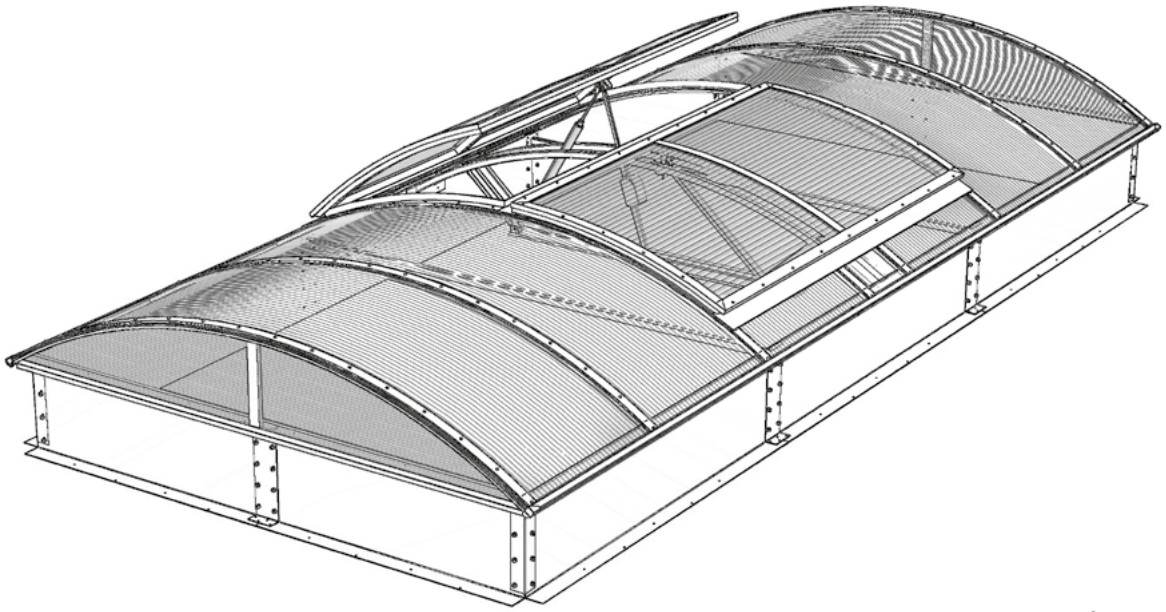
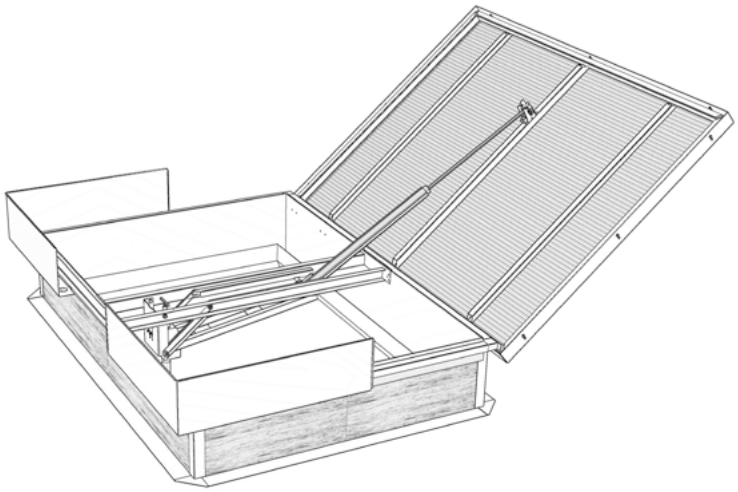
2022

Technical catalogue





mcr PROLIGHT

SMOKE VENTS, FIXED SKYLIGHTS,
ROOF HATCHES, VENTILATION VENTS
CONTINUOS ROOFLIGHTS WITH SMOKE VENTS

Smoke exhaust, heat removal and skylight systems
Technical Catalogue 2022

Graphic design and digital typesetting:
„MERCOR" S.A. – Export Department
2022 MERCOR Gdańsk

mcr PROLIGHT | Table of contents

Technical catalogue

2022

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, new generation roof hatches, all the way to the comprehensive review of our control systems. 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.

„MERCOR" S.A. - Export Department

Electronic copy
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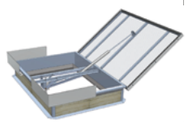
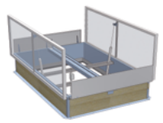
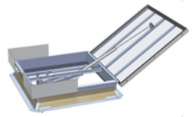
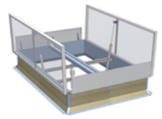
1.| Smoke vents mcr PROLIGHT

Smoke vents are the main element of any natural smoke exhaust system; their purpose is to extract smoke, fire fumes and heat energy from enclosed areas to the outside of the building. They allow to:
» maintain emergency routes in a state of moderate smoke level, permitting effective evacuation,
» carry out rescue operations by locating fire,
» reduce the risk of damaging or destroying the building structure by a sudden decrease in temperature.

	Parameters	C/ E vent	DVP vent	NG-A vent	DVPS vent
					
Product classification	Certificate of Conformity 1396-CPR-0040 as per EN 12101-2	» **Re300 or Re50** – operational reliability during 300/50 cycles of opening and closing to smoke exhaust position, and 10 000 cycles to ventilation position (double function vent), » **WL1500 or WL750** – operational certainty of vents under wind stress equivalent to 1500 Pa or 750 Pa (depending on type, size and accessories), » **T(-25) or T(00)** – resistance of vents to low temperature of -25°C or 0°C, » **B300 or B600** – resistance of vents to high temperature of 300°C or 600°C (depending on type and accessories), » **SL:** 250, 550, 750, 950, 1300, 1600, 2000 - operational certainty of vents under snow load N/m^2			
Control	Pneumatic (smoke exhaust)	●	●	●	●
	Electric 230V~ (ventilation)	●	●	●	●
	Electric 24V- (smoke exhaust + daily ventilation)	●	●	●	●
	Pneumatic (gas springs) (smoke exhaust and/or ventilation)	●	●	-	-
Glazing	multi-chamber polycarbonate panel	●	●	●	●
	acrylic dome (*)	●	-	●	-
	solid polycarbonate dome (*)	●	-	●	-
	ALu sandwich panel (**)	●	●	●	●
	classification B_{ROOF}(t1) (***)	●	●	●	●
	multi-chamber polycarbonate panel and envelope cover(*)	●	●	●	●
	multi-chamber polycarbonate panel and single or double -layer acrylic dome or solid polycarbonate dome(*)	●	-	●	-

(*) Applies to selected vent sizes.
(**) ALU sandwich panel: aluminum - thermal insulation - aluminum
(***) B_{ROOF}(t1) glazing (multi-chamber polycarbonate of thickness ≥ 10 mm and polyester panel)

1.1.| Single-leaf smoke vents with straight base – type C, E

1.1.1 | Technical description of standard

» classification as per Certificate of Conformity in accordance with EN 12101-2 (CE Certificate),
» type C smoke vents (squared) and type E (rectangular) smoke vents for flat and pitched roofs covered with roofing paper or PVC membrane,
» dimensional range of smoke vents:
- C type (squared): 100x100 cm ÷ 200x200 cm
- E type (rectangular): 100x120 cm ÷ 200x250 cm
» straight base of height 300 mm or 500 mm made of galvanized steel sheet of 1.25 mm thickness
» 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,
» base standard: mcr Prolight: thermal insulation of base made of mineral wool of thickness 20 mm; heat transfer coefficient U=1.41 W/m^{2}K, circumferential strip in the upper part of base, made of galvanized steel sheet, used for fixing flashings,
» leaf glazing: multi-chamber polycarbonate panel, acrylic dome, solid polycarbonate dome, sandwich panel, multi-chamber polycarbonate panel and single or double-layer acrylic dome or solid polycarbonate dome, multi-chamber polycarbonate panel with aluminum envelope cover and glazing of B_{ROOF} (t1) class (details in section 4),
» leaf opening angle ≥ 140°,
» hinges fixing the leaf to base installed at lengthwise side of vent,
» smoke exhaust control: pneumatic, electric 24V-, mechanic,
» ventilation control: electric 230V~,
» optional increased active smoke exhaust area (Aa) through the use of wind deflectors and/or inlet deflector.

1.1.2 | Smoke vent design

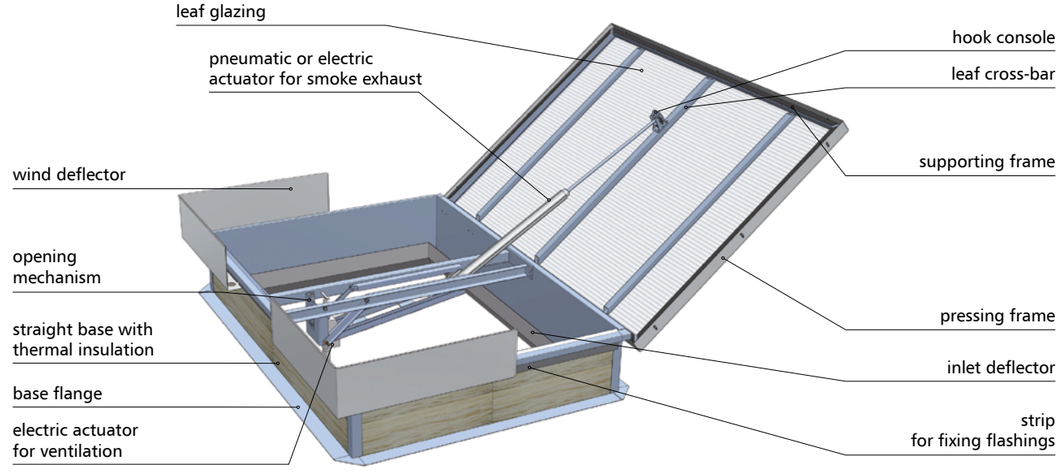


Fig.1 Design of mcr PROLIGHT E smoke vent equipped with wind deflectors and inlet deflector, with pneumatic actuator for smoke exhaust and electric actuator for ventilation

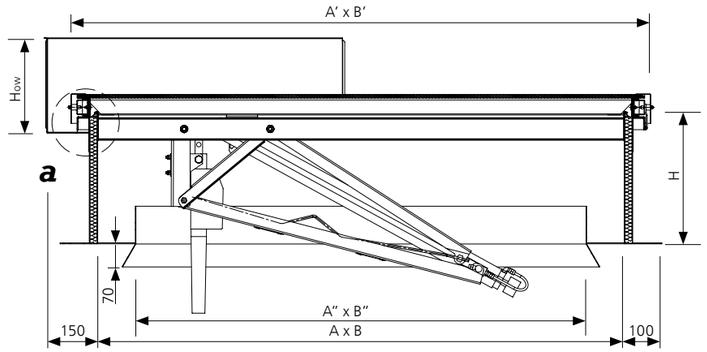
1.1.3| Non-standard options

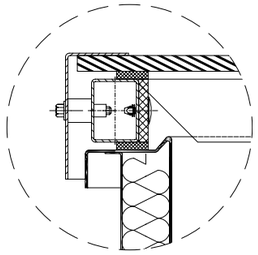
» vent elements painted to any RAL color - applies to wind deflectors, pressing frame, envelope cover, inlet deflector and base,
» thermal insulation of base: PIR panel of 30 mm thickness, heat transfer coefficient U=0.68 W/m^{2}K,
» base made of aluminium sheet of 2,00 mm thickness,
» custom dimensions of clear opening of vent base,
» custom base height within 200 mm(*) ÷ 700 mm,
» custom width of circumferential flange of base,
» circumferential strip for fixing roof flashings made of PVC coated metal sheet,
» base, inlet deflector and opening mechanism made of stainless steel,
» broad range of optional accessories,
» roof access option available..

