

# JW-HD144N

N-type

Bifacial Double Glass Mono Module

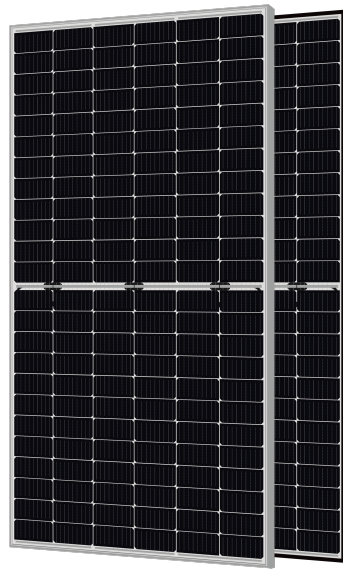
**445-470W**

IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018: Occupational health and safety management systems



**470W**

Maximum Power Output

**21.59%**

Maximum Module Efficiency

**0~+5W**

Power Output Tolerance



## 10-30% Additional Power Generation

30 years lifespan brings 10-30% additional power generation comparing with conventional P-type module



## ZERO LID (Light Induced Degradation)

N-type solar cell has no LID naturally which can increase power generation



## Lower LCOE

Higher bifaciality, higher power output and lower BOS cost



## Better Weak Illumination Response

Higher power output even under low-light environments like on cloudy or foggy days



## Better Temperature Coefficient

Higher power generation under working conditions, thanks to passivating contact cell technology



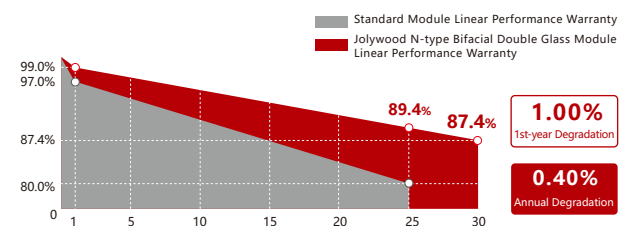
## Wider Applicability

More application scenes like BIPV, vertical installation, snowfield, high-humid, windy and dusty area

## Jolywood Delivers Reliable Performance Over Time

- Leader of N-type bifacial manufacturer
- Full-automatic facility and industry-leading technology
- Best-in-class durability and reliability
- BNEF Tier One

## Linear Performance Warranty



12 Years Product Material & Workmanship

30 Years Linear Performance Warranty

# JW-HD144N Series | N-type Bifacial Double Glass Mono Module

## Electrical Properties | STC\*

Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (P <sub>max</sub> ) (W)	445	450	455	460	465	470
MPP Voltage (V <sub>mp</sub> ) (V)	41.4	41.6	41.8	42.0	42.2	42.4
MPP Current (I <sub>mp</sub> ) (A)	10.75	10.82	10.89	10.96	11.02	11.09
Open Circuit Voltage (V <sub>oc</sub> ) (V)	49.8	50.0	50.2	50.4	50.6	50.8
Short Circuit Current (I <sub>sc</sub> ) (A)	11.36	11.43	11.50	11.56	11.62	11.69
Module Efficiency (%)	20.44	20.67	20.90	21.13	21.36	21.59

\*STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, AM1.5  
The data above is for reference only and the actual data is in accordance with the practical testing  
Power Measurement Tolerance ±3%

## Electrical Properties | NOCT\*

Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (P <sub>max</sub> ) (W)	337	341	345	349	352	356
MPP Voltage (V <sub>mp</sub> ) (V)	38.9	39.1	39.3	39.5	39.7	39.8
MPP Current (I <sub>mp</sub> ) (A)	8.67	8.72	8.78	8.84	8.88	8.94
Open Circuit Voltage (V <sub>oc</sub> ) (V)	47.6	47.8	48.0	48.2	48.4	48.6
Short Circuit Current (I <sub>sc</sub> ) (A)	9.16	9.22	9.27	9.32	9.37	9.43

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

## Operating Properties

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage (V)	1500V DC (IEC)
Maximum Series Fuse Rating (A)	25
Power Tolerance	0~+5W
Bifaciality*	80%

