Glass-glass module
Solid quality with high performance

Thanks to their modern design SOLARWATT glass-glass modules deliver the highest long-term yields. They are robust and resilient, yet just as light as their glass-foil predecessors.

The high-performance PERC-solar cells are embedded almost indistructibly in the glass-glass composite and thus optimally protected against all weather effects and mechanical stress. SOLARWATT can therefore offer a 30-year warranty on performance and product quality.

The SOLARWATT FullCoverage insurance is included for 5 years and free of charge. It insures almost all risks and takes effect even if the modules do not produce electricity or deliver less than expected in the event of damage.

Product Quality

• ammonia resistant
• intensive hailstorm resistant
• salt mist resistant
• LeTID tested

• 100 % plus-sorting
• 100 % PID protected
• snow-load warranty

Service

FullCoverage insurance included (up to 1,000 kWp*)

Simple returns policy as per „Delivery terms for SOLARWATT solar modules“

30 Year Product Warranty as per „Warranty conditions for SOLARWATT solar modules“

30 Year Performance Warranty on 87 % of nominal power as per „Warranty conditions for SOLARWATT solar modules“

* country-specific deviations apply
**General data**

- **Module technology**: Glass-glass laminate; aluminum frame
- **Covering material**: Tempered solar glass with anti-reflective finish, 2mm EVA-solar cells-EVA, white
- **Backing material**: Tempered glass, 2 mm
- **Solar cells**: 60 monocrystalline high power PERC-solar cells
- **Cell dimensions**: 157 x 157 mm
- **L x W x H / Weight**: 1,680± 2 x 990± 2 x 40± 0,3 mm / appr. 22,8 kg
- **Connection technology**: Cables 2 x 1,1 m/4 mm², TE Connectivity PV4-S connectors
- **Bypass diodes**: 3
- **Max. system voltage**: 1,000 V
- **IP rating**: IP67
- **Protection class**: II (acc. to IEC 61140)
- **Fire class**: A (acc. to IEC 61730/UL 790) E (acc. to EN 13501-1)
- **NMOT**: Tempered solar glass with anti-reflective finish, 2mm EVA-solar cells-EVA, white
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**Electrical data (STC)**

<table>
<thead>
<tr>
<th>Power Pmax</th>
<th>305 Wp</th>
<th>310 Wp</th>
<th>315 Wp</th>
<th>320 Wp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal power Pmax</td>
<td>305 Wp</td>
<td>310 Wp</td>
<td>315 Wp</td>
<td>320 Wp</td>
</tr>
<tr>
<td>Nominal voltage Vmax</td>
<td>32.1 V</td>
<td>32.3 V</td>
<td>32.5 V</td>
<td>32.7 V</td>
</tr>
<tr>
<td>Nominal current Imax</td>
<td>9.60 A</td>
<td>9.70 A</td>
<td>9.78 A</td>
<td>9.87 A</td>
</tr>
<tr>
<td>Open circuit voltage Vopen</td>
<td>40.0 V</td>
<td>40.2 V</td>
<td>40.3 V</td>
<td>40.4 V</td>
</tr>
<tr>
<td>Short circuit current Isc</td>
<td>10.09 A</td>
<td>10.21 A</td>
<td>10.31 A</td>
<td>10.4 A</td>
</tr>
</tbody>
</table>

**Measurement tolerances**: Pmax ±5 %; Voc ±10 %; Isc ±10 %, Ip ±10 %

**Reverse-current power rating Ir**: 20 A; operating modules with an external power source is only permissible if using a phase fuse with a tripping current of ≤ 20 A.

**Electrical data (NMOT and weak light)**

<table>
<thead>
<tr>
<th>Power Pmax</th>
<th>226 W</th>
<th>230 W</th>
<th>233 W</th>
<th>237 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal power Pmax</td>
<td>226 W</td>
<td>230 W</td>
<td>233 W</td>
<td>237 W</td>
</tr>
<tr>
<td>Nominal voltage Vmax</td>
<td>60.8 W</td>
<td>61.8 W</td>
<td>62.8 W</td>
<td>63.8 W</td>
</tr>
</tbody>
</table>

**Measurement tolerances**: Pmax ±5 %; Voc ±10 %; Isc ±10 %, Ip ±10 %

**Reduction of module efficiency when irradiance is reduced from 1000 W/m² to 200 W/m² (at 25°C)**: 4 ± 2 % (relative) / –0.6 ± 0.3 % (absolute).

**Characteristic lines (Performance Class 320 Wp)**

**Thermal Features**

- **Operating temperature range**: -40 ... +85 °C
- **Ambient temperature range**: -40 ... +65 °C
- **Temperature coefficient Pmax**: -0.39%/K
- **Temperature coefficient Vmax**: -0.39%/K
- **Temperature coefficient Isc**: 0.05%/K
- **NMOT**: 44°C