

# VELUX solar 3in1 roof window GGLS

VELUX®

Glazing 70



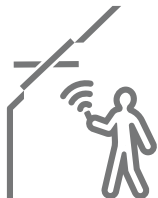
The VELUX solar 3in1 roof window GGLS is a wireless solution which together with three windows in one frame allows for fast and easy installation. The new daylight solution gives you an extensive view, increased influx of daylight and full flexibility for ultimate control and convenience. Control window, blinds, and heat protection products individually or grouped by hand, with a wall switch or with VELUX intelligent home control systems.

- Enjoy an extensive view to the outside and more daylight due to extra slim frame profiles
- Refresh your home by opening one or two windows according to your needs
- Solar-powered design delivers all of the benefits of a motorised window without the wires.
- Rain sensor automatically closes the window in the event of rain.
- The glazing comes standard with premium features like safety lamination, toughened glass, UV filter and our unique rain noise reduction.
- One frame module allows a simple well-known installation process with few components.
- Compatible with VELUX ACTIVE with NETATMO for a better indoor climate with sensor-based ventilation. Remote controlled via smartphone or voice.



## Application guidance operation method

The window can be installed in roof pitches between 15° and 90° to the horizontal.



VELUX solar 3in1 roof window GGLS consists of three windows, two openable, top-operated and one fixed, in one frame. This provides extra daylight and an extensive view while offering all the benefits of our top-operated windows. To benefit optimally from the wide view, we recommend an installation height that allows for a clear sight line to the outside from both a standing and seated position.

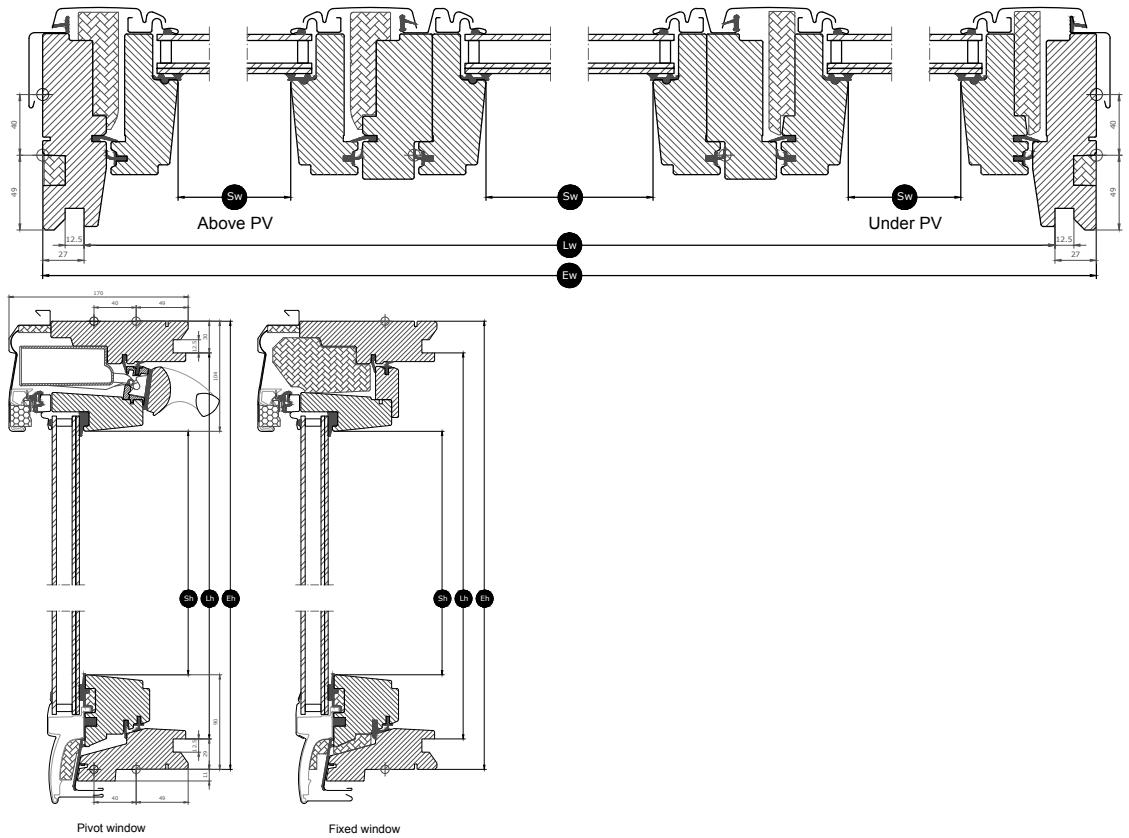
The 3in1 roof window gives you full flexibility for ultimate control and convenience. Control each sash, blind, and heat protection product manually, remotely with a wall switch or with VELUX intelligent home control systems.

