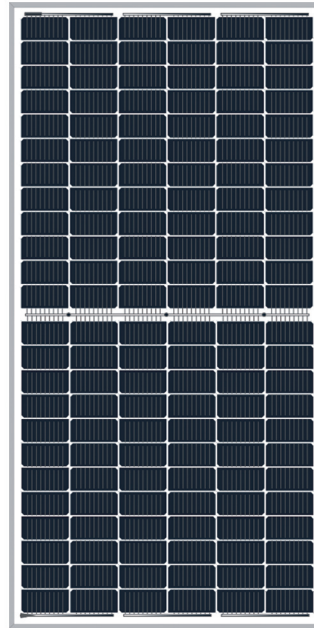


SFxxx-144M

166x83mm half-cut 6bb/9bb
Monocrystalline Module

430-460W



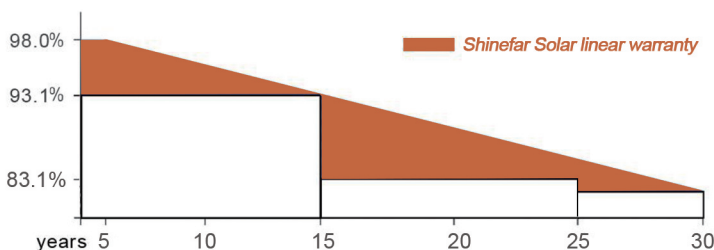
460W
Max Power Output

21.16
Max Module Efficiency

0~+5w
Power Output Guarantee

-  High conversion efficiency due to top quality wafers and advanced cell technology, Ideal choice for large scale ground installation
-  Through sand, salt fog, ammonia and other weather resistance test, adapt to harsh outdoor environment
-  Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free
-  Enhanced frame design, more excellent component load capacity
-  Highly transparent self cleaning glass brings additional yield and easy maintenance

Shinefar Solar is one of leading global manufacturers of solar modules and solar systems. Our solar modules production capacity reaches 3.0GW in the end of 2022 and we have our own fully automated production line which ensures the quality is strict and stable. We can produce market mainstream solar modules, including large size, MBB, high efficient single glass and double glass modules, both mono and poly, full cells and half cut cells. All our modules have TUV(IEC61215/IEC61730), PID(IEC61215/IEC61730/PPP58042B), Ammonia(IEC62716), salt mist corrosion(IEC61701) CE, SGS, INMETRO, CQC, ISO9001, ISO14001 and OHSAS18001 Certifications. Our solar modules have been exported to Europe, Vietnam, Brazil, Morocco and Many other markets since the year of 2005.



- 15-year limited product warranty(materials and labour)
- 30-year limited power warranty
 - 10-year at 93.1% power output
 - 25-year at 83.1% power output
 - 30-year at 80.0% power output

15 Years Limited Product Warranty / 30 Years Linear Power Warranty



(STC*) Electrical Specification

Max Power	Pmax (W)	430	435	440	445	450	455	460
Max Power Voltage	Vmp (V)	40.60	40.80	41.00	41.20	41.40	41.60	41.80
Max Power Current	Imp (A)	10.60	10.67	10.74	10.80	10.87	10.94	11.00
Open Circuit Voltage	Voc (V)	49.20	49.40	49.60	49.80	50.00	50.20	50.40
Short Circuit Current	Isc (A)	11.19	11.26	11.33	11.40	11.47	11.52	11.57
Module Efficiency	(%)	19.78	20.01	20.24	20.47	20.70	20.93	21.16
Dimensions of Module L*W*H	(mm)	2094x1038x35						
Weight	(kg)	24						
Solar Cell Type	(mm)	Mono 83×166,144 cells						
Packaging	(pcs)	31/pallet,748/40hq						
Power Output Tolerance	(W)	0 ~ +5						
Operational Temperature		-40~+85°C						
Maximum System Voltage		1500V DC						
Max Series Fuse Rating		20A						

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

(NOCT*) Electrical Specification

Max Power	Pmax (W)	318.5	322.2	326.0	329.8	333.6	337.4	341.2
Max Power Voltage	Vmp (V)	37.50	37.70	37.90	38.10	38.30	38.50	38.70
Max Power Current	Imp (A)	8.49	8.55	8.60	8.66	8.71	8.76	8.82
Open Circuit Voltage	Voc (V)	45.90	46.10	46.30	46.50	46.70	46.90	47.10
Short Circuit Current	Isc (A)	8.50	8.56	8.61	8.67	8.73	8.79	8.85

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

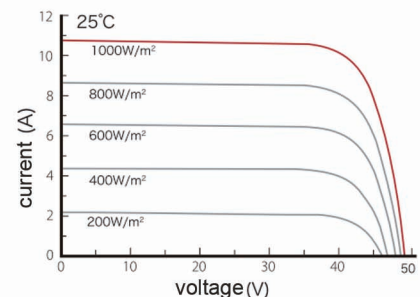
Glass	3.2mm High transparency solar glass
Backsheet	White or Black
Frame	Silver /black anodized alu alloy
J-Box	IP68 Rated
Cable	4 mm ² (0.006 inches ²),300 mm (1.18 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/5400Pa*
Connector	MC4 Compatible

* For more details please check the installation manual of SF

Temperature Ratings

(NOCT) Nominal Operating Cell Temperature	45±2°C
(Isc) Temperature Coefficient of Isc	+ 0.06%/°C
(Voc) Temperature Coefficient of Voc	- 0.30%/°C
(Pmax) Temperature Coefficient of Pmax	- 0.37%/°C

Current-Voltage(430W)



Power-Voltage(430W)

