Perfect union of ViaSolis Glass/Glass modules and Solrif mounting solution

Thanks to the patented photovoltaic in-roof mounting system by Solrif®, it is easy to turn a frameless ViaSolis Glass/Glass module into a solar power generating roof tile; thus, replace conventional roof cover.

Unlike on-roof systems, this roof integrated mounting system is a true alternative to conventional roof covers. More and more leading manufacturers of photovoltaic modules are offering their products with the simple yet proven Solrif®.

The Solrif® mounting system is suitable for various roof types. It can be used in complete or partial photovoltaic roofing, including in combination with solar thermal collectors or roof penetrations (such as skylights, chimneys, etc.). The flexible design options of Solrif® allow a simple and quick installation.

ADVANTAGES OF PV ROOF INTEGRATION ARE:

- Architectural and aesthetic demands satisfied.
- Roof tiles, slates etc. substituted by PV panels save roofing costs during construction or renovation.
- Particularly suitable for renovation. This will be an important topic in the near future.
- Decreased CO2 emission because tiles are not necessary.
- Less insurance costs, as the system is part of the building.
ViaSolis Solrif 250 – 270
Glass/Glass in-roof system with 60 cells modules

Glass/Glass modules – advanced choice for those who look for durability, safety, efficiency.

**KEY FEATURES**

- **Quick and fast installation** due to less components for the mounting system.
- **Easy and flexible maintenance** – single module pick inside the field is possible. Module based monitoring possible with SolarEdge Technology.
- **Aesthetically superior solution**. Full cover for the roof with perfect and aesthetical look in different colours.
- **50+ year lifespan**. Edge-sealant protection ensures superior atmospheric and humidity resistance.
- **Back glass** instead of plastic ensures durability and robust protection against UV, moisture, ammonia and salt corrosion.
- **Higher heat dispersal**. Glass is a better thermal conductor than a plastic back-sheet in standard modules ensuring higher efficiency in hot climates.
- **100% PID free**. Potential induced degradation is eliminated at cell level with special ARC structure and in module level by using PVB lamination foil.
- **Wider light spectrum absorbed**. PVB lamination foil utilises the light spectrum starting from 280nm.

**RELIABLE QUALITY**

- Positive power tolerance 0/+5 W
- 100% double quality control ensures modules are defect free
- Fully automated production lines
- Designed and manufactured in EU

**MANUFACTURER WARRANTY**

- 50-year laminates warranty
- 35-year product warranty
- 35-year linear performance guarantee

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**LAMINATION FOIL**

- Black
- White
- Transparent

**SOLRIF system options**
**ViaSolis Solrif 250 – 270**

Glass/Glass in-roof system with 60 cells modules

**MECHANICAL PARAMETERS**

- **Cell (mm):** None black/Poly blue (156x156)
- **Weight (kg):** 23 (approx.)
- **Dimensions (LxWxH/mm):** 1723 x 1023 x 17
- **Cable Cross Section Size (mm²):** 6/MC4
- **No. of Cells in the Module:** 6 (1064)
- **Junction Box:** Choice of SolarEdge optimizer or Standard J-box
- **Front / Back Glass (mm):** 2.1/2.1
- **Packaging Configuration:** 16 per pallet

**ELECTRICAL PARAMETERS**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>ViaSolis Solrif 60P 250</th>
<th>ViaSolis Solrif 60P 265</th>
<th>ViaSolis Solrif 60P 265</th>
<th>ViaSolis Solrif 60P 265</th>
<th>ViaSolis Solrif 80M 270</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Maximum Power at STC (Wp)</td>
<td>250</td>
<td>255</td>
<td>260</td>
<td>265</td>
<td>270</td>
</tr>
<tr>
<td>Open Circuit Voltage (Voc/V)</td>
<td>37.57</td>
<td>37.63</td>
<td>37.66</td>
<td>38.43</td>
<td>38.47</td>
</tr>
<tr>
<td>Maximum Power Voltage (Vmp/V)</td>
<td>30.14</td>
<td>30.17</td>
<td>30.19</td>
<td>30.78</td>
<td>30.82</td>
</tr>
<tr>
<td>Short Circuit Current (Isc/A)</td>
<td>8.87</td>
<td>9.04</td>
<td>9.21</td>
<td>9.12</td>
<td>9.29</td>
</tr>
<tr>
<td>Maximum Power Current (Imp/A)</td>
<td>8.30</td>
<td>8.46</td>
<td>8.62</td>
<td>8.61</td>
<td>8.77</td>
</tr>
<tr>
<td>Module efficiency [%]</td>
<td>15.08</td>
<td>15.38</td>
<td>15.68</td>
<td>15.98</td>
<td>16.29</td>
</tr>
<tr>
<td>Power Tolerance</td>
<td>±5 W</td>
<td>±5 W</td>
<td>±5 W</td>
<td>±5 W</td>
<td>±5 W</td>
</tr>
<tr>
<td>Temperature Coefficient of Inc (Wc/°C)</td>
<td>0.05%/°C</td>
<td>0.05%/°C</td>
<td>0.05%/°C</td>
<td>0.045%/°C</td>
<td>0.045%/°C</td>
</tr>
<tr>
<td>Temperature Coefficient of Voc (Vc/°C)</td>
<td>0.34%/°C</td>
<td>-0.34%/°C</td>
<td>0.34%/°C</td>
<td>0.305%/°C</td>
<td>0.305%/°C</td>
</tr>
<tr>
<td>Temperature Coefficient of Imp (Ic/°C)</td>
<td>0.42%/°C</td>
<td>-0.42%/°C</td>
<td>-0.42%/°C</td>
<td>-0.391%/°C</td>
<td>-0.391%/°C</td>
</tr>
<tr>
<td>STC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bestrahlsstärke 1000 W/m², Modultemperatur 25°C, AM 1.5</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Output Voltages and Currents**

