

# SF-M21/132

## 665-680W

### 210 ± 1.5 × 105 ± 1.5mm

### Cells 132

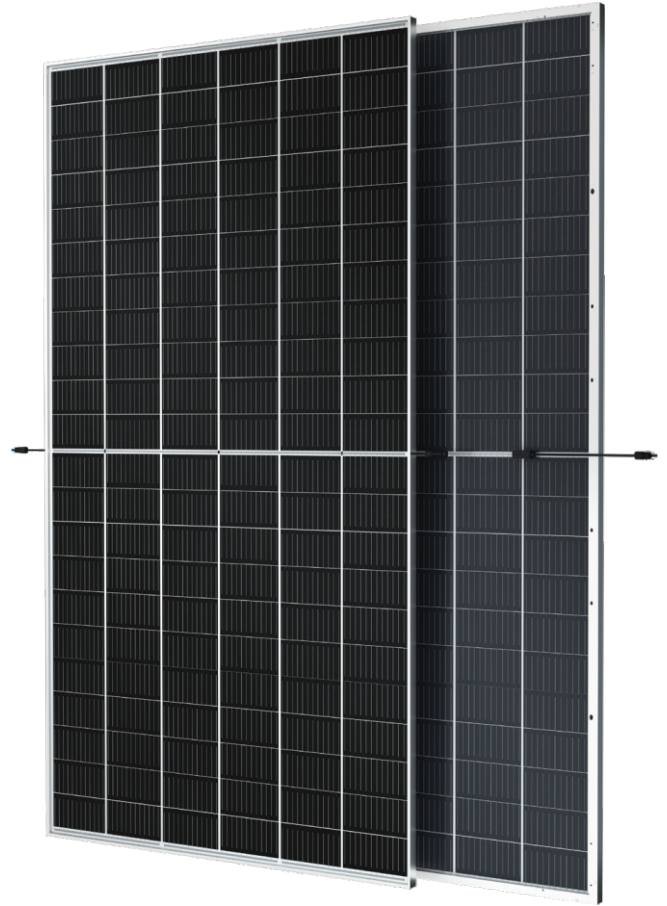
**Bifacial Single Glass**

**PERC Half-Cell Module**

Max Power Out: 680W

Max Efficiency: 21.89%

Power Tolerance: 0~+5W



#### SMBB Technology

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



#### PID Resistance

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



#### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.



#### Reduced Hot Spot Loss

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



#### Enhanced Mechanical Load

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

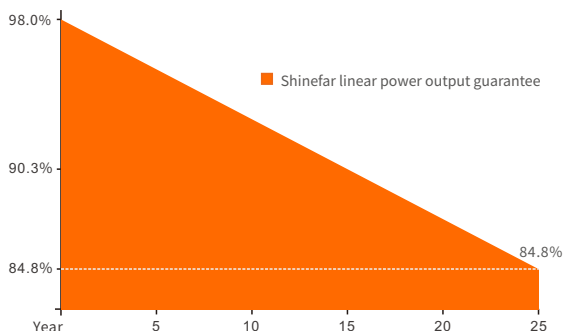


#### High Energy Generation, Low LCOE

Low Pmax temp coefficient increases energy production

### Superior Warranty

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

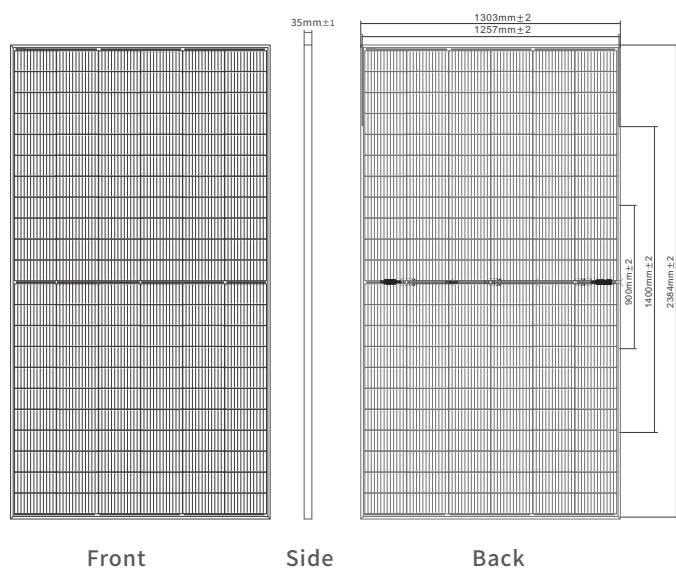


### Comprehensive Products and System Certificates

- 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	2384×1303×35mm
Weight	33.8kg
Packing	31PCS/Pallet, 558PCS/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-M21/132665		SF-M21/132670		SF-M21/132675		SF-M21/132680	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax) [W]	665	503	670	507	675	511	680	515
Maximum Power Voltage (Vmp) [V]	38.00	35.45	38.20	35.64	38.40	35.83	38.60	36.01
Maximum Power Current (Imp) [A]	17.50	14.20	17.54	14.23	17.58	14.26	17.62	14.29
Open Circuit Voltage (Voc) [V]	45.90	43.24	46.10	43.43	46.30	43.61	46.50	43.80
Short Circuit Current (Isc) [A]	18.56	14.91	18.59	14.94	18.63	14.97	18.66	15.00
Module Efficiency [%]	21.41		21.57		21.73		21.89	
Cell Type [mm]	Mono 210±1.5×105±1.5, 132 Cells							
Operational Temperature [°C]	-40~+85°C							
Maximum System Voltage	1500V DC							
Max Series Fuse Rating	30A							

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

Total Equivalent Power (Pmax) [Wp]	712	717	722	728
Maximum Power Voltage (Vmp) [V]	38.00	38.20	38.40	38.60
Maximum Power Current (Imp) [A]	18.73	18.77	18.81	18.85
Open Circuit Voltage (Voc) [V]	45.90	46.10	46.30	46.50
Short Circuit Current (Isc) [A]	19.85	19.89	19.93	19.97
Irradiance Ratio (Rear/Front)	10%			

## Temperature Ratings

Nominal Operating Cell Temperature	45±2°C
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.35%/°C

## Curve Diagram

