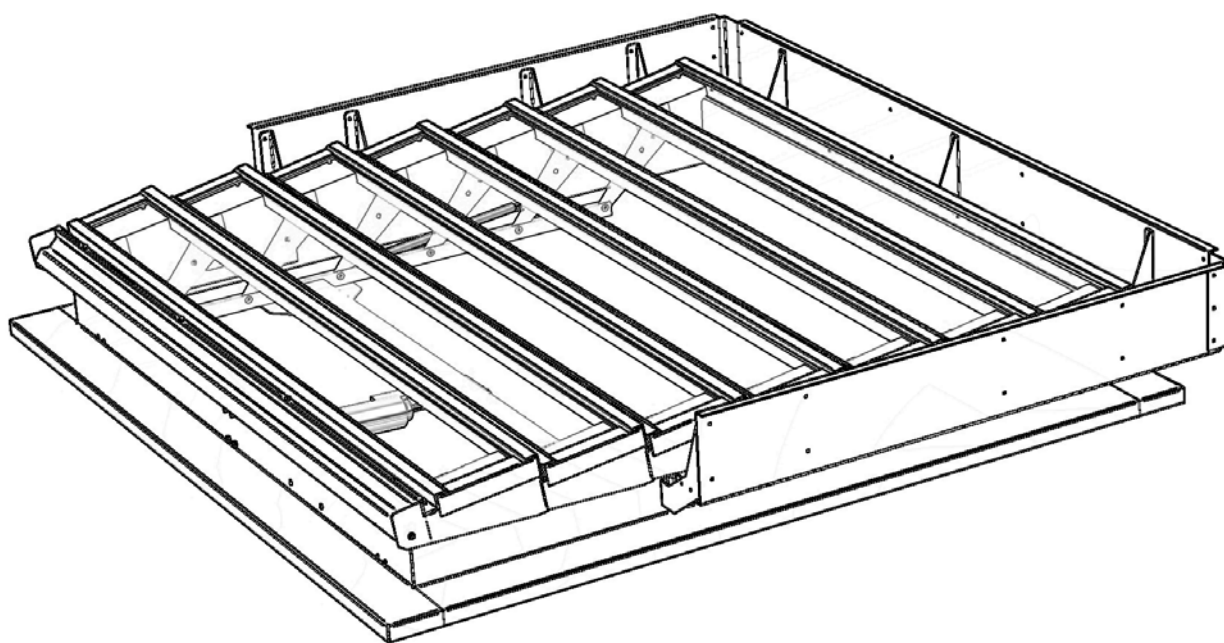


Technical catalogue



mcr LAM

LOUVERED SMOKE VENTS



Smoke exhaust, heat removal and skylight systems
Technical Catalogue 03/2024

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Graphic design and digital typesetting:
„MERCOR” S.A. – Export Department
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Technical catalogue

2024

Dear Clients,

We are pleased to present to you our technical catalogue for smoke exhaust, heat removal and skylight systems. This publication presents in detail „MERCOR” S.A. products, starting from smoke vents and skylights, through smoke curtains, roof hatches, all the way to the comprehensive review of louvered smoke vents. We believe the form in which we present our offer facilitates finding all the necessary information on the individual product series, their components, as well as detailed specifications for the elements of each product offered.

Every merchandise delivered from „MERCOR” S.A. to the Client is meticulously controlled in accordance with the highest quality assurance standards, and undergoes a number of approval tests. We take pride in providing safety through our business.

We invite you to see the full extent of our offer.

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1. | Louvered smoke vents

mcr LAM smoke vents are an element of natural smoke exhaust system. Their purpose is to remove smoke, hot combustion gases and heat energy outside the building. They allow to:

- » maintain emergency routes in a state of moderate smoke level, permitting effective evacuation,
- » enabling rescue operations by ensuring bottom passage of moderate smoke level,
- » reduce the risk of damaging or destroying the building structure,
- » limit fire losses caused by smoke and hot burning fumes.

		Roof mounted louvered vents	Façade mounted louvered vents
Parameters			
Product classification	Certificate of constancy of performance 1396-CPR-0032 (EN 12101-2)	<ul style="list-style-type: none"> » Re1000 – operational reliability during 1000 cycles of opening and closing to smoke exhaust position, » 10 000 – operational reliability during 10 000 cycles of opening and closing to ventilation position (double-function vent), » SL – operational certainty of vents under snow load N/ m², <ul style="list-style-type: none"> – SL250÷SL1300 – vents equipped with E1 electric control, – SL550÷SL2000 – vents equipped with C1, C2 pneumatic control, – SL125÷SL250 – vents equipped with C3 pneumatic control with gas spring, » WL – operational certainty of vents under wind load, <ul style="list-style-type: none"> – WL1500 – for all louvered vent types, of length 150 cm, – WL3000 – vents (max. 12 blades) of length 150 cm, – WL4000 – vents (max. 12 blades) of length 100 cm, » B300 – resistance of vents to high temperature of 300°C, » T(-25) or T(00) – resistance of vents to low temperature of -25°C or 0°C, » A_a – active smoke exhaust area, » 60s – maximum vent opening time to working position. 	<ul style="list-style-type: none"> » Re1000 – operational reliability during 1000 cycles of opening and closing to smoke exhaust position), » 10 000 – operational reliability during 10 000 cycles of opening and closing to ventilation position (double-function vent), » SL – operational certainty of vents under snow load N/m². <ul style="list-style-type: none"> – SL 0 – façade vents, » WL – operational certainty of vents under wind load, <ul style="list-style-type: none"> – WL1500 – for all louvered vent types, of length 150 cm, – WL3000 – vents (max. 12 blades) of length 150 cm, – WL4000 – vents (max. 12 blades) of length 100 cm, » B300 – resistance of vents to high temperature of 300°C, » T(-25) or T(00) – resistance of vents to low temperature of -25°C or 0°C, » A_a – active smoke exhaust area, » 60s – maximum vent opening time to working position.
Control	pneumatic	●	●
	electric 24 V-(ventilation)	●	●
Glazing	polycarbonate panel (PCA 16 mm)	●	●
	polycarbonate panel (PCA 25 mm)	●	●
	non-insulated aluminum profile (SO)(*)	●	●
	insulated aluminum profiles (SO+IZO)(**)	●	●

(*) Opaque glazing – two layers of aluminum sheet with air gap between

(**) Opaque glazing – two layers of aluminum sheet with IZO panel (extruded polystyrene 20 mm) between

2. | Exutoires de fumée à lames montés sur toit

2.1 | Description technique de la conception standard

- » classification as per Certificate of constancy of performance in accordance with EN 12101-2 (CE Certificate),
- » smoke vents designed for flat and sloping roofs, covered with tar paper or PVC foil,
- » base of height 150–250 mm, made of galvanized steel sheet of thickness 1.25 mm or aluminum sheet of thickness 2 mm,
- » bottom part of the base has a circumferential flange of width 100 mm, through which the base is fitted to the roof structure,
- » upper part of base has shape enabling water runoff,
- » thermal insulation of base made of mineral wool of thickness 20 mm; heat transfer coefficient $U=1.41 \text{ W/m}^2\text{K}$,
- » leaf glazing: **PCA 16** multi-chamber polycarbonate 16 mm thick / **PCA 25** multi-chamber polycarbonate 25 mm thick / **SO** – two layers of aluminum sheet with air gap between – opaque glazing / **SO+IZO** – two layers of aluminum sheets with 20 mm thick insulating material – opaque filling,
- » vent blades opening angle 90° ,
- » smoke exhaust control: pneumatic, electric 24 V-.

