



# VELUX Glazing Panels

Bespoke daylight solutions for public and commercial buildings

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**VELUX**<sup>®</sup>

Commercial



Front cover and this page: Dual pitched solution, Jakon Headquarters, Ballerup, Denmark. Dual pitch solution awarded with the Archiproducts Design Award 2020.

## Bespoke daylight solution in elegant design

VELUX Glazing Panels are bespoke glass rooflights with slim and shallow profiles for optimal daylight influx. They enable the creation of a wide range of rooflight designs from flush installations in a pitched roof to pyramids on a flat roof.

VELUX Glazing Panels are ideal for refurbishment projects of public and commercial buildings – for working, shopping and learning.





Mono pitched solution in saw tooth roofs, National College for Advanced Transport & Infrastructure, Doncaster, Great Britain.

Atrium mono pitched solution,  
 MT Højgaard, Søborg, Denmark  
 Certificate: DGNB Gold





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# The benefits

## Bespoke glass system with prefabricated panels

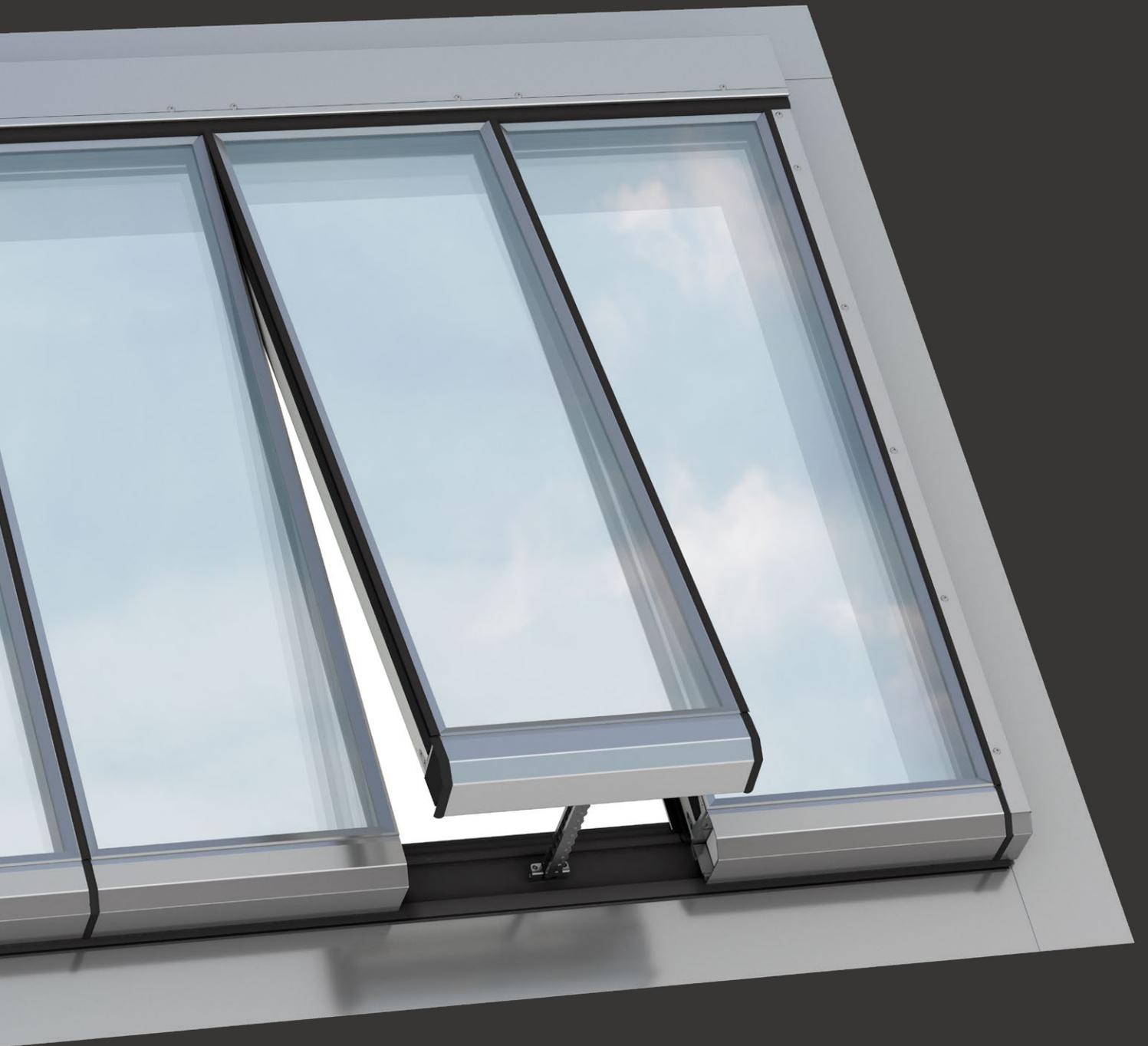
VELUX Glazing Panels are ideal for creating bespoke daylight solutions for public and commercial buildings as they are;

- **Flexible when designing**
- **Prefabricated yet bespoke**
- **Ideal for refurbishment**

VELUX Glazing Panels allow you to design almost anything, thereby creating your own bespoke glass system - ideal for creating special corner solutions, glass gables and pyramids. The elegantly designed aluminium profiles are thermally broken with a polyurethane core. The bespoke nature of panels makes them ideal for refurbishment projects as they can be designed to fit an already existing hole in the roof.

The individual panel is prefabricated off-site. It is delivered assembled with the glazing unit sealed into the frame, ready to be installed together with the accessories creating a high quality and weather-tight solution.





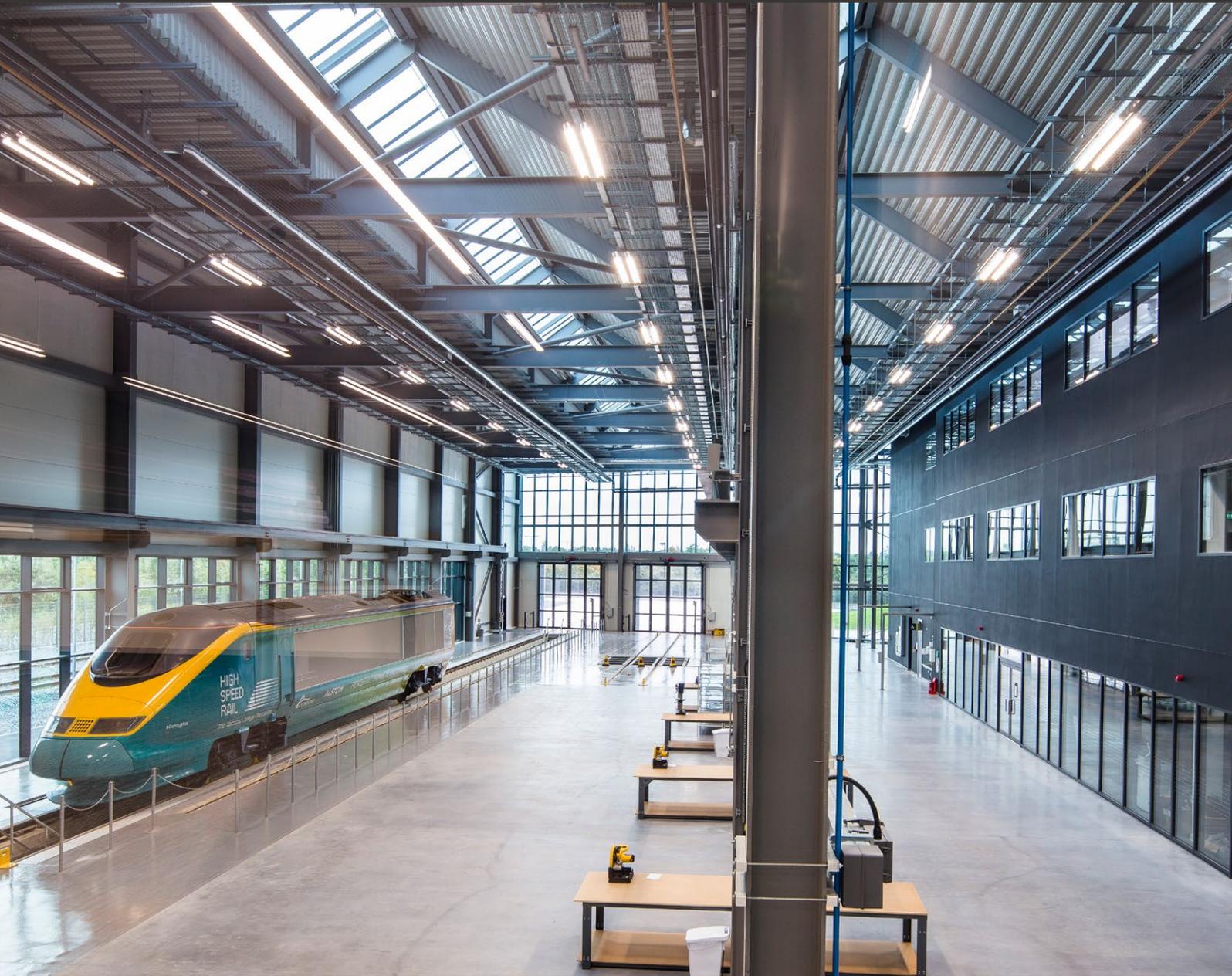
## The benefits

VELUX Glazing Panels are available as fixed and venting panels and can be configured with either double glazing or triple glazing providing various design opportunities. All venting panels are top-hung and are available in comfort and smoke ventilation versions. In closed position, there is no visible difference between a fixed and a venting panel from the outside. Additionally, a fixed panel can easily be converted to provide ventilation by post-installing an actuator and a crossbar.



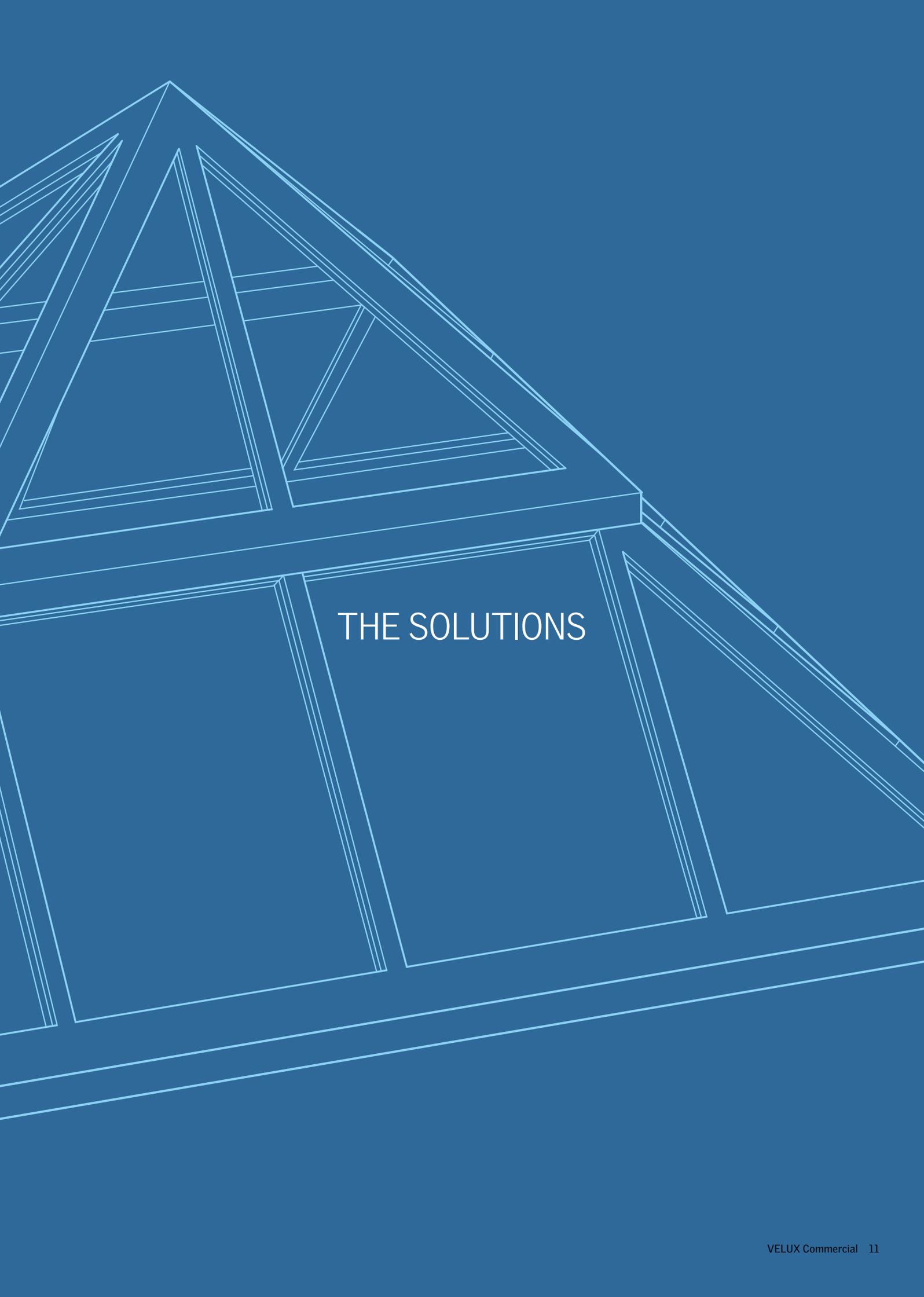
Dual pitched atrium solution,  
Psychiatric Hospital,  
Slagelse, Denmark





