



YLM 3.0 Mini 1

415W

MAXIMUM MODULE EFFICIENCY

21.3%

POSITIVE POWER TOLERANCE

0~+5_w



P-type PERC Bifacial Module

**IMPROVED POWER
NEVER SETTLE FOR LESS**



Backside Yield



Wide Applications



Superior Yield



Lower Losses



Excellent Durability



Yingli Solar Website



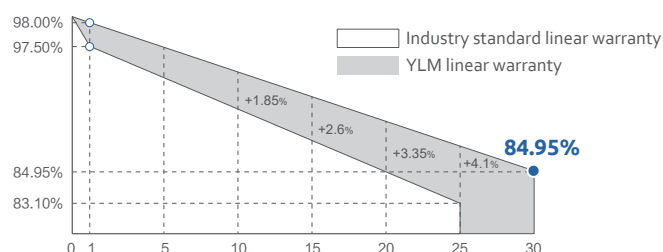
QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730, UL61730, 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

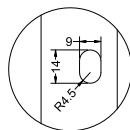
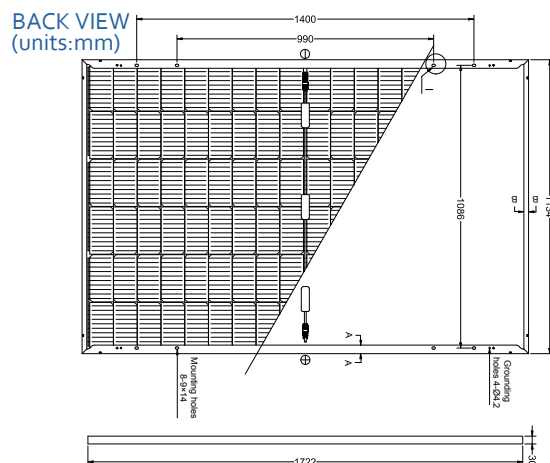


Warranty partner

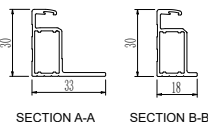
Munich RE



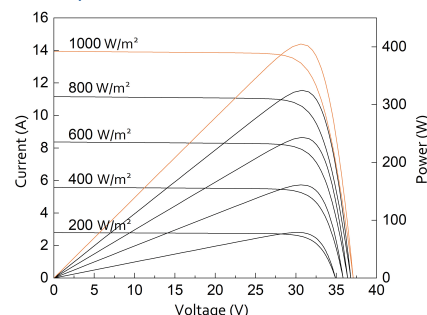
2.00% the 1st year power degradation
0.45% annual power degradation



DETAIL I



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	YLxxxDF54 e/2 (xxx=Pmax)					
Power output*·Pmax (W)	390	395	400	405	410	415
Power output tolerances-ΔPmax (W)	0 / + 5					
Module efficiency-η _m (%)	20.0	20.2	20.5	20.7	21.0	21.3
Voltage at Pmax - V _{mpp} (V)	30.27	30.42	30.56	30.71	30.86	31.00
Current at Pmax-I _{mpp} (A)	12.89	12.99	13.09	13.19	13.29	13.39
Open-circuit voltage*·V _{oc} (V)	36.80	36.90	37.00	37.10	37.20	37.30
Short-circuit current*·I _{sc} (A)	13.68	13.77	13.86	13.95	14.04	14.13

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

Electrical Parameters at Nominal Operating Cell Temperature (NOCT)

Power output·Pmax (W)	297	301	304	308	312	316
Voltage at Pmax - V _{mpp} (V)	28.87	29.01	29.14	29.29	29.43	29.56
Current at Pmax-I _{mpp} (A)	10.28	10.36	10.44	10.52	10.60	10.68
Open-circuit voltage·V _{oc} (V)	34.98	35.08	35.17	35.27	35.36	35.46
Short-circuit current-I _{sc} (A)	11.02	11.09	11.17	11.24	11.31	11.38

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)	427	432	438	443	449	454
Voltage at Pmax - V _{mpp} (V)	30.27	30.42	30.56	30.71	30.86	31.00
Current at Pmax-I _{mpp} (A)	14.10	14.21	14.33	14.43	14.54	14.65
Open-circuit voltage·V _{oc} (V)	36.80	36.90	37.00	37.10	37.20	37.30
Short-circuit current-I _{sc} (A)	14.97	15.07	15.17	15.27	15.37	15.47

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 70% ± 5%.

Thermal Characteristics

Nominal operating cell temperature-NOCT(°C)	39 ± 2
Temperature coefficient of Pmax-γ (% / °C)	- 0.35
Temperature coefficient of V _{oc} -β (% / °C)	- 0.28
Temperature coefficient of I _{sc} -α (% / °C)	0.05

Packaging Specifications

Number of modules per pallet	36
Number of pallets per 40' container	26
Packaging box dimensions (L / W / H)	1740 mm / 1110 mm / 1245 mm
Box weight	927 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)	1722 mm / 1134 mm / 30 mm
Weight	24.8 kg

Construction Materials

Cell (material / quantity)	p-type monocrystalline silicon / 6 x 18
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)	± 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.



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