

# SF-M21/80

## 425-440W

### 210×105mm cells 40

**Bifacial Single Glass**

**N-TYPE Half-Cell Module**

Max Power out: 440W

Max Efficiency: 22.89%

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.

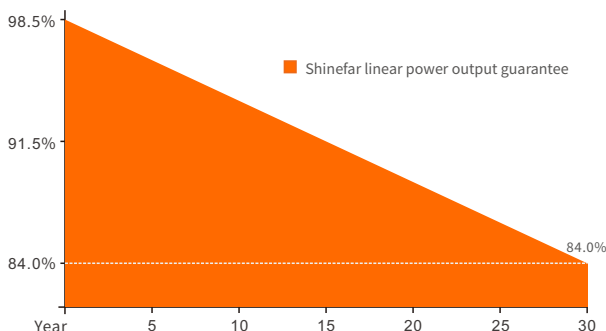


#### High energy generation, low LCOE

Low Pmax temp coefficient increases energy production

### Superior Warranty

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

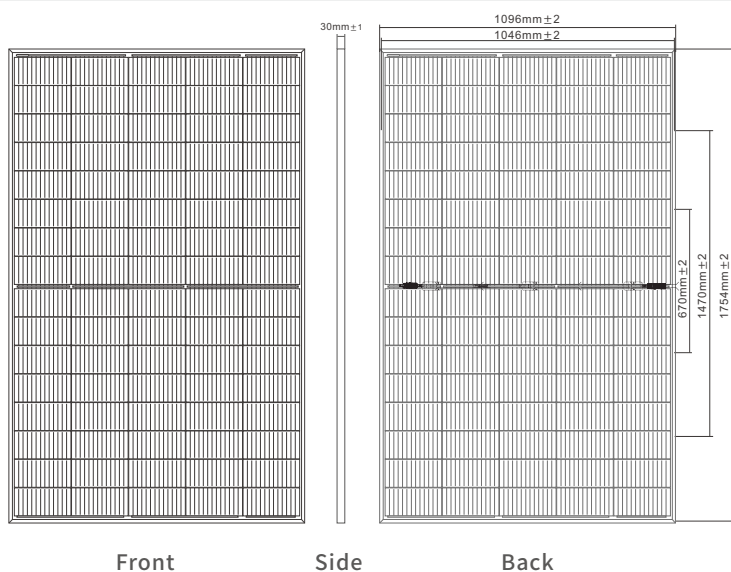


### Comprehensive Products and System Certificates

- 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
- IECCE CertificateBody (CB)
- UKCA:EN61730-2018
- ISO9001 & ISO14001 & ISO45001



## Engineering Drawings



## Structural Parameter

Dimensions of Module	1754 × 1096 × 30mm
Weight	20.5kg
Packing	37/pallet, 1001/40hq
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-M18/108425		SF-M18/108430		SF-M18/108435		SF-M18/108440	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax) [W]	425	321.13	430	324.91	435	328.69	440	332.46
Maximum Power Voltage (Vmp) [V]	24.09	22.58	24.29	22.78	24.49	22.98	24.69	23.18
Maximum Power Current (Imp) [A]	17.64	14.22	17.70	14.26	17.76	14.30	17.82	14.34
Open Circuit Voltage (Voc) [V]	28.67	26.91	28.87	27.11	29.07	27.32	29.27	27.52
Short Circuit Current (Isc) [A]	18.81	15.14	18.88	15.19	18.95	15.23	19.01	15.28
Module Efficiency [%]	22.11		22.37		22.63		22.89	
Cell Type [mm]	Mono 210 × 105, 80 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]	454.75	460.10	465.45	470.80
Maximum Power Voltage (Vmp) [V]	24.09	24.29	24.49	24.69
Maximum Power Current (Imp) [A]	18.88	18.94	19.01	19.07
Open Circuit Voltage (Voc) [V]	28.67	28.87	29.07	29.27
Short Circuit Current (Isc) [A]	20.13	20.20	20.27	20.34
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	-0.23%/°C
Temperature Coefficient of Pmax	-0.30%/°C

## Curve Diagram