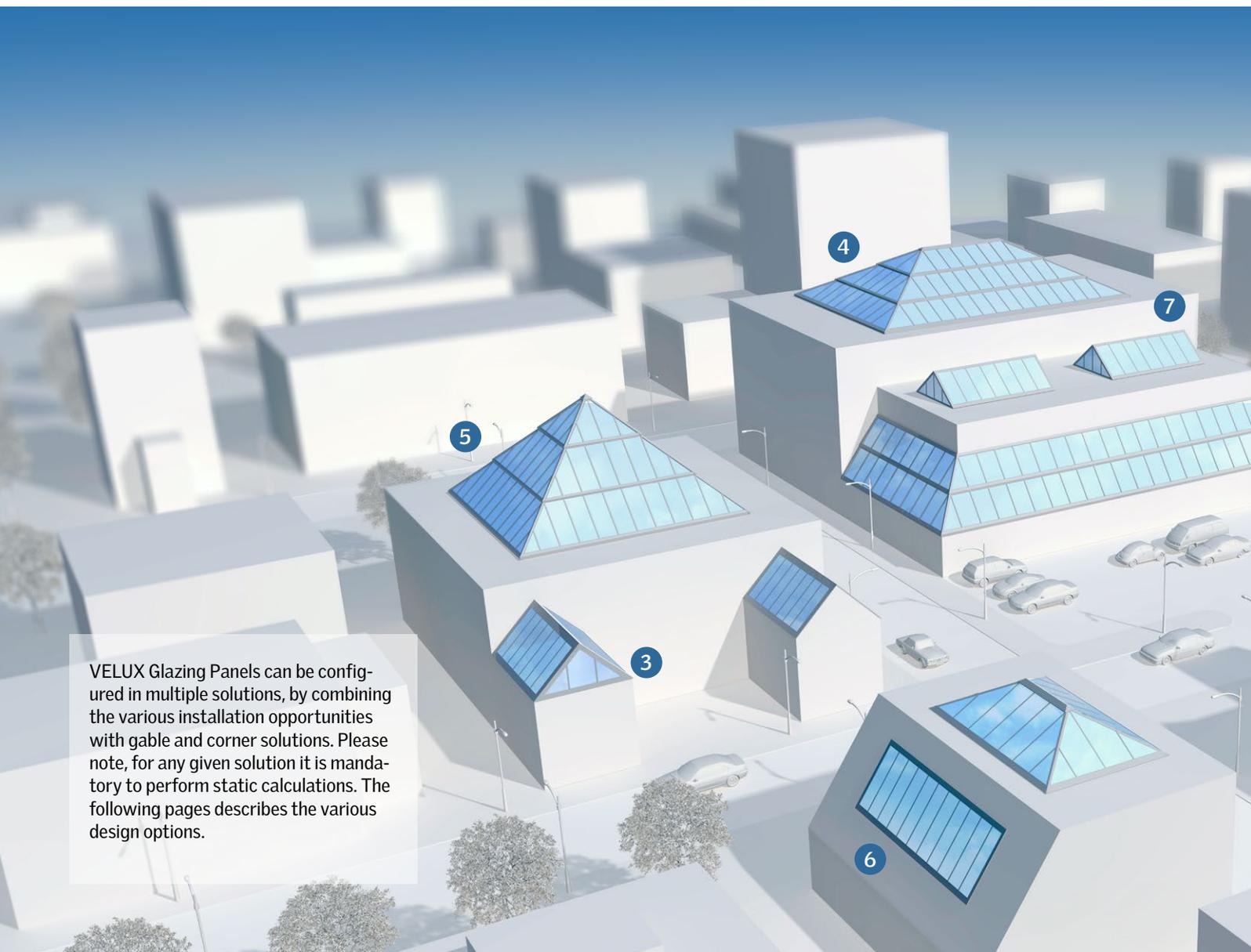
Mono pitched solution in saw tooth roofs, National College for Advanced Transport & Infrastructure, Doncaster, Great Britain.



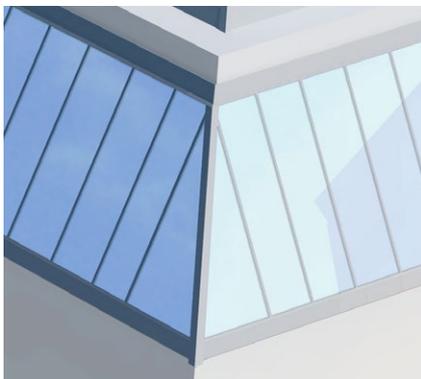


# THE SOLUTIONS

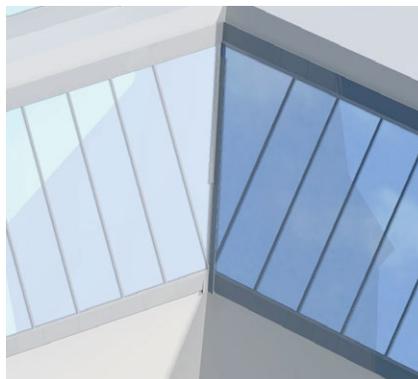
# Overview solutions



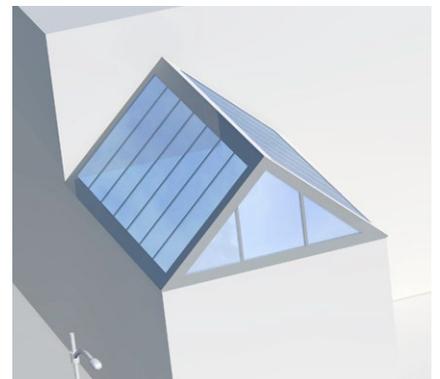
VELUX Glazing Panels can be configured in multiple solutions, by combining the various installation opportunities with gable and corner solutions. Please note, for any given solution it is mandatory to perform static calculations. The following pages describes the various design options.



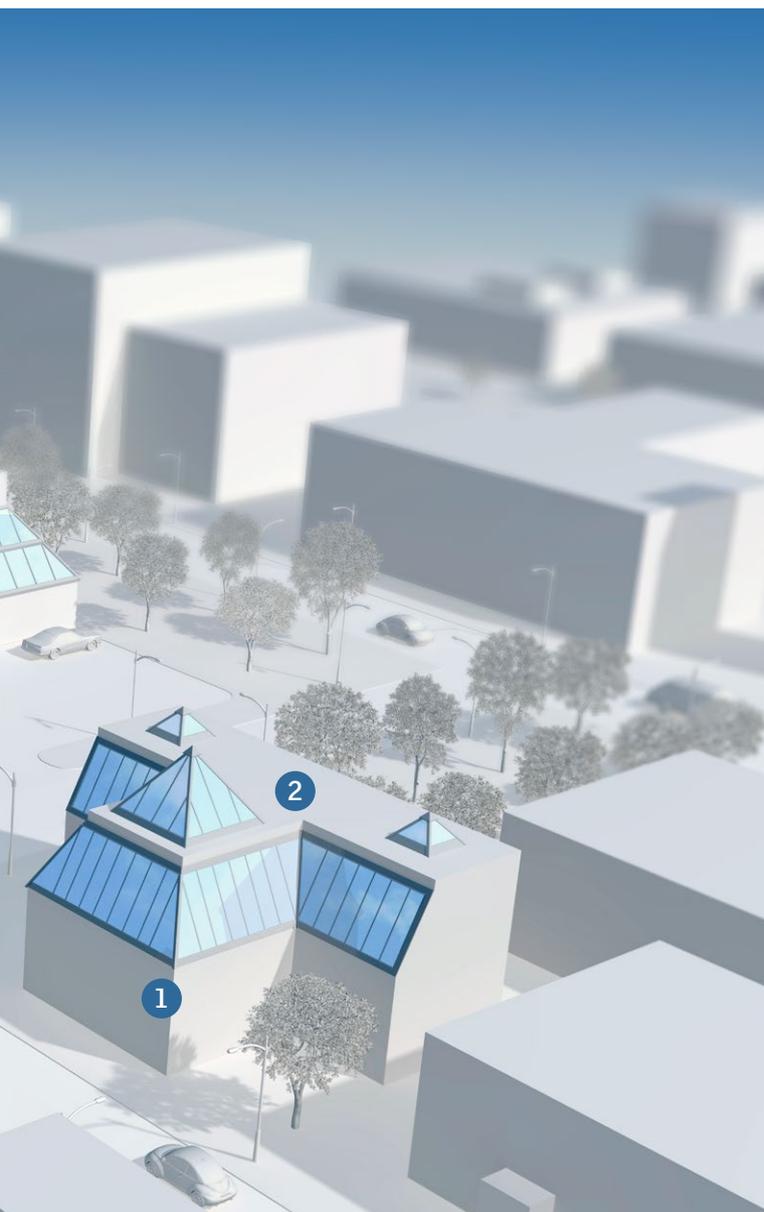
**1 Hip**  
A hip is an external facing corner solution used to connect two adjacent sloping sides of a rooflight. It is commonly used to create hipped gables in dual pitched solutions.



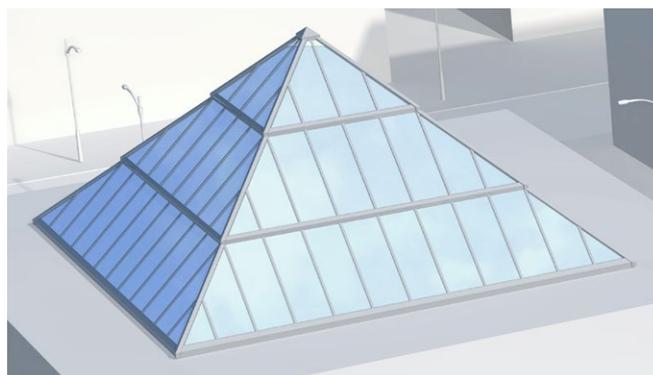
**2 Valley**  
A valley is an internal facing corner solution used in the intersection between two individual rooflights. It can be used to connect two adjacent rooflights.



**3 Vertical glass gable**  
A vertical glass gable is a section of vertical glazing made up of one or more panels located at the end of a mono pitched solution or dual pitched solution.



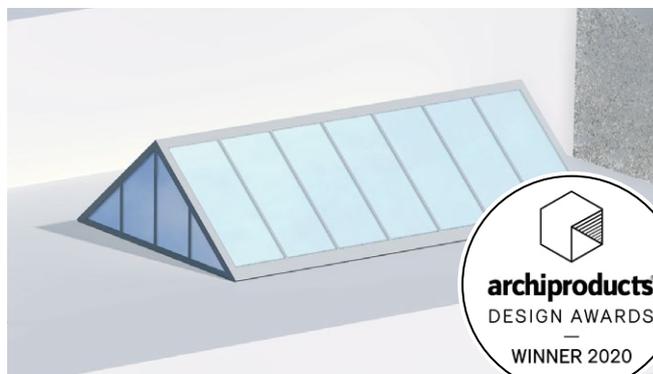
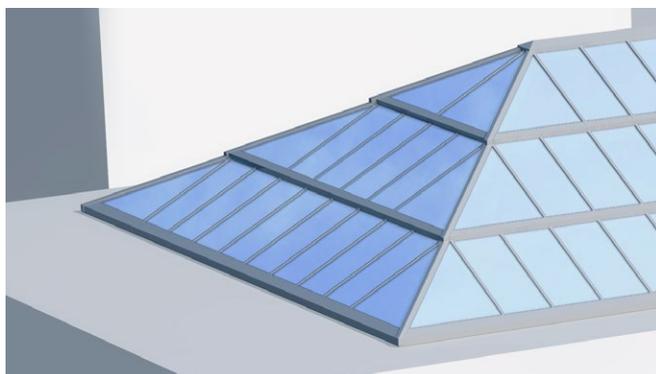
**4 Step solutions**  
 VELUX Glazing Panels can be configured in a step solution by installing multiple rows of panels on top of each other using a structural beam to connect the rows.



**5 Pyramid solutions**  
 A pyramid is comprised of multiple sides of panels connected using hipped corner solutions. For a small solution, it is possible to create a self-supporting pyramid, for bigger solutions, a support structure with hips and beams is required.



