



# JS 650~670W 132M12

## MONO 12BB HALF-CUT MODULE

▲ **1.6°C**

It's temperature is 1.6°C lower than that of the conventional module

▲ **4%**

4% more energy generation



### ▲ Half-Cut technique leads to increased power output

When the cells are cut into halves, the current are also halved, which enables less internal loss. Series-parallel wiring improves power performance. The working temperature of module and junction box are lower than that of conventional types, which effectively reduces the hot spot risk and reduces overall module damage.



### ▲ Reduced encapsulation loss due to reduced current

HC module is of lower current and lower CTM loss at around 0.2%, while the CTM loss of conventional module is 1%.



### ▲ Series-parallel wiring mode results in reduced shading loss

Series-parallel wiring will not only reduce power lows from shade but also improves the effective use of supports and space.

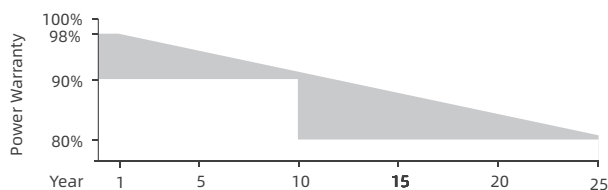


### ▲ Excellent temperature performance

The temperature of HC module is 1.6 °C lower than that of the conventional module under the same working condition, which results less power loss.

## LINEAR PERFORMANCE WARRANTY

2-25 years decay < 0.55% annually on average



**1500v**

### ▲ 1500V high system voltage design

ISO 9001: 2015  
Quality Management System

IEC 61215 / IEC 61730

ISO 14001: 2015  
Environmental Management System

OHSAS 18001: 2007  
Occupational Health & Safety Managemnet System

## CERTIFICATES

\*Certification requirements vary in different markets, please consult with JShine Solar Optronics sales team for appropriate certification.



## ELECTRICAL PARAMETERS @ STC

Max. Power Output Pmax (W)	650	655	660	665	670
Power Tolerance	0~+3%	0~+3%	0~+3%	0~+3%	0~+3%
Max. Power Voltage Vmp (V)	37.91	38.11	38.29	38.49	38.69
Max. Power Current Imp (A)	17.15	17.19	17.24	17.28	17.32
Open Circuit Voltage Voc (V)	45.00	45.21	45.39	45.59	45.79
Short Circuit Current Isc (A)	18.38	18.44	18.47	18.51	18.55
Module Efficiency (%)	20.93	21.09	21.25	21.41	21.57

\*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass 1.5

\*Measurement Tolerance (±3.0%)

## ELECTRICAL PARAMETERS @ NOCT

Max. Power Output Pmax (W)	483	487	491	494	499
Max. Power Voltage Vmp (V)	34.67	34.83	35.01	35.19	35.26
Max. Power Current Imp (A)	13.94	13.99	14.02	14.05	14.16
Open Circuit Voltage Voc (V)	41.83	42.02	42.19	42.37	42.58
Short Circuit Current Isc (A)	14.85	14.89	14.92	14.95	14.98

\*NOCT(Nominal Operating Cell Temperature): Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s

## TEMPERATURE COEFFICIENTS

Temperature Coefficients of Pmp	-0.34%/°C
Temperature Coefficients of Voc	-0.25%/°C
Temperature Coefficients of Isc	+0.040%/°C

## MECHANICAL PARAMETERS

Cell Type	Mono 210x105mm
Number of Cells	132pcs(6x22)
Dimensions (L*W*H)	2384x1303x35mm
Weight	33.7kg
Frame	Anodised Aluminum
Junction Box	IP67, 3 bypass diodes
Cable, Length	4.0mm <sup>2</sup> , 300mm

## OPERATING CONDITION

Maximum System Voltage(V)	1000(DC)	1500(DC)
Operating Temperature(°C)	-40~+85	
Max. Wind Load / Snow Load(pa)	2400/5400	
Max. Over Current(A)	30	
Fire Rating	Class C	
NOCT(°C)	45±2	

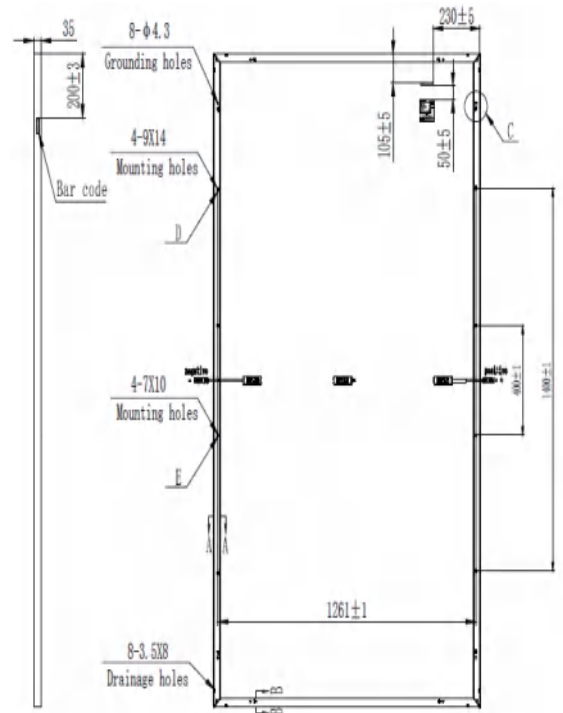
## PACKAGE INFORMATION

Container 40'HQ	558pcs
Quantity / Pallet	CTNR: 31pcs

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## ASSEMBLY DRAWING (Unit:mm)



## I-V Curves

