



panda 3.0 Mini 2

460W

MAXIMUM MODULE EFFICIENCY

23.0 %

POSITIVE POWER TOLERANCE

0~+5_w



N-type TOPCon Bifacial Module

IMPROVED POWER NEVER SETTLE FOR LESS



Backside Yield

Wide Applications



Superior Yield



Outstanding Bifaciality



Excellent Durability



Yingli Solar Website



QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730, CE

ISO 9001: Quality management systems

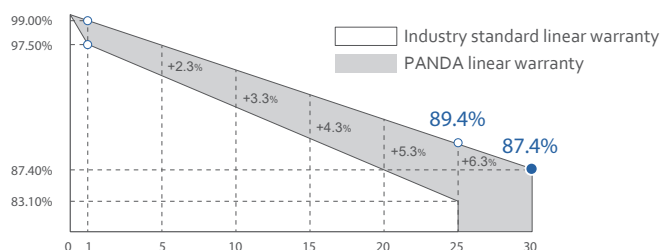
ISO 14001: Environmental management systems

IEC 62941: Quality system for PV module manufacturing

ISO 45001: Occupational health and safety management systems



Munich RE



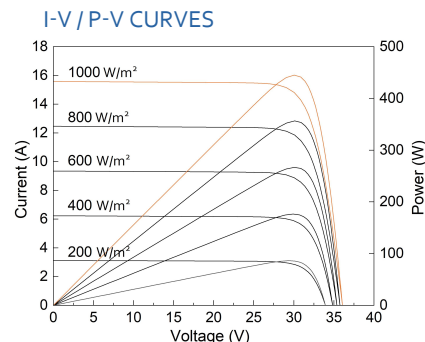
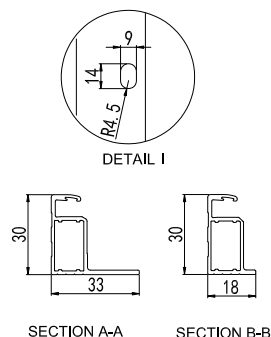
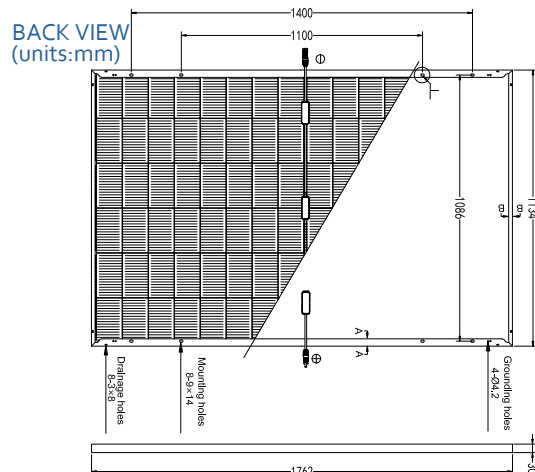
1.00% the 1st year power degradation
0.40% annual power degradation



Densys pv5

| We deliver. You install. The sun does all the rest. |

Data sheet provided for you @ www.densys-pv5.de



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

Electrical Parameters at Standard Test Conditions (STC*)

Module type	YLxxxCF48 i/2 (xxx=Pmax)					
Power output-Pmax (W)	435	440	445	450	455	460
Power output tolerances-ΔPmax (W)	0 / + 5					
Module efficiency-η _m (%)	21.8	22.0	22.3	22.5	22.8	23.0
Voltage at Pmax - V _{mpp} (V)	29.45	29.68	29.91	30.14	30.37	30.60
Current at Pmax-I _{mp} (A)	14.78	14.83	14.88	14.94	14.99	15.04
Open-circuit voltage-Voc (V)	35.63	35.84	36.05	36.26	36.47	36.68
Short-circuit current-Isc (A)	15.46	15.52	15.58	15.64	15.70	15.76

*STC: 1000 W·m⁻² irradiance, 25°C cell temperature, AM 1.5.

Electrical Parameters at Nominal Operating Cell Temperature (NOCT*)

Power output-Pmax (W)	331	335	338	342	346	350
Voltage at Pmax - V _{mpp} (V)	28.09	28.31	28.53	28.75	28.97	29.19
Current at Pmax-I _{mp} (A)	11.78	11.82	11.86	11.91	11.95	11.99
Open-circuit voltage-Voc (V)	33.83	34.03	34.23	34.43	34.63	34.83
Short-circuit current-Isc (A)	12.46	12.50	12.55	12.60	12.65	12.70

*NOCT: open-circuit module operation temperature at 800 W·m⁻² irradiance, 20°C ambient temperature, 1 m · s⁻¹ wind speed.

Bifacial Electrical Parameters at Standard Test Conditions(BNPI*)

Power output-Pmax (W)	482	488	493	499	504	510
Voltage at Pmax - V _{mpp} (V)	29.45	29.68	29.91	30.14	30.37	30.60
Current at Pmax-I _{mp} (A)	16.38	16.43	16.49	16.55	16.61	16.66
Open-circuit voltage-Voc (V)	35.63	35.84	36.05	36.26	36.47	36.68
Short-circuit current-Isc (A)	17.13	17.20	17.26	17.33	17.40	17.46

*1000W·m⁻² on the front side and 135 W·m⁻² on the back side, 25°C cell temperature, AM 1.5.
Bifaciality coefficient is 80% ± 5%.

Thermal Characteristics

Nominal operating cell temperature-NOCT(°C)	42 ± 2
Temperature coefficient of Pmax-γ (% / °C)	- 0.29
Temperature coefficient of Voc-β (% / °C)	- 0.24
Temperature coefficient of Isc-α (% / °C)	0.042

Packaging Specifications

Number of modules per pallet	36
Number of pallets per 40' container	26
Packaging box dimensions (L / W / H)	1780 mm / 1110 mm / 1245 mm
Box weight	793 kg

Operating Conditions

Max. system voltage	1500 V _{DC}
Max. series fuse rating*	30 A
Operating temperature range	- 40°C~ 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.

General Characteristics

Dimensions (L / W / H)	1762 mm / 1134 mm / 30 mm
Weight	21.0 kg

Construction Materials

Cell (material / quantity)	n-type monocrystalline silicon / 6 x 16
Glass (thickness)	1.6 mm / 1.6 mm
Frame (material)	anodized aluminum alloy
Junction box (type / protection degree)	3 bypass diodes / ≥ IP68
Cable (length / cross-sectional area)	± 1200 mm / 4 mm ²

• 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.
• The 30 year Product Warranty only for the solar modules dispatched to Densys PV5 GmbH.



Yingli Solar Website

