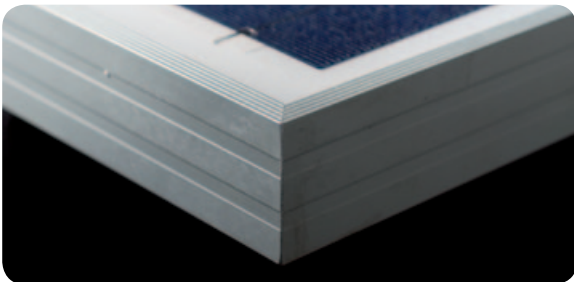
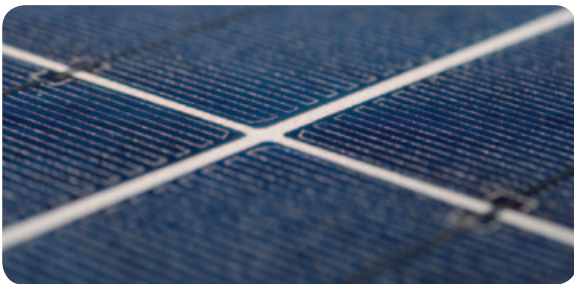
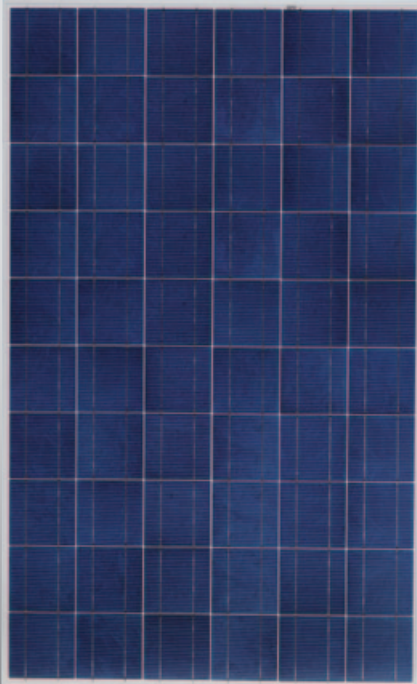


## YL 235 P-29b / 1650x990 SERIES

YL 210 P-29b . YL 215 P-29b . YL 220 P-29b  
YL 225 P-29b . YL 230 P-29b . YL 235 P-29b



### ABOUT YINGLI SOLAR

Yingli Solar is a vertically integrated manufacturer of solar photovoltaic modules. Under one roof we manufacture our ingots, wafers, cells and modules. This ensures that we can tightly control our material and production quality, offering our customers leading product durability and sustainable performance backed by our 25 year limited power warranty\*.

### PERFORMANCE

- >> High efficiency, polycrystalline solar cells with high transmission and textured glass delivering a module series efficiency of up to 14.4%, minimising installation costs and maximising the kWh output of your system per unit area.
- >> Power tolerance of +/-3% minimising PV system mismatch losses.

### QUALITY & RELIABILITY

- >> Robust, corrosion resistant aluminium frame independently tested to withstand wind loads of 2.4KPa and snow loads of 5.4KPa ensuring a stable mechanical life for your modules.
- >> Take confidence in our modules with a 5 year limited product warranty and a 25 year limited power warranty\*.
- >> Modules protected by box during transportation and with 20 modules in a box on-site waste is minimised.
- >> Modules independently tested to ensure conformance with certification and regulatory standards.
- >> Manufacturing facility certified to ISO 9001 Quality Management System standards.

### WARRANTIES

5-year limited product warranty\*  
Limited power warranty\*: 10 years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output

### QUALIFICATIONS AND CERTIFICATES

IEC 61215 Edition 2, IEC 61730 Class A, CE, ISO 9001



- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection



\* In compliance with our Warranty Terms and Conditions

# YL 235 P-29b / 1650x990 SERIES

## ELECTRICAL PARAMETERS

Electrical parameters at STC (1,000 W/m<sup>2</sup>, 25°C, AM 1.5 according to EN 60904-3)