2.2 | Smoke vent design

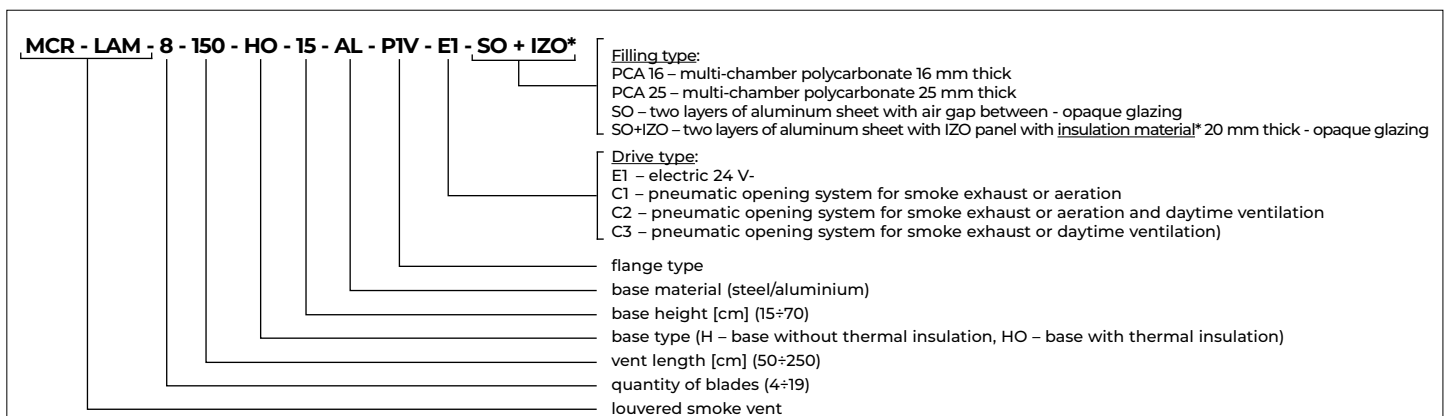


Fig. 1 Design of mcr LAM louvered smoke vent

2.3 | Non-standard options

- » vent elements (base, wind deflectors, painted to any RAL color,
- » painting the metal parts of the blades,
- » non-insulated base (H) or insulated from the outside (HO) with 20 mm thick mineral wool,
- » optional production and delivery of bottom base (plinth) of maximum height 70 cm, made of galvanized steel sheet of thickness 1.25 mm, or aluminum sheet of thickness 2 mm (non-insulated element),
- » a wide choice of base flange (top and bottom – plinth) and its length (min. 70 mm),
- » aluminum base covering enabling installation on a roof made of profiled sheet metal,
- » limit switch – open/close indication,
- » possible connection of louvered vent with a continuous rooflights through special flange.

2.4 | Vent type marking



2.5 | Technical drawings

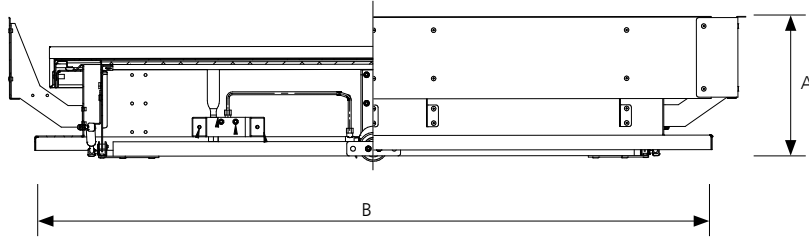


Fig. 2 Section **B-B** of mcr LAM louvered smoke vent in closed position (roof installation)

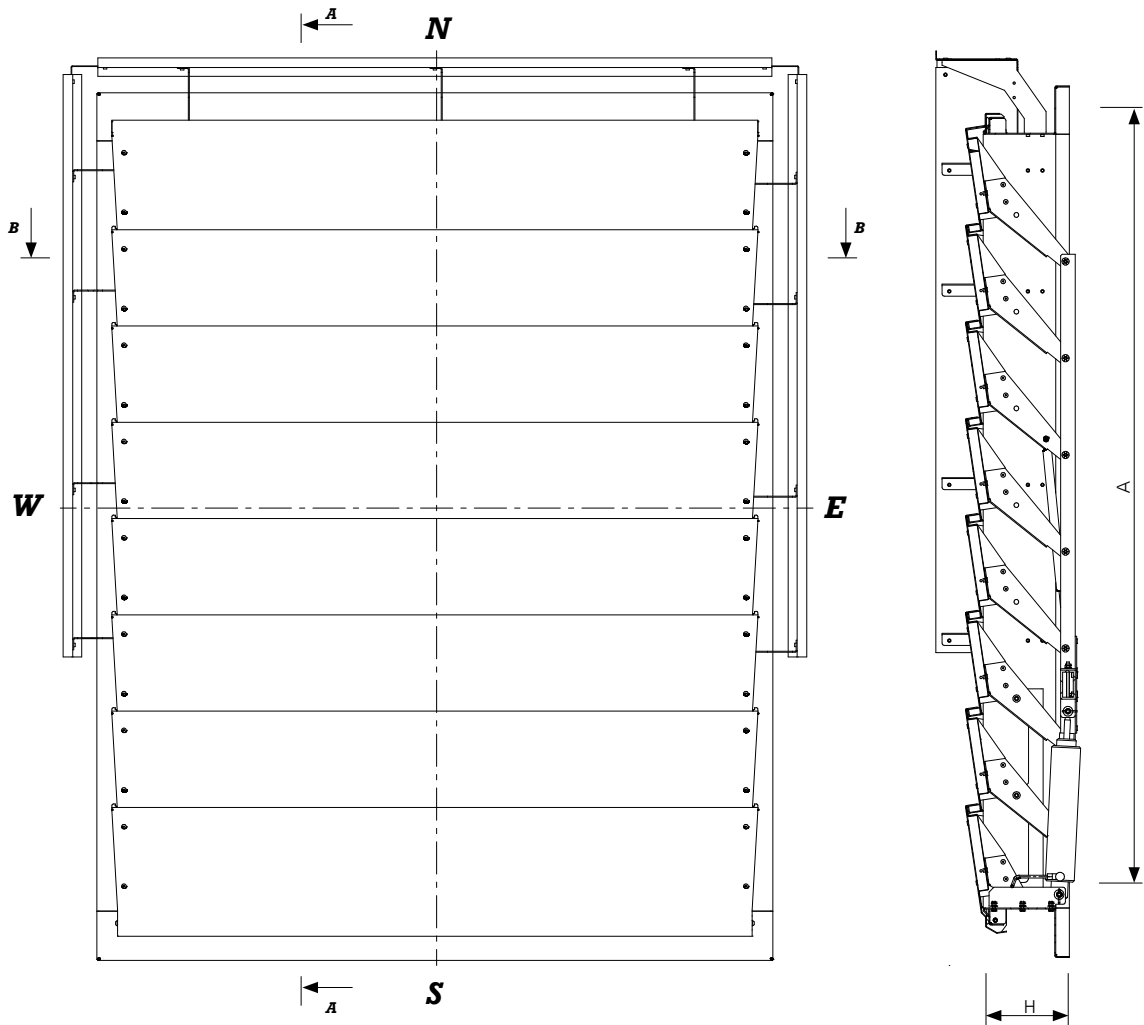


Fig. 3 Top view of mcr LAM louvered smoke vent in closed position

Fig. 4 Section **A-A** of mcr LAM louvered smoke vent in closed position (roof installation)

- A – width
- B – length
- H – height of base
- N,S,W,E - template to define correctly each flange detail

3. | mcr LAM façade mounted louvered smoke vents

3.1 | Technical description of standard

- » classification as per Certificate of constancy of performance in accordance with EN 12101-2 (CE Certificate),
- » base of height 150–250 mm, made of galvanized steel sheet of thickness 1.25 mm, or of aluminum sheet of thickness 2.0 mm,
- » thermal insulation of base made of mineral wool of thickness 20 mm; heat transfer coefficient $U=1.41 \text{ W/m}^2\text{K}$,
- » leaf glazing: **PCA 16** multi-chamber polycarbonate 16 mm thick / **PCA 25** multi-chamber polycarbonate 25 mm thick / **SO** – two layers of aluminum sheet with air gap between - opaque glazing / **SO+IZO** – two layers of aluminum sheets with 20 mm thick insulating material – opaque filling,
- » vent blades opening angle 90° ,
- » smoke exhaust control: pneumatic, electric 24 V-.

