



Engineering & Construction



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GRE.EEC.R.99.CL.P.08602.03.001.00

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TITLE:

AVAILABLE LANGUAGE: EN

# PV MODULE

# DATASHEET

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| REV. | DATE       | DESCRIPTION    | PREPARED | VERIFIED | APPROVED |
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| 00   | 02/11/2021 | First issuance | SS       | LX       | CZ       |

### GRE VALIDATION

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VERIFIED BY

VALIDATED BY

PROJECT / PLANT

EL MANZANO SOLAR

### GRE CODE

| GROUP | FUNCION | TYPE | ISSUER | COUNTRY | TEC | PLANT | SYSTEM | PROGRESSIVE | REVISION |   |   |   |   |   |   |   |   |   |   |
|-------|---------|------|--------|---------|-----|-------|--------|-------------|----------|---|---|---|---|---|---|---|---|---|---|
| GRE   | EEC     | R    | 9      | 9       | C   | L     | P      | 0           | 8        | 6 | 0 | 2 | 0 | 3 | 0 | 0 | 1 | 0 | 0 |

CLASSIFICATION For Validation

UTILIZATION SCOPE Issued for Construction

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**1. PV MODULE**

The PV module considered is model HD120N-12BB-605-630-210. The power class considered for El Manzano Project are:

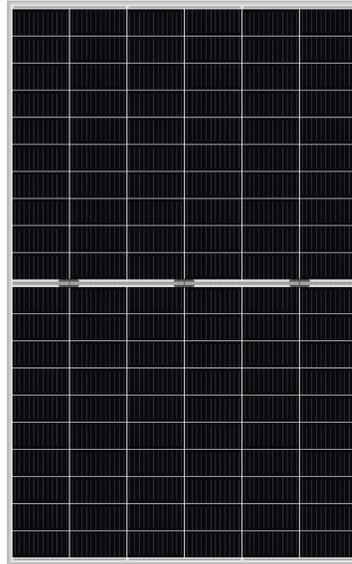
- 610 Peak Power (Pmax)(W)
- 615 Peak Power (Pmax)(W)

# JW-HD120N

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

## 605-630W

Cell Type: 12BB



### 630W

Maximum Power Output

### 22.26%

Maximum Module Efficiency

### 0~+5W

Power Output Tolerance



#### Additional Power Generation Gain

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



#### Better Weak Illumination Response

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



#### ZERO LID (Light Induced Degradation)

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



#### Better Temperature Coefficient

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



#### Lower LCOE

High bifaciality, high power output, saving BOS cost



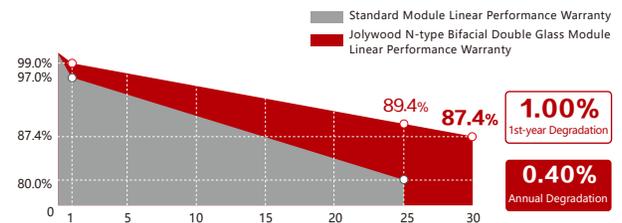
#### Wider Applicability

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 passed
- 100% EL tests

### Linear Performance Warranty



12 Years Product Material & Workmanship 30 Years Linear Performance Warranty

### Additional Insurance Backed by Munich Re



# JW-HD120N Series

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

### Electrical Properties | STC\*

| Testing Condition               | Front Side |
|---------------------------------|------------|------------|------------|------------|------------|------------|
| Peak Power (Pmax) (W)           | 605        | 610        | 615        | 620        | 625        | 630        |
| MPP Voltage (Vmp) (V)           | 34.7       | 34.9       | 35.1       | 35.3       | 35.5       | 35.7       |
| MPP Current (Imp) (A)           | 17.45      | 17.49      | 17.53      | 17.58      | 17.62      | 17.66      |
| Open Circuit Voltage (Voc) (V)  | 41.5       | 41.7       | 41.9       | 42.1       | 42.3       | 42.5       |
| Short Circuit Current (Isc) (A) | 18.45      | 18.50      | 18.55      | 18.60      | 18.65      | 18.70      |
| Module Efficiency (%)           | 21.38      | 21.55      | 21.73      | 21.91      | 22.08      | 22.26      |

