

## JNMM144-435~455(L)

"L" after the module type indicates that the type is suitable for 1000V DC.

### High efficiency mono solar module

#### JNMM144

Ga-doped silicon wafer, reduce LID and LeTID. SE technology effectively improves cell conversion efficiency.

Optimized anti-reflective film and high-impedance encapsulating material to obtain excellent anti-PID performance.

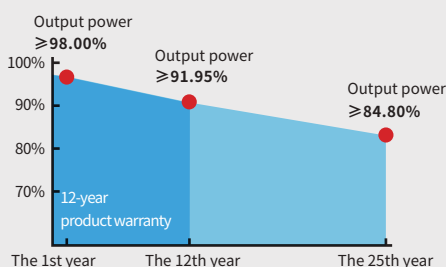
MBB and half-cell design to reduce shadow effects, improve module reliability and reduces loss.

#### CERTIFICATION



TUV: IEC/EN 61215, IEC/EN 61730  
BIS: IS 14286/IEC 61215, IS/IEC 61730  
GB/T 19001-2016/ISO 9001:2015  
GB/T 24001-2016/ISO 14001:2015  
GB/T 45001-2020/ISO 45001:2018  
CNAS-CL01:ISO/IEC 17025:2017

#### QUALITY ASSURANCE



#### Advanced production process

Optimized MBB design  
Cell efficiency >23.0%



#### Superior quality control

Full automatic production line  
MES and ERP digitizing logistics management  
100% three times EL and appearance inspection



#### Excellent power generation performance

0~+5W positive power tolerance  
Improved low light irradiance performance and low degradation



#### Stable mechanical performance

Passed rigorous hail test  
Withstands 5400Pa snow and 2400Pa wind loads



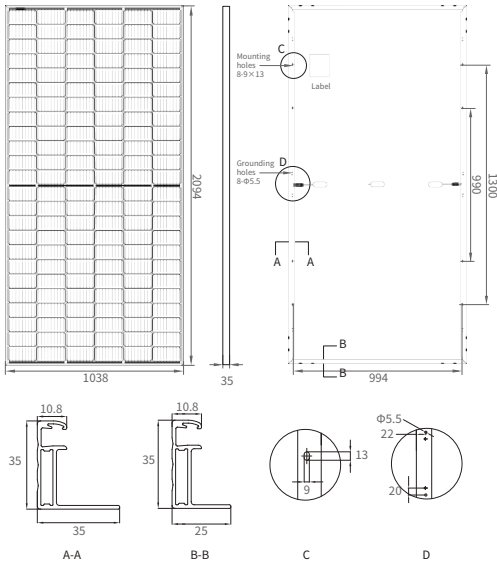
#### Long weather resistance

Excellent anti-PID performance  
Certified in fireproofing for safety



#### JINNENG CLEAN ENERGY TECHNOLOGY LTD JINNENG PHOTOVOLTAIC TECHNOLOGY LTD

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**MECHANICAL PARAMETERS**

Cell (mm)	166*83 Mono
Dimensions (L*W*H) (mm)	2094*1038*35
Weight (kg)	23.3
Cable Cross Section Size (mm <sup>2</sup> )	4
No. of Cells & Connections	144(6*24)
No. of Diodes	3

<b>QUALIFICATION</b>	
Temperature Cycling Range (°C)	-40~+85
Max. Series Fuse Rating (A)	20
Max. Wind Load / Max. Snow Load (Pa)	2400 / 5400
Hot Spot Rate	100% Free
Fire Rating	Class C
Junction Box & Connector Protection Grade	IP68

**ELECTRICAL PARAMETERS**

Module Type	(1000V DC)	JNMM144-435L	JNMM144-440L	JNMM144-445L	JNMM144-450L	JNMM144-455L
	(1500V DC)	JNMM144-435	JNMM144-440	JNMM144-445	JNMM144-450	JNMM144-455
<b>STC</b> AM1.5 1000W/m <sup>2</sup> Cell Temperature 25°C	Max. Power at STC (Pmpp/W)	435	440	445	450	455
	Output Tolerance (W)	0~+5	0~+5	0~+5	0~+5	0~+5
	Max. Power Voltage (Vmp/V)	40.77	40.97	41.16	41.36	41.56
	Max. Power Current (Imp/A)	10.67	10.74	10.82	10.89	10.96
	Open Circuit Voltage (Voc/V)	49.39	49.58	49.78	49.98	50.18
	Short Circuit Current (Isc/A)	11.28	11.35	11.42	11.50	11.58
	Module Efficiency (%)	20.01	20.24	20.47	20.70	20.93
<b>NMOT</b> AM1.5 800W/m <sup>2</sup> Ambient Temperature 20°C Wind Speed 1m/s	Max. Power at NMOT (Pmpp/W)	327.4	331.2	334.9	338.7	342.5
	Max. Power Voltage (Vmp/V)	38.36	38.54	38.69	38.88	39.06
	Max. Power Current (Imp/A)	8.54	8.59	8.66	8.71	8.77
	Open Circuit Voltage (Voc/V)	46.63	46.81	47.00	47.18	47.37
	Short Circuit Current (Isc/A)	9.08	9.14	9.19	9.26	9.32

\*Measurement tolerance: Pmax: ±3%, Voc: ±3%; Isc: ±5%.

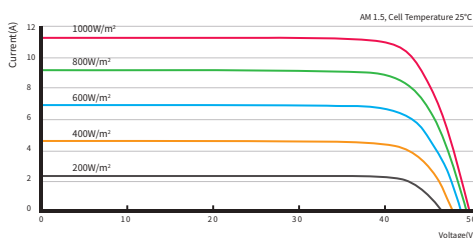
**PACKING CONFIGURATION**

Pieces Per Pallet	31
Pallets Per Stack	2
Stacks Per Container	11
Pieces Per Container	682

**TEMPERATURE COEFFICIENTS**

Nominal Module Operating Temperature (NMOT)	43±2°C
Temperature Coefficient Voltage (Voc)	-0.29 %/°C
Temperature Coefficient Current (Isc)	0.04 %/°C
Temperature Coefficient Power (Pm)	-0.35 %/°C

**I-V CURVE(445W)**



**Optional**

Connector Type	<input type="checkbox"/> MC4 Compatible	<input type="checkbox"/> MC4
Cable Length	<input type="checkbox"/> 400mm / 200mm	<input type="checkbox"/> Customized
Frame Color	<input type="checkbox"/> Silver	<input type="checkbox"/> Black
Max. System Voltage	<input type="checkbox"/> 1000V	<input type="checkbox"/> 1500V

Notes: