

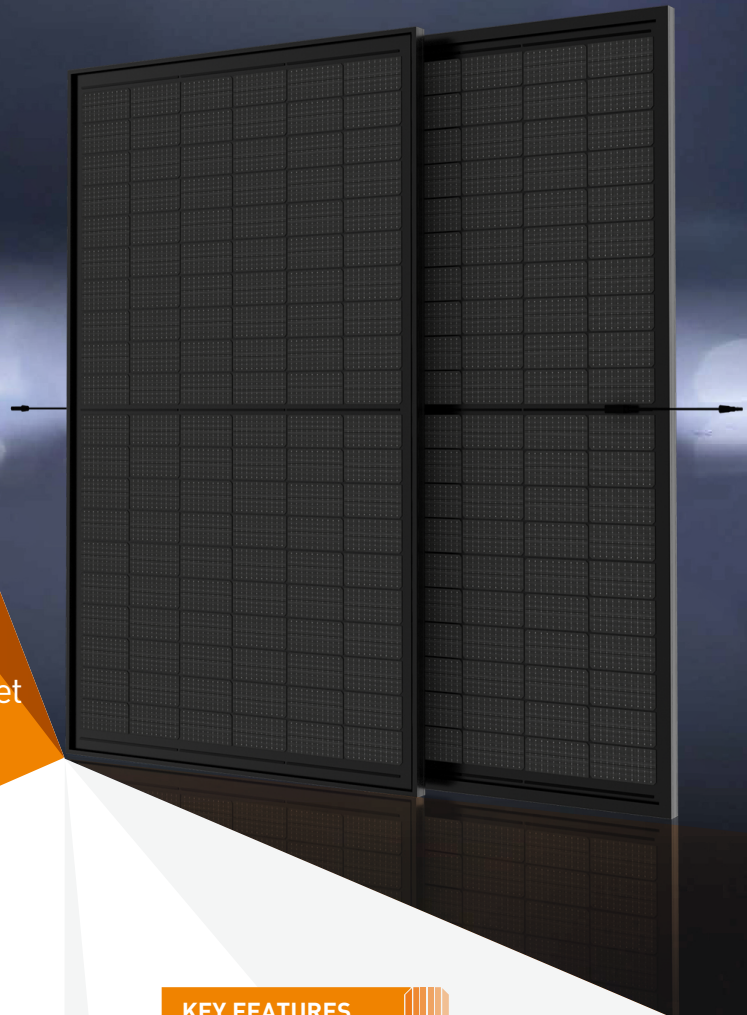


# BIPRO

TP7G60M  
TP7G60M(H) **120-cell**

**440 - 460W**

Bifacial Module With Transparent Backsheet  
10BB Half-cut Mono Perc



## 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

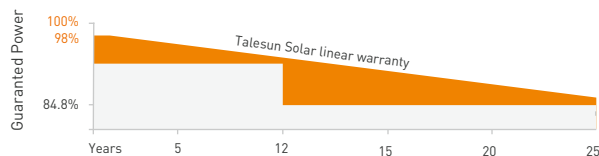


## PERFORMANCE WARRANTY

**12** Years  
Quality Assurance

**25** Years  
Power Output Guarantee

■ Linear Performance Warranty  
■ Standard Performance Warranty



## KEY FEATURES



### 10BB Half-cut Cell Technology

New circuit design, lower internal current, lower Rs loss  
Ga doped wafer, attenuation <2% (1st year) / ≤0.55% (Linear)



### Significantly Lower the Risk of Hot Spot

Special circuit design with much lower hot spot temperature



### Lower LCOE

2% more power generation, lower LCOE



### Excellent Anti-PID Performance

2 times of industry standard Anti-PID test



### IP68 Junction Box

High waterproof level

## ELECTRICAL CHARACTERISTICS

Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	440	328	445	332	450	336	455	339	460	343
Operating Voltage (Vmpp/V)	34.35	32.1	34.53	32.2	34.70	32.4	34.87	32.6	35.04	32.7
Operating Current (Impp/A)	12.81	10.23	12.89	10.30	12.97	10.36	13.05	10.42	13.13	10.49
Open-Circuit Voltage (Voc/V)	40.99	38.6	41.16	38.7	41.33	38.9	41.50	39.1	41.67	39.2
Short-Circuit Current (Isc/A)	13.69	11.04	13.78	11.11	13.86	11.17	13.94	11.24	14.02	11.30
Module Efficiency (%)	20.30		20.60		20.80		21.00		21.30	

STC: Irradiance 1000W/m<sup>2</sup>, Spectra at AM1.5, Module Temperature 25 °C. Power output tolerance: 0~+5W, Test uncertainty for Pmax: ±3%  
 NMOT: Irradiance 800W/m<sup>2</sup>, Spectra at AM1.5, Ambient Temperature 20 °C, Wind speed 1m/s

## REAR SIDE POWER GAIN(REFERENCE TO 445W FRONT)

Pmax gain	5%	10%	15%	20%	25%
Pmax/W	467	490	512	534	556
Vmpp/V	34.53	34.53	34.53	34.53	34.53
Impp/A	13.53	14.18	14.82	15.47	16.11
Voc/V	41.16	41.16	41.16	41.16	41.16
Isc/A	14.47	15.16	15.85	16.54	17.23

## MECHANICAL CHARACTERISTICS

Cell Type	Monocrystalline Silicon (10Busbar)
No. of Cells	120pcs in series (6*20)
Module Dimensions	1908*1134*35mm (75.12*44.65*1.38inches)
Weight	24.3kg (53.6lbs.)
Front Glass	3.2mm AR Coating Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Output Cables	4mm <sup>2</sup> (IEC), 12AWG(UL) 300mm in Length or Customized Length
Connectors	T01/LJQ-3-CSY/MC4/MC4-EV02

## APPLICATION CONDITIONS

Maximum System Voltage	1000V/1500V/DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A
Safety Protection Class	Class II
Mechanical Load (Front side)	5400Pa
Mechanical Load (Back side)	2400Pa
Refer. Bifaciality Factor	70%+5%/-10%

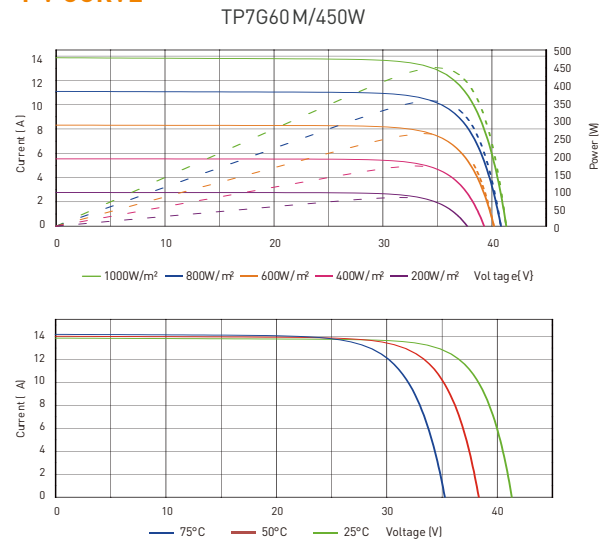
## TEMPERATURE CHARACTERISTICS

Temperature Coefficient of Pmax	-0.35%/°C
Temperature Coefficient of Voc	-0.26%/°C
Temperature Coefficient of Isc	+0.048%/°C
Nominal Module Operating Temperature(NMOT)	43±2°C

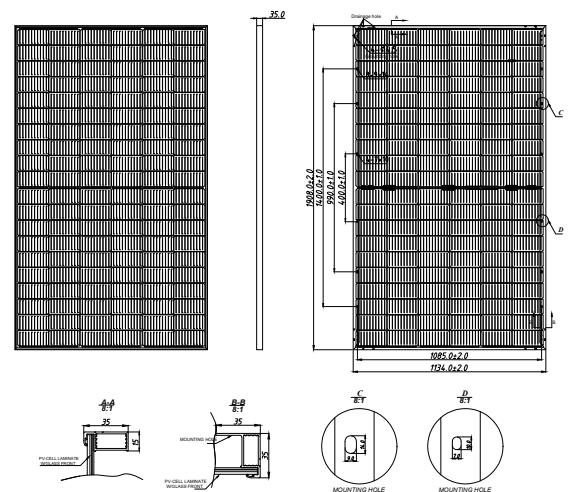
## PACKING CONFIGURATION

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

## I-V CURVE



## TECHNICAL DRAWINGS



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