



# BIPRO

GSD6172M **144-cell**

**435 - 455W**

Bifacial Dual Glass  
9BB 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



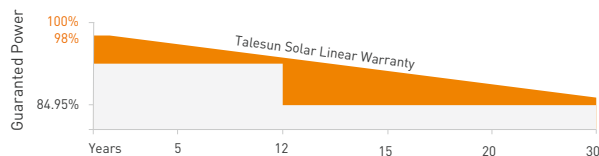
## PERFORMANCE WARRANTY

**12** Years  
Quality Assurance

**30** Years  
Power Output Guarantee

Linear Performance Warranty

Standard Performance Warranty



## KEY FEATURES



### 9BB Half-cut Cell Technology

New circuit design, lower internal current, lower  $R_s$  loss  
Ga doped wafer, attenuation  $<2\%$  (1st year) /  $\leq 0.45\%$  (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



### 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

[www.gstar.sg](http://www.gstar.sg)

[lyntonlin@gstar-solar.com](mailto:lyntonlin@gstar-solar.com)

\* GL-EN-Version 2022.03.01

## ELECTRICAL CHARACTERISTICS

| Testing Condition             | STC   | NMOT | STC   | NMOT | STC   | NMOT | STC   | NMOT | STC   | NMOT |
|-------------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|
| Maximum Power (Pmax/W)        | 435   | 323  | 440   | 327  | 445   | 330  | 450   | 334  | 455   | 338  |
| Operating Voltage (Vmpp/V)    | 41.4  | 38.7 | 41.6  | 38.9 | 41.8  | 39.1 | 42.0  | 39.3 | 42.2  | 39.4 |
| Operating Current (Impp/A)    | 10.51 | 8.36 | 10.58 | 8.41 | 10.65 | 8.47 | 10.72 | 8.52 | 10.79 | 8.57 |
| Open-Circuit Voltage (Voc/V)  | 49.8  | 46.6 | 50.0  | 46.8 | 50.2  | 46.9 | 50.4  | 47.1 | 50.6  | 47.3 |
| Short-Circuit Current (Isc/A) | 11.16 | 9.00 | 11.22 | 9.04 | 11.29 | 9.10 | 11.36 | 9.16 | 11.43 | 9.21 |
| Module Efficiency [%]         | 20.00 |      | 20.20 |      | 20.50 |      | 20.70 |      | 20.90 |      |

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 440W FRONT)

| Pmax gain | 5%    | 10%   | 15%   | 20%   | 25%   |
|-----------|-------|-------|-------|-------|-------|
| Pmax/W    | 462   | 484   | 506   | 528   | 550   |
| Vmpp/V    | 41.6  | 41.6  | 41.6  | 41.6  | 41.6  |
| Impp/A    | 11.11 | 11.64 | 12.17 | 12.70 | 13.23 |
| Voc/V     | 50.0  | 50.0  | 50.0  | 50.2  | 50.2  |
| Isc/A     | 11.78 | 12.34 | 12.90 | 13.46 | 14.03 |

## MECHANICAL CHARACTERISTICS

|                   |   |
|-------------------|---|
| Cell Type         | Monocrystalline Silicon (9Busbar)   |
| No. of Cells      | 144pcs in series (6*24)   |
| Module Dimensions | 2094*1038*30mm (82.44*40.87*1.18inches)                                   |
| Weight            | 28.0kg (61.73lbs)   |
| 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 <sup>2</sup> (IEC), 12AWG(UL)<br>300mm in Length or Customized Length |
| Connectors        | T01/LJQ-3-CSY/MC4/MC4-EV02  |

## APPLICATION CONDITIONS

|                           |                                     |
|---------------------------|-------------------------------------|
| Maximum System Voltage    | 1500V/DC                            |
| Operating Temperature     | -40°C~+85°C                         |
| Maximum Series Fuse       | 25A                                 |
| Safety Protection Class   | Class II                            |
| Mechanical Load           | Front side 5400Pa, Back side 2400Pa |
| Refer. Bifaciality Factor | 70%±5%                              |

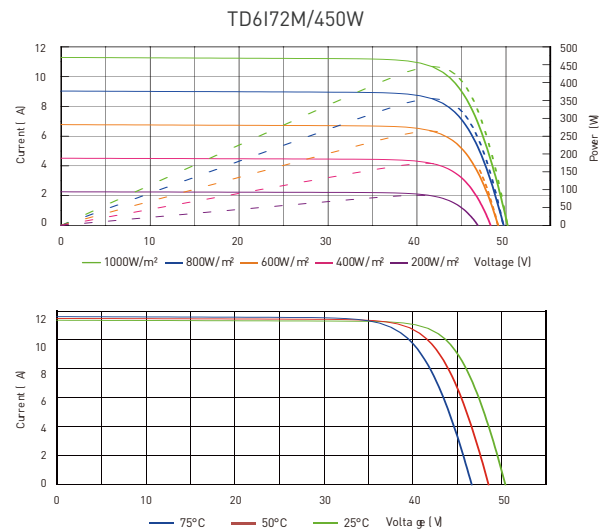
## TEMPERATURE CHARACTERISTICS

|  |            |
|--|------------|
| Temperature Coefficient of Pmax            | -0.36%/°C  |
| Temperature Coefficient of Voc             | -0.26%/°C  |
| Temperature Coefficient of Isc             | +0.043%/°C |
| Nominal Module Operating Temperature(NMOT) | 43±2°C     |

## PACKING CONFIGURATION

|                             |     |         |
|-----------------------------|-----|---------|
| Pieces Per Pallet           | 36  | 36(USA) |
| Pieces Per Container(40'HQ) | 792 | 648     |

## I-V CURVE



## TECHNICAL DRAWINGS