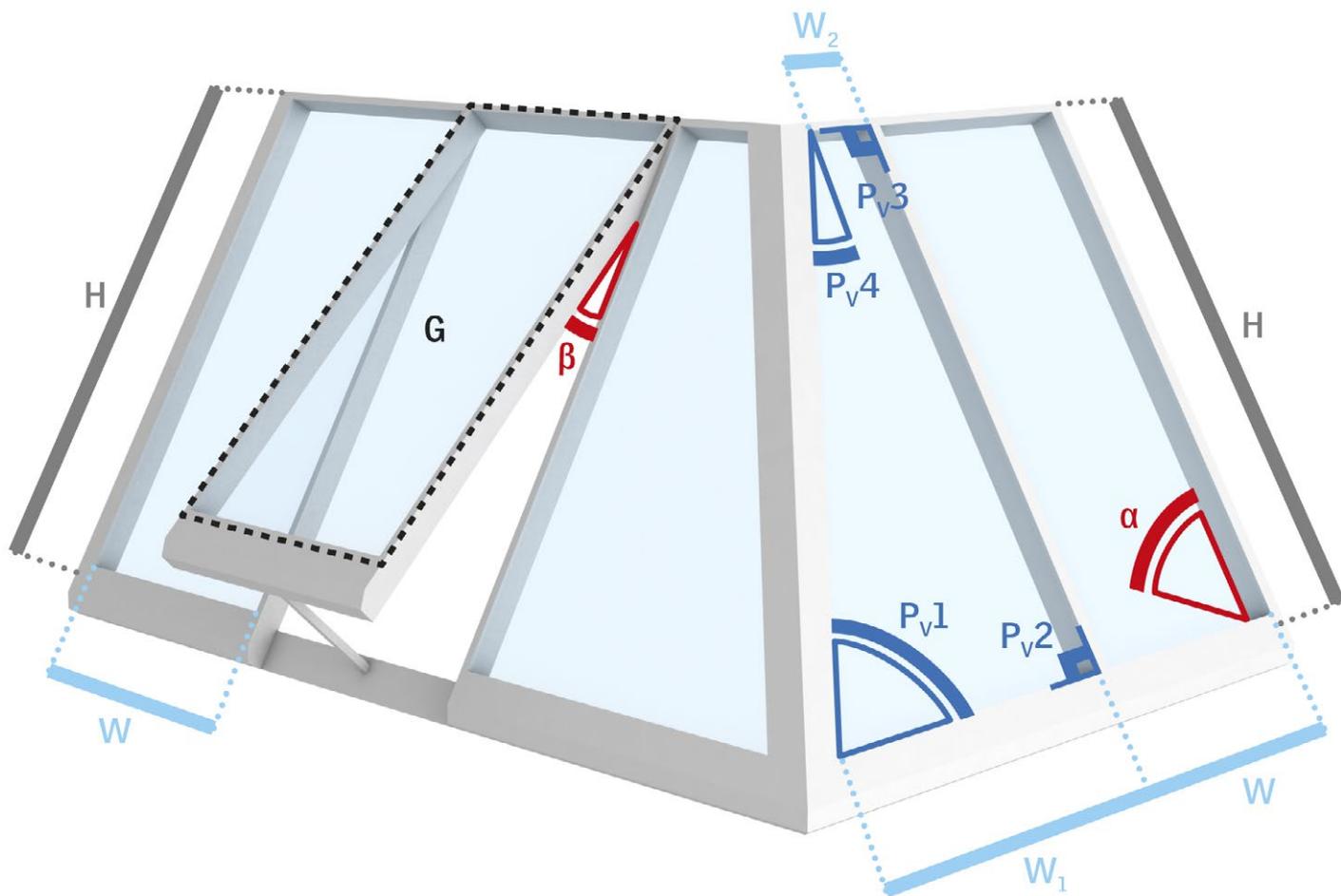
**6 Mono pitched solutions**  
 Mono pitched solutions are single rows of VELUX Glazing Panels installed between 15-90° on either an upstand (on a flat roof) or a non-protruding installation in a sloped roof. Solutions mounted against a vertical wall can be installed in pitches between 15-60°.



**7 Dual pitched solutions**  
 Dual pitched solutions are two rows of VELUX Glazing Panels connected at the top, creating a ridge. For self-supporting solutions, the installation pitch is between 25-60°. It is possible to create a supported dual pitched solution with pitches of 15° or above by introducing a girder at the ridge.

# Panel design options

The tables to the right describe the design options such as the size of the panels and installation pitch. To confirm the size of the panel, a static calculation incorporating snow and wind loads is required for the specific project.



## Configuration options



Fixed, comfort and smoke evacuation panels outside the scope of EN 12101-2			
		Double glazing	Triple glazing
<b>W</b>	Module width	264 mm – 1200 mm (fixed or crossbar solution)	256 mm – 1200 mm (fixed or crossbar solution) 651 mm – 1200 mm (hidden actuator)
	Panel width	Module width – 4 mm	Module width – 6 mm
<b>W<sub>1-2</sub></b>	Shaped panel	Measurement limitations per shaped type, please contact your local VELUX Commercial sales office	Measurement limitations per shaped type, please contact your local VELUX Commercial sales office
<b>H</b>	Panel height	260 mm – 2900 mm	250 mm – 3500 mm
	Ratio	W/H: 1:6 or 6:1	W/H: 1:6 or 6:1
<b>G</b>	Panel area**	max. 2 m <sup>2</sup>	max. 3 m <sup>2</sup>
<b>β</b>	Opening angles	0° – 45° (max. opening to horizontal)	0° – 45° (max. opening to horizontal)
<b>P<sub>v</sub></b>	Corner angles	Fixed panels 25° – 155°. Venting panels only with 90° corners.	Fixed panels 25° – 155°. Venting panels only with 90° corners.
<b>α</b>	Installation pitch	15° – 90° (ponding groove if pitch is under 25°)*	15° – 90° (ponding groove if pitch is under 25°)*

Smoke venting panels, in accordance with EN 12101-2			
		Double glazing	Triple glazing
<b>W</b>	Module width	504 – 1200 mm (crossbar solution)	506 mm – 1200 mm (crossbar solution) 851 mm – 1200 mm (hidden actuator)
	Panel width	Module width – 4 mm	Module width – 6 mm
<b>H</b>	Panel height	600 mm – 2900 mm	500 mm – 3500 mm (crossbar solution) 500 mm – 2366 mm (hidden actuator)
	Ratio	W/H: 1:6 or 6:1	W/H: 1:6 or 6:1
<b>G</b>	Panel area**	max. 2 m <sup>2</sup>	max. 2 m <sup>2</sup>
<b>β</b>	Opening angle	0° – 45°	8° – 45°
<b>α</b>	Installation pitch	15° – 60° (ponding groove if pitch is under 25°)*	15° – 50° (ponding groove if pitch is under 25°)*
	Glazing weight	max. 40 kg/m <sup>2</sup>	max. 50 kg/m <sup>2</sup>
	Wind deflector	Not available	Available in size 200 and 400 mm high
	Solutions	Be aware that the above guidance only applies to some solutions, please contact your local VELUX Commercial sales office	Be aware that the above guidance only applies to some solutions, please contact your local VELUX Commercial sales office

- For more information regarding venting panels, see page 26.  
 \* For more information regarding ponding groove, see page 25.  
 \*\* Based on panel width x height.

# Panels

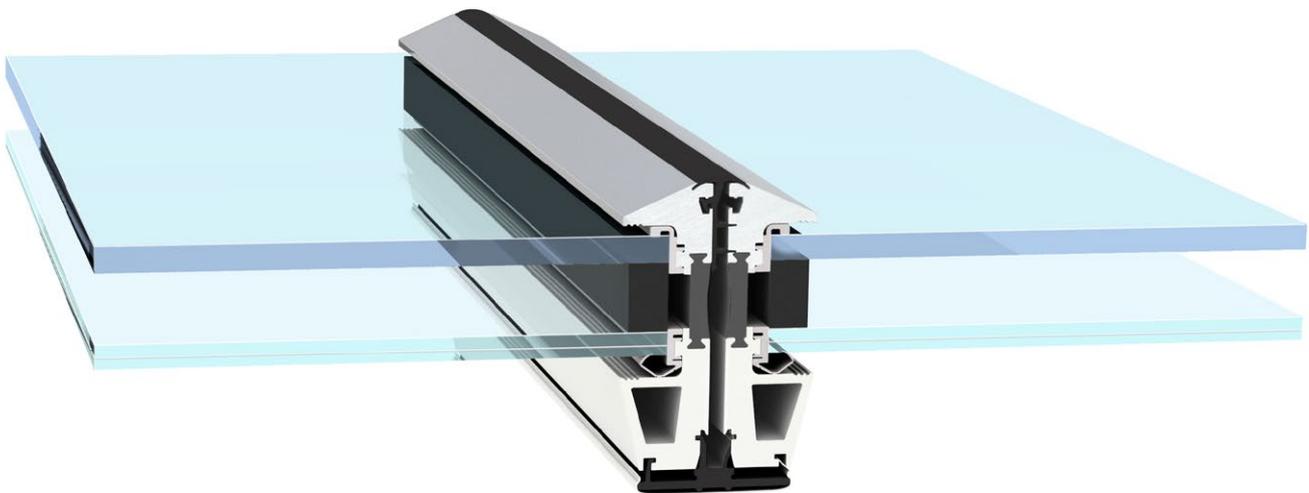
The prefabricated panel consists of aluminium frame profiles with a glazing unit sealed into the frame. When the panels are joint together on-site, the outer gasket and an inside drainage profile must be mounted to secure drainage and a weather-tight solution.

## Double glazing

Frame profile height: 74 mm

Panel joint height: 82 mm

Panel joint width: 50 mm



## U-value

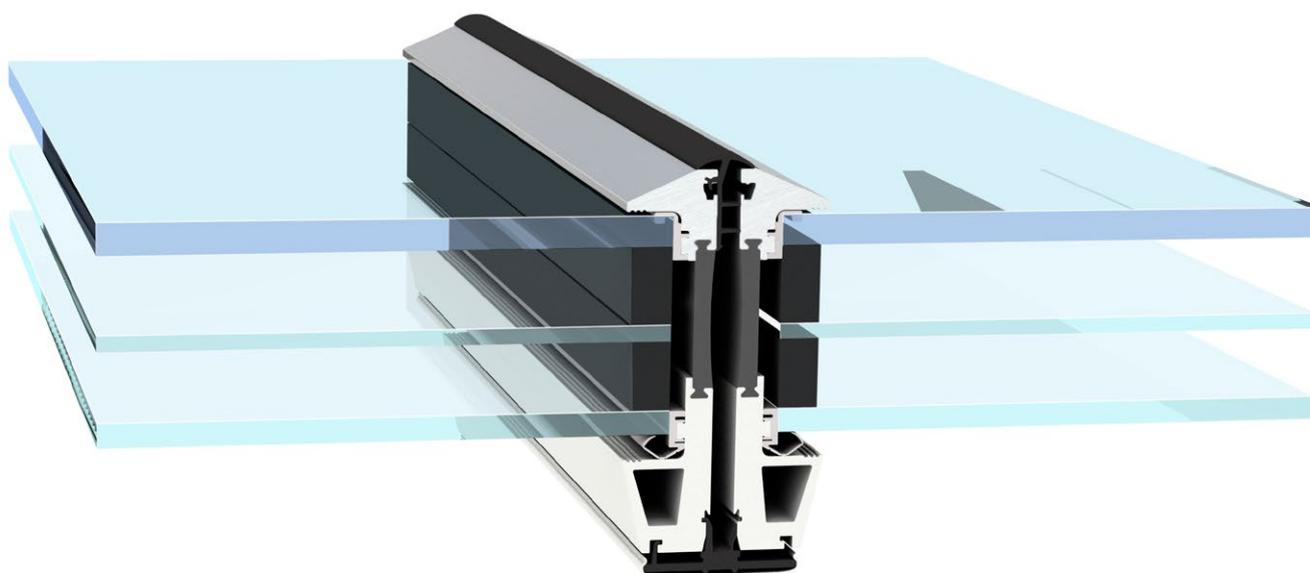
Thermal transmittance in accordance with EN 14351-1:

Panels with double glazing:

**$U_w = 1.7-1.8 \text{ W/m}^2\text{K}$**

## Triple glazing

Frame profile height: 98 mm  
Panel joint height: 106 mm  
Panel joint width: 52 mm



## U-value

Thermal transmittance in accordance with EN 14351-1:

Panels with triple glazing:  
 **$U_w = 1.0-1.3 \text{ W/m}^2\text{K}$**

# Glazing

Control daylight and heat to create a better indoor climate. VELUX Glazing Panels come with double or triple glazing with low emissivity (LowE) and sun protection coatings. The coatings are optimised to meet the desired levels of solar heat gain, sun protection, light

transmittance and colour rendering. Below you can find some examples and the effect of the coatings. Information about other available glazing variants and technical values, see page 31.



## Double glazing unit with sun protection coating

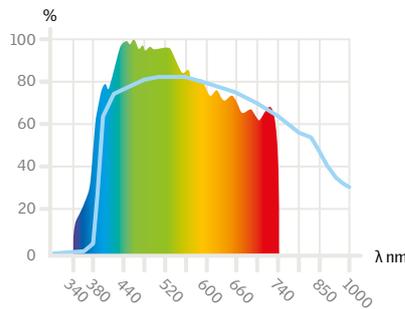
Spectral values (wave length in nm)  
 Visible daylight    tau

All of the mentioned values are in accordance with EN 410.

### Double glazing with low emissivity coating (LowE)

#### Variant 40L

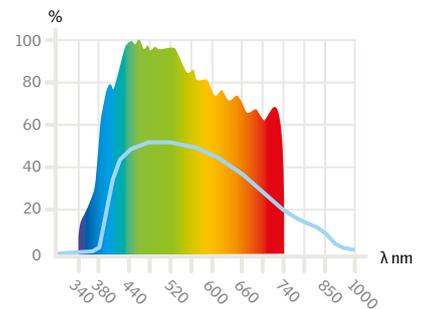
Light transmittance:  $\tau_v$ -value = 80%  
 Solar factor: g-value = 64%  
 Colour rendering index:  $R_a$  = 97



### Double glazing with light sun protection coating (Sun1)

#### Variant 41L

Light transmittance:  $\tau_v$ -value = 50%  
 Solar factor: g-value = 27%  
 Colour rendering index:  $R_a$  = 91



## Colour simulation

Your choice in coating will affect the amount of penetrating light as well as the natural colouring of the interior.



