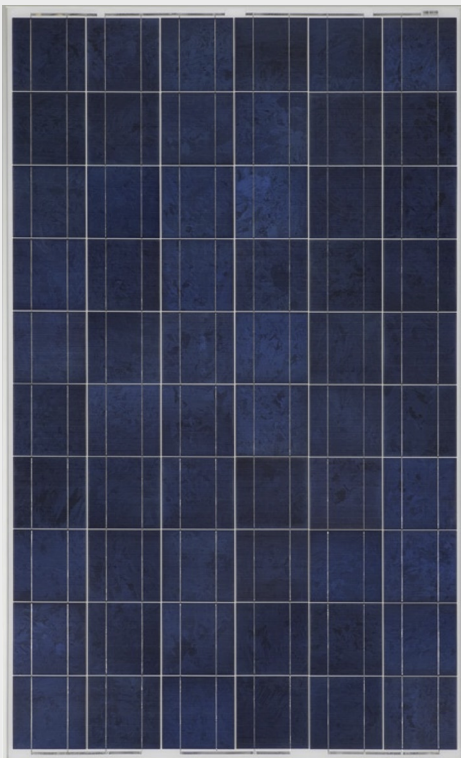


**60 CELLS**  
POLYCRYSTALLINE MODULE

**230-250W**  
POWER RANGE

**15.37%**  
MAXIMUM EFFICIENCY

**-3 TO +3%**  
POWER TOLERANCE



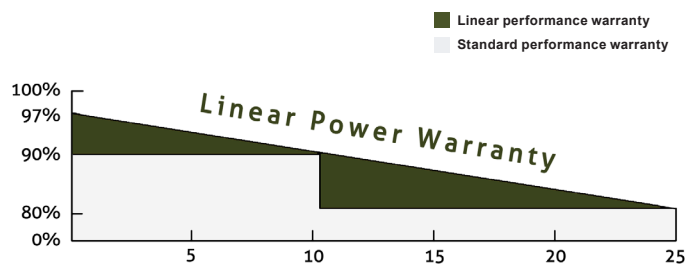
TM-P660230 230W  
TM-P660235 235W · TM-P660240 240W  
TM-P660245 245W · TM-P660250 250W

## FEATURES

- High module conversion efficiency up to 15.37%, through superior manufacturing technology.
- Guaranteed  $\pm 3\%$  power tolerance.
- Robust and corrosion free modules. Entire module certificate to withstand high wind loads (2400Pa).
- Excellent performance under low light environments.
- International certificates to ensure the best quality and performance.
- Manufacturing process certified under the ISO 9001 standards.
- Enhanced design for easy installation and long term reliability.

## WARRANTIES

- 10-years warranty on material and workmanship. \*
- Standard power output warranty (10 years - 90%, 25 years - 80%).
- Linear power output warranty: power output decrease yearly. Year 25 rated power output not below than 80%. \*
- Additional warranted production insurance by top world insurance companies. \*



\* Based on customer requirements and contract terms

# TM-P660230-250

## TM-SERIES POLYCRYSTALLINE

### ELECTRICAL SPECIFICATION

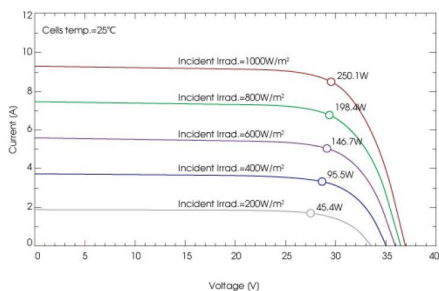
STC	TM-P660250	TM-P660245	TM-P660240	TM-P660235	TM-P660230
Nominal Power (Pmax)	250 W	245 W	240 W	235 W	230 W
Voltage at Pmax (Vmp)	30.1 V	29.9 V	29.7 V	29.5 V	29.3 V
Current at Pmax (Imp)	8.30 A	8.19 A	8.08 A	7.96 A	7.84 A
Open Circuit Voltage (Voc)	37.9 V	37.7V	37.5 V	37.3 V	37.2 V
Short Circuit Current (Isc)	8.65 A	8.57 A	8.48 A	8.40 A	8.31 A
Module efficiency	15.37%	15.06%	14.75%	14.44%	14.14%
Power Tolerance	±3%				
Max. system voltage	1.000 V DC				
Max. series fuse rating	15 A				
Operating temperature range	-40 °C to +85 °C				

Electric characteristics at standard conditions (STC)  
 STC conditions: Irradiance: 1.000W/m2, cell temperature: 25°C, AM=1.5

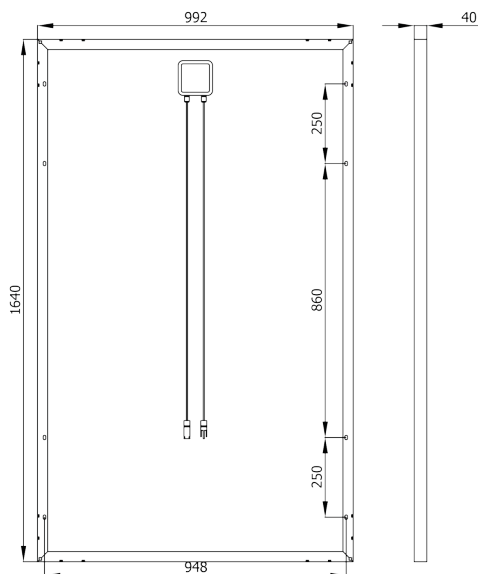
NOCT	TM-P660250	TM-P660245	TM-P660240	TM-P660235	TM-P660230
Nominal Power (Pmax)	182 W	178 W	175 W	171 W	167 W
Voltage at Pmax (Vmp)	27.5 V	27.3 V	27.1 V	26.8 V	26.5 V
Current at Pmax (Imp)	6.62 A	6.53 A	6.46 A	6.38 A	6.30 A
Open Circuit Voltage (Voc)	34.8 V	34.7V	34.5 V	34.4 V	34.2 V
Short Circuit Current (Isc)	7.04 A	6.99 A	6.93 A	6.88 A	6.82 A

Electric characteristics at normal operation conditions (NOCT)  
 NOCT conditions: Irradiance: 800W/m2, ambient temperature: 20°C, AM=1.5, wind speed: 1m/s

### I-V CURVES OF THE MODULE



### MODULE DIMENSIONS



### MECHANICAL CHARACTERISTICS

Solar cells	Poly-crystalline silicon 156 x 156 mm
Cell arrangement	60 cells in series
Dimensions	1640x992x40 mm
Weight	21.5 kg
Max. static load, front (snow)	5400 Pa
Max. static load, back (wind)	2400 Pa
Front cover	Low-iron tempered glass 3.2 mm
Frame	Anodized aluminum alloy
Encapsulant	EVA (ethylene vinyl acetate)
Junction box (protection degree)	IP65
Bypass diodes	3
Cables (length / area)	≥1000 mm / 4 mm <sup>2</sup>
Connectors	MC4

### TERMAL

Nominal operating cell temperature (NOCT)	45 ± 2 °C
Temperature coefficient of Pmax	-0.45 %/°C
Temperature coefficient of Voc	-0.34 %/°C
Temperature coefficient of Isc	0.06 %/°C

### PACKAGING

Modules per pallet	20
N° of pallets per HC container (40')	28

The maximum capacity of a container is 784 modules

PARTNER