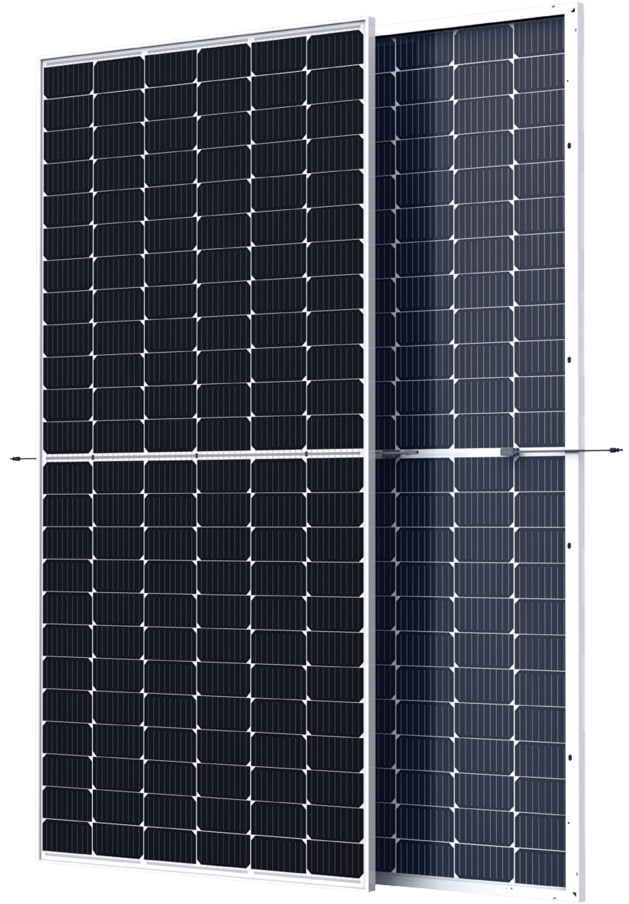


# SF-M16/144

## 450-465W

### 166±1.5×83±1.5mm

### Cells 144



**Bifacial Single Glass**

**PERC Half-Cell Module**

Max Power Out: 465W

Max Efficiency: 21.39%

Power Tolerance: 0~+5W



#### SMBB Technology

Better light trapping and current collection to improve module power output and reliability



#### Reduced Hot Spot Loss

Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.



#### PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



#### Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



#### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.

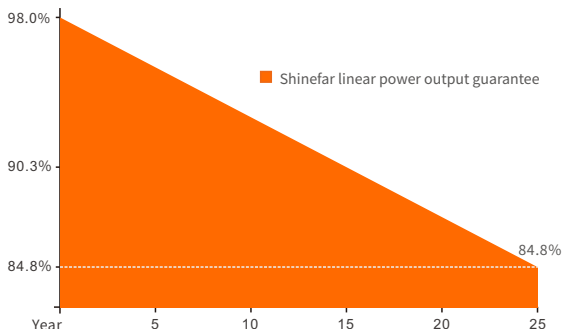


#### High Energy Generation, Low LCOE

Low Pmax temp coefficient increases energy production

### Superior Warranty

- 15-year material & technology warranty
- 25-year linear power output warranty

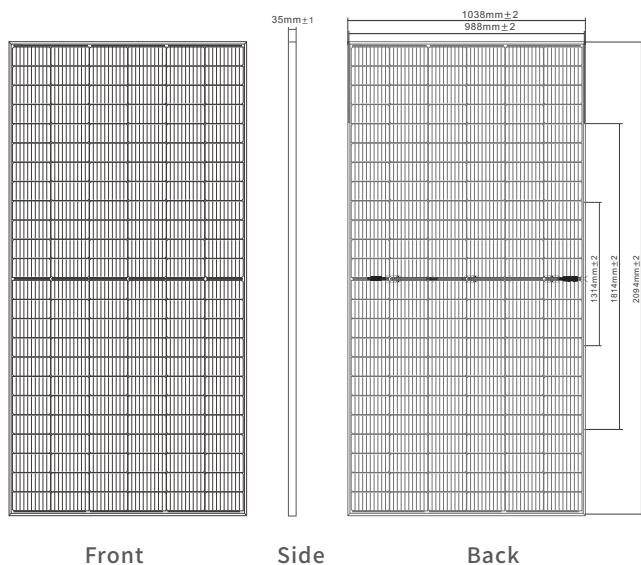


### Comprehensive Products and System Certificates

- IEC/EN61215-1:2021 & IEC/EN61215-2:2021
- IEC/EN61730-1:2016 & IEC/EN61730-2:2016
- UL61730-1:2017 & UL61730-2:2017
- UL61215-1:2017 & UL61215-2:2017
- IEC 61701:2020-Saltmist
- IEC 62716:2013-Ammonia
- IEC 62804:2020-PID
- IECEE Certificate Body (CB)
- UKCA:EN61730-2018
- ISO9001 & ISO14001 & ISO45001



