

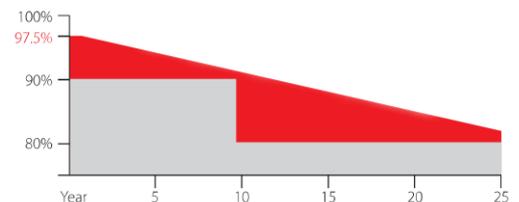
-  High conversion efficiency
-  Extremely environmental testing
-  Salt mist corrosion resistant
-  IP68 Junction box
-  Strong compressive strength
-  Fire test approved
-  PID Resistant

GIVING YOU MORE

-  3% positive tolerance
-  Authorised photovoltaic certificates

-  Series of internal harsh tests
-  Linear performance warranty

Top Solar was established in 2008 and is a hi-tech corporation with its core business in R&D, manufacturing and sale of high efficiency solar panel.



www.topsolar-energy.com

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Electrical Characteristics under STC*

Model No.:	TS-S270M-H	TS-S280M-H	TS-S290M-H
Maximum Power-Pmax(Wp)	270W	280W	290W
Voltage at Maximum Power-Vmp(V)	32.15V	32.34V	32.55V
Current at Maximum Power-Imp(A)	8.4A	8.66A	8.91A
Open Circuit Voltage-Voc(V)	39.38V	39.62V	39.87V
Short Circuit Current-Isc(A)	9.2A	9.48A	9.76A
Cell Efficiency(%)	18.41	19.10	19.78
Solar Panel Efficiency(%)	16.22	16.82	17.42
Power Tolerance(%)	0/+3	0/+3	0/+3

Mechanical Characteristics

Cell Type	Mono	156.75*78.38mm
Number of Cells	120(12*10)	
Dimension	1678*992*35mm	
Weight	18.5kg	
Front Glass	3.2mm,Low Iron Tempered Glass	
Encapsulant	EVA	
Frame	Anodized Aluminum Alloy	
Junction box	IP68,3 diodes	
Output cables	4mm ² ,30cm,MC4	
MaxWind Load/Snow	2400Pa/5400Pa	

Temperature Characteristics

NOCT*	47±2°C
Temperature Coefficient of Pmax(%)	-0.360/°C
Temperature Coefficient of Voc(%)	-0.289/°C
Temperature Coefficient of Isc(%)	0.051/°C

Maximum System Ratings

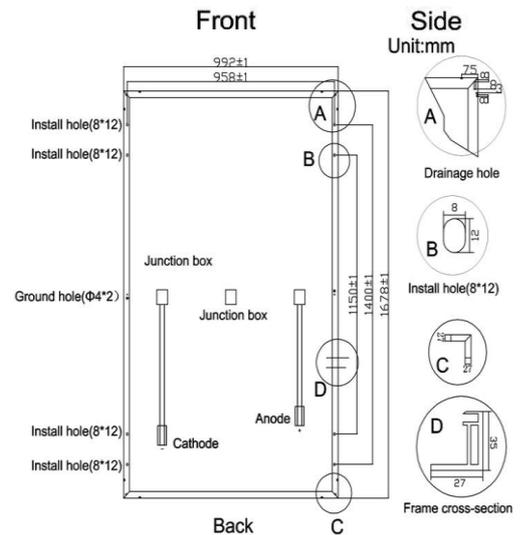
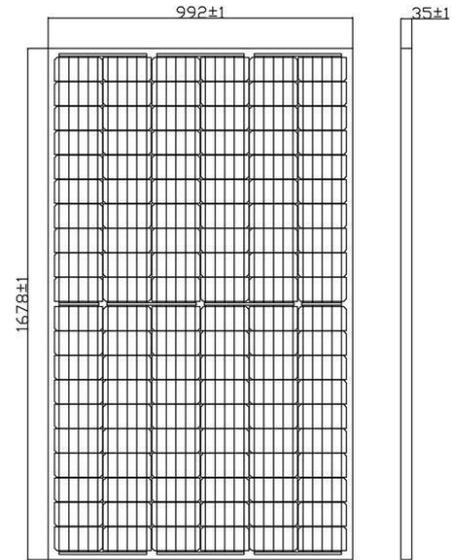
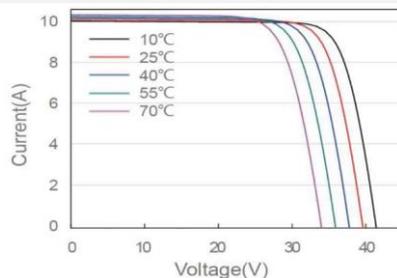
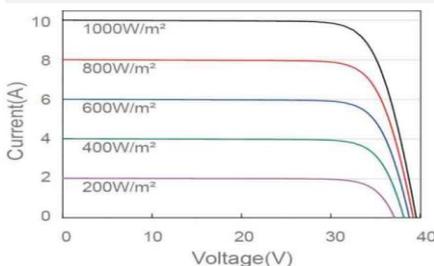
Operating Temperature	-40°C to +85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	20A

Packing list

20FT container	384pcs
40HQ container	894pcs

Warranty

- 12 years product warranty
- 12 years warranty on 90% power output
- 25 years warranty on 80% power output



JUNCTION BOX

High waterproof rating
Protection Degree: IP67
Safety Class: Class II
Rated Voltage: 1500V

FRAME

Strong mechanical load
resistance up to 5400 Pa
Anodic oxidation layer resistant
to chemical corrosion
Available in silver and black

*STC(Standard Testing Conditions):Irradiance 1000W/m²,cell temperature 25°C,AM=1.5 *NOCT(Nominal Operating Cell Temperature):Irradiance 800W/m², ambient temperature 20°C,wind speed 1m/s