3.2 | Façade mounted vent design

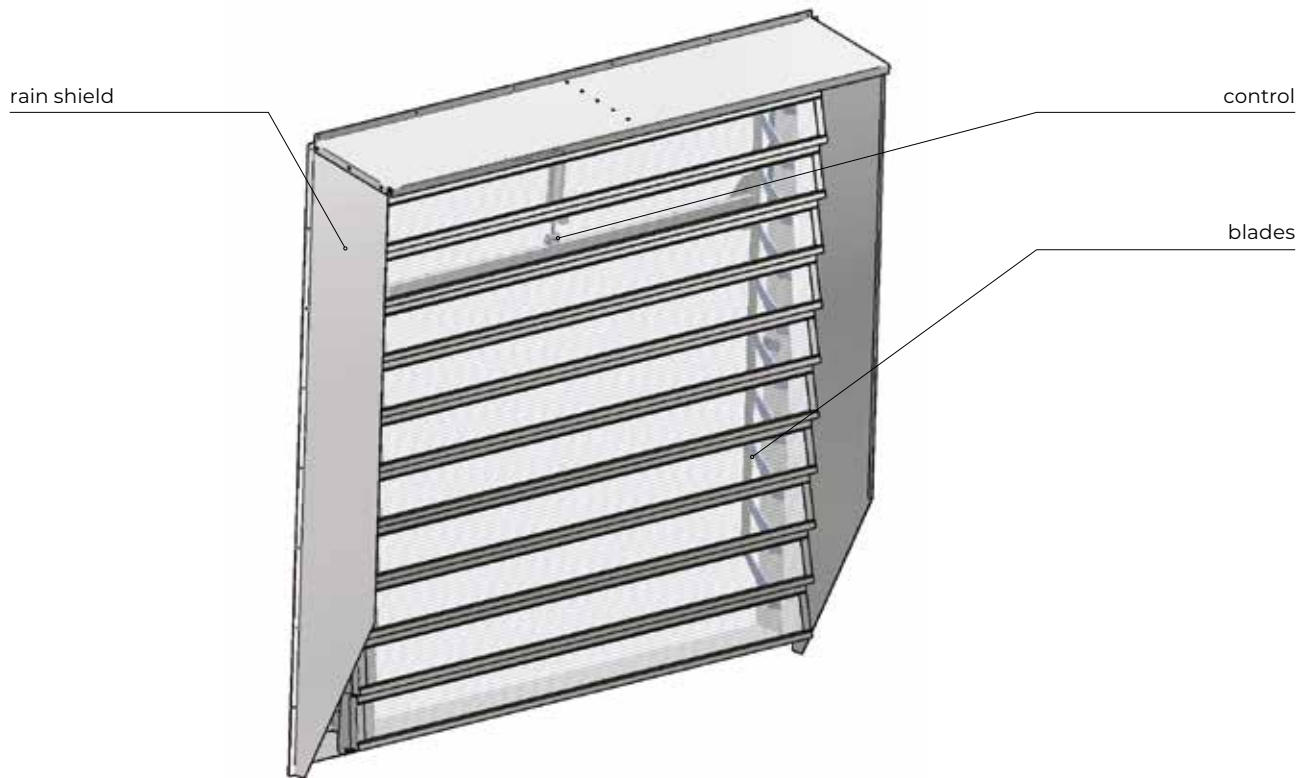


Fig. 5 Design of mcr LAM louvered smoke vent with rain shield

3.3 | Non-standard options

- » vent elements (base, rain shield, blades) painted to any RAL color,
- » non-insulated base (H),
- » wide selection of base flange types,
- » limit switch – open/close indication,
- » rain shields enhancing vent's protection against weather conditions.

3.4 | Technical drawings

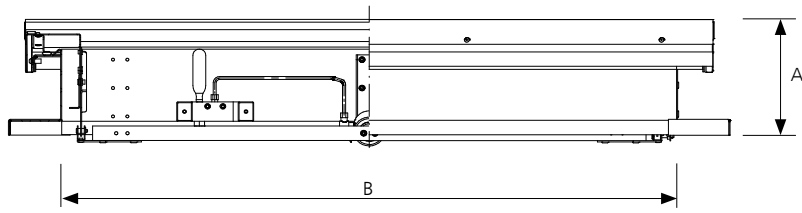


Fig. 6 Section **B-B** of mcr LAM louvered vent in closed position (façade installation)

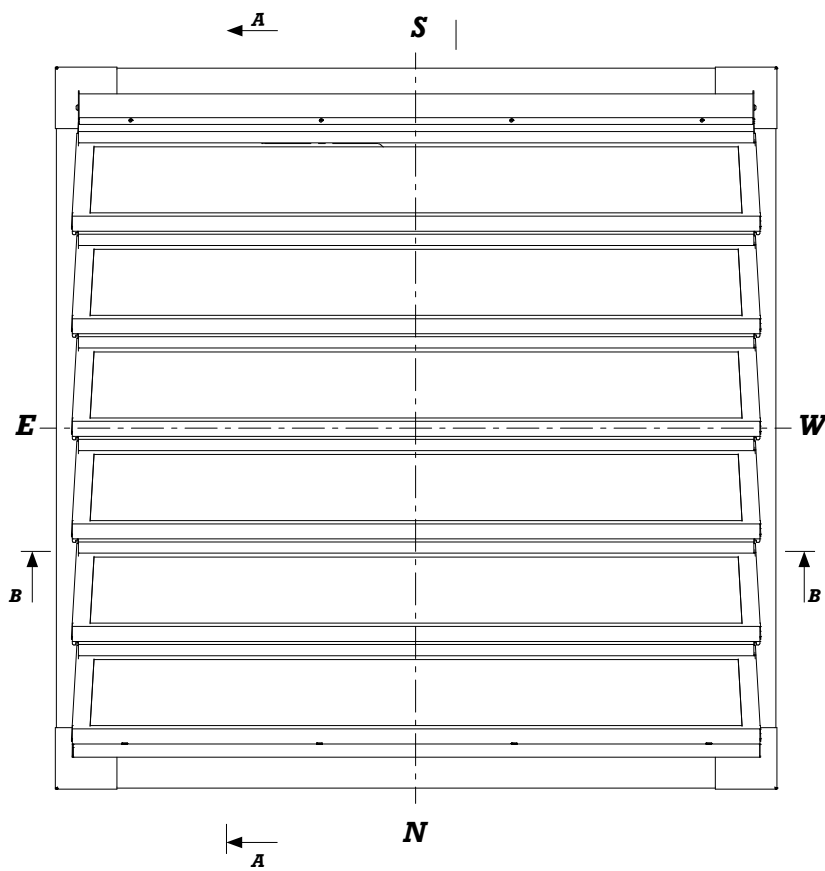


Fig. 7 Top view of mcr LAM louvered vent in closed position (façade installation)