\*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

### Electrical Properties | NOCT\*

| Testing Condition               | Front Side |
|---------------------------------|------------|------------|------------|------------|------------|------------|
| Peak Power (Pmax) (W)           | 458        | 461        | 465        | 469        | 473        | 477        |
| MPP Voltage (Vmp) (V)           | 32.5       | 32.7       | 32.9       | 33.1       | 33.3       | 33.5       |
| MPP Current (Imp) (A)           | 14.07      | 14.10      | 14.13      | 14.17      | 14.21      | 14.24      |
| Open Circuit Voltage (Voc) (V)  | 39.7       | 39.9       | 40.0       | 40.2       | 40.4       | 40.6       |
| Short Circuit Current (Isc) (A) | 14.88      | 14.92      | 14.96      | 15.00      | 15.04      | 15.08      |

\*NOCT: Irradiance at 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 (IEC) |
| Maximum Series Fuse Rating(A) | 30          |
| Power Tolerance               | 0~+5W       |
| Bifaciality*                  | 75%         |

\*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

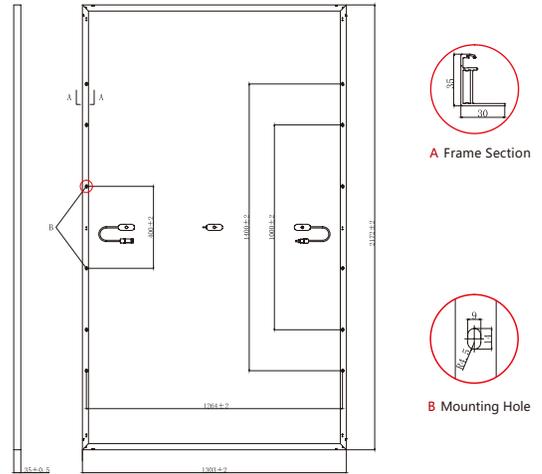
|                    |                            |
|--------------------|----------------------------|
| Cell Type          | 210.00mm*105.00mm          |
| Number of Cells    | 120pcs(12*10)              |
| Dimension          | 2172mm*1303mm*35mm         |
| Weight             | 35.5kg                     |
| Front /Rear Glass* | 2.0mm/2.0mm                |
| Frame              | Anodized Aluminium         |
| Junction Box       | IP68 (3 diodes)            |
| Length of Cable*   | 4.0mm <sup>2</sup> , 300mm |
| Connector          | MC4 Compatible             |

\*Heat strengthened glass  
\*Cable length can be customized

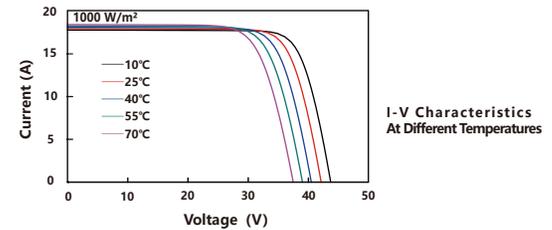
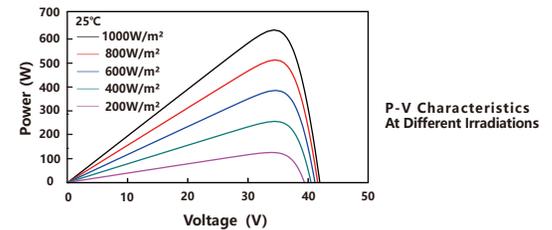
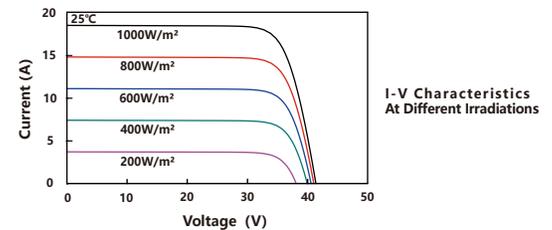
### With Different Power Generation Gain (regarding 620W as an example)

| 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             | 670                   | 35.3                  | 18.97                 | 42.1                           | 20.07                           |
| 15             | 694                   | 35.3                  | 19.66                 | 42.1                           | 20.80                           |
| 20             | 719                   | 35.3                  | 20.36                 | 42.1                           | 21.54                           |
| 25             | 744                   | 35.3                  | 21.05                 | 42.1                           | 22.27                           |
| 30             | 769                   | 35.4                  | 21.75                 | 42.2                           | 23.01                           |

### Engineering Drawing (unit: mm)



### Characteristic Curves | HD120N-620



### Packaging Configuration

|                  |       |
|------------------|-------|
| Packing Type     | 40'HQ |
| Piece/Pallet     | 31    |
| Pallet/Container | 18    |
| Piece/Container  | 558   |

\*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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