

# 415W High efficiency bifacial PERC Solar Panel

SGP-415-BBS



Bifacial technology allows for the harvesting of up to an additional 25% energy from the rear side of the module



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.

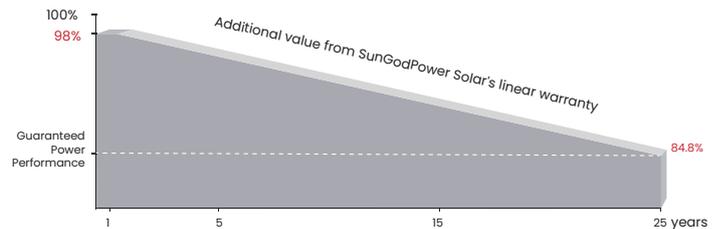


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



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

## LINEAR PERFORMANCE WARRANTY



up to **12** years  
Product quality & process guarantee

**30** years  
Linear power guarantee

**0.55**%  
Annual degradation Over 25 years

## COMPREHENSIVE CERTIFICATES



UL61730 Certified by ETL,CEC Listed

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

**2x54** cells

**ELECTRIC CHARACTERISTICS**

Model of modules	SGP-415-BBS	
	STC	NOCT
Peak power - $P_{mp}$ (W)	415	310
Open circuit voltage - $V_{oc}$ (V)	37.79	35.67
Short circuit current - $I_{sc}$ (A)	13.72	11.08
MPP voltage - $V_{mp}$ (V)	31.94	29.90
MPP current - $I_{mp}$ (A)	13.01	10.35
Module efficiency - $\eta_m$ (%)	21.3	

**STC** (Standard Testing Conditions): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Spectra at AM1.5

**NOCT** (Nominal Operating Cell Temperature): Irradiance 800W/m<sup>2</sup>, 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)	458
Open circuit voltage - $V_{oc}$ (V)	37.79
Short circuit current - $I_{sc}$ (A)	15.02
MPP voltage - $V_{mp}$ (V)	31.94
MPP current - $I_{mp}$ (A)	14.33
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	45.19 lbs (20.5 kg)
Number of cells	108 cells
Cell	PERC monocrystalline (M10)
Glass	Tempered, 32 mm AR, High transmittance, Low iron
Backsheet	Transparent black mesh backsheet
Frame	Black anodized aluminum alloy
Junction box	IP68, 3 diodes
Output wire	4.0 mm <sup>2</sup>
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	70±5 %

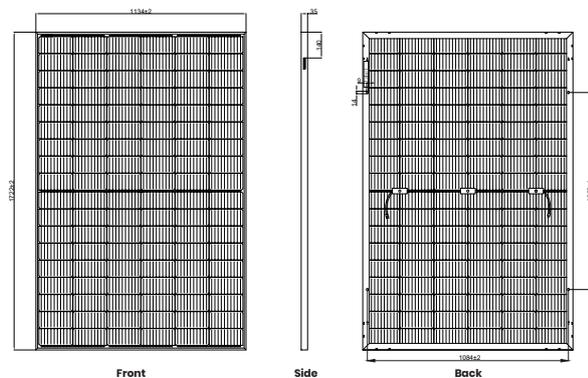
**MECHANICAL LOADING**

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

**TEMPERATURE RATINGS**

Temperature coefficient ( $P_{max}$ )	-0.33 %/K
Temperature coefficient ( $V_{oc}$ )	-0.26 %/K
Temperature coefficient ( $I_{sc}$ )	+0.06 %/K
Nominal operating cell temperature	113±35.6 °F (45±2 °C)

**MODULE DIMENSIONS (MM)**



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

