

## S-series Solar Module

# 380-415W

### HIGH EFFICIENCY SHINGLED MODULE



#### Shingling Technology

- Incorporating Shingling technology and flexible adhesive, give rise to high density layout



#### Aesthetic Appearance

- Cells are densely packed, free of tabbing ribbons, and have uniform appearance



#### Eco-friendly

- No fluorine and low lead material adopted, achieves eco-friendly PV design



#### Trustworthy Quality and Reliability

- Soldering-free technology eliminates mechanical stress and potential microcrack
- Parallel circuit design lowers hot spot risk



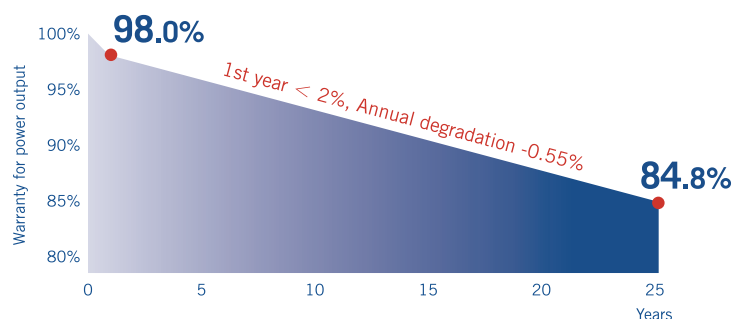
#### Lower BOS cost & Higher ROI

- Higher module efficiency reduces BOS cost and improve long term investment return

### Linear Power Output Warranty

**15** 15-year warranty for materials

**25** 25-year warranty for linear power output



### Quality Management System and Product Certification



IEC61215/61730, IEC62804(PID), IEC61701(Salt)  
IEC62716(Ammonia), IEC60068-2-68(Sand)  
ISO 9001:2015/ quality management system  
ISO 14001:2015/ environmental management system  
ISO 45001:2018/occupation health safety management system  
ISO 50001:2011/energy management system  
IEC TS 62941-2016/PV industry quality management system

## Electrical Characteristics (STC)

Module Type: TP380-415PMB5-60SBS		415	410	405	400	395	390	385	380
Maximum Power - Pm	[W]	415	410	405	400	395	390	385	380
Open Circuit Voltage - Voc	[V]	46.7	46.6	46.5	46.4	46.3	46.3	46.2	46.1
Short Circuit Current-Isc	[A]	11.12	11.07	11.02	10.97	10.92	10.87	10.82	10.77
Maximum Power Voltage-Vm	[V]	38.9	38.8	38.7	38.6	38.5	38.5	38.4	38.3
Maximum Power Current-Im	[A]	10.67	10.57	10.47	10.36	10.26	10.13	10.03	9.92
Module Efficiency-η	[%]	21.2	20.9	20.7	20.4	20.2	19.9	19.6	19.4

## Electrical Characteristics at NMOT

Maximum Power-Pm	[W]	312	309	305	301	297	294	290	286
Open Circuit Voltage-Voc	[V]	44.5	44.4	44.3	44.2	44.1	44.1	44.0	43.9
Short Circuit Current-Isc	[A]	8.97	8.93	8.89	8.85	8.81	8.77	8.73	8.69
Maximum Power Voltage-Vm	[V]	37.1	37.0	36.9	36.8	36.7	36.7	36.6	36.5
Maximum Power Current-Im	[A]	8.43	8.35	8.27	8.18	8.10	8.00	7.92	7.84

Note:  
1. Standard Test Conditions (STC): irradiance 1000 W/m<sup>2</sup>; AM 1.5; ambient temperature 25°C according to EN 60904-3;  
2. Nominal Module Operating Temperature (NMOT): Irradiance 800W/m<sup>2</sup>; wind speed 1m/s, ambient temperature 20°C.  
3. Tolerance of Pm: 0~+5W, Measuring uncertainty of power: ±3%. Performance deviation of Voc [V], Isc [A], Vm [V] and Im [A]: ±3%.

