

TECHNICAL FILE

Monoflap 2x2 m for Cintralux 25 mm

Aluminium opening system with
multi-walled polycarbonate sheets


SKYLUX[®]
Hello daylight!

General product description

The Monoflap opening system consists of 2 aluminium frames. The fixed subframe is connected with hinges to the openable top frame that is provided with 25 mm multi-walled polycarbonate sheets, resulting in a low Ug value. The pre-assembled Monoflap is placed on top of the Cintralux 25 barrel vault in accordance with the mounting instructions.

The Monoflap uses the principle of convection of warm air for efficient natural ventilation of the building in case of fire and/or for daily ventilation.

The Monoflap comes in 4 types:

1. SHE pneumatic: opens at 68 °C by means of CO₂ gas
2. SHE electric combi: combination of electric SHE (smoke and heat extraction) and daily ventilation
3. SHE pneumatic combi: combination of pneumatic SHE (smoke and heat extraction) and electric daily ventilation
4. Ventilation: electric actuator for daily ventilation

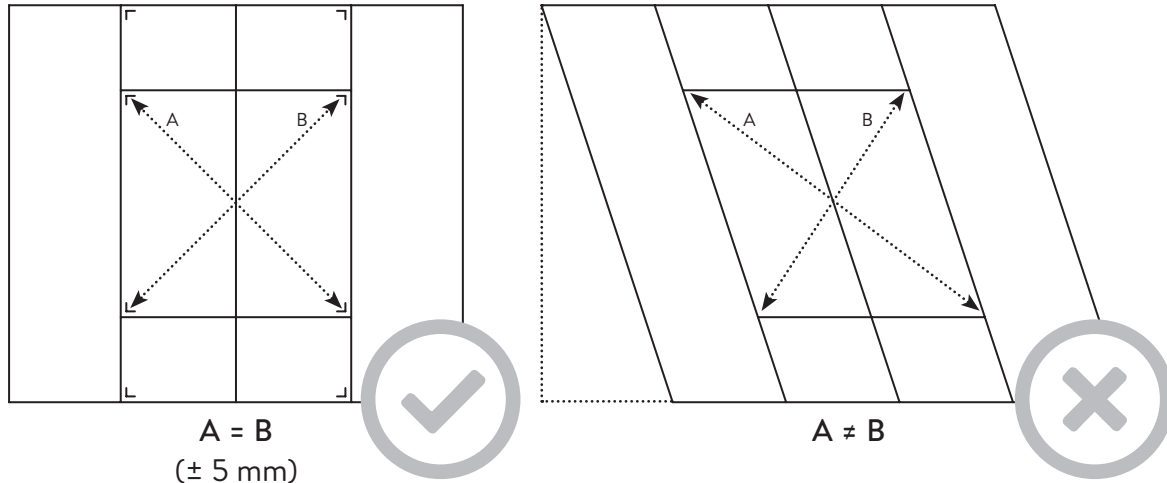
Advantages

- Combination of aesthetic aspect and light transmission, sound and heat insulation
- Various options: Combi, ventilation only, ...
- Suitable for large spans and heavy snow loads
- Cost-effective
- Easy installation because of pre-assembled frames

Compatible with barrel vault type	Cintralux® 25 mm
Min. barrel vault span:	
pitched curb	2500 mm
horizontal curb	4000 mm
Opening/daylight size	2036 mm x 2036 mm (4 m ²)
External flap size	2240 mm x 2265 mm (5 m ²)
Cover weight (top frame only)	± 40 kg
Complete frame weight without actuators	± 60 kg
Space between Monoflaps	min. 1 full sheet (1072 mm)
Space between end piece and Monoflap	min. ½ sheet (536 mm)
Radius	R=4000 mm (for span 2.5-4.99 m) R=5000 mm (for span 5-6.3 m)
Sheet colour	opal (clear = on demand)
U value	see Cintralux® 25 mm
LT	see Cintralux® 25 mm
G value	see Cintralux® 25 mm
Max. wind speed when opened	6 m/s (4 Beaufort) (daily ventilation)

