

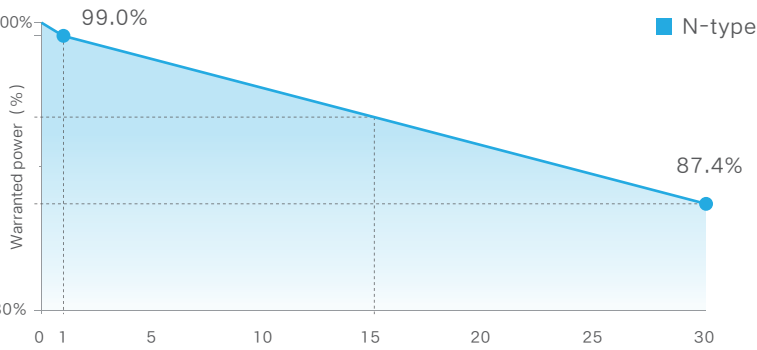
SG-48TG4D  
430-450W

N-type TOPCon Solar Double Glass Bifacial Module  
Maximum Efficiency 22.5%

Quality Certification



Product Warranty



25-year Warranty for Materials and Processing

30-year Warranty for Extra Linear Power Output

First Year Power Degradation<1%

Year 2-30 Power Degradation<0.4%

Power warranty applies at STC condition or only applies to the front side of the module

Product Performance

**Outstanding Aesthetics**  
An elegant, all-black design that can be easily integrated into various roof types

**Smaller Size**  
A lightweighted design for convenient transportation and installation

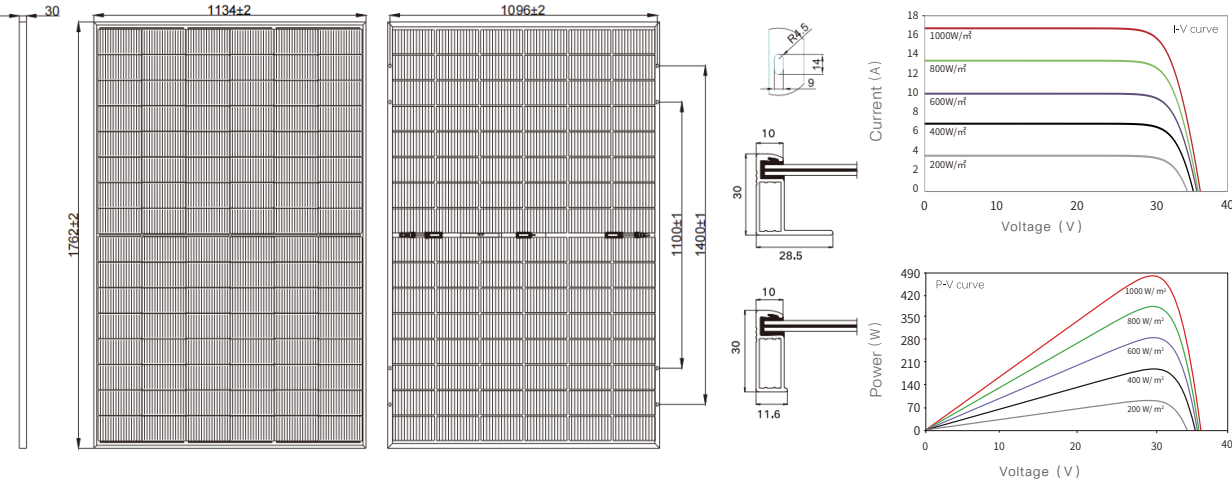
**Higher Bifacial Factor**  
The rear power output and generation capacity are 20% and 3.5% higher than PERC, respectively

**Superior Temperature Coefficient**  
Generating 1%-2% more power than P-type modules in high temperature regions

**Non-destructive Laser Cutting Technology**  
Achieving better cell strength, lower micro-cracks risk for better product reliability

