RENSON®

Creating healthy spaces

Louvre panels & grilles

Contents < Introduction

Contents

Why choose Renson® louvres?

- RENSON® innovates.Having an in-house R&D team
- RENSON® widens. Offering the widest range of louvres
- RENSON® integrates.through vertical integration
- RENSON® specializes. Since 1909 and is represented worldwide

The acoustic properties of the RENSON®-blades have been tested by the internationally recognized laboratory, IFT Lab Rosenheim (Germany)

Water resistance tested by BSRIA laboratories.

Material

All louvres in this brochure have been manufactured from aluminium-profiles **AlMgSi 0,5** (according EN 12020-2).

Light, strong & durable
Aluminium is a very light metal, about one third of the weight of steel. This evolves in a lighter product, more efficient use of transport, high loading capacity, lower material usage…

Anti-corrosion
The finished aluminium louvre is corrosion resistant. In order to improve this sustainability, the louvre can be anodized or powder-coated. On top of that, aluminium is UV-resistant and can easily handle temperature fluctuations.

100% recyclable
Aluminium is 100% recyclable without loss of quality. The energy used to fuse the product takes only about 5% of the energy used to produce the original product. Did you know that 75% of the produced aluminium is still circulating the world?

Finishing

Anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron).

Finishing RENSON® standard WHITE
RENSON® offers a standard finishing in WHITE, according to powder code AXALTA AE9001914 8021 (denomination BEL 9010).

For UK: Marine environment and special colour paint finishes available upon request. Alternative anodising finishes and thicknesses available upon request.

Maintenance

The only maintenance required is cleaning the louvre.

Warranty

RENSON® NV provides the installers with a warranty valid on the goods delivered to them for 2 years from the date of production covering all defects that may occur during normal use and maintenance of the delivered goods. The guarantee for colourfast of the aluminium powder-coated parts is 10 years. A warranty of 5 years applies to the gloss of the coated profiles.

Packing

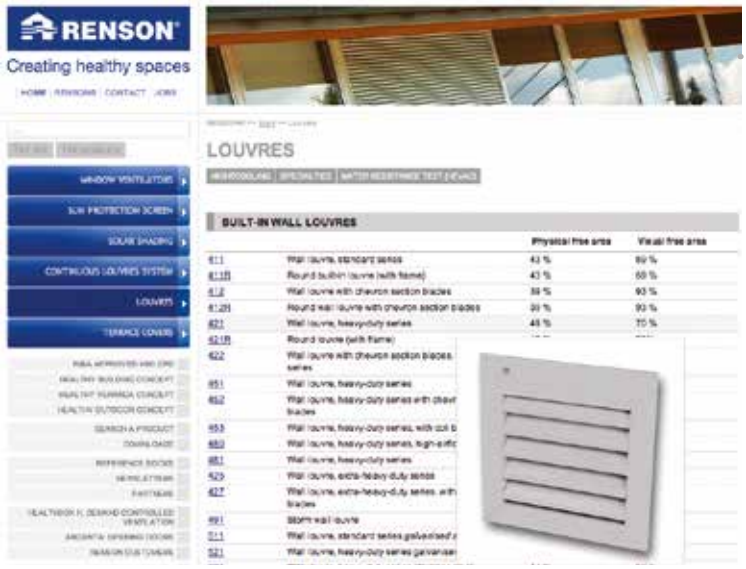
Louvres will be packed in a transparent plastic foil. In case the louvre is larger than 500 mm on one side, expanded polystyrene will be added on the framework as protection. For very large louvres, an additional cardboard packaging ensures the correct protection.

How to select the correct louvre for your application?

The tools and data below provide you an overview of the available services to select the correct louvre and required information.

Website

On the website you can find an overview of all louvres including technical drawings, leaflets and product summaries.



Selection and calculation software

Selection and calculation of the right louvre making use of the louvre software available on www.rensonlouvres.eu

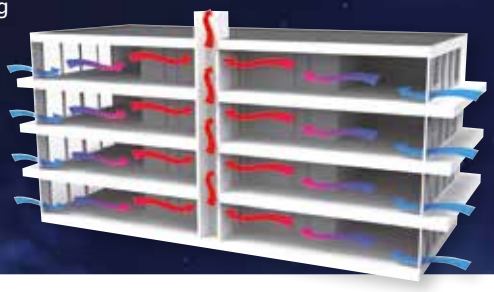
In order to calculate a made-to-measure louvre, please provide at least two of the following parameters:

- Surface of the opening
- Pressure drop over the louvre in Pa
- Required airflow in m³/h

Specific louvre characteristics

Nightcooling

By ventilating with large amounts of natural fresh air through the building at night, the indoor climate and building mass will cool down. In daytime the indoor temperature remains stable, as the building mass can heat up. Nightcooling can be achieved by placing specific louvres at the suction and discharge side. Type 432 is advised for suction, type 440 for discharge.



Test reports

Louvres with specific requirements have been tested according to EN norms. Test reports for IP-classification, burglarproof, acoustic damping and weatherability are available on request.

Burglarproof: louvre tested according to official WK (Widerstandsklasse) classification

Acoustic damping: louvre equipped with acoustic mineral wool for noise reduction

Water-proof: louvre with high HEVAC classification
(ref page 9)

Stick-proof: this louvre has been IP certified (EN 60529)

Louvre selector guide < Introduction

Family					Airflow				Page
Blade type Linius	Louvre type	Product type	Blade pitch	Physical free area	K-factor (supply)	K-factor (discharge)	Coeffi-cient C_e	Coeffi-cient C_d	
V20-blade	Built-in wall louvres	412	20	39	33,8	33,8	0,172	0,172	14
V20-blade	Built-in wall louvres	412R	20	39	33,8	33,8	0,172	0,172	83
V20-blade	Glazed-in louvres	415	20	39	33,8	33,8	0,172	0,172	41
V20-blade	Controllable glazed-in louvres	415/VA	20	n.a.	n.a.	n.a.	n.a.	n.a.	42
V20-blade	Round glazed-in louvres	415R	20	39	33,8	33,8	0,172	0,172	87
L.033.01	Built-in wall louvres	411	33,3	45	23,56	25,51	0,206	0,198	12
L.033.07	Built-in wall louvres	411R	33,3	40,5	23,56	25,51	0,206	0,198	82
L.033.01	Glazed-in louvres	414	33,3	45	23,56	25,51	0,206	0,198	37
L.033.07	Round glazed-in louvre	414R	33,3	40,5	23,56	25,51	0,206	0,198	86
L.033.01	Glazed-in louvres	414/D	33,3	n.a.	n.a.	n.a.	n.a.	n.a.	39
L.033.01	Controllable glazed-in louvre	414/VA	33,3	n.a.	n.a.	n.a.	n.a.	n.a.	39
L.033.01	Glazed-in louvres	414THF	33,3	45	23,56	25,51	0,206	0,198	40
L.033.01	Surface-mounted louvres	431	33,3	45	23,56	25,51	0,206	0,198	32
L.033.01	Surface-mounted louvres	431R	33,3	40,5	23,56	25,51	0,206	0,198	85
L.033.01	Surface-mounted louvres	432	33,3	45	23,56	25,51	0,206	0,198	34
L.033.01	Louvre box	440/11	33,3	45	23,56	25,51	0,206	0,198	60
L.033.08	Built-in wall louvres	491	33,3	26	123,5	118,1	0,09	0,092	31
L.033.08	Glazed-in louvres	494	33,3	26	123,5	118,1	0,09	0,092	47
L.033V	Built-in wall louvres	422	33,3	43	61,04	61,04	0,128	0,128	16
L.033V	Glazed-in louvres	428	33,3	43	61,04	61,04	0,128	0,128	44
L.050.00	Built-in wall louvres	421	50	49	13,42	9,35	0,273	0,327	15
L.050.00	Round built-in wall louvres	421R	50	47	13,42	9,35	0,273	0,327	84
L.050.00	Louvre box	440/21	50	49	13,42	9,35	0,273	0,327	60
L.050.00	Glazed-in louvres	424	50	49	13,42	9,35	0,273	0,327	43
L.050HF	Built-in wall louvres	481	50	60	9,41	9,47	0,326	0,325	24
L.050HF	Glazed-in louvres	484	50	60	9,41	9,47	0,326	0,325	46
L.050W	Built-in wall louvres	450	50	57	10,47	16,50	0,310	0,246	28
L.060HF	Built-in wall louvres	480	60	76	5,03	4,96	0,446	0,449	23
L.060HF	Glazed-in louvres	483	60	76	5,03	4,96	0,446	0,449	45
L.066.01	Built-in wall louvres	451	66	49	12,71	11,77	0,280	0,291	20
L.066V	Built-in wall louvres	452	66	41	66,1	79,7	0,123	0,112	29
L.066V	Built-in wall louvres	452v	66	41	60,1	79,9	0,129	0,114	30
L.065AL	Built-in wall louvres	453	65	55	13,92	17,22	0,268	0,241	21
Vertical blade	Built-in wall louvre	468SA	85	29	115,62	115,62	0,093	0,093	22

Remark: test results according to louvres including mesh

Family					Airflow				Page
Blade type Linius	Louvre type	Product type	Blade pitch	Physical free area	K-factor (supply)	K-factor (discharge)	Coeffi-cient C_e	Coeffi-cient C_d	
L.095.01	Built-in wall louvres	425	95	55	11,41	11,65	0,296	0,293	17
L.095.01	Glazed-in louvres	425/GL	95	55	11,41	11,65	0,296	0,293	48
mouvable blade	Built-in wall louvres	427	100	53	11,41	11,65	0,296	0,293	18
mouvable blade	Glazed-in louvres	427/GL	100	53	11,41	11,65	0,296	0,293	49
L.060AC	Acoustic louvres	445/86	60	34	9,22	13,29	0,329	0,274	50
L.150ACS.01	Acoustic louvres	446/150	150	34,3	38,46	34,48	0,161	0,169	52
L.150ACL.01	Acoustic louvres	446/225	150	34,3	37,3	41,9	0,164	0,15	52
L.150ACS.01	Acoustic louvres	446/300	150	34,3	45,93	45,93	0,148	0,148	52
L.150ACS.01	Acoustic louvres	447/150	170	37	25,46	25,15	0,198	0,200	54
L.150ACL.01	Acoustic louvres	447/225	170	37	28,58	30,88	0,187	0,180	54
acoustic	Acoustic louvres	468AK	85	29	86,85	89,35	0,107	0,106	56
floor grille	Floor grilles	311	16,5	76	n.a.	n.a.	n.a.	n.a.	70
floor grille	Floor grilles	371	20,5	61	n.a.	n.a.	n.a.	n.a.	71
punched	Ventilation grilles	381	n.a.	80	n.a.	n.a.	n.a.	n.a.	69
bar blade	Linear bar grilles	392	13	76	n.a.	n.a.	n.a.	n.a.	72
bar blade	Linear bar grilles	394	16,5	59	n.a.	n.a.	n.a.	n.a.	73
punched	Punched grilles	435R	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	65
slide blade	Controllable internal louvres	4032	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	63
slide blade	Controllable internal louvres	441	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	62
slide blade	Controllable internal louvres	442	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	61
door blade	Door grilles	461	20	39	33,8	33,8	0,172	0,172	74
extractor	Surface-mounted louvres	433	37 or 99	n.a.	n.a.	n.a.	n.a.	n.a.	36
door blade	Door grilles	469 Invisido	n.a.	n.a.	17,03	17,03	0,24	0,24	76
door blade	Door grilles	461AK Silendo	n.a.	27	6,13	6,13	0,40	0,40	75
burglarproof blade	Burglarproof louvres	421WK2	50	43	13,82	12,85	0,269	0,279	57
burglarproof blade	Burglarproof louvres	423WK4	50	22	27,06	27,28	0,193	0,192	59
L.033.07	Burglarproof louvres	431WK2	33,3	40,5	23,56	25,51	0,206	0,198	58
fire blade	Fire blade	464 Incendo	20	51	10,27	10,27	0,312	0,312	78
fire blade	Fire blade	465	17,5	57	8,16	8,16	0,350	0,350	79
fire blade	Fire blade	466	20	70	6,80	6,80	0,383	0,383	80
galvanised blade	Built-in wall louvres	511	33,3	43	92,13	84,73	0,104	0,109	25
galvanised blade	Built-in wall louvres	521	46*	52	24,21	21,26	0,203	0,217	26
stainless blade	Built-in wall louvres	621	46*	52	26,27	22,59	0,195	0,210	27
controllable	Controllable internal louvres	XD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	64

** Variable blade pitch*

Watertightness tests < Introduction

Method for watertightness (HEVAC) testing

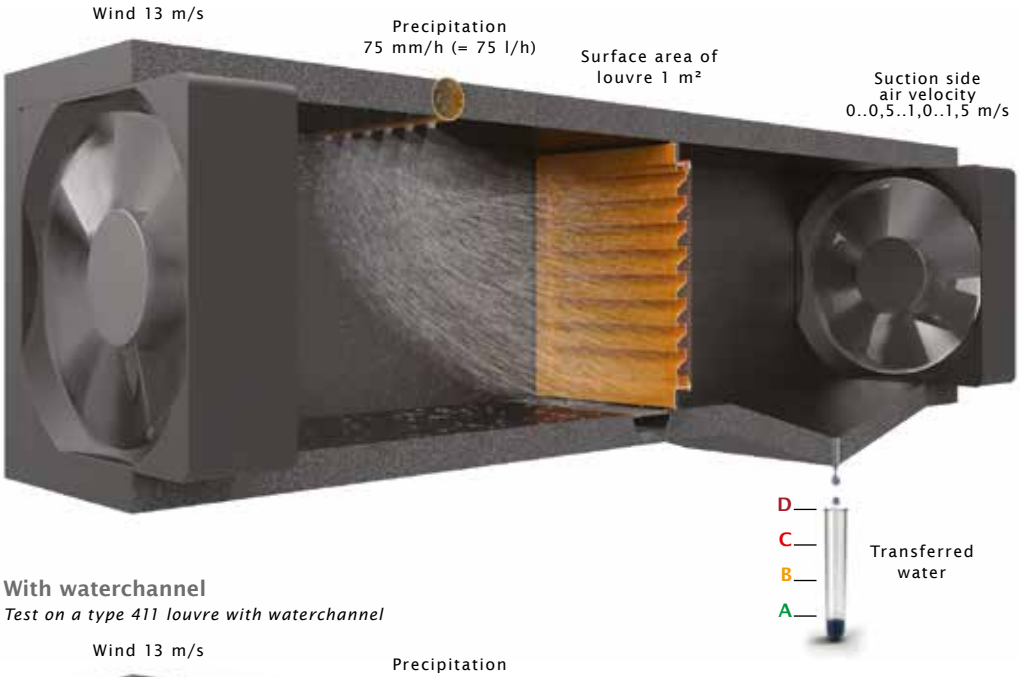
RENSON® louvres are subjected to European HEVAC testing (according to EN 13030) by the internationally accredited corporation BSRIA Ltd. During these tests, a louvre of 1m², equipped with stainless steel mesh is exposed to downpours at a rate of 75 litres per hour an a wind speed of 13 m/second. HEVAC classification is based on the obtained results, i.e. the quantity of water infiltrating through the louvre.

Attention: The "air speed" reference always indicates the air speed at the suction side. If a louvre is assigned to a watertightness, the class suction side air speed has to be indicated. The outside wind speed is fixed to 13m/s and is therefore never mentioned.

Remark:
In case a weatherable louvre is used in extreme weather conditions RENSON® advises to seal the seams of the frame. Additionally, applying a water channel will guarantee an even better weatherbility.

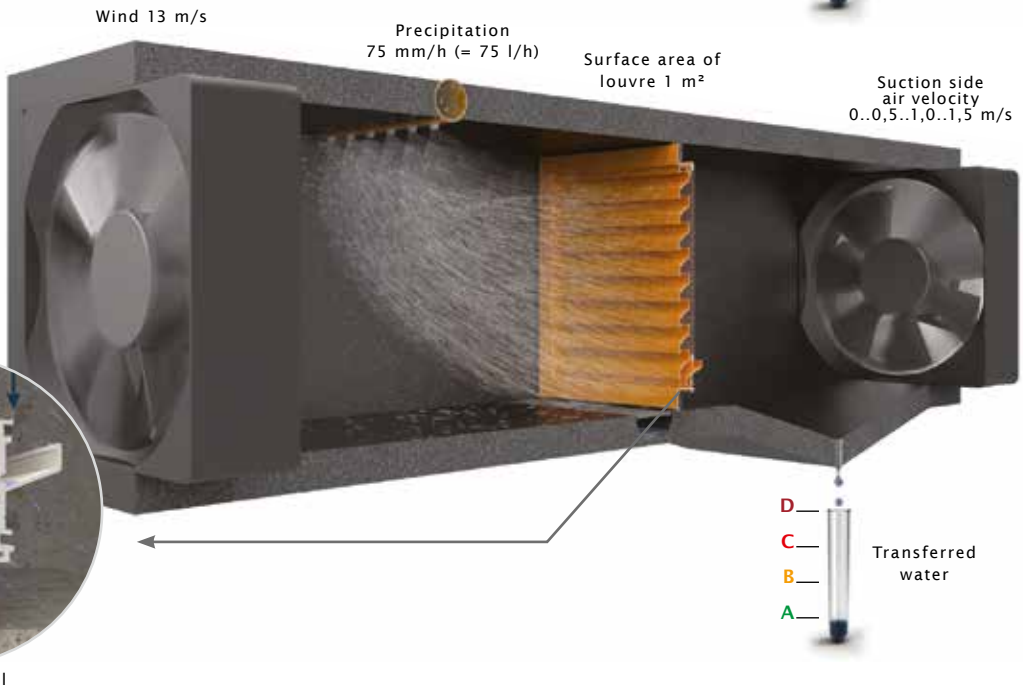
Without waterchannel

Test on a standard type 411 louvre



With waterchannel

Test on a type 411 louvre with waterchannel

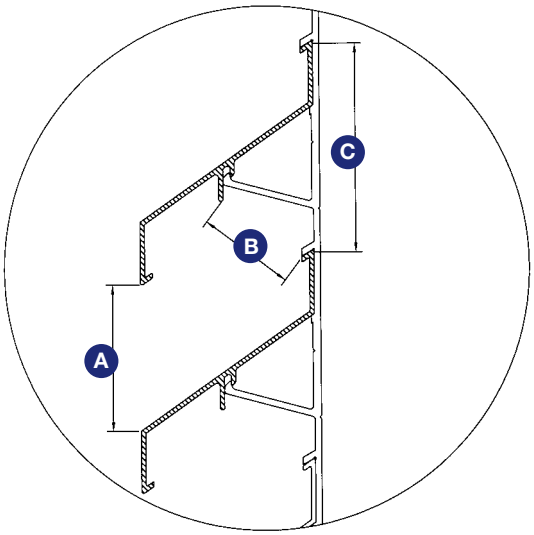


Waterchannel

RENSON®
Creating healthy spaces

	Class	% water infiltration	Air resistance class
Very good rain protection	A	0 - 1 %	C_e > 0,4: 1
Good rain protection	B	1,1 - 5 %	0,3 < C_e < 0.4: 2
Average rain protection	C	5,1 - 20 %	C_e: 0,2 - 0,299: 3
Low rain protection	D	> 20 %	C_e < 0.199: 4

Type of louvre	Insect screen (mm)	Suction air speed (m/s)	Tested with water channel Class	Tested with water channel %	Tested without water channel Class	Tested without water channel %	Suction air resistance class (C_e-coefficiënt)
450	2.3 x 2.3 mm	0,0	A	0,0			2
L.050W		0,5	A	0,0			2
		1,0	A	0,0			2
		1,5	A	0,0			2
		2,0	A	0,1			2
		2,5	A	0,1			2
		3,0	A	0,8			2
			Standard equipped with water channel				
452V	2.3 x 2.3 mm	0,0	A	0,0			4
L.066V		0,5	A	0,0			4
		1,0	A	0,0			4
		1,5	A	0,3			4
		2,0	C	19,8			4
		2,5	D	> 20			4
		3,0	D	> 20			4
			Standard equipped with water channel				
452	6 x 6 mm	0,0	A	0,0			4
L.066		0,5	A	0,1			4
		1,0	A	0,4			4
		1,5	B	5,0			4
		2,0	D	43,1			4
		2,5	D	> 20			4
		3,0	D	> 20			4
			Option water channel				
491/494	6 x 6 mm	0,0	A	0,0			4
L.033.08		0,5	A	0,3			4
		1,0	C	8,4			4
		1,5	D	49,9			4
		2,0	D	> 20			4
		2,5	D	> 20			4
			Option water channel				
422/428	6 x 6 mm	0,0	A	0,1	A	0,7	4
L.033V		0,5	A	0,5	B	1,9	4
		1,0	B	3,1	C	6,6	4
		1,5	C	12,1	C	12,5	4
		2,0	D	37,8	D	40,0	4
		2,5	D	78,0	D	75,0	4
		3,0	D	81,9	D	82,1	4
412/415	6 x 6 mm	0,0	A	0,5	B	1,9	4
V20-blade		0,5	A	1,0	B	3,1	4
		1,0	B	2,0	C	10,0	4
411/414/431	2.3 x 2.3 mm	0,0	B	1,3	B	3,3	4
L.033.01		0,5	B	2,0	B	5,0	4
		1,0	B	3,6	C	6,7	4
		1,5	C	11,5	D	> 20	4
		2,0			D	> 20	
451	2.3 x 2.3 mm	0,0	B	2,0	C	9,0	3
L.066.01		0,5	B	3,9	C	10,7	3
		1,0	C	5,8	C	12,9	3
		1,5	C	10,5	C	18,4	3
		2,0			D	29,3	
451	6 x 6 mm	0,0	C	8,0	C	14,6	3
L.066.01		0,5	C	9,9	C	16,4	3
		1,0	C	11,8	D	> 20	3
		1,5	C	16,5			3
		2,0					
421/424	2,3 x 2,3 mm	0,0	B	3,1	C	9,4	3
L.050.00		0,5	B	4,4	C	12,3	3
		1,0	C	6,3	D	> 20	3
		1,5	C	11,0	D	> 20	3
		2,0					
421/424	6 x 6 mm	0,0	C	5,8	C	15,8	3
L.050.00		0,5	C	8,2	C	19,0	3
		1,0	C	10,5	D	> 20	3
		1,5	C	14,3			3
		2,0					
425	2.3 x 2.3 mm	0,0	B	3,4	C	18,0	3
L.095.01		0,5	C	6,1	D	25,2	3
		1,0	C	10,0	D	> 20	3
		1,5	C	16,5	D	> 20	3
		2,0	D	23,7	D	> 20	3
425	6 x 6 mm	0,0	C	8,7	D	> 20	3
L.095.01		0,5	C	11,7			3
		1,0	C	14,9			3
		1,5	D	20,6			3
		2,0					



Geometric terms for louvres

Visual free area = determined by the ratio of the visual distance between two blades (A) to the blade pitch (C).