Installation

- Tools: aerial working platform + standard toolbox equipment
- Curb specifications:
 - see also technical file Cintralux 25, special attention to:
 - curb perpendicularity (squareness):

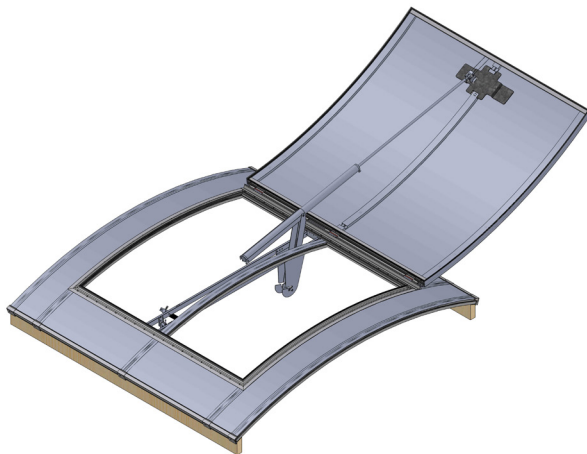


It is very important that the difference between the diagonals, A and B, is not bigger than 5 mm. Otherwise you will have problems installing the top frame onto the subframe of the Monoflap.

Opening types

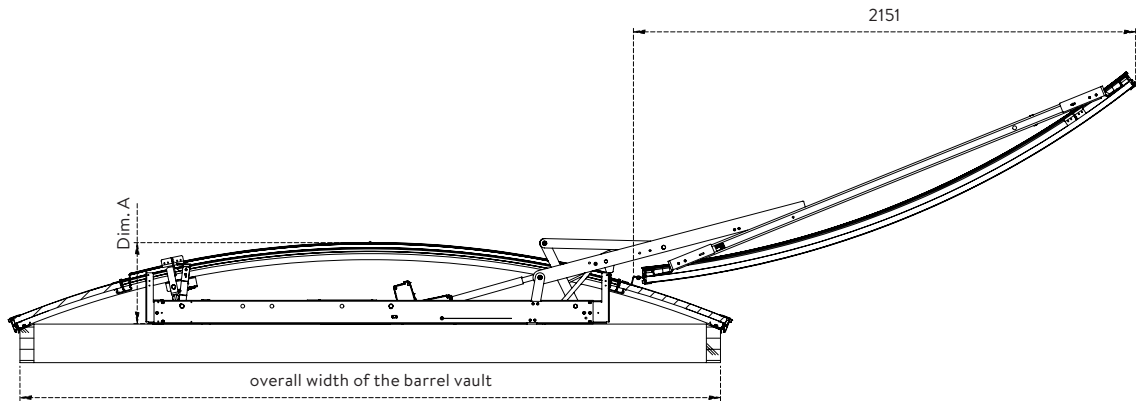
1. SHE pneumatic

- SHE function: at e.g. 68 °C, the pneumatic cylinder will open the Monoflap 160° by using CO₂ gas. Close manually.



2. SHE electric combi (SHE electric + electric ventilation)

- SHE function: by using the priority switch, the Skycom CE Master and Skycom CE Slave control units will send a signal to the electric actuator 24 V that will close and open the Monoflap 160°.
- Daily ventilation: the Monoflap opens to the required position (standard setting = ± 30 cm).



Specification CE according to EN 12101-2 for Skylux 160°CE electric

Min. operating temperature (°C)	-15°
Heat resistance (°C)	B300
Snow load (N/m ²)	SL 250*
Wind load (N /m ²)	WL 1500
Aerodynamic surface with deflector	2.48 m ²
Reliability	Re 1000
Reliability ventilation	Re 10,000

Specific characteristics opening mechanism

Voltage	24 V DC - 48 V DC
Current	nominal 6 A
Number of actuators	1
Opening angle	160°
Weight	23 kg
Limit switch	electronic
Density class	IP54
Certification	CE according to EN12101-2
Finish	galvanised
Dimension A	370 mm, actuator mechanism is always higher than the top side of the barrel vault curb

* SL500 possible on request (use of 2 actuators)

3. SHE pneumatic combi (SHE pneumatic + electric ventilation)

- SHE function: at e.g. 68 °C, the pneumatic cylinder will open the Monoflap 160° by using CO₂ gas. Close manually.
- Daily ventilation: electric spindle actuator opens the Monoflap up to 50 cm.