(*) Base height below 300 mm available only if a plinth is designed for the vent, ensuring total height (vent+plinth) of min. 300 mm.

1.1.4 | Technical drawings

» **Smoke vent with wind deflectors and inlet deflector, with pneumatic control for smoke exhaust and electric actuator for ventilation**





Detail **a** – mcr PROLIGHT

Fig.2 *Section **B-B** of mcr PROLIGHT C or E smoke vent in closed position, dimensions in [mm]*

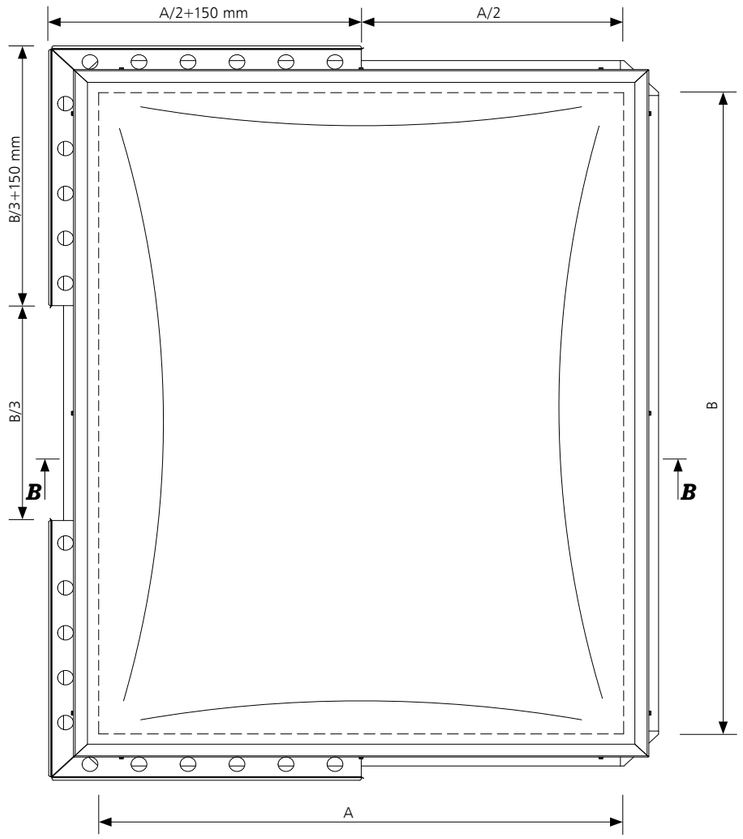


Fig.3 *Top view of mcr PROLIGHT C or E smoke vent in closed position, dimensions in [mm]*

A, B – nominal dimensions [mm], clear opening of smoke vent
A', B' – total dimensions of smoke vent leaf A'=A+135 mm, B'=B+135 mm
A'', B'' – clear opening of inlet deflector A''=A–200 mm, B''=B–200 mm
H – smoke vent base height [mm]
H_{ow} – wind deflector height 100 mm ≤ How ≤ 450 mm

1.1.5.1 | Technical details

VENT Type	NOMINAL DIMENSIONS (*)	BASE OF MIN. H=500 mm			BASE OF MIN. H=300 mm			ESTIMATED WEIGHT(**)
		ACTIVE AREA A_a [m^2]			ACTIVE AREA A_a [m^2]			
	A x B	STANDARD			STANDARD			
	[mm]	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	[kg]
C 100	1000 x 1000	0,72	0,71	0,79	0,64	0,67	0,75	76
C 110	1100 x 1100	0,85	0,85	0,96	0,74	0,80	0,92	82
C 115	1150 x 1150	0,91	0,93	1,04	0,79	0,87	1,01	85
C 120	1200 x 1200	0,98	1,01	1,14	0,85	0,95	1,09	88
C 125	1250 x 1250	1,05	1,09	1,25	0,91	1,03	1,19	91
C 130	1300 x 1300	1,13	1,17	1,35	0,96	1,12	1,28	94
C 135	1350 x 1350	1,20	1,26	1,46	1,04	1,20	1,40	102
C 140	1400 x 1400	1,27	1,35	1,57	1,10	1,27	1,51	105
C 150	1500 x 1500	1,44	1,55	1,80	1,22	1,46	1,73	117
C 155	1550 x 1550	1,51	1,63	1,92	1,30	1,56	1,85	120
C 160	1600 x 1600	1,61	1,74	2,05	1,36	1,66	1,97	124
C 170	1700 x 1700	1,76	1,97	2,34	1,50	1,88	2,23	140
C 180	1800 x 1800	1,94	2,20	2,62	1,65	2,11	2,49	147
C 190	1900 x 1900	2,13	2,45	2,92	1,81	2,35	2,82	154
C 195	1950 x 1950	2,24	2,55	3,08	1,86	2,43	2,97	157
C 200	2000 x 2000	2,32	2,68	3,24	1,96	2,56	3,12	161
E 100/120	1000 x 1200	0,85	0,84	0,95	0,74	0,79	0,91	82
E 100/130	1000 x 1300	0,92	0,91	1,03	0,79	0,86	0,99	85
E 100/140	1000 x 1400	0,98	0,98	1,11	0,85	0,92	1,06	88
E 100/150	1000 x 1500	1,04	1,05	1,19	0,90	0,99	1,14	95
E 100/160	1000 x 1600	1,10	1,12	1,26	0,94	1,06	1,22	98
E 100/180	1000 x 1800	1,22	1,24	1,44	1,03	1,19	1,37	104
E 100/190	1000 x 1900	1,27	1,31	1,52	1,07	1,25	1,44	107
E 100/200	1000 x 2000	1,34	1,38	1,60	1,12	1,32	1,54	110
E 100/210	1000 x 2100	1,40	1,45	1,68	1,16	1,39	1,62	113
E 100/220	1000 x 2200	1,45	1,52	1,76	1,19	1,45	1,69	116
E 100/230	1000 x 2300	1,50	1,59	1,84	1,22	1,50	1,77	119
E 100/240	1000 x 2400	1,56	1,66	1,92	1,27	1,56	1,85	122
E 100/250	1000 x 2500	1,63	1,73	2,00	1,30	1,63	1,93	125
E 110/200	1100 x 2000	1,45	1,52	1,76	1,21	1,43	1,69	114
E 115/200	1150 x 2000	1,50	1,59	1,84	1,24	1,50	1,77	116
E 120/140	1200 x 1400	1,13	1,16	1,34	0,97	1,11	1,28	94
E 120/150	1200 x 1500	1,21	1,24	1,44	1,03	1,19	1,39	102
E 120/170	1200 x 1700	1,35	1,41	1,63	1,14	1,33	1,57	108
E 120/180	1200 x 1800	1,43	1,49	1,73	1,19	1,40	1,66	111
E 120/200	1200 x 2000	1,56	1,66	1,92	1,30	1,56	1,85	117
E 120/210	1200 x 2100	1,63	1,71	2,02	1,34	1,64	1,94	120
E 120/220	1200 x 2200	1,69	1,80	2,11	1,40	1,72	2,03	123
E 120/240	1200 x 2400	1,81	1,96	2,30	1,47	1,87	2,22	130
E 120/250	1200 x 2500	1,89	2,04	2,40	1,53	1,95	2,31	133
E 125/250	1250 x 2500	1,94	2,13	2,50	1,56	2,03	2,41	134
E 130/150	1300 x 1500	1,29	1,35	1,56	1,09	1,27	1,50	105
E 130/160	1300 x 1600	1,35	1,44	1,66	1,16	1,35	1,60	108
E 130/180	1300 x 1800	1,52	1,61	1,87	1,26	1,52	1,80	180
E 130/190	1300 x 1900	1,58	1,68	1,98	1,33	1,61	1,90	117
E 130/200	1300 x 2000	1,66	1,77	2,08	1,38	1,69	2,00	121
E 130/220	1300 x 2200	1,80	1,94	2,29	1,49	1,86	2,20	127
E 130/230	1300 x 2300	1,88	2,03	2,39	1,52	1,94	2,30	130
E 130/250	1300 x 2500	2,02	2,21	2,60	1,63	2,11	2,50	136

