

## 470W MBB Half-Cell Module

JAM72S20 445-470/MR Series

### Introduction

Assembled with multi-busbar PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.



Higher output power



Lower LCOE



Less shading and lower resistive loss

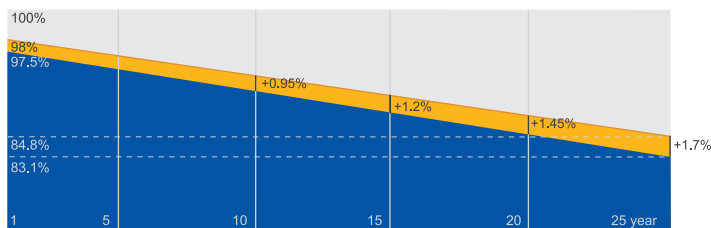


Better mechanical loading tolerance

### Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty

0.55% Annual Degradation Over 25 years



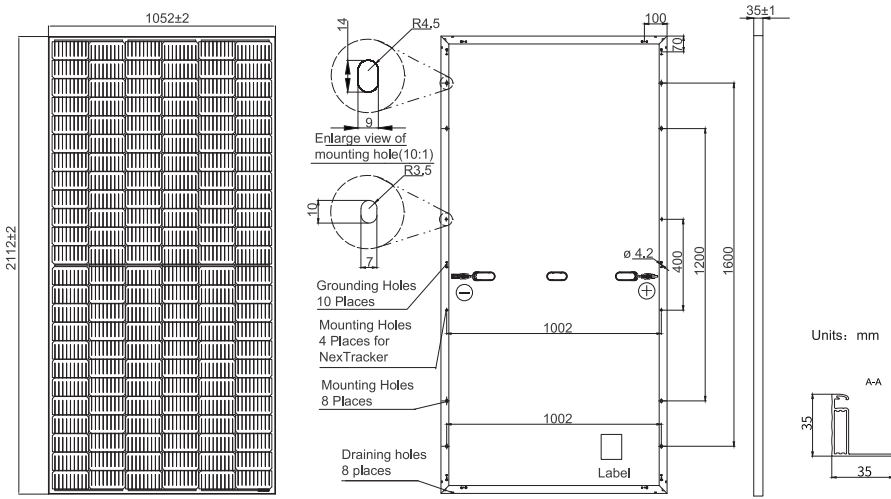
■ New linear power warranty ■ Standard module linear power warranty

### Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001:2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



**MECHANICAL DIAGRAMS**



Remark: customized frame color and cable length available upon request

**SPECIFICATIONS**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Cell                               | Mono                                  |
| Weight                             | 24.7kg±3%                             |
| Dimensions                         | 2112±2mm×1052±2mm×35±1mm              |
| Cable Cross Section Size           | 4mm <sup>2</sup> (IEC) , 12 AWG(UL)   |
| No. of cells                       | 144 (6×24)                            |
| Junction Box                       | IP68, 3 diodes                        |
| Connector                          | MC4(1000V)<br>MC4-EVO2(1500V)         |
| Cable Length (Including Connector) | 1200mm(+)/1200mm(-)                   |
| Packaging Configuration            | 31pcs/pallet<br>682pcs/40ft Container |

