YLM 3.0 modules use high efficiency p-type monocrystalline PERC cell technology. With high quality encapsulation materials and classic glass-backsheet structure, YLM 3.0 modules are perfectly suited to the harsh environment and provide you with high reliability and quality assurance.

**Classic Structure**
The glass-backsheet structure and layout design have been proven in the market for a long time.

**Superior Yield**
The large size cell enhances the module's power output, while the excellent temperature coefficient and comprehensive LID/LeTID degradation suppression technology allow the module to generate more energy yield once in use.

**Excellent Durability**
The modules meet IEC standard testing requirements and are resistant to salt mist, ammonia, dust and sand, snail trail and PID risks.

**Wide Applications**
The glass-backsheet structure, special material selection and extra-strong frames effectively enhance the mechanical performance of the modules, their compatibility with mainstream trackers and inverters, and their adaptability to harsh environments.

**Lower Losses**
The multi-busbar design effectively reduces the impact of micro-cracks and broken busbars, and the half-cell structure effectively reduces the impact of shadow shading.

**QUALIFICATIONS & CERTIFICATES**

Yingli Solar
Headquartered in Baoding, China, Yingli Energy Development Company Limited, known as Yingli Solar, is a leading solar solution provider. Yingli Solar is committed to providing clean, renewable energy through PV power generation technology for factories, homes and utilities around the world. Yingli Solar provides reliable products and services through continuous technological advancement and management innovation.
### Electrical parameters at Standard Test Conditions (STC*)

<table>
<thead>
<tr>
<th>Module type</th>
<th>Power output $P_{\text{max}}$ W</th>
<th>Power output tolerances $\Delta P_{\text{max}}$ W</th>
<th>Module efficiency $\eta_{\text{m}}$ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>YLMxxxD-45f 1/2 (xxx=Pmax)</td>
<td>645</td>
<td>650</td>
<td>20.76</td>
</tr>
<tr>
<td>YLMxxxD-45f 1500V 1/2 (xxx=Pmax)</td>
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<td>660</td>
<td>20.92</td>
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<td>665</td>
<td>670</td>
<td>21.09</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Voltage at $P_{\text{max}}$ $V_{\text{mpp}}$ V</th>
<th>Current at $P_{\text{max}}$ $I_{\text{mpp}}$ A</th>
<th>Open–circuit voltage $V_{\text{oc}}$ V</th>
<th>Short–circuit current $I_{\text{sc}}$ A</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.50</td>
<td>17.20</td>
<td>45.10</td>
<td>18.26</td>
</tr>
<tr>
<td>37.70</td>
<td>17.24</td>
<td>45.30</td>
<td>18.31</td>
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<tr>
<td>37.90</td>
<td>17.29</td>
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<tr>
<td>38.50</td>
<td>17.41</td>
<td></td>
<td>18.54</td>
</tr>
</tbody>
</table>

*STC: 1000 W·m$^{-2}$ irradiance, 25°C cell temperature, AM 1.5 spectrum according to EN 60904-3.

### THERMAL CHARACTERISTICS

Nominal operating cell temperature $\text{NOCT}$ °C: 43 ± 2

Temperature coefficient of $P_{\text{max}}$ $\gamma$ %/°C: -0.34

Temperature coefficient of $V_{\text{oc}}$ $\beta$ %/°C: -0.25

Temperature coefficient of $I_{\text{sc}}$ $\alpha$ %/°C: 0.04

### OPERATING CONDITIONS

Max. system voltage: 1000 $V_{\text{oc}}$ / 1500 $V_{\text{oc}}$

Max. series fuse rating*: 30 A

Operating temperature range: -40°C to 85°C

Max. static load, front (e.g., snow): 5400 Pa

Max. static load, back (e.g., wind): 2400 Pa

Max. hailstone impact (diameter / velocity): 25 mm / 23 m·s$^{-1}$

*DO NOT CONNECT FUSE IN COMBINER BOX WITH TWO OR MORE STRINGS IN PARALLEL CONNECTION.

### CONSTRUCTION MATERIALS

- **Cell (material / quantity):** $p$-type monocrystalline silicon / 6 x 22
- **Glass (material / thickness):** low-iron tempered glass / 3.2 mm
- **Frame (material):** anodized aluminum alloy
- **Junction box (type / protection degree):** 3 bypass diodes / ≥ IP68
- **Cable (length / cross-sectional area):** ± 300 mm or customized length / 4 mm$^2$

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**Warning:** Read the Installation and User Manual in its entirety before handling, installing and operating Yingli Solar modules.

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