



BIPRO

TM7G60M 120-cell

460 - 480W

Bifacial Dual Glass

16BB Half-cut Mono N-type



SYSTEM & PRODUCT CERTIFICATES

- IEC 61215 / IEC 61730 / UL 61730
- ISO 9001: 2015 Quality Management System
- ISO 14001: 2015 Environment Management System
- ISO 45001: 2018 Occupational Health and Safety Management Systems



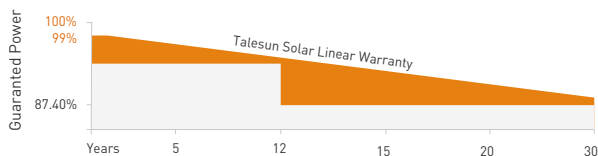
PERFORMANCE WARRANTY

12 Years
Quality Assurance

30 Years
Power Output Guarantee

Linear Performance Warranty

Standard Performance Warranty



KEY FEATURES



16BB Half-cut Cell Technology

New circuit design, lower internal current, lower R_s loss
Ga doped wafer, attenuation $< 1\%$ (1st year) / $\leq 0.4\%$ (Linear)



Industry Leading High Yield

Bifacial TOPCon cell technology,
10%-30% more yield depends on different conditions



Wider Application

No water-permeability and high wear-resistance,
can be widely used in high-humid, windy and dusty area



IP68 Junction Box

High waterproof level

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* GL-EN-Version 2023.11.10

* Made in China

ELECTRICAL CHARACTERISTICS

Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	460	349	465	354	470	358	475	362	480	366
Operating Voltage (Vmpp/V)	34.70	33.10	34.87	33.00	35.03	33.10	35.19	33.20	35.36	33.40
Operating Current (Impp/A)	13.26	10.54	13.34	10.74	13.42	10.81	13.50	10.87	13.58	10.94
Open-Circuit Voltage (Voc/V)	42.03	39.90	42.20	39.90	42.36	40.00	42.52	40.20	42.69	40.40
Short-Circuit Current (Isc/A)	14.00	11.28	14.08	11.35	14.16	11.42	14.24	11.48	14.32	11.54
Module Efficiency (%)	21.26		21.49		21.72		21.95		22.19	

STC: Irradiance 1000W/m², Spectra at AM1.5, Module Temperature 25°C. Power output tolerance: 0~+5W, Test uncertainty for Pmax: ±3%
 NMOT: Irradiance 800W/m², Spectra at AM1.5, Ambient Temperature 20°C, Wind speed 1m/s

REAR SIDE POWER GAIN(REFERENCE TO 470W FRONT)

Pmax gain	10%	15%	20%	25%	30%
Pmax/W	517	541	564	588	611
Vmpp/V	35.03	35.03	35.03	35.03	35.03
Impp/A	14.76	15.43	16.10	16.77	17.44
Voc/V	42.36	42.36	42.36	42.36	42.36
Isc/A	15.57	16.28	16.99	17.70	18.40

MECHANICAL CHARACTERISTICS

Cell Type	N-type Mono-Crystallin (16Busbar)
No. of Cells	120pcs in series (6*20)
Module Dimensions	1908*1134*30mm (75.12*44.65*1.18inches)
Weight	27.0kg (59.5lbs)
Front Glass	2.0mm AR Coating Semi-tempered Glass
Back Glass	2.0mm Glazed Semi-tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Output Cables	4mm ² (IEC), 12AWG(UL) 300mm in Length or Customized Length
Connectors	T01/LJQ-3-CSY/PV-KST4&PV-KBT4 PV-KST4-EV02&PV-KBT4-EV02

APPLICATION CONDITIONS

Maximun System Voltage	1500V/DC
Operating Temperature	-40°C~+85°C
Maximun Series Fuse	30A
Safety Protection Class	Class II
Mechanical Load	Front side 5400Pa, Back side 2400Pa
Refer. Bifaciality Factor	80%±5%
Fire Class Rating	Class C

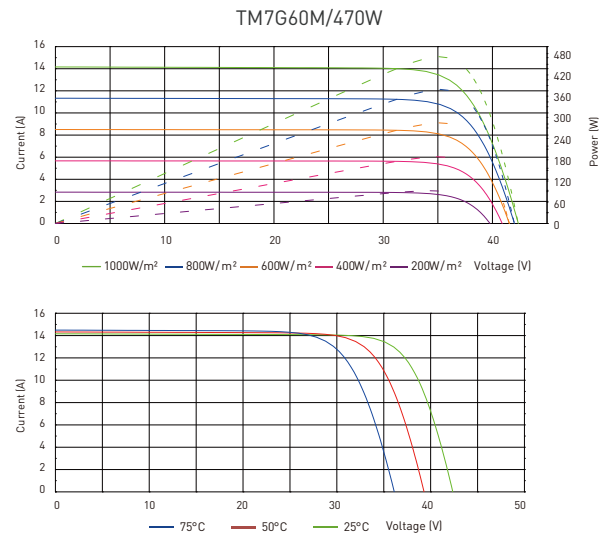
TEMPERATURE CHARACTERISTICS

Temperature Coefficient of Pmax	-0.30%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.046%/°C
Nominal Module Operating Temperature(NMOT)	43±2°C

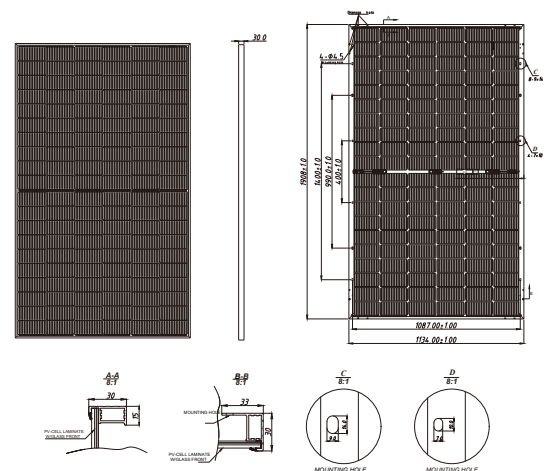
PACKING CONFIGURATION

Pieces Per Pallet	31	31(USA)
Pieces Per Container(40'HQ)	744	682

I-V CURVE



TECHNICAL DRAWINGS



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