**Superior Mechanical Load Capacity**  
Heavy snow load up to 5400 Pa  
wind load up to 2400 Pa

Engineering Drawings



Electrical Characteristics

| Module Type                      | SG-48TG4D - 430 | SG-48TG4D - 435 | SG-48TG4D - 440         | SG-48TG4D - 445 | SG-48TG4D - 450 |
|----------------------------------|-----------------|-----------------|-------------------------|-----------------|-----------------|
| Maximum Power Pmax (W)           | 430             | 435             | 440                     | 445             | 450             |
| Voltage at Maximum Power (Vmp/V) | 29.36           | 29.54           | 29.72                   | 29.90           | 30.08           |
| Current at Maximum Power (Imp/A) | 14.65           | 14.73           | 14.81                   | 14.89           | 14.97           |
| Open Circuit Voltage (Voc/V)     | 34.31           | 34.49           | 34.67                   | 34.85           | 35.03           |
| Short Circuit Current (Isc/A)    | 15.85           | 15.90           | 15.95                   | 16.00           | 16.05           |
| Module Efficiency (%)            | 21.5            | 21.8            | 22.0                    | 22.3            | 22.5            |
| Pmax/Voc/Isc Tolerance           | ±3%             |                 | Maximum System Voltage  |                 | DC1500V         |
| Maximum Series Fuse Rating       | 30A             |                 | Operating Temperature   |                 | -40°C~+70°C     |
| Fire Rating                      | Class C         |                 | Power Sorting Tolerance |                 | 0~+5W           |

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

|                                  |                                              |       |       |       |       |
|----------------------------------|----------------------------------------------|-------|-------|-------|-------|
| Maximum Power Pmax (W)           | 473                                          | 479   | 484   | 490   | 495   |
| Voltage at Maximum Power (Vmp/V) | 29.36                                        | 29.54 | 29.72 | 29.90 | 30.08 |
| Current at Maximum Power (Imp/A) | 16.12                                        | 16.20 | 16.29 | 16.38 | 16.47 |
| Open Circuit Voltage (Voc/V)     | 34.31                                        | 34.49 | 34.67 | 34.85 | 35.03 |
| Short Circuit Current (Isc/A)    | 17.44                                        | 17.49 | 17.55 | 17.60 | 17.66 |
| aBSI(A)                          | 19.37                                        | 19.43 | 19.49 | 19.56 | 19.62 |
| Pmax/Voc/Isc/aBSI Tolerance      | ±3%                                          |       |       |       |       |
| Bifaciality Coefficient          | φVoc: 100±3 %, φIsc: 80±10 %, φPmax: 80±10 % |       |       |       |       |

BNPI: Irradiance Front 1000W/m², Rear 135W/m² Cell Temperature 25°C, AM=1.5  
aBSI: Irradiance Front 1000W/m², Rear 300W/m² Cell Temperature 25°C, AM=1.5

Mechanical Characteristics

|                  |                                                                             |
|------------------|-----------------------------------------------------------------------------|
| Cell Type        | N- type mono-crystalline                                                    |
| Cell Orientation | 96 (2 x 48)                                                                 |
| Dimension        | 1762 x 1134 x 30mm                                                          |
| Weight           | 24.5kg                                                                      |
| Glass            | Dual glass, 2.0mm+2.0mm semi-tempered glass                                 |
| Frame            | Anodized aluminum alloy                                                     |
| Junction Box     | IP68 rated                                                                  |
| Output Cables    | 4mm², (+): 300mm, (-): 200mm or customized length                           |
| Connector Type   | Z4S-abcd(Zerun)/PV-ZH202B(Zhonghuan)/PV-HT03x(Haitian)/QC4.10-cds(QC Solar) |
| Mechanical Load  | +5400Pa / -2400Pa                                                           |

Temperature Characteristics

|                                  |           |
|----------------------------------|-----------|
| Temperature Coefficients of Pmax | -0.30%/°C |
| Temperature Coefficients of Voc  | -0.25%/°C |
| Temperature Coefficients of Isc  | 0.046%/°C |
| Temperature Rating [T98]max      | 70°C      |

Packaging Configuration

|                  |                                                        |
|------------------|--------------------------------------------------------|
| Pallet Dimension | 1792 x 1140 x 1249 mm                                  |
| Packing Detail   | 36 pcs/pallets, 72 pcs/stack, 936 pcs/ 40'HQ container |