Module type	YL 210 P-29b	YL 215 P-29b	YL 220 P-29b	YL 225 P-29b	YL 230 P-29b	YL 235 P-29b
Power output [W]	210.0	215.0	220.0	225.0	230.0	235.0
Power output tolerances [%]	+/- 3	+/- 3	+/- 3	+/- 3	+/- 3	+/- 3
Module Efficiency [%]	12.9	13.2	13.5	13.8	14.1	14.4
Voltage at Pmax, V <sub>mpp</sub> [V]	28.5	29.0	29.0	29.5	29.5	29.5
Current at Pmax, I <sub>mpp</sub> [A]	7.37	7.41	7.59	7.63	7.80	7.97
Open circuit voltage V <sub>oc</sub> [V]	36.0	36.0	36.5	36.5	37.0	37.0
Short circuit current I <sub>sc</sub> [A]	7.95	8.10	8.15	8.28	8.40	8.54
Max. system Voltage [V]	1,000 VDC					

### Parameters of the thermal characteristics

NOCT (Nominal Operating Cell Temperature) [°C]	46 +/- 2
Temperature coefficient beta of I <sub>sc</sub> [1/K]	+ 0.0006
Temperature coefficient alpha of V <sub>oc</sub> [1/K]	- 0.0037
Temperature coefficient gamma of P <sub>mpp</sub> [1/K]	- 0.0045

## MECHANICAL PARAMETERS

Dimensions (length [mm] / width [mm] / thickness [mm])	1,650 / 990 / 50
Thickness with junction box [mm]	50
Weight [kg]	19.8
Junction box (manufacturer / protection degree / number of diodes)	CIXI / IP65 / 6
Junction box dimensions (length / width / thickness [mm])	151 / 122 / 25
Positive cable & negative cable (manufacturer / length [mm] / cable cross-section [mm <sup>2</sup> ])	CIXI / 1,200 (900) / 4.0
Plug connector (manufacturer / type / protection degree)	MC4 / UV resistance and self-locking / IP67
Front cover (material / thickness [mm])	Tempered Glass, 3.6mm
Cell type (quantity / technology)	60 / polycrystalline / 156 x 156
Encapsulation materials	Ethylene Vinyl Acetate (EVA)
Rear cover (material / thickness [mm])	Le - PET - PVDF / 0.287
Frame (material)	robust anodized aluminum alloy

## OPERATING CONDITIONS

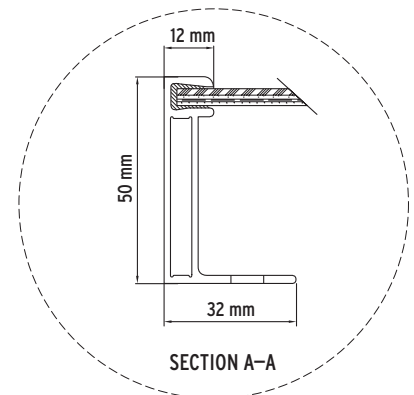
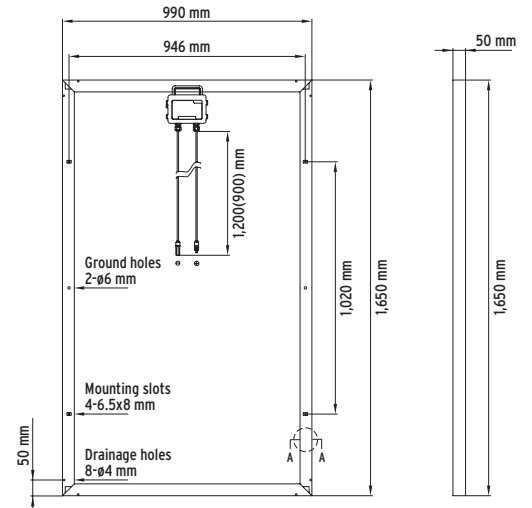
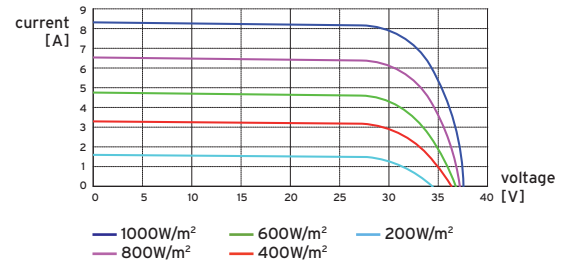
Operating temperature [°C]	- 40 to + 85
Max. wind load / Max. snow load [Pa]	2.4K / 5.4K

## PACKAGING

Number of modules per box	20
Box size (length [mm] / width [mm] / depth [mm])	1,700 / 1,140 / 1,165
Box Gross weight in kg	450
Boxes per pallet	1

\* The data does not refer to a single module and they are not part of the offer, they serve for comparison only to different module types.

## IV CURVES



Electrical equipment, check with your installer