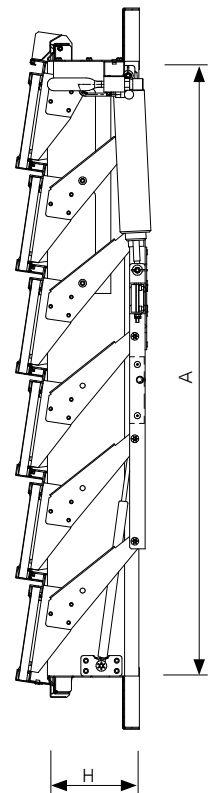


Fig. 8 Section **A-A** of mcr LAM louvered vent in closed position (façade installation)

A – height
 B – width
 H – height of base
 N,S,W,E - template to define correctly each flange detail

4. | Louvered smoke vents control

4.1 | Technical details

VENT TYPE	NUMBER OF BLADES	NOMINAL DIMENSIONS (A x B)	ACTIVE AREA ROOF [A _a]	ACTIVE AREA FAÇADE [A _a]	ELECTRIC CONTROL – POWER CONSUMPTION [A]							ESTIMATED MASS MIN(*)-MAX(**)	
					BY ELECTRIC ACTUATOR								SL 0 (installation in façade)
					SL 1300	SL 950	SL 750	SL 500	SL 250	SL 125			
[pcs.]	[mm]	[m ²]	[m ²]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[kg]		
mcr LAM 4 50	4	800 x 500	0.240	0.24	0.8	0.8	0.8	0.8	0.8	-	0.8	23 - 27	
mcr LAM 4 80	4	800 x 800	0.390	0.39	1.3	1.0	0.8	0.8	0.8	-	0.8	27 - 32	
mcr LAM 4 100	4	800 x 1000	0.496	0.49	1.3	1.0	0.8	0.8	0.8	-	0.8	30 - 36	
mcr LAM 4 120	4	800 x 1200	0.595	0.60	2.0	1.3	1.0	0.8	0.8	-	0.8	33 - 40	
mcr LAM 4 140	4	800 x 1400	0.694	0.70	2.0	1.3	1.0	0.8	0.8	-	0.8	35 - 43	
mcr LAM 4 160	4	800 x 1600	0.806	0.80	2.6	1.8	1.3	1.0	0.8	-	0.8	38 - 47	
mcr LAM 4 170	4	800 x 1700	0.857	0.85	2.6	1.8	1.3	1.0	0.8	-	0.8	40 - 49	
mcr LAM 5 50	5	1000 x 500	0.300	0.30	1.0	0.8	0.8	0.8	0.8	-	0.8	26 - 31	
mcr LAM 5 100	5	1000 x 1000	0.620	0.62	2.0	1.3	1.0	0.8	0.8	-	0.8	34 - 41	
mcr LAM 5 120	5	1000 x 1200	0.756	0.75	2.0	1.3	1.3	1.0	0.8	-	0.8	37 - 46	
mcr LAM 5 140	5	1000 x 1400	0.882	0.88	2.6	2.0	1.6	1.0	0.8	-	0.8	40 - 50	
mcr LAM 5 160	5	1000 x 1600	1.008	1.01	2 x 1.3	2.0	1.6	1.3	0.8	-	0.8	43 - 54	
mcr LAM 5 180	5	1000 x 1800	1.134	1.14	2 x 1.3	2.6	2.0	1.3	0.8	-	0.8	47 - 58	
mcr LAM 5 200	5	1000 x 2000	1.260	1.27	1 x 2.0	2.6	2.0	1.3	0.8	-	0.8	50 - 63	
mcr LAM 5 210	5	1000 x 2100	1.323	1.32	2 x 2	2 x 1.3	2.6	2.0	1.0	-	0.8	52 - 67	
mcr LAM 6 50	6	1200 x 500	0.366	0.36	2.0	1.3	1.3	1.0	0.8	-	0.8	26 - 32	
mcr LAM 6 100	6	1200 x 1000	0.756	0.75	2.0	1.3	1.3	1.0	0.8	-	0.8	38 - 47	
mcr LAM 6 120	6	1200 x 1200	0.907	0.91	2.6	2.0	1.6	1.0	0.8	-	0.8	42 - 52	
mcr LAM 6 140	6	1200 x 1400	1.058	1.06	2 x 1.3	2.0	2.0	1.3	0.8	-	0.8	45 - 57	
mcr LAM 6 160	6	1200 x 1600	1.210	1.22	2 x 1.6	2.6	2.0	1.3	0.8	-	0.8	49 - 61	
mcr LAM 6 180	6	1200 x 1800	1.382	1.37	2 x 2.0	2 x 1.3	2.0	1.6	0.8	-	0.8	53 - 66	
mcr LAM 6 200	6	1200 x 2000	1.536	1.53	2 x 2.0	2 x 1.3	2.6	2.0	1.0	-	0.8	56 - 71	
mcr LAM 6 220	6	1200 x 2200	1.690	1.68	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	60 - 76	
mcr LAM 6 240	6	1200 x 2400	1.843	1.84	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	63 - 81	
mcr LAM 6 250	6	1200 x 2500	1.920	1.92	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	67 - 85	
mcr LAM 7 50	6	1400 x 500	0.427	0.42	2.6	2.0	1.6	1.0	0.8	-	0.8	30 - 36	
mcr LAM 7 60	7	1400 x 600	0.521	0.52	2.6	2.0	1.6	1.0	0.8	-	0.8	32 - 38	
mcr LAM 7 100	7	1400 x 1000	0.882	0.88	2.6	2.0	1.6	1.0	0.8	-	0.8	42 - 52	
mcr LAM 7 120	7	1400 x 1200	1.058	1.06	2 x 1.3	2.0	2.0	1.3	0.8	-	0.8	47 - 58	
mcr LAM 7 140	7	1400 x 1400	1.235	1.24	2 x 2.0	2.6	2.0	1.3	0.8	-	0.8	51 - 63	
mcr LAM 7 160	7	1400 x 1600	1.434	1.43	2 x 2.0	2 x 1.3	2.6	2.0	0.8	-	0.8	54 - 68	
mcr LAM 7 180	7	1400 x 1800	1.613	1.61	2 x 2.0	2 x 1.3	2 x 1.3	2.0	1.0	-	0.8	58 - 73	
mcr LAM 7 200	7	1400 x 2000	1.792	1.79	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	61 - 78	
mcr LAM 7 220	7	1400 x 2200	1.971	1.97	-	2 x 2.0	2 x 2.0	2 x 1.3	1.3	-	0.8	65 - 83	
mcr LAM 7 240	7	1400 x 2400	2.150	2.15	-	2 x 2.0	2 x 2.0	2 x 1.3	1.3	-	0.8	69 - 89	
mcr LAM 7 250	7	1400 x 2500	2.240	2.24	-	2 x 2.0	2 x 2.0	2 x 1.3	1.3	-	0.8	72 - 93	
mcr LAM 8 55	8	1600 x 550	0.537	0.53	2 x 1.3	2.0	1.6	1.3	0.8	-	0.8	32 - 38	
mcr LAM 8 70	8	1600 x 700	0.694	0.69	2 x 1.3	2.0	1.6	1.3	0.8	-	0.8	40 - 50	
mcr LAM 8 100	8	1600 x 1000	1.008	1.01	2 x 1.3	2.0	1.6	1.3	0.8	-	0.8	46 - 57	
mcr LAM 8 120	8	1600 x 1200	1.210	1.22	2 x 1.6	2.6	2.0	1.3	0.8	-	0.8	52 - 65	
mcr LAM 8 140	8	1600 x 1400	1.434	1.43	2 x 2.0	2 x 1.3	2.6	2.0	0.8	-	0.8	58 - 72	
mcr LAM 8 160	8	1600 x 1600	1.638	1.63	2 x 2.0	2 x 1.6	2 x 1.3	2.0	1.0	-	0.8	63 - 79	
mcr LAM 8 180	8	1600 x 1800	1.843	1.84	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	69 - 86	
mcr LAM 8 200	8	1600 x 2000	2.048	2.05	-	2 x 2.0	2 x 1.6	2.6	1.3	-	0.8	74 - 94	