## Mechanical Characteristics

Dimensions	1719×1140×30mm
Weight	21.0kg
Front glass	3.2mm toughened glass
Frame	Anodized aluminum profile
Cells	Mono-crystalline solar cell
Cell Orientation	340 (34×10)
Junction Box	IP68, two diodes
Cable	1200mm long, 4mm <sup>2</sup> cross section, customizable
Packaging	36pcs/box; 936pcs/40'cabinet; 1368pcs/truck

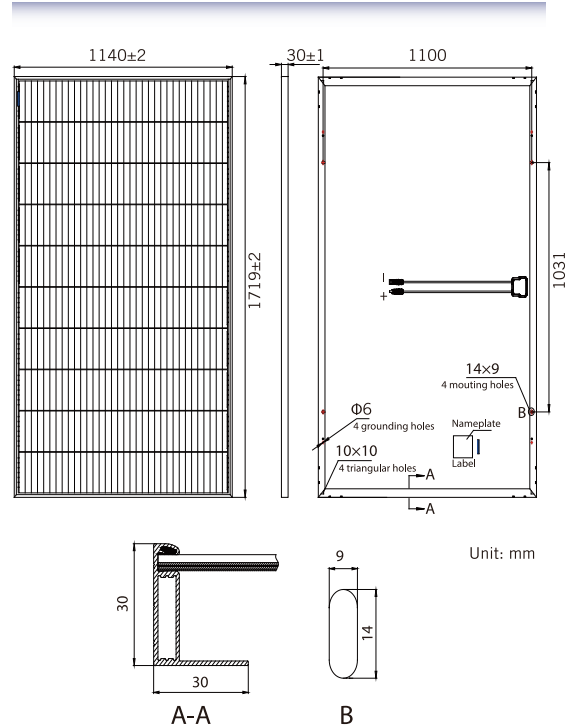
## Temperature Parameters

NMOT	42.30°C (±2°C)
Temperature Coefficient of Voc	-0.27%/°C
Temperature Coefficient of Isc	+0.04%/°C
Temperature Coefficient of Pm	-0.34%/°C

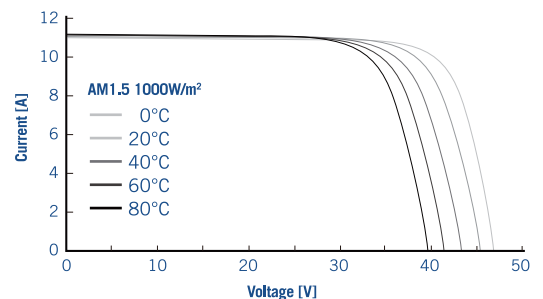
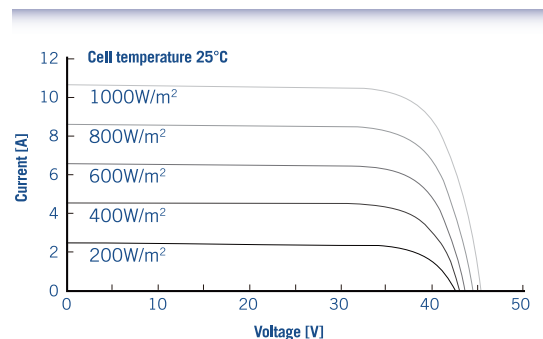
## Maximum Ratings

Maximum System Voltage	[V]	DC1500/1000 (IEC)
Series Fuse Rating	[A]	20
Maximum Surface Load Capacity	[Pa]	5400
Temperature Range	[C]	-40~+85
Withstanding Hail	[A]	Maximum diameter of 25 mm with impact speed of 23 m/s

## Engineering Drawings



## I-V Curve



**Declaration:** With the technical progress and product updates, there exists a deviation between the technical parameter of the Topco Solar's future products and the technical parameter in this specification. The Topco Solar reserves the right to adjust the technical parameter at any time without notifying the customers. Topco Solar reserves the final right of interpretation.