

**Mono**

## 460W MBB Bifacial Mono PERC Half-cell Double Glass Module

JAM72D20 435-460/MB/1500V Series

### Introduction

Assembled with MBB bifacial PERCUM cells and half-cell configuration, these double glass modules have the capability of converting the incident light from the rear side together with the front side into electricity, providing higher output power, lower temperature coefficient, less shading loss, as well as enhanced tolerance for mechanical loading.



Higher output power



More reliable, more stable power generation



Less shading effect

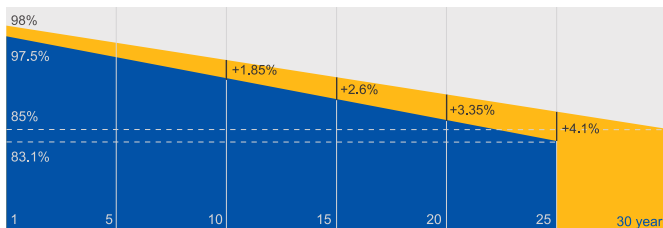


Lower temperature coefficient

### Superior Warranty

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

0.45% Annual Degradation Over 30 years



■ Bifacial double glass module linear power warranty

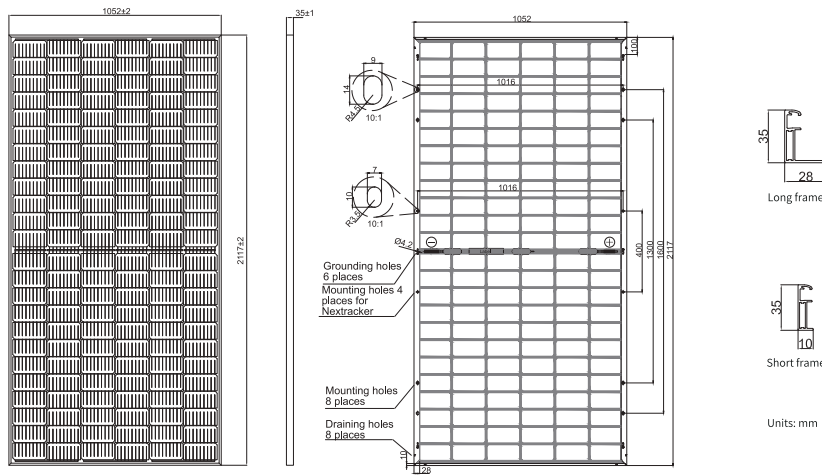
■ Standard module linear power warranty

### Comprehensive Certificates

- IEC 61215, IEC 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems



**MECHANICAL DIAGRAMS**



Remark: customized frame color and cable length available upon request

**SPECIFICATIONS**

Cell	Mono
Weight	27.3kg±3%
Dimensions	2117±2mm×1052±2mm×35±1mm
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
No. of cells	144(6×24)
Junction Box	IP68, 3 diodes
Connector	Stäubli MC4-EVO2A/MC4-EVO2 QC Solar QC 4.10-35/ QC 4.10-351
Cable Length (Including Connector)	Portrait:300mm(+)/400mm(-); Landscape:1200mm(+)/1200mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Country of Manufacturer	China/Vietnam

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM72D20 -435/MB/1500V	JAM72D20 -440/MB/1500V	JAM72D20 -445/MB/1500V	JAM72D20 -450/MB/1500V	JAM72D20 -455/MB/1500V	JAM72D20 -460/MB/1500V
Rated Maximum Power(Pmax) [W]	435	440	445	450	455	460
Open Circuit Voltage(Voc) [V]	49.15	49.30	49.45	49.61	49.75	49.91
Maximum Power Voltage(Vmp) [V]	40.28	40.60	40.91	41.21	41.52	41.79
Short Circuit Current(Isc) [A]	11.29	11.33	11.38	11.42	11.46	11.50
Maximum Power Current(Imp) [A]	10.80	10.84	10.88	10.92	10.96	11.01
Module Efficiency [%]	19.5	19.8	20.0	20.2	20.4	20.7
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.  
Measurement tolerance at STC: Pmax ±3%, Voc ±3% and Isc ±4%.

**ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO**

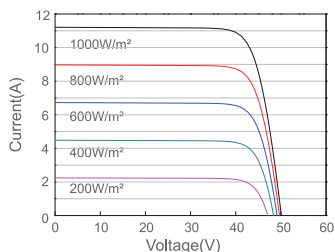
**OPERATING CONDITIONS**

TYPE	JAM72D20 -440/MB	JAM72D20 -445/MB	JAM72D20 -450/MB	JAM72D20 -455/MB	JAM72D20 -460/MB	JAM72D20 -465/MB	OPERATING CONDITIONS	
Rated Max Power(Pmax) [W]	471	476	482	487	492	498	Maximum System Voltage	1500V DC
Open Circuit Voltage(Voc) [V]	49.40	49.55	49.71	49.85	50.01	50.15	Operating Temperature	-40°C~+85°C
Max Power Voltage(Vmp) [V]	40.59	40.90	41.21	41.51	41.78	42.08	Maximum Series Fuse	25A
Short Circuit Current(Isc) [A]	12.12	12.18	12.22	12.26	12.31	12.36	Maximum Static Load,Front* Maximum Static Load,Back*	3600Pa, 1.5 1600Pa, 1.5
Max Power Current(Imp) [A]	11.60	11.64	11.68	11.73	11.78	11.82	NOCT	45±2°C
Irradiation Ratio (rear/front)	10%						Bifaciality**	70%±10%
							Fire Safety Class	Class C

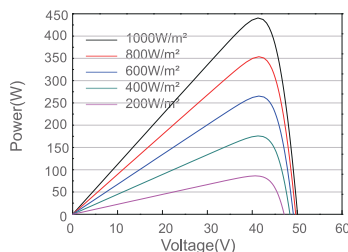
\*\*Bifaciality=Pmax,rear/Rated Pmax,front

**CHARACTERISTICS**

Current-Voltage Curve JAM72D20-440/MB/1500V



Power-Voltage Curve JAM72D20-440/MB/1500V



Current-Voltage Curve JAM72D20-440/MB/1500V