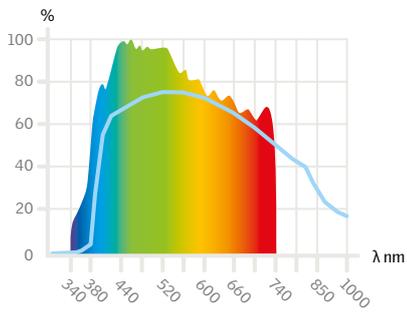
# Triple glazing unit with sun protection coating



## Triple glazing with low emissivity coating (LowE)

### Variant 46L

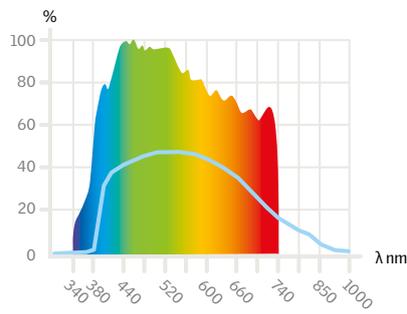
Light transmittance:  $\tau_v$ -value = 73%  
Solar factor: g-value = 53%  
Colour rendering index:  $R_a$  = 96



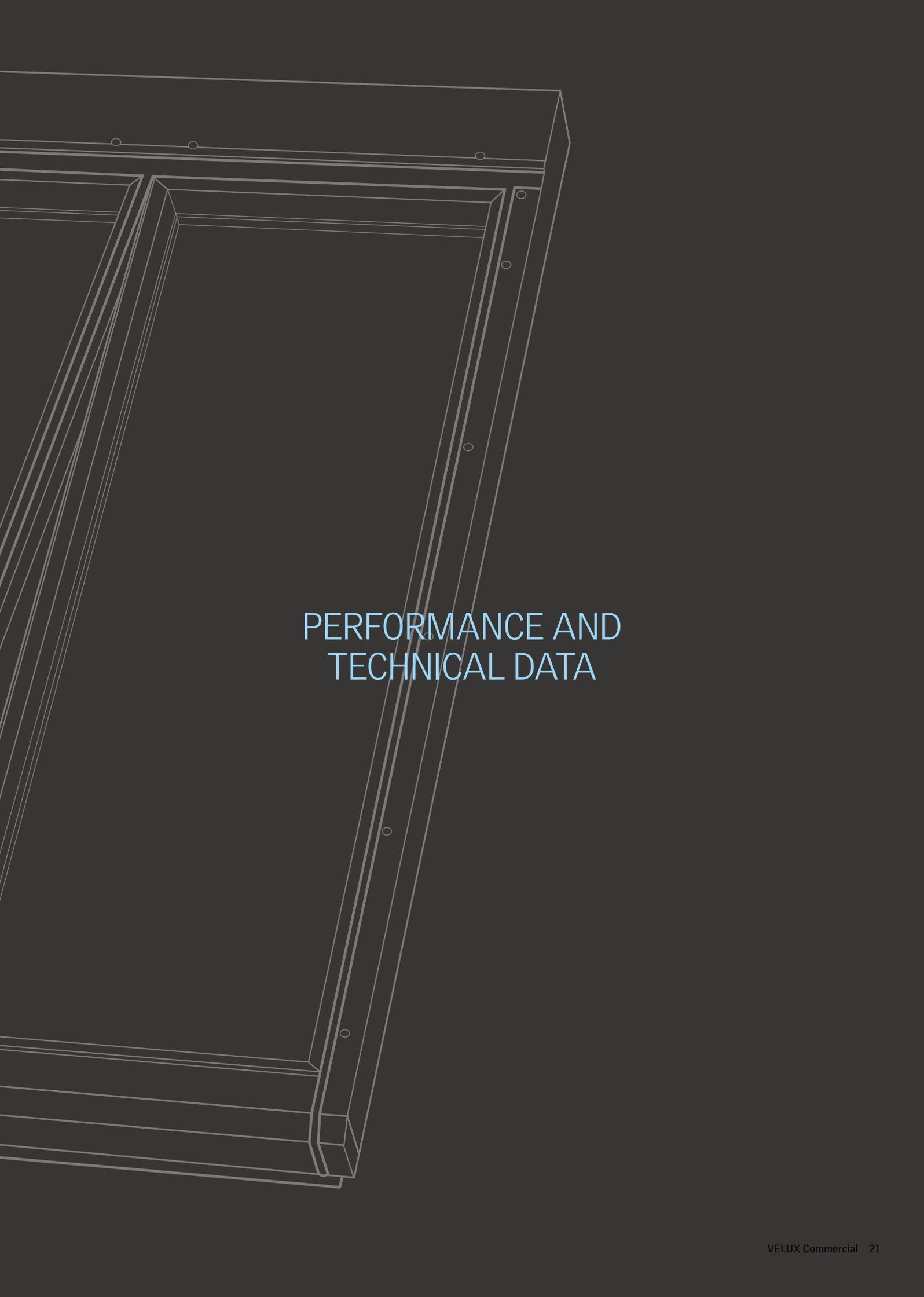
## Triple glazing with light sun protection coating (Sun1)

### Variant 47L

Light transmittance:  $\tau_v$ -value = 47%  
Solar factor: g-value = 26%  
Colour rendering index:  $R_a$  = 83







# PERFORMANCE AND TECHNICAL DATA

# Main components and attachment to the roof

VELUX Glazing Panels are attached to the roof in the top and the bottom of the panels. At the top, the panel is installed using an installation profile ① which must be fastened to the sub-construction or wall in wall-mounted solutions.

For a self-supported dual pitched solution a dual pitched installation profile is used thus a sub construction is not required in the top.

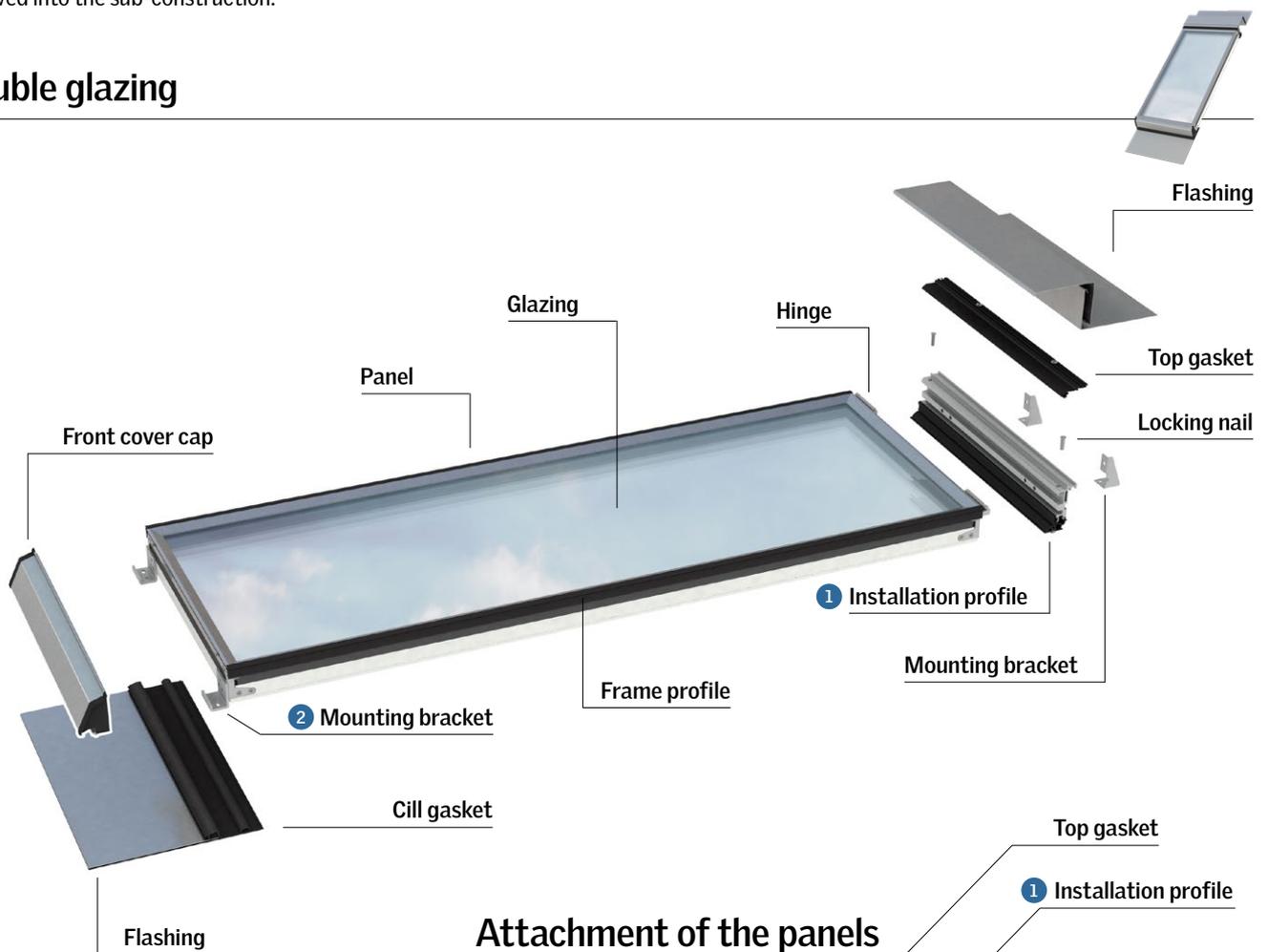
In the bottom, the panel is attached using a pre-mounted mounting bracket ② which for fixed panels must be screwed into the sub-construction. For venting panels, the mounting bracket must not be screwed into the sub-construction.

At the ends, the panel is finished against a side gable which is screwed into the sub-construction or a wall. The installation is completed with gaskets and flashings, ensuring a weathertight solution.

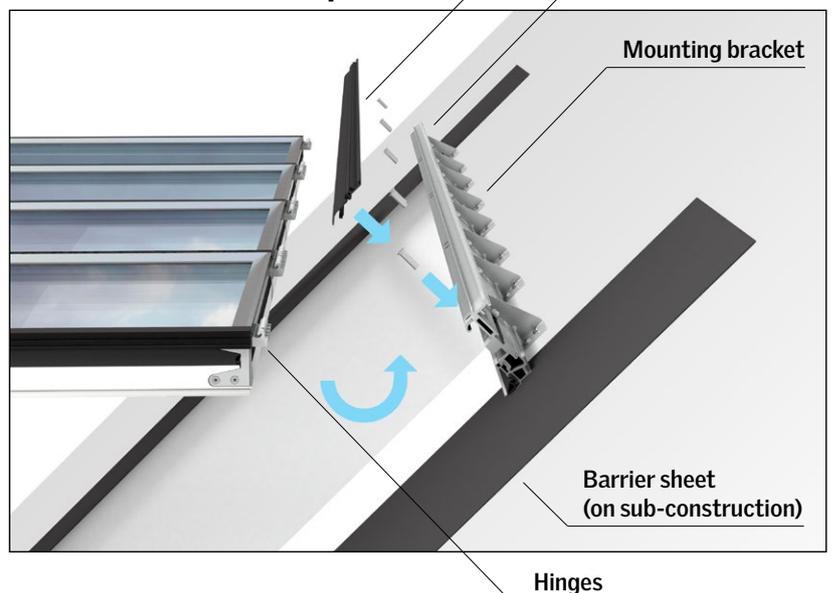
The individual panel and main parts of the accessories are prefabricated off-site, making the installation easier on-site.

Due to the bespoke nature of the panels, the installation must be carried out by a trained installer or with support from a VELUX Commercial technician.