\*Bifaciality=P<sub>maxrear</sub> (STC) /P<sub>maxfront</sub> (STC) , Bifaciality tolerance:±5%

## Temperature Coefficient

Temperature Coefficient of P <sub>max</sub> *	-0.300%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.250%/°C
Temperature Coefficient of I <sub>sc</sub>	+0.045%/°C
Nominal Operating Cell Temperature (NOCT)	42±2°C

\*Temperature Coefficient of P<sub>max</sub>±0.03%/°C

## Mechanical Properties

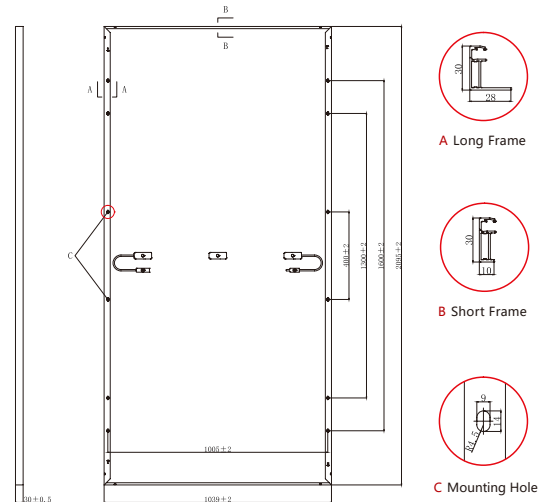
Cell Size	166.00mm*83.00mm
Number of Cells	144pcs(12*12)
Module Dimension	2095mm*1039mm*30mm
Weight	28kg
Front / Rear Glass*	2.0mm/2.0mm
Frame	Anodized Aluminium Alloy
Junction Box	IP68 (3 diodes)
Length of Cable	4.0mm <sup>2</sup> , +300mm/-180mm (Cable length can be customized )

\*Heat strengthened glass

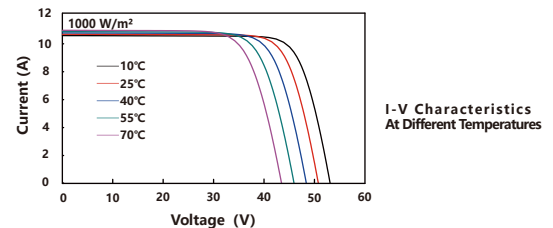
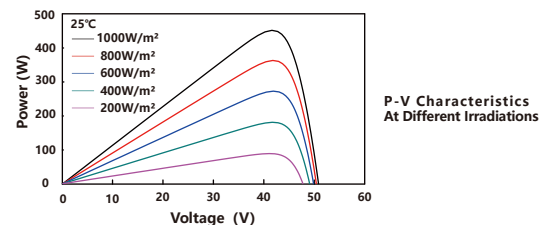
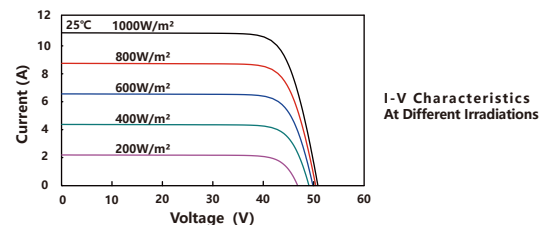
## With Different Power Generation Gain (regarding 460W as an example)

Power Gain (%)	Peak Power (P <sub>max</sub> ) (W)	MPP Voltage (V <sub>mp</sub> ) (V)	MPP Current (I <sub>mp</sub> ) (A)	Open Circuit Voltage (V <sub>oc</sub> ) (V)	Short Circuit Current (I <sub>sc</sub> ) (A)
10	497	42.0	11.83	50.4	12.46
15	515	42.0	12.26	50.4	12.91
20	534	42.0	12.69	50.4	13.36
25	552	42.1	13.12	50.5	13.81
30	570	42.1	13.56	50.5	14.27

## Engineering Drawing (unit: mm)



## Characteristic Curves | HD144N-460



## Packaging Configuration

Packing Type	20'GP	40'GP	40'HQ
Piece/Pallet		36	
Pallet/Container	5	11	22
Piece/Container	180	396	792

\*The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement, Jolywood (Taizhou) Solar Technology Co., Ltd. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

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