VENT Type	NOMINAL DIMENSIONS (*)	BASE OF MIN. H=500 mm			BASE OF MIN. H=300 mm			ESTIMATED WEIGHT(**)
		ACTIVE AREA A_a [m^2]			ACTIVE AREA A_a [m^2]			
	A x B	STANDARD			STANDARD			
	[mm]	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	[kg]
E 140/150	1400 x 1500	1,37	1,45	1,68	1,16	1,37	1,62	114
E 140/180	1400 x 1800	1,61	1,71	2,02	1,36	1,64	1,94	123
E 140/200	1400 x 2000	1,76	1,90	2,24	1,46	1,82	2,16	130
E 140/250	1400 x 2500	2,14	2,38	2,80	1,75	2,28	2,70	145
E 150/160	1500 x 1600	1,51	1,63	1,92	1,30	1,56	1,85	120
E 150/180	1500 x 1800	1,70	1,84	2,16	1,43	1,76	2,08	126
E 150/200	1500 x 2000	1,86	2,04	2,43	1,56	1,95	2,31	133
E 150/210	1500 x 2100	1,95	2,14	2,55	1,61	2,05	2,43	136
E 150/240	1500 x 2400	2,20	2,45	2,88	1,80	2,34	2,77	146
E 150/250	1500 x 2500	2,25	2,55	3,00	1,84	2,44	2,89	149
E 160/180	1600 x 1800	1,79	1,96	2,33	1,50	1,87	2,22	130
E 160/190	1600 x 1900	1,88	2,07	2,46	1,58	1,98	2,34	133
E 160/200	1600 x 2000	1,95	2,18	2,59	1,63	2,08	2,46	137
E 160/220	1600 x 2200	2,15	2,39	2,85	1,76	2,29	2,75	143
E 160/230	1600 x 2300	2,21	2,50	2,98	1,84	2,39	2,87	146
E 160/240	1600 x 2400	2,30	2,61	3,11	1,88	2,50	3,00	149
E 180/200	1800 x 2000	2,16	2,45	2,92	1,80	2,34	2,81	154
E 180/220	1800 x 2200	2,34	2,65	3,21	1,94	2,53	3,09	160
E 180/240	1800 x 2400	2,55	2,89	3,50	2,07	2,76	3,37	167
E 180/250	1800 x 2500	2,61	3,02	3,65	2,16	2,88	3,51	170
E 190/200	1900 x 2000	2,24	2,55	3,08	1,86	2,43	2,96	158
E 195/200	1950 x 2000	2,30	2,61	3,16	1,91	2,50	3,04	159
E 195/220	1950 x 2200	2,49	2,87	3,47	2,06	2,75	3,35	166
E 195/250	1950 x 2500	2,78	3,27	3,95	2,29	3,12	3,80	176
E 200/250	2000 x 2500	2,85	3,35	4,05	2,35	3,20	3,90	177

(*) Intermediate smoke vent dimensions between the values specified in the table are possible. The size of active smoke exhaust area for those dimensions is determined through linear interpolation method
(**) Estimated weight specified for smoke vent of base height 500 mm, of standard configuration with multi-chamber polycarbonate panel glazing of 16 mm thickness, with pneumatic control.

1.1.6 | Smoke vents control

For correct operation, smoke vents as well as smoke exhaust & ventilation 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,
- 24V electric smoke exhaust control system with ventilation function,
- pneumatic and electric control system; the pneumatic part is responsible for smoke exhaust, while the 230V~ electric part - for ventilation.

Smoke exhaust control systems are activated as follows:

1. automatic – through a thermo switch installed in the vent (pneumatic system), or by optical smoke sensors (electric system),
2. manual – by a release of CO_2 cartridges in alarm box (pneumatic system), or by operation of RPO 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).

1.1.6.1 | Smoke vents control

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [G] [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
C 100	550	50	24	1,6	2,6
C 110	550	50	24	1,6	2,6
C 115	550	50	24	1,6	4,0
C 120	550	50	40	2,0	4,0
C 125	550	50	40	2,0	4,0
C 130	550	50	40	2,6	4,0
C 135	750	50	40	2,6	6,0
C 140	750	50	40	2,6	6,0
C 150	750	50	55	4,0	6,0
C 155	750	50	55	4,0	6,0
C 160	750	50	55	6,0	-
C 170	1050	63	55	6,0	-
C 180	1050	63	120	6,0	-
C 190	1050	63	120	8,0	-
C 195	1050	63	120	8,0	-
C 200	1050	63	120	8,0	-
E 100/120	550	50	24	1,6	2,6
E 100/130	550	50	24	1,6	2,6
E 100/140	550	50	24	1,6	2,6
E 100/150	550	50	24	1,6	4,0
E 100/160	550	50	40	2,0	4,0
E 100/180	550	50	40	2,0	4,0
E 100/190	550	50	40	2,0	4,0
E 100/200	550	50	40	2,0	4,0
E 100/210	550	50	40	2,6	4,0
E 100/220	550	50	40	2,6	4,0
E 100/230	550	50	40	2,6	6,0
E 100/240	550	50	40	2,6	6,0
E 100/250	550	50	40	2,6	6,0

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [G] [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
E 115/200	550	50	40	2,6	6,0
E 120/140	550	50	40	2,0	4,0
E 120/150	550	50	40	2,6	4,0
E 120/170	550	50	40	2,6	6,0
E 120/180	550	50	40	2,6	6,0
E 120/200	550	50	40	2,6	6,0
E 120/210	550	50	55	4,0	6,0
E 120/220	550	50	55	4,0	6,0
E 120/240	550	50	55	4,0	6,0
E 120/250	550	50	55	4,0	6,0
E 125/250	550	50	55	4,0	8,0
E 130/150	550	50	40	2,6	6,0
E 130/160	550	50	40	2,6	6,0
E 130/180	550	50	55	4,0	6,0
E 130/190	550	50	55	4,0	6,0
E 130/200	550	50	55	4,0	6,0
E 130/220	550	50	55	4,0	6,0
E 130/230	550	50	55	4,0	8,0
E 130/250	550	50	80	4,0	8,0
E 140/150	750	50	40	2,6	6,0
E 140/180	750	50	55	4,0	6,0
E 140/200	750	50	55	4,0	8,0
E 140/250	750	50	80	6,0	8,0
E 150/160	750	50	55	4,0	8,0
E 150/180	750	50	55	4,0	8,0
E 150/200	750	50	80	6,0	8,0
E 150/210	750	50	80	6,0	8,0
E 150/240	750	50	80	6,0	8,0
E 150/250	750	50	80	6,0	-
E 160/180	750	50	80	6,0	-
E 160/190	750	50	80	6,0	-
E 160/200	750	50	80	6,0	-
E 160/220	750	50	80	6,0	-
E 160/230	750	50	80	6,0	-
E 160/240	750	50	80	6,0	-
E 180/200	1050	63	120	6,0	-
E 180/220	1050	63	120	8,0	-
E 180/240	1050	63	120	8,0	-
E 180/250	1050	63	120	8,0	-
E 190/200	1050	63	120	8,0	-
E 195/200	1050	63	120	8,0	-
E 195/220	1050	63	120	8,0	-
E 195/250	1050	63	120	-	-
E 200/250	1050	63	120	-	-

(*) Pneumatic control available in classes: SL 250, SL 550, SL 750, SL 1300, SL 1600 and SL 2000 at special request (applies to selected vent sizes).
(**) Electric control available in classes: SL 750, SL 950, SL 1300 and SL 1600 at special request (applies to selected vent sizes).
Power consumption specified in the table applies to smoke vent with multi-chamber polycarbonate glazing.

1.2.| Double-leaf smoke vents with straight base – type DVP

1.2.1 | Technical description of standard

» classification as per Certificate of Conformity in accordance with EN 12101-2 (CE Certificate),
» type DVP smoke vents (double-leaf) for flat and pitched roofs covered with roofing paper or PVC membrane,
» dimensional range of smoke vents:
- 120x250 cm ÷ 300x300 cm
» straight base of height 300 mm or 500 mm made of galvanized steel sheet of 1.25 mm thickness
» 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 and water trough made of mineral wool of thickness 20 mm; heat transfer coefficient U=1.41W/m²K,
» circumferential strip in the upper part of base, made of galvanized steel sheet, used for fixing roof work,
» leaf glazing: multi-chamber polycarbonate panel, sandwich panel, multi-chamber polycarbonate panel with aluminum envelope cover and glazing with B_{ROOF} (t1) classification (details in section 4),
» leaf opening angle ≥ 90°,
» hinges fixing the leaf to base installed at lengthwise side of vent,
» smoke exhaust control: pneumatic, electric 24V-, oleoneumatic,
» ventilation control: electric 230V~,
» optional increased active smoke exhaust area (Aa) through the use of wind deflectors and/or inlet deflector.

1.2.2 | Smoke vent design

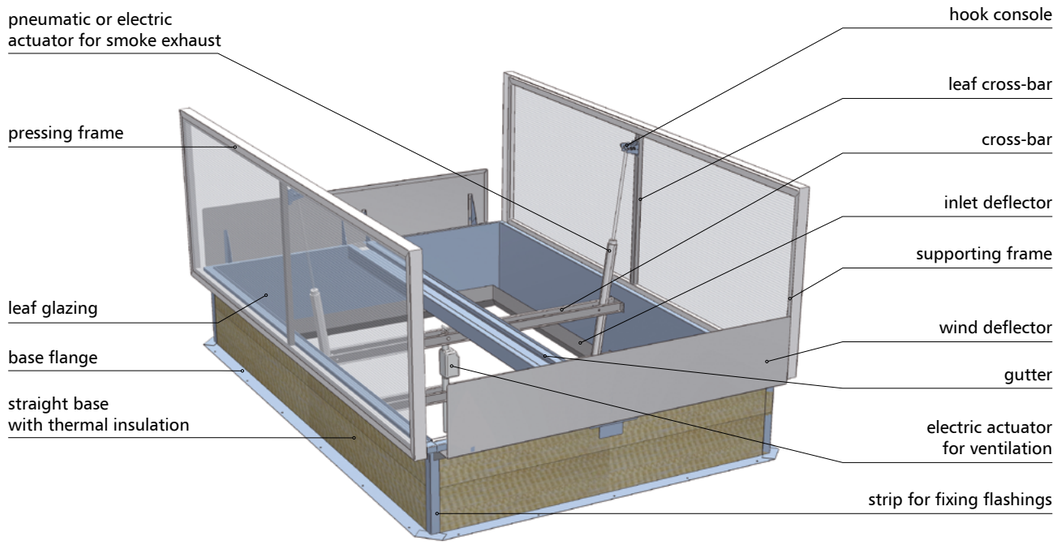


Fig.4 Design of mcr PROLIGHT DVP smoke vent equipped with wind deflectors and inlet deflector, with pneumatic actuators for smoke exhaust and electric actuator for ventilation.

1.2.3| Non-standard options

» vent elements painted to any RAL color - applies to pressing frame, wind deflectors, inlet deflector and base - powder coating up to 1800x3000 [mm] dimensions,
» thermal insulation of base made of PIR panel of 30 mm thickness, heat transfer coefficient U=0.68 W/m²K,
» base made of aluminium sheet of 2,00 mm thickness,
» custom dimensions of clear opening of vent base,
» custom base height within 200 mm(*) ÷ 700 mm,
» custom width of circumferential flange of base,
» circumferential strip for fixing roof flashings made of PVC coated metal sheet,
» base, inlet deflector and cross-bar in stainless steel,
» broad range of optional accessories.

(*) Base height below 300 mm available only if a plinth is designed for the vent, ensuring total height (vent+plinth) of min. 300 mm.

1.2.4 | Technical drawings

» **Smoke vent with wind deflectors and inlet deflector, with pneumatic control(for smoke exhaust and electric actuator for ventilation**

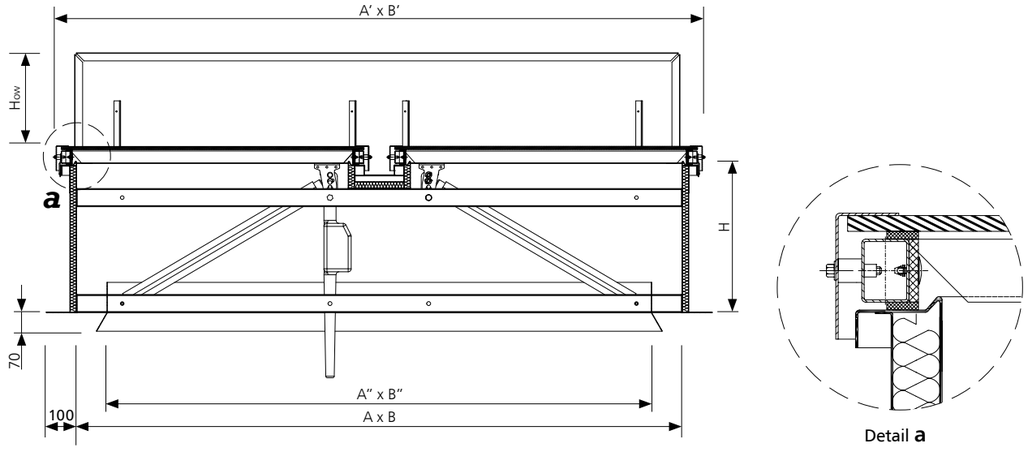


Fig.5 *Section **B-B** of mcr PROLIGHT DVP smoke vent in closed position, dimensions in [mm]*

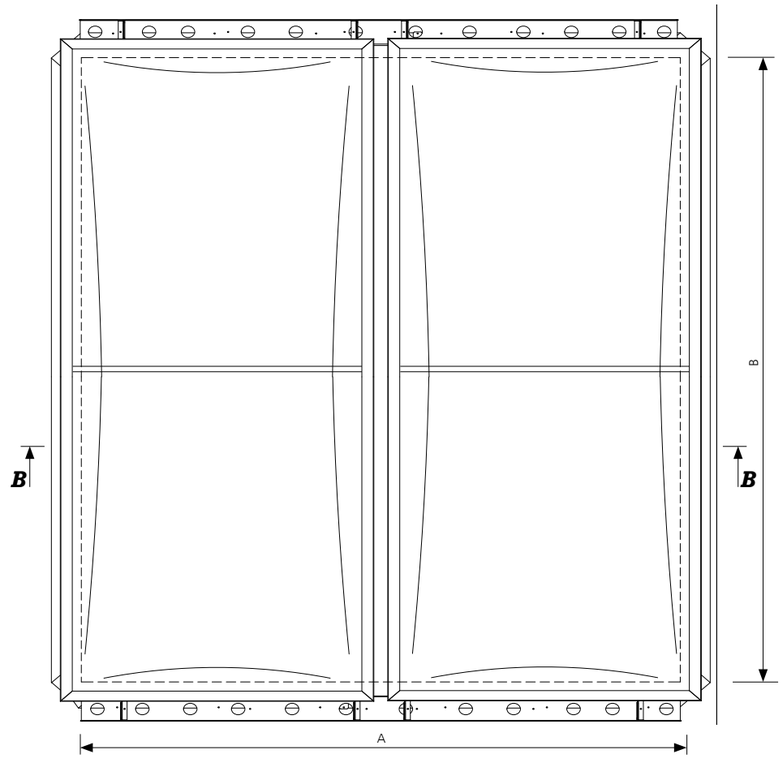


Fig.6 *Top view of mcr PROLIGHT DVP smoke vent in closed position, dimensions in [mm]*

A, B – nominal dimensions [mm], clear opening of smoke vent
A', B' – total dimensions of smoke vent leaf A'=A+135 mm, B'=B+135 mm
A", B" – clear opening of inlet deflector A"=A–100 mm, B"=B–100 mm
H – smoke vent base height [mm]
H_{ow} – wind deflector height 100 mm ≤ How ≤ 370 mm

mcr PROLIGHT | Smoke vents

1.2.5 | Technical details

VENT Type	NOMINAL DIMENSIONS (*)	BASE OF MIN. H=500 mm			BASE OF MIN. H=300 mm			ESTIMATED WEIGHT(**)
		ACTIVE AREA A_a [m^2]			ACTIVE AREA A_a [m^2]			
	A x B	STANDARD			STANDARD			
	[mm]	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	WITHOUT WIND DEFLECTORS AND INLET DEFLECTOR	WITH WIND DEFLECTORS	WITH WIND DEFLECTORS AND INLET DEFLECTOR	[kg]
DVP 120/250	1200 x 2500	1,90	1,90	2,04	1,62	1,83	2,07	159
DVP 120/300	1200 x 3000	2,30	2,30	2,45	1,98	2,20	2,48	181
DVP 150/250	1500 x 2500	2,20	2,43	2,63	1,85	2,32	2,63	170
DVP 150/300	1500 x 3000	2,65	2,93	3,15	2,25	2,79	3,15	193
DVP 160/160	1600 x 1600	1,51	1,62	1,74	1,28	1,56	1,74	135
DVP 160/250	1600 x 2500	2,28	2,60	2,80	1,92	2,48	2,80	176
DVP 160/280	1600 x 2800	2,55	2,91	3,14	2,15	2,82	3,14	189
DVP 160/300	1600 x 3000	2,74	3,17	3,41	2,30	3,02	3,41	198
DVP 180/160	1800 x 1600	1,64	1,84	1,96	1,38	1,76	1,99	144
DVP 180/180	1800 x 1800	1,83	2,07	2,24	1,52	2,01	2,24	153
DVP 180/250	1800 x 2500	2,48	2,97	3,20	2,07	2,84	3,20	185
DVP 180/280	1800 x 2800	2,77	3,33	3,58	2,32	3,18	3,58	199
DVP 180/300	1800 x 3000	2,97	3,56	3,83	2,48	3,40	3,83	208
DVP 200/200	2000 x 2000	2,16	2,60	2,80	1,80	2,48	2,80	169
DVP 200/240	2000 x 2400	2,59	3,17	3,41	2,16	3,02	3,41	188
DVP 200/250	2000 x 2500	2,70	3,30	3,55	2,25	3,15	3,55	193
DVP 200/280	2000 x 2800	3,02	3,70	4,03	2,52	3,53	3,98	207
DVP 200/300	2000 x 3000	3,18	3,96	4,32	2,67	3,78	4,32	216
DVP 220/220	2200 x 2200	2,57	3,19	3,44	2,13	3,05	3,44	189
DVP 220/240	2200 x 2400	2,75	3,48	3,80	2,32	3,33	3,75	199
DVP 220/250	2200 x 2500	2,86	3,63	3,96	2,37	3,47	3,91	203
DVP 240/240	2400 x 2400	2,94	3,80	4,15	2,42	3,63	4,15	206
DVP 240/250	2400 x 2500	3,06	4,02	4,32	2,52	3,84	4,32	211
DVP 250/250	2500 x 2500	3,19	4,19	4,50	2,63	4,00	4,50	217
DVP 250/300	2500 x 3000	3,75	5,03	5,48	3,15	4,80	5,40	240
DVP 300/300	3000 x 3000	4,32	6,12	6,66	3,60	5,85	6,57	264

(*) Intermediate smoke vent dimensions between the values specified in the table are possible. The size of active smoke exhaust area for those dimensions is determined through linear interpolation method.
(**) Estimated weight specified for smoke vent of base height 500 mm, of standard configuration with multi-chamber polycarbonate panel glazing of 16 mm thickness, with pneumatic control.

1.2.6 | Smoke vents control

For correct operation, smoke vents as well as smoke exhaust & ventilation 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,
» 24V electric smoke exhaust control system with ventilation function,
» pneumatic and electric control system; the pneumatic part is responsible for smoke exhaust, while the 230V~ electric part - for ventilation.

Smoke exhaust control systems are activated as follows:

1. automatic – through a Thermo switch installed in the vent (pneumatic system), or by optical smoke sensors (electric system),
2. manual – by a release of CO2 cartridges in alarm box (pneumatic system), or by operation of RPO 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).

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
DVP 120/250	350	40	24	2 x 0,8	2 x 1,3
DVP 120/300	350	40	38	2 x 1,0	2 x 1,6
DVP 150/250	350	40	38	2 x 1,0	2 x 2,0
DVP 150/300	350	40	40	2 x 1,3	2 x 2,0
DVP 160/160	400	40	38	2 x 1,0	2 x 1,6
DVP 160/250	400	40	40	2 x 1,3	2 x 2,6
DVP 160/280	400	50/40	55	2 x 1,3	2 x 2,6
DVP 160/300	400	50/40	55	2 x 1,3	2 x 2,6
DVP 180/160	400	40	38	2 x 1,6	2 x 2,0
DVP 180/180	400	40	38	2 x 1,6	2 x 2,0
DVP 180/250	400	50/40	55	2 x 1,6	2 x 2,6
DVP 180/280	400	50/40	55	2 x 1,6	2 x 2,6
DVP 180/300	400	50	55	2 x 1,6	2 x 4,0
DVP 200/200	500	40	55	2 x 1,6	2 x 2,6
DVP 200/240	500	50/40	55	2 x 1,6	2 x 4,0
DVP 200/250	500	50/40	55	2 x 2,0	2 x 4,0
DVP 200/280	500	50/40	80	2 x 2,0	2 x 4,0
DVP 200/300	500	50/40	80	2 x 2,0	2 x 4,0
DVP 220/220	500	50	80	2 x 2,0	2 x 4,0
DVP 220/240	500	50	55	2 x 2,0	2 x 6,0
DVP 220/250	500	50	80	2 x 2,0	2 x 6,0
DVP 240/240	600	50	80	2 x 2,6	2 x 6,0
DVP 240/250	600	50	80	2 x 2,6	2 x 6,0
DVP 250/250	600	50	120	2 x 4,0	2 x 6,0
DVP 250/300	600	50	120	2 x 4,0	2 x 8,0
DVP 300/300	750	63/50	150	2 x 6,0	2 x 8,0

(*) Pneumatic control available in classes: SL 250, SL 550, SL 750, Sl 950 and SL 1300 at special request (applies to selected vent sizes).
(**) Selectric control available in classes: SL 750, SL 950, SL 1300, SL 1600 and SL 2000 at special request (applies to selected vent sizes). Power con- sumption specified in the table applies to smoke vent with multi-chamber polycarbonate glazing.

1.3.| Single-leaf smoke vents with skew base – type NG-A

1.3.1 | Technical description of standard

» classification as per Certificate of Conformity in accordance with EN 12101-2 (CE Certificate),
» NG-A type (squared and rectangular) smoke vents for flat and pitched roofs covered with roofing paper or PVC membrane,
» skew base of height 300 mm or 500 mm made of galvanized steel sheet of 1.25 mm thickness
» 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,
» base standard: mcr Prolight: thermal insulation of base made of mineral wool of thickness 20 mm; heat transfer coefficient U=1.41 W/m²K, circumferential strip in the upper part of base, made of galvanized steel sheet, used for fixing flashings,
» leaf glazing: multi-chamber polycarbonate panel, acrylic dome, solid polycarbonate dome, sandwich panel, multi-chamber polycarbonate panel and single or double-layer acrylic dome or solid polycarbonate dome, multi-chamber polycarbonate panel, envelope cover and glazing of B_{ROOF} (t1) class (details in section 4),
» leaf opening angle ≥ 140°,
» hinges fixing the leaf to base installed at lengthwise side of vent,
» smoke exhaust control: pneumatic, electric 24V-,
» ventilation control: electric 230V~.

1.3.2 | Smoke vent design

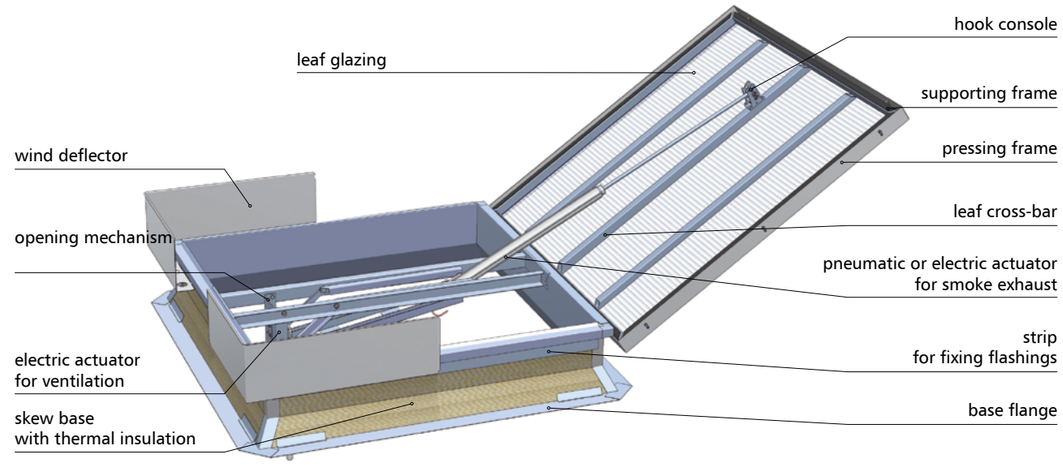


Fig.7 Design of mcr PROLIGHT NG-A smoke vent equipped with wind deflectors, with pneumatic actuator for smoke exhaust and electric actuator for ventilation

1.3.3 | Non-standard options

» vent elements painted to any RAL color - applies to base and wind deflectors,
» thermal insulation of base made of PIR panel of 30 mm thickness, heat transfer coefficient U=0.68 W/m²K,
» base made of aluminium sheet of 2,00 mm thickness,
» custom dimensions of clear opening of vent base,
» custom base height within 300 mm ÷ 700 mm,
» custom width of circumferential flange of base,
» circumferential strip for fixing roof flashings made of PVC coated metal sheet,
» base and opening mechanism in stainless steel (on request),
» broad range of optional accessories.

1.3.4 | Technical drawings

» **Smoke vent with wind deflectors, with pneumatic control for smoke exhaust and electric actuator for ventilation**

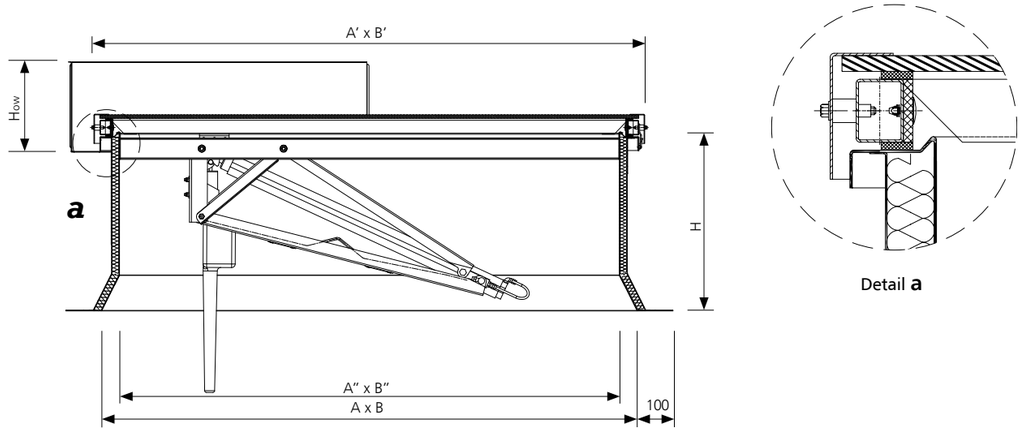


Fig.8 *Section **B-B** of mcr PROLIGHT NG-A smoke vent in closed position, dimensions in [mm]*

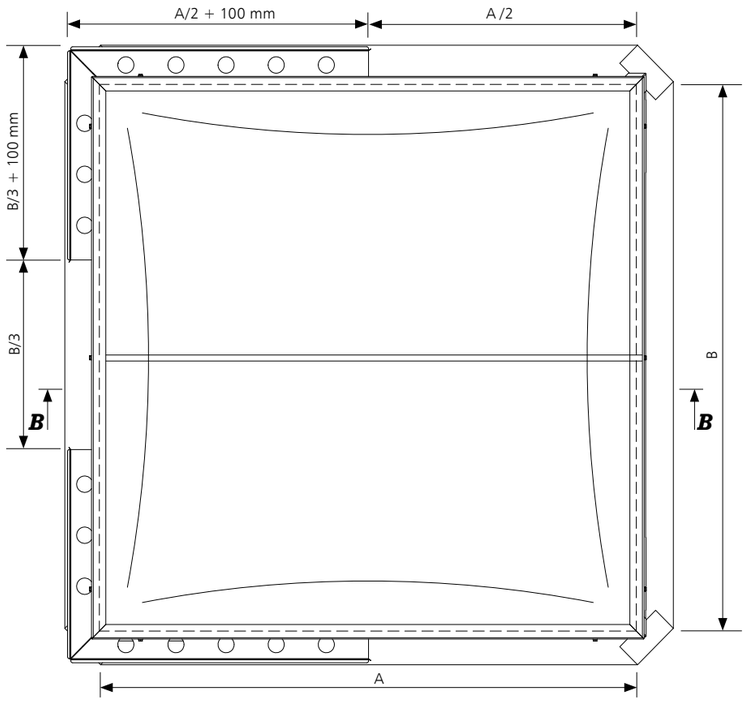


Fig.9 *Top view of mcr PROLIGHT NG-A smoke vent in closed position, dimensions in [mm]*

A, B – nominal dimensions [mm], clear opening of smoke vent
A', B' – total dimensions of smoke vent leaf A'=A+135 mm, B'=B+35 mm
A'', B'' – clear dimensions of smoke vent upper opening A''=A–100 mm, B''=B–100 mm
H – smoke vent base height [mm]
H_{ow} – wind deflector height 230 mm ≤ How ≤ 530 mm

1.3.5 | Technical details

VENT Type	NOMINAL DIMENSIONS(*)	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	ESTIMATED WEIGHT(**)
	A x B	ACTIVE AREA Aa [m^2]	ACTIVE AREA Aa [m^2]	
	[mm]	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	[kg]
NG-A 100/100	1000 x 1000	0,66	0,66	78
NG-A 100/110	1000 x 1100	0,74	0,73	81
NG-A 100/120	1000 x 1200	0,81	0,80	84
NG-A 100/130	1000 x 1300	0,89	0,87	87
NG-A 100/140	1000 x 1400	0,96	0,94	90
NG-A 100/150	1000 x 1500	1,03	1,01	96
NG-A 100/160	1000 x 1600	1,11	1,08	100
NG-A 100/170	1000 x 1700	1,18	1,15	103
NG-A 100/180	1000 x 1800	1,26	1,23	106
NG-A 100/190	1000 x 1900	1,33	1,30	110
NG-A 100/200	1000 x 2000	1,40	1,37	113
NG-A 100/210	1000 x 2100	1,48	1,44	116
NG-A 100/220	1000 x 2200	1,55	1,51	119
NG-A 100/230	1000 x 2300	1,62	1,58	122
NG-A 100/240	1000 x 2400	1,70	1,65	125
NG-A 100/250	1000 x 2500	1,77	1,72	129
NG-A 120/120	1200 x 1200	0,99	0,97	91
NG-A 120/130	1200 x 1300	1,08	1,06	94
NG-A 120/140	1200 x 1400	1,17	1,14	97
NG-A 120/150	1200 x 1500	1,26	1,23	104
NG-A 120/170	1200 x 1700	1,44	1,40	110
NG-A 120/180	1200 x 1800	1,54	1,49	114
NG-A 120/190	1200 x 1900	1,63	1,58	117
NG-A 120/200	1200 x 2000	1,72	1,66	120
NG-A 120/210	1200 x 2100	1,81	1,75	124
NG-A 120/220	1200 x 2200	1,90	1,84	127
NG-A 120/230	1200 x 2300	1,99	1,92	130
NG-A 120/240	1200 x 2400	2,08	2,01	133
NG-A 120/250	1200 x 2500	2,17	2,10	137
NG-A 125/125	1250 x 1250	1,08	1,06	94
NG-A 130/130	1300 x 1300	1,18	1,15	97
NG-A 130/140	1300 x 1400	1,28	1,25	100
NG-A 130/150	1300 x 1500	1,38	1,34	108
NG-A 130/160	1300 x 1600	1,48	1,44	111
NG-A 130/170	1300 x 1700	1,58	1,53	114
NG-A 130/180	1300 x 1800	1,68	1,62	118
NG-A 130/190	1300 x 1900	1,77	1,72	121
NG-A 130/200	1300 x 2000	1,87	1,81	124
NG-A 130/210	1300 x 2100	1,97	1,91	128
NG-A 130/220	1300 x 2200	2,07	2,00	131
NG-A 130/230	1300 x 2300	2,17	2,10	134
NG-A 130/240	1300 x 2400	2,27	2,19	138
NG-A 130/250	1300 x 2500	2,37	2,28	141
NG-A 140/140	1400 x 1400	1,39	1,35	104
NG-A 140/150	1400 x 1500	1,49	1,45	111
NG-A 140/160	1400 x 1600	1,60	1,55	115

VENT Type	NOMINAL DIMENSIONS(*)	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	ESTIMATED WEIGHT(**)
	A x B	ACTIVE AREA Aa [m^2]	ACTIVE AREA Aa [m^2]	
	[mm]	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	[kg]
NG-A 140/170	1400 x 1700	1,71	1,66	118
NG-A 140/180	1400 x 1800	1,82	1,76	122
NG-A 140/190	1400 x 1900	1,92	1,86	125
NG-A 140/200	1400 x 2000	2,03	1,96	128
NG-A 140/210	1400 x 2100	2,14	2,06	132
NG-A 140/220	1400 x 2200	2,24	2,17	135
NG-A 140/230	1400 x 2300	2,35	2,27	138
NG-A 140/240	1400 x 2400	2,46	2,37	142
NG-A 140/250	1400 x 2500	2,56	2,47	145
NG-A 150/150	1500 x 1500	1,61	1,56	120
NG-A 150/160	1500 x 1600	1,72	1,67	124
NG-A 150/170	1500 x 1700	1,84	1,78	127
NG-A 150/180	1500 x 1800	1,96	1,89	130
NG-A 150/190	1500 x 1900	2,07	2,00	134
NG-A 150/200	1500 x 2000	2,19	2,11	137
NG-A 150/210	1500 x 2100	2,30	2,22	141
NG-A 150/220	1500 x 2200	2,42	2,33	144
NG-A 150/230	1500 x 2300	2,53	2,44	148
NG-A 150/240	1500 x 2400	2,65	2,55	151
NG-A 150/250	1500 x 2500	2,76	2,66	154
NG-A 160/160	1600 x 1600	1,85	1,79	128
NG-A 160/170	1600 x 1700	1,97	1,91	131
NG-A 160/180	1600 x 1800	2,10	2,02	134
NG-A 160/190	1600 x 1900	2,22	2,14	138
NG-A 160/200	1600 x 2000	2,34	2,26	141
NG-A 160/210	1600 x 2100	2,47	2,38	145
NG-A 160/220	1600 x 2200	2,59	2,49	148
NG-A 160/230	1600 x 2300	2,71	2,61	151
NG-A 160/240	1600 x 2400	2,84	2,73	154
NG-A 160/250	1600 x 2500	2,96	2,85	158
NG-A 170/170	1700 x 1700	2,10	2,03	135
NG-A 170/180	1700 x 1800	2,24	2,16	138
NG-A 170/190	1700 x 1900	2,37	2,28	142
NG-A 170/200	1700 x 2000	2,50	2,41	145
NG-A 170/210	1700 x 2100	2,63	2,53	149
NG-A 170/220	1700 x 2200	2,76	2,66	152
NG-A 170/230	1700 x 2300	2,89	2,78	155
NG-A 170/240	1700 x 2400	3,03	2,91	159
NG-A 170/250	1700 x 2500	3,16	3,03	162
NG-A 180/180	1800 x 1800	2,38	2,29	152
NG-A 180/190	1800 x 1900	2,52	2,42	156
NG-A 180/200	1800 x 2000	2,66	2,56	159
NG-A 180/210	1800 x 2100	2,80	2,69	163
NG-A 180/220	1800 x 2200	2,94	2,82	166
NG-A 180/230	1800 x 2300	3,08	2,95	170
NG-A 180/240	1800 x 2400	3,22	3,09	173

mcr PROLIGHT | Smoke vents

VENT Type	NOMINAL DIMENSIONS(*)	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	ESTIMATED WEIGHT(**)
	A x B	ACTIVE AREA Aa [m^2]	ACTIVE AREA Aa [m^2]	
	[mm]	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	[kg]
NG-A 180/250	1800 x 2500	3,36	3,22	176
NG-A 180/260	1800 x 2600	3,50	3,35	180
NG-A 180/270	1800 x 2700	3,64	3,49	183
NG-A 180/280	1800 x 2800	3,78	3,62	186
NG-A 180/290	1800 x 2900	3,92	3,75	189
NG-A 180/300	1800 x 3000	4,06	3,89	193
NG-A 190/190	1900 x 1900	2,66	2,56	160
NG-A 190/200	1900 x 2000	2,81	2,70	163
NG-A 190/210	1900 x 2100	2,96	2,84	167
NG-A 190/220	1900 x 2200	3,11	2,99	170
NG-A 190/230	1900 x 2300	3,26	3,13	174
NG-A 190/240	1900 x 2400	3,40	3,27	177
NG-A 190/250	1900 x 2500	3,55	3,41	180
NG-A 190/260	1900 x 2600	3,70	3,55	184
NG-A 190/270	1900 x 2700	3,85	3,69	187
NG-A 190/280	1900 x 2800	4,00	3,83	191
NG-A 190/290	1900 x 2900	4,15	3,97	194
NG-A 190/300	1900 x 3000	4,29	4,11	197
NG-A 200/200	2000 x 2000	2,97	2,85	167
NG-A 200/210	2000 x 2100	3,12	3,00	171
NG-A 200/220	2000 x 2200	3,28	3,15	174
NG-A 200/230	2000 x 2300	3,44	3,30	178
NG-A 200/240	2000 x 2400	3,59	3,45	181
NG-A 200/250	2000 x 2500	3,75	3,59	185
NG-A 200/260	2000 x 2600	3,91	3,74	188
NG-A 200/270	2000 x 2700	4,06	3,89	191
NG-A 200/280	2000 x 2800	4,22	4,04	195
NG-A 200/290	2000 x 2900	4,38	4,19	198
NG-A 200/300	2000 x 3000	4,53	4,34	202
NG-A 210/210	2100 x 2100	3,29	3,16	175

(*) Intermediate smoke vent dimensions between the values specified in the table are possible. The size of active smoke exhaust area for those dimensions is determined through linear interpolation method.
(**) Estimated weight specified for smoke vent of base height 500 mm with wind deflectors, of standard configuration with multi-chamber polycarbonate panel glazing of 16 mm thickness, with pneumatic control.

1.3.6 | Smoke vents control

For correct operation, smoke vents as well as smoke exhaust & ventilation 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,
- 24V electric smoke exhaust control system with ventilation function,
- pneumatic and electric control system; the pneumatic part is responsible for smoke exhaust, while the 230V~ electric part - for ventilation.

Smoke exhaust control systems are activated as follows:

1. automatic – through a thermal valve installed in the vent (pneumatic system), or by optical smoke sensors (electric system),
2. manual – by a release of CO_2 cartridges in alarm box (pneumatic system), or by operation of RPO 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).

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
NG-A 100/100	550	50	24	-	-
NG-A 100/110	550	50	24	-	-
NG-A 100/120	550	50	24	-	-
NG-A 100/130	550	50	24	-	-
NG-A 100/140	550	50	24	-	-
NG-A 100/150	550	50	24	-	-
NG-A 100/160	550	50	24	-	-
NG-A 100/170	550	50	40	-	-
NG-A 100/180	550	50	40	-	-
NG-A 100/190	550	50	40	-	-
NG-A 100/200	550	50	40	-	-
NG-A 100/210	550	50	40	-	-
NG-A 100/220	550	50	40	-	-
NG-A 100/230	550	50	40	-	-
NG-A 100/240	550	50	40	-	-
NG-A 100/250	550	50	40	-	-
NG-A 120/120	550	50	24	1,6	2,6
NG-A 120/130	550	50	40	1,6	2,6
NG-A 120/140	550	50	40	1,6	2,6
NG-A 120/150	550	50	40	1,6	4,0
NG-A 120/170	550	50	40	2,0	4,0
NG-A 120/180	550	50	40	2,6	4,0
NG-A 120/190	550	50	40	2,6	6,0
NG-A 120/200	550	50	40	2,6	6,0
NG-A 120/210	550	50	40	2,6	6,0
NG-A 120/220	550	50	55	4,0	6,0
NG-A 120/230	550	50	55	4,0	6,0
NG-A 120/240	550	50	55	4,0	6,0
NG-A 120/250	550	50	55	4,0	6,0
NG-A 125/125	550	50	24	1,6	4,0