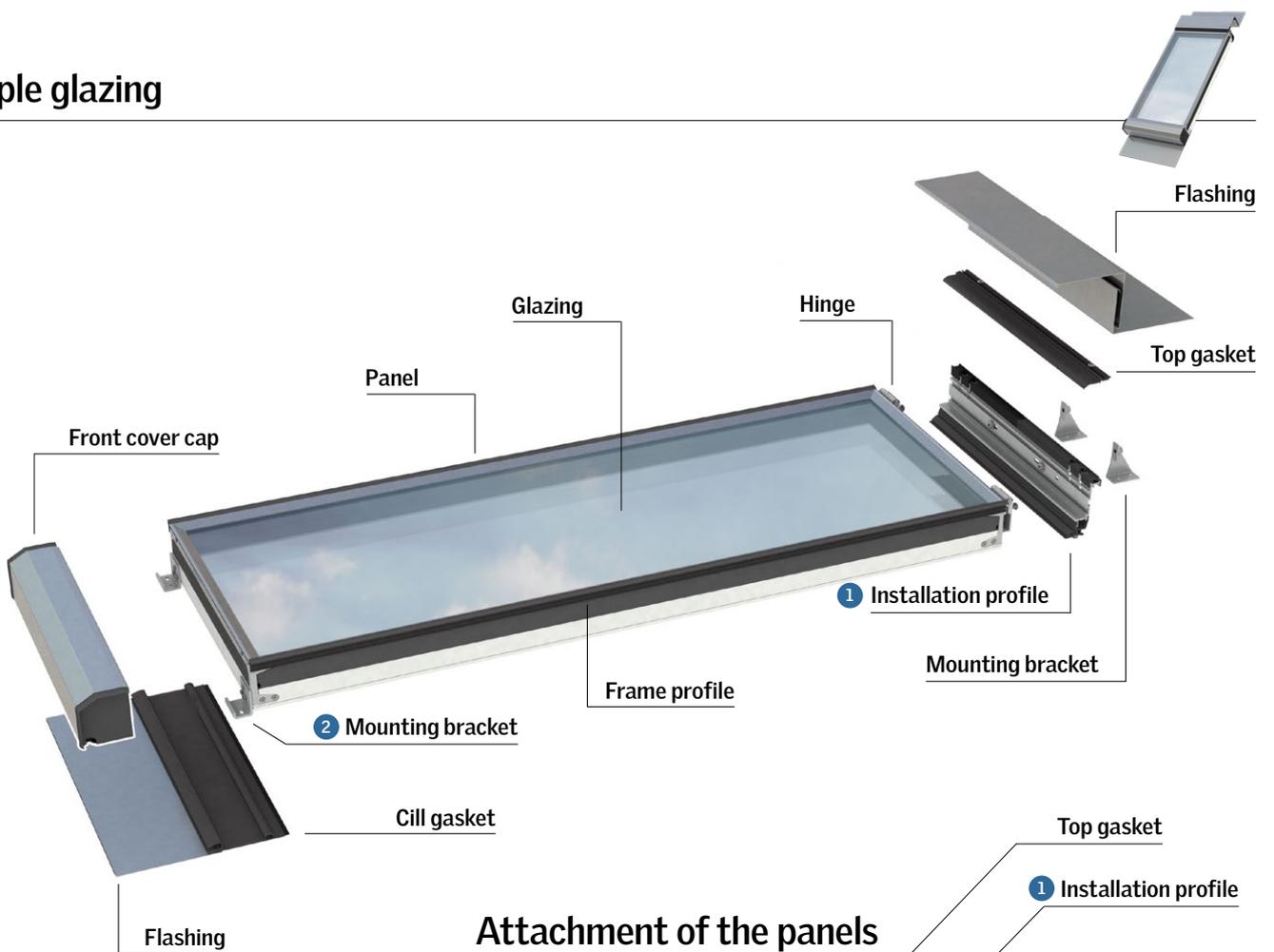
## Double glazing



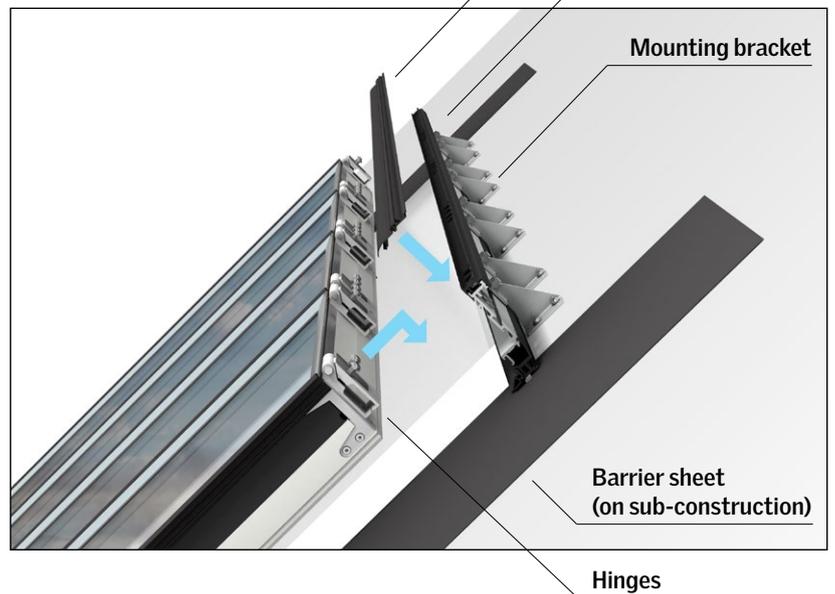
## Attachment of the panels



# Triple glazing



## Attachment of the panels



# Material and colours

## Double glazing



**Hinge**

**Exterior view**



**Frame profile\***

Material: Aluminium & polyurethane core  
Surface: Nature anodized or polyester powder coated  
Exterior colour: RAL 9010/9005/7016, gloss 30  
Interior colour: Same as exterior or wet coloured painted RAL 9010



**Front cover cap\* & rubber plug**

Material: Aluminium (2 mm), EPDM rubber plug & polystyrene insulation  
Surface: Nature anodized or polyester powder coated  
Colour: RAL 9010/9005/7016, gloss 30



**Installation profile**

Material: Aluminium, PVC & EPDM rubber gasket



**Flashing\***

Material: Aluminium (1 mm)  
Surface: Nature anodized or pre-painted  
Colour: RAL 9010/9005/7016, gloss 30



**Side gable + fixing angle profile**

Material: Foamed PVC & aluminium, including a EPDM rubber plug.  
NB: Can be delivered without a fixing angle profile depending on installation.



**Cill gasket**

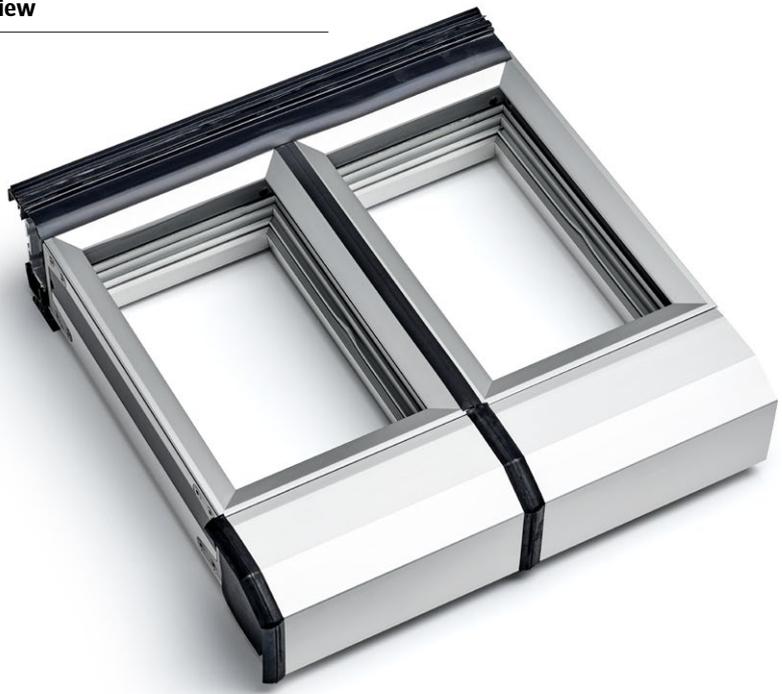
Material: Black EPDM rubber

\* Other RAL colours can be ordered at additional cost. Contact your local VELUX Commercial sales office for more information.

# Triple glazing



**Exterior view**



**Hinge**



**Frame profile\***

Material: Aluminium & polyurethane core  
 Surface: Nature anodized or polyester powder coated  
 Exterior colour: RAL 9010/9005/7016, gloss 30  
 Interior colour: Same as exterior or wet coloured painted RAL 9010



**Front cover cap\* & rubber plug**

Material: Aluminium (2 mm), EPDM rubber plug & polystyrene insulation  
 Surface: Nature anodized or polyester powder coated  
 Colour: RAL 9010/9005/7016, gloss 30



**Installation profile**

Material: Aluminium, PVC & EPDM rubber gasket



**Flashing\***

Material: Aluminium (1 mm)  
 Surface: Nature anodized or pre-painted  
 Colour: RAL 9010/9005/7016, gloss 30



**Side gable + fixing angle profile**

Material: Foamed PVC & aluminium.  
 NB: Can be delivered without a fixing angle profile depending on installation.



**Cill gasket**

Material: Black EPDM rubber

\* Other RAL colours can be ordered at additional cost. Contact your local VELUX Commercial sales office for more information.

# Double glazing and triple glazing



## Cover cap\*

Material: Steel (0.5mm)  
 Surface: Polyester powder coated  
 Colour: Same as interior frame profile  
 NB: Nature anodized frame surface will be matched with a similar colour coating



## Drainage profile

Material: Hard PVC with soft PVC gasket lips



## Mounting bracket

Material: Steel (4 mm)



## Top gasket

Material: Black EPDM rubber



## Outer gasket

Material: 2 component TPE profile



## Barrier sheet

Material: Bitumen-based membrane



## Aluminium crossbar for double glazing panel

For comfort and smoke ventilation

Material: Aluminium square pipe (reinforced with steel u-profile for panel width > 700 mm)  
 Surface: Nature anodized or polyester powder coated  
 Colour: Same as interior frame profile



## Steel crossbar for double glazing panel

For comfort ventilation

Material: Steel square pipe with aluminium cover  
 Surface: Nature anodized or polyester powder coated  
 Colour: Same as interior frame profile



## Steel crossbar for triple glazing panel

For comfort and smoke ventilation

Material: Steel square pipe with aluminium cover  
 Surface: Nature anodized or polyester powder coated  
 Colour: Same as interior frame profile



## Installation profile – dual pitched for double glazing panel

Material: Aluminium, PVC, EPDM rubber gasket & steel bracket



## Installation profile – dual pitched for triple glazing panel

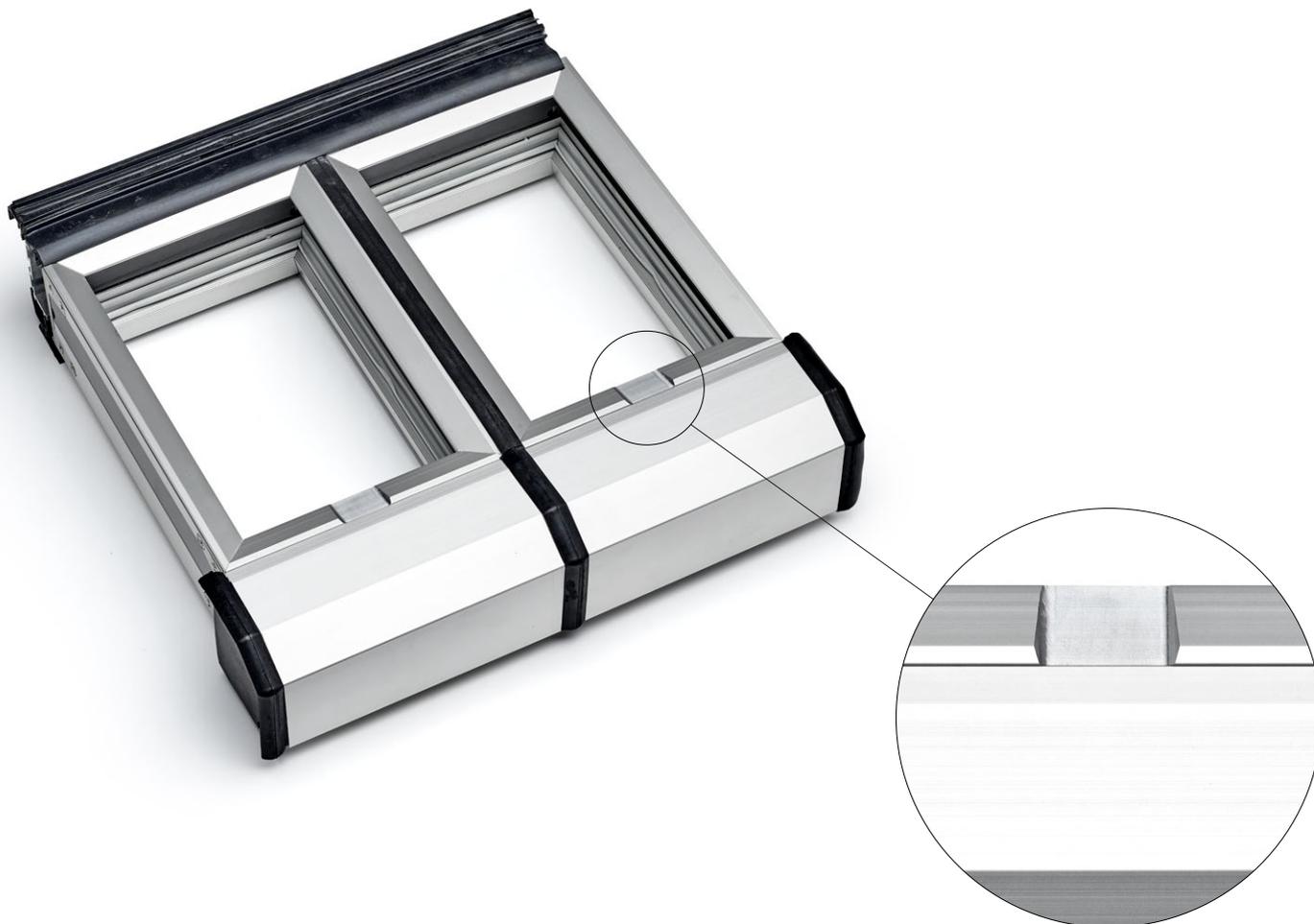
Material: Aluminium, PVC, EPDM rubber gasket & steel bracket

\* Other RAL colours can be ordered at additional cost. Contact your local VELUX Commercial sales office for more information.

## Ponding groove

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When installing VELUX Glazing Panels below 25°, both double and triple glazing variants, the panels will be manufactured with a ponding groove in the bottom of the panels to minimise ponding water on the glazing.



# Venting panels

For venting panels there are several options of actuators available. Double glazing panels have one configuration option; a visible actuator operating on a crossbar (see images ① and ② to the right) installed in the panel in parallel with the bottom frame profile.

Triple glazing panels have two configuration options; a hidden chain actuator (see image ③ to the right) only visible when the panel is open, or a visible actuator operating on a crossbar (see images ① and ② to the right) installed in the panel in parallel with the bottom frame profile.

For both double and triple glazing, the visible actuator is available as a spindle ① or a chain ② version. The chain stroke or spindle

length depends on the size of the panel and installation pitch. In addition, it is possible to convert a rectangular fixed panel to a venting panel by post-installing a visible actuator and a crossbar. This will increase the ventilation flow in the building without opening up the building envelope again.

The venting panels must be controlled by a separate Open System  $\pm 24$  V DC (OS  $\pm 24$  V DC), which is not included in the VELUX delivery. Connection to a fieldbus system requires a separate control box between fieldbus system and actuator. For the OS  $\pm 24$  V DC, only the actuators are supplied by the VELUX Group.



