| 1800 | 13     | 19  | 26  | 32  | 39  | 45   | 52   | 58   | 65   | 71   | 78   |
| 1950 | 14     | 21  | 28  | 35  | 42  | 49   | 56   | 63   | 70   | 77   | 84   |
| 2100 | 15     | 23  | 30  | 38  | 45  | 53   | 61   | 68   | 76   | 83   | 91   |
| 2250 | 16     | 24  | 32  | 41  | 49  | 57   | 65   | 73   | 81   | 89   | 97   |

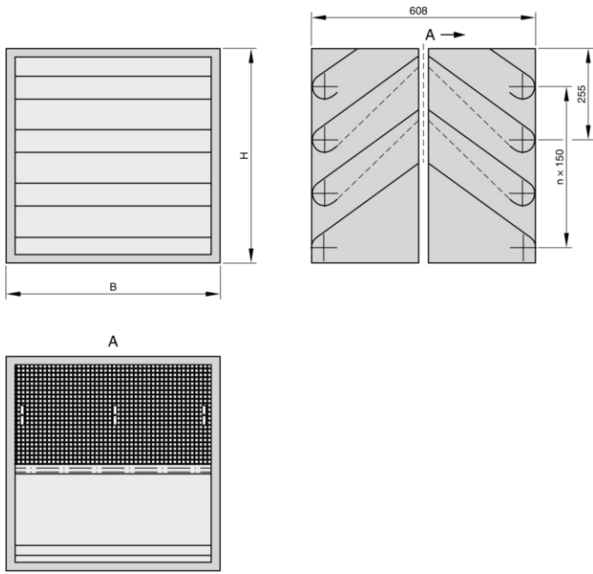
NL-D-A, weight

| H    | B [mm] |     |     |     |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
|      | 300    | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| mm   | kg     |     |     |     |     |      |      |      |      |      |      |
| 450  | 2      | 4   | 5   | 6   | 7   | 8    | 10   | 11   | 12   | 13   | 14   |
| 600  | 3      | 5   | 6   | 8   | 10  | 11   | 13   | 14   | 16   | 17   | 19   |
| 750  | 4      | 6   | 8   | 10  | 12  | 14   | 16   | 18   | 20   | 22   | 24   |
| 900  | 5      | 7   | 10  | 12  | 14  | 17   | 19   | 21   | 24   | 26   | 28   |
| 1050 | 6      | 8   | 11  | 14  | 17  | 19   | 22   | 25   | 28   | 30   | 33   |
| 1200 | 6      | 10  | 13  | 16  | 19  | 22   | 25   | 28   | 32   | 35   | 38   |
| 1350 | 7      | 11  | 14  | 18  | 21  | 25   | 28   | 32   | 35   | 39   | 43   |
| 1500 | 8      | 12  | 16  | 20  | 24  | 28   | 32   | 35   | 39   | 43   | 47   |
| 1650 | 9      | 13  | 17  | 22  | 26  | 30   | 35   | 39   | 43   | 48   | 52   |
| 1800 | 10     | 14  | 19  | 24  | 28  | 33   | 38   | 43   | 47   | 52   | 57   |
| 1950 | 10     | 15  | 21  | 26  | 31  | 36   | 41   | 46   | 51   | 56   | 61   |
| 2100 | 11     | 17  | 22  | 28  | 33  | 39   | 44   | 50   | 55   | 61   | 66   |
| 2250 | 12     | 18  | 24  | 30  | 35  | 41   | 47   | 53   | 59   | 65   | 71   |