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
NG-A 130/130	550	50	40	2,0	4,0
NG-A 130/140	550	50	40	2,0	4,0
NG-A 130/150	550	50	40	2,0	4,0
NG-A 130/160	550	50	40	2,6	4,0
NG-A 130/170	550	50	40	2,6	6,0
NG-A 130/180	550	50	40	2,6	6,0
NG-A 130/190	550	50	40	2,6	6,0
NG-A 130/200	550	50	40	2,6	6,0
NG-A 130/210	550	50	40	2,6	6,0
NG-A 130/220	550	50	55	4,0	6,0
NG-A 130/230	550	50	55	4,0	6,0
NG-A 130/240	550	50	55	4,0	6,0
NG-A 130/250	550	50	55	4,0	6,0
NG-A 140/140	550	50	40	2,6	4,0
NG-A 140/150	550	50	40	2,6	6,0
NG-A 140/160	550	50	40	2,6	6,0
NG-A 140/170	550	50	40	2,6	6,0
NG-A 140/180	550	50	55	4,0	6,0
NG-A 140/190	550	50	55	4,0	6,0
NG-A 140/200	550	50	55	4,0	6,0
NG-A 140/210	550	50	55	4,0	6,0
NG-A 140/220	550	50	55	4,0	6,0
NG-A 140/230	550	50	55	4,0	6,0
NG-A 140/240	550	50	55	4,0	8,0
NG-A 140/250	550	50	80	4,0	8,0
NG-A 150/150	750	50	40	2,6	6,0
NG-A 150/160	750	50	40	2,6	6,0
NG-A 150/170	750	50	55	4,0	6,0
NG-A 150/180	750	50	55	4,0	6,0
NG-A 150/190	750	50	55	4,0	8,0
NG-A 150/200	750	50	55	4,0	8,0
NG-A 150/210	750	50	55	4,0	8,0
NG-A 150/220	750	50	80	4,0	8,0
NG-A 150/230	750	50	80	4,0	8,0
NG-A 150/240	750	50	80	4,0	8,0
NG-A 150/250	750	50	80	6,0	8,0
NG-A 160/160	750	50	55	4,0	6,0
NG-A 160/170	750	50	55	4,0	8,0
NG-A 160/180	750	50	55	4,0	8,0
NG-A 160/190	750	50	55	4,0	8,0
NG-A 160/200	750	50	80	6,0	8,0
NG-A 160/210	750	50	80	6,0	8,0
NG-A 160/220	750	50	80	6,0	8,0
NG-A 160/230	750	50	80	6,0	8,0
NG-A 160/240	750	50	80	6,0	8,0
NG-A 160/250	750	50	80	6,0	8,0
NG-A 170/170	750	50	55	6,0	-
NG-A 170/180	750	50	80	6,0	-
NG-A 170/190	750	50	80	6,0	-

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
NG-A 170/200	750	50	80	6,0	-
NG-A 170/210	750	50	80	6,0	-
NG-A 170/220	750	50	80	6,0	-
NG-A 170/230	750	50	80	6,0	-
NG-A 170/240	750	50	80	6,0	-
NG-A 170/250	750	50	80	6,0	-
NG-A 180/180	1050	63	80	6,0	-
NG-A 180/190	1050	63	120	6,0	-
NG-A 180/200	1050	63	120	8,0	-
NG-A 180/210	1050	63	120	8,0	-
NG-A 180/220	1050	63	120	8,0	-
NG-A 180/230	1050	63	120	8,0	-
NG-A 180/240	1050	63	120	8,0	-
NG-A 180/250	1050	63	120	8,0	-
NG-A 180/260	1050	63	120	8,0	-
NG-A 180/270	1050	63	120	-	-
NG-A 180/280	1050	63	120	-	-
NG-A 180/290	1050	63	120	-	-
NG-A 180/300	1050	63	120	-	-
NG-A 190/190	1050	63	120	6,0	-
NG-A 190/200	1050	63	120	6,0	-
NG-A 190/210	1050	63	120	6,0	-
NG-A 190/220	1050	63	120	8,0	-
NG-A 190/230	1050	63	120	8,0	-
NG-A 190/240	1050	63	120	8,0	-
NG-A 190/250	1050	63	120	8,0	-
NG-A 190/260	1050	63	120	8,0	-
NG-A 190/270	1050	63	120	-	-
NG-A 190/280	1050	63	120	-	-
NG-A 190/290	1050	63	120	-	-
NG-A 190/300	1050	63	120	-	-
NG-A 200/200	1050	63	120	8,0	-
NG-A 200/210	1050	63	120	8,0	-
NG-A 200/220	1050	63	120	8,0	-
NG-A 200/230	1050	63	120	8,0	-
NG-A 200/240	1050	63	120	-	-
NG-A 200/250	1050	63	120	-	-
NG-A 200/260	1050	63	120	-	-
NG-A 200/270	1050	63	120	-	-
NG-A 200/280	1050	63	120	-	-
NG-A 200/290	1050	63	120	-	-
NG-A 200/300	1050	63	120***	-	-
NG-A 210/210	1050	63	120	8,0	-
NG-A 220/220	1050	63	120	-	-

(*) Pneumatic control available in classes: SL 250, SL 550, SL 750, SL 950, SL 1300, SL 1600 and SL 2000 at special request (applies to selected vent sizes).
(**) Electric control available in classes: SL 750, SL 950, SL 1300 and SL 1600 at special request (applies to selected vent sizes). Power consumption specified in the table applies to smoke vent with multi-chamber polycarbonate glazing.
(***) SL 900

1.4.| Double-leaf smoke vents with skew base - type DVPS

1.4.1 | Technical description of standard

- classification as per Certificate of Conformity in accordance with EN 12101-2 (CE Certificate),
- DVP type smoke vents (double-leaf) for flat and pitched roofs covered with roofing paper or PVC membrane,
- skew base of height 300 mm or 500 mm made of galvanized steel sheet of 1.25 mm thickness
- 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 W/m^{2}K
- circumferential strip of galvanized steel sheet for fixing roof flashing,
- wind deflectors made of aluminum or galvanized steel sheet,
- leaf glazing: multi-chamber polycarbonate panel, sandwich panel, multi-chamber polycarbonate panel with aluminum envelope cover and glazing with B_{ROOF} (t1) classification (details in section 4),
- leaf opening angle ≥ 90°,
- hinges fixing the leaf to base installed at lengthwise side of vent,
- smoke exhaust control: pneumatic, electric 24V-,
- ventilation control: electric 230V~.

1.4.2 | Smoke vent design

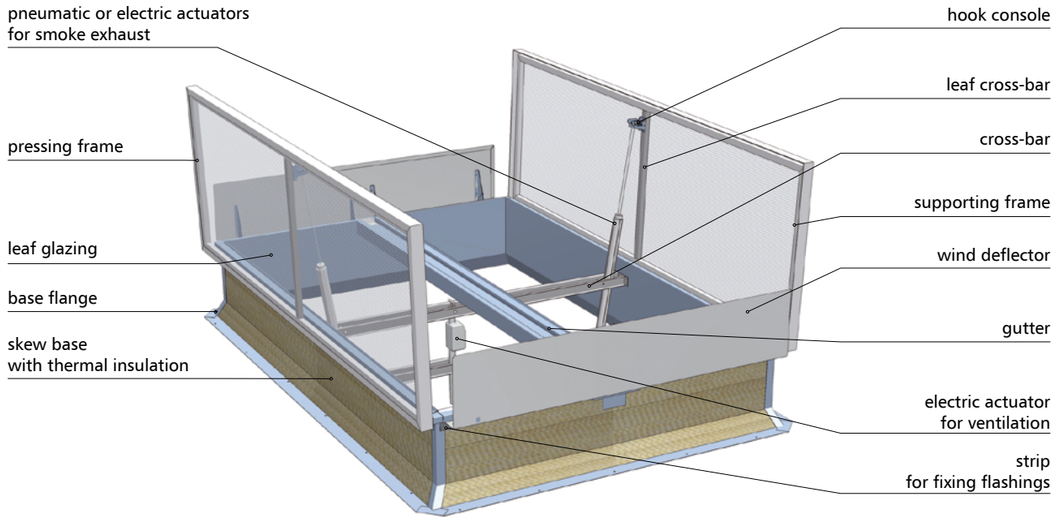


Fig.10 Design of mcr PROLIGHT DVPS smoke vent equipped with wind deflectors, with pneumatic actuators for smoke exhaust and electric actuator for ventilation

1.4.3| Non-standard options

- vent elements painting to any RAL color - applies to pressing frame, wind deflectors and base - powder coating up to 1800x3000 [mm] dimensions,
- thermal insulation of base made of PIR panel of 30 mm thickness, heat transfer coefficient U=0.68 W/m^{2}K,
- base made of aluminium sheet of 2,00 mm thickness,
- custom dimensions of clear opening of vent base,
- custom base height within 300 mm ÷ 700 mm,
- custom width of circumferential flange of base,
- circumferential strip for fixing roof flashings made of PVC coated metal sheet,
- base and cross-bar in stainless steel,
- broad range of optional accessories.

1.4.4 | Technical drawings

» **Smoke vent with wind deflectors, with pneumatic control for smoke exhaust and electric actuator for ventilation**

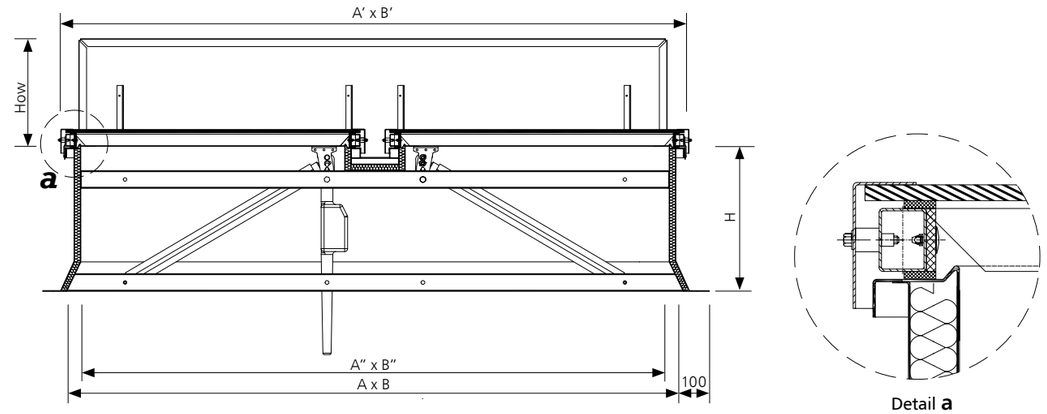


*Fig.11 Section **B-B** of mcr PROLIGHT DVPS smoke vent in closed position, dimensions in [mm]*

