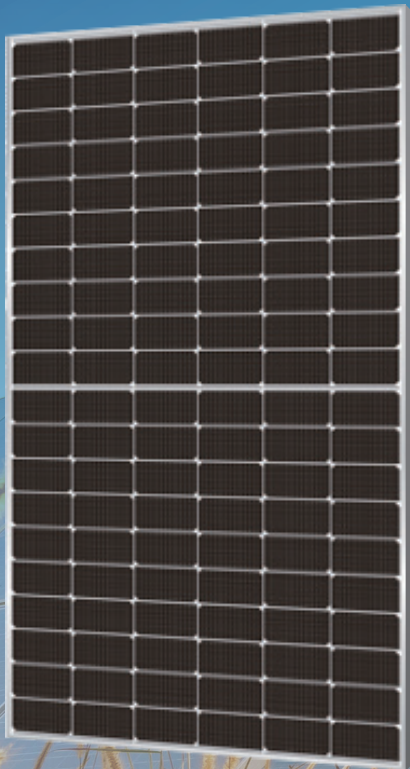


High Efficiency  
Bifacial HJT Module

# GSM- MH3/120- BHDG650

630W | 635W | 640W  
645W | 650W



**650W**  
Maximum Power Output

**85%**  
Bifaciality

**22.97%**  
Maximum Efficiency

**30YEAR**  
Linear Power Warranty

## Product Features



### Industry-Leading Process Technology

Advanced HJT cell/module design, higher reliability and outstanding performance



### High Energy Yield

Maximum Module Efficiency up to 22.97% achieved by mature mass production HJT cell technology



### G12 Cell / Module

G12 Big size wafer, effectively reduced LCOE and improved ROI



### High Reliability

Certified mechanical performance up to 5400 Pa positive load and 2400 Pa negative load, with better protection against harsh weather



### Higher Performance

Excellent weak light performance and lower temperature coefficient, resulting in better energy yield in all-weather



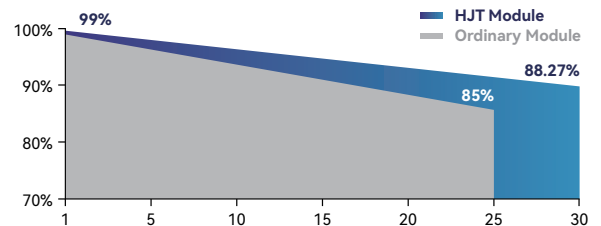
### Better Warranty

Extremely low LID/PID in longer service life, 11.73% Power degradation in 30 years

## Quality Assurance

**12** Years Product Warranty

**30** Years Linear Power Warranty



## Certificates



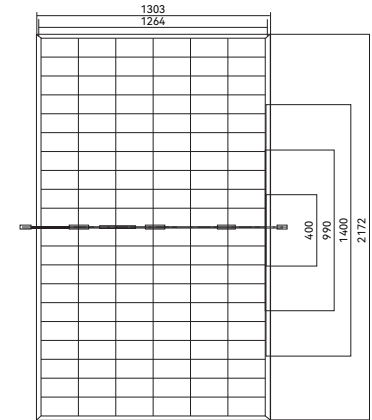
Guosheng Energy Co., Ltd.

Web: [www.grandsunergy.com](http://www.grandsunergy.com) E-mail: [sales@grandsunergy.com](mailto:sales@grandsunergy.com)

Add: West Side to Zhongjing 7th Road, South Side to Pengcheng Boulevard, Xuzhou Industrial Park, Xuzhou City, Jiangsu Province

## Mechanical Data

|   |  |
|---|--|
| Cell (mm)   | 210×105  |
| Weight (kg)   | 35±0.5kg   |
| Dimension(L×W×H)(mm)                                | 2172×1303×33mm   |
| Cable (mm)  | 4mm <sup>2</sup> , 300mm(customized length based on needs)   |
| Frame   | anodized aluminum 6005-T26   |
| Junction Box  | IP68, 1500VDC, 3 Diodes  |
| Packaging Configuration (40'Container;17.5'Trailer) | 33 pcs. / pallet; 17pallet / container; 561pcs / container<br>33 pcs. / pallet; 25pallet / Trailer; 825pcs / Trailer |



## Electrical Data(STC)

| Model      | GSM-MH3/120-BHDG630 | GSM-MH3/120-BHDG635 | GSM-MH3/120-BHDG640 | GSM-MH3/120-BHDG645 | GSM-MH3/120-BHDG650 |
|------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Pmax(Wp)   | 630                 | 635                 | 640                 | 645                 | 650                 |
| Voc(V)     | 45.30               | 45.48               | 45.66               | 45.84               | 46.02               |
| Isc(A)     | 17.37               | 17.43               | 17.49               | 17.55               | 17.61               |
| Vmpp(V)    | 38.04               | 38.19               | 38.35               | 38.51               | 38.67               |
| Impp(A)    | 16.57               | 16.63               | 16.69               | 16.75               | 16.81               |
| Efficiency | 22.26%              | 22.44%              | 22.61%              | 22.79%              | 22.97%              |

STC: AM1.5 Irradiance: 1000W/m<sup>2</sup> Temperature=25°C

## Electrical Characteristics(BSTC)

| Model  | GSM-MH3/120-BHDG630 | GSM-MH3/120-BHDG635 | GSM-MH3/120-BHDG640 | GSM-MH3/120-BHDG645 | GSM-MH3/120-BHDG650 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| Pmax(Wp)   | 695                 | 700                 | 707                 | 713                 | 718                 |
| Voc(V)   | 45.35               | 45.53               | 45.71               | 45.89               | 46.07               |
| Isc(A)   | 19.11               | 19.17               | 19.23               | 19.29               | 19.35               |
| Vmpp(V)  | 38.11               | 38.29               | 38.47               | 38.65               | 38.83               |
| Impp(A)  | 18.26               | 18.32               | 18.38               | 18.44               | 18.50               |
| α <sub>sc</sub> (%/K) : 0.04; β <sub>Voc</sub> (%/K) : -0.24; γ <sub>Pmp</sub> (%/K) : -0.26 |                     |                     |                     |                     |                     |

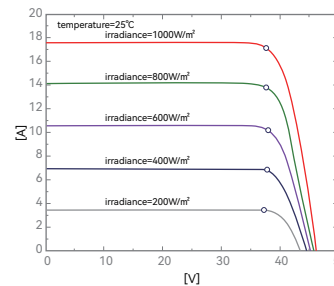
AM1.5, Front irradiance: 1000W/m<sup>2</sup>, Back irradiance: 135W/m<sup>2</sup>, Temperature=25°C, Wind speed=1m/s

## Working Condition

|                                 |               |
|---------------------------------|---------------|
| Maximum System Voltage          | 1500VDC       |
| Operating Temperature           | -40°C ~ +85°C |
| Maximum Fuse Rating             | 35A           |
| Rear Side Mechanical Load       | 2400Pa        |
| Front Side Mechanical Load      | 5400Pa        |
| NOCT                            | 44±2°C        |
| Safety Class                    | Class II      |
| Grounding Electric Conductivity | < 0.1Ω        |

## I-V Diagram

(Different Irradiance)



## I-V Diagram

(Different Temperature)