Powered by	SHE: pneumatic cartridge 120 g fluid CO ₂
Opening angle	full opening, 160°
Activation temperature	68°C (red glass fuse)

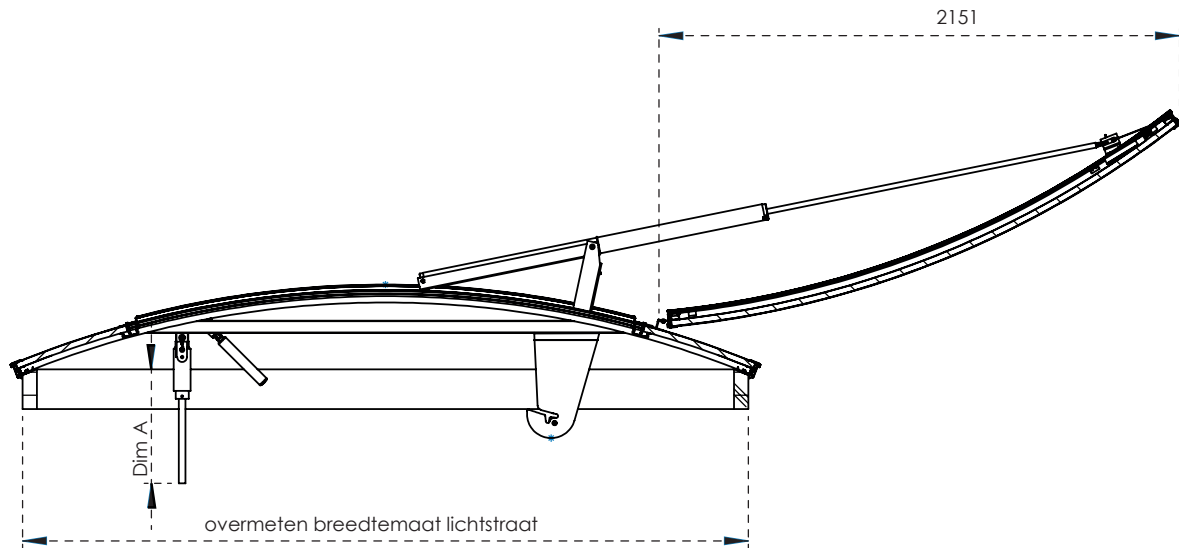
Electr. ventilation (optional)
See actuator specifications below in point 3 'ventilation'.

Performance according to EN12101-2:

Snow load	SL 500 for T(-5) SL 125 for T(-15)
Wind load	WL 1500
Reliability	Re 500
Heat-resistance class	B 300
Aerodynamic free area:	
- with wind deflector	2.48 m ² (Cv = 0.62)
Min. working pressure for opening:	
- without load	7 bar (open & close)
- with snow load 250 N/m ²	14 bar
- with snow load 500 N/m ²	25 bar
Consumption (cylinder volume)	4.22 litres
Weight actuator system (traverse)	± 30 kg

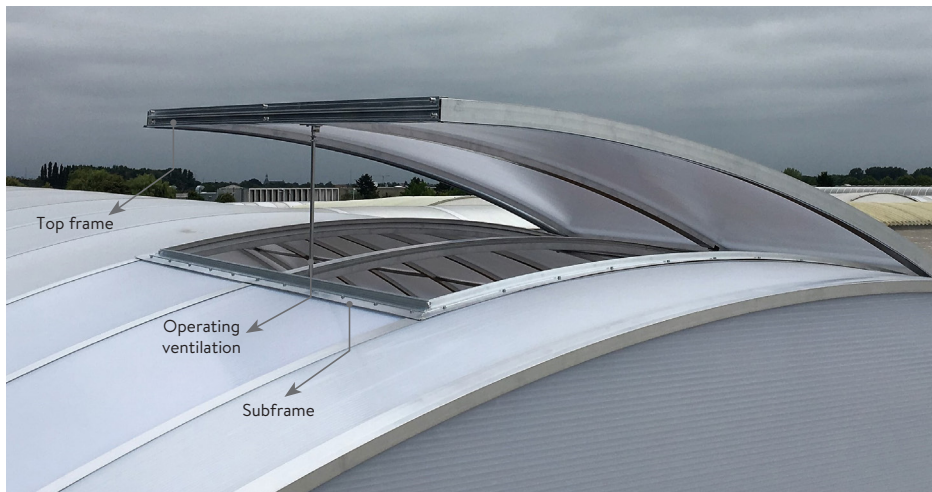
The same electric spindle actuator is used in the combi and in the ventilation version of the Monoflap