## Engineering Drawings



## Structural Parameter

|                      |   |
|----------------------|---|
| Dimensions of Module | 2094 × 1038 × 35mm                              |
| Weight               | 22.7kg  |
| Packing              | 31PCS/Pallet, 748PCS/40HQ                       |
| Front Glass          | High Transparency Solar Glass 3.2mm             |
| Back Glass           | Transparent or Transparent Grid                 |
| Frame                | Anodized Aluminum Alloy & Custom Color Accepted |
| J-Box                | IP68 Rated                                      |
| Cable                | 4.0mm <sup>2</sup> , 300mm                      |
| Bypass Diodes        | 3PCS  |
| Wind/ Snow Load      | 2400Pa/5400Pa                                   |
| Connector            | MC4 Compatible                                  |

## Electrical Specification

(STC: Irradiance 1000W/m<sup>2</sup>, Cell temperature 25°C, AM1.5G — NOCT: Irradiance 800W/m<sup>2</sup>, Ambient temperature 20°C, Wind speed 1m/s)

| Module Type                     | SF-M16/144450                        |        | SF-M16/144455 |        | SF-M16/144460 |        | SF-M16/144465 |        |
|---------------------------------|--------------------------------------|--------|---------------|--------|---------------|--------|---------------|--------|
|                                 | STC                                  | NOCT   | STC           | NOCT   | STC           | NOCT   | STC           | NOCT   |
| Maximum Power (Pmax) [W]        | 450                                  | 333.90 | 455           | 337.61 | 460           | 341.32 | 465           | 345.03 |
| Maximum Power Voltage (Vmp) [V] | 41.40                                | 38.88  | 41.60         | 39.07  | 41.80         | 39.26  | 42.00         | 39.45  |
| Maximum Power Current (Imp) [A] | 10.87                                | 8.59   | 10.94         | 8.64   | 11.00         | 8.69   | 11.07         | 8.75   |
| Open Circuit Voltage (Voc) [V]  | 49.98                                | 46.82  | 50.18         | 47.02  | 50.38         | 47.22  | 50.58         | 47.42  |
| Short Circuit Current (Isc) [A] | 11.33                                | 8.97   | 11.39         | 9.02   | 11.44         | 9.06   | 11.49         | 9.10   |
| Module Efficiency [%]           | 20.70                                |        | 20.93         |        | 21.16         |        | 21.39         |        |
| Cell Type [mm]                  | Mono 166 ± 1.5 × 83 ± 1.5, 144 Cells |        |               |        |               |        |               |        |
| Operational Temperature [°C]    | -40 ~ +85°C                          |        |               |        |               |        |               |        |
| Maximum System Voltage          | 1500V DC                             |        |               |        |               |        |               |        |
| Max Series Fuse Rating          | 20A                                  |        |               |        |               |        |               |        |

## Electrical Characteristics With Different Power Bin (Reference to 10% Irradiance Ratio)

|                                    |       |       |       |       |
|------------------------------------|-------|-------|-------|-------|
| Total Equivalent Power (Pmax) [Wp] | 482   | 487   | 492   | 498   |
| Maximum Power Voltage (Vmp) [V]    | 41.40 | 41.60 | 41.80 | 42.00 |
| Maximum Power Current (Imp) [A]    | 11.63 | 11.70 | 11.78 | 11.85 |
| Open Circuit Voltage (Voc) [V]     | 49.98 | 50.18 | 50.38 | 50.58 |
| Short Circuit Current (Isc) [A]    | 12.12 | 12.18 | 12.24 | 12.30 |
| Irradiance Ratio (Rear/Front)      | 10%   |       |       |       |

## Temperature Ratings

|                                    |           |
|------------------------------------|-----------|
| Nominal Operating Cell Temperature | 45 ± 2°C  |
| Temperature Coefficient of Isc     | +0.06%/°C |
| Temperature Coefficient of Voc     | -0.30%/°C |
| Temperature Coefficient of Pmax    | -0.39%/°C |

## Curve Diagram

