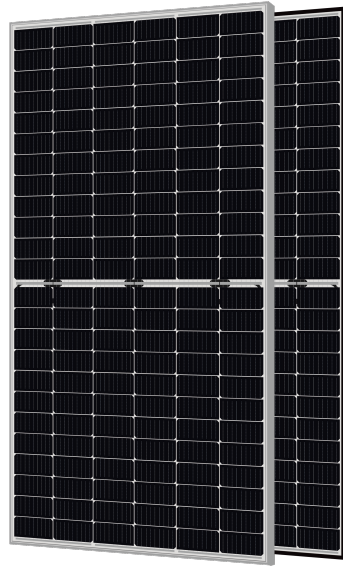


# JW-HD144N

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



### Better Weak Illumination Response

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



### ZERO LID (Light Induced Degradation)

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



### Better Temperature Coefficient

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



### Lower LCOE

Higher bifaciality, higher power output and lower BOS cost



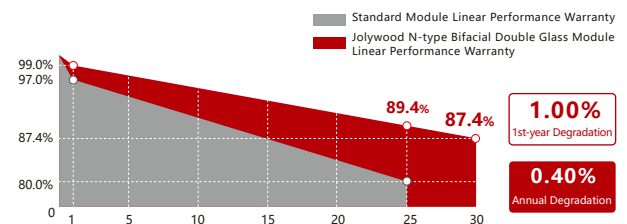
### Wider Applicability

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 (Pmax) (W)           | 445        | 450        | 455        | 460        | 465        | 470        |
| MPP Voltage (Vmp) (V)           | 41.4       | 41.6       | 41.8       | 42.0       | 42.2       | 42.4       |
| MPP Current (Imp) (A)           | 10.75      | 10.82      | 10.89      | 10.96      | 11.02      | 11.09      |
| Open Circuit Voltage (Voc) (V)  | 49.8       | 50.0       | 50.2       | 50.4       | 50.6       | 50.8       |
| Short Circuit Current (Isc) (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 (Pmax) (W)           | 337        | 341        | 345        | 349        | 352        | 356        |
| MPP Voltage (Vmp) (V)           | 38.9       | 39.1       | 39.3       | 39.5       | 39.7       | 39.8       |
| MPP Current (Imp) (A)           | 8.67       | 8.72       | 8.78       | 8.84       | 8.88       | 8.94       |
| Open Circuit Voltage (Voc) (V)  | 47.6       | 47.8       | 48.0       | 48.2       | 48.4       | 48.6       |
| Short Circuit Current (Isc) (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=Pmaxrear (STC) /Pmaxfront (STC) , Bifaciality tolerance:±5%

## Temperature Coefficient

|   |            |
|---|------------|
| Temperature Coefficient of Pmax*          | -0.300%/°C |
| Temperature Coefficient of Voc            | -0.250%/°C |
| Temperature Coefficient of Isc            | +0.045%/°C |
| Nominal Operating Cell Temperature (NOCT) | 42±2°C     |

\*Temperature Coefficient of Pmax±0.03%/°C

## Mechanical Properties

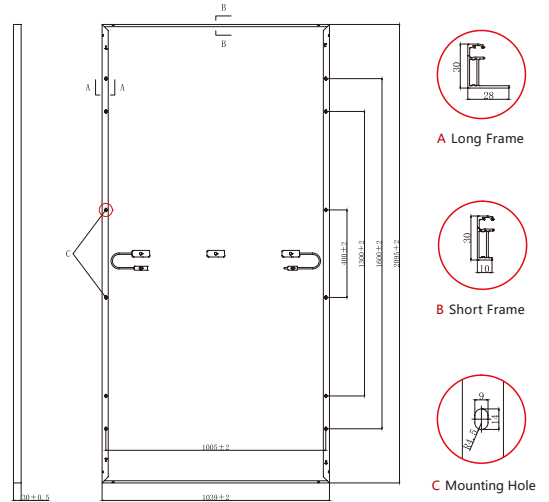
|                     |   |
|---------------------|---|
| Cell Size           | 166.00mm*83.00mm  |
| Number of Cells     | 144pcs(12*12)   |
| Module Dimension    | 2095mm*1039mm*30mm  |
| Weight              | 28kg  |
| Front / Rear Glass* | 2.0mm/2.0mm   |
| Frame               | Anodized Aluminium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

\*Heat strengthened glass

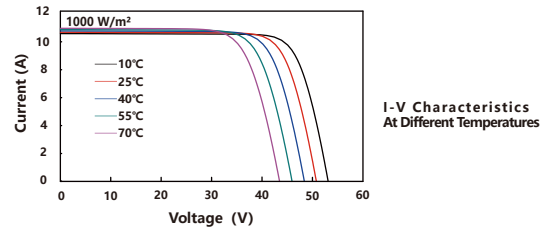
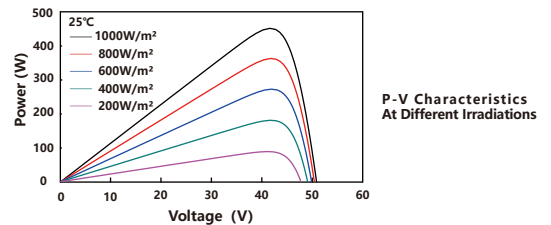
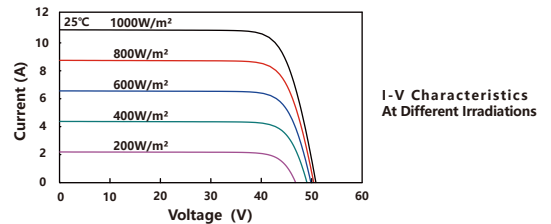
## With Different Power Generation Gain (regarding 460W as an example)

| Power Gain (%) | Peak Power (Pmax) (W) | MPP Voltage (Vmp) (V) | MPP Current (Imp) (A) | Open Circuit Voltage (Voc) (V) | Short Circuit Current (Isc) (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.

