

## Shingled monofacial module

# TH420~445PMB7 46SCS (Black Frame)



### Features of Module



#### Shingling Technology

Innovative structure, low-temperature adhesive bonding, high-density layout.



#### Beautiful Appearance

Uniform layout, better aesthetic.



#### Superior Safety and Reliability

No hidden welding crack, low operating temperature, high pressure resistance.



#### Low System Cost

High module efficiency, reducing system cost.



#### Low Hot Spot Risk

Parallel circuit design reduces shading loss.



#### Low Shading Loss

Full parallel arrangement brings high effective power generation hours.



#### Eco-friendly

Adhering to green philosophy, no fluorine and low lead.

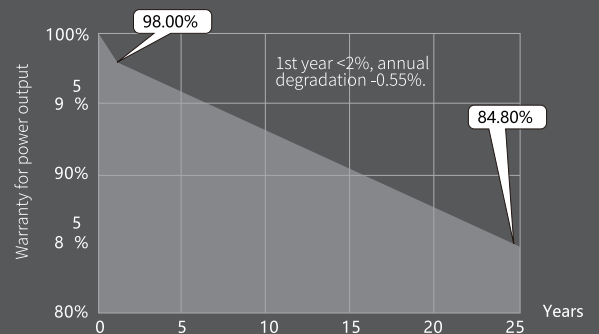
### Linear Power Output Warranty

# 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: TH***PMB7-46SCS	445	440	435	430	425	420
Maximum Power - Pm (W)	445	440	435	430	425	420
Open Circuit Voltage - Voc (V)	43.8	43.7	43.6	43.5	43.4	43.3
Short Circuit Current-Isc [A]	13.01	12.90	12.79	12.68	12.56	12.46
Maximum Power Voltage-Vm [V]	36.4	36.3	36.2	36.1	36.0	35.9
Maximum Power Current-Im [A]	12.23	12.13	12.02	11.92	11.81	11.71
Module Efficiency-η [%]	21.4	21.1	20.9	20.7	20.4	20.2

### Electrical Characteristics at NMOT

Maximum Power-Pm [W]	335	331	328	324	320	316
Open Circuit Voltage-Voc [V]	41.8	41.7	41.6	41.5	41.4	41.3
Short Circuit Current-Isc [A]	10.50	10.41	10.32	10.23	10.14	10.05
Maximum Power Voltage-Vm [V]	34.7	34.6	34.5	34.4	34.3	34.2
Maximum Power Current-Im [A]	9.66	9.57	9.49	9.41	9.32	9.24

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 Parameters

Dimensions	1899 × 1096 × 30 mm
Weight	21.8kg
Front glass	tempered glass, 3.2mm
Frame	Anodized aluminum profile
Cells	Mono-crystalline solar cell
Cell Orientation	320 (64 × 5)
Junction Box	IP68, two diodes
Cable	4mm <sup>2</sup> ,+300mm/-1000mm(Vertical), +220mm/-180mm(Horizontal)
Packaging	36pcs/box;864pcs/40'container;1296pcs/flat car

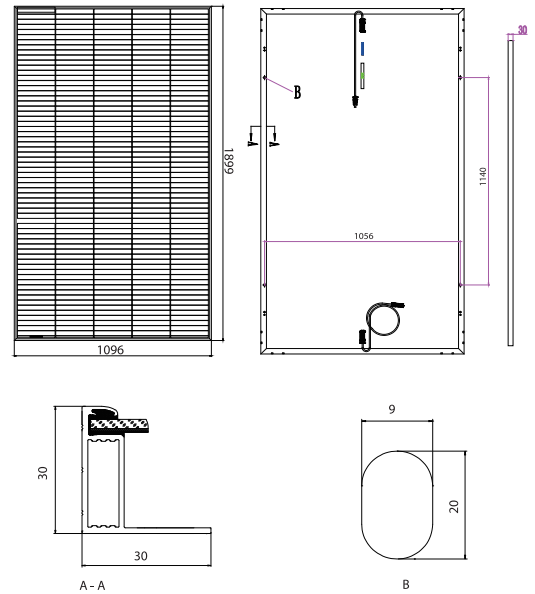
### Temperature Parameters

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

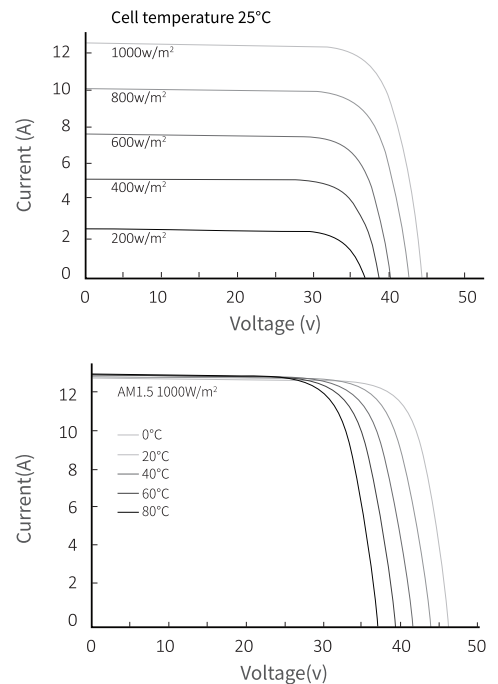
### Maximum Ratings

Maximum System Voltage [V]	DC1500 (IEC)
Series Fuse Rating [A]	25
Maximum Surface Load Capacity [Pa]	Front 5400 / Back 2400
Temperature Range [°C]	-40 ~ + 85
Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m/s

### Drawings



### I-V Curve



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