## Available sizes and daylight area

	1880
1178	GGLS FFKF06 (1.41)
1398	GGLS FFKF08 (1.74)

All measurements are in mm. ( ) = Effective daylight area, m<sup>2</sup>



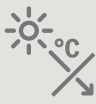






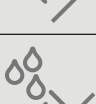
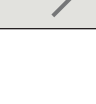
# Cross section dimensions



Width		FFKF--
Sw	Sash aperture width	481, 481, 481
Lw	Distance between lining grooves, width	1826
Ew	External frame width	1880

Height		--06	--08
Sh	Sash aperture height	984	1204
Lh	Distance between lining grooves, height	1119	1339
Eh	External frame height	1178	1398

## Glazing features

Glazing 70		
	<b>Heat insulation</b> The low energy glazing unit reduces heat loss through the window and enhanced indoor comfort.	$U_g = 1.0$
	<b>Solar gain</b> In colder climates and in rooms with large window areas, solar gain provides a better indoor climate during winter periods.	<b>0.46</b>
	<b>Solar protection</b> In warm climates and in rooms with large window areas, a sun protective glazing unit provides a better indoor climate during summer periods.	★★★★☆
	<b>Security</b> Thicker laminated inner glass increases resistance to manual attack (burglary).	★★★★☆
	<b>Safety lamination</b> Prevents glass from falling into the room in case of accidental breakage.	✓
	<b>Toughened glass</b> Adds strength to the outer glass surface to protect from wayward balls and extreme weather such as heavy storms and hail.	✓
	<b>UV filter</b> Protects your interior furnishings from fading due to the sun's harmful UV rays.	✓
	<b>Rain noise reduction</b> Rain noise reduction creates a barrier between the window and the weather outside for undisturbed moments during rainy days – or nights.	✓
	<b>Easy-to-clean</b> Dirt-repellent coating lets you spend less time cleaning and more time enjoying the view.	
	<b>Anti-dew</b> The anti-dew coating significantly reduces the days with dew on the outer glass and thus gives you a clear view.	

### Glazing structure

Glazing unit	Variant composition
Double-glazed	6.8 mm laminated float glass - 16 mm Argon - 4 mm toughened glass

## Technical values for the window

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Overview of technical values for the product, covering among other, CE marking in accordance with EN 14351-2.

Window characteristics	Performance
Thermal transmittance	1.3 (size 06: 1.4) W/(m <sup>2</sup> K)
Light transmittance	0.68
Total solar energy transmittance	0.46
Sound insulation	34(-1;-4)
Air permeability	4
External fire performance - British	npd
External fire performance - European	npd
Impact resistance	Class 3
Load-bearing capacity of safety devices	√
Reaction to fire	C-s1,d2
Resistance to snow load	See glazing construction
Resistance to wind load	Class C3
Water tightness	9A

NPD: No performance determined

## Visible features

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### Window operator, solar

Fully-integrated solar-powered motor is hidden from view in the top of the frame and is operated by remote control.



### Integrated rain sensor, solar

The roof window closes automatically in the event of rain or is prevented from opening thanks to the rain sensor.



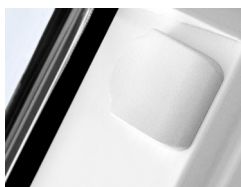
### Detachable sash

The fixed sash is detachable and can be taken out for an easier process during service or installation from the inside.



### Ventilation flap

The full-width ventilation flap can be used for ventilation even with a closed window. The ventilation flap is connected to the top sash with the lock casing.



### Blind bracket, manual

Easily install blinds on the window without the need for extra tools. Simply click on the blind in the pre-fitted brackets.



### Frame hinge, centre-pivot, side

Durable hinge design allows for reliable operation and enables the sash to be rotated for easy cleaning of the outer glass.



### Interior insulation, frame top sides

Innovative ThermoTechnology™ insulation is integrated into the top frame sides of the window to increase energy-efficiency.



### Barrel bolt

The barrel bolt can be placed into the integrated barrel bolt bushing to secure the window for cleaning of outer glass surface or for safe ventilation.