Physical free area = determined by the ratio of the smallest gap between two blades (B) to the blade pitch (C). Owing to peripheral effects and assembly, a maximum deviation of 5% must be considered.

Remark: The top and bottom blades are not taken into account in the two free area definitions.

All louvre characteristics can be calculated making use of free software on the website www.rensonlouvres.eu

Airflow

K-factor = a value describing aerodynamic resistance to airflow. Contrary to the free area, this value describes the link between the airflow through the louvre and the pressure drop over it.

C_e = entry loss coefficient = a value describing the aerodynamic channelling of the airflow on entry. This value represents the ratio of the actual airflow to the theoretical airflow.

C_d = discharge loss coefficient = a value describing the aerodynamic channelling of the airflow on discharge. This value represents the ratio of the actual airflow to the theoretical airflow.

Acoustic terms

dB(a) = the decibel (dB) in this brochure is used to characterize the noise reduction of a louvre. The A-weight (dB(a)) shows that the acoustic tests have been taken out according to the sensitivity of the human sound spectrum.

$D_{n,e,w}$ = weighted element-normalized sound level difference, used to characterise a single element like a louvre.

R_w (C;Ctr) = weighted sound reduction index, used to characterise glazing, brick walls, wall louvres, etc.

C = spectrum correction term for pink noise, always added to R_w or $D_{n,e,w}$ when the source of the noise is, for example, fast-moving traffic.

C_{tr} = spectrum correction term for traffic noise, always added to R_w or $D_{n,e,w}$ when the source of the noise is, for example, urban traffic.

Frequency = pitch expressed in Hertz (Hz), or the number of vibrations per second.

Remark: in order to select the correct louvre for your application please refer to local building regulations.

Technical terms

IP-class = international protection rating, protection rate to classify intruding objects and water penetration. The distance to the electrical installation is measured from the outside surface of the louvre.
The IP-class of a louvre is determined according to EN 60529.

Building technical terms

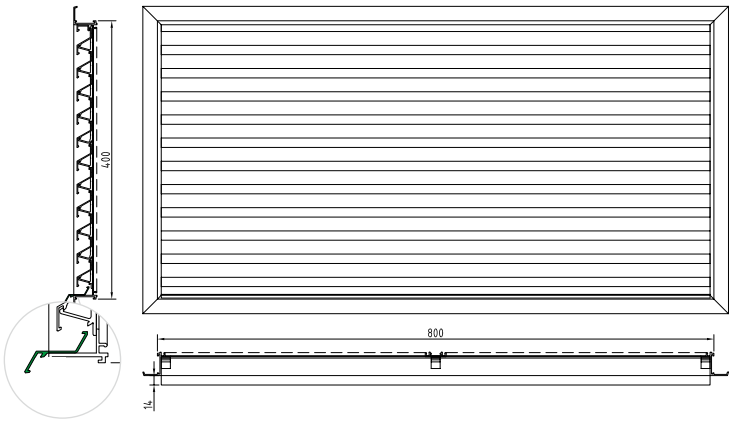
Wall anchor = aluminium bar used to mount and fix louvre to the wall.

Flange = part of the frame profile visible from the front.

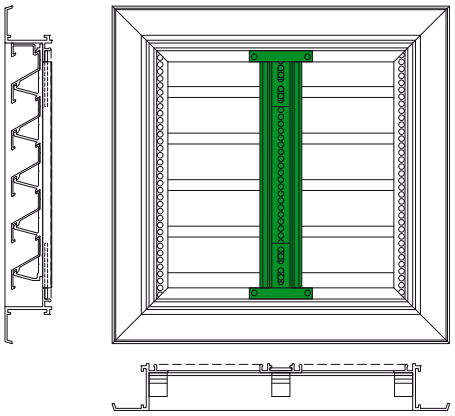
Aluminium extrusion = technique to shape an aluminium element by pressing it through a mold.

Drainage profile

This profile is designed for all types of aluminium rectangular wall louvres

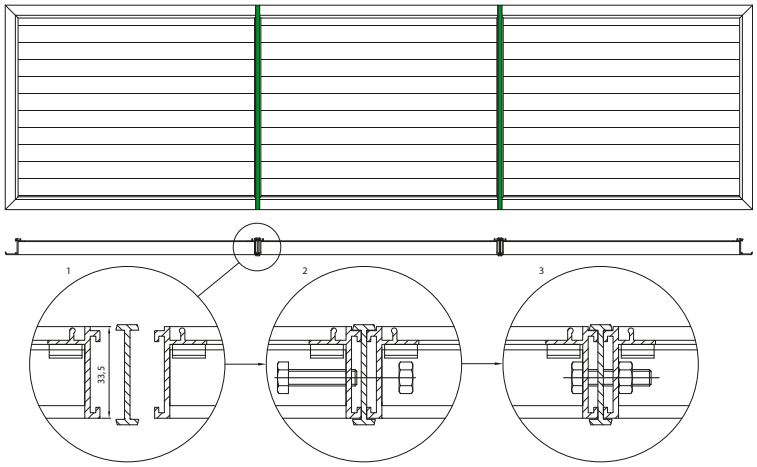


Louvre with strengthening support



Remark: a strengthening support will be provided for a louvre wider than 700mm.

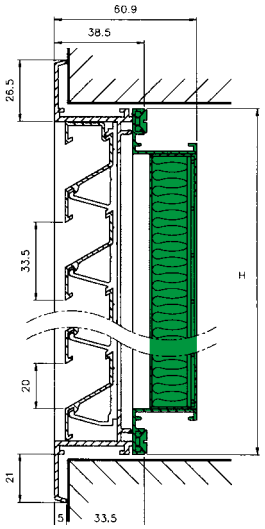
Coupled louvres



- Louvres can be coupled both vertically and horizontally
- Standard vertical

Dust filter

- This profile is designed for all louvre types
- Equipped with dust filter class G4



Removable insect mesh 401

Material

- Pick-up angle (non-visible) in polyamide
- Mesh in stainless steel 304
  6x6 mm
  2.3x2.3 mm

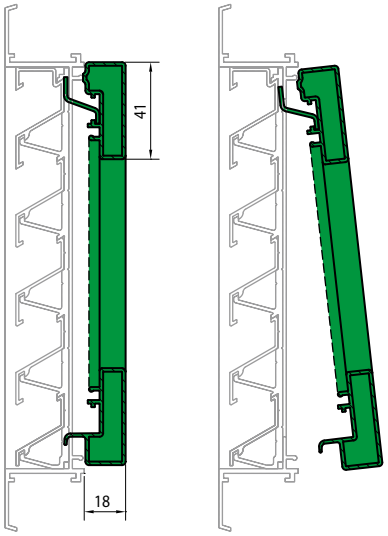
Dimensions

- Minimum dimensions:
  190x190 mm
- Maximum dimensions :
  1500x1200 mm

Advantages

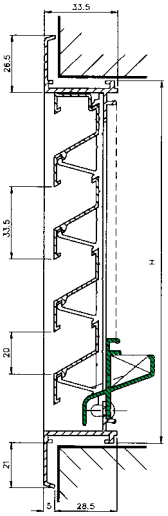
- Integrated water channel
- Aesthetical mesh
- No technical details visible
- Applicable to louvres with water channel

Remark: not applicable to surface-mounted louvres



Water channel

- This profile is designed for many louvre types
- It collects any water infiltration and channels it outside



411 with thermal insulation panel

Wall louvre, standard series, pitch 33

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Depth to fit: 29 mm
- Flange size: 21 mm
- Minimum dimensions: 100 x 100 mm

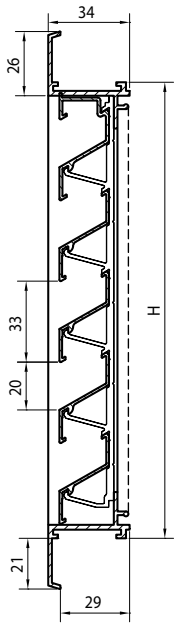
Fixing
- Brackets ref. 418
- Spring clips ref. 419 available on request (small dimensions)
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

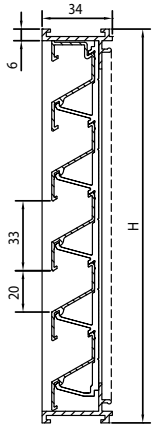
Options *(page 11)*
- Water channel
- Drainage profile
- Removable insect mesh
- Backframe
- Filter
- Special shape *(see next page)*
- Controllable *(see next page)*
- Without flange *(see next page)*
- Glazed-in louvre 414 *(ref. page 37)*

Typical applications
- Every application without specific needs

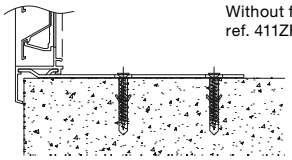
Stock models			
Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	Airflow at 2Pa (m^3/h)
200 x 200	•	•	54
300 x 200	•		81
300 x 300	•	•	122
400 x 200	•	•	108
400 x 300	•	•	162
400 x 400	•	•	217
500 x 300	•		203
500 x 400	•		271
500 x 500	•	•	338
600 x 300	•		244
600 x 400	•		325
600 x 600	•	•	487
700 x 700	•		663
1000 x 500	•		677
1000 x 1000	•		1354
142 x 142	•		27

Cross-sections



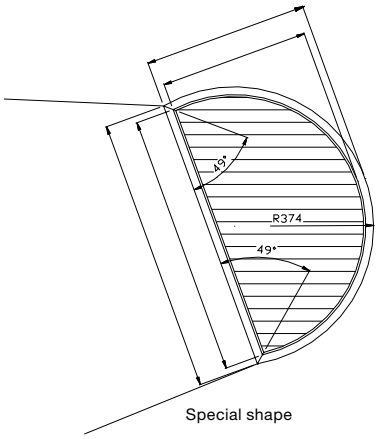


Without flange
ref. 411ZF

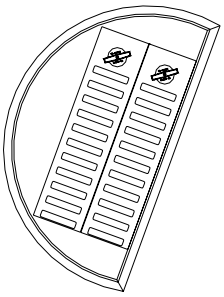


Bracket ref. 418

Options

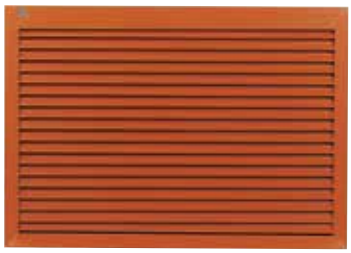


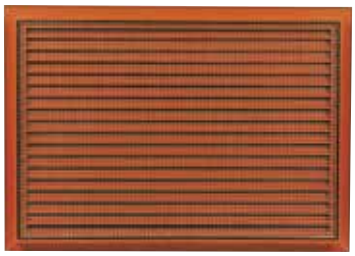
Special shape



Controllable

Technical specifications	411
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	45 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD





412 with dust filter

Stock models		
Dimensions (W x H) mm	Satin anodised	Airflow at 2Pa (m^3/h)
200 x 200	•	45
300 x 300	•	102
400 x 300	•	136
500 x 300	•	170
600 x 400	•	271

Wall louvre with chevron section blades, pitch 20

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Equipped with earthing lug

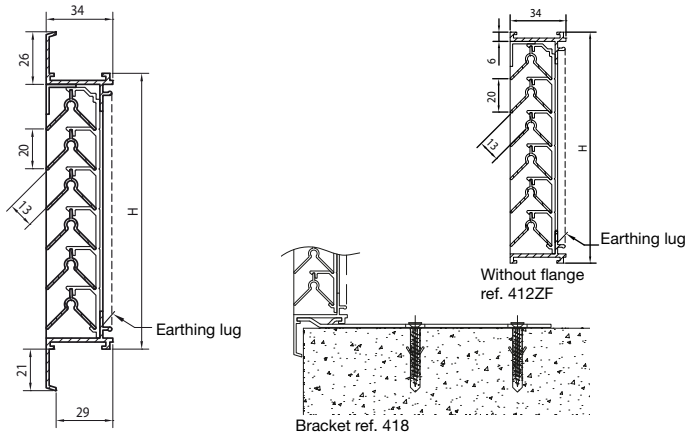
Dimensions
- Blade pitch: 20 mm chevron
- Depth to fit: 29 mm
- Flange size: 21 mm
- Minimum dimensions: 100 x 100 mm

Fixing
- Brackets ref. 418
- Spring clips ref. 419 available on request (small dimensions)
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable insect mesh
- Backframe
- Filter
- Without flange
- Glazed-in louvre 415 *(ref. page 41)*

Typical applications
- High-voltage stations
- IT rooms

Cross-sections



Technical specifications	412
Airflow	(EN 13030)
K-factor (supply)	33,80
K-factor (discharge)	33,80
C_e coefficient	0,172
C_d coefficient	0,172
Technical data	
Visual free area	93 %
Physical free area	39 %
IP class	IP2XD

Wall louvre, heavy-duty series, pitch 50

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

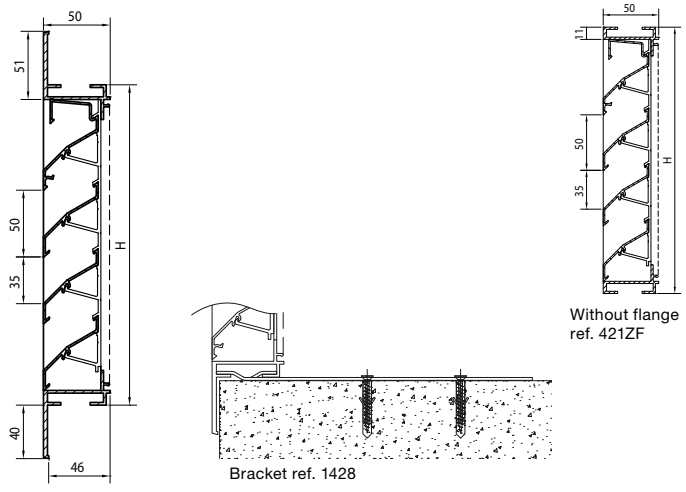
Dimensions
- Blade pitch: 50 mm
- Depth to fit: 46 mm
- Flange size: 40 mm
- Minimum dimensions: 150 x 150 mm

Fixing
- Brackets ref. 1428
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable insect mesh
- Filter
- Without flange
- Glazed-in louvre 424 *(ref. page 43)*
- Burglarproof louvre 421WK2 *(ref page 57)*

Typical applications
- Applications where aesthetics and strength are key parameters

Cross-sections



Technical specifications	421
Airflow	(EN 13030)
K-factor (supply)	13,42
K-factor (discharge)	9,35
C_e coefficient	0,273
C_d coefficient	0,327
Technical data	
Visual free area	70 %
Physical free area	49 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

Wall louvre with chevron section blades, heavy-duty series, pitch 33

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (6 x 6 mm) or mesh (2.3x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

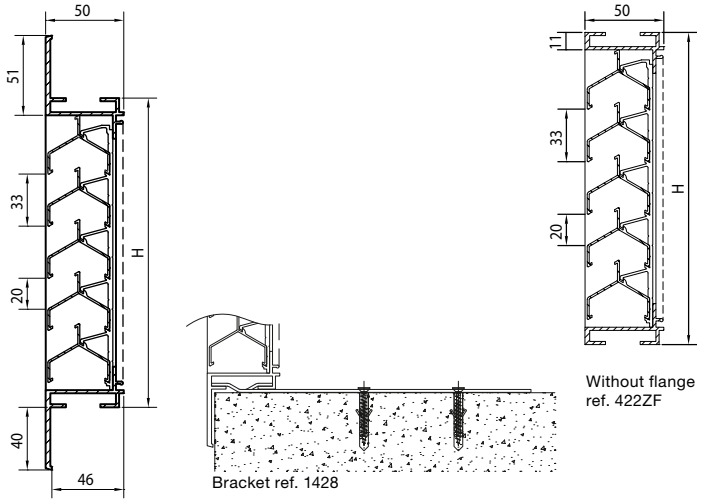
Dimensions
- Blade pitch: 33 mm
- Depth to fit: 46 mm
- Flange size: 40 mm
- Minimum dimensions: 150 x 150 mm

Fixing
- Brackets ref. 1428
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable insect mesh
- Filter
- Without flange
- Glazed-in louvre 428 *(ref. page 44)*

Typical applications
- Applications where extreme strength and stick-proof are key parameters

Cross-sections



Technical specifications	422
Airflow	(EN 13030)
K-factor (supply)	61,04
K-factor (discharge)	61,04
C_e coefficient	0,128
C_d coefficient	0,128
Technical data	
Visual free area	59 %
Physical free area	43 %
IP class	IP2XD

Wall louvre, extra-heavy-duty series, pitch 95

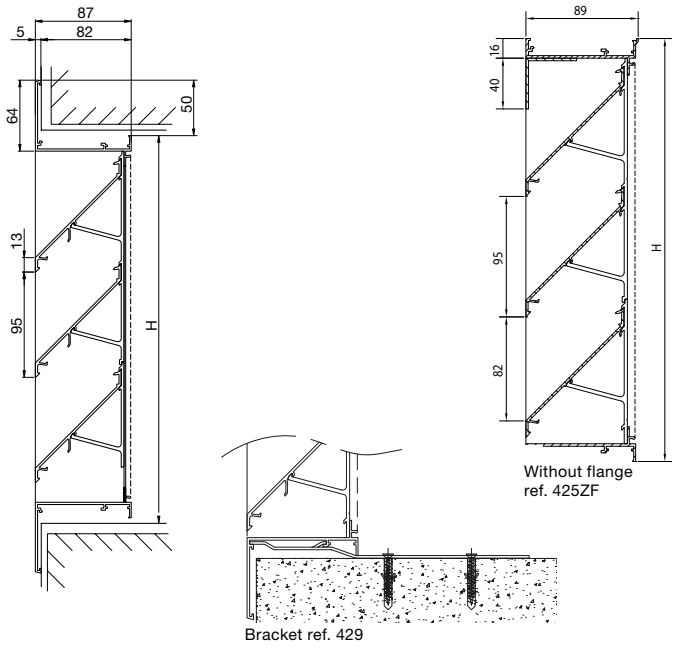
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or mesh (2.3 x 2.3 mm) on demand
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 95 mm
- Depth to fit: 81,5 mm
- Flange size: 50 mm
- Minimum dimensions: 300 x 300 mm

Fixing
- Brackets ref. 429
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable insect mesh
- Filter
- Without flange
- Glazed-in louvre 425GL *(ref. page 48)*

Cross-sections



Technical specifications	425
Airflow	(EN 13030)
K-factor (supply)	11,41
K-factor (discharge)	11,65
C_e coefficient	0,296
C_d coefficient	0,293
Technical data	
Visual free area	86 %
Physical free area	55 %

Type 427/1

427/1 - 427/2 - 427/3 - 427/4 - 427/5
Wall louvre, extra-heavy-duty series,
with adjustable blades

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or mesh 304 (2.3 x 2.3 mm) on demand
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Depth to fit: 82 mm
- Maximum width in one piece: 1300 mm
- Minimum dimensions: 300 x 290 mm
- Flange size: 50 mm
- Preferred height = (multiple of 100) + 290 mm
  Remark: the minimum height is dependant of the control option (see next page).

