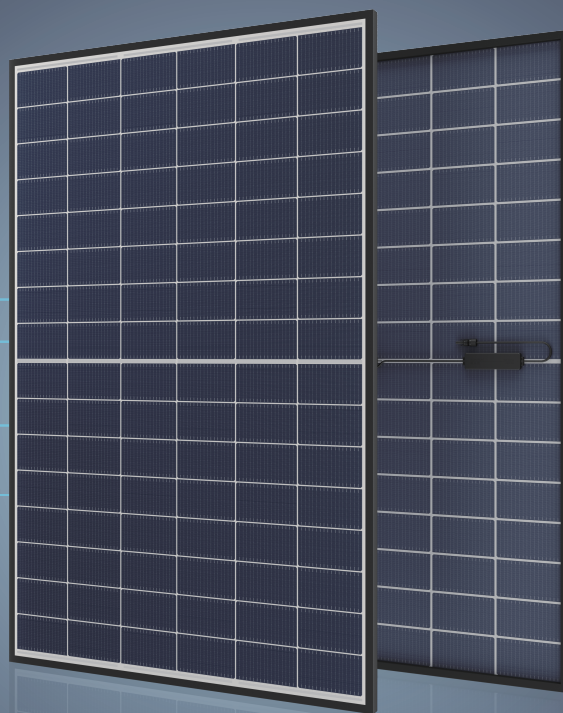




SG-48TG4D-X

455-480W

Maximum Efficiency **24.0%**

## Smart Functions

### Module-Level Monitoring

iSolarCloud Storage & Data Visualization

### Smart Pathfinding

Fault Localization & Precision Bypass

### System-Level Response

Anomaly Detection & Shutdown Time  $\leq 25s$

### Digital Lifecycle Records

Full Lifecycle Data Transparency

### Self-cleaning

More Power Generation

## Product Warranty

**25** Year

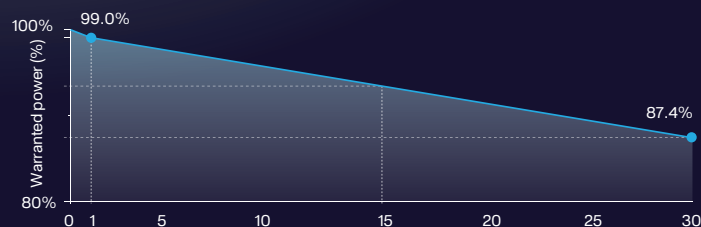
Warranty for Materials and Processing

First Year Power Degradation **<1%**

**30** Year

Warranty for Extra Linear Power Output

Year 2-30 Power Degradation **<0.4%**

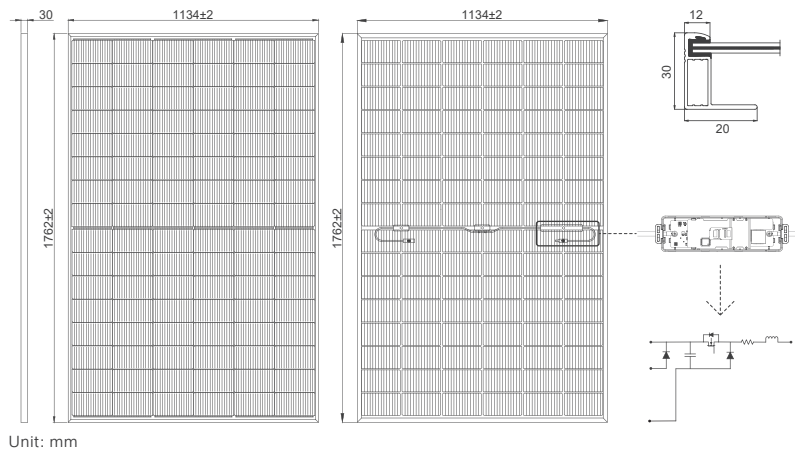


## Quality Certification

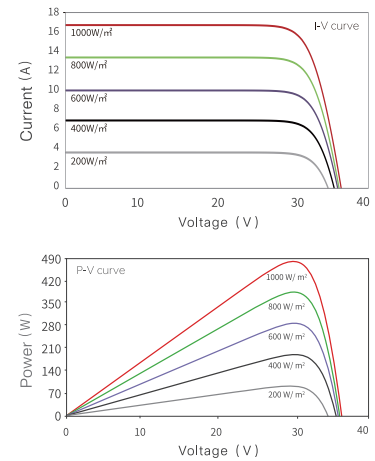


- IEC61215:2021 / IEC61730:2023
- IEC62109-3:2020
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Quality Management System
- ISO14001:2015: Environment Management System
- ISO45001:2018: Occupational health and safety management systems

