

# GGL/GGU Solar INTEGRA® Electric Roof Window



VELUX Solar INTEGRA® Electric powered roof window utilises the energy from the sun with a photovoltaic solar cell on the external window frame charging a high performance NiMH battery which provides the power for operation. The centre-pivot window is a classic and versatile design manufactured in high quality natural pine with the option of a clear lacquered pine internal finish (GGL) or a white polyurethane internal finish (GGU). This requires direct exposure to sunlight. There is no need to plug into a power supply which makes installation even quicker and easier. It is suitable for installation into roof pitches between 15° and 90°.



VELUX Solar blinds can be fitted internally along with either Solar Awning blinds or Roller Shutters fitted externally and still be operated from the window Control Pad.

VELUX recommend that all roof windows including solar or electrically operated roof windows are installed with a laminated pane for instances above 2.20m

## GGL



### Features/Benefits

- Ventilation bar with dust and insect filter – *Allows fresh air to enter the room while the window is securely closed*
- Friction springs – *Allows easy operation of window*
- Sash rotates 180° from inside – *Allows easy and convenient cleaning*

## GGU



### Operation

The Control Pad has a free field range of up to 300m, indoor range is 30m and will open the window up to 200mm. The window can also be manually opened and will centre-pivot to 180° for cleaning purposes. The Solar INTEGRA® Electric powered roof window has many functions. [Click here](#) for the Solar INTEGRA® directions for use.

## VELUX INTEGRA®



Control Pad

### Glazing options

- (--60) glazing Double glazed, laminated inner pane, toughened outer pane with Easy-to-clean coating, enhanced noise reduction.
- (--66) glazing Triple glazed, laminated inner, toughened outer pane with Easy-to-clean & Anti-dew coating.
- (--70) glazing Double glazed, laminated inner pane, toughened outer pane.

### Cladding

- NCS standard colour (Grey): S 7500-N nearest RAL standard colour: 7043.
- Also available: titanium zinc, copper or other cladding types and colours.

### Maintenance

The pane should be cleaned with a soft, clean, lint-free cloth or non-abrasive sponge. The rest of the window can be cleaned with ordinary household cleaners. The filter can be removed and either washed or replaced.

For further advice on maintenance please [click here](#).

### Guarantee

- 10 year VELUX guarantee on windows and flashing kits.
- 3 year guarantee on blinds, shutters, awnings and electrics.

[Click here](#) for further information regarding the VELUX guarantee.

### Interior finish option

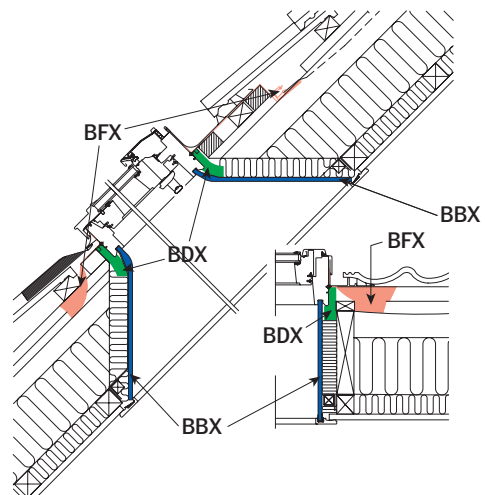
#### GGL

- White paint finish.

#### GGU

- No other finish available.

### Best practice installation



## Installation Products recommended by VELUX

### Flashings for

- Single installation (ED\_)
- Twin installation (EB\_)
- Combi installation (EK\_)

[Click here](#) for information on flashings.

### Installation Products

- Insulation Collar (BDX)
- Underfelt Collar (BFX) includes transverse drainage gutter
- Vapour Barrier (BBX)

[Click here](#) for information on installation products.

## Blinds, Awnings/Shutters

### Interior Sunscreening

- Blackout Blind – Solar (DSL)
- Roller Blind – Solar (RSL)