Fixing
- Brackets ref. 429

Options
- Without flange
- Glazed-in louvre 427GL *(ref. page 49)*

Control options
- 427/1 Manual
- 427/2 Cable
- 427/3 Ultraflex
- 427/4 Motor 230 - 24V / Spring-return actuator 24V
- 427/5 Air pressure

Typical applications
- Powers stations
- High buildings
- Controlled ventilation
- Production halls

Type 427/2

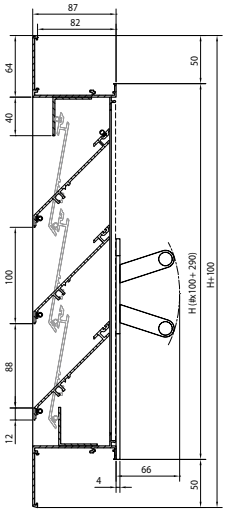
Type 427/3

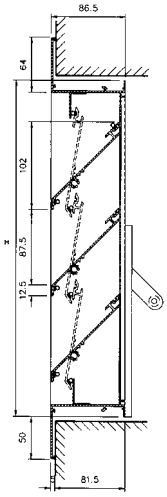
Type 427/4

Type 427/5

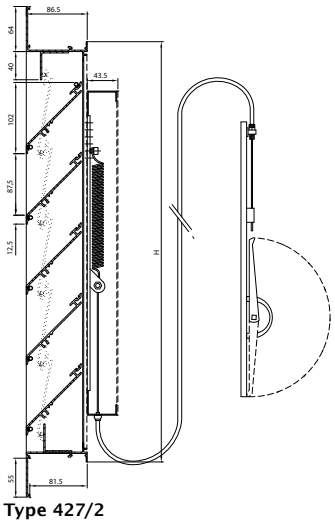
Technical specifications	427
Airflow (in open position)	(EN 13030)
K-factor (supply)	11,41
K-factor (discharge)	11,65
C_e coefficient	0,296
C_d coefficient	0,293
Technical data	
Visual free area	88 %
Physical free area	53 %

Cross-sections

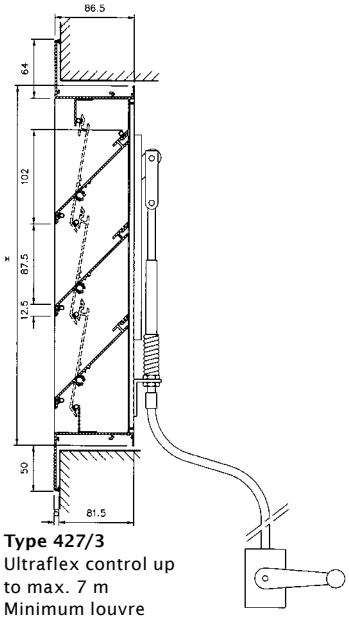




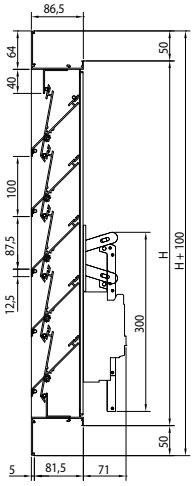
Type 427/1
Manual control
Minimum louvre
height: 290 mm



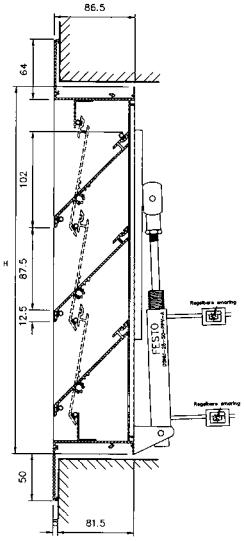
Type 427/2
Cable control up to 2250 mm
Minimum louvre
height: 390 mm



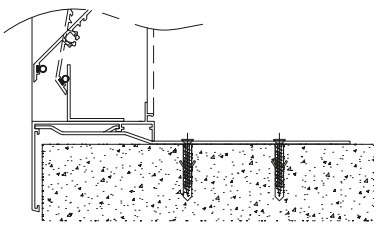
Type 427/3
Ultraflex control up
to max. 7 m
Minimum louvre
height: 690 mm



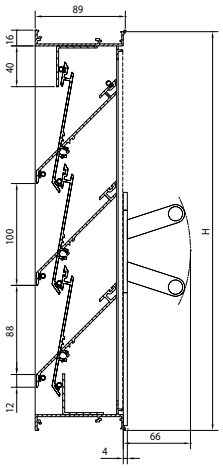
Type 427/4
220 V/24 V motor
control
Minimum louvre
height: 390 mm



Type 427/5
Air pressure control
Minimum louvre
height: 390 mm



Bracket ref. 429



Without flange
ref. 427ZF

Wall louvre, heavy-duty series, pitch 66

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

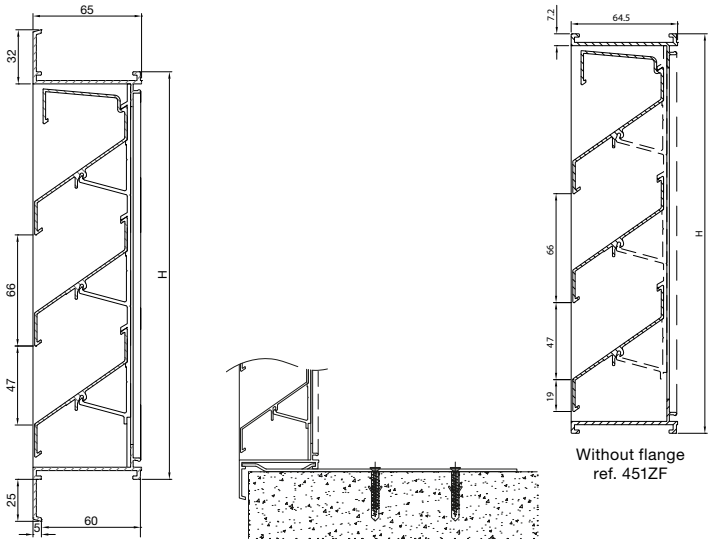
Dimensions
- Blade pitch: 66 mm
- Depth to fit: 60 mm
- Flange size: 25 mm
- Minimum dimensions: 300 x 300 mm

Fixing
- Brackets ref. 429
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable insect mesh
- Filter
- Without flange

Typical applications
- Industrial, commercial with large blade pitch

Cross-sections



Technical specifications	451
Airflow	(EN 13030)
K-factor (supply)	12,71
K-factor (discharge)	11,77
C_e coefficient	0,280
C_d coefficient	0,291
Technical data	
Visual free area	70 %
Physical free area	49 %

Wall louvre, heavy-duty series,
with aluminium coil blades, pitch 65

Material
- Frame made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Roll-formed aluminium coil blades
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: powder-coated in any RAL or Syntha Pulvin colour (40 micron)

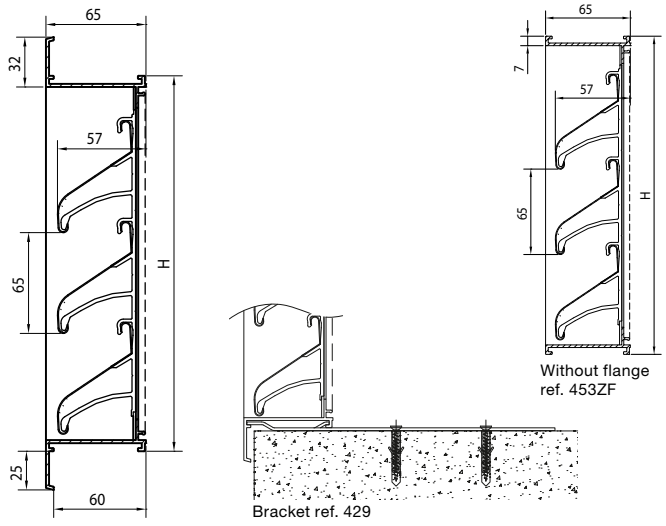
Dimensions
- Blade pitch: 65 mm
- Depth to fit: 60 mm
- Flange size: 25 mm
- Minimum dimensions: 300 x 300 mm

Fixing
- Brackets ref. 429
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

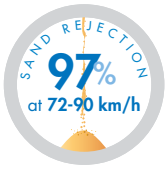
Options
- Water channel
- Drainage profile
- Filter
- Without flange

Typical applications
- Aesthetical

Cross-sections



Technical specifications	453
Airflow	(EN 13030)
K-factor (supply)	13,92
K-factor (discharge)	17,22
C_e coefficient	0,268
C_d coefficient	0,241
Technical data	
Visual free area	69 %
Physical free area	55 %



Sand trap louvre

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect mesh (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized (20 micron) or powdercoated in any RAL or Syntha Pulvin colour (60 - 80 micron)
- Vertically mounted blades. No rivets visible from the front.
- Standard equipped with sand rejection sill, finished in the same colour as the louvre

Note: when anodised, slight colour difference between sand rejection sill and louvre

Dimensions
- Blade pitch: 85 mm
- Depth to fit: 60 mm
- Flange size: 25 mm
- Minimum dimensions: 185 x 185 mm
- Width = (multiple of 42,5) + 185mm
  Remark : - symmetric louvre when the multiple is even
  - asymmetric louvre when the multiple is odd
- Maximum dimensions: 2012,5 x 1200 mm

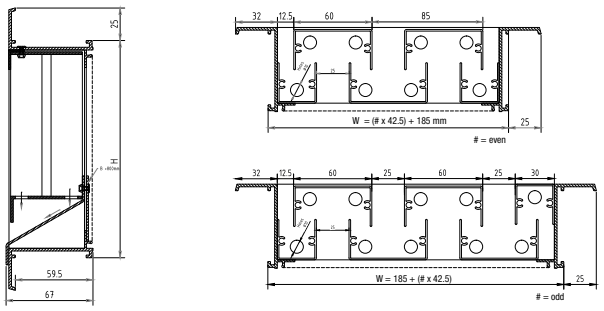
Remark : at a maximum wind load of 2kN/m²

Fixing
- Brackets ref 429 included

Options
- Anti-dust filter cassette class G4
- Controllable airflow modules mounted on backside (type / VA)
- Without flange

Typical applications
- Coastal area
- Dusty & polluted areas
- HVAC
- Power stations & high-voltage stations.

Cross-sections



Technical specifications	468 SA
Sand rejection	(EN 13181)
Suction air velocity	
0 m/s	97%
0,5 m/s	94%
Airflow	(EN13030)
K-factor (supply)	115,62
K-factor (exhaust)	115,62
C_e coefficient	0,093
C_d coefficient	0,093
Technical Data	
Physical free area	29%
Visual free area	29%
IP class (louvre with mesh)	IP2XD

High-airflow wall louvres, pitch 60

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

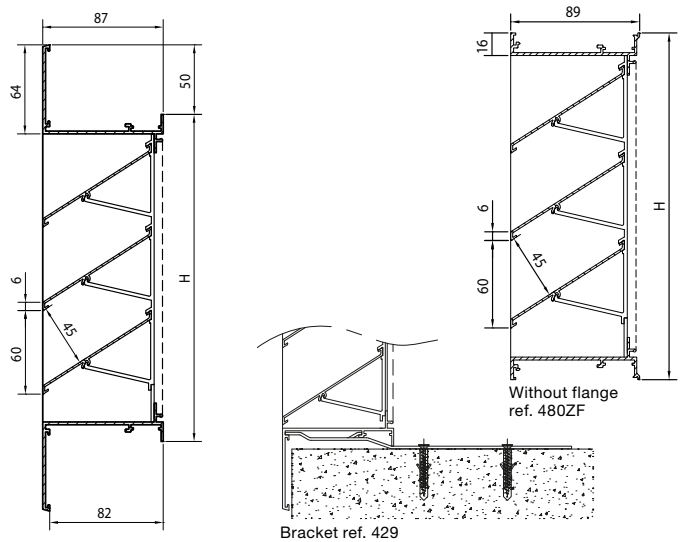
Dimensions
- Blade pitch: 60 mm
- Depth to fit: 82 mm
- Flange size: 50 mm
- Minimum dimensions: 300 x 300 mm

Fixing
- Brackets ref. 429
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter
- Without flange
- Glazed-in louvre 483 *(ref. page 45)*

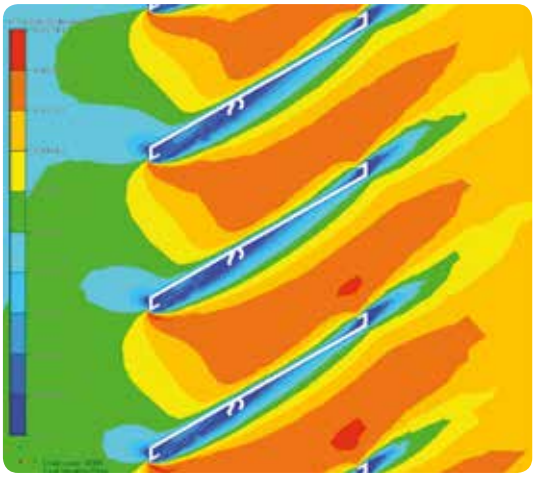
Typical applications
- Underground parkings
- Industrial applications

Cross-sections

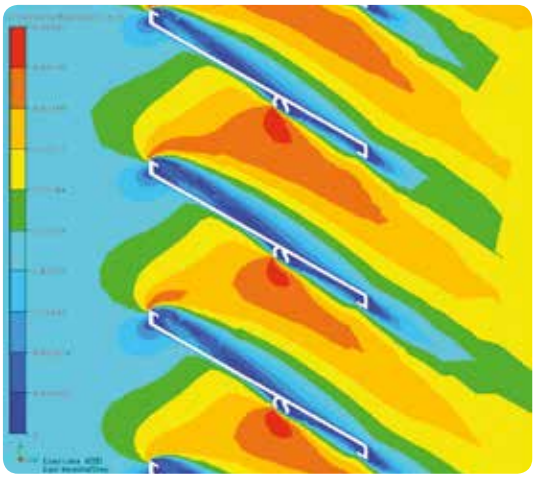


Technical specifications	480
Airflow	(EN 13030)
K-factor (supply)	5,03
K-factor (discharge)	4,96
C_e coefficient	0,446
C_d coefficient	0,449
Technical data	
Visual free area	90 %
Physical free area	76 %
IP class (louvre with mesh; electrical installation at least 180mm from louvre	IP2XD

AIRFLOW



Supply



Discharge

Wall louvre, heavy-duty series, pitch 50

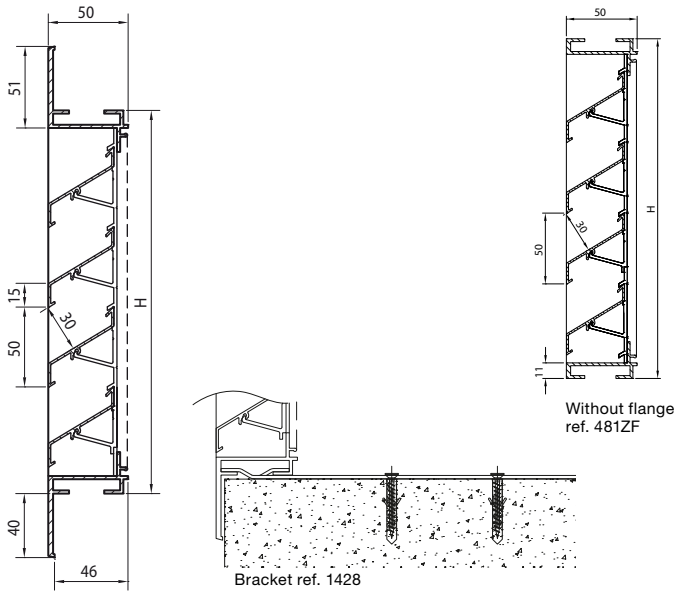
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 50 mm
- Depth to fit: 46 mm
- Flange size: 40 mm
- Minimum dimensions: 150 x 150 mm

Fixing
- Brackets ref. 1428
- For louvres larger than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter
- Without flange
- Glazed-in louvre 484 *(ref. page 46)*

Cross-sections



Technical specifications	481
Airflow	(EN 13030)
K-factor (supply)	9,41
K-factor (discharge)	9,47
C_e coefficient	0,326
C_d coefficient	0,325
Technical data	
Visual free area	70 %
Physical free area	60 %
IP class (louvre with mesh; electrical installation at least 105mm from louvre)	IP2XD

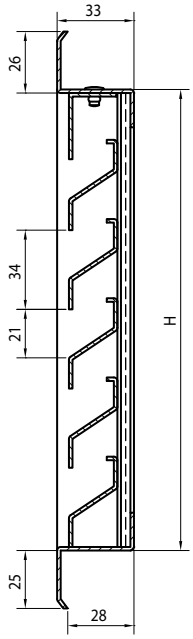
Wall louvre, galvanised steel, pitch 34

Material
- Made from steel plate
- Electroplating: 10 micron FeZn12C
- Steel mesh (5 x 5 mm)
- Finishing: no powder-coating possible

Dimensions
- Blade pitch: 34 mm
- Depth to fit: 28 mm
- Flange size: 25 mm
- No made to measure

Typical applications
- Basic louvre
- Economical solution
- No power-coating possible
- Stronger than aluminium
- Anti-vandalism
- Sports centre

Cross-section



Stock models

Dimensions (W x H) mm	Galvanised steel
200 x 200	•
300 x 300	•
400 x 200	•

Remark: only available in above mentioned sizes.

Technical specifications	511
Airflow	(EN 13030)
K-factor (supply)	92,91
K-factor (discharge)	84,73
C_e coefficient	0,104
C_d coefficient	0,109
Technical data	
Visual free area	61 %
Physical free area	43 %

Wall louvre, heavy-duty series, galvanised steel, pitch 50

Material
- Made from steel plate
- Electroplating: 10 micron FeZn12C
- Finishing: powder coating in any RAL or Syntha PulvinR colour (min 40 microns)
- Steel mesh (13 x 13 mm)

Dimensions
- Variable blade pitch: 38 - 50 mm (determined by the outer dimensions)
- Depth to fit: 43 mm
- Flange size: 40 mm
- Minimum dimensions: 200 x 200 mm
- Maximum dimensions: 2000 x 2000 mm

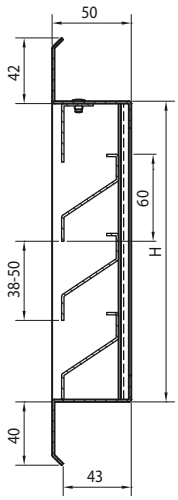
Fixing
- Brackets pre-fitted to the frame

Typical applications
- Basic louvre
- Economical solution
- Containers

Stock models	
Dimensions (W x H) mm	Galvanised steel
400 x 400	•
500 x 500	•
600 x 600	•
1000 x 1000	•

Remark: available in standard sizes and made-to-measure.

Cross-section



Technical specifications	521		
Airflow (blade pitch: 46 mm)		(EN 13030)	
K-factor (supply)		24,21	
K-factor (discharge)		21,26	
C_e coefficient		0,203	
C_d coefficient		0,217	
Technical data			
Blade pitch	38 mm	46 mm	50 mm
Visual free area	73 %	77 %	79 %
Physical free area	49 %	52 %	54 %

Wall louvre, stainless steel, pitch 50

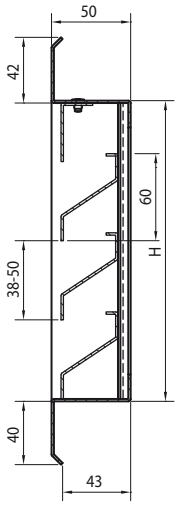
Material
- Made from stainless steel 316 L
- Stainless steel 304 mesh (6 x 6 mm)

Dimensions
- Variable blade pitch: 38 - 50 mm (determined by the outer dimensions)
- Depth to fit: 43 mm
- Flange size: 40 mm
- Minimum dimensions: 200 x 200 mm
- Maximum dimensions: 2000 x 2000 mm

Fixing
- Brackets pre-fitted to the frame

Typical applications
- Food sector
- Chemical sector
- Hospitals
- Environment with high corrosion

Cross-section



Technical specifications		621	
Airflow (blade pitch: 46 mm)		(EN 13030)	
K-factor (supply)		26,27	
K-factor (discharge)		22,59	
C_e coefficient		0,195	
C_d coefficient		0,210	
Données techniques			
Blade pitch	38 mm	46 mm	50 mm
Visual free area	73 %	77 %	79 %
Physical free area	49 %	52 %	54 %

Extreme weatherable louvre

Louvre 450 delivers the best performance on watertightness combined with a very high airflow.

