

# G12R<sup>+</sup>-66P

## N-type Bifacial Double Glass Module

HSM-GHF-NM605~630

## 630W

Maximum Power Output

## 23.3%

Maximum Efficiency

### High Energy Yield

- High-density cell package, increasing 2% cells
- Lower temperature coefficient (Pmax): -0.29%/°C
- Up to 80% power bifaciality

### Industry-leading G12 Wafer

- <1% degradation in the first year
- Smaller wafer chamfer, larger light receiving area
- Wafer: 210R<sup>+</sup>, Thickness: ≤130μm

### Superior Customer Value

- Integrated technology: TOPCon + Shingling
- Optimized dimension design for all scenarios
- More artistic beauty with no-gap design

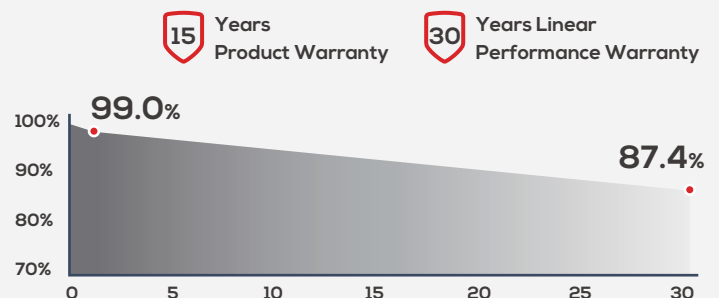
### Long-term Reliability

- 1/3 cell technology, lower current loss and hot spot risk
- Harsh environment resistance
- Damage-free laser cutting, lower micro-crack risk
- Mechanical load: Front 5400 Pa, Back 2400 Pa

### Comprehensive Products and System Certificates



### Linear Performance Warranty



\* Please refer to product warranty for details

# G12R+ -66P N-type Bifacial Double Glass Module

HSM-GHF-NM605~630

**630W**

Maximum Power

**23.3%**

Maximum Efficiency

**0~+5W**

Power Tolerance

## Electrical Parameters (STC\*)

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM1.5, Measuring Tolerance: ±2%

|                       |                      |       |       |       |       |       |       |
|-----------------------|----------------------|-------|-------|-------|-------|-------|-------|
| Maximum Power         | P <sub>max</sub> (W) | 605   | 610   | 615   | 620   | 625   | 630   |
| Open Circuit Voltage  | V <sub>oc</sub> (V)  | 47.90 | 48.10 | 48.30 | 48.50 | 48.70 | 48.90 |
| Short Circuit Current | I <sub>sc</sub> (A)  | 15.79 | 15.82 | 15.85 | 15.88 | 15.91 | 15.94 |
| Maximum Power Voltage | V <sub>mp</sub> (V)  | 40.50 | 40.75 | 41.00 | 41.25 | 41.50 | 41.75 |
| Maximum Power Current | I <sub>mp</sub> (A)  | 14.94 | 14.97 | 15.00 | 15.03 | 15.06 | 15.09 |
| Module Efficiency     | (%)                  | 22.4  | 22.6  | 22.8  | 23.0  | 23.1  | 23.3  |

## Electrical Characteristics with 10% Bifacial Gain\*

\* The additional gain from the back side depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

|                       |                      |       |       |       |       |       |       |
|-----------------------|----------------------|-------|-------|-------|-------|-------|-------|
| Maximum Power         | P <sub>max</sub> (W) | 666   | 671   | 677   | 682   | 688   | 693   |
| Open Circuit Voltage  | V <sub>oc</sub> (V)  | 47.90 | 48.10 | 48.30 | 48.50 | 48.70 | 48.90 |
| Short Circuit Current | I <sub>sc</sub> (A)  | 17.37 | 17.40 | 17.44 | 17.47 | 17.50 | 17.53 |
| Maximum Power Voltage | V <sub>mp</sub> (V)  | 40.50 | 40.75 | 41.00 | 41.25 | 41.50 | 41.75 |
| Maximum Power Current | I <sub>mp</sub> (A)  | 16.43 | 16.47 | 16.50 | 16.53 | 16.57 | 16.60 |

## Mechanical Data

\* Please refer to installation manual for details

|                     |   |
|---------------------|---|
| No. of Cells        | 198pcs (6×33)   |
| Dimension           | 2382×1134×30mm  |
| Weight              | 33.2kg  |
| Front Glass         | 2.0mm High Transmission, Heat Strengthened Glass                |
| Back Glass          | 2.0mm Heat Strengthened Glass                                   |
| Frame               | Anodized Aluminium Alloy  |
| J-Box               | IP68  |
| Cables              | 4.0mm <sup>2</sup> , +350mm, -280mm/±1400mm (can be customized) |
| Diodes              | 3   |
| Maximum Static Load | Front: 5400Pa/Back: 2400Pa*                                     |

## Temperature Coefficient

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

|  |            |   |           |
|--|------------|---|-----------|
| Nominal Module Operating Temperature*      | 43±2°C     | Temperature Coefficient of Voc              | -0.25%/°C |
| Temperature Coefficient of I <sub>sc</sub> | +0.045%/°C | Temperature Coefficient of P <sub>max</sub> | -0.29%/°C |

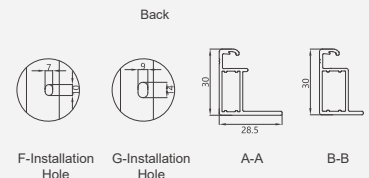
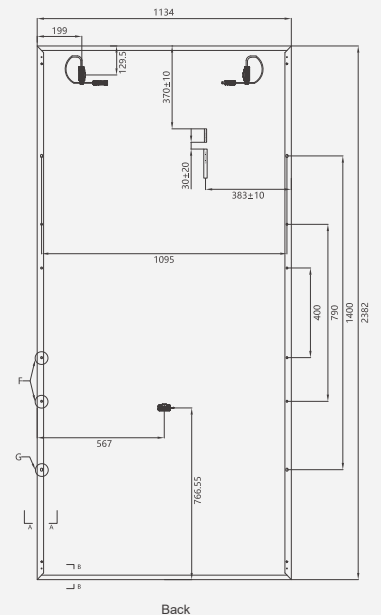
## Operating Parameters

|                            |           |
|----------------------------|-----------|
| Operating Temperature      | -40~+85°C |
| Maximum System Voltage     | 1500V DC  |
| Maximum Series Fuse Rating | 30A       |
| Power Bifaciality          | 80±5%     |

## Packaging Configuration

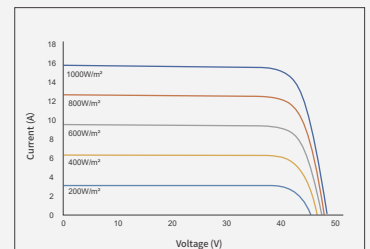
|                             |        |
|-----------------------------|--------|
| Modules per Pallet          | 36pcs  |
| Modules per 40'HQ Container | 720pcs |
| Pallets per 40'HQ Container | 20plt  |

## Engineering Drawing [Unit: mm]

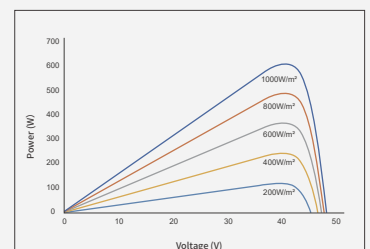


## Curve Graph

### I-V Curves (610W)



### P-V Curves (610W)



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Datasheets