## PANDA 60 Cell 40mm SERIES

## 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 3.6GW 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 ${ }^{\top M}$.

## PERFORMANCE

- Yingli Solar PANDA is a new monocrystalline silicon module technology with n-type solar cells that have average efficiencies higher than 19.0\%. Combined with high transmission glass, module efficiencies are up to 16.5\%.
- Compared to traditional modules with p-type solar cells, PANDA modules have lower initial degradation and higher performance under both high temperature and low irradiation conditions.
-Tight positive power tolerance of - 0 W to +5 W 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 2.4 kPa and snow loads of up to 5.4 kPa 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.
- Manufacturing facility certified by TÜV Rheinland to ISO 9001:2008, ISO 14001:2004 and BS OHSAS 18001:2007.


## WARRANTIES

-10-year limited product warranty ${ }^{1}$.
-Limited power warranty ${ }^{1}$ : 1 year at $98 \%$ of the minimal rated power output, 10 years at $92 \%$ of the minimal rated power output, 25 years at $82 \%$ of the minimal rated power output.
${ }^{1}$ In compliance with our Warranty Terms and Conditions.

## QUALIFICATIONS \& CERTIFICATES

IEC 61215, IEC 61730, MCS, CE, ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007, SA 8000, PV Cycle

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ELECTRICAL PERFORMANCE

| Electrical parameters at Standard Test Conditions (STC) |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Module type |  |  | YL270C-30b | YL265C.30b | YL260C.30b | YL255C.30b | YL250C-30b |
| Power output | $\mathrm{P}_{\text {max }}$ | w | 270 | 265 | 260 | 255 | 250 |
| Power output tolerances | $\Delta P_{\text {max }}$ | w | -0/ +5 |  |  |  |  |
| Module efficiency | $\mathrm{n}_{\mathrm{m}}$ | \% | 16.5 | 16.2 | 15.9 | 15.6 | 15.3 |
| Voltage at $\mathrm{P}_{\text {max }}$ | $\mathrm{V}_{\text {mpp }}$ | v | 31.1 | 31.0 | 30.8 | 30.6 | 30.5 |
| Current at $\mathrm{P}_{\text {max }}$ | $\mathrm{I}_{\text {mpp }}$ | A | 8.68 | 8.55 | 8.46 | 8.33 | 8.20 |
| Open-circuit voltage | $\mathrm{V}_{\text {oc }}$ | V | 39.0 | 39.0 | 38.6 | 38.3 | 38.1 |
| Short-circuit current | $\mathrm{I}_{s c}$ | A | 9.06 | 8.93 | 8.91 | 8.85 | 8.71 |

STC: $1000 \mathrm{~W} / \mathrm{m}^{2}$ irradiance, $25^{\circ} \mathrm{C}$ cell temperature, AM 1.5 g spectrum according to EN 60904-3.
Average relative efficiency reduction of $3.5 \%$ at $200 \mathrm{~W} / \mathrm{m}^{2}$ according to EN 60904-1.

## Electrical parameters at Nominal Operating Cell Temperature (NOCT)

| Power output | $\mathrm{P}_{\max }$ | W | 195.6 | 192.4 | 188.8 | 185.2 | 181.6 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Voltage at $\mathbf{P}_{\max }$ | $\mathrm{V}_{\text {mp }}$ | V | 28.3 | 28.1 | 27.8 | 27.7 | 27.6 |
| Current at $\mathrm{P}_{\max }$ | $\mathrm{I}_{\text {mpp }}$ | A | 6.91 | 6.86 | 6.79 | 6.68 | 6.58 |
| Open-circuit voltage | $\mathrm{V}_{\text {oc }}$ | V | 36.1 | 35.9 | 35.5 | 35.2 | 35.1 |
| Short-circuit current | $\mathrm{I}_{\mathrm{sc}}$ | A | 7.34 | 7.20 | 7.18 | 7.13 | 7.02 | NOCT: open-circuit module operation temperature at $800 \mathrm{~W} / \mathrm{m}^{2}$ irradiance, $20^{\circ} \mathrm{C}$ ambient temperature, $1 \mathrm{~m} / \mathrm{s}$ wind speed.

THERMAL CHARACTERISTICS

| Nominal operating cell temperature | NOCT | ${ }^{\circ} \mathrm{C}$ | $46+/-2$ |
| :--- | :---: | :---: | :---: |
| Temperature coefficient of $\mathrm{P}_{\max }$ | $\boldsymbol{\gamma}$ | $\% /{ }^{\circ} \mathrm{C}$ | -0.42 |
| Temperature coefficient of $\mathrm{V}_{\mathrm{oc}}$ | $\beta_{\mathrm{Voc}}$ | $\% /{ }^{\circ} \mathrm{C}$ | -0.31 |
| Temperature coefficient of $\mathrm{I}_{\mathrm{sc}}$ | $\alpha_{\mathrm{lsc}}$ | $\% /{ }^{\circ} \mathrm{C}$ | 0.04 |
| Temperature coefficient of $\mathrm{V}_{\mathrm{mpp}}$ | $\beta_{\mathrm{Vmpp}}$ | $\% /{ }^{\circ} \mathrm{C}$ | -0.41 |

OPERATING CONDITIONS

| Max. system voltage | $1000 \mathrm{~V}_{\mathrm{DC}}$ |
| :--- | :---: |
| Max. series fuse rating | 15 A |
| Limiting reverse current | 15 A |
| Operating temperature range | -40 to $85^{\circ} \mathrm{C}$ |
| Max. static load, front (e.g., snow and wind) | 5400 Pa |
| Max. static load, back (e.g., wind) | 2400 Pa |
| Max. hailstone impact (diameter / velocity) | $25 \mathrm{~mm} / 23 \mathrm{~m} / \mathrm{s}$ |

CONSTRUCTION MATERIALS

| Front cover (material / thickness) | low-iron tempered glass / 3.2mm |
| :--- | :---: |
| Cell (quantity / material / dimensions) | $60 /$ monocrystalline silicon / 156mm $\times 156 \mathrm{~mm}$ |
| Encapsulant (material) | ethylene vinyl acetate (EVA) |
| Frame (material / color / anodization color) | anodized aluminum alloy / silver / clear |
| Junction box (protection degree) | $\geq$ IP65 |
| Cable (length / cross-sectional area) | $1100 \mathrm{~mm} / 4 \mathrm{~mm}^{2}$ |
| Plug connector <br> (type / protection degree) | $\mathrm{MC4} / \mathrm{IP67}$ 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.

GENERAL CHARACTERISTICS

| Dimensions (L / W / H) | $1650 \mathrm{~mm} / 990 \mathrm{~mm} / 40 \mathrm{~mm}$ |
| :--- | :---: |
| Weight | 19.1 kg |

PACKAGING SPECIFICATIONS

| Number of modules per pallet | 26 |
| :--- | :---: |
| Number of pallets per 40' container | 28 |
| Packaging box dimensions <br> (L / W / H) | $1700 \mathrm{~mm} / 1150 \mathrm{~mm} / 1190 \mathrm{~mm}$ |
| Box weight | 534 kg |

Unit: mm



4Warning: Read the Installation and User Manual in its entirety before handling, installing, and operating Yingli Solar modules.

## Our Partners:



