

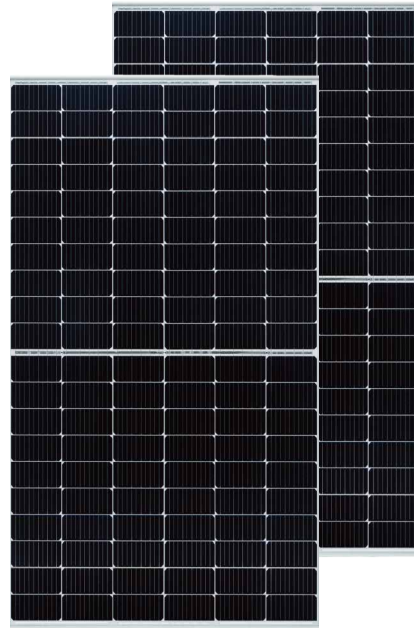
# BIPRO

TD7G60M **120 half-cell**

440 - 460W

bifacial dual glass

10BB half-cut mono perc



## KEY FEATURES



### 10BB half-cut cell technology

New circuit design, lower internal current, lower Rs loss  
Ga doped wafer, attenuation < 2% (1st year) / ≤ 0.45% (Linear)



### Industry leading high yield

Bifacial PERC cell technology,  
5%-25% more yield depends on different conditions



### Excellent Anti-PID performance

2 times of industry standard Anti-PID test by TUV SUD



### 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

## SYSTEM & PRODUCT CERTIFICATES

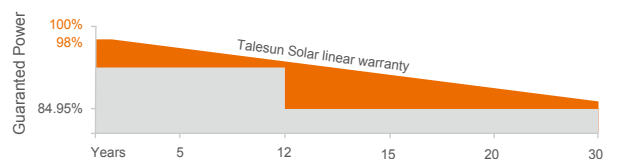
- IEC 61215 / IEC 61730 / UL 61730
- ISO 9001: 2015 Quality Management System
- ISO 14001: 2015 Environment Management System
- ISO 45001: 2018 Occupational Health and Safety Management Systems



## PERFORMANCE WARRANTY



- Linear Performance Warranty
- Standard Performance Warranty



## ELECTRICAL PARAMETERS

### Performance at STC (Power Tolerance 0 ~ +3%)

Maximum Power (Pmax/W)	440	445	450	455	460
Operating Voltage (Vmpp/V)	34.35	34.53	34.70	34.87	35.04
Operating Current (Impp/A)	12.81	12.89	12.97	13.05	13.13
Open-Circuit Voltage (Voc/V)	40.99	41.16	41.33	41.50	41.67
Short-Circuit Current (Isc/A)	13.69	13.78	13.86	13.94	14.02
Module Efficiency $\eta$ m(%)	20.3	20.5	20.7	21.0	21.2

### Performance at NMOT

Maximum Power (Pmax/W)	328	332	336	339	343
Operating Voltage (Vmpp/V)	32.1	32.2	32.4	32.6	32.7
Operating Current (Impp/A)	10.23	10.30	10.36	10.42	10.49
Open-Circuit Voltage (Voc/V)	38.6	38.7	38.9	39.1	39.2
Short-Circuit Current (Isc/A)	11.04	11.11	11.17	11.24	11.30

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5 NMOT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass AM1.5, Wind Speed 1m/s

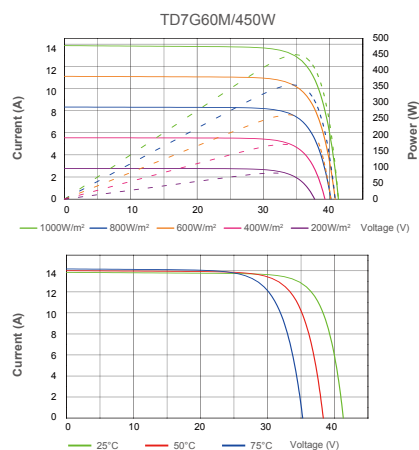
### Electrical characteristics with different rear side power gain (refer to 445W front)

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

## MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	182*182mm
Cell Arrangement	120 (6*20)
Weight	27kg (59.5lbs.)
Module Dimensions	1914*1134*35mm (75.35*44.65*1.38inches)
Cable Length	Portrait 300mm/Landscape 1200mm/Customized
Cable Cross Section Size	TUV: 4mm <sup>2</sup> (0.006inches <sup>2</sup> )/UL: 12AWG
Front Glass	2.0mm (0.08 inches) AR Coating Semi-tempered Glass
Back Glass	2.0mm (0.08 inches) Glazed Semi-tempered Glass
No. of Bypass Diodes	3
Packing Configuration (1)	31pcs/carton, 744pcs/40hq
Packing Configuration (for USA)	31pcs/carton, 682pcs/40hq
Frame	Anodized Aluminium Alloy
Junction Box	IP68

## I-V CURVE



## OPERATING CONDITIONS

Maximum System Voltage	1500V/DC(IEC)
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	30A
Static Loading	Snow Loading: 5400Pa/ Wind Loading: 2400Pa
Conductivity at Ground	≤0.1Ω
Safety Class	II
Resistance	≥100MΩ
Connector	T01/LJQ-3-CSY/MC4/MC4-EVO2
Backside Output Ratio*	70% ± 5%
*Under STC: Backside Output Ratio = $P_{\max(\text{rear})} / P_{\max(\text{front})}$	

## TEMPERATURE COEFFICIENT

Temperature Coefficient Pmax	-0.35%/°C
Temperature Coefficient Voc	-0.26%/°C
Temperature Coefficient Isc	+0.048%/°C
NMOT	43±2°C

## TECHNICAL DRAWINGS

