

# VELUX solar Passive House roof window GGU

Glazing 82A82B



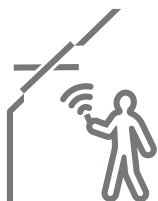
The solar Passive House roof window GGU is certified in Class A for Passive House building constructions in cold climate regions. Consisting of an outer triple glazing combined with additional inner double glazing, the window offers ultra low energy consumption, with a U-value of just 0.51 W/(m<sup>2</sup>K).

- Rain sensor automatically closes the window in the event of rain.
- The motor is hidden in the top cover and totally invisible from view.
- Easily control your roof window with the wireless wall switch that offers simple open/close/stop functionality.
- Silent motor keeps rooms quiet for sleeping children or simply for improved well-being.
- Entrapment control detects objects in the path of the window.
- Compatible with VELUX ACTIVE with NETATMO for a better indoor climate with sensor-based ventilation. Remote controlled via smartphone or voice.
- The io-homecontrol® platform ensures very high and future-proof system security.



## Application guidance

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



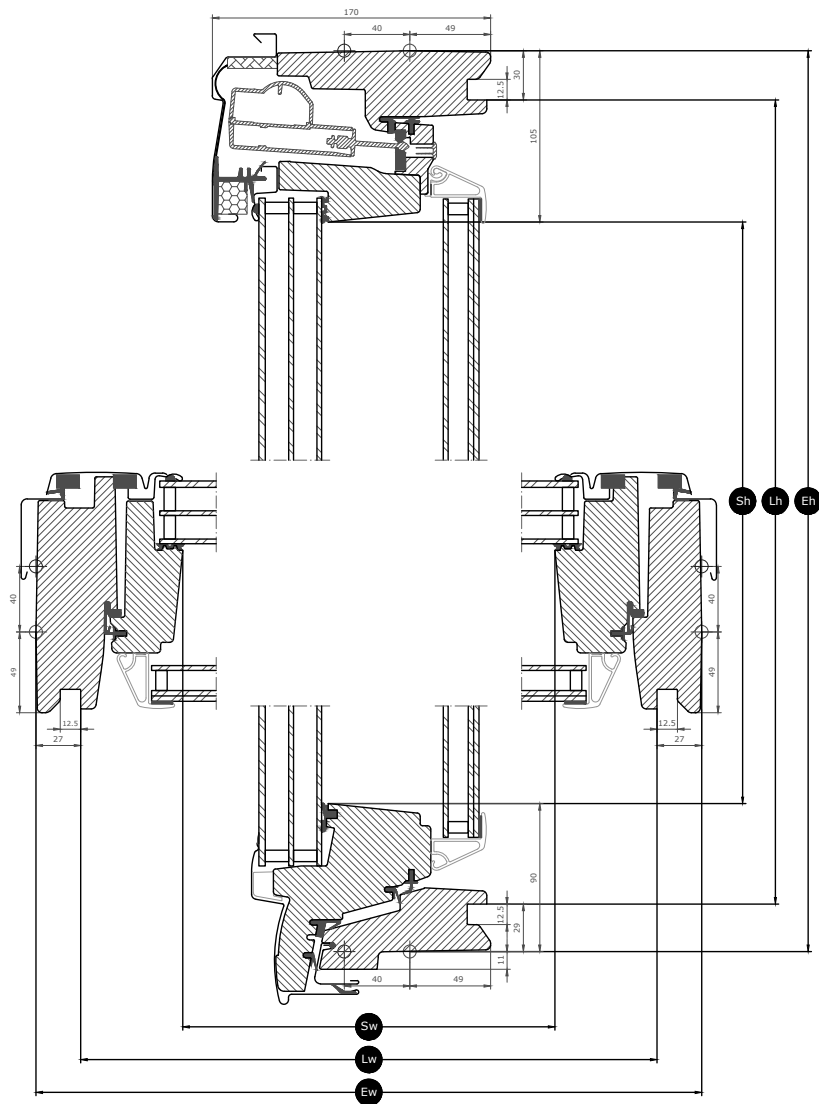
The Passive house roof window is solar powered and easily operated by a wireless wall switch, providing fresh air at the touch of a button. Perfect for both within-reach and out-of-reach applications where extra comfort and convenient operation is required. For optimum daylight, choose larger windows for lower roof pitches.

## Available sizes and daylight area

	780 mm	1140 mm
978 mm	GGU MK04 0.47 m <sup>2</sup>	
1178 mm	GGU MK06 0.59 m <sup>2</sup>	GGU SK06 0.95 m <sup>2</sup>
1398 mm	GGU MK08 0.72 m <sup>2</sup>	

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



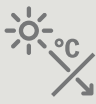





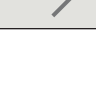
# Cross section dimensions



Width		MK--	SK--
Sw	Sash aperture width	601	961
Lw	Distance between lining grooves, width	725	1085
Ew	Exterior frame width	780	1140

Height		--04	--06	--08
Sh	Sash aperture height	784	984	1204
Lh	Distance between lining grooves, height	919	1119	1339
Eh	Exterior frame height	978	1178	1398

