PANDA BIFACIAL modules generate power from the front side as well as from the back. Together with the cutting-edge PANDA n-type crystalline silicon solar cells, which wake up earlier than conventional p-type and go to sleep later, the energy yield can be highest increased by 30%.

**Bifacial Power**
In contrast to conventional modules, PANDA BIFACIAL modules generate energy from both sides. As the backside makes use of the reflected and scattered light from the surroundings, the modules could yield more.

**High Yield**
Once used, PANDA BIFACIAL modules generate more energy, because of low LID, good low-light performance and temperature coefficient of n-type monocrystalline silicon solar cells.

**Durability**
Durable PANDA BIFACIAL modules work well in muggy conditions, and independently tested for harsh environmental conditions beyond IEC standards, such as exposure to salt mist, ammonia, dust or known PID risk factors.

**Optimal Self-cleaning@CL**
Optimal self-cleaning due to frameless module design.

**Mechanical Performance@CF**
Specially designed aluminium frames enhance the mechanical performance of modules and the installation efficiency of systems.

**Yingli Green Energy**
Yingli Green Energy Holding Company Limited, known as “Yingli Solar”, is one of the world’s leading solar panel manufacturers with the mission to provide affordable green energy for all. Yingli Solar makes solar power possible for communities everywhere by using our global manufacturing and logistics expertise to address unique local challenges.
**ELECTRICAL PERFORMANCE**

### Module type
- 60CL (60 cell, frameless): YLxxxCG2530L-1
- 60CF (60 cell, framed): YLxxxCG2530F-1

#### Electrical parameters at Bifacial Standard Test Conditions (BSTC)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output $P_{m,p}$</td>
<td>355</td>
<td>350</td>
<td>345</td>
<td>340</td>
<td>335</td>
<td>330</td>
<td>325</td>
<td>320</td>
<td></td>
</tr>
<tr>
<td>Voltage at $P_{m,p}$</td>
<td>33.30</td>
<td>33.10</td>
<td>32.90</td>
<td>32.70</td>
<td>32.40</td>
<td>32.20</td>
<td>32.00</td>
<td>31.70</td>
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<tr>
<td>Current at $P_{m,p}$</td>
<td>10.79</td>
<td>10.69</td>
<td>10.59</td>
<td>10.49</td>
<td>10.41</td>
<td>10.30</td>
<td>10.19</td>
<td>10.11</td>
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</tr>
<tr>
<td>Open-circuit voltage $V_{oc}$</td>
<td>40.50</td>
<td>40.30</td>
<td>40.10</td>
<td>39.90</td>
<td>39.70</td>
<td>39.40</td>
<td>39.20</td>
<td>39.00</td>
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</tr>
<tr>
<td>Short-circuit current $I_{sc}$</td>
<td>11.21</td>
<td>11.10</td>
<td>11.03</td>
<td>10.97</td>
<td>10.90</td>
<td>10.82</td>
<td>10.76</td>
<td>10.69</td>
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</tr>
<tr>
<td>Power output tolerance $\Delta P_{m,p}$</td>
<td>0</td>
<td>/ + 5</td>
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</tr>
</tbody>
</table>

#### Module efficiency at 60CL
- $\eta_{xxx}$ %
  - 21.58
  - 21.28
  - 20.88
  - 20.67
  - 20.37
  - 20.06
  - 19.76
  - 19.46

#### Module efficiency at 60CF
- $\eta_{xxx}$ %
  - 23.08
  - 20.78
  - 20.48
  - 20.19
  - 19.89
  - 19.59
  - 19.29

#### Electrical parameters at Nominal Module Operating Temperature (NMOT)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output $P_{xxx}$</td>
<td>272.10</td>
<td>267.97</td>
<td>263.87</td>
<td>259.80</td>
<td>255.52</td>
<td>251.25</td>
<td>247.01</td>
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<tr>
<td>Voltage at $P_{xxx}$</td>
<td>31.62</td>
<td>31.43</td>
<td>31.24</td>
<td>31.05</td>
<td>30.76</td>
<td>30.57</td>
<td>30.38</td>
<td>30.10</td>
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</tr>
<tr>
<td>Current at $P_{xxx}$</td>
<td>8.61</td>
<td>8.53</td>
<td>8.45</td>
<td>8.37</td>
<td>8.31</td>
<td>8.22</td>
<td>8.13</td>
<td>8.07</td>
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</tr>
<tr>
<td>Open-circuit voltage $V_{oc}$</td>
<td>38.41</td>
<td>38.22</td>
<td>38.03</td>
<td>37.84</td>
<td>37.65</td>
<td>37.46</td>
<td>37.27</td>
<td>36.99</td>
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</tr>
<tr>
<td>Short-circuit current $I_{sc}$</td>
<td>9.02</td>
<td>8.93</td>
<td>8.88</td>
<td>8.82</td>
<td>8.77</td>
<td>8.71</td>
<td>8.65</td>
<td>8.60</td>
<td></td>
</tr>
</tbody>
</table>

#### THERMAL CHARACTERISTICS

- Nominal module operating temperature $P_{NMOT}$
  - $\Phi_{xxx}$ % / °C
  - Bifacility
  - $\Phi_{xxx}$ %
  - Bifacility
  - $\Phi_{xxx}$ %
  - Bifacility

#### OPERATING CONDITIONS

- Max. system voltage $1500V_{dc}$
- Front and back cover (material / thickness)
  - Low-iron semi-tempered glass / 2.5mm x 2
- Max. series fuse rating
  - 20A
- Cell (material / number of busbar)
  - N-type monocrystalline / S-12
- Operating temperature range
  - -40°C to 85°C
- Frame (60CL / 60CF)
  - None / anodized aluminum alloy
- Fire resistance
  - Class A
- Cable (length / cross-sectional area)
  - 200mm / 4mm²
- Halo-impact (diameter / velocity)
  - 25mm / 23m.s⁻¹
- Junction box (protection degree)
  - IP67
- Snow load, front (60CL / 60CF)
  - 3000Pa / 4400Pa
- Wind load, back (60CL / 60CF)
  - 2400Pa / 2400Pa
- Plug connector (type / protection degree)
  - RFI 05-8 / IP67
  - QC4.10-cd / IP68

#### CONSTRUCTION MATERIALS

- Low-iron semi-tempered glass / 2.5mm x 2
- N-type monocrystalline / S-12
- None / anodized aluminum alloy
- 200mm / 4mm²
- 25mm / 23m.s⁻¹
- IP67
- RFI 05-8 / IP67
- QC4.10-cd / IP68