## Smoke ventilation

For some solutions a selection of the actuators can be configured for smoke ventilation in accordance with EN 12101-2. When using a smoke venting panel for comfort ventilation, it must be ensured that the panel, in open position, does not get above horizontal. The actuator stroke for comfort venting function must be limited accordingly by the control system time to maintain lifetime expectancy and guarantee of the actuator and for example can be done by limiting the drive time in most simple control setup. The maximum stroke length and drive time for comfort ventilation depend on the project specific panel size and installation pitch.

### With or without wind deflector

Whenever it is required to obtain an aerodynamic free area ( $A_a$ ) declared in accordance with EN 12101-2, VELUX Group recommends to install a triple glazing venting panel with prefabricated wind deflector. The wind deflector is designed to change the wind profile over the glazing panels in open position, in order to minimise the risk of air intake and allow outtake of smoke even under unfavourable wind conditions. Please note that triple glazing venting panels require a wind deflector, when a EN 12101-2 solution is needed.

For double glazing venting panel a deflector is not available and therefore the expressed aerodynamic free area ( $A_a$ ) is wind sensitive. This means that when choosing /designing with double glazing panels, the wind sensitivity of these smoke ventilators must be considered already in the design phase and steps must be taken to incorporate the products as part of a total solution that can be approved by the local fire authorities. This solution could consist of, for instance, a wind direction sensor, a custom made wind deflector or another device that always ensures a sufficient aerodynamic area.

### Smoke ventilation systems

A smoke ventilation system always has a building specific design, incorporating smoke ventilators, controls, air inlets and mechanical ventilation. Designing a smoke ventilation system is therefore a rather complex matter, which must be addressed by skilled and authorized fire engineers in order to obtain an adequate level of performance and safety. The design covers all relevant parameters such as the location of the building, height and shape of the roof, position of ventilators on the roof, relative position to each other, facades and doors providing air intake, mechanical ventilation, evacuation plan and escape routes, and the natural and artificial wind obstacles in the surroundings of the building. The VELUX Group provides the essential performance characteristics of each individual CE-marked VELUX Glazing Panels in accordance with EN 12101-2, but cannot validate the functionality and safety of the complete system.

### Smoke evacuation outside the scope of EN 12101-2

Further to above, VELUX Glazing venting panels, with both double glazing and triple glazing, can be used for smoke evacuation purposes outside the scope of EN 12101-2, whenever they meet the requirements in national regulations and/or practical guides. The methods to define the geometric area accountable for cold smoke evacuation are nationally regulated and should be respected together with the rules of applicability.

Please contact your local VELUX Commercial sales office for detailed design possibility as to smoke ventilation with VELUX Glazing Panels. Furthermore, please be aware that it is the responsibility of the building owner – together with the local fire authorities, if necessary – to ensure the system is specified, installed and operated in accordance with current national legislation and requirements.



Please note that the venting panel operate with high closing force, which can cause serious injury in case of entrapment. VELUX Glazing Panels have a recommended minimum installation height of 2.5 m above floor level (inside) and ground level (outside). In case of installation below that level, safety measures must be applied by the installer/user to prevent serious injury. No instruction or measure can eliminate the inherent hazards resulting from installation heights below 2.5 m.

The VELUX Group will not accept responsibility for damages, injury or death resulting from such installation. The installer/user is ultimately responsible for own omissions and actions. Measures could for instance be to install a motion sensor that is able to disconnect power from the control unit in case of any movement in the immediate vicinity of the VELUX Glazing Panels.



1 Spindle actuator with crossbar



2 Chain actuator with crossbar



3 Chain actuator hidden in front cover cap  
(only available for triple glazing)

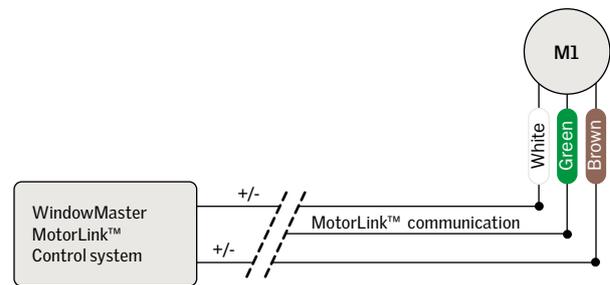
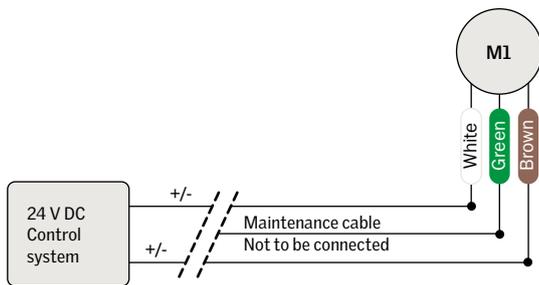
# Electrical system

In the Open system  $\pm 24$  V DC (OS  $\pm 24$  V DC), the actuators are controlled by  $\pm 24$  V DC. In addition, the actuator can be integrated in common building automation fieldbus systems, e.g. KNX, BACnet, LON and Modbus, through the integrated MotorLink™ technology.

Connection to a fieldbus system requires a separate control box between fieldbus system and actuator. For the OS  $\pm 24$  V DC, only the actuators are supplied by the VELUX Group.

## Planning for the electrical system:

- Control system is not a part of the VELUX Glazing Panels venting panels, but can for small stand-alone comfort venting systems be purchased separately
- Wiring between the control system and the actuator is not part of the VELUX delivery
- The actuator can be controlled by either  $\pm 24$  V DC or WindowMaster MotorLink™



## Electrical control components



VELUX can provide following components for comfort venting panels.

Control unit*	Control unit*	Control switch
		
<b>WCC 103</b> WCC 103 0101 EU (3 Amp) WCC 103 0401 UK (3 Amp)	<b>WCC 310/320</b> WCC 310 S 0410 (10 Amp) WCC 320 S 0810 (20 Amp)	<b>WSK 102/103</b> WSK 102 (Fuga) WSK 103 N101 (Fuga)

\* Choice of control unit depend on actuator type

Wind and rain sensor	Rain sensor	Control system – Inside and outside Rain, wind and temperature
		
<b>WLA 330</b>	<b>WLA 331</b>	<b>NV SOLO®</b>

# Glazing Unit

## Technical values



Double Glazing = DG Triple Glazing = TG	Coating	Construction	Light transmittance	Solar factor	Thermal transmittance	Thermal transmittance of the entire window in accordance with EN 14351-1		
						area > 2.3 m <sup>2</sup>	area ≤ 2.3 m <sup>2</sup>	
						IGU	Insulating Glass Unit (IGU)	τ <sub>v</sub>
code	(outside - inside)	%	%	W/m <sup>2</sup> K	W/m <sup>2</sup> K	W/m <sup>2</sup> K		
DG	LowE	40LF	6F LowE - 18 Argon - 6.76F (33.2)	80	61	1.1	-	1.6
DG	LowE	40L	6H - 18 Argon - 6.76F LowE (33.2)	80	64	1.1	-	1.6
DG	LowE	40LS	6H + HST - 18 Argon - 6.76F LowE (33.2)	80	64	1.1	-	1.6
DG	LowE	40LT	6H - 16 Argon - 8.76F LowE (44.2)	81	62	1.1	-	1.6
DG	LowE	40LST	6H + HST - 16 Argon - 8.76F LowE (44.2)	81	62	1.1	-	1.6
DG	LowE	40T	8H - 14 Argon - 8.76F LowE (44.2)	80	61	1.1	-	1.6
DG	Sun1	41L	6H Sun1 - 18 Argon - 6.76F LowE (33.2)	50	27	1.0	-	1.6
DG	Sun1	41LS	6H Sun1 + HST - 18 Argon - 6.76F LowE (33.2)	50	27	1.0	-	1.6
DG	Sun1	41LT	6H Sun1 - 16 Argon - 8.76F LowE (44.2)	50	27	1.0	-	1.6
DG	Sun1	41LST	6H Sun1 + HST - 16 Argon - 8.76F LowE (44.2)	50	27	1.0	-	1.6
DG	Sun1	41T	8H Sun1 - 14 Argon - 8.76F LowE (44.2)	49	27	1.0	-	1.6
TG	LowE	46LF	6F LowE - 20 Argon - 4F - 18 Argon - 6.76F LowE (33.2)	73	53	0.5	0.80	1.0
TG	LowE	46L	6H LowE - 20 Argon - 4H - 18 Argon - 6.76F LowE (33.2)	73	53	0.5	0.80	1.0
TG	LowE	46LS	6H LowE + HST - 20 Argon - 4H - 18 Argon - 6.76F LowE (33.2)	73	53	0.5	0.80	1.0
TG	LowE	46LT	6H LowE - 16 Argon - 6H - 18 Argon - 8.76F LowE (44.2)	72	53	0.5	0.80	1.0
TG	LowE	46LST	6H LowE + HST - 16 Argon - 6H - 18 Argon - 8.76F LowE (44.2)	72	53	0.5	0.80	1.0
TG	LowE	46T*	8H LowE - 16 Argon - 6H - 16 Argon - 8.76F LowE (44.2)	71	52	0.6	0.88	1.1
TG	Sun1	47L	6H Sun1 - 20 Argon - 4H - 18 Argon - 6.76F LowE (33.2)	47	26	0.5	0.80	1.0
TG	Sun1	47LS	6H Sun1 + HST - 20 Argon - 4H - 18 Argon - 6.76F LowE (33.2)	47	26	0.5	0.80	1.0
TG	Sun1	47LT	6H Sun1 - 16 Argon - 6H - 18 Argon - 8.76F LowE (44.2)	46	25	0.5	0.80	1.0
TG	Sun1	47LST	6H Sun1 + HST - 16 Argon - 6H - 18 Argon - 8.76F LowE (44.2)	46	25	0.5	0.80	1.0
TG	Sun1	47T*	8H Sun1 - 16 Argon - 6H - 16 Argon - 8.76F LowE (44.2)	46	25	0.5	0.80	1.0

\* Cannot be used for smoke venting panels

Glazing unit construction	
IGU example (40LS)	6H + HST - 18 Argon - 6.76F LowE (33.2)
F	Float
H	Toughened
HST	Heat soak tested
33.2	Laminated glass, 3 mm float - 2 x 0.38 PVB foil - 3 mm float
LowE	Low-emissivity coating
Sun1	Light sun protection coating

# Classifications

## Essential characteristic



Essential characteristic performances according to EN 14351-1		
Essential characteristics	Performance	
Resistance to windload, EN12210	Class C4 <sup>1)</sup>	
Watertightness, EN12208	Class E1200 <sup>2)</sup>	
Thermal transmittance, EN ISO 10077-1, EN ISO 10077-2	Double glazing 1.6 W/m <sup>2</sup> K <sup>3)</sup>	Triple glazing 0.80 – 1.1 W/m <sup>2</sup> K <sup>3)</sup>
Air permeability, EN12207	Class 4 <sup>2)</sup>	
Reaction to fire, EN13501-1	Class B, s1-d0	
Acoustic performance, EN ISO 140-3, EN ISO 717-1	NPD	

1) For panel width > 800 mm: NPD, for panel height > 2100 mm: NPD

2) For triple glazing panel > 2.52 m<sup>2</sup>: NPD

3) For specific type and size, see Glazing Unit table page 29.

NPD = No Performance Determined

Essential characteristic performances according to EN 12101-2		
Essential characteristics	Performance (double glazing) **	Performance (triple glazing)
Operational reliability	Re 50	Re 1000
Aerodynamic free area (A <sub>a</sub> ) [m <sup>2</sup> ]	*	*
Resistance to heat	B 300	B 300
Opening under load	SL 800	SL 1000
Low ambient temperature	T(-05)	T(-15)
Stability under wind load	WL 1500	WL 3000 (hidden actuator) WL 2200 (crossbar)
Reaction to fire, EN13501-1	B-s1,d0	B-s1,d0

\* A<sub>a</sub> is project specific and must be calculated for each project.

\*\* A VELUX wind deflector is not available for double glazing smoke venting panels and therefore the solution is wind sensitive.

