



panda 3.0 Pro 1

610W

MAXIMUM MODULE EFFICIENCY

23.6%

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

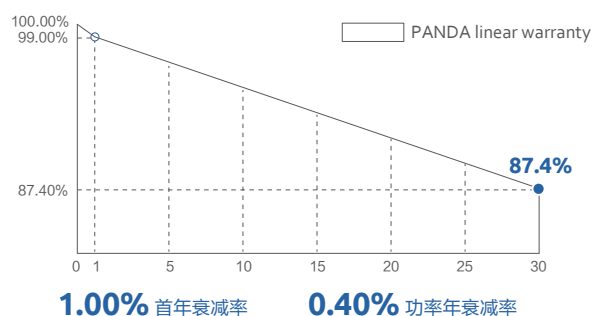
ISO 14001: Environmental management systems

IEC 62941: Quality system for PV module manufacturing

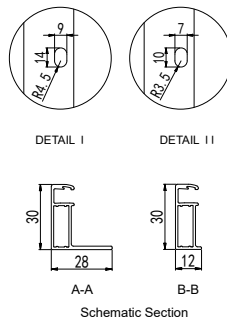
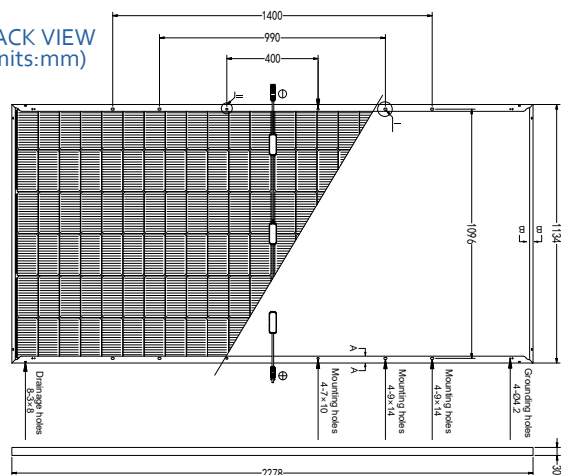
ISO 45001: Occupational health and safety management systems



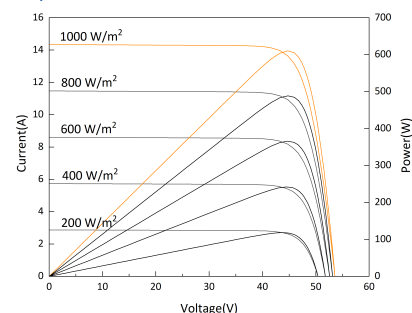
Warranty partner



BACK VIEW
(units:mm)



I-V / P-V CURVES



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	YLxxxCF72 e/2 (xxx=Pmax)					
Power output*-Pmax (W)	585	590	595	600	605	610
Power output tolerances-ΔPmax (W)	0 / + 5					
Module efficiency-η _m (%)	22.6	22.8	23.0	23.2	23.4	23.6
Voltage at Pmax - V _{mpp} (V)	44.36	44.49	44.62	44.75	44.88	45.01
Current at Pmax-I _{mpp} (A)	13.19	13.27	13.34	13.41	13.49	13.56
Open-circuit voltage*-V _{oc} (V)	52.83	52.98	53.13	53.28	53.43	53.58
Short-circuit current*-I _{sc} (A)	13.99	14.06	14.13	14.20	14.27	14.34

STC: 1000 W·m⁻² irradiance, 25°C cell temperature, AM 1.5. *Measruing tolerance: ±3%.

Electrical Parameters at Nominal Operating Cell Temperature (NOCT)

Power output-Pmax (W)	445	449	453	456	460	464
Voltage at Pmax - V _{mpp} (V)	42.32	42.44	42.56	42.69	42.81	42.94
Current at Pmax-I _{mpp} (A)	10.52	10.58	10.64	10.69	10.76	10.81
Open-circuit voltage-V _{oc} (V)	50.17	50.31	50.45	50.60	50.74	50.88
Short-circuit current-I _{sc} (A)	11.27	11.33	11.38	11.44	11.50	11.55

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)	648	654	660	665	671	676
Voltage at Pmax - V _{mpp} (V)	44.36	44.49	44.62	44.75	44.88	45.01
Current at Pmax-I _{mpp} (A)	14.61	14.70	14.78	14.86	14.95	15.02
Open-circuit voltage-V _{oc} (V)	52.83	52.98	53.13	53.28	53.43	53.58
Short-circuit current-I _{sc} (A)	15.50	15.58	15.66	15.73	15.81	15.89

BNPI: 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	20
Packaging box dimensions (L / W / H)	2300 mm / 1110 mm / 1245 mm
Box weight	1193 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)	2278 mm / 1134 mm / 30 mm
Weight	31.6 kg

Construction Materials

Cell (material / quantity)	n-type monocrystalline silicon / 6 x 24
Glass (thickness)	2.0 mm / 2.0 mm
Frame (material)	anodized aluminum alloy
Junction box (type / protection degree)	3 bypass diodes / ≥ IP68
Cable (length / cross-sectional area)	± 1400 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.



Yingli Solar Website