ABOUT YINGLI GREEN ENERGY

Yingli Green Energy Holding Company Limited (NYSE: YGE) is one of the world’s largest fully vertically integrated PV manufacturers, which markets its products under the brand “Yingli Solar”. With over 2GW of modules installed globally, we are a leading solar energy company built upon proven product reliability and sustainable performance. We are the first renewable energy company and the first Chinese company to sponsor the FIFA World Cup™.

PERFORMANCE

- High efficiency, multicrystalline solar cells with high transmission and textured glass deliver a module efficiency of up to 15.0%, minimizing installation costs and maximizing the kWh output of your system per unit area.
- Tight positive power tolerance of 0W to +5W ensures you receive modules at or above nameplate power and contributes to minimizing module mismatch losses leading to improved system yield.

QUALITY & RELIABILITY

- Robust, corrosion resistant aluminum frames independently tested to withstand wind loads of up to 2.4kPa and snow loads of up to 5.4kPa ensuring a stable mechanical life for your modules.
- Module packaging optimized to protect product during transportation and minimize on-site waste.
- Modules independently tested to ensure conformance with certification and regulatory standards.

WARRANTIES

- 5-year limited product warranty¹.
- Limited power warranty¹: 10 years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.

¹ In compliance with our Warranty Terms and Conditions.

QUALIFICATIONS & CERTIFICATES


YINGLISOLAR.COM
ELECTRICAL PERFORMANCE

Electrical parameters at Standard Test Conditions (STC)

<table>
<thead>
<tr>
<th>Module name</th>
<th>YGE 245</th>
<th>YGE 240</th>
<th>YGE 235</th>
<th>YGE 230</th>
<th>YGE 225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output P_{max} W</td>
<td>245</td>
<td>240</td>
<td>235</td>
<td>230</td>
<td>225</td>
</tr>
<tr>
<td>Power output tolerances ΔP_{max} W</td>
<td>-0 ~ +5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module efficiency η %</td>
<td>15.0</td>
<td>14.7</td>
<td>14.4</td>
<td>14.1</td>
<td>13.8</td>
</tr>
<tr>
<td>Voltage at P_{max} V</td>
<td>30.2</td>
<td>29.5</td>
<td>29.5</td>
<td>29.5</td>
<td>29.5</td>
</tr>
<tr>
<td>Current at P_{max} A</td>
<td>8.11</td>
<td>8.14</td>
<td>7.97</td>
<td>7.80</td>
<td>7.63</td>
</tr>
<tr>
<td>Open-circuit voltage V</td>
<td>37.8</td>
<td>37.5</td>
<td>37.0</td>
<td>37.0</td>
<td>36.5</td>
</tr>
<tr>
<td>Short-circuit current I A</td>
<td>8.63</td>
<td>8.65</td>
<td>8.54</td>
<td>8.40</td>
<td>8.28</td>
</tr>
</tbody>
</table>

STC: 1000W/m² irradiance, 25°C module temperature, AM1.5g spectrum according to EN 60904-3. Ave. efficiency reduction of 2% at 2000W/m² according to EN 60904-1.

Electrical parameters at Nominal Operating Cell Temperature (NOCT)

<table>
<thead>
<tr>
<th>Module name</th>
<th>YGE 245</th>
<th>YGE 240</th>
<th>YGE 235</th>
<th>YGE 230</th>
<th>YGE 225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output P_{max} W</td>
<td>177.9</td>
<td>174.3</td>
<td>170.7</td>
<td>167.0</td>
<td>163.4</td>
</tr>
<tr>
<td>Voltage at P_{max} V</td>
<td>27.2</td>
<td>26.6</td>
<td>26.6</td>
<td>26.6</td>
<td>26.6</td>
</tr>
<tr>
<td>Current at P_{max} A</td>
<td>6.54</td>
<td>6.56</td>
<td>6.42</td>
<td>6.29</td>
<td>6.15</td>
</tr>
<tr>
<td>Open-circuit voltage V</td>
<td>34.5</td>
<td>34.2</td>
<td>33.8</td>
<td>33.8</td>
<td>33.3</td>
</tr>
<tr>
<td>Short-circuit current I A</td>
<td>6.99</td>
<td>7.01</td>
<td>6.92</td>
<td>6.81</td>
<td>6.71</td>
</tr>
</tbody>
</table>

NOCT: open-circuit module operation temperature at 800W/m² irradiance, 20°C ambient temperature, 1m/s wind speed.

THERMAL CHARACTERISTICS

Nominal operating cell temperature NOCT °C 46 +/- 2
Temperature coefficient of P_{max} V %/°C -0.45
Temperature coefficient of V_{max} %/°C -0.37
Temperature coefficient of I_{max} %/°C 0.06

OPERATING CONDITIONS

Max. system voltage 1000V_{DC}
Max. series fuse rating 15A
Limiting reverse current Do not apply external voltages larger than V_{oc} of the module.
Operating temperature range -40 to 85°C
Max. static load, front (e.g., snow and wind) 5400Pa
Max. static load, back (e.g., wind) 2400Pa
Max. hailstone impact (diameter / velocity) 25mm / 23m/s

CONSTRUCTION MATERIALS

Front cover (material / type / thickness) low iron tempered glass / 3.2mm
Cell (quantity / material / type / dimensions) 60 / multicrystalline / 156mm x 156mm
Encapsulant (material) ethylene vinyl acetate (EVA)
Frame (material / color / anodization color) anodized aluminum alloy / silver / clear
Junction box (protection degree) IP65
Cable (length / cross-sectional area) 1200mm / 4mm²
Plug connector (type / protection degree) MC4 / IP67 or Amphenol H4 / IP68

Due to continuous innovation, research and product improvement, the specifications in this product information sheet are subject to change without prior notice. The specifications may deviate slightly and are not guaranteed.

The data do not refer to a single module and they are not part of the offer, they only serve for comparison to different module types.

WARNING: Read the instruction manual in its entirety before handling, installing, and operating Yingli Solar modules.

Our Partners:

Yingli Green Energy Holding Co. Ltd.
service@yinglisolar.com
Tel: +0086-312-8929802
YINGLISOLAR.COM

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