**NB:** For smoke venting solutions, please consult with your local VELUX Commercial sales office.

## The tests we are conducting



Watertightness



Air permeability



Resistance to wind load



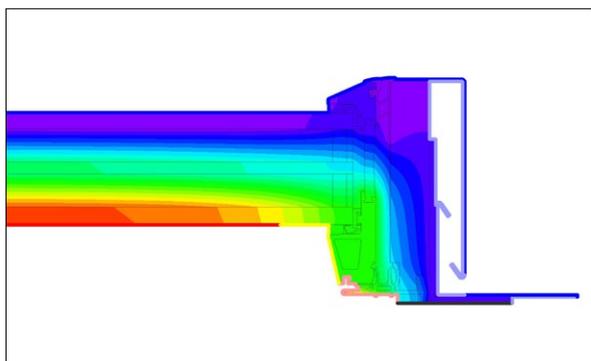
Reaction to fire



Opening under load



Resistance to heat



Thermal transmittance





# SUPPORT

# Sub-construction

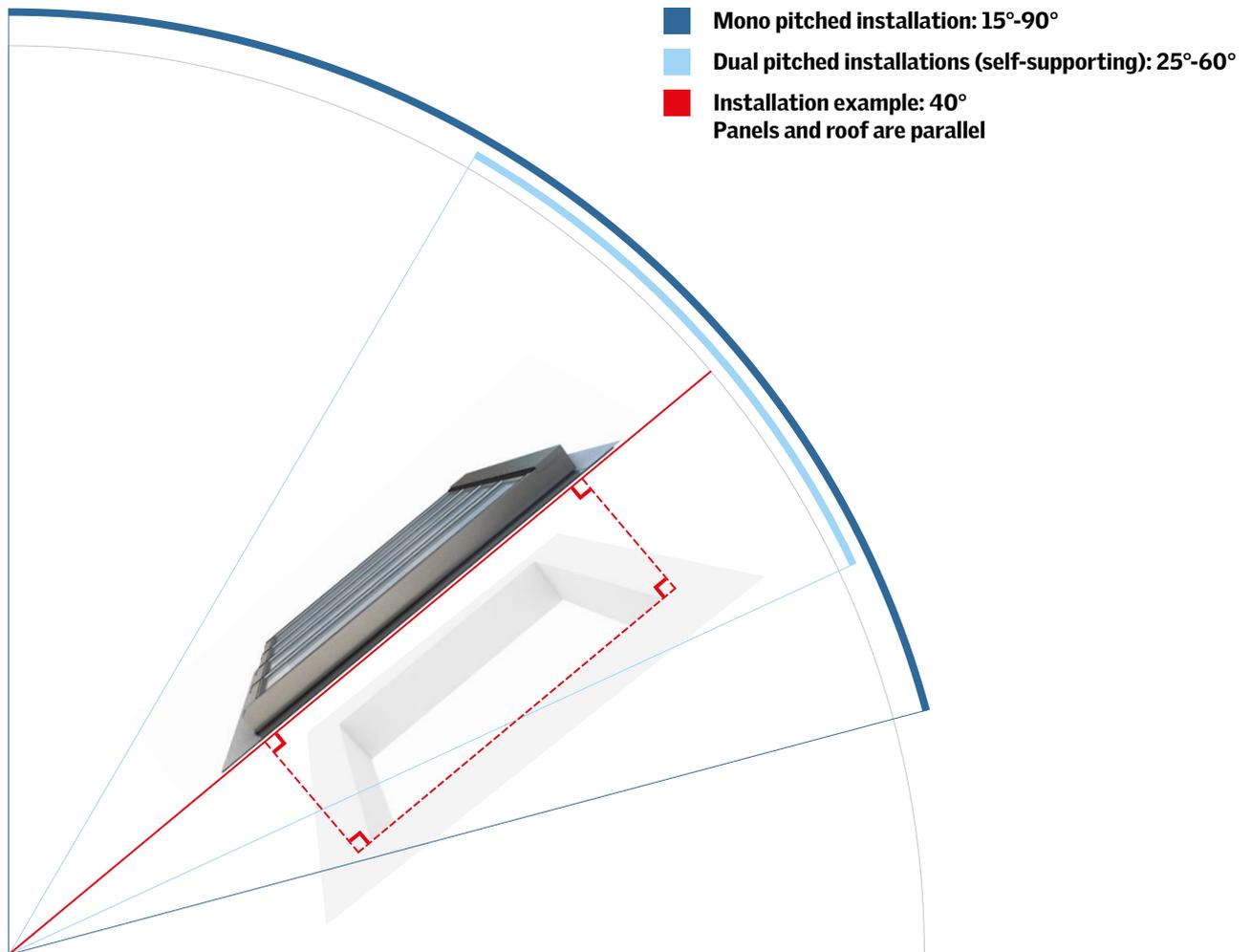
VELUX Glazing Panels require an accurate, fixed and dimensioned sub-construction. The strength of the sub-construction must also be calculated for the individual project, based on the building design and application size. It is the responsibility of the customer to have a static calculation of the sub-construction done by a static engineer.

Consequently, the sub-construction is not a part of the bespoke panel system. The VELUX Group is not responsible for the sub-construction. All solutions are project specific, thus a general sub-construction document cannot be provided. For each project, a project

specific sub-construction drawing will be prepared with measurements for the outer geometry of the sub-construction. Please note that there will be no indication or description for the composition of the sub-construction.

To be able to correctly install VELUX Glazing Panels, the sub-construction must be parallel to the panel itself.

Please observe that a lateral slope on the panels is NOT possible.

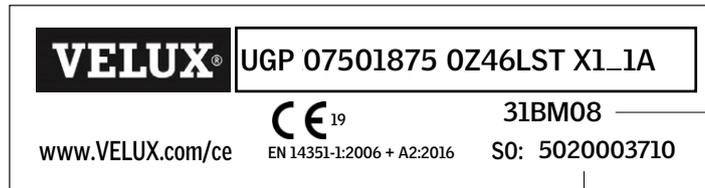


# Data plate

## Information about the panels

All VELUX Glazing Panels, have a data plate sticker. The data plate helps to identify the product and must NOT be removed.

If a product is damaged or malfunctioning, the information on the data plate must be given to the your local VELUX Commercial sales office.



Product code

Production code

Sales order number

Example of data plate and position

## Product code structure

UGP	07501875	0	Z	46	LST	X1	_	1	A
<b>Window type</b>	<b>Panel size</b>	<b>Interior colour</b>	<b>Exterior colour</b>	<b>Glazing type</b>	<b>Glazing variant</b>	<b>Panel variant</b>	<b>Actuator</b>	<b>Branding</b>	<b>Panel generation</b>
UGP = VELUX Glazing Panels	Above is a size example in mm	0 = If "0" it is same colour as exterior colour	Z = Natur anodized	40 = DG/LowE	L = 6 mm outer glass	Shape indication Example: X1 = Square	C = Hidden actuator comfort (only used for TG panels)	1 = VELUX	A = Launch 2020
	Panel width and panel height	1 = Wet coloured paint, white 9010	1 = 9010 gloss 30	41 = DG/Sun1	F = Float glass	All possible panel variants have different indications	A = Hidden actuator smoke ventilation (only used for TG panels)		
		9 = Wet coloured paint, Non standard	2 = 9005 gloss 30	46 = TG/LowE	S = Heat soak tested glass		_ = Panel used as fixed or as venting with a visible actuator (a crossbar is ordered separately)		
			3 = 7016 gloss 30	47 = TG/Sun1	T = 4+4 mm inner glass				
			8 = Special colour	99 = Non standard	X = Non standard				

DG = Double Glazing  
TG = Triple Glazing

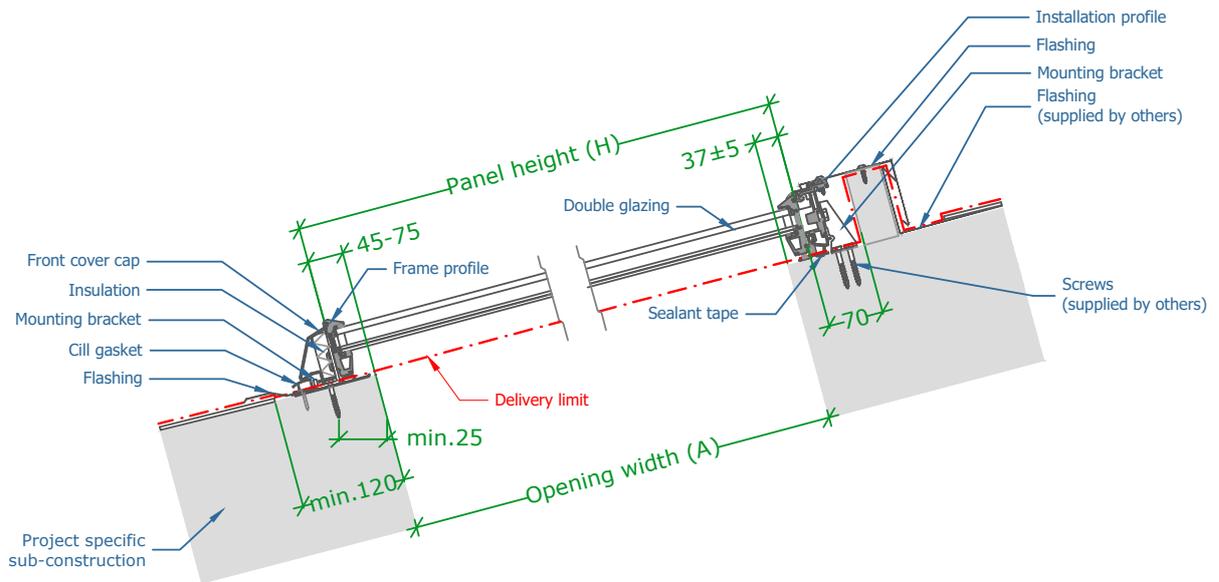
# Sectional drawings

Examples of sectional drawings. The full assortment is available at our website.

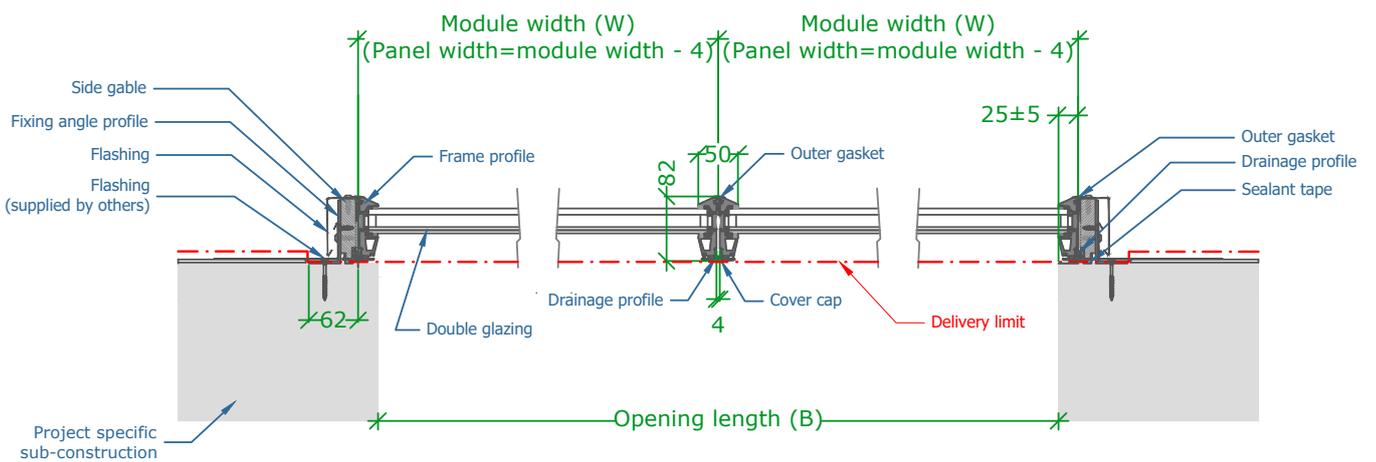


## Mono pitched

### Double glazing



Cross-section



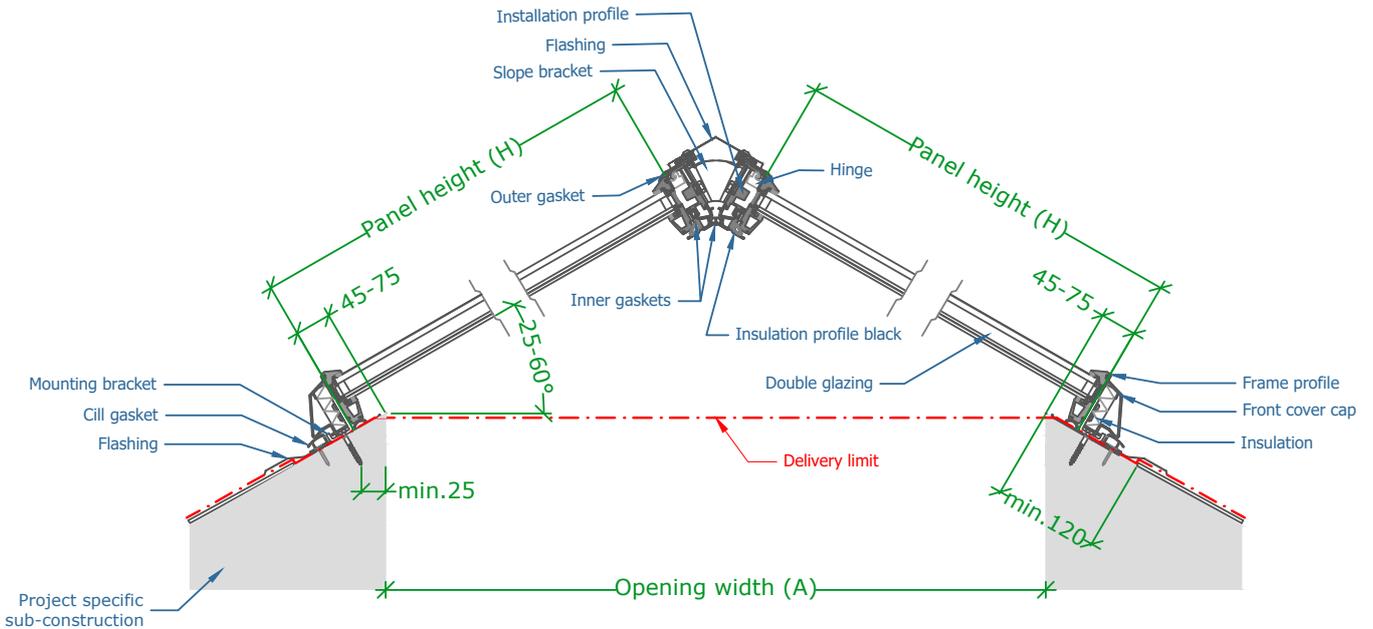
Longitudinal section

Please observe that a lateral slope on the panels is NOT possible.

