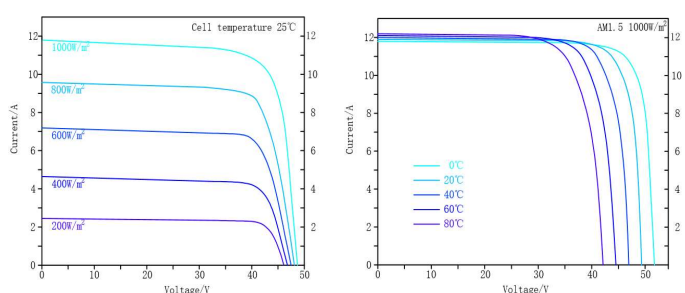
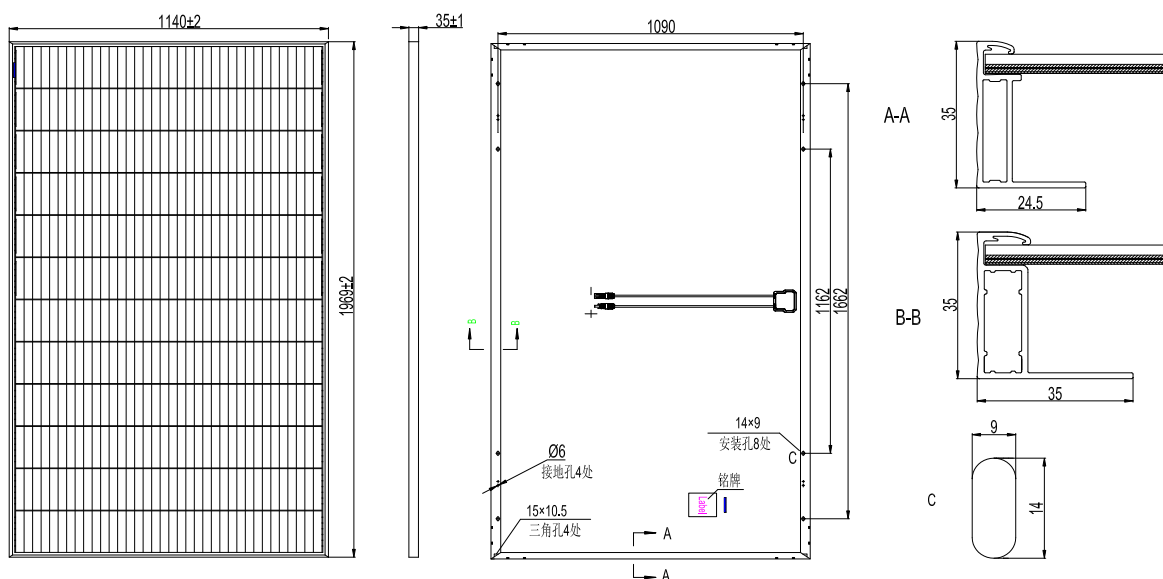


## Specification of THxxxPM5-78SA Monocrystalline PERC shingled solar module

Electrical Characteristics at Standard Test Conditions(STC)							Temperature Characteristics		
Module Type:TH *** PM5-78SA	475	470	465	460	455	450	NMOT	42.3°C (±2°C)	
Maximum Power-Pm [W]	475	470	465	460	455	450	Temperature Coefficient of Voc	-0.27%/°C	
Open Circuit Voltage-Voc [V]	49.5	49.4	49.4	49.2	49.0	48.8	Temperature Coefficient of Isc	0.04%/°C	
Short Circuit Current-Isc [A]	12.12	12.07	12.03	11.99	11.95	11.90	Temperature Coefficient of Pm	-0.34%/°C	
Maximum Power Voltage-Vm [V]	41	40.9	40.9	40.7	40.5	40.3	<b>Maximum Ratings</b>		
Maximum Power Current-Im [A]	11.59	11.49	11.37	11.30	11.23	11.17	Maximum System Voltage [V]	DC 1500(IEC); DC 1500(UL)	
Module Efficiency-η [%]	21.2	20.9	20.7	20.5	20.3	20.0	Series Fuse Rating [A]	20	
<b>Electrical Characteristics at NMOT</b>							Maximum Surface Load Capacity [Pa]	5,400	
Maximum Power-Pm [W]	358	354	350	346	343	339	Temperature Range [°C]	- 40 to + 85	
Open Circuit Voltage-Voc [V]	47.2	47.1	47.1	46.9	46.7	46.5	Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m·s <sup>-1</sup>	
Short Circuit Current-Isc [A]	9.78	9.74	9.71	9.67	9.64	9.60	Fire class rating	Class C	
Maximum Power Voltage-Vm [V]	39.1	39.0	39.0	38.8	38.6	38.4	<b>Other Characteristics</b>		
Maximum Power Current-Im [A]	9.15	9.08	8.98	8.93	8.87	8.82	Packaging	31 pcs/box;682pcs/40'container;1054pcs/flat car	
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%.							Warranty	15 years Product Workmanship Warranty	
							Warranty	25 years limited warranty on Power Output , the first year of power loss will be within 2%, and it will maintain loss within 0.55% annually from the 2 nd to the 25 th year . The last year power output is not less than 84.8%.	
<b>Mechanical Characteristics</b>							<b>I-V curve</b>		
Dimensions	1969×1140×35mm (L×W×H)								
Weight	24.5kg								
Front Glass	White toughened safety glass, 3.2mm								
Encapsulation	EVA								
Cells	158.75*158.75 PERC solar cells (in increment of 5)								
Back Sheet	high weatherability blacksheet								
Frame	Anodized aluminum profile								
Junction Box	Rated current:15A, IP67, TUV&UL								
Cable	Length 1200mm, 1×4mm <sup>2</sup>								
Connector	Genuine MC4 evo2								

### Drawing



Manufactured in China

**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.