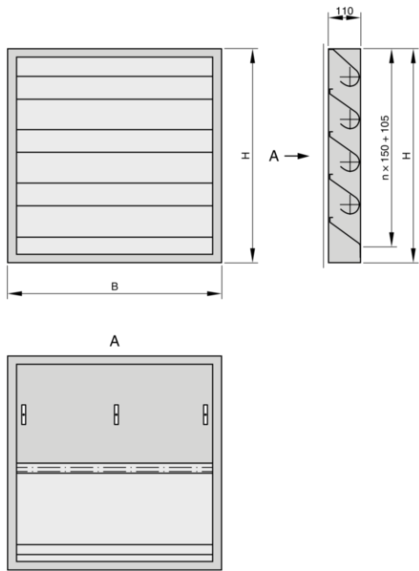
NL



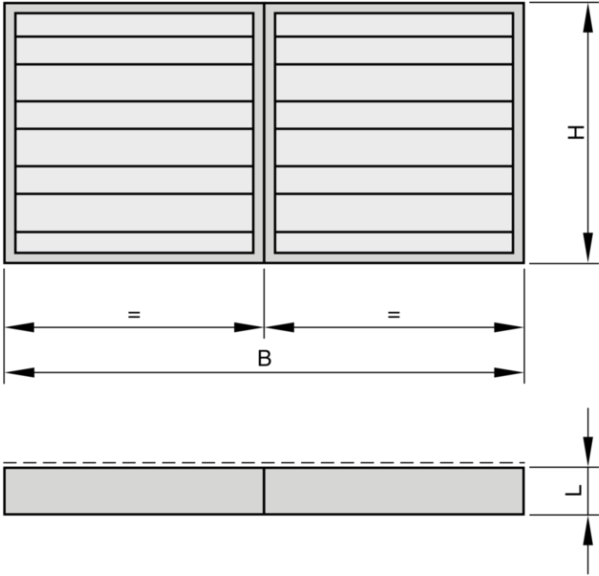
NL-H



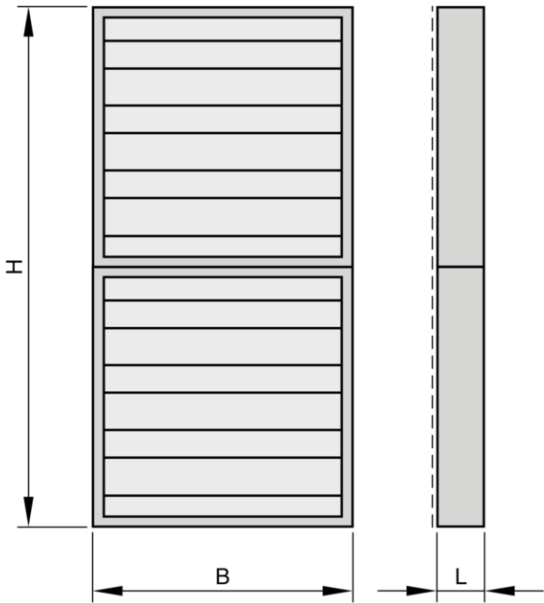
NL-D



NL width subdivided

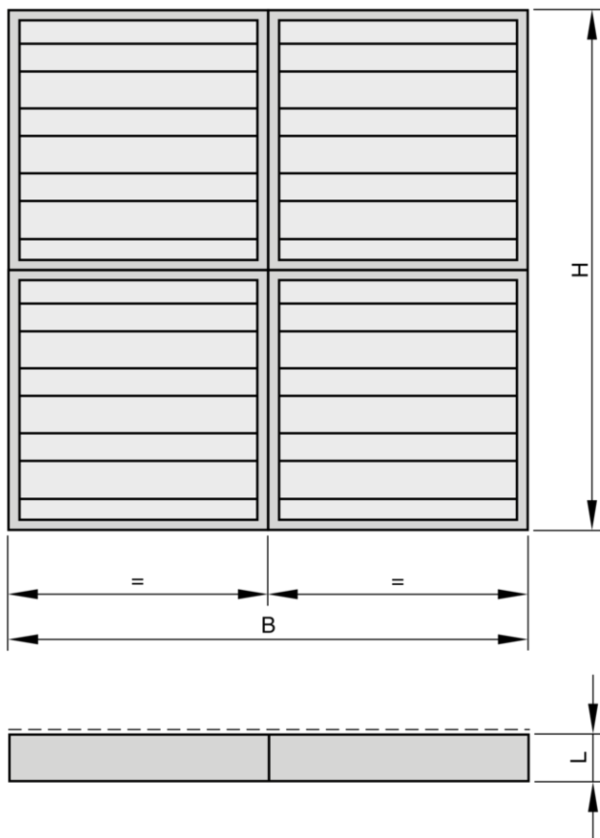


NL height subdivided



NL width and height subdivided





## Installation details, Basic information and nomenclature



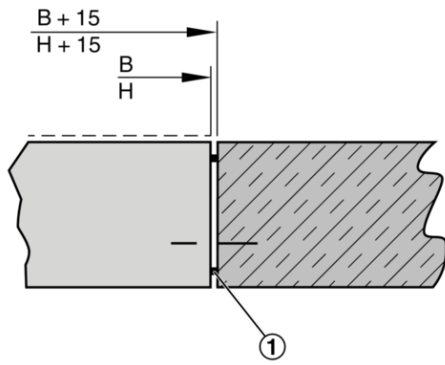
### Installation and commissioning

- Installation either without installation subframe or with timber subframe, fixing angles, or steel frame made of angle sections (to be provided by others)
- Install subdivided constructions either horizontally next to each other or vertically on top of each other
- Seal perimeter gap with mastic
- Fix cover strips