4.1 | Technical details

VENT TYPE	NUMBER OF BLADES	NOMINAL DIMENSIONS (A x B)	ACTIVE AREA ROOF [A _a]	ACTIVE AREA FAÇADE [A _a]	ELECTRIC CONTROL – POWER CONSUMPTION [A]							ESTIMATED MASS
					BY ELECTRIC ACTUATOR							
	[pcs.]	[mm]	[m ²]	[m ²]	SL 1300	SL 950	SL 750	SL 500	SL 250	SL 125	SL 0 (installation in façade)	MIN(*)-MAX(**)
				[A]	[A]	[A]	[A]	[A]	[A]	[A]	[kg]	
mcr LAM 8 220	8	1600 x 2200	2.253	2.26	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	0.8	80 - 101
mcr LAM 8 240	8	1600 x 2400	2.458	2.47	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	0.8	86 - 108
mcr LAM 8 250	8	1600 x 2500	2.560	2.57	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	0.8	91 - 114
mcr LAM 9 60	9	1800 x 600	0.670	0.67	-	2.0	1.3	1.3	0.8	-	0.8	42 - 52
mcr LAM 9 80	9	1800 x 800	0.907	0.9	-	2.0	1.3	1.3	0.8	-	0.8	45 - 55
mcr LAM 9 100	9	1800 x 1000	1.134	1.14	2 x 1.6	2.6	2.0	1.3	0.8	-	0.8	51 - 63
mcr LAM 9 120	9	1800 x 1200	1.382	1.37	2 x 2.0	2 x 1.3	2.6	1.6	0.8	-	0.8	57 - 71
mcr LAM 9 140	9	1800 x 1400	1.613	1.61	2 x 2.0	2 x 1.6	2 x 1.3	2.0	1.0	-	0.8	63 - 79
mcr LAM 9 160	9	1800 x 1600	1.843	1.84	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	69 - 86
mcr LAM 9 180	9	1800 x 1800	2.074	2.08	-	2 x 2.0	2 x 1.6	2.6	1.3	-	0.8	75 - 94
mcr LAM 9 200	9	1800 x 2000	2.304	2.31	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	81 - 102
mcr LAM 9 220	9	1800 x 2200	2.534	2.55	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	87 - 110
mcr LAM 9 240	9	1800 x 2400	2.765	2.78	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	93 - 118
mcr LAM 9 250	9	1800 x 2500	2.880	2.90	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	99 - 125
mcr LAM 10 65	10	2000 x 650	0.806	0.8	2 x 2.0	2 x 1.3	2.0	1.3	0.8	-	0.8	52 - 64
mcr LAM 10 100	10	2000 x 1000	1.260	1.27	2 x 2.0	2 x 1.3	2.0	1.3	0.8	-	0.8	55 - 68
mcr LAM 10 120	10	2000 x 1200	1.536	1.53	2 x 2.0	2 x 1.3	2.6	2.0	1.0	-	0.8	61 - 77
mcr LAM 10 140	10	2000 x 1400	1.792	1.79	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	68 - 85
mcr LAM 10 160	10	2000 x 1600	2.048	2.05	-	2 x 2.0	2 x 1.6	2.6	1.3	-	0.8	74 - 94
mcr LAM 10 180	10	2000 x 1800	2.304	2.31	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	81 - 102
mcr LAM 10 200	10	2000 x 2000	2.560	2.57	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	88 - 111
mcr LAM 10 220	10	2000 x 2200	2.816	2.84	-	-	2 x 2.0	2 x 2.0	1.3	-	1.3	94 - 120
mcr LAM 10 240	10	2000 x 2400	3.120	3.10	-	-	2 x 2.0	2 x 2.0	1.3	-	1.3	101 - 128
mcr LAM 10 250	10	2000 x 2500	3.250	3.23	-	-	2 x 2.0	2 x 2.0	1.3	-	1.3	107 - 136
mcr LAM 11 70	11	2200 x 700	0.970	0.97	2 x 2.0	2 x 1.3	2.6	2.0	0.8	-	0.8	59 - 73
mcr LAM 11 100	11	2200 x 1000	1.386	1.40	2 x 2.0	2 x 1.3	2.6	2.0	0.8	-	0.8	59 - 73
mcr LAM 11 120	11	2200 x 1200	1.690	1.68	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	66 - 83
mcr LAM 11 140	11	2200 x 1400	1.971	1.97	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	73 - 92
mcr LAM 11 160	11	2200 x 1600	2.253	2.26	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	0.8	80 - 101
mcr LAM 11 180	11	2200 x 1800	2.534	2.55	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	87 - 110
mcr LAM 11 200	11	2200 x 2000	2.816	2.84	-	-	2 x 2.6	2 x 1.6	1.6	-	1.0	94 - 120
mcr LAM 11 220	11	2200 x 2200	3.146	3.12	-	-	-	2 x 2.0	2	-	1.3	101 - 129
mcr LAM 11 240	11	2200 x 2400	3.432	3.41	-	-	-	2 x 2.0	2	-	1.3	109 - 138
mcr LAM 11 250	11	2200 x 2500	3.575	3.56	-	-	-	2 x 2.0	2.0	-	1.3	116 - 146
mcr LAM 12 80	12	2400 x 800	1.210	1.21	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	63 - 79
mcr LAM 12 100	12	2400 x 1000	1.536	1.52	-	2 x 2.0	2 x 1.3	2.6	1.0	-	0.8	63 - 79
mcr LAM 12 120	12	2400 x 1200	1.843	1.84	2 x 2.6	2 x 2.0	2 x 1.3	2.0	1.0	-	0.8	70 - 89
mcr LAM 12 140	12	2400 x 1400	2.150	2.15	-	2 x 2.0	2 x 2.0	2 x 1.3	1.3	-	0.8	78 - 99
mcr LAM 12 160	12	2400 x 1600	2.458	2.47	-	2 x 2.6	2 x 2.0	2 x 1.3	1.3	-	1.0	86 - 109
mcr LAM 12 180	12	2400 x 1800	2.765	2.78	-	-	2 x 2.0	2 x 1.6	1.6	-	1.0	93 - 118
mcr LAM 12 200	12	2400 x 2000	3.120	3.10	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	101 - 128
mcr LAM 12 220	12	2400 x 2200	3.432	3.41	-	-	-	2 x 2.6	2.6	-	1.3	109 - 138
mcr LAM 12 240	12	2400 x 2400	3.744	3.73	-	-	-	2 x 2.6	2.6	-	1.3	116 - 148