| Module Power | 5-60 Vdc |
| MINIMUM string size with SolarEdge inverter | 5-Vdc, 5-Vdc |
| MAXIMUM string size with SolarEdge inverter | 15 Adc |
| String size with Non-SolarEdge inverter | 10 Adc |
| Output in Standby mode with SolarEdge inverter or with SMI and Non-SolarEdge inverter (when disconnected from inverter or inverter off) | 1 Vdc |

**String Lengths (computed automatically by SolarEdge Site Designer)**

| Module Power | 255 | 260 | 265 | 270 |
| MINIMUM string size with SolarEdge inverter | 1ph | 2ph | 3ph | 4ph |
| MAXIMUM string size with SolarEdge inverter | 1ph | 2ph | 3ph | 4ph |
| String size with Non-SolarEdge inverter | 50 ph | 40 ph | 48 ph |

**SOLRIF**

Easy Installation

The modules are held by metal clamps that are mounted to the roof battens. This allows for quick and easy installation.

Optimal Weather-tightness

Frames are shingled from top to bottom and are interlocking left to right much like tiles for optimal weather protection. For roof pitches between 10 and 70 degrees (lower slopes require rain-proof or water-tight substructure).

**ADVANTAGES AT A GLANCE**

- Substitutes conventional roof cladding
- As weather-tight as a traditionally tiled roof
- Tried and tested in thousands of roofs for more than 10 years
- Higher surface yield due to narrow frame profiles
- Short energy pay-back of just 3 years
- Good ventilation due to sleek frame profile
- Weather-protected cabling
- Easy to service
- Requires no maintenance

Specifications subject to technical changes and tests. Manufacturer reserves the right of final interpretation.

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PV Glass Manufacturing & Architectural Energy Solutions
## Advantages of Via Solis Glass/Glass PV module

<table>
<thead>
<tr>
<th>Conventional PV module</th>
<th>Glass/Glass PV module</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,2 mm front glass</td>
<td>Ultra thin 2 mm front glass</td>
<td><strong>Up to 2 % higher YIELD</strong> effect due increased light transmission</td>
</tr>
<tr>
<td>EVA bonding</td>
<td>PVB bonding</td>
<td><strong>Up to 4 % higher YIELD</strong> ensured of wider light spectrum utilisation (starts at 280 nm versus 320 nm [EVA])</td>
</tr>
<tr>
<td>Frame</td>
<td>Frameless</td>
<td><strong>Increased YIELD</strong> of the module and PV power station due eliminating negative impact of dirt, sand and snow that commonly stopped by the module frame</td>
</tr>
<tr>
<td>Heat transfer coefficient 0,36 W/(m²*K)</td>
<td>Heat transfer coefficient 0,98 W/(m²*K)</td>
<td>3 <strong>times higher heat transfer coefficient (inverse of thermal insulation)</strong>, 3 <strong>times better heat dissipation resulting in up to 2 % higher YIELD</strong></td>
</tr>
<tr>
<td>Expected life time 15-20 years</td>
<td>Expected life time 35-50 years</td>
<td><strong>Increased performance in double</strong></td>
</tr>
<tr>
<td>Different thermal shrinkage of the lamination materials</td>
<td>Equal thermal shrinkage of the lamination materials</td>
<td><strong>No cell breakage</strong> ensured by tantamount material design. Withstands higher stress course by fluctuations of temperature (day/night), heavy loads and strong winds</td>
</tr>
<tr>
<td>Open edge</td>
<td>Thermo-sealing edge isolation</td>
<td><strong>Up to 50 % increased lifetime due to robust protection against UV, moisture, ammonia and salt corrosion.</strong></td>
</tr>
</tbody>
</table>

### SOLAR EDGE

To maximize power generation for PV systems and to prevent modules from malfunctions, solar power harvesting and PV monitoring systems are necessary. ViaSolis PV modules have already an embedded SolarEdge Optimizer which, in combination with SolarEdge inverter and module level monitoring, guarantees up to 25% more energy due to MPP tracking and Module level monitoring. Advantages in combination with Solrif®: Optimum protection of wooden structure against fire. Easy maintenance by module level based monitoring. ViaSolis PV modules with standard junction box are available as well.

### RELIABILITY

ViaSolis Glass/Glass module is the first PV module tested and approved by the Electrosuisse - main Swiss certification body.