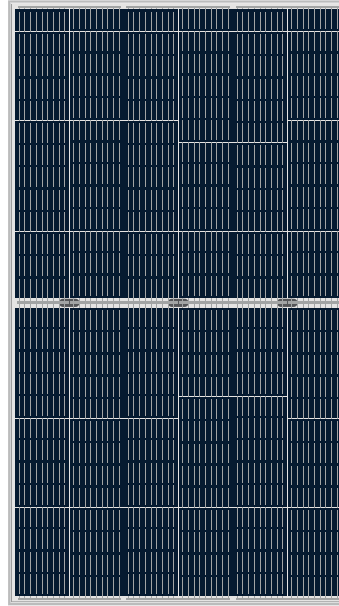


JW-HD156N

N-type Bifacial High Efficiency
Mono Silicon Half-Cell Double Glass Module

440-465W

Cell Type



465W

Maximum Power Output

21.42%

Maximum Module Efficiency

0~+5W

Power Output Guarantee



Additional Power Generation Gain

At least 30-year product life, more than 10%- 30% additional power gain comparing with conventional module



ZERO LID (Light Induced Degradation)

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



Lower LCOE

High power and 1500V system voltage, saving BOS cost



Better Weak Illumination Response

Wide spectral response, higher power output even under low-light settings like smog or cloudy days



Better Temperature Coefficient

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



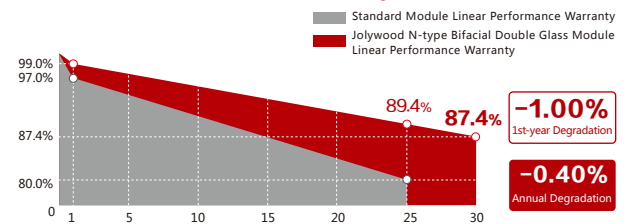
Wider Applicability

BIPV, vertical installation, snowfield, high-humid area, windy and dusty area

Jolywood Delivers Reliable Performance Over Time

- Leader of n-type bifacial technology
- Fully automatic facility and world-class technology
- Long term reliability tests
- 100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 Years Product Material & Workmanship 30 Years Linear Performance Warranty

Additional Insurance Backed by Munich Re



JW-HD156N Series

N-type Bifacial High Efficiency Mono Silicon Half-Cell Double Glass Module

Electrical Properties | STC*

Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (Pmax) (W)	440	445	450	455	460	465
MPP Voltage (Vmp) (V)	45.5	45.8	46.1	46.3	46.5	46.7
MPP Current (Imp) (A)	9.68	9.72	9.77	9.83	9.90	9.97
Open Circuit Voltage (Voc) (V)	54.1	54.4	54.7	54.9	55.2	55.5
Short Circuit Current (Isc) (A)	10.17	10.22	10.28	10.34	10.41	10.47
Module Efficiency (%)	20.26	20.49	20.73	20.96	21.19	21.42

*STC: Irradiance 1000 W/m², Cell Temperature 25°C, AM1.5
The data above is for reference only and the actual data is in accordance with the practical testing

Electrical Properties | NOCT*

Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (Pmax) (W)	333	337	340	344	348	352
MPP Voltage (Vmp) (V)	42.6	43.0	43.2	43.4	43.6	43.8
MPP Current (Imp) (A)	7.80	7.84	7.88	7.93	7.98	8.04
Open Circuit Voltage (Voc) (V)	51.7	52.0	52.3	52.5	52.8	53.0
Short Circuit Current (Isc) (A)	8.20	8.24	8.29	8.34	8.39	8.44

*NOCT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s

Operating Properties

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage (V)	1500V (IEC)
Maximum Series Fuse Rating(A)	20
Power Tolerance	0~+5W
Bifaciality*	80%

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

Temperature Coefficient

Temperature Coefficient of Pmax*	-0.320%/°C
Temperature Coefficient of Voc	-0.260%/°C
Temperature Coefficient of Isc	+0.046%/°C
Nominal Operating Cell Temperature (NOCT)	42±2°C

*Temperature Coefficient of Pmax±0.03%/°C

Mechanical Properties

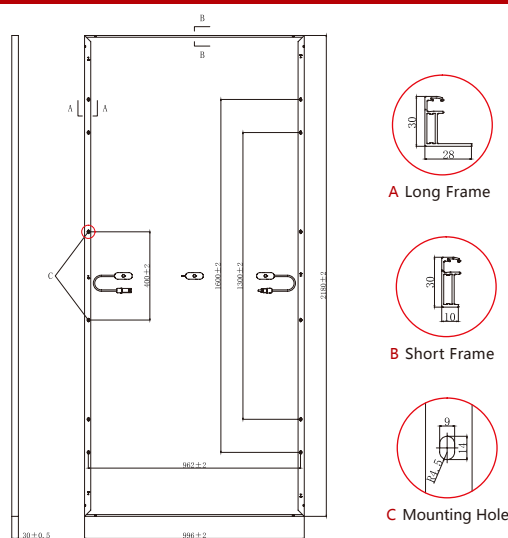
Cell Type	158.75mm*79.375mm
Number of Cells	156pcs(12*13)
Dimension	2180mm*996mm*30mm
Weight	28Kg
Front /Rear Glass*	2.0mm/2.0mm
Frame	Anodized Aluminium
Junction Box	IP68 (3 diodes)
Length of Cable*	4.0mm ² , 300mm
Connector	MC4 Compatible

*Heat strengthened glass
*Cable length can be customized

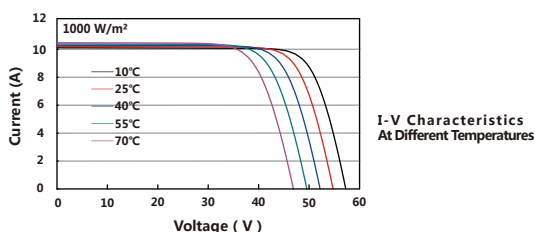
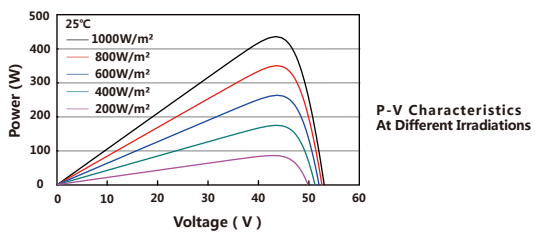
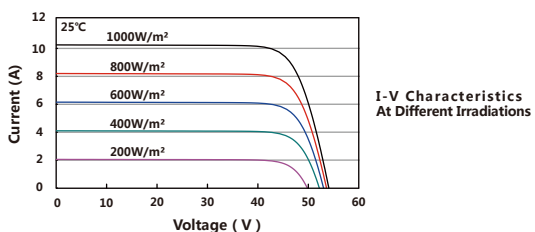
With Different Power Generation Gain (regarding 440W as an example)

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	475	45.5	10.44	54.1	10.97
15	493	45.5	10.82	54.1	11.37
20	510	45.6	11.20	54.2	11.77
25	528	45.6	11.58	54.2	12.17
30	546	45.6	11.96	54.2	12.57

Engineering Drawing (unit : mm)



Characteristic Curves | HD144N-440



Packaging Configuration

Packing Type	20'GP	40'GP	40'HQ
Piece/Pallet		35	
Pallet/Container	5	10	20
Piece/Container	175	350	700

*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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