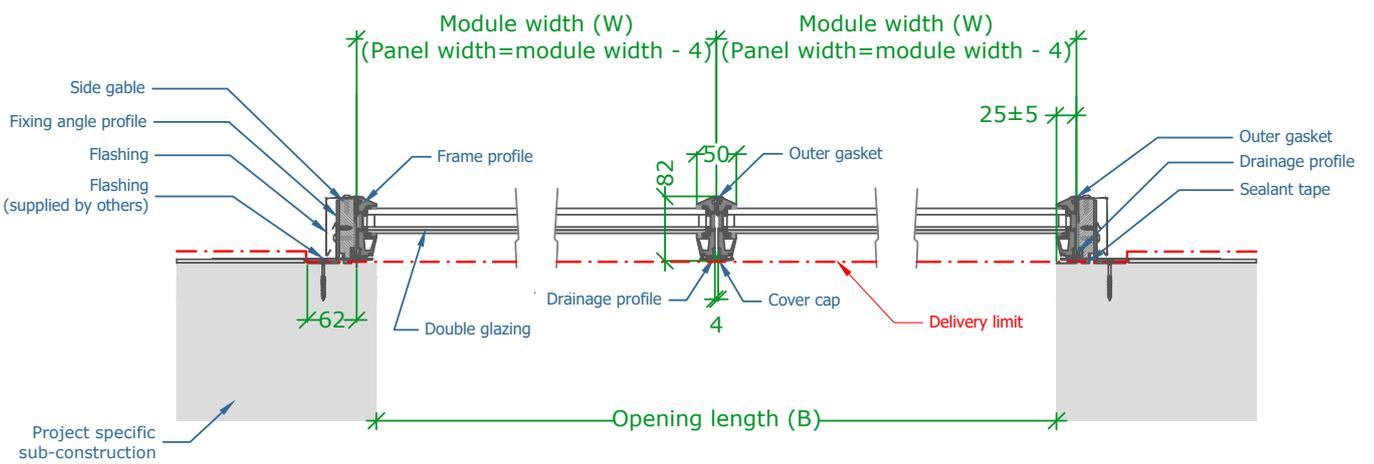
# Dual pitched



## Double glazing



Cross-section

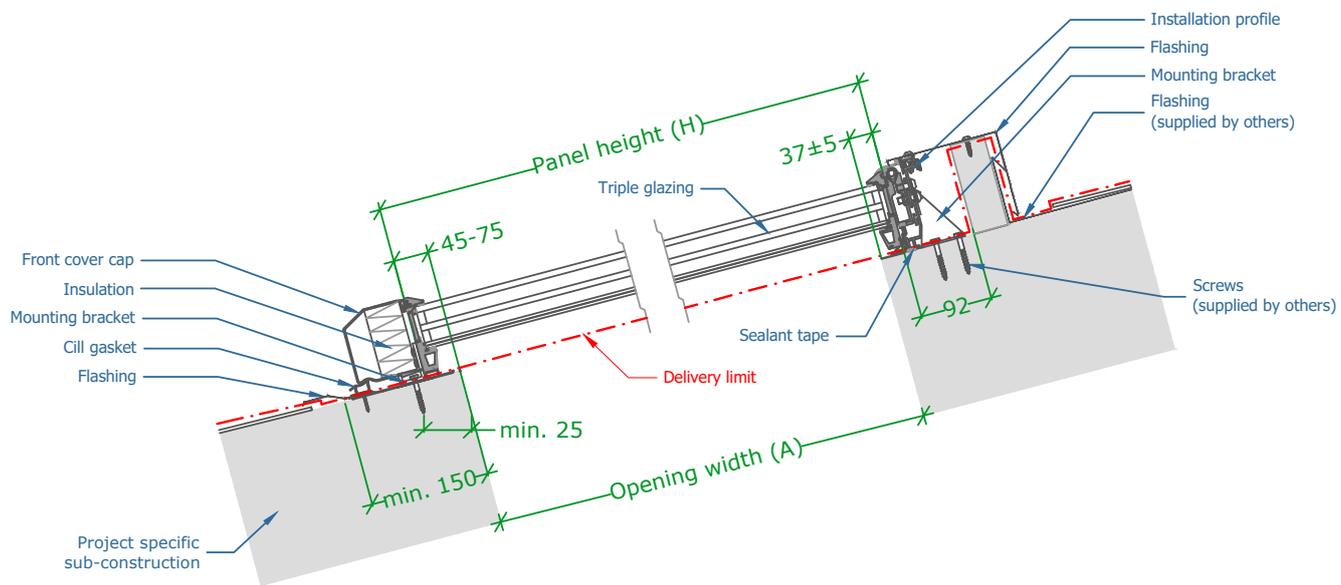


Longitudinal section

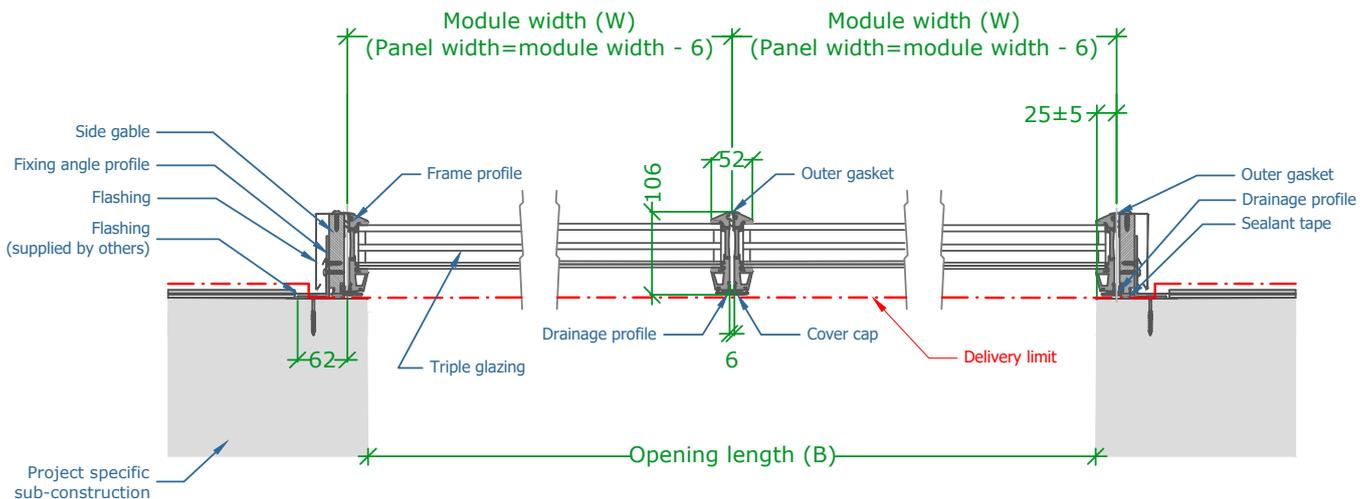
# Mono pitched



## Triple glazing



Cross-section



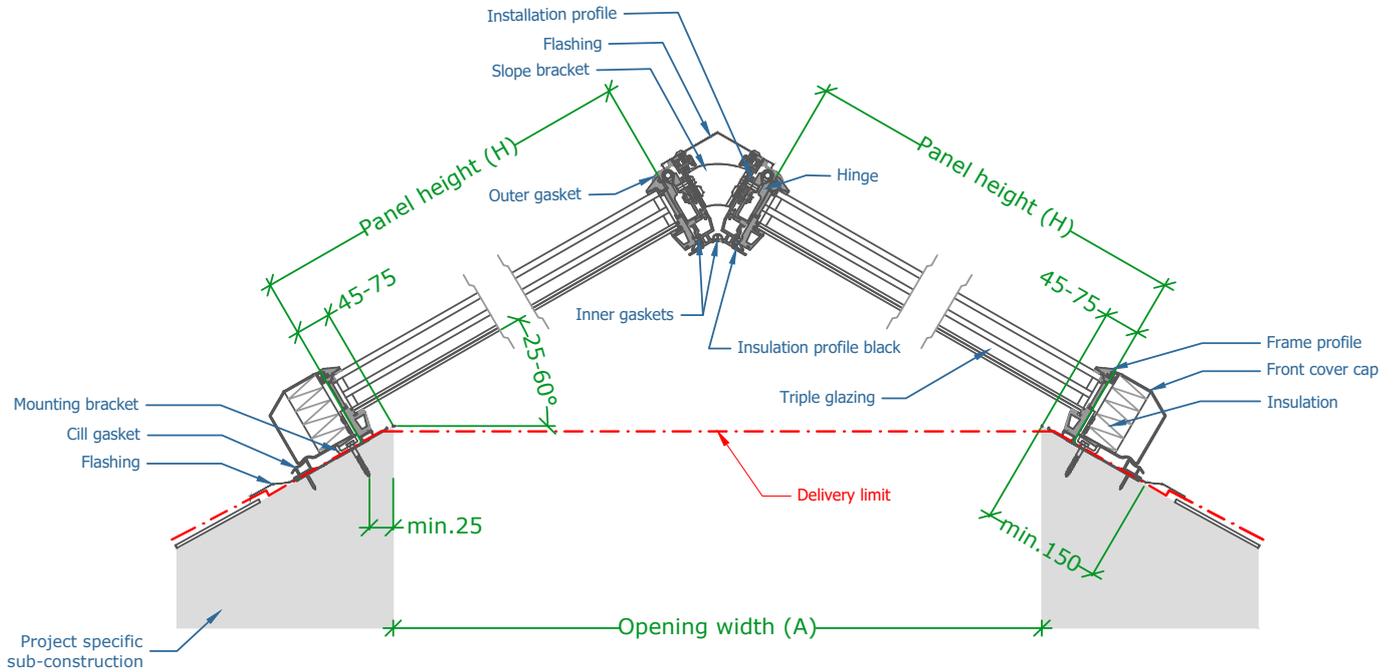
Longitudinal section

Please observe that a lateral slope on the panels is NOT possible.

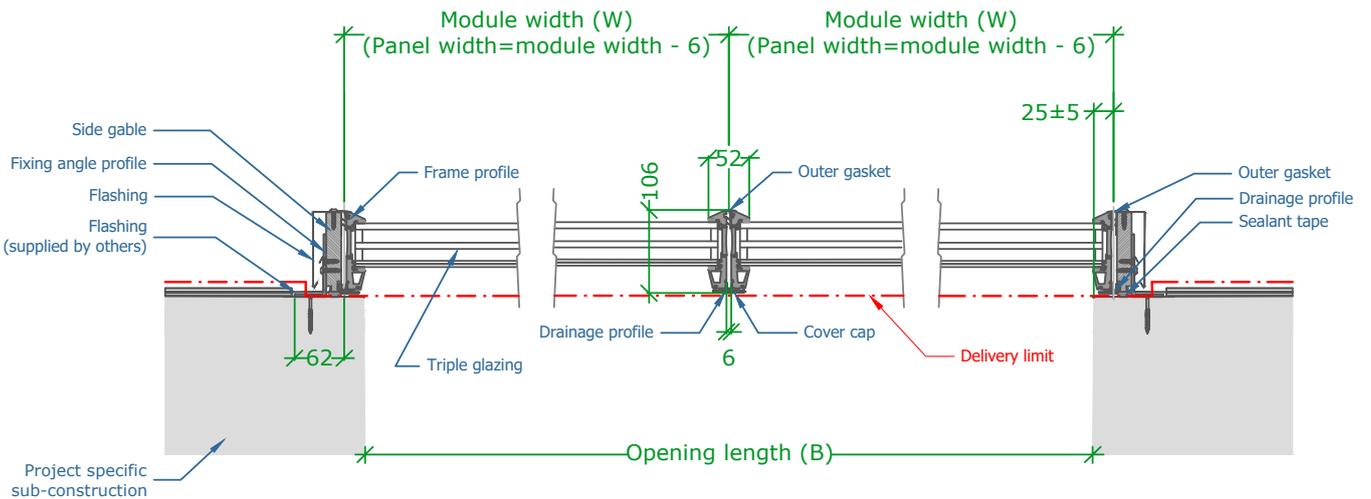
# Dual pitched



## Triple glazing



Cross-section



Longitudinal section

# Project support

## Design phase

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### **Consultancy**

To help you get started, we offer expert guidance even before your project gets approved.

### **Technical documentation**

For further technical information, contact your local VELUX Commercial sales office.

### **Specification**

Our experienced building consultants stand ready to help you specify your projects.



## Download detailed 2D illustrations and technical drawings

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Precise and detailed AutoCAD material can be downloaded for immediate use, directly from our website. The drawings contain all relevant descriptions and measurements.

Go to the download section of CAD 2D drawings at your local VELUX Commercial website.

## Daily operation

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### User guidance

To maximise performance output, we are there to guide you on the different components of the solutions and we offer training.

### Product service

Should the system, for some reason, require professional service, our team of VELUX Commercial service technicians will do all they can to solve the problem to everyone's satisfaction.



## Guarantee

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10 years on the glazing panels



3 years on the actuators and electrical components

Our glazing panels and flashings are supported by a 10-year guarantee. Actuators and electrical components that are a part of the glazing panel system come with a 3-year guarantee.

The guarantee is subject to correct installation and usage. Guarantee conditions can be found at your local VELUX Commercial website.

## Contact

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Our aim is to provide all the tools and answers to make your project as simple and trouble-free as possible. Thus, we offer a wide range of expert support and

consulting from before the project starts to well after its completion. To get in touch, please contact your local VELUX Commercial sales office.

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