**ELECTRICAL PARAMETERS AT STC**

| TYPE   | JAM72S20<br>-445/MR   | JAM72S20<br>-450/MR | JAM72S20<br>-455/MR | JAM72S20<br>-460/MR | JAM72S20<br>-465/MR | JAM72S20<br>-470/MR |
|--|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Rated Maximum Power(Pmax) [W]                      | 445   | 450                 | 455                 | 460                 | 465                 | 470                 |
| Open Circuit Voltage(Voc) [V]                      | 49.56   | 49.70               | 49.85               | 50.01               | 50.15               | 50.31               |
| Maximum Power Voltage(Vmp) [V]                     | 41.21   | 41.52               | 41.82               | 42.13               | 42.43               | 42.69               |
| Short Circuit Current(Isc) [A]                     | 11.32   | 11.36               | 11.41               | 11.45               | 11.49               | 11.53               |
| Maximum Power Current(Imp) [A]                     | 10.80   | 10.84               | 10.88               | 10.92               | 10.96               | 11.01               |
| Module Efficiency [%]                              | 20.0  | 20.3                | 20.5                | 20.7                | 20.9                | 21.2                |
| Power Tolerance                                    | 0~+5W   |                     |                     |                     |                     |                     |
| Temperature Coefficient of Isc(α <sub>Isc</sub> )  | +0.044%/°C  |                     |                     |                     |                     |                     |
| Temperature Coefficient of Voc(β <sub>Voc</sub> )  | -0.272%/°C  |                     |                     |                     |                     |                     |
| Temperature Coefficient of Pmax(γ <sub>Pmp</sub> ) | -0.350%/°C  |                     |                     |                     |                     |                     |
| STC  | Irradiance 1000W/m <sup>2</sup> , cell temperature 25°C, AM1.5G |                     |                     |                     |                     |                     |

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

**ELECTRICAL PARAMETERS AT NOCT**

| TYPE                           | JAM72S20<br>-445/MR   | JAM72S20<br>-450/MR | JAM72S20<br>-455/MR | JAM72S20<br>-460/MR | JAM72S20<br>-465/MR | JAM72S20<br>-470/MR |
|--------------------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Rated Max Power(Pmax) [W]      | 336   | 340                 | 344                 | 348                 | 352                 | 355                 |
| Open Circuit Voltage(Voc) [V]  | 46.65   | 46.90               | 47.15               | 47.38               | 47.61               | 47.84               |
| Max Power Voltage(Vmp) [V]     | 38.95   | 39.19               | 39.44               | 39.68               | 39.90               | 40.10               |
| Short Circuit Current(Isc) [A] | 9.20  | 9.25                | 9.29                | 9.33                | 9.38                | 9.42                |
| Max Power Current(Imp) [A]     | 8.64  | 8.68                | 8.72                | 8.76                | 8.81                | 8.86                |
| NOCT                           | Irradiance 800W/m <sup>2</sup> , ambient temperature 20°C,wind speed 1m/s, AM1.5G |                     |                     |                     |                     |                     |

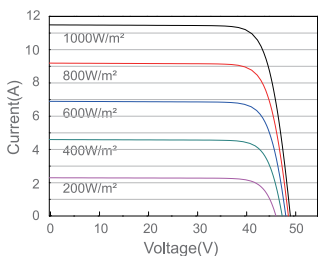
**OPERATING CONDITIONS**

|                            |                                 |
|----------------------------|---------------------------------|
| Maximum System Voltage     | 1000V/1500V DC                  |
| Operating Temperature      | -40°C~+85°C                     |
| Maximum Series Fuse Rating | 20A                             |
| Maximum Static Load,Front* | 5400Pa(112 lb/ft <sup>2</sup> ) |
| Maximum Static Load,Back*  | 2400Pa(50 lb/ft <sup>2</sup> )  |
| NOCT                       | 45±2°C                          |
| Safety Class               | Class II                        |
| Fire Performance           | UL Type 1                       |

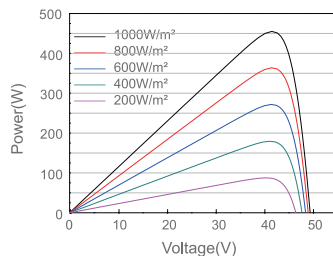
\*For NexTracker installations ,Maximum Static Load, Front is 1800Pa while Maximum Static Load, Back is 1800Pa.

**CHARACTERISTICS**

Current-Voltage Curve JAM72S20-455/MR



Power-Voltage Curve JAM72S20-455/MR



Current-Voltage Curve JAM72S20-455/MR

