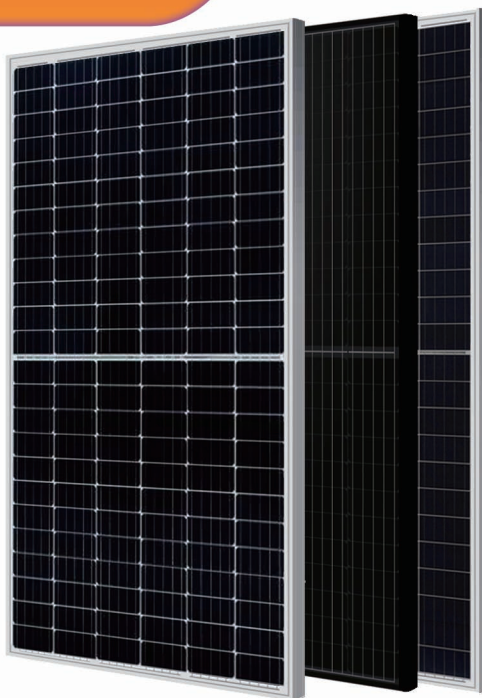


SF-M15/144

158.75mm half-cut 5bb/9bb
Monocrystalline Module

390-420W



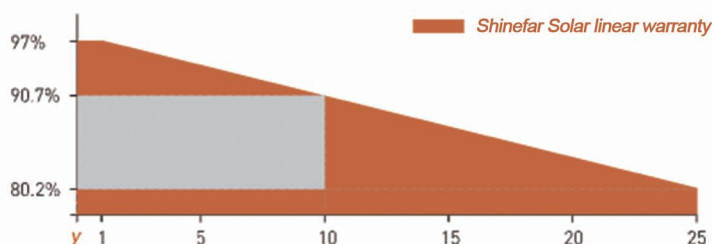
420W
Max Power Output

20.87%
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 1.2GW 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, 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.



- 10-year limited product warranty (materials and labour)
- 25-year limited power warranty
10-year at 90.7% power output
25-year at 80.2% power output



(STC*) Electrical Specification

Max Power	Pmax (W)	390	395	400	405	410	415	420
Max Power Voltage	Vmp (V)	39.92	40.27	40.61	40.96	41.31	41.66	42.01
Max Power Current	Imp (A)	9.77	9.81	9.85	9.89	9.92	10.05	10.08
Open Circuit Voltage	Voc (V)	48.33	48.63	48.93	49.23	49.53	49.83	51.12
Short Circuit Current	Isc (A)	10.29	10.33	10.36	10.39	10.42	10.45	10.48
Module Efficiency	(%)	19.80	20.00	20.30	20.13	20.38	20.63	20.87
Dimensions of Module L*W*H	(mm)	2018x1002x30 or 2018x1002x35						
Weight	(kg)	22.6						
Solar Cell Type	(mm)	Mono 79.38×158.75, 144 cells						
Packaging	(pcs)	31/pallet, 924/40hq or 759/40hq						
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

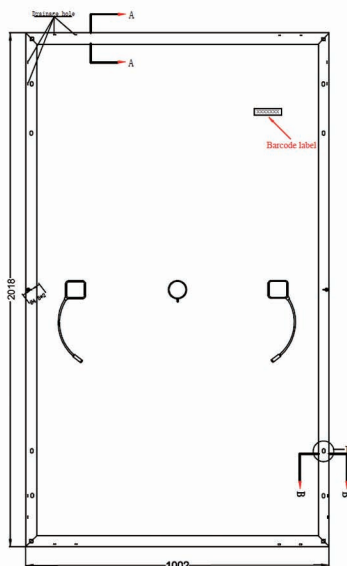
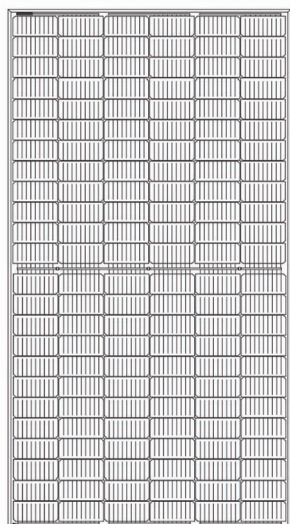
Max Power	Pmax (W)	283.48	287.21	290.94	301.37	304.34	307.31	309.65
Max Power Voltage	Vmp (V)	36.60	36.90	37.20	38.10	38.40	38.70	39.00
Max Power Current	Imp (A)	7.77	7.80	7.84	7.91	7.93	7.94	7.95
Open Circuit Voltage	Voc (V)	44.50	44.80	45.00	45.80	46.00	46.20	46.40
Short Circuit Current	Isc (A)	8.26	8.29	8.32	8.40	8.42	8.44	8.46

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

Mechanical Data

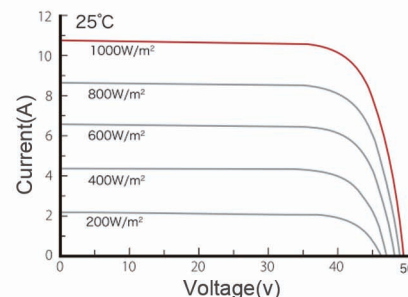
Glass	3.2mm High transparency solar glass
Backsheet	White or Black
Frame	Silver /black anodized alu alloy
J-Box	IP68 Rated
Cable	4mm ² (0.006 inches ²), 300 mm(1.18 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/5400Pa*
Connector	MC4 Compatible

* 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(420W)



Power-voltage(420W)

