

450W

N-Type High efficiency

Bifacial Solar Panel

SGN-450-BBS



Bifacial technology allows for the harvesting of up to an additional 30% energy from the rear side of the module.



30 years lifespan brings 10-30% additional power generation comparing with conventional P-type module.



N-type solar cell has no LID naturally which can increase power generation.



Excellent low irradiance performance.



Enhanced light trapping and optimized current collection contribute to the improvement of both module power output and reliability.



Industry leading lowest thermal coefficient of power.



Design optimized for lower operating current, resulting in minimized hot spot loss and improved temperature coefficient.

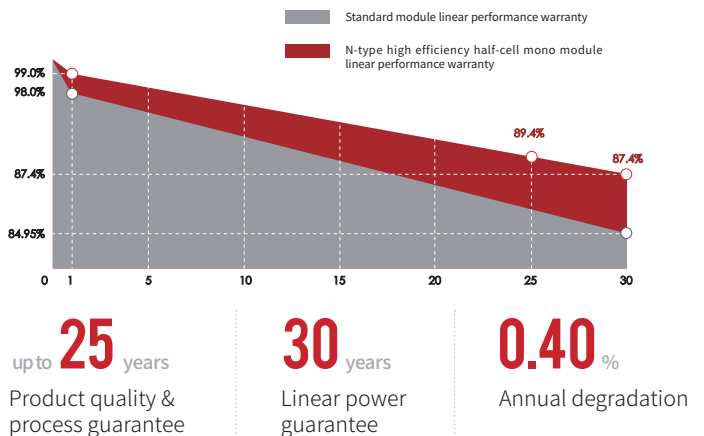


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



100% triple EL test enables remarkable reduction of module hidden crack rate.

LINEAR PERFORMANCE WARRANTY



COMPREHENSIVE CERTIFICATES



UL61730 Certified by ETL

ISO 9001: Quality Management System
 ISO 14001: Environmental Management System Standard
 ISO 45001: International Occupational Health and Safety Assessment System Standard

ELECTRICAL CHARACTERISTICS**2×54 cells**

Model of modules	SGN-450-BBS	
	STC	NMOT
Peak power - P_{mp} (W)	450	344
Open circuit voltage - V_{oc} (V)	39.54	37.85
Short circuit current - I_{sc} (A)	14.04	11.30
MPP voltage - V_{mp} (V)	33.57	32.13
MPP current - I_{mp} (A)	13.41	10.71
Module efficiency - η_m (%)	23.0	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25 °C, Spectra at AM1.5

NMOT (Nominal Module Operating Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

ELECTRICAL CHARACTERISTICS WITH DIFFERENT POWER BIN (REFERENCE TO 13.5% IRRADIANCE RATIO)

Peak power - P_{mp} (W)	499
Open circuit voltage - V_{oc} (V)	39.54
Short circuit current - I_{sc} (A)	15.56
MPP voltage - V_{mp} (V)	33.57
MPP current - I_{mp} (A)	14.86
Irradiance ratio (rear/front)	13.5 %

STRUCTURAL CHARACTERISTICS

Module dimension (L*W*H)	67.80 x 44.65 x 1.38 inch (1722 x 1134 x 35 mm)
Weight	46.30 lbs (21.0 kg)
Number of cells	108 cells
Cell	N-type monocrystalline (M10)
Glass	Tempered, 32 mm AR, High transmittance, Low iron
Backsheet	Transparent black mesh backsheet
Frame	Anodized aluminum alloy
Junction box	IP68, 3 diodes
Output wire	4.0 mm ²
Wire length (Including Connector)	(+): 400 mm, (-): 200 mm or Customized Length
Connector	MC4 - EVO2
Packing specification	31 pcs/Pallet; 806 pcs/40'HQ

OPERATING PARAMETERS

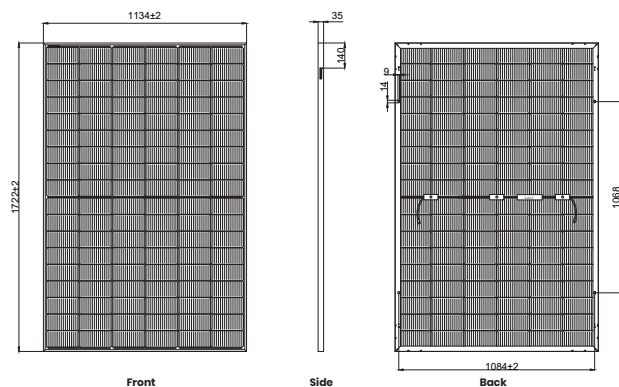
Power tolerance (W)	(0,+5)
Maximum system voltage (V)	1500
Maximum rated fuse current (A)	30
Current operating temperature (°C)	-40~+185 °F (-40~+85 °C)
Bifaciality	80±10 %

MECHANICAL LOADING

Front side maximum static loading (Pa)	5400
Rear side maximum static loading (Pa)	2400
Hailstone test (mm)	35

TEMPERATURE RATINGS

Temperature coefficient (P_{max})	-0.29 %/K
Temperature coefficient (V_{oc})	-0.28 %/K
Temperature coefficient (I_{sc})	+0.04 %/K
Nominal Module Operating Temperature	109.4±35.6 °F (43±2 °C)

MODULE DIMENSIONS (MM)

* The unmarked tolerance is ±1 mm
Length shown in mm