### Installation information

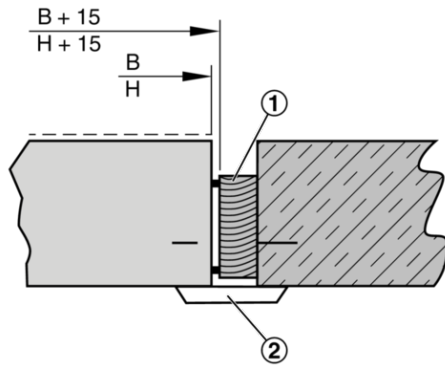
- Casing with slotted holes of 10 × 15 mm along the side panels

### Wall installation



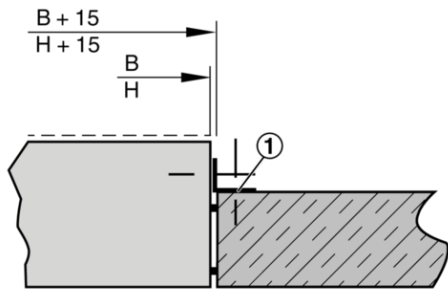
① Mastic, to be provided by others

Wall installation with a timber frame



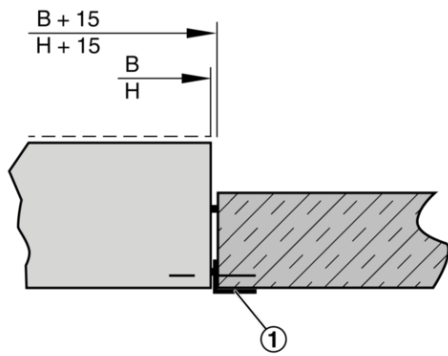
- ① Timber frame, to be provided by others
- ② Optional cover strip, to be performed by others

Wall installation with mounting brackets



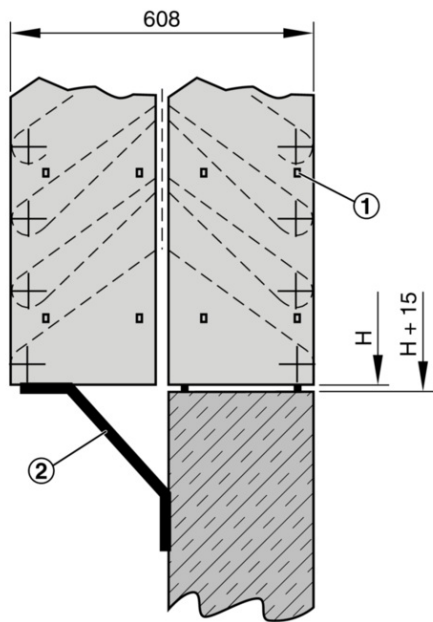
① Mounting brackets, to be provided by others

Wall installation with a steel frame made of angle sections



① Steel frame made of angle sections, to be provided by others

Wall installation of NL-H



- ① 10 mm wide slotted holes, 300 mm pitch (from centre line to centre line)
- ② Support for mesh at the rear, to be provided by others

#### **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.

##### **$D_e$ [dB]**

Insertion loss

Measured with sound transmission from inside to outside

##### **$R$ [dB]**

Sound reduction index

##### **$R_w$ [dB]**

Weighted sound reduction index

Measured with sound transmission from inside to outside

#### **Principal dimensions**

##### **$B$ [mm]**

Duct width

##### **$B_1$ [mm]**

Duct width for subdivided louvres

##### **$H$ [mm]**

Duct height

##### **$H_1$ [mm]**

Duct height for subdivided louvres

##### **$n$ [ ]**

Number of flange screw holes

##### **$m$ [kg]**

Weight

TROX Middle East (LLC)

---

□

P.O. Box No. 31432  
19 Street  
Al Quoz Industrial Estate #3  
Dubai  
United Arab. Emirates  
Tel.: +971 4 3417448  
Fax: +971 4 3417449

Online-Services

---

- › TROX Academy
- 
- › Your contact partner
- 

Service-Hotlines

---

United Arab. Emirates

Tel.: +971 4 3417448  
Fax: +971 4 3417449

[Contact](#)

TROX IN SOCIAL WEB

---