### Awnings/Shutters

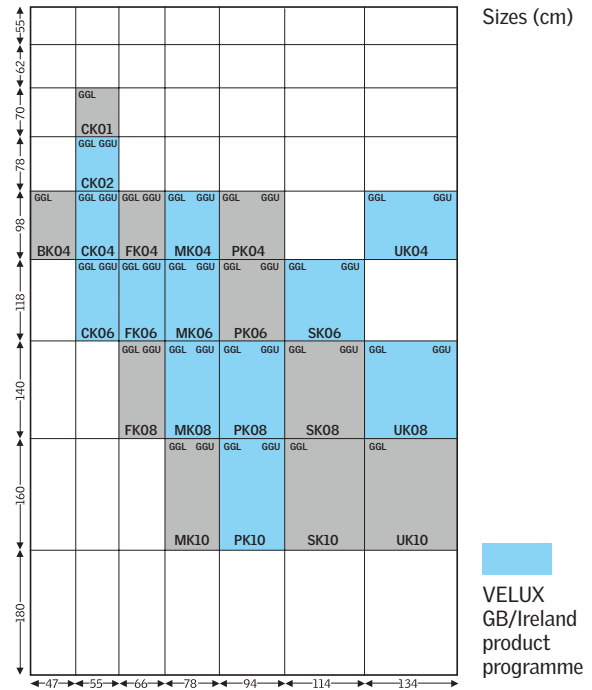
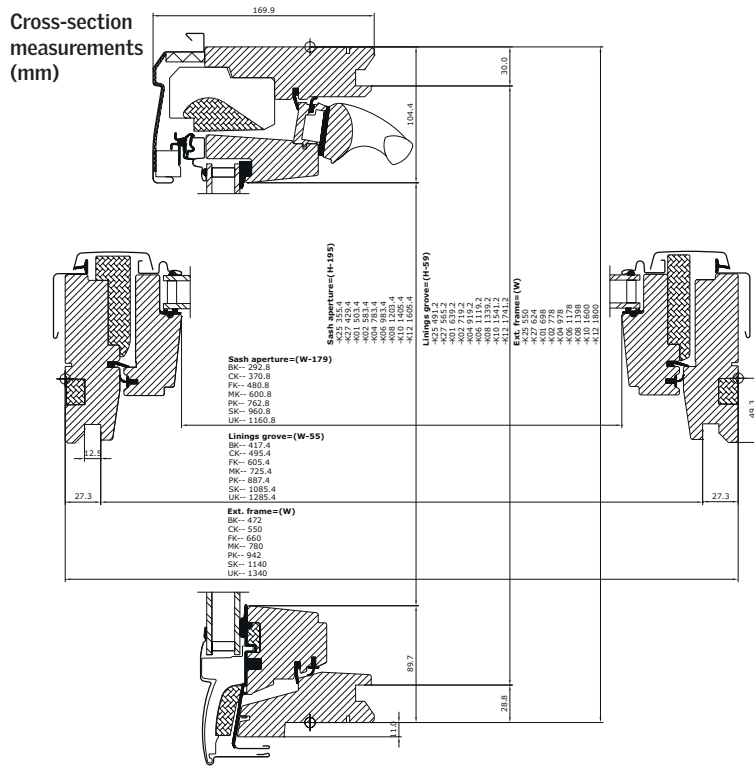
- Awning Blind – Solar (MSL)
- Roller Shutters – Solar (SSL)

# GGL/GGU Solar INTEGRA®

Please note not all glazing variants are available in all sizes and types

| Size | Window Options | Exterior Frame | Visible Glass | Lining Rebate |
|------|----------------|----------------|---------------|---------------|
|      |                | WxH            | exf           | kxl           |
| BK04 | GGL            | 472 x 978      | 293 x 783     | 417 x 639     |
| CK01 | GGL            | 550 x 698      | 371 x 503     | 495 x 639     |
| CK02 | GGL, GGU       | 550 x 778      | 371 x 583     | 495 x 719     |
| CK04 | GGL, GGU       | 550 x 978      | 371 x 783     | 495 x 919     |
| CK06 | GGL, GGU       | 550 x 1178     | 371 x 983     | 495 x 1119    |
| FK04 | GGL, GGU       | 660 x 978      | 481 x 783     | 605 x 919     |
| FK06 | GGL, GGU       | 660 x 1178     | 481 x 983     | 605 x 1119    |
| FK08 | GGL, GGU       | 660 x 1398     | 481 x 1203    | 605 x 1339    |
| MK04 | GGL, GGU       | 780 x 978      | 601 x 783     | 725 x 919     |
| MK06 | GGL, GGU       | 780 x 1178     | 601 x 983     | 725 x 1119    |
| MK08 | GGL, GGU       | 780 x 1398     | 601 x 1203    | 725 x 1339    |

