

# JW-HD96N-R2

n-type Bifacial Dual-Glass **Glazed Black** Module

**445-470W**



**470W**  
Maximum Power Output

**23.5%**  
Maximum Module Efficiency

**0~+3%**  
Power Output Tolerance



**Aesthetic Design**

Framed in pure black with ultra-thin busbars for seamless visual integration.



**Zero LID (Light-Induced Degradation)**

n-type cells are naturally LID-free, ensuring stable power output.



**Optimized Temperature Coefficient**

Lower operating temperature and optimized temperature coefficient (-0.28%/°C) brings more power generation.



**Better Low-light Performance**

Higher power output even under low-light conditions such as cloudy or foggy days.



**Ultra-High Reliability**

J-TOPCon New technology, greater resistance to hot-spot.



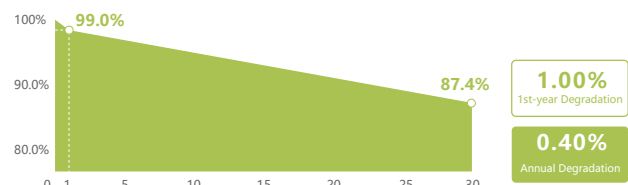
**Wider Application Scenarios**

Bifacial and dual-glass design enables broader applications like BIPV, vertical installation, snow/sand/high-humidity regions.



IEC 61215(2021)/IEC 61730(2023)/IEC 61701/IEC 62716  
 ISO 9001:2015: Quality Management System  
 ISO 14001:2015: Environment Management System  
 ISO 45001:2018: Occupational health and safety  
 IEC 62941:2019: Quality system for PV module manufacturing

**Linear Performance Warranty**



25 Years Product Material & Workmanship / 30 Years Linear Performance Warranty

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### 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)	29.80	29.98	30.16	30.34	30.52	30.70
MPP Current (Imp) (A)	14.93	15.01	15.09	15.16	15.24	15.31
Open Circuit Voltage (Voc) (V)	34.71	34.91	35.11	35.31	35.51	35.71
Short Circuit Current (Isc) (A)	15.79	15.86	15.93	16.00	16.07	16.14
Module Efficiency (%)	22.3	22.5	22.8	23.0	23.3	23.5

\*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 | NMOT\*

Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (Pmax) (W)	333	337	341	345	348	352
MPP Voltage (Vmp) (V)	28.53	28.71	28.88	29.05	29.22	29.40
MPP Current (Imp) (A)	11.68	11.74	11.80	11.86	11.92	11.98
Open Circuit Voltage (Voc) (V)	33.24	33.43	33.62	33.81	34.00	34.20
Short Circuit Current (Isc) (A)	12.76	12.81	12.87	12.92	12.98	13.04

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

### Electrical Properties Under Different Rear Gain | JW-HD96N-R2-460

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	506.00	30.34	16.68	35.31	17.60
15	529.00	30.34	17.44	35.31	18.40
20	552.00	30.34	18.19	35.31	19.20
25	575.00	30.44	18.89	35.41	19.95
30	598.00	30.44	19.65	35.41	20.75

### Operating Properties

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage (V)	1500V DC (IEC)
Maximum Series Fuse Rating (A)	35
Bifaciality*	80%
Static Load	Front side 5400Pa, Rear side 2400Pa

\*Bifaciality = Pmaxrear (STC) / Pmaxfront (STC), Bifaciality tolerance: ±5%

### Temperature Coefficient

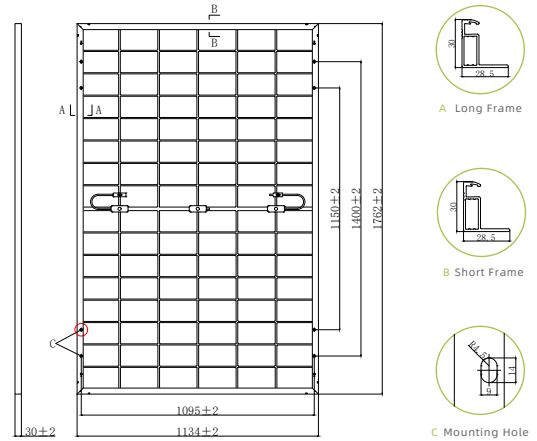
Temperature Coefficient of Pmax	-0.280%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Isc	+0.045%/°C
Nominal Operating Cell Temperature	45±2°C

### Mechanical Properties

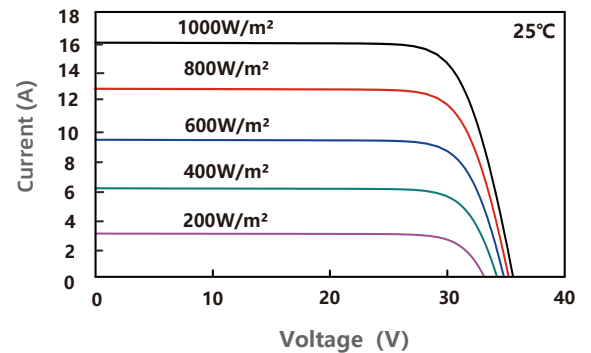
Number of Cells	96pcs
Module Dimension	1762mm*1134mm*30mm
Weight	24.6kg
Front / Rear Glass	2.0mm/2.0mm Heat-strengthened glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 (3 diodes)
Length of Cable	4.0mm <sup>2</sup> , +1200mm/-1200mm (Cable length can be customized)
Packaging Configuration	37pcs/Pallet, 962pcs/40'HQ

\*The specification and key features described in this datasheet may deviate slightly and aren't 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.

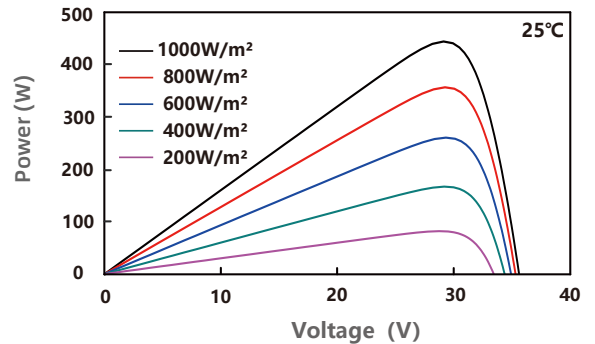
### Engineering Drawing (unit: mm)



### Characteristic Curves | JW-HD96N-R2-460



### I-V Characteristics At Different Irradiations



### P-V Characteristics At Different Irradiations

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