

Specification of TH380 ~ 415PMB5-60SBS

Monocrystalline PERC solar module

KEY features



Technology

Innovative structure; Low temperature adhesive; High density setting



Beautiful appearance

Module's layout is homogeneous and consistent; With more aesthetic feeling of science and technology



Safety and reliability

No micro-crack caused by welding; Lower operating temperature; High pressure resistance



Lower system cost

High screen-to-body ratio which reduce system cost



Low hot spot effect

Prolong module lifetime; Reduce electricity loss during generating



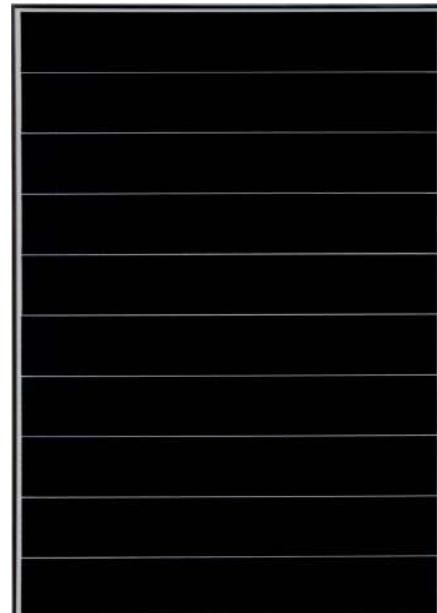
Lower occlusion loss

Parallel layout brings high effective generation hours



Green and environmental friendly

Insist environmental friendly faith; Fluorine-free and low Pb in module



15
year

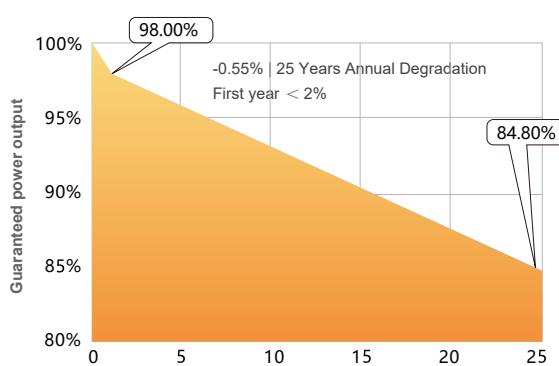
material process warranty

25
year

linear power output warranty

Complete system and product certifications

Warranty



IEC 61215/61730、IEC62804(PID)、IEC61701(Salt)、IEC62716(Ammonia)

ISO 9001:2015 / Quality management System

ISO 14001:2015 / Environmental management System

ISO 45001:2018 / Occupational health and safety Management System

ISO 50001:2011 / Energy management Systems

IEC TS 62941-2016 / Photovoltaic industry Quality management System



Electrical Characteristics at Standard Test Conditions(STC)

Module Type:TH *** PMB5-60SBS	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/m²; AM 1.5 ; ambient temperature 25°C according to EN 60904-3;
 2. Nominal Module Operating Temperature (NMOT): Irradiance 800W/ m²; 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%.

Temperature Characteristics

NMOT	42.3°C (±2°C)
Temperature Coefficient of Voc	-0.27%/°C
Temperature Coefficient of Isc	0.04%/°C
Temperature Coefficient of Pm	-0.34%/°C

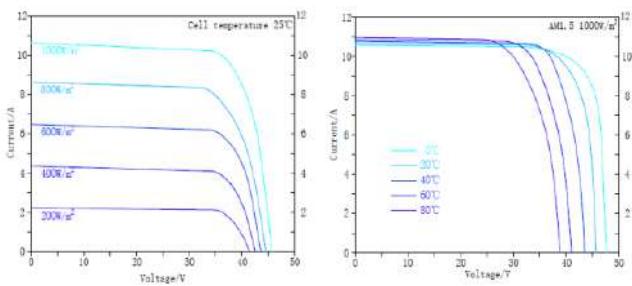
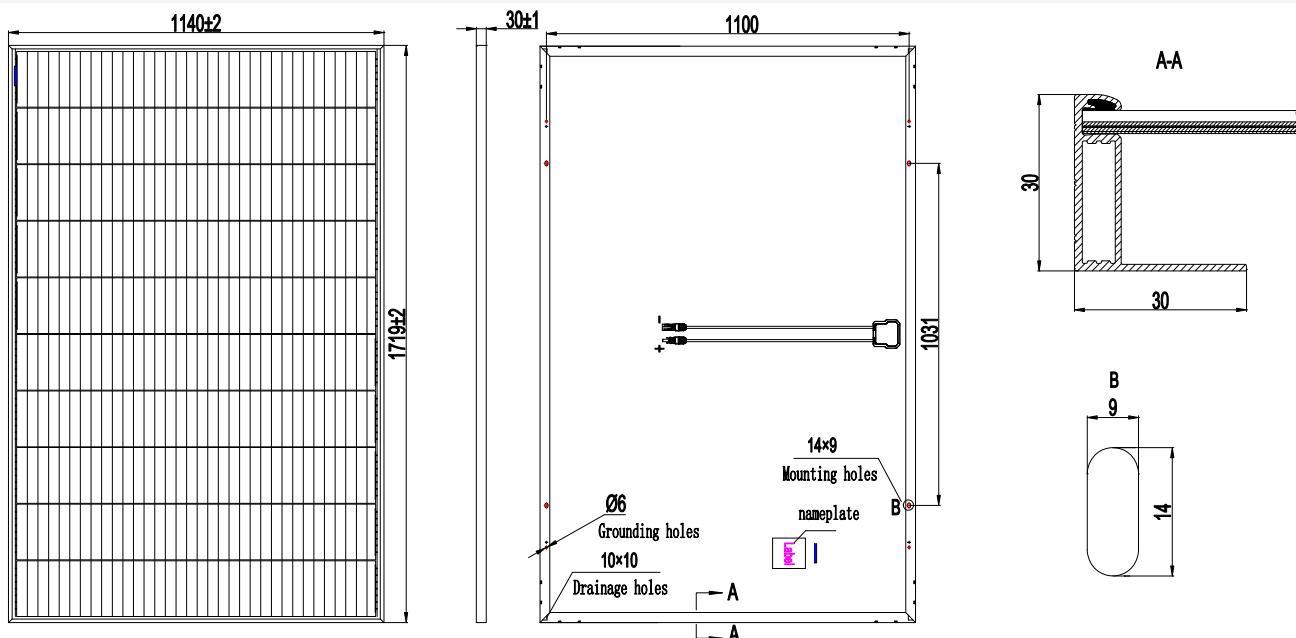
Maximum Ratings

Maximum System Voltage [V]	DC 1500/1000(IEC)
Series Fuse Rating [A]	20
Maximum Surface Load Capacity [Pa]	5400
Temperature Range [°C]	-40~+85

Package	
Number of panels per pallet	36
Number of pallets per 40' HQ container	26
Number of modules per container	936

Mechanical Characteristics

Dimensions	1719×1140×30mm
Weight	21kg
Front Glass	AR coating tempered glass, 3.2mm
Frame	Anodized aluminum profile
Cells	Mono-crystalline solar cell
Cell Orientation	340 (34*10)
Junction Box	IP68, two diodes
Cable	4mm ² , 1200mm (Be customized by customers)

I-V curve

Drawing

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.