## Glazing features

Glazing 82A82B		
	<b>Heat insulation</b> The low energy glazing unit reduces heat loss through the window and enhanced indoor comfort.	$U_g = 0.3$
	<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>0.34</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	Composition (from inside to outside)
Double+triple-glazed	Inner IGU: 6.8 mm laminated glass - 12 mm krypton - 3 mm heat strengthened glass - 77.6 mm air; Outer IGU: 3 mm heat strengthened glass - 14 mm krypton - 3 mm heat strengthened glass - 14 mm krypton - 4 mm toughened glass

## Technical values for the window

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

Window characteristics	Performance
Thermal transmittance (U-value)	0.51 W/(m <sup>2</sup> K)
Light transmittance (τ <sub>v</sub> )	0.48
Total solar energy transmittance (g-value)	0.34
Sound insulation (R <sub>w</sub> )	37(-1;-4)
Air permeability, [class]	4 (PK10: 3)
External fire performance - British [class]	AC
External fire performance - European [class]	npd
Impact resistance [class]	3
Load-bearing capacity of safety devices	√
Reaction to fire [class]	D-s3,d2
Resistance to snow load	See glazing composition
Resistance to wind load [class]	C3 (>SK08: NPD)
Water tightness [class]	E900

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.



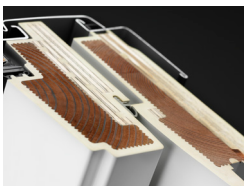
### Integrated rain sensor, solar

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



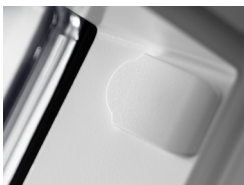
### Inner sash, Passive house window

The inner sash of the Passive house window comprises a secondary glazing unit with laminated glass to enhance insulation performance.



### Excellent insulation

High performance insulation materials in the window construction and thermally modified timber core increase the energy efficiency of the window.



### 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.



### 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.



### Data plate

Every VELUX roof window has a unique data plate with information that can be used to look up CE marking documentation, when purchasing accessories or in case of service or replacement.

## Interior finish

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Material Description	White maintenance-free Finished with polyurethane lacquer.
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
Colour code NCS, outer surface	S 7500-N
Colour code nearest RAL, outer surface	7043

## 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.



VELUX repair and maintenance kits are available.

## Guarantee period

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## 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, blackout and insect protection. 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://velux.com>.

## Technical information

<b>VELUX solar Passive House roof window GGU</b>	<b>Installation and use</b>	The window is classified in protection class IP44. The window operator is hidden in the top cover and functions at temperatures between -10 °C and +60 °C. Installation in rooms with a high level of humidity must comply with relevant regulations (contact a qualified electrician if necessary).
	<b>Window opening</b>	The window operator permits a maximum opening of 200 mm within 35 seconds.
	<b>Compatibility</b>	<p>The roof window is based on radio frequency (RF) technology, 868 MHz range, and is compatible with other VELUX products with the io-homecontrol® logo.</p> <p>Subsequent installation of VELUX solar roller shutter SSL or VELUX solar awning blind MSL is possible if the window size code is MK--, PK--, SK-- or UK--. Only these sizes have enough room for the solar cell on the roller shutter top casing or the awning blind top cover.</p> <p>Installation of VELUX solar roller shutter SSL or VELUX solar awning blind MSL-VA requires adaptor plate kit ZOZ 213K. The kit must be purchased separately.</p> <p>Note: the installation of MSL/SSS-SA in window size C &amp; F requires dual solar switch ZOZ 246, which must be purchased separately.</p> <p>Interior decoration and sunscreening products can be fitted to VELUX solar GGL and GGU. Please note that if these products are combined with VELUX solar roller shutter SSL or VELUX solar awning blind MSL, the battery recharging capability of the interior solar decoration and sunscreening products will be reduced. Connection to non-compatible products may cause damage or malfunction.</p>
<b>Pre-paired wall switch</b>	<b>Materials</b>	ABS plastic, white (NCS S 1000-N)
	<b>Size and weight description</b>	8.2 cm x 8.2 cm x 1.7 cm, 0.125 kg.
	<b>Installation and use</b>	<p>The wall switch is for indoor use only, between a minimum ambient temperature 5 °C and a maximum ambient temperature 45 °C.</p> <p>It can be used in a dry or humid environment (such as a living room or a bathroom).</p> <p>Radio frequency range: 300 m range open field. Depending on the building construction, the indoor range is approximately 30 m.</p>
<b>Integrated rain sensor, solar</b>	<b>Power consumption</b>	2 x alkaline AAA (1.5V) batteries Expected battery lifetime: Up to 1 year.
	<b>Materials</b>	PC with glass fibre
	<b>Materials</b>	ASA with glass fibre, black (NCS S 9000-N), with ASI 3 solar cell
<b>Solar panel</b>	<b>Size and weight description</b>	Solar cell incl. rain sensor: 520 x 20 x 88 mm (W x H x D), 0.4 kg
<b>Window operator, solar</b>	<b>Materials</b>	Motor casing of polybutulene terephthalate (PBT) with glass fibre, black (NCS S 9000-N). Stainless steel chain.
	<b>Size and weight description</b>	370 x 50 x 110 mm (W x H x D), 1.2 kg
	<b>Power consumption</b>	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.
	<b>Motor capacity</b>	Traction capacity: Min 225 N Pressure capacity: Min 150 N