| Size | Window Options | Exterior Frame | Visible Glass | Lining Rebate |
|------|----------------|----------------|---------------|---------------|
|      |                | WxH            | exf           | kxl           |
| MK10 | GGL, GGU       | 780 x 1600     | 601 x 1405    | 725 x 1541    |
| PK04 | GGL, GGU       | 942 x 978      | 763 x 783     | 887 x 919     |
| PK06 | GGL, GGU       | 942 x 1178     | 783 x 983     | 887 x 1119    |
| PK08 | GGL, GGU       | 942 x 1398     | 763 x 1203    | 887 x 1339    |
| PK10 | GGL, GGU       | 942 x 1600     | 763 x 1405    | 887 x 1541    |
| SK06 | GGL, GGU       | 1140 x 1178    | 961 x 983     | 1085 x 1119   |
| SK08 | GGL, GGU       | 1140 x 1398    | 961 x 1203    | 1085 x 1339   |
| SK10 | GGL            | 1140 x 1600    | 961 x 1405    | 1085 x 1541   |
| UK04 | GGL, GGU       | 1340 x 978     | 1161 x 783    | 1285 x 919    |
| UK08 | GGL, GGU       | 1340 x 1398    | 1161 x 1203   | 1285 x 1339   |
| UK10 | GGL            | 1340 x 1600    | 1161 x 1405   | 1285 x 1541   |



| Technical data (GGL/GGU)   | Size | BK04 | CK01 | CK02 | CK04 | CK06 | FK04 | FK06 | FK08 | MK04 | MK06 | MK08 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Ventilation flap - free area [10 <sup>3</sup> mm <sup>2</sup> ]*       |      | 2.2  | 2.8  | 2.8  | 2.8  | 2.8  | 3.7  | 3.7  | 3.7  | 4.5  | 4.5  | 4.5  |
| Ventilation flap - equivalent area [10 <sup>3</sup> mm <sup>2</sup> ]* |      | 1.9  | 2.6  | 2.6  | 2.6  | 2.6  | 3.1  | 3.1  | 3.1  | 3.7  | 3.7  | 3.7  |
| Ventilation - open window INTEGRA [m <sup>2</sup> ]                    |      | 0.17 | 0.11 | 0.10 | 0.20 | 0.20 | 0.24 | 0.24 | 0.24 | 0.28 | 0.28 | 0.28 |
| Effective daylight area [m <sup>2</sup> ]                              |      | 0.23 | 0.19 | 0.22 | 0.29 | 0.37 | 0.37 | 0.47 | 0.58 | 0.47 | 0.59 | 0.72 |

\*Measured to EN 13141-1

| Technical data (GGL/GGU)   | Size | MK10 | PK04 | PK06 | PK08 | PK10 | SK06 | SK08 | SK10 | UK04 | UK08 | UK10 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Ventilation flap - free area [10 <sup>3</sup> mm <sup>2</sup> ]*       |      | 4.5  | 6.1  | 6.1  | 6.1  | 6.1  | 7.2  | 7.2  | 7.2  | 10.6 | 10.6 | 10.6 |
| Ventilation flap - equivalent area [10 <sup>3</sup> mm <sup>2</sup> ]* |      | 3.7  | 4.6  | 4.6  | 4.6  | 4.6  | 5.6  | 5.6  | 5.6  | 6.6  | 6.6  | 6.6  |
| Ventilation - open window INTEGRA [m <sup>2</sup> ]                    |      | 0.28 | 0.33 | 0.33 | 0.33 | 0.34 | 0.39 | 0.39 | 0.40 | 0.47 | 0.46 | 0.46 |
| Effective daylight area [m <sup>2</sup> ]                              |      | 0.85 | 0.60 | 0.75 | 0.91 | 1.07 | 0.95 | 1.14 | 1.35 | 0.91 | 1.41 | 1.63 |

\*Measured to EN 13141-1

| Pane variant   | --60    | GGL --62 | GGU --62 | --66    | --70    | EN/ISO Standard |
|--|---------|----------|----------|---------|---------|-----------------|
| Thermal transmittance, U <sub>w</sub> [W/m <sup>2</sup> K] | 1.2     | 0.83     | 0.81     | 1.0     | 1.3     | EN ISO 12567-2  |
| Thermal transmittance, U <sub>g</sub> [W/m <sup>2</sup> K] | 1.0     | 0.5      | 0.5      | 0.7     | 1.1     | EN 673          |
| Sound insulation, R <sub>w</sub> [dB]                      | 37      | 42       | 42       | 37      | 35      | EN ISO 10140-2  |
| Air permeability   | Class 4 | Class 4  | Class 4  | Class 4 | Class 4 | EN 1026         |
| Light transmittance, τ <sub>v</sub>                        | 0.61    | 0.65     | 0.65     | 0.69    | 0.79    | EN 410          |
| Total solar energy transmittance, g                        | 0.30    | 0.50     | 0.50     | 0.50    | 0.64    | EN 410          |