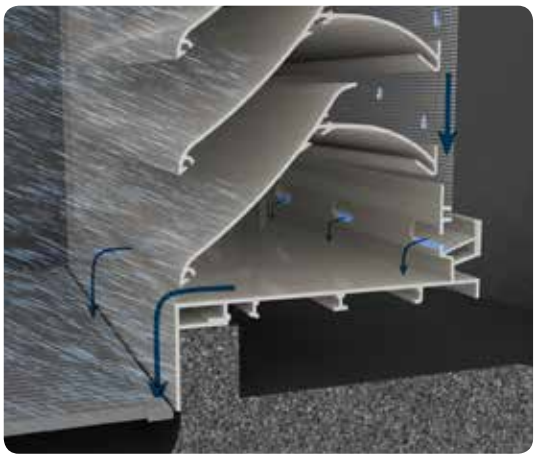
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect mesh (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodiced in satin / bronze colour (20 micron) or powder coated in any RAL or Syntha Pulvin colour (60 – 80 micron),
- Fitted with a water channel at top and bottom to enhance drainage

Dimensions
- Blade pitch: 50 mm
- Depth to fit: 159 mm
- Flange size: 38 mm
- Minimum dimensions: 200 x 225 mm
- Preferred height: (multiple of 50) + 225 mm

Fixing
- Brackets ref. 1428 included
- For louvres wider than 2395mm, a reinforcing mullion is required to suit span and wind load subject to design

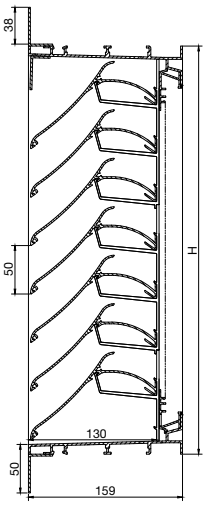
Option
- Without flange
- Glazing-in louvre available on request.
- In combination with the L.050.WS dummy blade

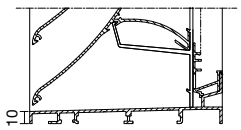
Typical applications
- Data and IT centres
- Power stations
- Sub stations
- Coastal applications



Water channel

Cross-sections





Without flange 450ZF

Technical specifications	450
Weatherability	(EN 13030)
HEVAC class (details page 9)	A2 (3m/s)
Airflow	(EN13030)
K-factor (supply)	10,47
K-factor (discharge)	16.52
C_e coefficient	0,309
C_d coefficient	0,246
Technical Data	
Physical free area	57%

Wall louvre, heavy-duty series with chevron section blades, pitch 66

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

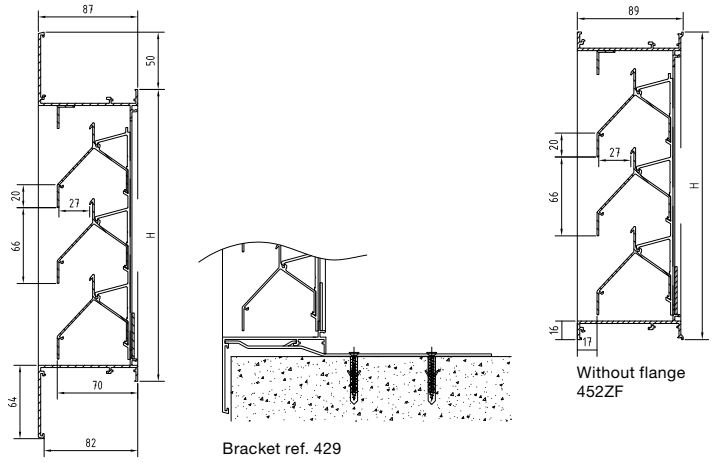
Dimensions
- Blade pitch: 66 mm
- Depth to fit: 82 mm
- Flange size: 50 mm
- Minimum dimensions: 300 x 310 mm

Fixing
- Brackets ref. 429
- For louvres taller than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Water channel, drainage profile, removable insect mesh, filter, without flange
- Glazed-in louvre available on request

Typical applications
- Application where strength, stick-proof and excellent weatherability are important selection criteria
- High-voltage cabins
- HVAC
- No see-through

Cross-sections



Technical specifications	452
Weatherability	(EN 13030)
HEVAC class (details page 9)	A (1m/s)
Airflow	(EN13030)
K-factor (supply)	66,1
K-factor (discharge)	79,7
C_e coefficient	0,123
C_d coefficient	0,246
Technical data	
Visual free area	70 %
Physical free area	41 %
IP class (louvre with mesh)	IP2XD

Vertical blades - 452V

Wall louvre, heavy-duty series with vertical chevron section blades, pitch 66

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Insect screen (2.3 x 2.3 mm) or stainless steel 304 mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Standard equipped with water channel

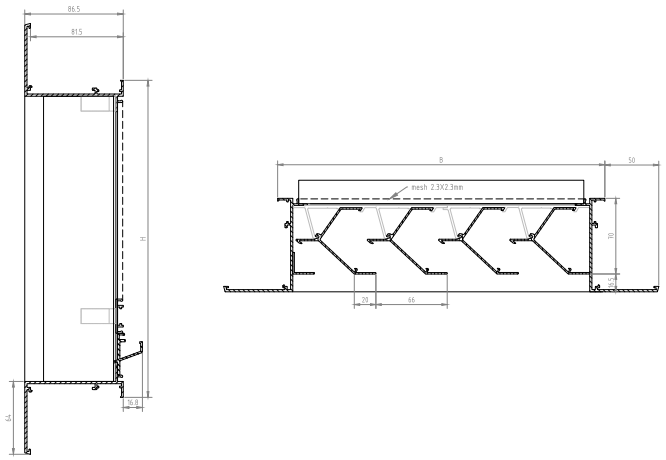
Dimensions
- Blade pitch: 66 mm
- Depth to fit: 82 mm
- Flange size: 50 mm
- Minimum dimensions: 310 x 300 mm

Fixing
- Brackets ref. 429
- For louvres taller than approx. 3 m², a reinforcing mullion is required to suit span and windload

Options
- Drainage profile, removable insect mesh, filter, without flange
- Glazed-in louvre available on request

Typical applications
- Application where strength, stick-proof and excellent weatherability are important selection criteria
- High-voltage cabins
- HVAC
- No see-through

Cross-sections



Technical specifications	452V
Weatherability	(EN 13030)
HEVAC class (details page 9)	A (1,5m/s)
Airflow	(EN13030)
K-factor (supply)	60,1
K-factor (discharge)	79,9
C_e coefficient	0,129
C_d coefficient	0,114
Technical data	
Visual free area	70 %
Physical free area	41 %
IP class (louvre with mesh)	IP2XD

"Storm" wall louvre, pitch 33

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

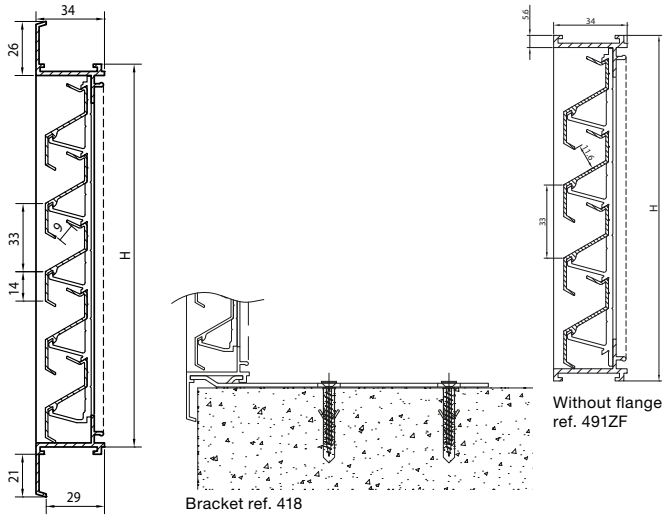
Dimensions
- Blade pitch: 33 mm
- Depth to fit: 29 mm
- Flange size: 21 mm
- Minimum dimensions: 100 x 100 mm

Fixing
- Brackets ref. 418

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter
- Without flange
- Welded blades on frame (only RAL finish)
- Glazed-in "storm" louvre 494 *(ref. page 47)*

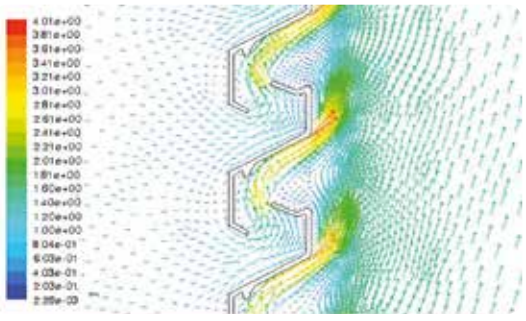
Typical applications
- Good weatherability combined with low airflow, applications with a lot of wind, coastal area
- Snow resistant

Cross-sections

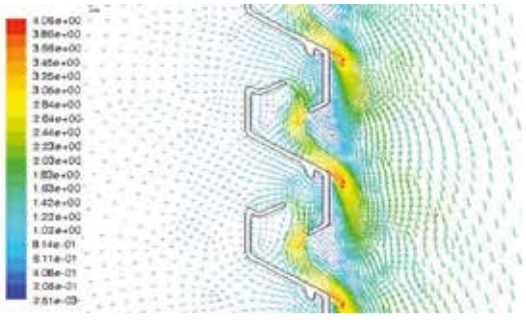


Technical specifications	491
Weatherability	(EN 13030)
HEVAC class (details page 9)	A (0,5m/s)
Airflow	(EN13030)
K-factor (supply)	123,5
K-factor (discharge)	118,1
C_e coefficient	0,090
C_d coefficient	0,092
Technical data	
Visual free area	57 %
Physical free area	26 %
IP class (louvre with mesh)	IP2XD

AIRFLOW



Supply



Discharge

Surface-mounted wall louvre, pitch 33

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33 mm
- Thickness: 29 mm
- Minimum dimensions: 120 x 120 mm

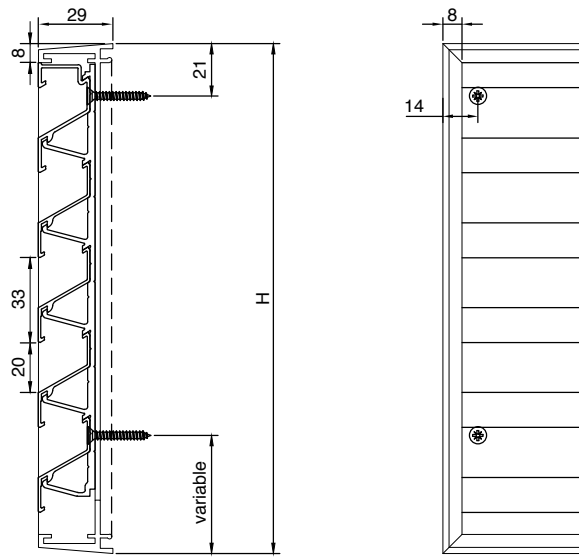
Fixing
- Screws and plugs are included
- Louvre 432 is the removable version of louvre 431 *(pag. 34)*

Options
- Burglarproof louvre 431WK2 *(ref page 58)*

Typical applications
- Fixed louvre
- Nightcooling
- Standard surface-mounted louvre

Nightcooling

Cross-section



Technical specifications	431
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	45 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

Stock models

Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	RAL 7016	Airflow at 2 Pa (m^3/h)
165 x 165	•	•	•	29,4
225 x 225	•	•	•	56,8
325 x 325	•	•		143
425 x 425	•			245
525 x 525	•			373

Surface-mounted, glazed-in louvre with frame

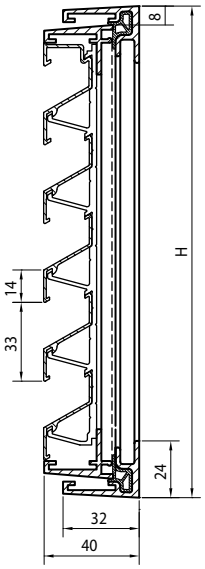
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Consists of a screwfixed frame and a removable louvre

Dimensions
- Blade pitch: 33 mm
- Thickness: 40 mm
- Minimum dimensions: 136 x 136 mm
- Maximum surface: 2.25 m^2

Fixing
- Screws and plugs are included

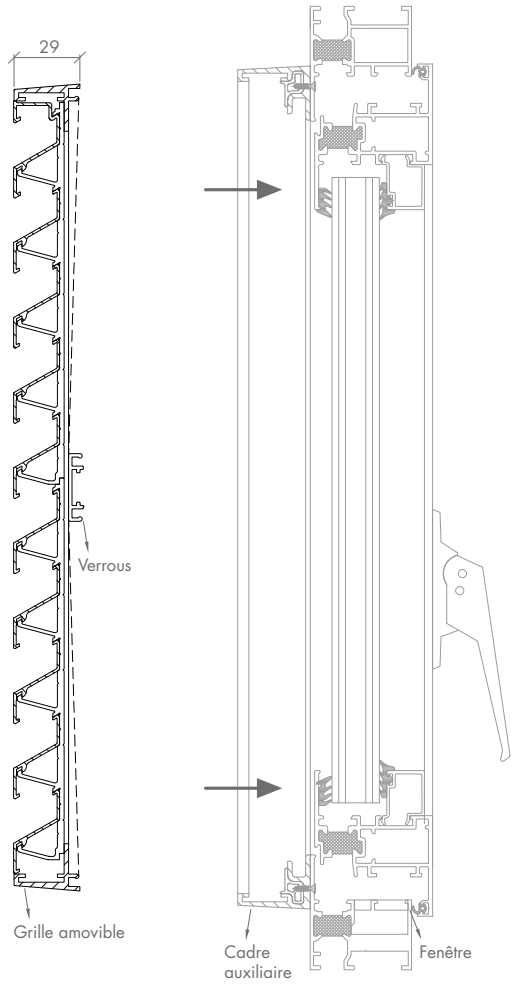
Typical applications
- Nightcooling
- Removable louvre: to entrance indoor brightness and facilitate maintenance

Cross-section



Technical specifications	432
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	45 %

Cross-section



The screwfixed frame is surface mounted. The removable louvre is installed from the outside and secured from the inside out by means of deadbolts. By unlocking these deadbolts the louvre can easily be removed.

433/S / 433/L < Surface-mounted louvres

Pressure-relief damper

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Extractor hood louvres: the blades open at the same time
- Pressure-relief louvres: the blades open individually
- Without insect screen
- Opening pressure: 10 Pa standard, 20 Pa with enhanced blade

Dimensions pressure-relief damper 433/L
- Height: (multiple of 100) + 328 mm
- Minimum dimensions: 300 x 328 mm
- Thickness: 29 mm
- In length, the blades are in one piece up to 800 mm

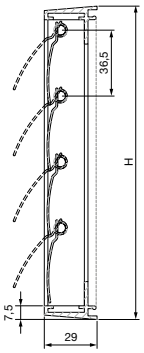
Dimensions extractor hood louvre 433/S
See stock models *(below page)*

Fixing
- Invisible fixing
- Screws and plugs are included

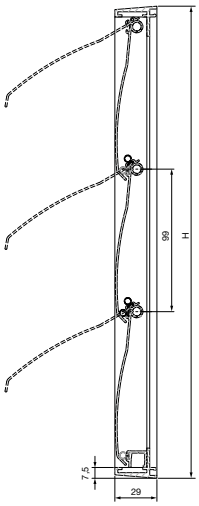
Typical applications
- Extractor hood
- Drying cabinet

Cross-sections

Renson® Technology extractor hood louvre 433/S



Pressure-relief louvre 433/L



Stock models

Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	RAL 8019	RAL 7016
Extractor hood louvres 433/S				
173 x 173	•	•	•	•
210 x 210	•	•	•	•
246 x 246	•	•	•	
Pressure-relief louvres 433/L				
328 x 328	•			
428 x 428	•			
528 x 528	•			

Glazed-in louvre, pitch 33

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

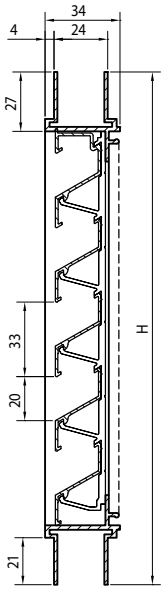
Dimensions
- Blade pitch: 33,3 mm
- Frame thickness: 24, 28 or 32 mm
- Minimum dimensions: 130 x 130 mm
- Specify on ordering: width x height in mm (overall dimensions)

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Removable mesh
- Filter
- Pressure-relief louvre

Typical applications
- Nightcooling

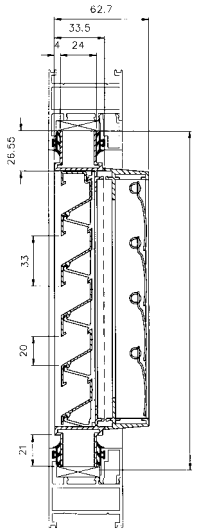
Cross-section



Technical specifications	414
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	45 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

Pressure-relief grille

Combination of a pressure-relief louvre type 433 and a louvre type 414



Controllable louvre

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (2.3 x 2.3 mm) or insect screen (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Frame thickness: 24, 28 or 32 mm
- Minimum dimensions: 200 x 130 mm
- Specify on ordering: width x height in mm (overall dimensions)
- Controllable in combination with 100, 130 and 150 mm hit-and-miss ventilators or with insulated aluminium door (414/D) (max size 800 x 800 mm)

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

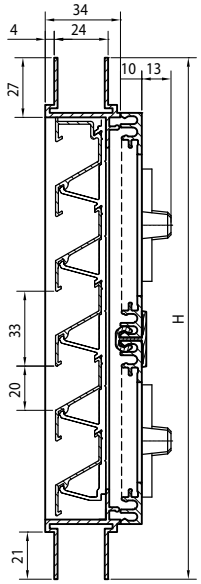
Controloptions (1 controlpanel per module)
- Knob control (standard)
- Rod
- Cord
- Motor

414VA

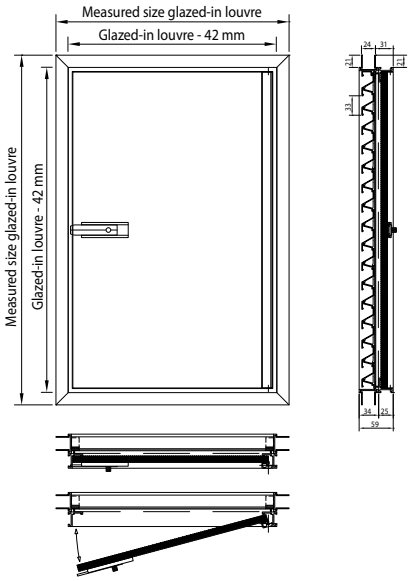
414/D

Cross-sections

414VA

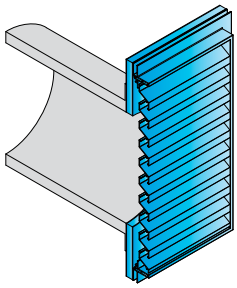


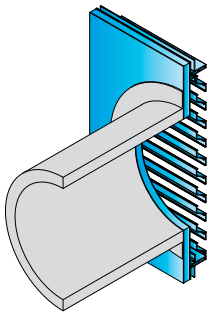
414/D



Technical specifications	414VA
Airflow	(EN 13030)
K-factor (supply)	28,13
C_e coefficient	0,189
(For combination with 130 and 150 mm vents)	

414THF < Glazed-in louvres





Thermally insulated window grille

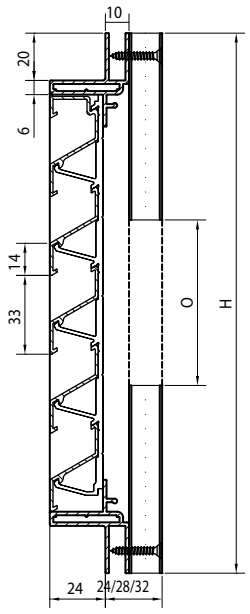
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Thermal insulation panel with PUR foam composite
- Sandwichpanel can also be powdercoated on both sides

Dimensions
- Blade pitch: 33,3 mm
- Minimum size: 130 x 130mm
- Flange width: 24, 28 and 32

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Typical applications
- Curtain walls
- Thermally insulated air duct

Cross-section



Technical specifications *(for cut-out part of thermal insulation)*	414THF
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
U-value	1,1 W/m²K

Glazed-in louvre with chevron section blades, pitch 20

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

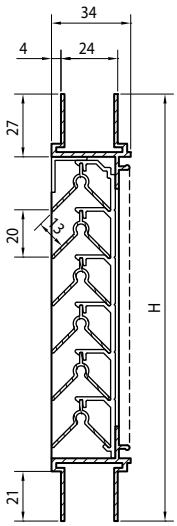
Dimensions
- Blade pitch: 20 mm
- Frame thickness: 24, 28 or 32 mm
- Minimum dimensions: 130 x 130 mm
- Specify on ordering: width x height in mm (Overall dimensions)

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Opties
- Water channel
- Drainage profile
- Removable mesh
- filter

Typical applications
- Window Louvre with no look-through and stick-proof

Cross-section



Technical specifications	415
Airflow	(EN 13030)
K-factor (supply)	33,80
K-factor (discharge)	33,80
C_e coefficient	0,172
C_d coefficient	0,172
Technical data	
Visual free area	93 %
Physical free area	39 %
IP class	IP2XD

415VA < Glazed-in louvres

Controllable louvre with chevron section blade

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

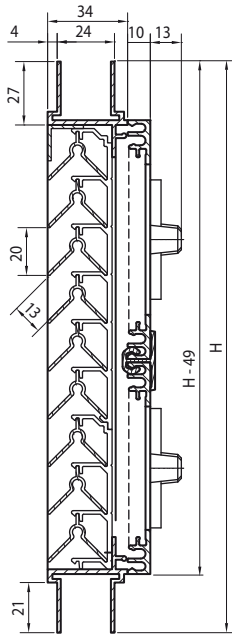
Dimensions
- Blade pitch: 20 mm
- Frame thickness: 24, 28 or 32 mm
- Specify on ordering: width x height in mm (overall dimensions)
- Controllable in combination with 100, 130 and 150 mm hit-and-miss ventilators or with insulated aluminium door (415/D)
- Minimum dimensions: 200 x 130 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Controloptions (1 controlpanel per module)
- Standard: knob control
- Rod
- Cord
- Motor

Typical applications
- Classrooms

Cross-section



Technical specifications	415VA
Airflow	(EN 13030)
K-factor (supply)	34,24
C_e coefficient	0,171
(For combination with 100, 130 and 150 vents)	
Technical data	
IP klasse	IP2XD

Glazed-in louvre, heavy-duty series, pitch 50

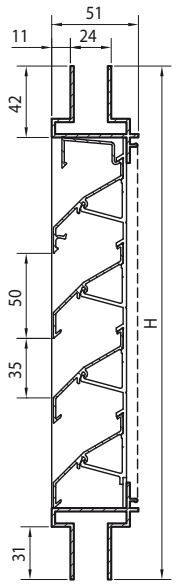
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 50 mm
- Frame thickness: 24 or 28 mm
- Specify on ordering: full width x height in mm
- Minimum dimensions: 220 x 220 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter

Cross-section



Technical specifications	424
Airflow	(EN 13030)
K-factor (supply)	13,42
K-factor (discharge)	9,35
C_e coefficient	0,273
C_d coefficient	0,327
Technical data	
Visual free area	70 %
Physical free area	49 %
IP class (louvre with mesh; electrical installation at least 105mm from louvre)	IP2XD

Glazed-in louvre with chevron section blades, heavy-duty series, pitch 33

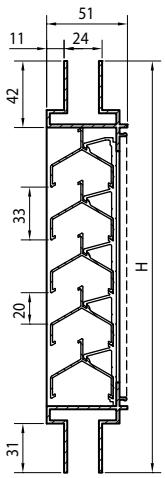
Materiaal
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Frame thickness: 24 or 28 mm
- Specify on ordering: full width x height in mm
- Minimum dimensions: 220 x 220 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter
- Controllable louvre 428/VA

Cross-section



Technical specifications	428
Airflow	(EN 13030)
K-factor (supply)	61,04
K-factor (discharge)	61,04
C_e coefficient	0,128
C_d coefficient	0,128
Technical data	
Visual free area	59 %
Physical free area	43 %
IP class	IP2XD

High-airflow glazed-in louvre, pitch 60

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

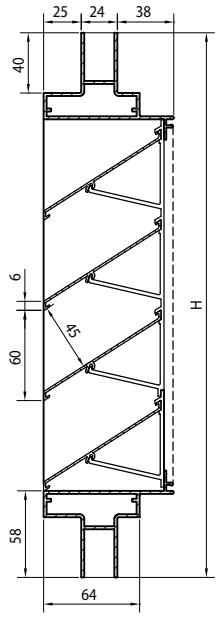
Dimensions
- Blade pitch: 60 mm
- Frame thickness: 24 mm (frame thickness of 8 to 50 mm on request)
- Specify on ordering: full width x height in mm
- Minimum dimensions: 385 x 385 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter

Typical applications
- Applications with request for high air-flow

Cross-section



Technical specifications	483
Airflow	(EN 13030)
K-factor (supply)	5,03
K-factor (discharge)	4,96
C_e coefficient	0,446
C_d coefficient	0,449
Technical data	
Visual free area	90 %
Physical free area	76 %

Glazed-in louvre, heavy-duty series, pitch 50

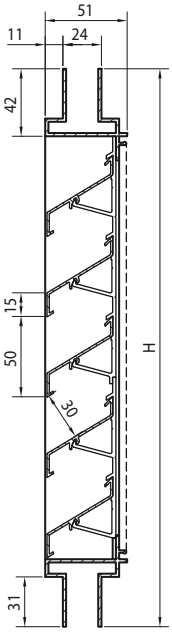
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 50 mm
- Frame thickness: 24 or 28 mm
- Specify on ordering: full width x height in mm
- Minimum dimensions: 220 x 220 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Removable mesh
- Filter
- Controllable type 484/VA – same build as type 414/VA

Cross-section



Technical specifications	484
Airflow	(EN 13030)
K-factor (supply)	9,41
K-factor (discharge)	9,47
C_e coefficient	0,326
C_d coefficient	0,325
Technical data	
Visual free area	70 %
Physical free area	60 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

Glazed-in "storm" louvre, pitch 33

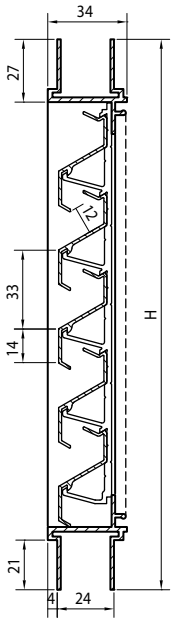
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Frame thickness: 24, 28 or 32 mm
- Specify on ordering: full width x height in mm
- Minimum dimensions: 130 x 130 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

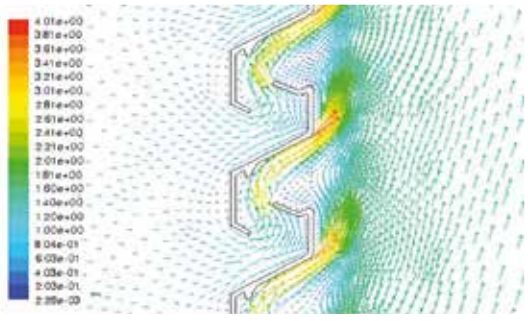
Options
- Water channel
- Drainage profile
- Removable mesh
- Filter
- Welded blades on frame (only RAL finish)

Cross-section

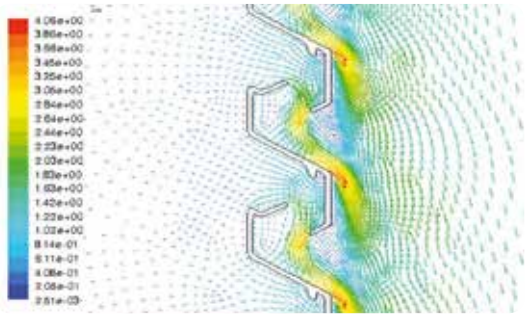


Technical specifications	494
Airflow	(EN 13030)
K-factor (supply)	123,5
K-factor (discharge)	118,1
C_e coefficient	0,090
C_d coefficient	0,092
Technical data	
Visual free area	57 %
Physical free area	26 %
IP class (louvre with mesh)	IP2XD

AIRFLOW



Supply



Discharge

425GL < Glazed-in louvres

Glazed-in louvre, extra-heavy-duty series

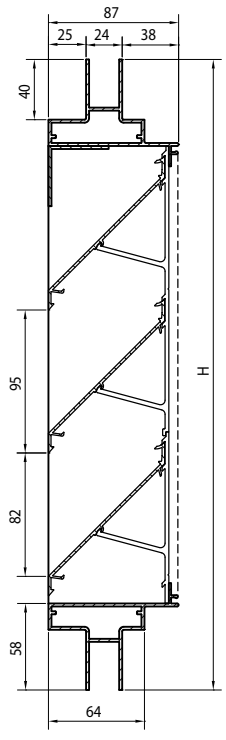
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 95 mm
- Depth to fit: 81.5 mm
- Frame thickness: 24 mm (frame thickness of 8 to 50 mm on request)
- Specify on ordering: full width x height in mm
- Minimum dimensions: 385 x 385 mm

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Options
- Water channel
- Drainage profile
- Removable mesh
- Filter

Cross-section



Technical specifications	425GL
Airflow	(EN 13030)
K-factor (supply)	11,41
K-factor (discharge)	11,65
C_e coefficient	0,296
C_d coefficient	0,293
Technical data	
Visual free area	86 %
Physical free area	55 %

Glazed-in louvre with adjustable blades, extra-heavy-duty series

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

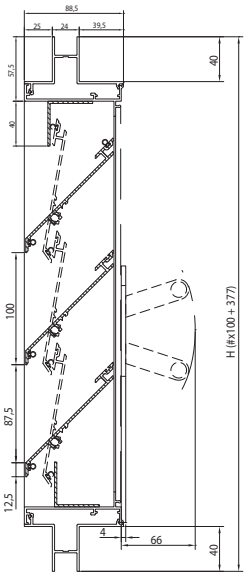
Dimensions
- Blade pitch: 100 mm
- Maximum width in one piece: 1300 mm
- Frame thickness: 24 mm (frame thickness of 8 to 50 mm on request)
- Specify on ordering: full width x height in mm
- Minimum dimensions: 377 x 377 mm
- Preferred height = (multiple of x 100) + 377 mm
  Remarque: the minimum height is dependant of the control option.

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Control options
- 427/1 Manuel: minimum height 377 mm
- 427/2 Cable: minimum height 477 mm
- 427/3 Ultraflex : hauteur minimum 777 mm
- 427/4 Motor (220V - 24V) / spring-return actuator (24V): minimum height 477 mm
- 427/5 Air pressure: minimum height 477 mm

For more information on the different control modes, please refer to page 18.

Cross-section



Technical specifications	427GL
Airflow	(EN 13030)
K-factor (supply)	11,41
K-factor (discharge)	11,65
C_e coefficient	0,296
C_d coefficient	0,293
Technical data	
Visual free area	88 %
Physical free area	53 %

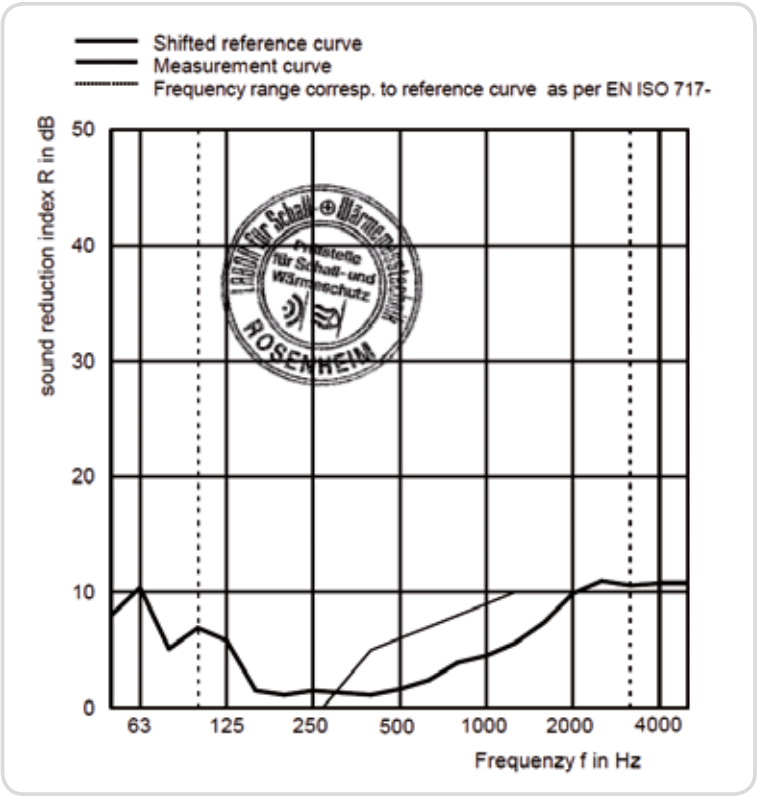
Acoustic wall louvre

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- 100% stainless

Dimensions
- Blade pitch: 60 mm
- Dimensions: depth to fit: 81.5mm
- Frame thickness: 50mm
- Height in steps of 60 mm (space between blades)
- Minimum dimensions: 200 x 200 mm

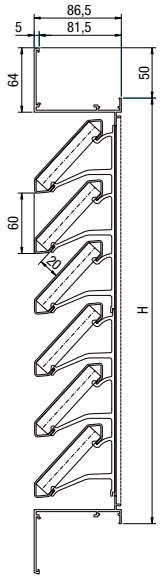
Fixing
- Brackets ref. 429

Options
- Water channel
- Drainage profile
- Removable mesh



The acoustic properties of the RENSON®-blades have been tested by the internationally recognized laboratory, IFT Lab Rosenheim (Germany)

Cross-section



Technical specifications	445/86
Airflow	(EN 13030)
K-factor (supply)	9,22
K-factor (discharge)	13,29
C_e coefficient	0,329
C_d coefficient	0,274
Comfort	(EN ISO 140-10, EN ISO 717-1)
Sound reduction in open position R_w ($C;C_{tr}$)	6 (-1;-2) dB
Technical data	
Visual free area	77 %
Physical free area	34 %
Depth to fit	86 mm

Sound reduction in dB per frequency	445/86
f in Hz	R in dB
63	10,4
125	5,8
250	1,5
500	1,6
1000	4,5
2000	9,9
4000	10,8

446/150, 446/225, 446/300 < Acoustic louvres

446/150

446/225

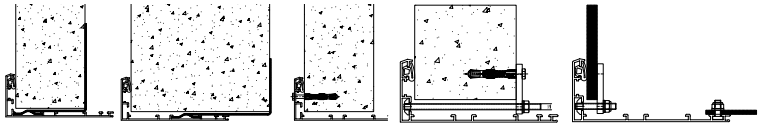
446/300

Acoustic wall louvre, blade pitch 150 mm

Material
- Aluminum profiles AlMgSi 0,5 (according to EN 12020-2)
- Acoustic insulation material: non-flammable mineral wool
- Stainless steel mesh 304 6x6mm
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- 100% stainless

Dimensions
- Blade pitch: 150 mm
- Depth to fit: 446/150: 143 mm
  446/225: 218 mm
  446/300: 293 mm
- Frame thickness: 55mm
- Height in steps of 150 mm (space between blades)
- Minimum dimensions: 446/150: 300 W x 410 H
  446/225: 300 W x 410 H
  446/300: 311 W x 421 H

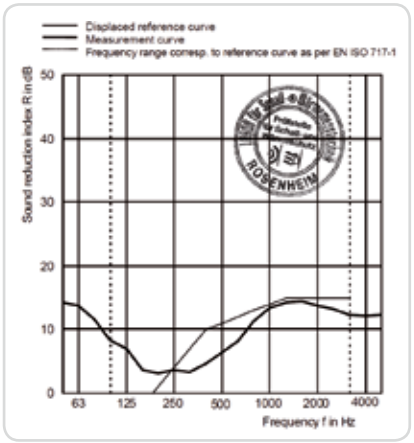
Fixing
- Fixing bracket: installation with bracket no. 1428 possible
  - position 1: up to 100 mm wall thickness
  - position 2: for wall thickness up to 200 mm
- Screws: Fix the screws from the outside through the flange (screw holes upon request)
- Pull bracket: fixation with a long pull bracket and expander bolts for wall mounting or a short pull bracket for connection to a ventilation channel (pull bracket rod optional)
- Fixation on the backside: by screwing a hammerhead bolt to a structural backframe
- For louvres 446/300 larger than 3m², a backframe structure is required



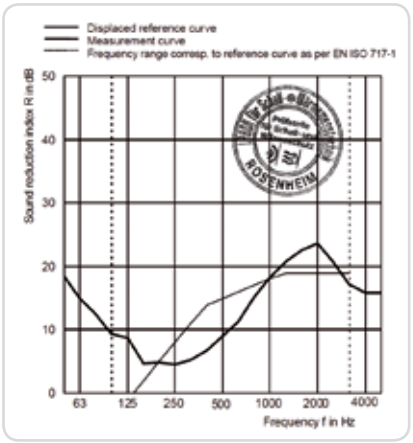
Fixing bracket pos. 1 | Fixing bracket pos.2 | Screw from the outside | Long pull bracket | Short pull bracket | Fastening backside with hammerhead bolts

Sealing possibilities
- Sealing gasket: suitable for reduction of contact sounds (option sealing gasket)
- PU sealing tape: against water infiltration (option PU sealing tape)
- Silicone seal: seal the flange on the outside with silicone (option silicone)

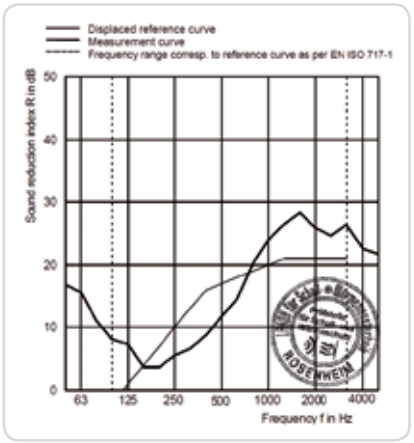
Options
- Drainage profile



446/150

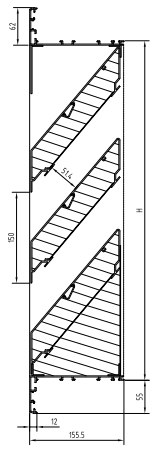


446/225

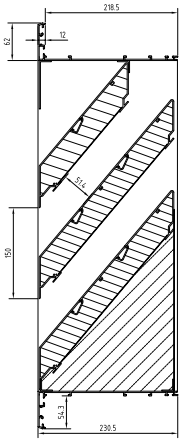


446/300

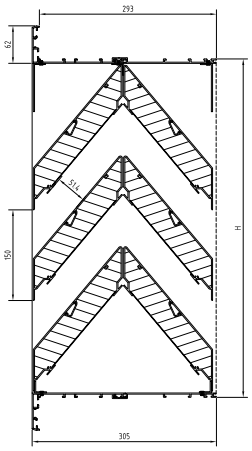
Cross-sections



446/150

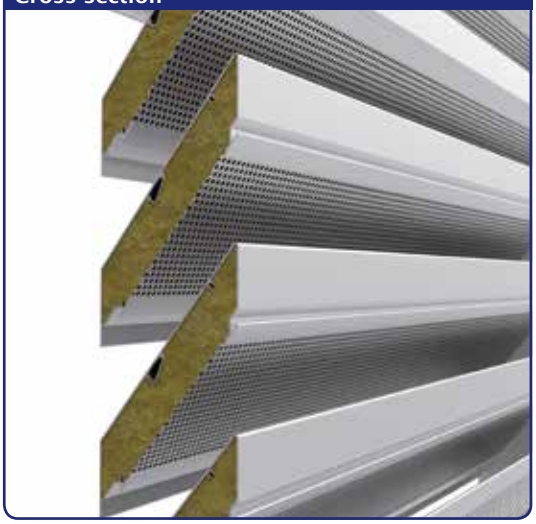


446/225



446/300

Cross-section

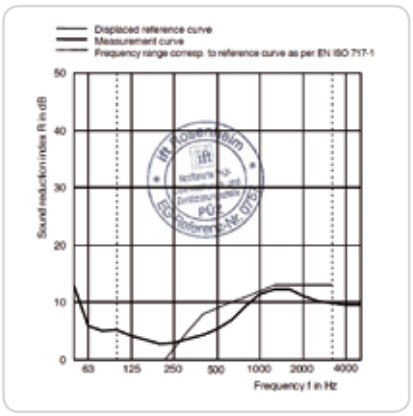


Technical specifications	446/150	446/225	446/300
Airflow		(EN 13030)	
K-factor (supply)	38,46	37,30	45,93
K-factor (discharge)	34,48	41,90	45,93
C_e coefficient	0,161	0,164	0,148
C_d coefficient	0,169	0,150	0,148
Comfort		(EN ISO 140-10, EN ISO 717-1)	
Sound reduction in open position R_w ($C;C_{tr}$)	11 (-1;-2) dB	15 (-1;-4) dB	17 (-1;-4) dB
Technical data			
Visual free area	54 %	54 %	54 %
Physical free area	34 %	34 %	34 %
Watertightness	A (1 m/s)	A (1 m/s)	A (1 m/s)
Depth to fit	150 mm	225 mm	300 mm

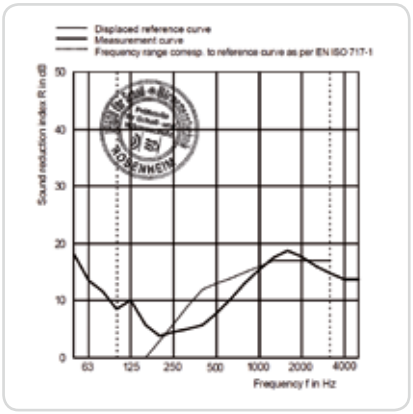
Sound reduction in dB per frequency	446/150	446/225	446/300
f in Hz	R in dB	R in dB	R in dB
63	13,8	15,0	15,7
125	6,9	8,7	7,3
250	3,6	4,5	5,5
500	6,4	9,1	11,8
1000	13,4	18,2	24,0
2000	13,8	23,7	25,9
4000	12,1	15,8	22,6

The acoustic properties of the RENSON®-blades have been tested by the internationally recognized laboratory, IFT Lab Rosenheim (Germany)

Water resistance tested by BSRIA laboratories.



447/150



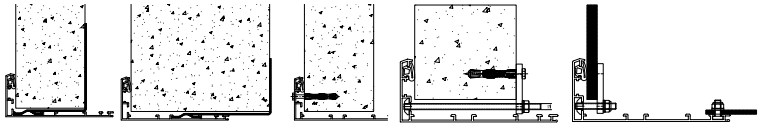
447/225

Acoustic wall louvre, blade pitch 170 mm

Material
- Aluminum profiles AlMgSi 0,5 (according to EN 12020-2)
- Acoustic insulation material: non-flammable mineral wool
- Stainless steel mesh 304 6x6mm
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- 100 % stainless

Dimensions
- Blade pitch: 170 mm
- Depth to fit: 447/150: 143 mm
  447/225: 218 mm
- Frame thickness: 55mm
- Height in steps of 150 mm (space between blades)
- Minimum dimensions: 447/150: 300 W x 430 H
  447/225: 300 W x 430 H

- Fixing bracket: installation with bracket no. 1428 possible
  - position 1: up to 100 mm wall thickness
  - position 2: for wall thickness up to 200 mm
- Screws: Fix the screws from the outside through the flange (screw holes upon request)
- Pull bracket: fixation with a long pull bracket and expander bolts for wall mounting or a short pull bracket for connection to a ventilation channel (pull bracket rod optional)
- Fixation on the backside: by screwing a hammerhead bolt to a structural backframe.



