

## 460W MBB Bifacial Mono PERC Half-cell Double Glass Module 단결정 하프셀 양면발전 모듈 JAM72D20 435-460/MB Series

### Introduction

단결정 Multi Bus-bar 양면발전 셀을 Half-cut 가공 및 전·후면 유리 적용으로 전면 뿐만 아니라 후면에 입사된 빛을 전기에너지로 변환합니다. 이로 인해 더 높은 출력을 제공하며, 더 낮은 온도 계수와 음영에서의 손실 저감 효과 및 기계적 부하에 따른 내구성 향상을 가져옵니다.



동일 사이즈 대비 고출력



보다 나은 내구성



음영에 의한 손실 최소화

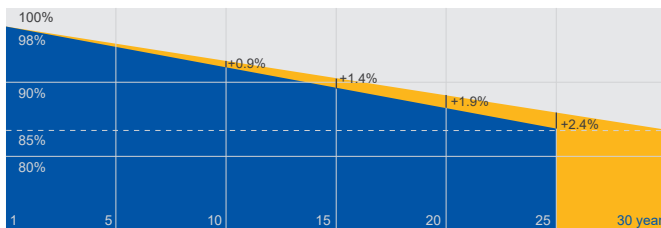


우수한 온도 계수

### Superior Warranty

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

0.45% Annual Degradation  
Over 30 years



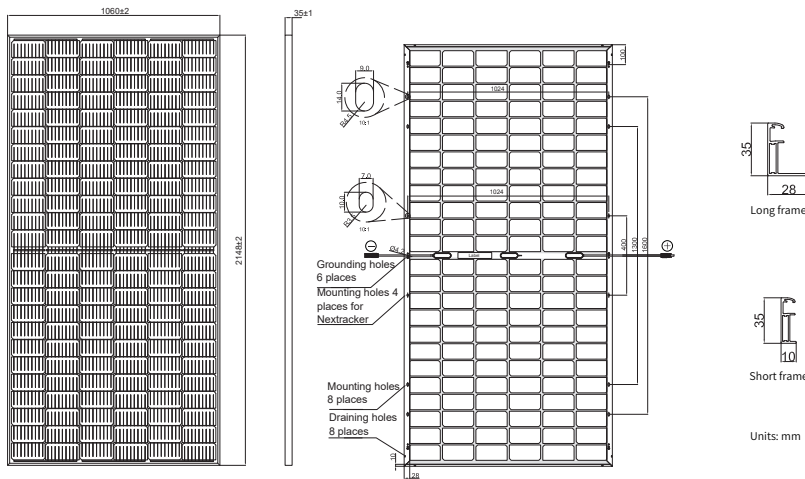
■ Additional Value From 30-Year Warranty ■ JA Standard

### Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- OHSAS 18001: 2007 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	28.2kg±3%
Dimensions	2148±2mm×1060±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	QC 4.10-35
Cable Length (Including Connector)	Portrait:300mm(+)/400mm(-); Landscape:1200mm(+)/1200mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	30pcs/pallet, 600pcs/40ft Container

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM72D20 -435/MB	JAM72D20 -440/MB	JAM72D20 -445/MB	JAM72D20 -450/MB	JAM72D20 -455/MB	JAM72D20 -460/MB
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 [%]	19.1	19.3	19.5	19.8	20.0	20.2
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> )	-0.354%/°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.

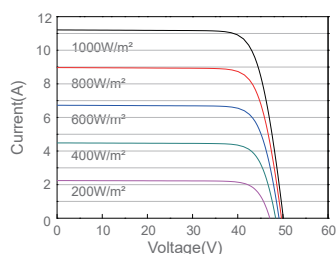
**ELECTRICAL CHARACTERISTICS WITH DIFFERENT REAR SIDE POWER GAIN(REFRENCE TO 445W FRONT)**

**OPERATING CONDITIONS**

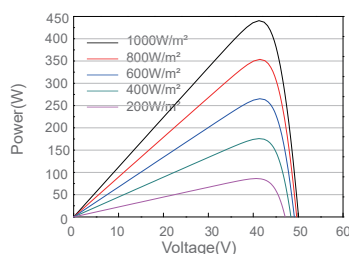
Backside Power Gain	5%	10%	15%	20%	25%	Maximum System Voltage	1500V DC
Rated Max Power(Pmax) [W]	467	490	512	534	556	Operating Temperature	-40°C~+85°C
Open Circuit Voltage(Voc) [V]	48.80	48.80	48.80	48.90	48.90	Maximum Series Fuse	25A
Max Power Voltage(Vmp) [V]	41.30	41.30	41.30	41.40	41.40	Maximum Static Load,Front*	5400Pa(112 lb/ft <sup>2</sup> )
Short Circuit Current(Isc) [A]	11.98	12.55	13.12	13.69	14.26	Maximum Static Load,Back*	2400Pa(50 lb/ft <sup>2</sup> )
Max Power Current(Imp) [A]	11.31	11.85	12.39	12.90	13.44	NOCT	45±2°C
*For NexTracker installations static loading performance: front load measure 2400Pa, while back load measures 2400Pa.						Bifaciality**	70%±10%
**Bifaciality=Pmax,rear/Rated Pmax,front						Fire Performance	UL Type 29

**CHARACTERISTICS**

Current-Voltage Curve JAM72D20-440/MB



Power-Voltage Curve JAM72D20-440/MB



Current-Voltage Curve JAM72D20-440/MB