## Engineering Drawings



## I-V and P-V Curves



## Specifications (STC)

|                                  |       |                        |       |       |              |       |
|----------------------------------|-------|------------------------|-------|-------|--------------|-------|
| Maximum Power Pmax (W)           | 455   | 460                    | 465   | 470   | 475          | 480   |
| Voltage at Maximum Power (Vmp/V) | 30.40 | 30.67                  | 30.94 | 31.21 | 31.48        | 31.75 |
| Current at Maximum Power (Imp/A) | 14.97 | 15.00                  | 15.03 | 15.06 | 15.09        | 15.12 |
| Open Circuit Voltage (Voc/V)     | 35.98 | 36.15                  | 36.32 | 36.49 | 36.66        | 36.83 |
| Short Circuit Current (Isc/A)    | 15.87 | 15.90                  | 15.93 | 15.96 | 15.99        | 16.02 |
| Module Efficiency (%)            | 22.8  | 23.0                   | 23.3  | 23.5  | 23.8         | 24.0  |
| Power Tolerance                  | 0~+3% | Maximum System Voltage |       |       | DC1500V      |       |
| Maximum Series Fuse Rating       | 30A   | Operating Temperature  |       |       | -40°C~-+70°C |       |
| Bifacial Factor                  | 80±5% |                        |       |       |              |       |

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

## Specifications (BNPI)

|                                  |       |       |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|-------|-------|
| Maximum Power Pmax (W)           | 501   | 506   | 512   | 517   | 523   | 528   |
| Voltage at Maximum Power (Vmp/V) | 30.40 | 30.67 | 30.94 | 31.21 | 31.48 | 31.75 |
| Current at Maximum Power (Imp/A) | 16.47 | 16.50 | 16.53 | 16.57 | 16.60 | 16.63 |
| Open Circuit Voltage (Voc/V)     | 35.98 | 36.15 | 36.32 | 36.49 | 36.66 | 36.83 |
| Short Circuit Current (Isc/A)    | 17.46 | 17.49 | 17.52 | 17.56 | 17.59 | 17.62 |

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

## Mechanical Characteristics

|                  |                                                      |
|------------------|------------------------------------------------------|
| Cell Type        | N-type mono-crystalline                              |
| Cell Orientation | 96 (2×48)                                            |
| Dimension        | 1762×1134×30mm                                       |
| Weight           | 24.0kg                                               |
| Front Glass      | 2.0mm, Anti-reflection Coating                       |
| Back Glass       | 2.0mm, Heat Strengthened Glass                       |
| Frame            | Composite material                                   |
| Junction Box     | IP68 rated                                           |
| Output Cables    | 4mm², (+) : 1200mm, (-) : 1200mm or customize length |
| Connector Type   | MC4-EVO2A/others                                     |
| Mechanical Load  | 5400Pa (Front side) /2400Pa (Rear side)              |

## Temperature Characteristics

|                                  |           |
|----------------------------------|-----------|
| Temperature Coefficients of Pmax | -0.29%/°C |
| Temperature Coefficients of Voc  | -0.25%/°C |
| Temperature Coefficients of Isc  | 0.045%/°C |

## Packaging Configuration

|                |                                                        |
|----------------|--------------------------------------------------------|
| Packing Detail | 36 pcs/pallets, 72 pcs/stack, 936 pcs/ 40'HQ container |
|----------------|--------------------------------------------------------|

## RSD Parameters

|                                |        |
|--------------------------------|--------|
| Shutdown Output Voltage        | 1±0.1V |
| Output Bypass                  | Yes    |
| Rapid Shutdown Time            | ≤25s   |
| Maximum Input Voltage          | 60V    |
| Maximum System Voltage         | 1500V  |
| Communication Method           | PLC    |
| Maximum Communication Distance | ≤450m  |