

## TPM7-SHLDD120

# 435-465W

## MONOCRYSTALLINE PERC BIFACIAL PV MODULE



### Excellent Cell Efficiency

- MBB technology reduces the distance between busbars and finger grid line which is beneficial to power increase.



### Anti PID

- Ensured PID resistance through the quality control of cell manufacturing process and raw materials.



### Bifacial Technology

- Up to 25% additional power gain from back side depending on albedo



### Better Weak Illumination Response

- More power output in weak light condition, such as haze, cloudy, and early morning



### Adapt To Harsh Outdoor Environment

- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment



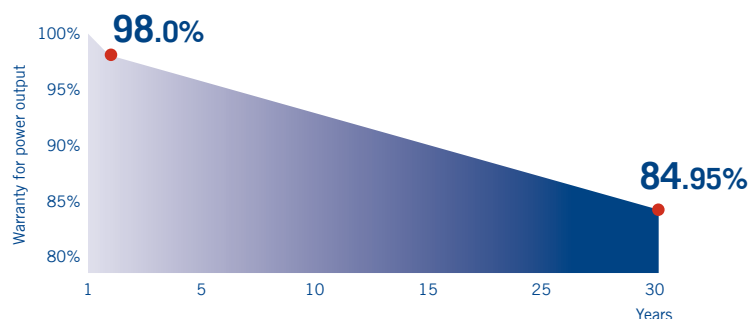
### Excellent Quality Management System

- Warranted reliability and stringent quality assurances well beyond certified requirements

### Linear Power Output Warranty

**12** 12-year warranty for materials

**30** 30-year warranty for linear power output



### Quality Management System and Product Certification



IEC 61215/IEC 61730/IEC 61701/IEC 62716/UL61730  
ISO 14001: Environmental Management System  
ISO 9001: Quality Management System  
ISO45001: Occupational Health and Safety Management System

**Electrical Characteristics (STC)**

Module Type (TPM7-SHLDD120)		435	440	445	450	455	460	465
Maximum Power Voltage Vmp	[V]	34	34.2	34.4	34.6	34.8	35	35.2
Maximum Power Current Imp	[A]	12.8	12.87	12.94	13.01	13.08	13.15	13.22
Open Circuit Voltage Voc	[V]	40.9	41.1	41.3	41.5	41.7	41.9	42.1
Short Circuit Current Isc	[A]	13.55	13.62	13.69	13.76	13.83	13.9	13.97
Module Efficiency	[%]	20.16	20.39	20.62	20.85	21.08	21.32	21.55

**Electrical Characteristics (NMOT)**

Maximum Power Pmax	[Wp]	325.3	328.8	332.6	336.3	340.1	343.8	347.6
Maximum Power Voltage Vmpp	[V]	31.6	31.8	32	32.1	32.3	32.5	32.7
Maximum Power Current Impp	[A]	10.29	10.34	10.4	10.46	10.52	10.58	10.63
Open Circuit Voltage Voc	[V]	38.2	38.4	38.6	38.8	39	39.1	39.3
Short Circuit Current Isc	[A]	10.94	11	11.06	11.11	11.17	11.23	11.28

**ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN**

Front power Pmax	[W]	435	440	445	450	455	460	465
Total power Pmax	[W]	544	550	556	563	569	575	581
Vmp (Total)	[V]	34.1	34.3	34.5	34.7	34.9	35.1	35.3
Imp (Total)	[A]	15.95	16.03	16.12	16.21	16.3	16.38	16.47
Voc (Total)	[V]	41	41.2	41.4	41.6	41.8	42	42.2
Isc (Total)	[A]	16.88	16.97	17.06	17.14	17.23	17.32	17.4

**Mechanical Characteristics**

Solar cells	Mono PERC
Cells orientation	120(6x20)
Module dimension	1903x1134x30 mm(With Frame)
Weight	26.5±1.0 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm <sup>2</sup> , 350 mm
Connectors*	MC4

**Application Conditions**

Maximum system voltage	1500 V DC
Operating temperature	-40 C ~+85 C
Maximum series fuse	30 A
Front Side Maximum Static Loading	Up to 5400Pa
Rear Side Maximum Static Loading	Up to 2400Pa

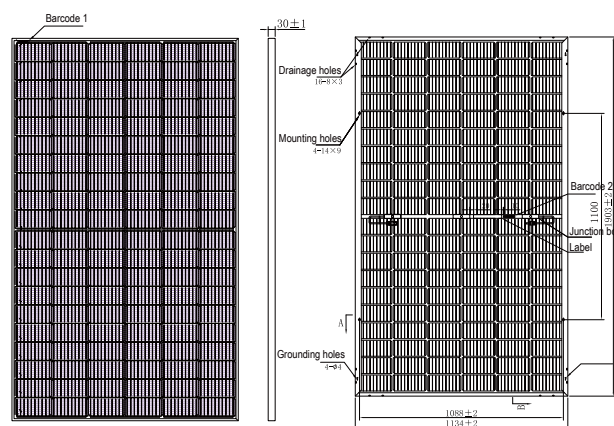
**Temperature Characteristics**

NMOT	44 C ±2 C
Temperature coefficient of Pmax	-0.35%/C
Temperature coefficient of Voc	-0.29%/C
Temperature coefficient of Isc	0.05%/C
Bifaciality	70±10%

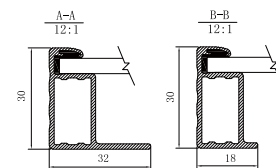
**Packing Configuration**

Piece/Box	36
Piece/Container(40'HQ)	864

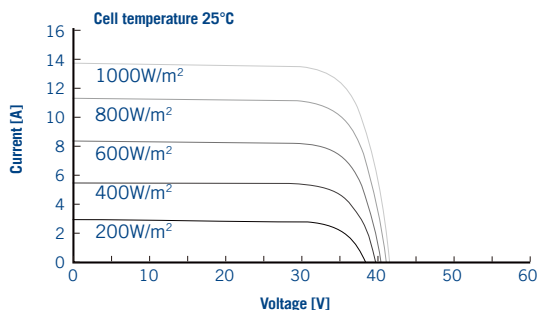
**Engineering Drawings**



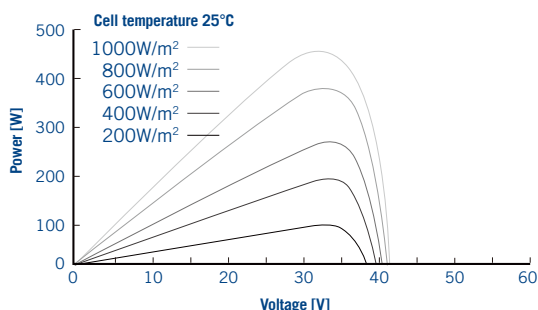
Unit: mm



**I-V CURVES OF PV MODULE (440W)**



**P-V CURVES OF PV MODULE (440W)**



**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.

**Topco Solar Inc.**

1810 E Sahara Ave Ste 212 Las Vegas, Nevada 89104, USA

[www.topcosolar.com](http://www.topcosolar.com)