4.1 | Technical details

VENT TYPE	NUMBER OF BLADES	NOMINAL DIMENSIONS (A x B)	ACTIVE AREA ROOF [Aa]	ACTIVE AREA FAÇADE [Aa]	ELECTRIC CONTROL – POWER CONSUMPTION [A]							ESTIMATED MASS MIN(*)-MAX(**)	
					BY ELECTRIC ACTUATOR								SL 0 (installation in façade)
					SL 1300	SL 950	SL 750	SL 500	SL 250	SL 125	[A]		
[pcs.]	[mm]	[m ²]	[m ²]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[kg]		
mcr LAM 12 250	12	2400 x 2500	3.900	3.88	-	-	-	2 x 2.6	2.6	-	1.3	124 - 157	
mcr LAM 13 85	13	2600 x 850	1.392	1.39	-	-	2 x 2.0	2 x 1.3	1.3	-	1.0	75 - 95	
mcr LAM 13 120	13	2600 x 1200	1.997	1.99	-	-	2 x 2.0	2 x 1.3	1.3	-	1.0	75 - 95	
mcr LAM 14 90	14	2800 x 900	1.588	1.58	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	80 - 101	
mcr LAM 14 120	14	2800 x 1200	2.150	2.15	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	80 - 101	
mcr LAM 14 140	14	2800 x 1400	2.509	2.52	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	88 - 112	
mcr LAM 14 160	14	2800 x 1600	2.867	2.88	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	97 - 123	
mcr LAM 14 180	14	2800 x 1800	3.276	3.25	-	-	-	2 x 2.0	2.0	-	1.3	106 - 135	
mcr LAM 14 200	14	2800 x 2000	3.640	3.62	-	-	-	2 x 2.6	2.6	-	1.3	114 - 146	
mcr LAM 14 220	14	2800 x 2200	4.004	3.99	-	-	-	2 x 2.6	2.6	-	1.3	123 - 157	
mcr LAM 14 240	14	2800 x 2400	4.368	4.35	-	-	-	-	2 x 1.3 (SL400)	-	1.3	131 - 168	
mcr LAM 14 250	14	2800 x 2500	4.550	4.54	-	-	-	-	2 x 1.3 (SL400)	-	1.3	140 - 178	
mcr LAM 15 95	15	3000 x 950	1.824	1.82	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	84 - 107	
mcr LAM 15 120	15	3000 x 1200	2.304	2.30	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	84 - 107	
mcr LAM 15 140	15	3000 x 1400	2.688	2.70	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	93 - 119	
mcr LAM 15 160	15	3000 x 1600	3.072	3.09	-	-	2 x 2.6	2 x 2.0	2.0	-	1.3	103 - 131	
mcr LAM 15 180	15	3000 x 1800	3.510	3.49	-	-	-	2 x 2.0	2.0	-	1.3	112 - 143	
mcr LAM 15 200	15	3000 x 2000	3.900	3.88	-	-	-	2 x 2.6	2.6	-	1.3	121 - 155	
mcr LAM 15 210	15	3000 x 2100	4.095	4.08	-	-	-	2 x 2.6	2.6	-	1.3	125 - 160	
mcr LAM 15 220	15	3000 x 2200	4.290	4.27	-	-	-	2 x 2.6	2.6	-	1.3	130 - 166	
mcr LAM 15 230	15	3000 x 2300	4.485	4.47	-	-	-	-	2 x 1.3 (SL400)	-	1.3	134 - 172	
mcr LAM 15 240	15	3000 x 2400	4.680	4.67	-	-	-	-	2 x 1.3 (SL400)	-	1.3	139 - 178	
mcr LAM 15 250	15	3000 x 2500	4.875	4.87	-	-	-	-	2 x 1.3 (SL400)	-	1.3	148 - 189	
mcr LAM 16 105	16	3200 x 1050	2.150	2.15	-	-	-	-	2 x 1.3	2 x 0.8	0.8	89 - 113	
mcr LAM 16 120	16	3200 x 1200	2.458	2.46	-	-	-	-	2 x 1.3	2 x 0.8	0.8	89 - 113	
mcr LAM 16 140	16	3200 x 1400	2.867	2.88	-	-	-	-	2 x 1.3	2 x 0.8	0.8	98 - 125	
mcr LAM 16 160	16	3200 x 1600	3.277	3.30	-	-	-	-	2 x 1.3	2 x 0.8	0.8	108 - 138	
mcr LAM 16 180	16	3200 x 1800	3.744	3.72	-	-	-	-	2 x 1.3	2 x 0.8	0.8	118 - 150	
mcr LAM 16 200	16	3200 x 2000	4.160	4.14	-	-	-	-	2 x 1.3	2 x 0.8	0.8	127 - 163	
mcr LAM 16 220	16	3200 x 2200	4.576	4.56	-	-	-	-	2 x 1.3	2 x 0.8	0.8	137 - 176	
mcr LAM 16 240	16	3200 x 2400	4.992	4.98	-	-	-	-	2 x 1.3	2 x 1.0	0.8	146 - 188	
mcr LAM 16 250	16	3200 x 2500	5.200	5.19	-	-	-	-	2 x 1.3	2 x 1.0	0.8	156 - 199	
mcr LAM 17 110	17	3400 x 1100	2.394	2.39	-	-	-	-	2 x 1.3	2 x 0.8	0.8	93 - 119	
mcr LAM 17 120	17	3400 x 1200	2.611	2.61	-	-	-	-	2 x 1.3	2 x 0.8	0.8	93 - 119	
mcr LAM 17 140	17	3400 x 1400	3.046	3.06	-	-	-	-	2 x 1.3	2 x 0.8	0.8	104 - 132	
mcr LAM 17 160	17	3400 x 1600	3.536	3.51	-	-	-	-	2 x 1.3	2 x 0.8	0.8	114 - 145	
mcr LAM 17 180	17	3400 x 1800	3.978	3.96	-	-	-	-	2 x 1.3	2 x 0.8	0.8	124 - 158	
mcr LAM 17 200	17	3400 x 2000	4.420	4.40	-	-	-	-	2 x 1.3	2 x 0.8	0.8	134 - 172	
mcr LAM 17 220	17	3400 x 2200	4.862	4.85	-	-	-	-	2 x 1.3	2 x 1.0	0.8	144 - 185	
mcr LAM 17 240	17	3400 x 2400	5.304	5.30	-	-	-	-	2 x 1.3	2 x 1.0	0.8	154 - 198	
mcr LAM 17 250	17	3400 x 2500	5.525	5.52	-	-	-	-	2 x 1.3	2 x 1.0	0.8	159 - 205	

4.1 | Technical details

VENT TYPE	NUMBER OF BLADES	NOMINAL DIMENSIONS (A x B)	ACTIVE AREA ROOF [Aa]	ACTIVE AREA FAÇADE [Aa]	ELECTRIC CONTROL – POWER CONSUMPTION [A]							ESTIMATED MASS
					BY ELECTRIC ACTUATOR							
	[pcs.]	[mm]	[m²]	[m²]	SL 1300	SL 950	SL 750	SL 500	SL 250	SL 125	MIN(*)-MAX(**)	
					[A]	[A]	[A]	[A]	[A]	[A]	[kg]	
mcr LAM 18 115	18	3600 x 1150	2.650	2.65	-	-	-	-	2 x 1.3	2 x 0.8	0.8	98 - 125
mcr LAM 18 120	18	3600 x 1200	2.765	2.77	-	-	-	-	2 x 1.3	2 x 0.8	0.8	98 - 125
mcr LAM 18 140	18	3600 x 1400	3.226	3.24	-	-	-	-	2 x 1.3	2 x 0.8	w0.8	109 - 139
mcr LAM 18 160	18	3600 x 1600	3.744	3.72	-	-	-	-	2 x 1.3	2 x 0.8	0.8	119 - 153
mcr LAM 18 180	18	3600 x 1800	4.212	4.19	-	-	-	-	2 x 1.3	2 x 0.8	0.8	130 - 167
mcr LAM 18 200	18	3600 x 2000	4.680	4.66	-	-	-	-	2 x 1.3	2 x 0.8	0.8	140 - 181
mcr LAM 18 220	18	3600 x 2200	5.148	5.14	-	-	-	-	2 x 1.3	2 x 1.0	0.8	151 - 195
mcr LAM 18 240	18	3600 x 2400	5.616	5.61	-	-	-	-	2 x 1.3	2 x 1.0	0.8	162 - 209
mcr LAM 18 250	18	3600 x 2500	5.850	5.85	-	-	-	-	2 x 1.3	2 x 1.0	0.8	167 - 216
mcr LAM 19 120	19	3800 x 1200	2.918	2.93	-	-	-	-	2 x 1.3	2 x 0.8	2 x 0.8	103 - 131
mcr LAM 19 140	19	3800 x 1400	3.405	3.43	-	-	-	-	2 x 1.3	2 x 0.8	2 x 0.8	114 - 145
mcr LAM 19 160	19	3800 x 1600	3.952	3.93	-	-	-	-	2 x 1.3	2 x 0.8	2 x 0.8	125 - 160
mcr LAM 19 180	19	3800 x 1800	4.446	4.43	-	-	-	-	2 x 1.3	2 x 0.8	2 x 0.8	136 - 175
mcr LAM 19 200	19	3800 x 2000	4.940	4.93	-	-	-	-	2 x 1.3	2 x 1.0	2 x 0.8	147 - 189
mcr LAM 19 220	19	3800 x 2200	5.434	5.43	-	-	-	-	2 x 1.3	2 x 1.0	2 x 0.8	158 - 204
mcr LAM 19 240	19	3800w x 2400	5.928	5.93	-	-	-	-	2 x 1.3	-	2 x 0.8	169 - 219
mcr LAM 19 250	19	3800 x 2500	6.175	6.18	-	-	-	-	2 x 1.3	-	2 x 0.8	175 - 226

