YINGLI SOLAR

YLM 3.0 PLUS
645-670 W

132 CELL
CELL QUANTITY

0–5 W
POWER TOLERANCE

12 YEAR
PRODUCT WARRANTY

25 YEAR
POWER WARRANTY

98.00%
91.95%
84.80%
0%

1   12   25
Years
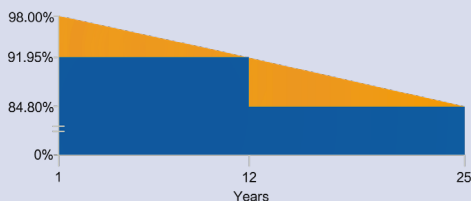
■ Yingli's linear performance warranty
■ Industry standard warranty
* 0.55% annual degradation over 25 years

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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 classic glass-backsheet structure, YLM 3.0 modules are perfectly suited to the harsh environment and provide you with high reliability and quality assurance.

Classic Structure
The glass-backsheet structure and layout design have been proven in the market for a long time.

Superior Yield
The large size cell enhances the module's power output, while the excellent temperature coefficient and comprehensive LID/LeTID degradation suppression technology allow 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-backsheet 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

TÜVRheinland CERTIFIED   CE   TÜV SÜD   Munich RE

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.

YLM 3.0 PLUS

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Electrical parameters at Standard Test Conditions (STC*)

Module type			YLxxxD−45f 1/2 (xxx=Pmax) YLxxxD−45f 1500V 1/2 (xxx=Pmax)					
Power output	P_{max}	W	645	650	655	660	665	670
Power output tolerances	ΔP_{max}	W	0 / + 5					
Module efficiency	η_m	%	20.76	20.92	21.09	21.25	21.41	21.57
Voltage at P_{max}	V_{mpp}	V	37.50	37.70	37.90	38.10	38.30	38.50
Current at P_{max}	I_{mpp}	A	17.20	17.24	17.29	17.33	17.37	17.41
Open−circuit voltage	V_{oc}	V	45.10	45.30	45.50	45.70	45.90	46.10
Short−circuit current	I_{sc}	A	18.26	18.31	18.36	18.42	18.48	18.54

*STC: 1000 W · m^{-2} irradiance, 25°C cell temperature, AM 1.5 spectrum according to EN 60904−3.

Electrical parameters at Nominal Operating Cell Temperature (NOCT*)

Power output	P_{max}	W	484.42	488.18	491.93	495.69	499.44	503.20
Voltage at P_{max}	V_{mpp}	V	35.21	35.40	35.56	35.75	35.94	36.13
Current at P_{max}	I_{mpp}	A	13.76	13.79	13.83	13.86	13.90	13.93
Open−circuit voltage	V_{oc}	V	42.64	42.83	43.02	43.21	43.40	43.59
Short−circuit current	I_{sc}	A	14.71	14.75	14.79	14.84	14.89	14.94

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

THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	43 ± 2
Temperature coefficient of P_{max}	γ	%/°C	− 0.34
Temperature coefficient of V_{oc}	β	%/°C	− 0.25
Temperature coefficient of I_{sc}	α	%/°C	0.04

OPERATING CONDITIONS

Max. system voltage	1000 V_{DC} / 1500 V_{DC}
Max. series fuse rating*	30 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^{-1}

*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 tempered glass / 3.2 mm
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 mm²

GENERAL CHARACTERISTICS

Dimensions (L / W / H)	2384 mm / 1303 mm / 35 mm
Weight	34 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	1107 kg

BACK VIEW (units: mm)
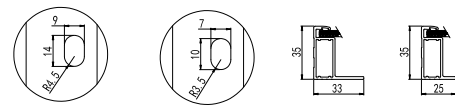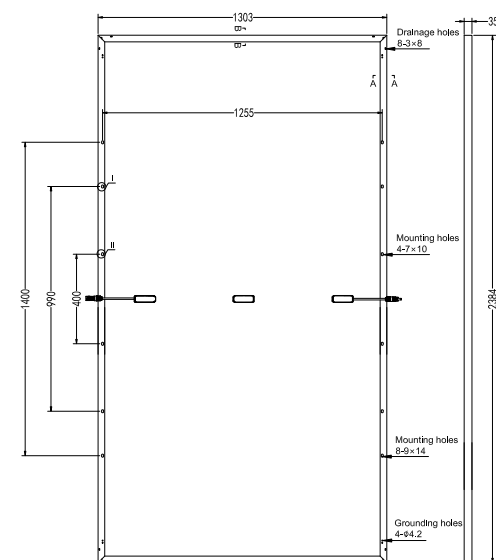
Warning : Read the Installation and User Manual in its entirety before handling, installing and operating Yingli Solar modules.

• 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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