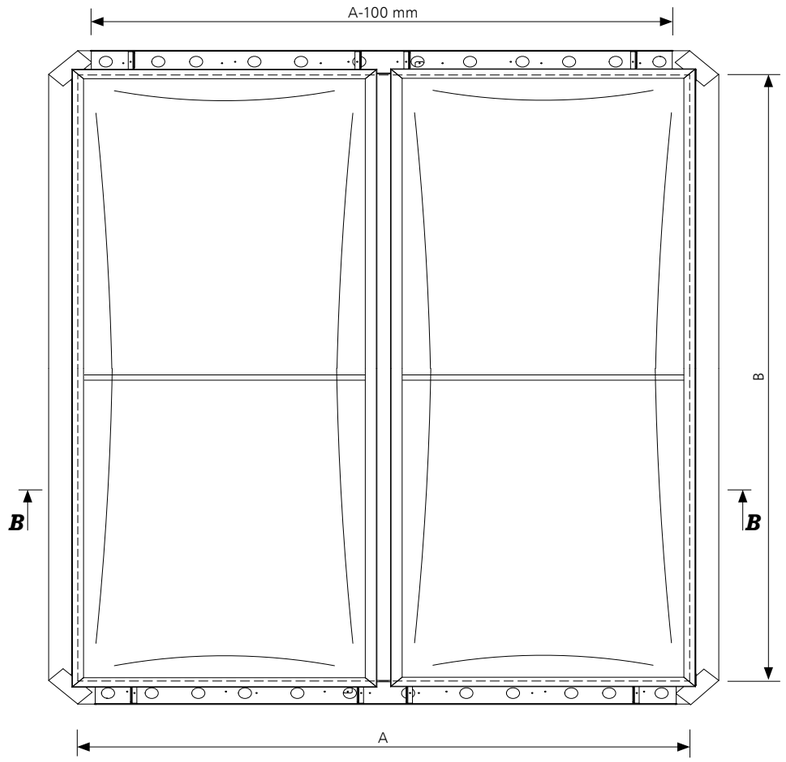


Fig.12 Top view of mcr PROLIGHT DVPS smoke vent in closed position, dimensions in [mm]

A, B – nominal dimensions [mm], clear opening of smoke vent
A', B' – total dimensions of smoke vent leaf A'=A+35 mm, B'=B+35 mm
A'', B'' – clear dimensions of smoke vent upper opening A''=A–100 mm, B''=B–100 mm
H – smoke vent base height [mm]
How – wind deflector height 100 mm ≤ How ≤ 390 mm

1.4.5 | Technical details

VENT Type	NOMINAL DIMENSIONS(*)	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	ESTIMATED WEIGHT(**)
	A x B	ACTIVE AREA Aa [m^2]	ACTIVE AREA Aa [m^2]	
	[mm]	BASE OF MIN. H=500 mm	BASE OF MIN. H=300 mm	[kg]
DVPS 120/250	1200 x 2500	1,80	1,83	160
DVPS 120/300	1200 x 3000	2,20	2,20	183
DVPS 150/250	1500 x 2500	2,36	2,36	172
DVPS 150/300	1500 x 3000	2,93	2,84	195
DVPS 160/160	1600 x 1600	1,54	1,56	138
DVPS 160/250	1600 x 2500	2,56	2,52	178
DVPS 160/280	1600 x 2800	2,91	2,87	192
DVPS 160/300	1600 x 3000	3,12	3,07	201
DVPS 180/160	1800 x 1600	1,76	1,76	147
DVPS 180/180	1800 x 1800	2,04	2,01	156
DVPS 180/250	1800 x 2500	2,97	2,88	189
DVPS 180/280	1800 x 2800	3,33	3,23	203
DVPS 180/300	1800 x 3000	3,62	3,51	212
DVPS 200/200	2000 x 2000	2,60	2,52	173
DVPS 200/240	2000 x 2400	3,17	3,07	192
DVPS 200/250	2000 x 2500	3,35	3,25	197
DVPS 200/280	2000 x 2800	3,75	3,64	211
DVPS 200/300	2000 x 3000	4,08	3,90	221
DVPS 220/220	2200 x 2200	3,19	3,15	194
DVPS 220/240	2200 x 2400	3,54	3,43	204
DVPS 220/250	2200 x 2500	3,69	3,58	208
DVPS 240/240	2400 x 2400	3,92	3,74	212
DVPS 240/250	2400 x 2500	4,08	3,96	216
DVPS 250/250	2500 x 2500	4,31	4,13	223
DVPS 250/300	2500 x 3000	5,25	5,03	247
DVPS 300/300	3000 x 3000	6,39	6,03	272

(*) Intermediate smoke vent dimensions between the values specified in the table are possible. The size of active smoke exhaust area for those dimensions is determined through linear interpolation method.
(**) Estimated weight specified for smoke vent of base height 500 mm with wind deflectors, of standard configuration with multi-chamber polycarbonate panel glazing of 16 mm thickness, with pneumatic control.

1.4.6 | Smoke vents control

For correct operation, smoke vents as well as smoke exhaust & ventilation 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,
» 24V electric smoke exhaust control system with ventilation function,
» pneumatic and electric control system; the pneumatic part is responsible for smoke exhaust, while the 230V~ electric part - for ventilation.

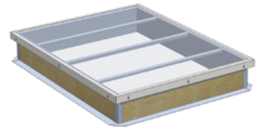
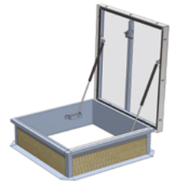
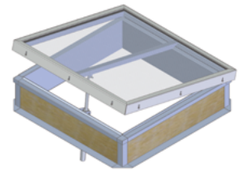
Smoke exhaust control systems are activated as follows:
1. automatic – through a thermo switch installed in the vent (pneumatic system), or by optical smoke sensors (electric system),
2. manual – by a release of CO2 cartridges in alarm box (pneumatic system), or by operation of RPO emergency pushbutton (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).

VENT Type	PNEUMATIC CONTROL(*)			ELECTRIC CONTROL(**)	
	PNEUMATIC ACTUATOR		MIN. CO_2 CARTRIDGE CAPACITY – SL 950 [g]	POWER CONSUMPTION [A] BY ELECTRIC ACTUATOR FOR CLASS	
	STROKE [mm]	DIAMETER [mm]		SL 250	SL 550
DVPS 120/250	350	40	24	2 x 0,8	2 x 1,3
DVPS 120/300	350	40	38	2 x 1,0	2 x 1,6
DVPS 150/250	350	40	38	2 x 1,0	2 x 2,0
DVPS 150/300	350	40	40	2 x 1,3	2 x 2,6
DVPS 160/160	350	40	25	2 x 0,8	2 x 1,3
DVPS 160/250	350	40	38	2 x 1,0	2 x 2,0
DVPS 160/280	350	40	38	2 x 1,0	2 x 2,0
DVPS 160/300	350	40	40	2 x 1,3	2 x 2,0
DVPS 180/160	400	40	38	2 x 1,0	2 x 2,0
DVPS 180/180	400	40	38	2 x 1,0	2 x 2,0
DVPS 180/250	400	50/40	55	2 x 1,3	2 x 2,6
DVPS 180/280	400	50/40	55	2 x 1,3	2 x 2,6
DVPS 180/300	400	50	55	2 x 1,6	2 x 2,6
DVPS 200/200	500	40	55	2 x 1,6	2 x 2,6
DVPS 200/240	500	50/40	55	2 x 1,6	2 x 4,0
DVPS 200/250	500	50/40	55	2 x 2,0	2 x 4,0
DVPS 200/280	500	50/40	80	2 x 2,0	2 x 4,0
DVPS 200/300	500	50/40	80	2 x 2,0	2 x 4,0
DVPS 220/220	500	50	80	2 x 2,0	2 x 4,0
DVPS 220/240	500	50	55	2 x 2,0	2 x 6,0
DVPS 220/250	500	50	80	2 x 2,0	2 x 6,0
DVPS 240/240	600	50	80	2 x 2,6	2 x 6,0
DVPS 240/250	600	50	80	2 x 2,6	2 x 6,0
DVPS 250/250	600	50	120	2 x 2,6	2 x 6,0
DVPS 250/300	600	50	120	2 x 2,6	2 x 6,0
DVPS 300/300	750	63/50	150	2 x 6,0	2 x 8,0

(*) Pneumatic control available in classes: SL 250, SL 550, SL 750 and SL 1300 at special request (applies to selected vent sizes).
(**) Electric control available in classes: SL 750, SL 950, SL 1300, SL 1600 and SL 2000 at special request (applies to selected vent sizes). Power consumption specified in the table applies to smoke vent with multi-chamber polycarbonate glazing.

2.| Fixed skylights, roof hatches, ventilation vents

The equipment series that includes mcr PROLIGHT fixed skylights, roof hatches and ventilation vents complements MERCOR natural smoke exhaust selection. Depending on the device chosen, they may serve the purpose of natural lighting, ventilating or increasing roof accessibility..

		Fixed skylights (non-openable skylights)	Roof hatches (openable skylights)	Ventilation vents (openable skylights)
Parameters				
Typ	mcr PROLIGHT	**C, E, NG-A**	**C, E, NG-A**	**C, E, NG-A**
Product classification	CE Declaration of Conformity (as per EN 1873) (*****)	» **Fire performance of available glazing:** – B_{ROOF}(t1) – B-s1-d0 – B-s2-d0 – E / NPD, » **Fire performance of weakest element:** – E / NPD » **Resistance to effect of external fire:** – B_{ROOF}(t1) – F_{ROOF}, » **Impact resistance of skylights with multi-chamber polycarbonate:** – SB1200 » **Heat transfer coefficient for entire device 1,1 W/m²K ≤ U ≤ 3,8 W/m²K (*), dependent on:** – type of glazing (see details in section 4) – type of device – dimensions of device – thermal insulation thickness – base type and height » **Direct acoustic resistance:** – Rw = 18÷22 dB dB for multi-chamber polycarbonates – Rw = 20 dB for double-layer domes – Rw = 22 dB for double-layer domes		
Control	pneumatic (ventilation)	-	-	●
	electric ~230V (ventilation)	-	-	●
	mechanic (gas springs)	-	●	-

(*) U heat transfer coefficient (thermal transmittance) available at client's request
(**) ALU sandwich panel (aluminum-thermal insulation-aluminum)
(***) B_{ROOF}(t1) glazing (multi-chamber polycarbonate of thickness ≥ 10 mm and polyester panel)
(****) Selected sizes
(*****) Only for units with translucent glazing