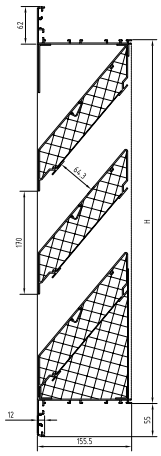
Fixing bracket pos. 1 | Fixing bracket pos.2 | Screw from the outside | Long pull bracket | Short pull bracket | Fastening backside with hammerhead bolts

Sealing possibilities
- Sealing gasket: suitable for reduction of contact sounds (option sealing gasket)
- PU sealing tape: against water infiltration (option PU sealing tape)
- Silicone seal: seal the flange on the outside with silicone (option silicone)

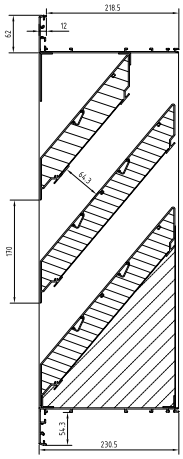
Options
- Drainage profile

The acoustic properties of the RENSON®-blades have been tested by the internationally recognized laboratory, IFT Lab Rosenheim (Germany)

Cross-sections

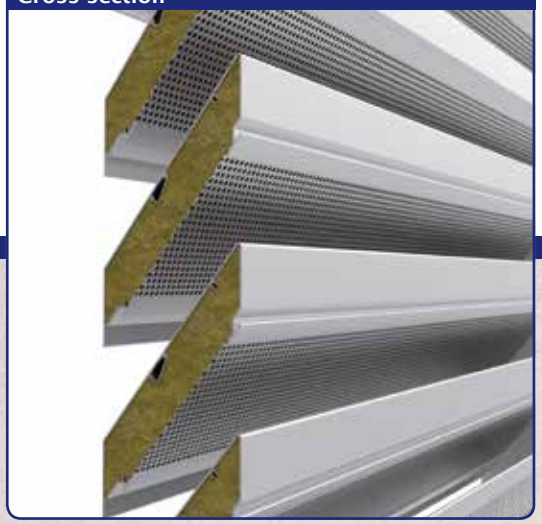


447/150



447/225

Cross-section



Technical specifications	447/150	447/225
Airflow	(EN 13030)	
K-factor (supply)	25,46	28,58
K-factor (discharge)	25,15	30,88
C_e coefficient	0,198	0,187
C_d coefficient	0,200	0,180
Comfort	(EN ISO 140-10, EN ISO 717-1)	
Sound reduction in open position R_w ($C;C_{tr}$)	9 (0;-1) dB	13 (-1;-3) dB
Technical data		
Visual free area	59 %	59 %
Physical free area	37 %	37 %
Depth to fit	150 mm	225 mm

Sound reduction in dB per frequency	447/150	447/225
f in Hz	R in dB	R in dB
63	5,9	13,6
125	4,2	10,1
250	2,9	4,6
500	5,4	7,8
1000	11,5	15,4
2000	11,2	17,8
4000	9,6	13,7

468AK/1 < Acoustic louvres

468AK/1 - front view

468AK/1 - rear view

Interior acoustic wall louvre

Material

- Made from aluminium sec tions: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Sound absorbing material: synthetic foam
- Labyrinth type blades

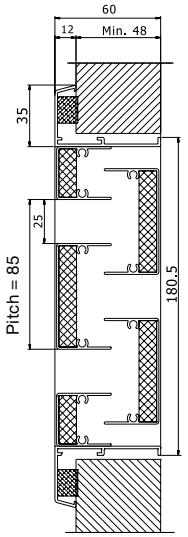
Dimensions

- Minimum dimensions: 200 x 180 mm
- Maximum dimensions: 800 x 775 mm
- Height in 85 mm steps (blade pitch)
- Depth to fit: 48 mm
- Flange size: 30 mm

Typical applications

- Schools
- Hospitals
- Elderly homes

Cross-section



Technical specifications	447/150	
Airflow	(EN 13030)	Comfort - $D_{n,e,w}$ ($C;C_{tr}$)
K-factor (supply)	86,85	
K-factor (discharge)	89,35	
C_e coefficient	0,107	
C_d coefficient	0,106	
Q at 2 Pa – louvre 292 x 180 mm	25 m³/h	30 (-1;-2) dB
Q at 2 Pa – louvre 382 x 265 mm	50 m³/h	28 (-1;-2) dB
Q at 2 Pa – louvre 432 x 350 mm	75 m³/h	26 (-1;-2) dB
Q at 2 Pa – louvre 452 x 435 mm	100 m³/h	25 (-1;-2) dB
Comfort	(EN ISO 140-10, EN ISO 717-1)	
Sound reduction R_w ($C;C_{tr}$)	8 (-1;-2) dB	
Technical data		
Visual free area	29 %	
Physical free area	29 %	
Ip class (louvre with mesh)	IP2XD	

Burglarproof louvre class WK2 (RC2)

Material
- Made from aluminum profiles AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel insect mesh 304 - 2.3 x 2.3 mm or stainless steel mesh 304 - 6 x 6 mm upon request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

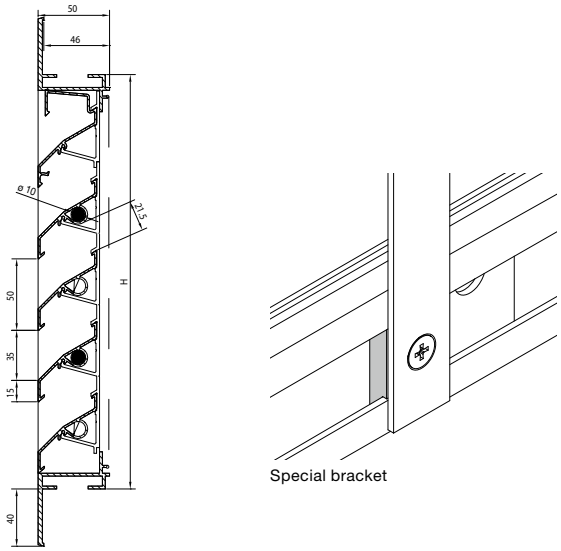
Dimensions
- Blade pitch: 50 mm
- Depth: 46 mm
- Flange size: 40 mm
- Minimum dimensions: 250 x 250 mm

Options
- Waterchannel
- Drainage profile
- Removabele insectmesh
- Filtre

Features
- Aesthetical and functional high-quality louvre
- Burglarproof according to class WK2 (RC2), certificate surface 0.44 <0 <1.225 m^2, in accordance to prEN 1627 up to 1630 and including (May 2009)
- Easy to install using brackets
- 100% stainless:
  - Entirely assembled of aluminum profiles
  - All connecting pieces in aluminum and stainless steel

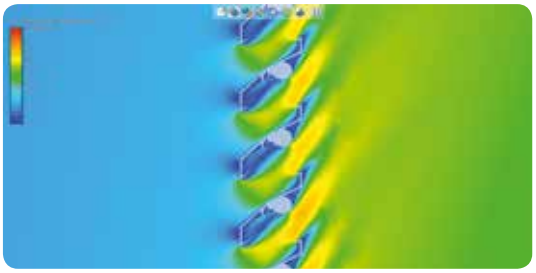
Typical applications
- Schools
- Shops
- Apartments

Cross-sections

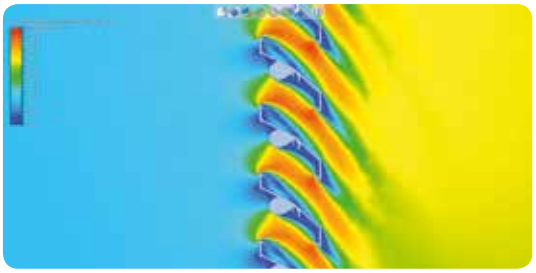


Technical specifications	421WK2
Airflow	(EN 13030)
K-factor (supply)	13,82
K-factor (discharge)	12,85
C_e coefficient	0,269
C_d coefficient	0,279
Technical data	
Visual free area	70 %
Physical free area	43 %
Aesthetically identical to the standard louvre 421	

AIRFLOW



Supply



Discharge

Burglarproof louvre class WK2 (RC2)

Material
- Made from aluminum profiles AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel insect mesh 304 - 2.3 x 2.3 mm or stainless steel mesh 304 6 x 6 mm upon request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Thickness: 31 mm
- Minimum dimensions: 170 x 170 mm

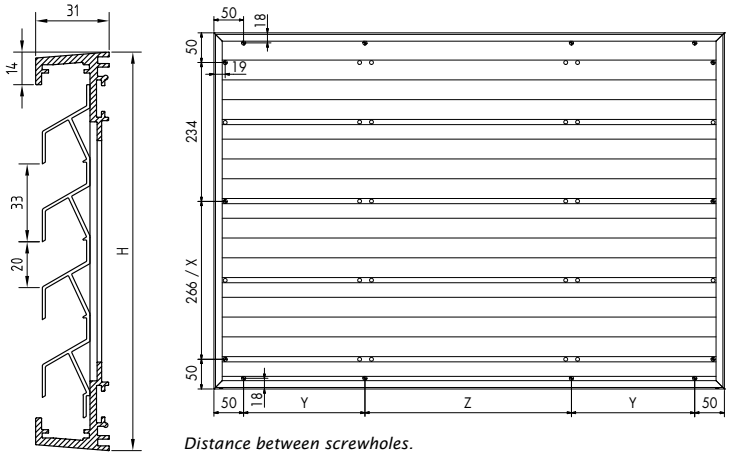
Fixing

- Surface mounted by means of burglarproof screws type Secu-Fast® Pin Hexagon diam. 4,2 x 38 mm A2 (included)
- Distance between screwholes:
  - Horizontal side = maximum 240 mm (Y, Z)
  - Vertical side = maximum 266 mm (X = variable distance to the lowest screwhole on the vertical side)

Features
- Aesthetical and functional high-quality louvre
- Burglarproof according to class WK2 (RC2), certificate surface 0.44 <o <1.225 m², in accordance with prEN 1627 up to 1630 and including (May 2009)
- 100% stainless:
  - Entirely assembled of aluminum profiles
  - All connecting pieces in aluminum and stainless steel

Typical applications
- Schools
- Shops
- Nightcooling

Cross-section



Distance between screwholes.

Technical specifications	431WK2
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	40,5 %
Aesthetically identical to the standard louvre 431	

Burglarproof louvre class WK4 (RC4)

Material
- Made from aluminum profiles AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel insect mesh 304 - 2.3 x 2.3 mm or stainless steel mesh 304 6 x 6 mm upon request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Every second blade has a bi-chromatised steel bar of diam. 20 mm

Dimensions
- Blade pitch: 50 mm
- Depth: 50 mm
- Frame without flange
- Minimum dimensions: 250 x 250 mm
- Maximum width: 2800 mm

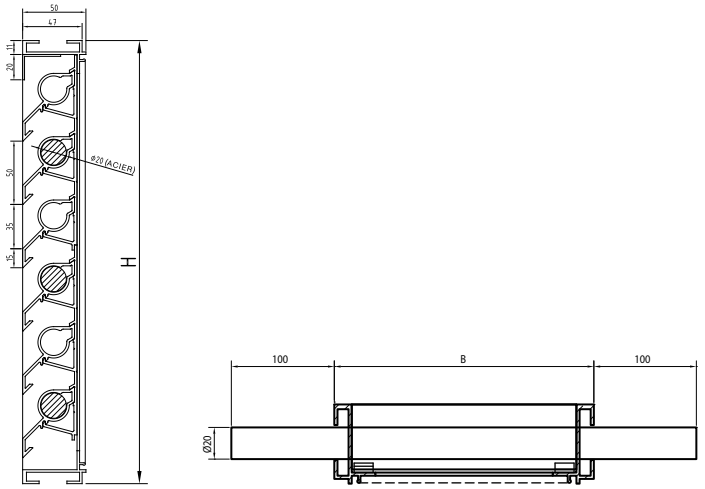
Fixing
- The steel bars of the louvre need to be built into the wall.
- Frame without flange

Options
- Water channel
- Drainage profile
- Filter

Features
- Aesthetical and functional high-quality louvre
- Burglarproof class WK4 (RC4), in accordance with prEN 1627 up to 1630 and including (May 2009)
- Official test report No. DE78A982

Typical applications
- Banks, IT rooms, museums and jewellers.

Cross-sections



Technical specifications	423 WK4
Airflow	(EN 13030)
K-factor (supply)	27,06
K-factor (discharge)	27,28
C_e coefficient	0,193
C_d coefficient	0,192
Technical data	
Visual free area	70 %
Physical free area	22 %
IP class	IP2XD

440 < Louvre box

Turret

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Cover plate
  - In aluminium sheet
  - Acoustic version optional

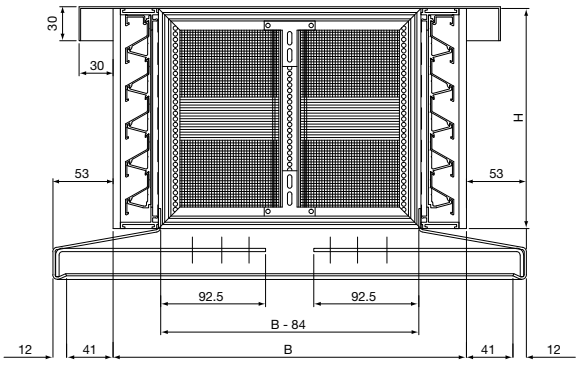
Dimensions
- Maximum dimensions in one piece up to 4m² ground surface
- Larger sizes possible on request

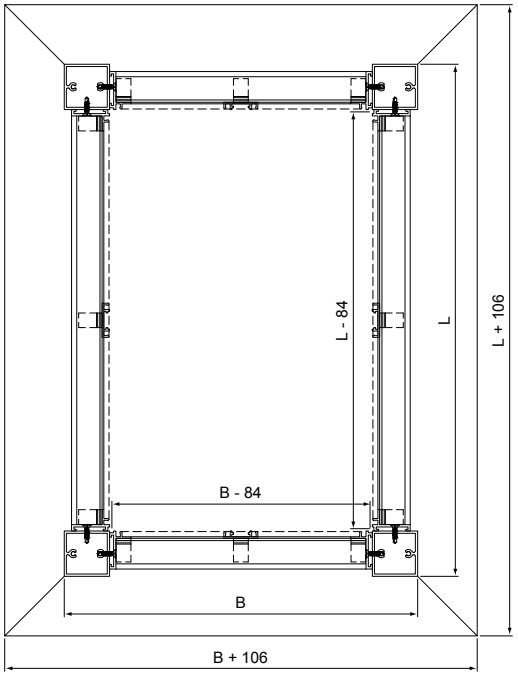
Types
All blade types possible, for example:
440/11: with blade n° 8 of louvre 411 (blade pitch 33 mm)
440/21: with blade n° 17 of louvre 421 (blade pitch 50 mm)

Options
- Waterchannel

Typical applications
- Office ventilation (Nightcooling)
- Manufacturing plants

Cross-sections





RENSON®
Creating healthy spaces

Cavity wall ventilator

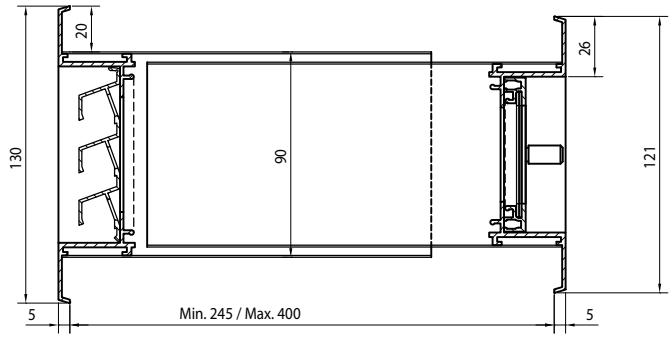
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Connecting sleeve made from galvanised steel

Dimensions
- Size to fit: 265 x 90 mm (L x H)
- Flange size: 21 mm
- Controllable internal louvre
- Adjustable sleeve for wall thickness of 245 till 400 mm

Options
- Optional sound absorbing material

Fixing
- Spring clips are included

Cross-section



Stock models

Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	Airway opening (cm^2)	Airflow at 2 Pa (m^3/h)	Airflow at 20 Pa (m^3/h)
265 x 90	•	•	38	15	49,4

Register with frame

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Depth to fit: 28.5 mm
- Flange size: 21 mm
- Rotating knob for louvre lengths of 500 mm and above (possibility of pull-cord or rod operation)

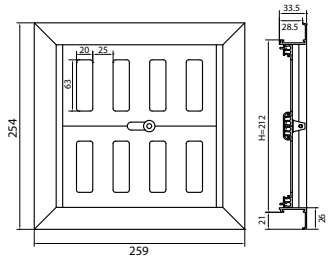
Fixing
- Spring clips available on request

Stock models

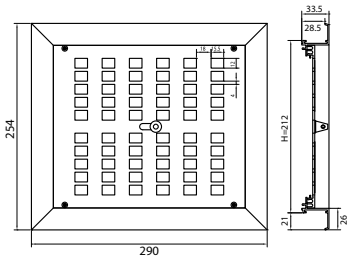
Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	Airway opening (cm^2)	Airflow at 2 Pa (m^3/h)
217 x 212	•	•	113	45
248 x 212	•	•	140	63,1
307 x 212	•	•	260	114,7

Cross-sections

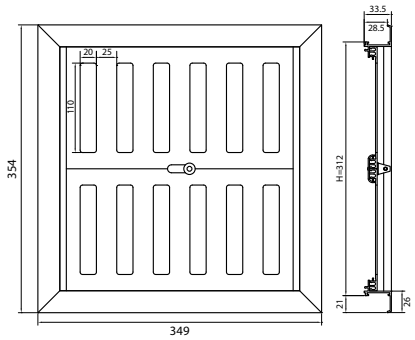
441 (217x212 mm)



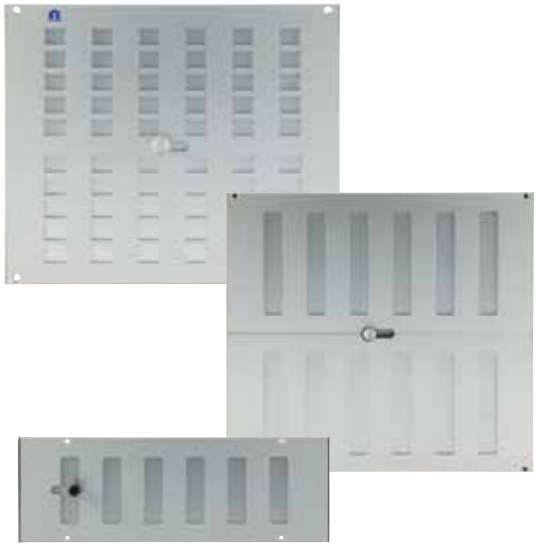
441 (248x212 mm)



441 (307x212 mm)



Register to fix



Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

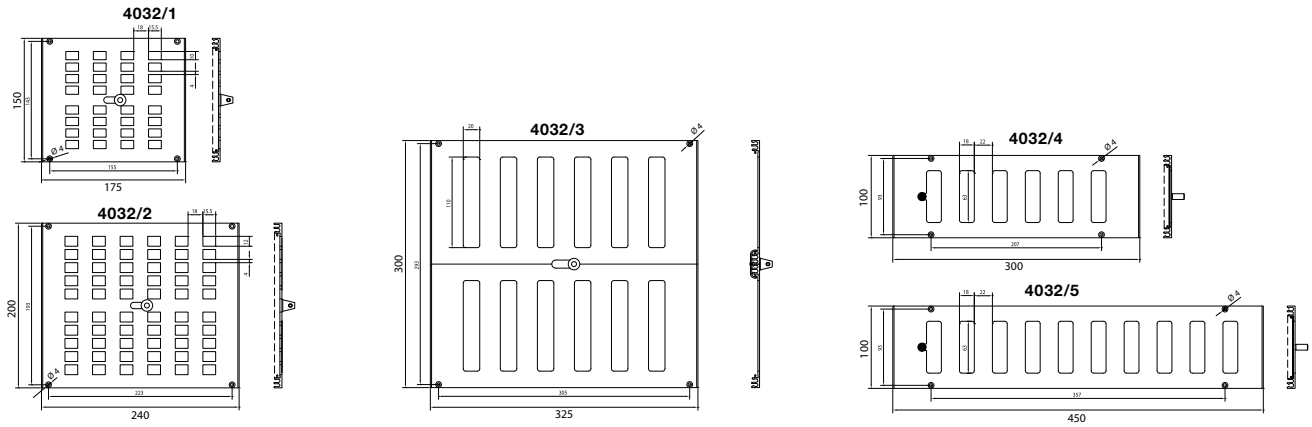
Dimensions
- Slide knob control
- Rotating knob for louvre lengths of 500 mm and above (possibility of pull-cord operation)
- Special heights on request
- The louvre height must fit within 100, 130 or 150 mm modules

Fixing
- Screws and plugs are included

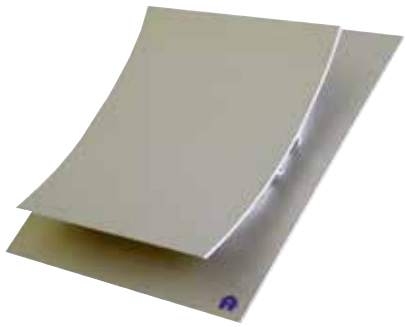
Stock models

Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	Airway opening (cm^2)	Airflow at 2 Pa (m^3/h)
4032/1: 175 x 150	•	•	49	22,1
4032/2: 240 x 200	•	•	113	51,0
4032/3: 325 x 300	•	•	260	114,7
4032/4: 300 x 100	•	•	68	30,0
4032/5: 450 x 100	•	•	113	49,9

Cross-sections



XD < Controllable cavity wall louvres



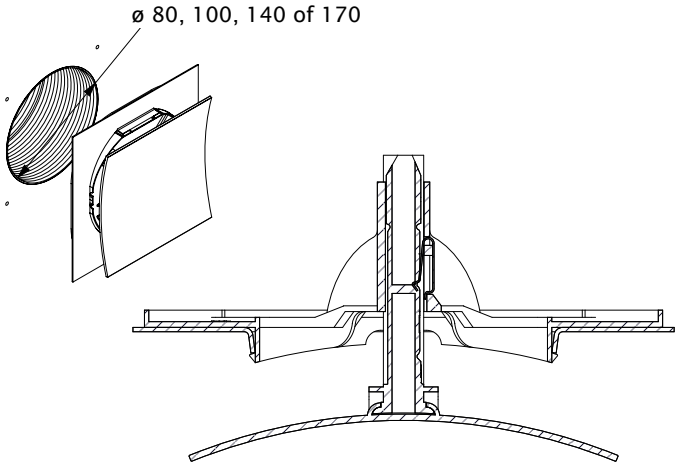
Stylish extraction louvre

Material
- Cover plate: aluminium AlMgSi 0.5 (according to EN 12020-2)
- Finishing: powder coating in any RAL or Syntha Pulvin® colour (40 microns)
- Base and sliding part: POM (polyoxymethylene)

Dimensions
- XD1: 152 x 152 mm
- XD2: 188 x 188 mm
- XD3: 233 x 233 mm
- Depth (in closed position): 79 mm

Typical applications
- Aesthetical internal louvre for wall or ceiling

Cross-sections



Technical specifications	XD1	XD2	XD3
Use			
	System C all wet areas	**System A** Toilet Closed area ≤ 14 m²	**System A** Openspace kitchen Close area ≤ 14 m²
Airflow		(EN 13141-1)	
	Position I: not possible *Position II:* 22 m³/h at 2 Pa	*Position I:* 39,2 m³/h at 2 Pa *Position II:* 50,4 m³/h at 2 Pa	*Position I:* 63,0 m³/h at 2 Pa *Position II:* 87,1 m³/h at 2 Pa
Duct diameter			
	80 mm (max ø 140 mm)	100 mm, 140 mm (max ø 160 mm)	140 mm, 170 mm (max ø 200 mm)
Colors			
RAL 9006	•	•	•
Renson standard WHITE	•	•	•
(other colors on demand)			

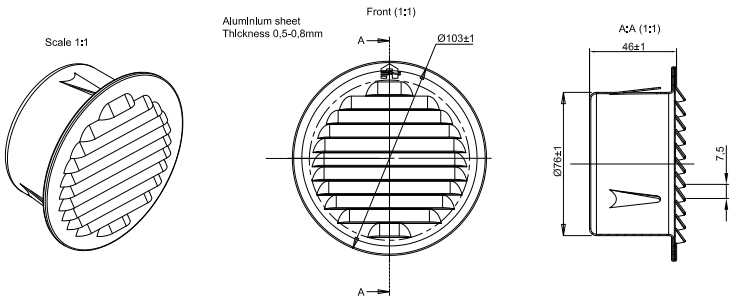
Circular built-in punched grille

Material

- Made from punched aluminium sheet
- Finishing: powder-coated in white (RAL 9010), brown (RAL 8019) and aluminium (RAL 9006) colours
- Insect mesh included

Cross-sections

Stock model - Ø 80 mm



Stock models

Diameter mm	Renson standard WHITE	RAL 8019	RAL 9006	RAL 7016	Airway opening in cm²	Airflow at 2 Pa (m³/h)
ø 80	•	•	•	•	27	8,3
ø 100	•	•	•	•	51	15,2
ø 115	•	•	•	•	75	23,6
ø 145	•	•	•	•	119	35,2
ø 190	•	•	•	•	204	53,1
ø 245	•	•	•	•	339	74,0

436/436-M < Punched grilles

Punched grille

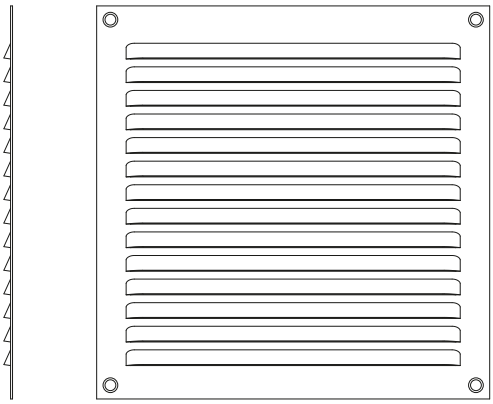
Material
- Punched aluminium sheet
- 436: without insect mesh
- 436-M: with insect mesh

Remark: standard dimensions only, not possible made-to-mesure.

Fixing
- Screw-mounted (screws and plugs not provided)

Technical specifications
- Physical free area: 28 %

Cross-section



Stock models - 436

Dimensions (W x H) mm	F1	Renson standard WHITE	RAL 8019	Airflow at 2 Pa (m³/h)
150 x 150	•	•	•	16
150 x 200	•	•	•	21,9
200 x 100	•	•	•	12
200 x 200	•	•	•	22,1
200 x 250	•	•	•	36,7
250 x 100	•	•	•	18,5
250 x 250	•	•	•	46,6
300 x 100	•	•	•	20,2
300 x 300	•	•	•	73,5
400 x 100	•	•	•	28,8
400 x 400	•	•	•	86,4
500 x 500	•	•	•	125,9

Stock models - 436-M

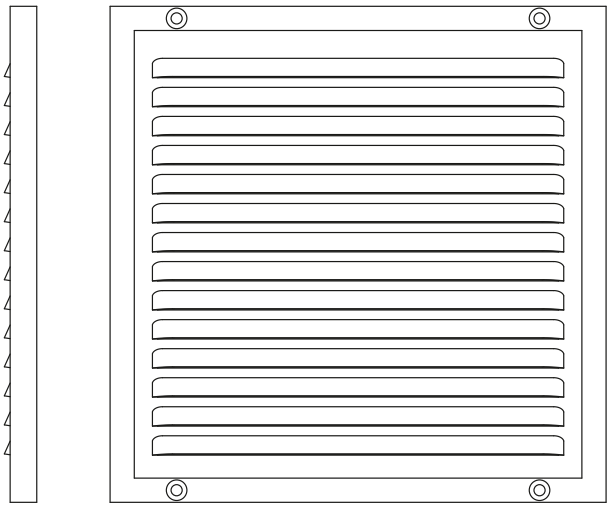
Dimensions (W x H) mm	F1	Renson standard WHITE	RAL 8019	Airflow at 2 Pa (m³/h)
150 x 150	•	•	•	15,2
150 x 200	•	•	•	20,8
200 x 100	•	•		11,4
200 x 200	•	•	•	21,0
200 x 250	•	•		34,9
250 x 100	•	•		17,6
250 x 250	•	•	•	44,3
300 x 100	•	•	•	19,2
300 x 300	•	•		69,8
400 x 100	•	•		27,4

Punched grille with frame

Material
- Punched aluminium sheet with frame
- With insect mesh
  Remark: standard dimensions only, not possible made-to-mesure.

Fixing
- Screw-mounted (screws and plugs not provided)

Cross-section



Stock models

Dimensions (W x H) mm	F1	Renson standard WHITE	RAL 8019	Airflow at 2 Pa (m^3/h)
150 x 150	•	•	•	16
200 x 100	•	•	•	12
200 x 200	•	•	•	22,1
200 x 250	•	•	•	36,7
300 x 300	•	•	•	73,5
400 x 400	•	•	•	86,4
500 x 500	•	•	•	125,9

438 < Punched grilles

Punched grille, stainless steel

Material

- Punched stainless steel sheet
  Remark: standard dimensions only, not possible made-to-mesure.

Fixing

- Screw-mounted (screws and plugs are not provided)

Stock models		
Dimensions (W x H) mm	Colour	Airflow at 2 Pa (m^3/h)
200 x 100	inox	12,3
250 x 100	inox	16,2
300 x 100	inox	18,4
400 x 100	inox	23,1
150 x 150	inox	15,8
150 x 200	inox	18,8
200 x 200	inox	21,3
200 x 250	inox	29,7
250 x 250	inox	40,7
300 x 300	inox	56,9

439 < Punched grilles

Punched grille, edge-raised

Material

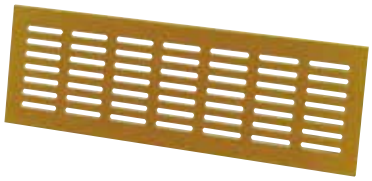
- Punched aluminium sheet
  Remark: standard dimensions only, not possible made-to-mesure.

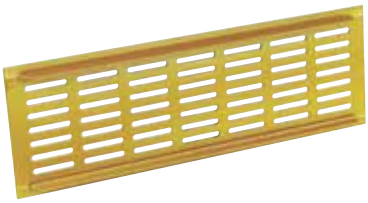
Fixing

- Screw-mounted (screws and plugs are not provided)

Mesures standard				
Dimensions (W x H) mm	F1	Renson standard WHITE	RAL 8019	Airflow at 2 Pa (m^3/h)
370 x 40	•	•	•	12,8
130 x 90	•	•	•	8,5
180 x 90	•	•	•	10,7
300 x 90	•	•	•	17,4
155 x 155	•	•	•	15,9
195 x 195	•	•	•	21,6
245 x 195	•	•	•	31,4
215 x 150	•	•	•	20,3

Built-in ventilation grille



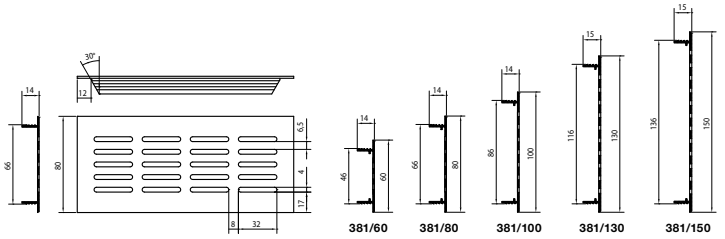


Fixing
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)

Typical applications
- Kitchens, refrigerators, counters

Packaging quantity: 10 pieces

Cross-sections



Mesures standard

Dimensions (W x H) mm	Satin anodised	Gold anodised	Renson standard WHITE	RAL 8022	RAL 9005	Net free area cm²	Airflow at 2 Pa (m³/h)
400 x 60	•		•	•		44	17,0
500 x 60	•		•	•		59	22,8
2000 x 60	•		•	•		244	94,4
300 x 80	•	•	•	•		43	17,6
400 x 80	•	•	•	•	•	56	22,4
500 x 80	•	•	•	•	•	74	29,6
600 x 80	•	•	•	•		87	33,6
1000 x 80	•		•	•		149	57,6
2000 x 80	•	•	•	•		305	117,9
300 x 100	•		•	•		61	23,6
400 x 100	•	•	•	•		78	30,2
500 x 100	•	•	•	•		104	40,2
600 x 100	•		•	•		122	47,2
1000 x 100	•		•	•		209	80,8
2000 x 100	•	•	•	•		427	165,1
500 x 130	•		•	•		149	57,6
1000 x 130	•		•	•		298	115,2
2000 x 130	•		•	•		610	235,9
500 x 150	•		•	•		179	69,2
2000 x 150	•	•	•	•		732	283,1

Other finishes and dimensions are available upon request, only for large quantities.

Convector grille

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodised in satin colour (20 microns) or powder-coated in any RAL or Syntha PulvinR colour (40 microns)
- The frame is lined with a rubber gasket to guarantee a reduced noise level

Dimensions
- Bar spacing: 12.5 mm
- Grille section: 20 x 4 mm
- 311/1 - 311/2
  - Length floor grille: min. 100 mm - max. 3500 mm (from 1300 mm multiple grille lengths)
  - Width floor grille: min. 100 mm - max. 1215 mm
- 311/3
  - Length frameless floor grille: min. 85 mm - max. 1300 mm
  - Width frameless floor grille: min. 85 mm - max. 1200 mm

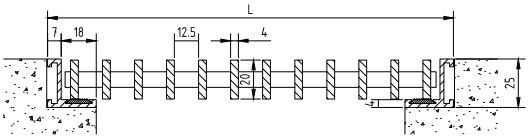
Remark: If the floor grille width > 650 mm, then an underlying support structure must be provided.

- Effective opening = length and width – 50 mm
- Bars arranged crosswise

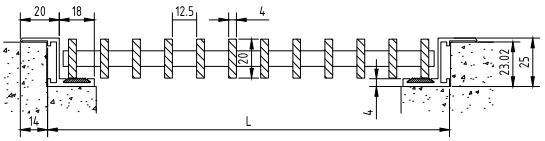
Fixing
- Brackets ref. 231

Typical applications
- Ground heating

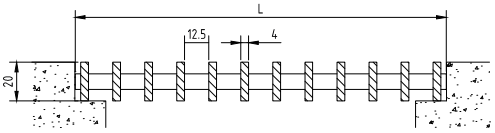
Cross-sections



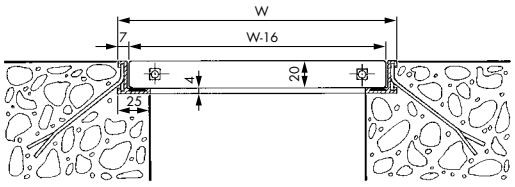
- 311/1: Floor grille or convector cover with flangeless “L” frame



- 311/2: Floor grille or convector cover with flanged “Z” frame

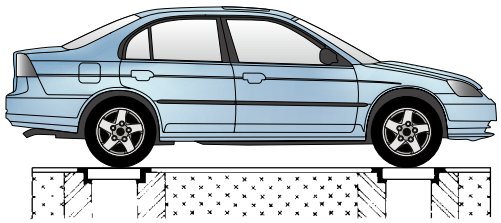


- 311/3: Frameless floor grille or convector cover



Technical specifications	311
Technical data	
Visual free area	76 %
Physical free area	76 %

Floor grille, heavy-duty series



Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- The frame is lined with a rubber gasket to guarantee a reduced noise level

Dimensions
- Bar spacing: 12.5 mm
- Grille section: 20 x 8 mm
- 371/1 - 371/2
  - Length floor grille: min. 135 mm - max. 3500 mm (from 1200 mm multiple lengths)
  - Width floor grille: min. 135 mm - max. 915 mm

  Remark: frame must be fully supported

- 371/3
  - Length frameless floor grille: min. 120 mm - max. 1200 mm
  - Width frameless floor grille: min. 120mm - max. 900 mm

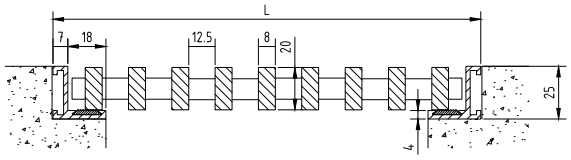
  Remark: If the floor grille width > 650 mm, then an underlying support structure must be provided.

- Effective opening = length and width – 50 mm
- Bars arranged crosswise

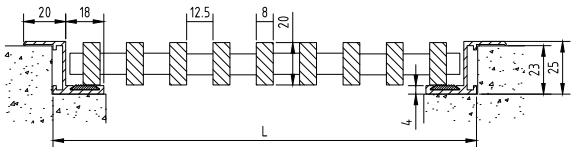
Fixing
- Brackets ref. 231

Typical applications
- Grilles for swimming pool drains, cellars, garages, car parks, abattoirs, etc
- To cover underfloor wiring ducts in computer rooms

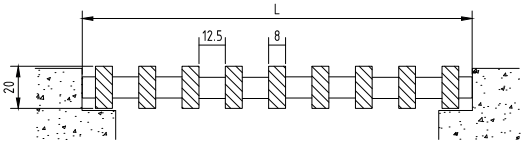
Cross-sections



- 371 /1: Floor grille with flangeless “L” frame



- 371 /2: Floor grille with flanged “Z” frame



- 371 / 3: Frameless floor grille

Technical specifications	371
Technical data	
Visual free area	61 %
Physical free area	61 %

Linear bar grille

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Remark: Grille not to be walked on.

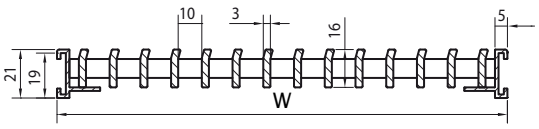
Dimensions
- Bar spacing: 10 mm
- Grille section: 16 x 3 mm
- 392/2:
  - Length linear bar grille: min. 130 mm - max. 3500 mm (from 1600 mm multiple grille elements)
  - Width linear bar grille: min. 55 mm - max. 311 mm
- 392/3:
  - Length linear bar grille without frame: min. 120 mm - max. 1600 mm
  - Width linear bar grille without frame: min. 45 mm - max. 300 mm
- Minimum dimensions: 100 x 60 mm
- Effective opening = length and width – 50 mm
- Deflection: 15°
- Bars arranged lengthwise

Fixing
- No fasteners

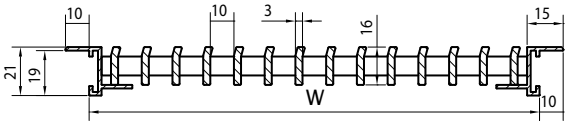
Options
- Linear bar grille with flangless 'L' frame

Typical applications
- Radiator frame

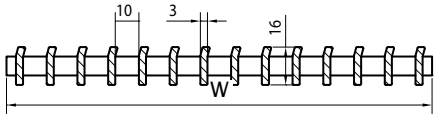
Cross-sections



- Option: Linear bar grille without flanged "Z" frame



- 392/2: Linear bar grille with flanged "Z" frame



- 392/3: Frameless linear bar grille

Technical specifications	392
Technical data	
Visual free area	76 %
Physical free area	76 %

Linear bar grille for self-assembly

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Remark: Grille not to be walked on.

Dimensions
- Bar spacing: 9.5 mm
- Section length: 3 or 6 metres
- 394/2
  - Length linear bar grille: min. 110 mm - max. 3510 mm
  - Width linear bar grille:
    - Per grille element: min. 55 mm - max. 220 mm
    - Coupled: max. 1055 mm
- 394/3 :
  - Length linear bar grille without frame: min. 100 mm - max. 3500 mm
  - Width linear bar grille without frame:
    - Per grille element: min. 45 mm - max. 209 mm
    - Coupled: max. 1045 mm
- Clip length: 209 mm
- Bars arranged lengthwise

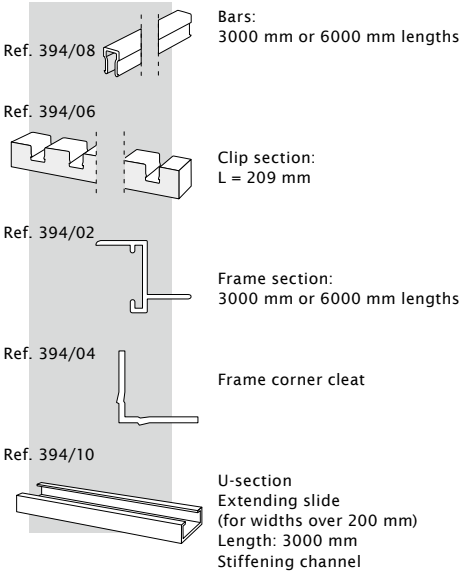
Fixing
- No fasteners

Number of clip sections/length

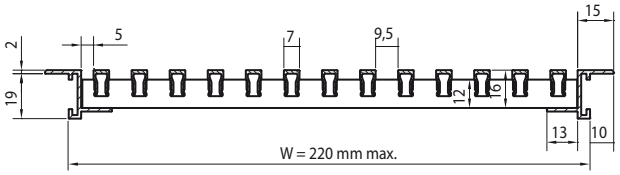
300 – 500 mm: 2 pieces
501 – 900 mm: 3 pieces
901 – 1300 mm: 4 pieces
1301 – 1700 mm: 5 pieces
1701 – 2100 mm: 6 pieces
2101 – 2600 mm: 7 pieces
2601 – 3000 mm: 8 pieces

Elements
- Simple clip assembly

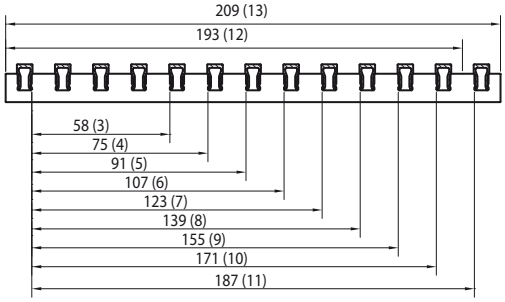
Typical applications
- Counters, radiator frame



Cross-sections

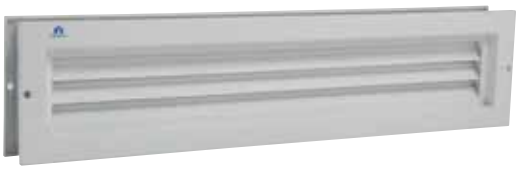


- 394/2: lineair bar grille with flanged 'Z' frame



- 394/3: flangeless lineair bar grille

Technical specifications	394
Technical data	
Visual free area	59 %
Physical free area	59 %



Door grille

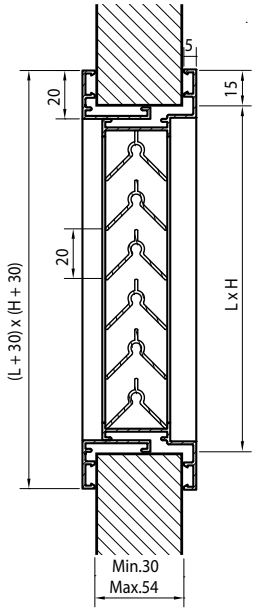
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Opaque grille with backframe and fixing screws