## Interior finish

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Material Description	White-painted Finished with triple coat, white painted.
Colour code NCS, inner surface	S 0500-N
Colour code nearest RAL, inner surface	9003

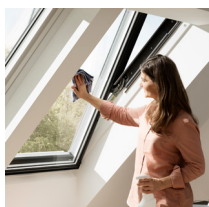
## Exterior covers

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Material Description	Aluminium, dark grey Dark grey	Untreated copper
Colour code NCS, outer surface	S 7500-N	No colour code
Colour code nearest RAL, outer surface	7043	No colour code

## Cleaning and maintenance

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To clean the outer glass surface from the inside, rotate sash manually and secure in cleaning position with barrel bolts.  
The fixed centre window can be cleaned outside by opening the right or left window.



VELUX repair and maintenance kits are available.

## Guarantee period

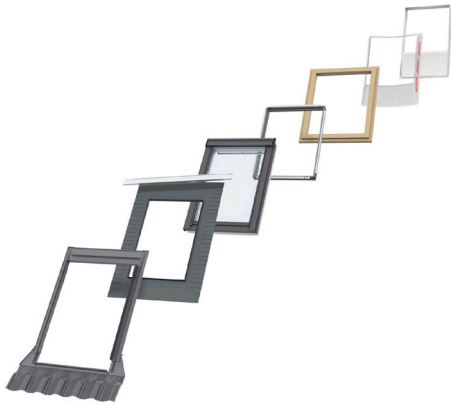
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All electrical components have a 3 year guarantee period

## Flashings and installation products

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### Flashings

Install the VELUX roof window in virtually any roofing material by using genuine VELUX flashing solutions. Our flashings are designed specifically for the exact size and shape of the roof windows to create perfect, watertight fit. Flashings can also be used to combine multiple roof windows.

### Installation products

Ensure a proper installation and an air- and watertight connection between the window and roof with VELUX installation products. All installation products are designed to perfectly fit the roof window for a reliable and durable result.

## Blinds, awnings and shutters

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Complete the VELUX roof window installation with roller shutters and awning blinds for heat protection and interior blinds for light dimming or blackout. Choose from a wide range of manually operated or remote-controlled products that are made to fit the particular window type and size. Please contact your local VELUX sales company for more details about compatibility.

## VELUX ACTIVE with NETATMO compatible

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Compatible with VELUX ACTIVE with NETATMO for a better indoor climate with sensor-based ventilation. Remote controlled via smartphone or voice.

## Further information

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We reserve the right to make technical changes.

For more information on our products, please visit <https://www.velux.co.uk> or <https://www.velux.ie>.



## Technical information

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<b>VELUX solar 3in1 roof window GGLS</b>	<b>Window opening</b>	<p>The window operator permits a maximum opening of 200 mm within 35 seconds. Due to a shorter chain, small/special window sizes have a different window opening.</p> <p>The chain engages and disengages automatically when the window is closed.</p> <p>When operated manually, the friction in the hinges allows the sash to be opened and parked at an opening angle of 5° to 45°.</p>
<b>Pre-paired wall switch</b>	<b>Materials</b> <b>Size and weight description</b> <b>Installation and use</b>	<p>ABS plastic, white (NCS S 1000-N)</p> <p>8.2 cm x 8.2 cm x 1.7 cm, 0.125 kg.</p> <p>The wall switch is for indoor use only, between a minimum ambient temperature 5 °C and a maximum ambient temperature 45 °C. It can be used in a dry or humid environment (such as a living room or a bathroom). Radio frequency range: 300 m range open field. Depending on the building construction, the indoor range is approximately 30 m.</p>
	<b>Power consumption</b>	<p>2 x alkaline AAA (1.5V) batteries          Expected battery lifetime: Up to 1 year.</p>
<b>Integrated rain sensor, solar Solar panel</b>	<b>Materials</b> <b>Materials</b> <b>Size and weight description</b>	<p>PC with glass fibre</p> <p>ASA with glass fibre, black (NCS S 9000-N), with ASI 3 solar cell</p> <p>Solar cell incl. rain sensor: 520 x 20 x 88 mm (W x H x D), 0.4 kg</p>
<b>Window operator, solar</b>	<b>Materials</b> <b>Size and weight description</b> <b>Power consumption</b>	<p>Motor casing of polybutulene terephthalate (PBT) with glass fibre, black (NCS S 9000-N). Stainless steel chain.</p> <p>370 x 50 x 110 mm (W x H x D), 1.2 kg</p> <p>90 uA standby, supplied by the battery. High performance battery, 10.8 V d.c., NiMH, type VELUX. Recharged continuously by the solar cell. A fully charged battery allows up to 300 operations without recharging.          Expected battery lifetime of the solar powered window operator: Approximately 10 years.</p>
	<b>Motor capacity</b>	<p>Traction capacity: Min 225 N          Pressure capacity: Min 150 N</p>