

190 Watt

MONOCRYSTALLINE SOLAR MODULE

Features



High module conversion efficiency (up to 14.9%), through superior manufacturing technology



Guaranteed 0-5W positive power output tolerance ensures high reliability



Proprietary Gallium-F22 doping process dramatically reduces initial light-induced degradation to <1%, thus delivering better power and performance over time



New Jumbo cells with 4% larger solar cell area produce more power per module



Entire module certified to withstand high wind loads (2400 Pascal) and snow loads (5400 Pascal) *

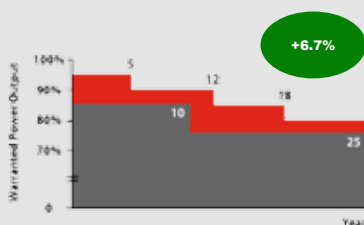


CE

Trust Sunny to Deliver Reliable Performance Over Time

- World's leading manufacturer of crystalline silicon photovoltaic modules
- Unrivaled manufacturing capacity and world-class technology
- Rigorous quality control meeting the highest international standards : ISO 9001: 2008 and ISO 14001: 2004
- Certification and standards: IEC 61215, IEC 61730, conformity to CE

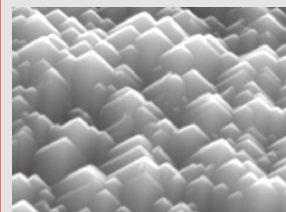
Industry-leading warranty



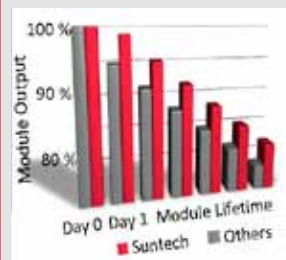
- 25 year transferrable power output warranty: 5 year/95%, 12 year/90%, 18 year/85%, 25 year/80% **
- Based on nominal power
- Warrants 6.7% more power than the market standard over 25 years
- 5 year material and workmanship warranty

* Please refer to Sunny Standard Module Installation Manual for details.

** Please refer to Sunny Product Warranty for details.



Patented surface pyramids enhance sunlight absorption by redirecting reflected light to other areas on the cell surface to be reabsorbed



Sunny cells feature a breakthrough process that replaces traditional boron doping with gallium doping. The effect of initial light-induced degradation is dramatically reduced, leading to greater power output over the entire module lifetime.

Graph is for illustration only and does not imply any guarantee of module performance. Please check warranty for details.

Electrical Characteristics

STC	SM190C	SM185C
Optimum Operating Voltage (Vmp)	36.5 V	36.4 V
Optimum Operating Current (Imp)	5.20 A	5.09 A
Open - Circuit Voltage (Voc)	45.2 V	45.0 V
Short - Circuit Current (Isc)	5.62 A	5.43 A
Maximum Power at STC (Pmax)	190 W	185 W
Module Efficiency	14.9%	14.5%
Operating Temperature	-40 °C to +85 °C	-40°C to +85°C
Maximum System Voltage	600 V DC	600 V DC
Maximum Series Fuse Rating	15 A	15 A
Power Tolerance	0/+5 W	0/+5 W

STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5

NOCT	SM190C	SM185C
Maximum Power (W)	139 W	135 W
Maximum Power Voltage (V)	33.1 V	33.0 V
Maximum Power Current (A)	4.19 A	4.10 A
Open Circuit Voltage (Voc)	41.3 V	41.0 V
Short Circuit Current (Isc)	4.56 A	4.40 A
Efficiency Reduction (from 1000 W/m ² to 200 W/m ²)	<4.5%	<4.5%

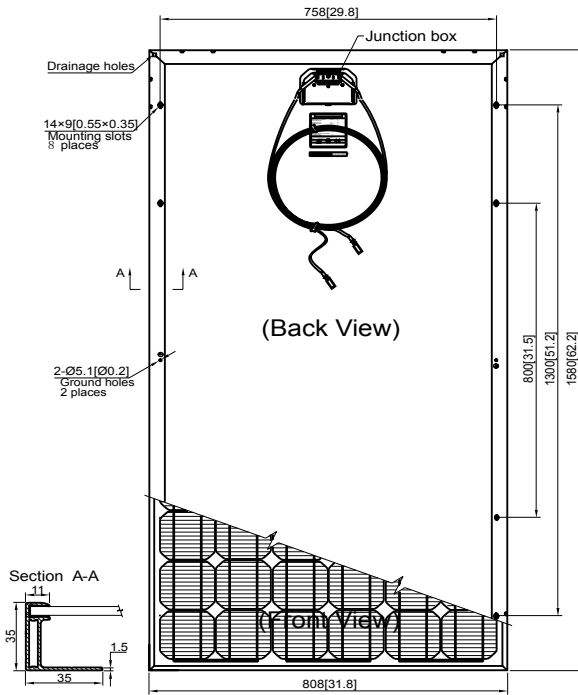
NOCT: Irradiance 800 W/m², ambient temperature 20 °C, wind speed 1 m/s

Mechanical Characteristics

Solar Cell	Monocrystalline 125 × 125 mm (5 inches)
No. of Cells	72 (6 × 12)
Dimensions	1580 × 808 × 35mm (62.2 × 31.8 × 1.4 inches)
Weight	15.5 kgs (34.1 lbs.)
Front Glass	3.2 mm (0.13 inches) tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP67 rated
Output Cables	H+S RADOX® SMART cable 4.0 mm ² (0.006 inches ²), symmetrical lengths (-) 1000 mm (39.4 inches) and (+) 1000 mm (39.4 inches), H4 connectors (MC4 compatible)

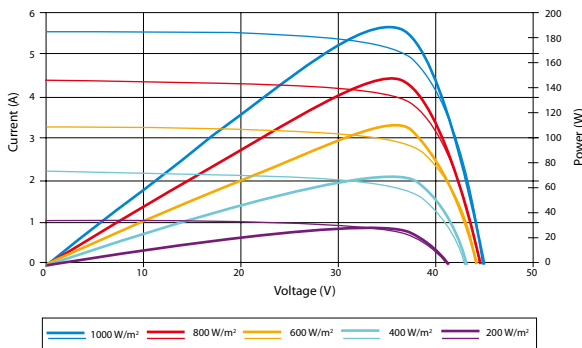
Packing Configuration

Container	20' GP	40' GP
Pieces per pallet	26	26
Pallets per container	12	28
Pieces per container	312	728



Note: mm [inch]

Current-Voltage & Power-Voltage Curve (190w)



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Pmax	-0.48 %/°C
Temperature Coefficient of Voc	-0.34 %/°C
Temperature Coefficient of Isc	0.037 %/°C

Dealer information box

Specifications are subject to change without further notification