Extension below curb for	see drawing Dim A:
- Span 2500	550 mm
- Span 3000	475 mm
- Span 3500	350 mm
- Span 4000	225 mm
- Span 4500	50 mm



4. Ventilation

- An electric spindle actuator opens the Monoflap up to 50 cm ensuring efficient daily ventilation of your building.



• Actuator specifications



Powered by	230 V / 50 Hz
Power consumption	200 W / 0.92 A
Parallel connection allowed	yes
Up-down control switch	double pole changeover contact (single pole changeover is also allowed)
<i>If up (brown) and down (black) signal are both connected at the same time to the L-line, the actuator will open.</i>	
<i>Also allowed that the supply voltage on the actuator terminals stays in open or closed position.</i>	
Connection cable	H05-VV-F 6 x 0.75 mm ² approx. 1.3 m long (white)
Operation mode duty cycle	S2- 1 min. (short-time duty)
Colour	similar to RAL 9002 (grey white)
Stroke	500 mm
Stroke time	10 mm/s
Push / tensile force	500 N / 250 N
Protection class	IP54
In case of rain or strong wind (≥ 6 m/s), the Monoflap must be closed!	
Thermal protection	115 °C: short time duty: after 4-6 full strokes, the thermal switch-off will be activated
Ambient temperature	max. 60°C
Reliability (dual purpose for Combi)	Re 10000
Electronic limit switch	>250 N
Open/closed position indication	potential free NO contact
(for e.g. indication lamp connection)	contact closes when Monoflap opens (max. 250 V/4 A)
Maintenance-free	yes
Safety	
Actuator weight	2.5 kg
Dimensions (diameter x length)	Ø 70 x 650 mm
Extension below curb	same as Combi

Wiring diagram

Check the wiring diagram to see how to connect the actuator correctly.

Maintenance

See separate installation instructions.

Legal requirement of yearly test: you need access to the CO₂ cartridge and glass fuse **by aerial working platform**.

Options

BRoof(t1)

Accessories

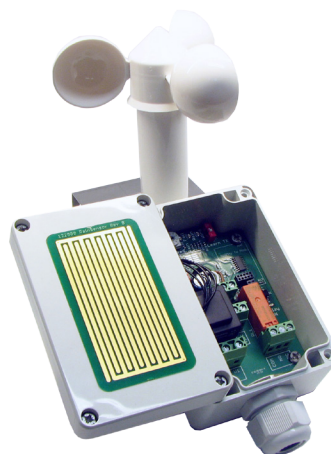
1. Bipolar switch

Met de schakelaar kan je de Monoflap bedienen.
A push button is also possible instead of a switch.
Maximum 10 actuators per switch (10 A).



2. Weather detector

The weather detector is optional. It closes the Monoflap when it rains or when there is a strong wind. If there is no weather detector, the customer is responsible to close the Monoflap in case of bad weather.
Maximum 8 actuators per weather detector (8 A).



Attestations, certificates and documentation



- CE according to SHE standard EN 12.101-2:2003
- CE of the Skycom® CE Master and Skycom® CE Slave control unit according to EN 12.101-(9)/10
- CE of multi-walled sheets EN16153
- DoP on www.skylux.be

SKYLUX NV
SPINNERIJSTRAAT 100 - B-8530 STASEGEM
T +32 (0)56 20 00 00 - F +32 (0)56 21 95 99
INFO@SKYLUX.BE
WWW.SKYLUX.BE


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