

# YLM 3.0 PLUS 645-670 W

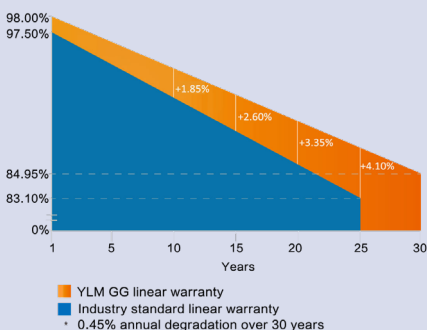


132 CELL  
CELL QUANTITY

0-5 W  
POWER TOLERANCE

12 YEAR  
PRODUCT WARRANTY

30 YEAR  
POWER WARRANTY



# IMPROVED POWER NEVER SETTLE FOR LESS

YLM 3.0 modules use high efficiency p-type monocrystalline PERC cell technology. With high quality encapsulation materials and excellent glass-glass structure, YLM 3.0 modules are perfectly suited to the harsh environment and provide you with high reliability and quality assurance.



### Backside Yield

The backside of the module effectively uses reflected and scattered light from the environment to generate electricity. Superior backside power generation reduces LCOE.



### Superior Yield

The large size cell enhances the module's power output, with the excellent temperature coefficient and comprehensive LID/LeTID degradation suppression technology, allows the module to generate more energy yield once in use.



### Excellent Durability

The modules meet IEC standard testing requirements and are resistant to salt mist, ammonia, dust and sand, snail trail and PID risks.



### Wide Applications

The glass-glass structure, special material selection and extra-strong frames effectively enhance the mechanical performance of the modules, their compatibility with mainstream trackers and inverters, and their adaptability to harsh environments.



### Lower Losses

The multi-busbar design effectively reduces the impact of micro-cracks and broken busbars, and the half-cell structure effectively reduces the impact of shadow shading.

## QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730, CE, IEC 62941:2019 Terrestrial photovoltaic (PV) modules—Quality system for PV module manufacturing, ISO 9001:2015 Quality management systems, ISO 14001:2015 Environmental management systems, ISO 45001:2018 Occupational health and safety management systems



Yingli Solar

Headquartered in Baoding, China, Yingli Energy Development Company Limited, known as Yingli Solar, is a leading solar solution provider. Yingli Solar is committed to providing clean, renewable energy through PV power generation technology for factories, homes and utilities around the world. Yingli Solar provides reliable products and services through continuous technological advancement and management innovation.

## Electrical parameters at Standard Test Conditions (STC<sup>\*</sup>)

Module type	YLxxxDF66 f/2 (xxx=Pmax)							
Power output	$P_{max}$	W	645	650	655	660	665	670
Power output tolerances	$\Delta P_{max}$	W	0 / + 5					
Module efficiency	$\eta_m$	%	20.76	20.92	21.09	21.25	21.41	21.57
Voltage at $P_{max}$	$V_{mpp}$	V	37.30	37.50	37.70	37.90	38.10	38.30
Current at $P_{max}$	$I_{mpp}$	A	17.29	17.34	17.38	17.42	17.46	17.50
Open-circuit voltage	$V_{oc}$	V	45.10	45.30	45.50	45.70	45.90	46.10
Short-circuit current	$I_{sc}$	A	18.31	18.36	18.42	18.48	18.54	18.58

\*STC: 1000 W · m<sup>-2</sup> irradiance, 25°C cell temperature, AM 1.5 spectrum according to EN 60904-3.

## GENERAL CHARACTERISTICS

Dimensions (L / W / H)	2384 mm / 1303 mm / 35 mm
Weight	38.4 kg

## PACKAGING SPECIFICATIONS

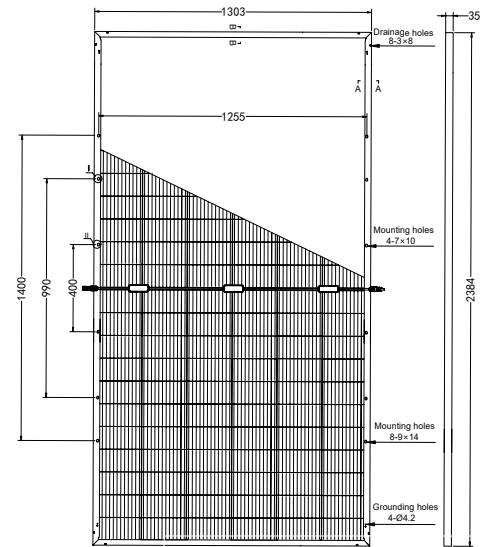
Number of modules per pallet	31
Number of pallets per 40' container	17
Packaging box dimensions (L / W / H)	1340 mm / 1140 mm / 2500 mm
Box weight	1243 kg

## Electrical parameters at Nominal Operating Cell Temperature (NOCT<sup>\*</sup>)

Power output	$P_{max}$	W	484.42	488.18	491.93	495.69	499.44	503.20
Voltage at $P_{max}$	$V_{mpp}$	V	35.02	35.19	35.38	35.57	35.76	35.94
Current at $P_{max}$	$I_{mpp}$	A	13.83	13.87	13.90	13.94	13.97	14.00
Open-circuit voltage	$V_{oc}$	V	42.64	42.83	43.02	43.21	43.40	43.59
Short-circuit current	$I_{sc}$	A	14.75	14.79	14.84	14.89	14.94	14.97

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

## BACK VIEW (units: mm)



DETAIL I



DETAIL II



SECTION A-A



SECTION B-B

## Bifacial electrical parameters at Standard Test Conditions (STC<sup>\*</sup>)

Power output	$P_{max}$	W	705.95	711.43	716.90	722.37	727.84	733.32
Voltage at $P_{max}$	$V_{mpp}$	V	37.30	37.50	37.70	37.90	38.10	38.30
Current at $P_{max}$	$I_{mpp}$	A	18.93	18.97	19.02	19.06	19.10	19.15
Open-circuit voltage	$V_{oc}$	V	45.10	45.30	45.50	45.70	45.90	46.10
Short-circuit current	$I_{sc}$	A	20.04	20.10	20.16	20.23	20.29	20.34

\*Bifaciality coefficient is 70% ± 5%, rear irradiance is 135 W · m<sup>-2</sup>.

## THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	43 ± 2
Temperature coefficient of $P_{max}$	$\gamma$	%/°C	- 0.34
Temperature coefficient of $V_{oc}$	$\beta$	%/°C	- 0.25
Temperature coefficient of $I_{sc}$	$\alpha$	%/°C	0.04

## OPERATING CONDITIONS

Max. system voltage	1500 V <sub>DC</sub>
Max. series fuse rating*	35 A
Operating temperature range	- 40°C to 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 <sup>-1</sup>

\*DO NOT CONNECT FUSE IN COMBINER BOX WITH TWO OR MORE STRINGS IN PARALLEL CONNECTION.

## CONSTRUCTION MATERIALS

Cell (material / quantity)	p-type monocrystalline silicon / 6 x 22
Glass (material / thickness)	low-iron semi-tempered glass / 2.0 mm (front), 2.0 mm (back)
Frame (material)	anodized aluminum alloy
Junction box (type / protection degree)	3 bypass diodes / ≥ IP68
Cable (length / cross-sectional area)	± 300 mm or customized length / 4 mm <sup>2</sup>



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

- 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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