(*) minimum weight value: mcr LAM louvered smoke vent with wind deflectors and aluminum base of height 20 cm; base without insulation (H), blades without insulation (S)

(**) maximum weight value: mcr LAM louvered smoke vent with wind deflectors and aluminum base of height 20 cm insulated with mineral wool of thickness 20 mm (HO); blades insulated with mineral wool of thickness 20 mm (SO+IZO)

4.2 | Louvered smoke vents control – description

For correct operation, louvered smoke vents require connecting to devices controlling their opening and closing. A set of such devices constitutes a system for smoke exhaust control or smoke exhaust and ventilation control.

Depending on the type of devices used, it may be designed as a:

- » pneumatic smoke exhaust control system,
- » 24 V- electric smoke exhaust control system with ventilation function,
- » pneumatic and electric control system; the pneumatic part is responsible for smoke exhaust, while the 230 V~ electric part – for ventilation.

Smoke exhaust control systems are activated as follows:

1. **automatically** – through thermal release valve installed in the vent (pneumatic system) or by optical smoke sensors (electric system),
2. **manually** – by a release of CO₂ cartridges in alarm box (pneumatic system) or by operation of RPO-1 emergency pushbutton (electric system),
3. **FAS signal** – by external impulse from fire alarm system (FAS) sent to an electromagnet installed in the alarm box (pneumatic system), or directly to smoke exhaust control unit (electric system).

Louvered smoke vent control types

- C1** – vent with pneumatic actuator with thermal release valve – CO₂ opening only (manual closing from roof),
- C2** – vent with pneumatic actuator with thermal release valve – CO₂ opening and closing,
- C3** – vent with pneumatic actuator with thermal release valve – CO₂ opening only, with gas spring for closing,
- E1** – vent with 24 V- electric actuator,
- E2** – vent with 230 V~ electric actuator for daily ventilation.

5. | **Installation**

5.1 | **Installation of louvered vents on the roof**

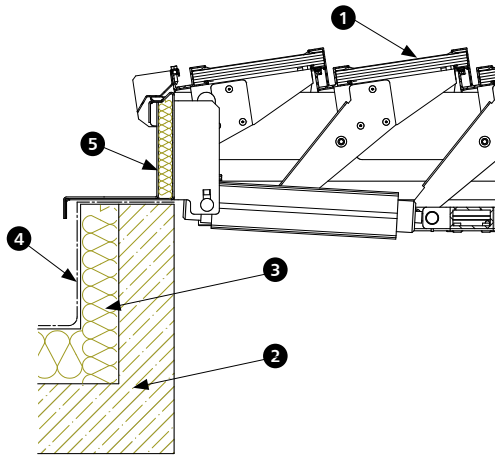


Fig. 9 Installation of louvered vent on existing concrete plinth

- 1. louvered vent
- 2. roof plinth
- 3. thermal insulation of plinth
- 4. waterproof insulation of plinth and roof
- 5. thermal insulation of vent base

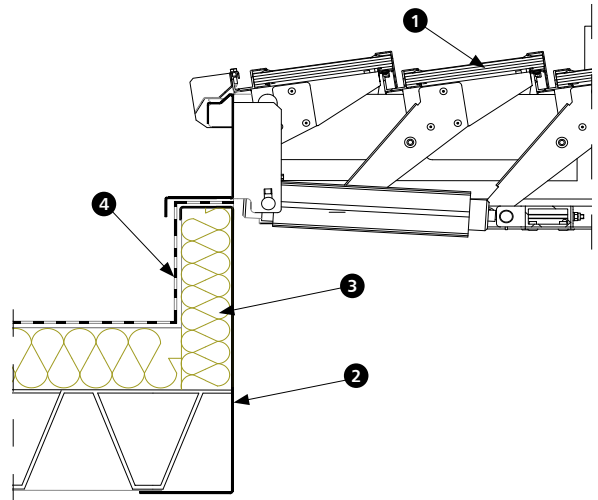


Fig. 10 Installation of louvered vent on existing steel plinth

- 1. louvered vent
- 2. additional bottom base or existing steel plinth
- 3. thermal insulation
- 4. waterproof insulation

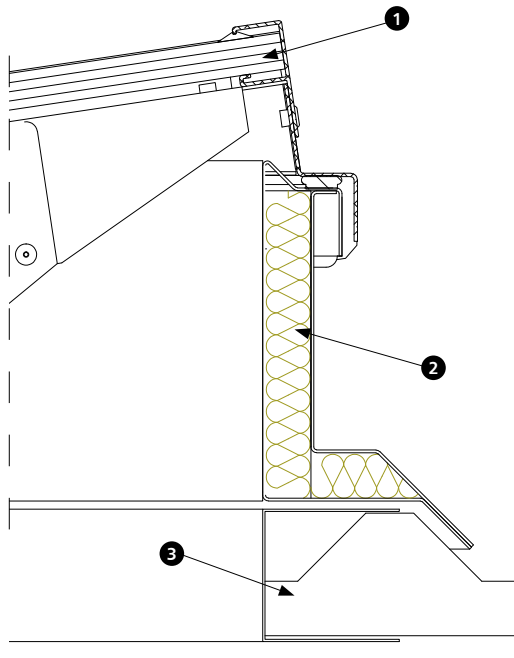


Fig. 11 Installation of louvered vent on a sheet-covered system roof

- 1. louvered vent
- 2. base insulation
- 3. system roofing

5.2 | Installation of louvered vents in the wall (façade)

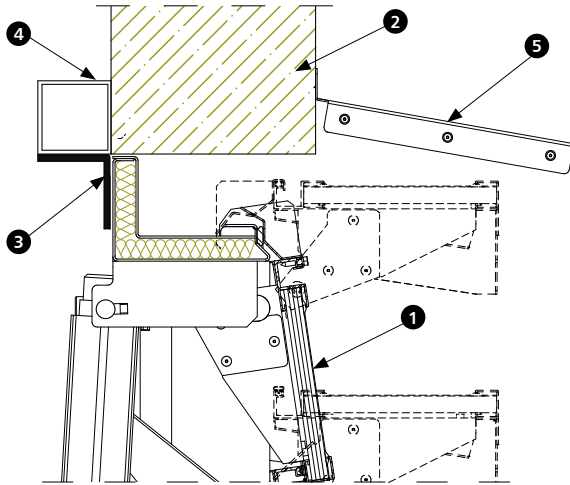


Fig. 12 Installation of louvered vent in the wall (façade) using additional steel profiles