Dimensions
- Blade pitch: 20 mm
- Door thickness: 30 to 54 mm
- Maximum width (in one piece): 800 mm

Options
- Controllable version (type 463) on request
- Frame for 55 to 80 mm thickness

Fixing
- Screws are included

Cross-section



Stock models

Dimensions (W x H) mm	Satin anodised	Renson standard WHITE	RAL 8019	Airflow at 2 Pa (m³/h)	Airflow at 20 Pa (m³/h)	Visual free area	Physical free area
200 x 100	•			13,6	43,0	93%	39%
400 x 200	•	•	•	72,4	228,9	93%	39%
400 x 300	•			117,6	371,9	93%	39%
500 x 300	•			147,0	464,9	93%	39%
600 x 400	•			244,2	772,2	93%	39%
425 x 76	•	•	•	19,2	60,7	93%	39%

Acoustic door grille for residential sector

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Sound absorbing material: synthetic foam
- End caps: in Luran S ASA polymer (colourfast, weatherproof and UV-resistant)
- End caps: available in grey, black, cream or white

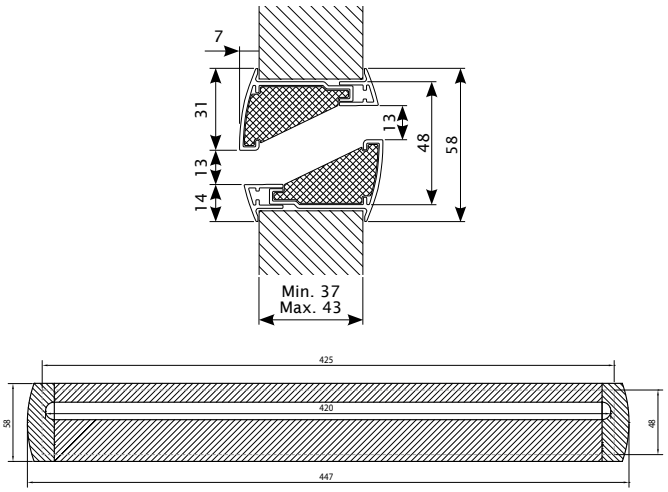
Dimensions
- Length: 425 mm
- Height: 48 mm
- Door thickness: 37 to 43 mm

Available models
- The Silendo R is available in a standard 425 x 48 mm size in the following standard colours: Renson standard WHITE (with matching white end caps), RAL 8019 (black end caps) and natural colour (grey end caps)
- Other lengths and colours available on request

Typical applications
- offices, commercial buildings, toiletdoors

ift ROSENHEIM

Cross-sections



Technical specifications	Silendo®
Airflow	(EN 13141-1)
Q at 1 Pa	17,7 m³/h
Q at 2 Pa	25,1 m³/h
Q at 10 Pa	56,1 m³/h
Q at 20 Pa	79,4 m³/h
Comfort	(EN ISO 140-10, EN ISO 717-1)
Sound reduction $D_{n,e,w}$ ($C;C_{tr}$)	32 (0;-2) dB
Technical data	
Visual free area	27%
Physical free area	27%
Colours	
Natural	•
Renson standard WHITE	•
RAL 8019	•

Invisido® 469 < Door grilles

Acoustic door grille for residential sector

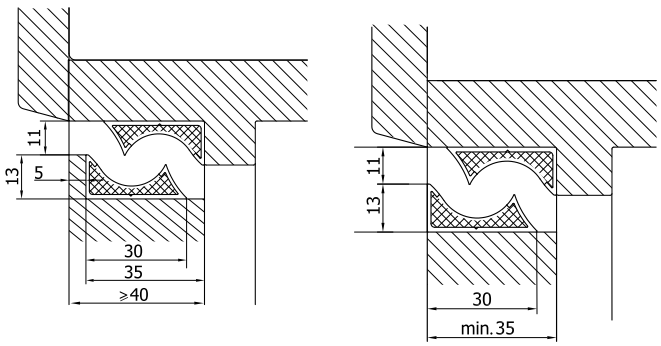
Material
- Sound absorbing material: synthetic foam
- End caps: in Luran S ASA polymer (colourfast, weatherproof and UV-resistant)
- End caps: available in grey, black, cream or white; other colors available on demand

Dimensions
- Maximum length: 2000 mm
- Standard length: 725 mm (type 730), 825 mm (type 830), 925 mm (type 930)
- Door thickness: 35 mm

Fixing
- Screws included

Typical applications
- No look-through
- Residential, aesthetical
- In combination with Renson system C⁺ and System C^{+EVO}

Cross-sections



Technical specifications	Invisido® type 469			
Airflow	(EN 13141-1)			
Q at 1 Pa	17,6 m³/h (4,9 dm³/s)			
Q at 2 Pa	25,3 m³/h			
Q at 10 Pa	58,8 m³/h			
Q at 20 Pa	84,7 m³/h			
Comfort	(EN ISO 140-10, EN ISO 717-1)			
Sound reduction $D_{n,e,w}$ ($C;C_{tr}$)	28 (-1;0) dB			
Dimensions (L)	Natural	Renson standard WHITE	RAL 9005	RAL 1015
725 mm	•	•	•	•
825 mm	•	•	•	•
925 mm	•	•	•	•

Internal acoustic door grille

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Sound absorbing material: synthetic foam

Dimensions
- Minimum dimensions: 200 x 193 mm H
- Maximum dimensions: 800 x 788 mm H
- Height in 85 mm steps (blade pitch)
- Door thickness: from 37.5 to 92 mm

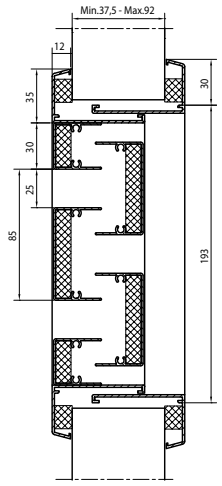
Available models
- The 468 AK/2 is available in Renson standard WHITE in the following standard sizes: 292 x 193 mm, 382 x 278 mm, 432 x 363 mm and 452 x 448 mm
- Other sizes and colours available on request

Fixing
- Screws included

Typical applications
- Schools, dressing rooms, garagedoors, central heating system rooms, hospitals

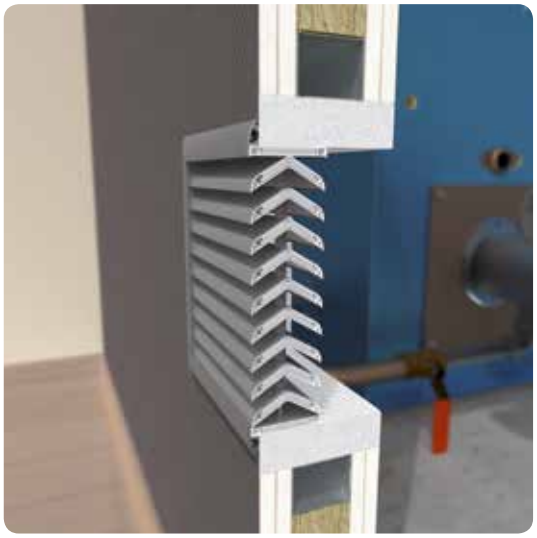
Remark: for internal use only!

Cross-section



Technical specifications	468 AK/2	
Airflow	(EN 13030)	Comfort - $D_{n,e,w}$ ($C;C_{tr}$)
K-factor (supply)	86,85	
K-factor (discharge)	89,35	
C_e coefficient	0,107	
C_d coefficient	0,106	
Q at 2 Pa - grille 292 x 193 mm	25 m³/h	30 (-1;-2) dB
Q at 2 Pa - grille 382 x 278 mm	50 m³/h	28 (-1;-2) dB
Q at 2 Pa - grille 432 x 363 mm	75 m³/h	26 (-1;-2) dB
Q at 2 Pa - grille 452 x 448 mm	100 m³/h	25 (-1;-2) dB
Comfort	(EN ISO 140-10, EN ISO 717-1)	
Sound reduction in open position R_w ($C;C_{tr}$)	8 (-1;-2) dB	
Technical data		
Visual free area	29 %	
Physical free area	29 %	
IP class (louvre with mesh)	IP2XD	

Incendo® 464 < Fire-resistant louvres



Fire-resistant louvre with angled blades, fire-resistance 60'

Material
- Blades filled with intumescent material
- Outer frame in Polystyrene
- Available in RAL 7024 (anthracite grey), RAL 9016 (traffic white) en RAL 9022 (pearl light grey)

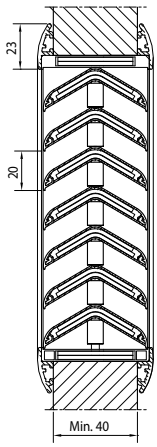
Dimensions
- Maximum dimension: 800 x 400 mm
- Minimum dimensions: 100 x 100 mm
- 464/1: with frame, 464/2: with frame and adjustable counterframe

Fixing
- With sealant and adhesive neoprene mastic

Typical applications
- Aesthetic finish, no visible vertical posts
- Tested according to EN1634-1, EN1364-1 and EN1364-2
- Fire resistance EI 60 (Integrity and thermal insulation for 1 hour) according to EN13501-2
- Suitable for installation in a wooden door panel, flexible wall, massive wall, floor or ceiling
- No visual see through

Remark: avoid contact with water, for indoor use only

Cross-section



Technical specifications	Incendo® 464
Airflow	(EN 13030)
K-factor (supply)	10,27
K-factor (discharge)	10,27
C_e coefficient	0,312
C_d coefficient	0,312
Technical specifications	
Visual free area	61 %
Physical free area	51 %
Ip class	IP2XD
Fire resistance	(EN 13501-2)
Massive (concrete) wall (100 mm)	EI 60/ EW 90 (ve i<->o)
Massive (concrete) floor (100 mm)	EI 60 (ho i<->o)
Flexible wall (metal stud gypsum plasterboard 100 mm)	EI 60 (ve i<->o)
(Wooden) doorpanel (50 mm)	EI 60 / EW 60 (ve i<->o)
(Wooden) doorpanel (40 mm)	EI 30 / EW 30 (ve i<->o)

Fire-resistant louvre with angled blades, fire-resistance 60'

Material
- Blades filled with intumescent materials (PALUSOL)
- Protection by grey-coloured synthetic sheath
- Outer frame in satin anodised aluminium (20 microns)
- Other framecolors on request.

Dimensions
- Maximum dimensions: 600 x 300 mm
- Special dimensions on request
- 465/2: door thickness min. 45 mm - max. 55 mm

Purpose
- Ventilation between two adjacent rooms
- In case of fire, cuts off the airflow and fulfils a firebreak function

Applications
- Fire-resistant constructions
- Fire-resistant conduit
- Fire doors

Remark: for indoor use only, avoid contact with water

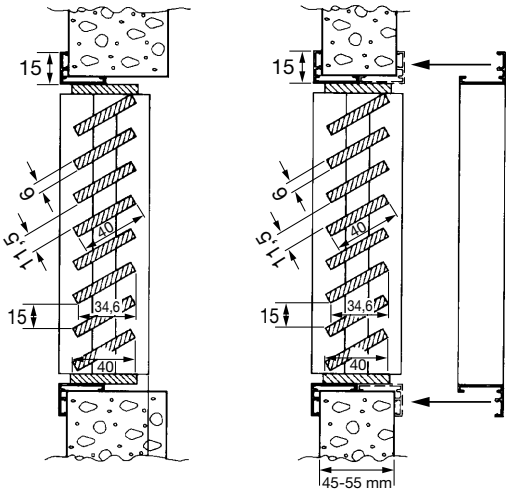
Function
- At a temperature of 120°C, the blades swell to close the vent
- Forms a static fire valve for 60 minutes

Fixing
- Secure the louvre in the opening
- Fill the gap between the louvre and the door/wall with fire-resistant mortar

Typical applications
- Fire door apartments

Stock models		
Dimensions (W x H) mm	465/1 (with frame)	465/2 (with frame and backframe)
200 x 200	•	
300 x 300	•	
400 x 200	•	•
500 x 200	•	

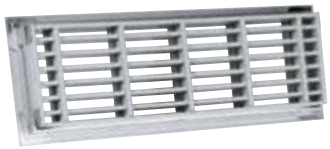
Cross-sections



465/1 with frame

465/2 with frame and backframe

Technical specifications	465
Fire resistance	Rf 1 hour
Testreport on request (Belgian BBRI test)	
Technical specifications	
Visual free area	74 %
Physical free area	57 %



Fire-resistant louvre with horizontal blades

Material
- Blades filled with intumescent materials (PALUSOL)
- Protection by grey-coloured synthetic sheath
- Outer frame in satin anodised aluminium (20 microns)
- Other framecolors on request.

Dimensions
- Maximum dimensions: 600 x 400 mm
- Dimensions on request
- 466/2: door thickness min. 45 mm - max. 55 mm

Purpose
- At normal temperature, guarantees ventilation between two adjacent rooms
- In case of fire, cuts off the airflow and fulfils a firebreak function

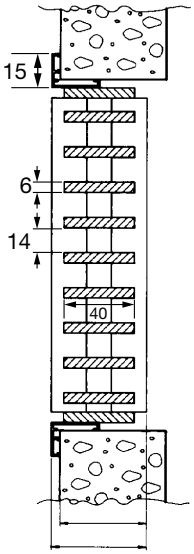
Applications
- Fire-resistant constructions
- Fire-resistant conduit
- Fire doors

Remark: for indoor use only, avoid contact with water

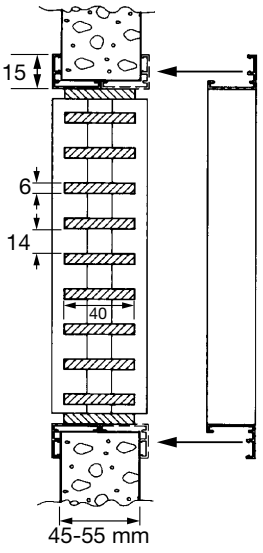
Function
- At a temperature of 120°C, the blades swell to close the vent
- Forms a static fire valve for 60 minutes

Fixing
- Secure the louvre in the opening
- Fill the gap between the louvre and the door/wall with fire-resistant mortar

Cross-sections



466/1 with frame



466/2 with frame and backframe

Technical specifications	466
Fire resistance	Rf 1 hour
Testreport on request (Belgian BBRI test)	
Technical specifications	
Visual free area	70 %
Physical free area	70 %

Round louvres

Round wall louvre (with frame)

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Frame assembled by a single weld

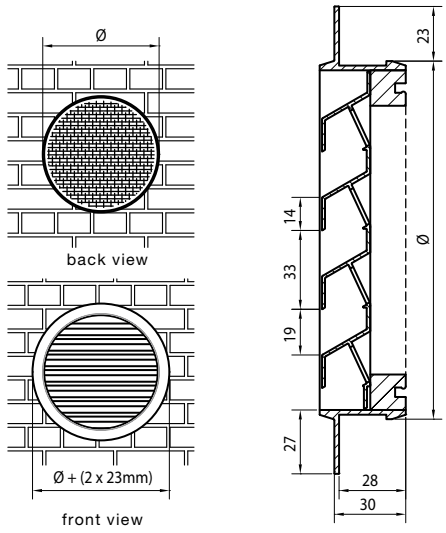
Dimensions
- Blade pitch: 33,3 mm
- Depth to fit: 28 mm
- Flange size: 23 mm
- Minimum diameter: 300 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha Pulvin colour
  - Over 1500 mm: in two parts

Fixing
- Brackets pre-fitted to the frame

Option
- Glazed-in louvre 414R *(see page 86)*

Typical applications
- Every application without specific needs

Cross-sections



Technical specifications	411R
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	40,5 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

Round wall louvre with chevron section blades

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Frame assembled by a single weld

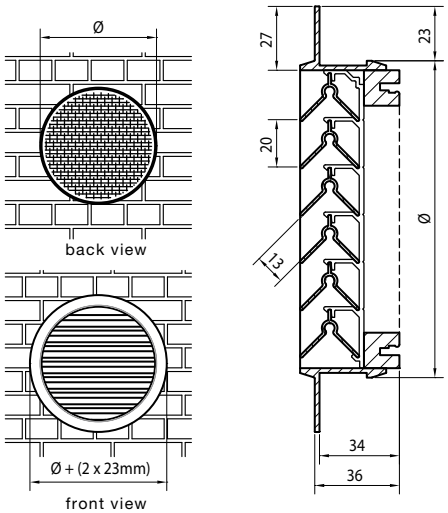
Dimensions
- Blade pitch: 20 mm chevron
- Depth to fit: 34 mm
- Flange size: 23 mm
- Minimum diameter: 300 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha Pulvin colour
  - Over 1500 mm: in two parts

Fixing
- Brackets pre-fit to the frame

Option
- Glazed-in louvre 415R *(see page 87)*

Typical applications
- High-voltage stations
- IT rooms

Cross-sections



Technical specifications	412R
Airflow	(EN 13030)
K-factor (supply)	33,80
K-factor (discharge)	33,80
C_e coefficient	0,172
C_d coefficient	0,172
Technical data	
Visual free area	93 %
Physical free area	39 %
IP class	IP2XD

Round wall louvre, heavy-duty series

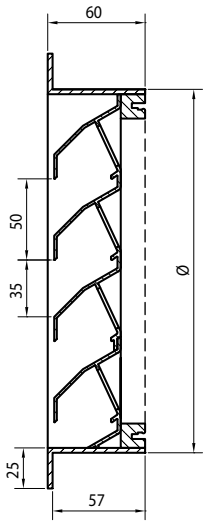
Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Finishing: anodised in satin colour (20 microns) or powder-coated in any RAL or Syntha PulvinR colour (40 microns)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Frame assembled by a single weld

Dimensions
- Blade pitch: 50 mm
- Depth to fit: 57 mm
- Flange size: 22 mm
- Minimum diameter: 400 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha Pulvin colour
  - Over 1500 mm: in two parts

Fixing
- Brackets pre-fit to the frame

Typical applications
- Applications where aesthetics and strength are key parameters

Cross-section



Technical specifications	421R
Airflow	(EN 13030)
K-factor (supply)	13,42
K-factor (discharge)	9,35
C_e coefficient	0,273
C_d coefficient	0,327
Technical data	
Visual free area	70 %
Physical free area	47 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

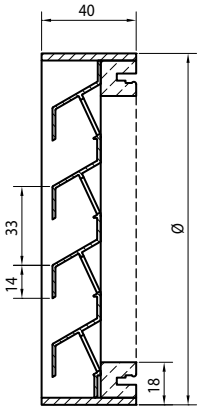
Round louvre without frame

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Depth to fit: 40 mm
- Minimum diameter: 300 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha PulvinR colour
  - Over 1500 mm: in two parts

Fixing
- Screws included

Cross-section



Technical specifications	431R
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	40,5 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

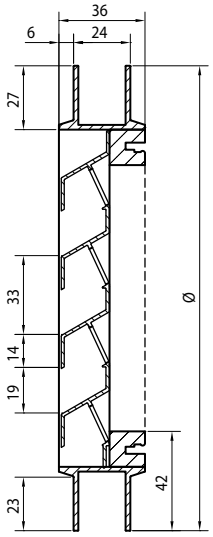
Round glazed-in louvre

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 insect screen (2.3 x 2.3 mm) or mesh (6 x 6 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)

Dimensions
- Blade pitch: 33,3 mm
- Frame thickness: 24 mm
- Minimum diameter: 340 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha PulvinR colour
  - Over 1500 mm: in two parts

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Cross-section



Technical specifications	414R
Airflow	(EN 13030)
K-factor (supply)	23,56
K-factor (discharge)	25,51
C_e coefficient	0,206
C_d coefficient	0,198
Technical data	
Visual free area	59 %
Physical free area	40,5 %
IP class (louvre with mesh; electrical installation at least 100mm from louvre)	IP2XD

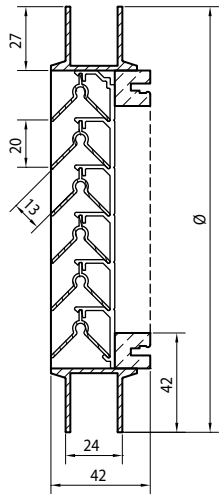
Round louvre with chevron section blade

Material
- Made from aluminium sections: AlMgSi 0.5 (according to EN 12020-2)
- Stainless steel 304 mesh (6 x 6 mm) or insect screen (2.3 x 2.3 mm) on request
- Finishing: anodized in satin/bronze colour (20 micron) or powder-coated in any RAL or Syntha Pulvin colour (40 micron)
- Frame assembled by a single weld

Dimensions
- Blade pitch: 20 mm
- Frame thickness: 24 mm
- Minimum diameter: 340 mm
- Maximum diameter:
  - 1400 mm if anodised in satin colour
  - 1500 mm if powder-coated in RAL or Syntha Pulvin colour
  - Over 1500 mm: in two parts

Fixing
- Suitable for 24, 28, 32 mm glazing sections. Other thicknesses on request.

Cross-section



Technical specifications	415R
Airflow	(EN 13030)
K-factor (supply)	33,80
K-factor (discharge)	33,80
C_e coefficient	0,172
C_d coefficient	0,172
Technical data	
Visual free area	93 %
Physical free area	39 %
IP class	IP2XD

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