Shinefar | solar

SF-M15L/G144
405-420W

158.75×79.375mm cells 72

Bifacial Double Glass

PERC Half-Cell Module

Max Power out: 420W
Max Efficiency: 20.77%
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

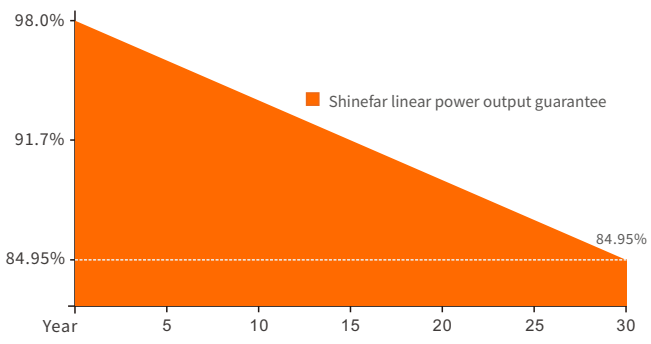
High salt mist and ammonia resistance.

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

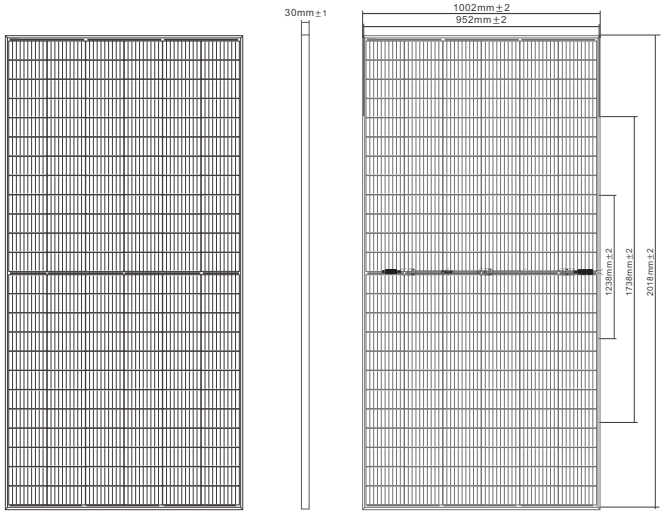


Comprehensive Products and System Certificates

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

Shinefar | solar

Engineering Drawings



Front Side Back

Structural Parameter

Dimensions of Module	2018×1002×30mm
Weight	26kg
Packing	37/pallet, 924/40hq
Front Glass	High Transparency Solar Glass 2.0mm
Back Glass	Heat Strengthened Glass 2.0mm
Frame	Anodized aluminum alloy & Custom color accepted
J-Box	IP68 Rated
Cable	4.0mm², 300mm
Bypass Diodes	3pcs
Wind/ Snow Load	2400Pa/5400Pa
Connector	MC4 Compatible

Electrical Specification

(STC: Irradiance 1000W/m², cell temperature 25°C, AM1.5G — NOCT: Irradiance 800W/m2, Ambient temperature 20°C, Wind speed 1m/s)

Module Type	SF-M15L/G144405		SF-M15L/G144410		SF-M15L/G144415		SF-M15L/G144420	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax) [W]	405	300.51	410	304.22	415	307.93	420	311.64
Maximum Power Voltage (Vmp) [V]	40.68	37.83	40.88	38.02	41.08	38.20	41.28	38.39
Maximum Power Current (Imp) [A]	9.96	7.94	10.03	8.00	10.10	8.06	10.17	8.12
Open Circuit Voltage (Voc) V]	49.20	45.76	49.40	45.94	49.60	46.13	49.80	46.31
Short Circuit Current (Isc) [A]	10.41	8.30	10.47	8.35	10.53	8.40	10.59	8.45
Module Efficiency [%]	20.03		20.28		20.52		20.77	
Cell Type [mm]	Mono 158.75×79.375, 144 cells							
Operational Temperature [°C]	-40~+85°C							
Maximum System Voltage	1500V DC							
Max Series Fuse Rating	15A							

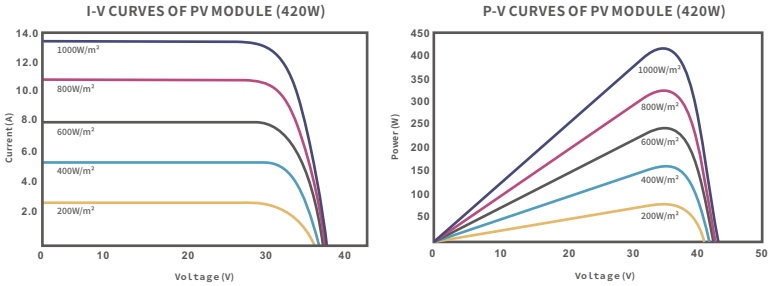
Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power (Pmax) [Wp]	446	451	457	462
Maximum Power Voltage (Vmp) [V]	40.68	40.88	41.08	41.28
Maximum Power Current (Imp) [A]	10.95	11.03	11.11	11.19
Open Circuit Voltage (Voc) [V]	49.20	49.40	49.60	49.80
Short Circuit Current (Isc) [A]	11.45	11.51	11.58	11.65
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



Solar Excellence in Every Ray

For more details please check the installation manual of SF