- 1. louvered vent
- 2. wall (façade)
- 3. fixing angle profile
- 4. supporting steel profile
- 5. rain shield (optional)

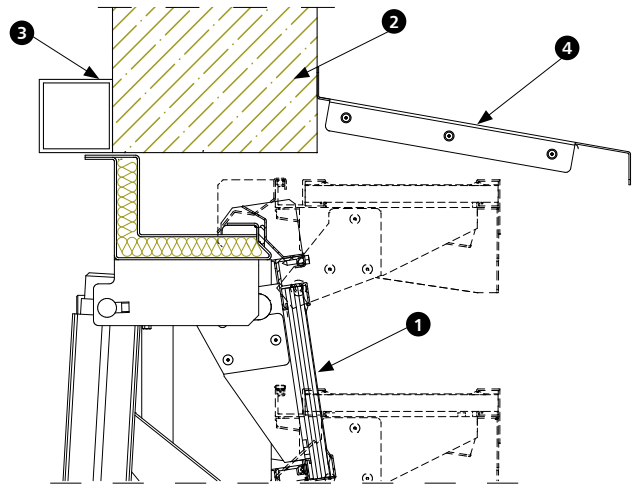


Fig. 13 Installation of louvered vent in the wall (façade) using additional steel profile

- 1. louvered vent
- 2. wall (façade)
- 3. supporting steel profile
- 4. rain shield (optional)

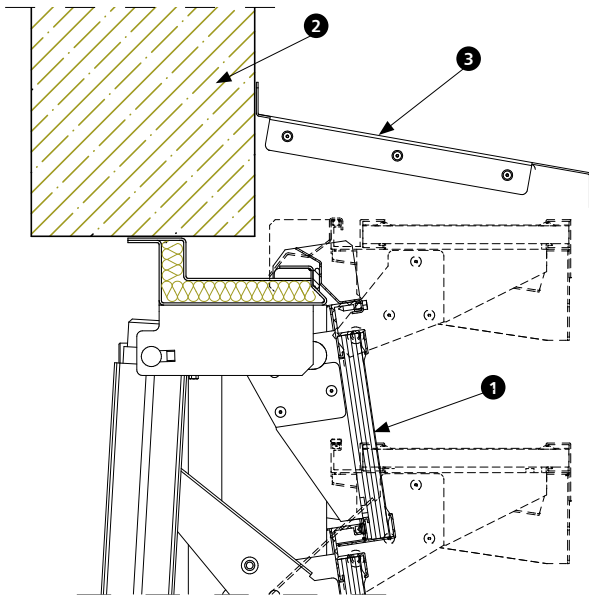


Fig. 14 Installation of louvered vent directly in the wall (façade)

- 1. louvered vent
- 2. wall (façade)
- 3. rain shield (recommended)

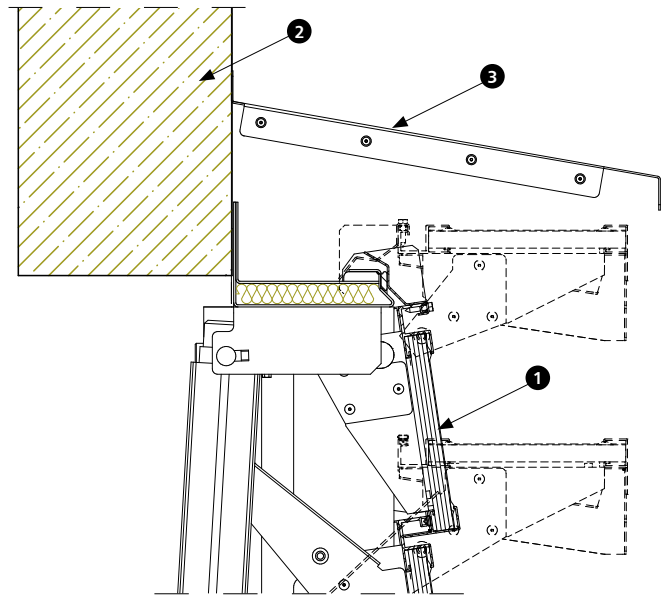




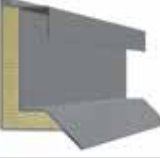






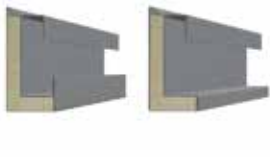



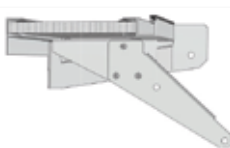
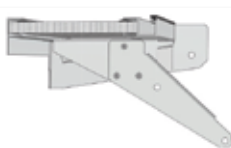
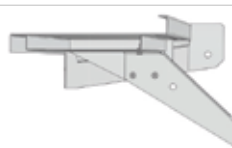
Fig. 15 Installation of louvered vent directly on the wall (façade) from the outside

- 1. louvered vent
- 2. wall (façade)
- 3. rain shield (recommended)

6. | Flange types

TYPE	FLANGE WITH INSULATION		FLANGE WITHOUT INSULATION	APPLICATION
	V(*)	H(**)		
P1				installation on existing plinth
P2				installation on sandwich type roofs
P3				façade vents,
P4				façade vents
P11				vents connected with continuous rooflights

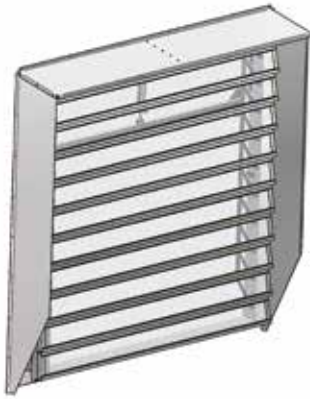
7. | Fillings

TYPE	MULTI-CHAMBER POLYCARBONATE PCA 16 (*)	MULTI-CHAMBER POLYCARBONATE PCA 25 (*)	ALUMINUM SHEET NON-INSULATED (S0) (**)	ALUMINUM SHEET INSULATED (SO+IZO) (***)
				
SMOKE VENTS mcr LAM	•	•	•	•

(*) Blade glazing with multi-chamber polycarbonate panel of thickness 16 mm or 25 mm, OPAL or CLEAR
 (**) Opaque glazing – two layers of aluminum sheet with air gap between
 (***) Opaque glazing – two layers of aluminum sheet with insulation

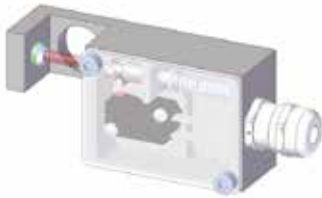
8. | Additional equipment

» **Rain shield**



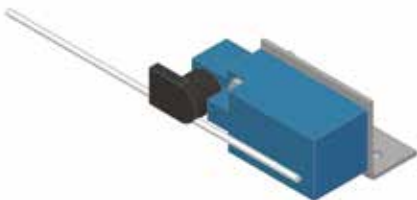
- » rain shields enhancing weather-proof properties,
- » can be an element of façade vent equipment.

» **Thermo switch**



- » Thermo switch with alcohol-ampule thermal fuse, installed in louvered vent base with E1 type electric control,
- » connected between the control unit and the vent actuator,
- » connected constantly to 24 V- voltage (actuators are disconnected from power supply); after the thermal fuse breaks, voltage is supplied to actuators as a result of temperature increase, causing vent opening. A new fuse must be provided in order to close the vent.

» **Limit switch**



- » Limit switch indicating open and/or closed position of blades.



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