



panda n-type TOPCon Bifacial Module

640-650 W

MAXIMUM MODULE EFFICIENCY

23.0%

POSITIVE POWER TOLERANCE

0 TO +5 W



IDEAL FOR:

Utility Projects

STRONG AND ROBUST

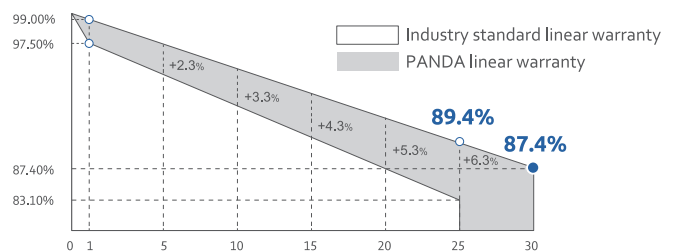
Outstanding Bifaciality | High Temperature Stability | Excellent Durability

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
- SA8000 Standard (Social Accountability International)

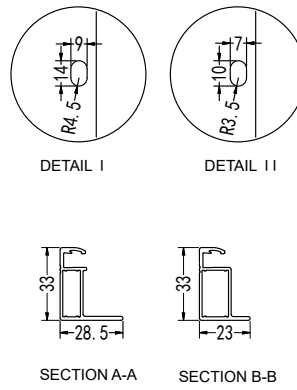
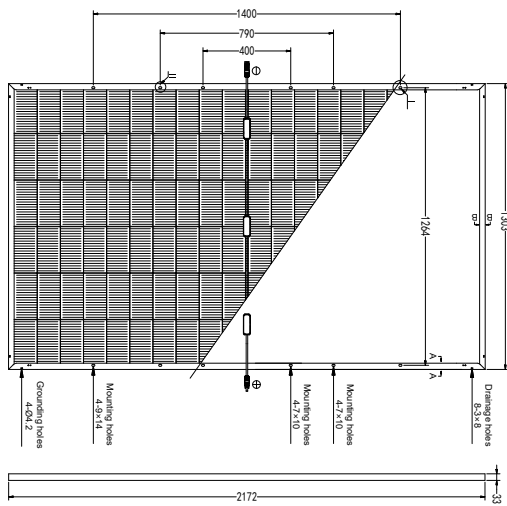


Munich RE

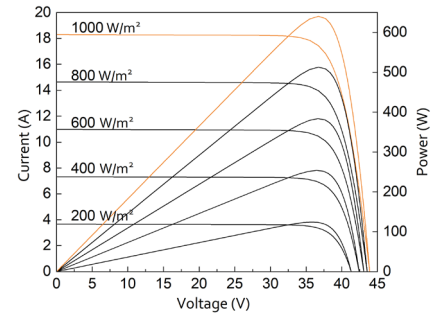


0.40% annual power degradation

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.

MODULE TYPE YLxxxCF60 f/2 (xxx=Pmax)
DIMENSIONS 2172 mm / 1303 mm / 33 mm WEIGHT 34.6 kg FIRE RESISTANCE RATING Class A

Electrical Parameters at Standard Test Conditions (STC*)

Power output-Pmax (W)	625	630	635	640	645	650
Power output tolerances-ΔPmax (W)	0 / + 5	0 / + 5	0 / + 5	0 / + 5	0 / + 5	0 / + 5
Module efficiency-ηm (%)	22.1	22.3	22.4	22.6	22.8	23.0
Voltage at Pmax - Vmpp (V)	36.59	36.73	36.86	37.00	37.14	37.27
Current at Pmax-Impp (A)	17.09	17.16	17.23	17.30	17.37	17.45
Open-circuit voltage-Voc (V)	43.36	43.55	43.73	43.91	44.09	44.27
Short-circuit current-Isc (A)	18.18	18.22	18.26	18.30	18.34	18.38

*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)	476	479	483	487	491	495
Voltage at Pmax - Vmpp (V)	34.90	35.04	35.16	35.30	35.43	35.55
Current at Pmax-Impp (A)	13.63	13.68	13.74	13.79	13.85	13.91
Open-circuit voltage-Voc (V)	41.18	41.36	41.53	41.70	41.87	42.04
Short-circuit current-Isc (A)	14.65	14.68	14.71	14.74	14.78	14.81

*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)	693	698	704	709	715	721
Voltage at Pmax - Vmpp (V)	36.59	36.73	36.86	37.00	37.14	37.27
Current at Pmax-Impp (A)	18.94	19.01	19.09	19.17	19.25	19.33
Open-circuit voltage-Voc (V)	43.36	43.55	43.73	43.91	44.09	44.27
Short-circuit current-Isc (A)	20.14	20.19	20.23	20.28	20.32	20.37

*1000W·m⁻² on the front side and 135W·m⁻² on the back side, 25°C cell temperature, AM 1.5. Bifaciality coefficient is 80% ± 5%. φPmax = 80%, φIsc = 80% and φVoc = 99% with tolerance 5% for reference. Measurement tolerance: Pmax ±3%, Voc ±3% and Isc ±3%.

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	33
Number of pallets per 40' container	17
Packaging box dimensions (L / W / H)	1340 mm / 1140 mm / 2290 mm
Box weight	1194 kg

Operating Conditions

Max. system voltage	1500 Vdc
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.

Construction Materials

Cell (material / quantity)	n-type monocrystalline silicon / 6 x 20
Glass (thickness)	2.0 mm / 2.0 mm
Frame (material)	Anodised aluminum alloy
Junction box (type / protection degree)	3 bypass diodes / ≥ IP68
Plug connector (type)	Staubli EVO2 or Yitong YT18-01 or Renhe RHC2 or HY-H4
Cable (length / cross-sectional area)	±1400 mm or customised length / 4 mm ²

- Proudly manufactured in China.
- 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.

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