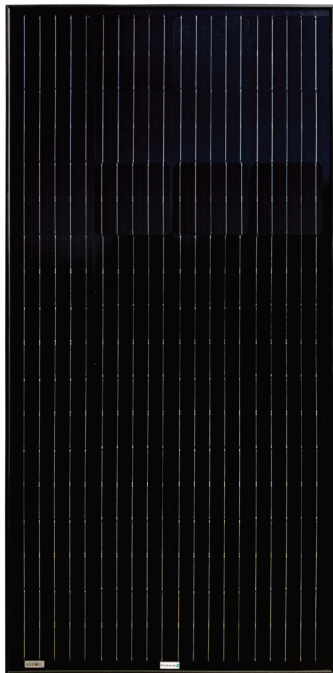
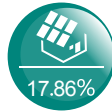


**SP-EN190W / SP-EN190W-B
F 35mm
Mono Solar Panel**



Key Features



High Conversion Efficiency
Module efficiency up to 17.86% achieved through advanced cell technology and manufacturing capabilities



Positive Tolerance
Positive tolerance of up to 0~+5W delivers higher output reliability



High PID Resistant
Advanced cell technology and qualified materials lead to high PID resistant



Current Sorting Process
System output maximised by reducing mismatch losses up to 2% with modules sorted and packaged by amperage



Extended Wind and Snow
Load tests
Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal)



Withstanding Harsh Environment
Reliable quality leads to a better sustainability even in harsh environments in the outdoors

Quality Guarantee

- * High efficiency solar cells, Low resistance loss and higher conversion efficiency
- * Double EL test before and after lamination, highly controls product defects
- * Solar panel classified by current, to improve system performance

Certificates

- * ISO9001:2015
- * ISO145001:2018
- * ISO45001:2018
- * CE;CQC;SGS;IN METRO;DEKRA



SP-EN190W / SP-EN190W-B F 35mm Mono Solar Panel

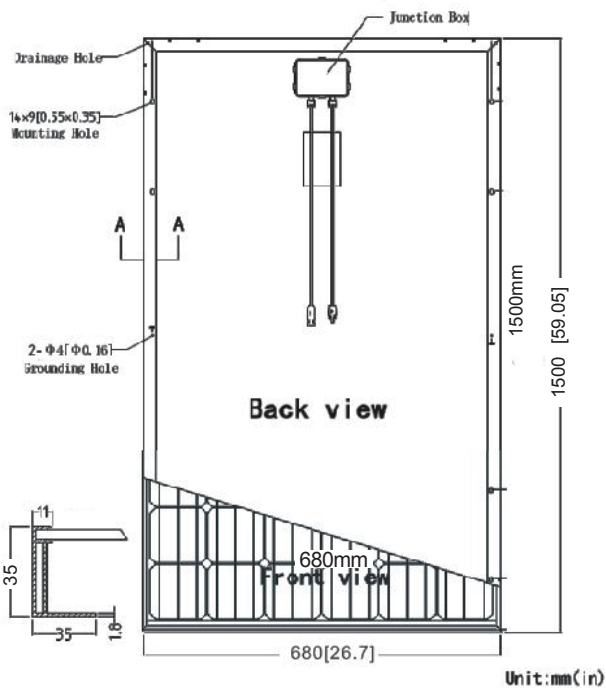


Electrical Characteristics

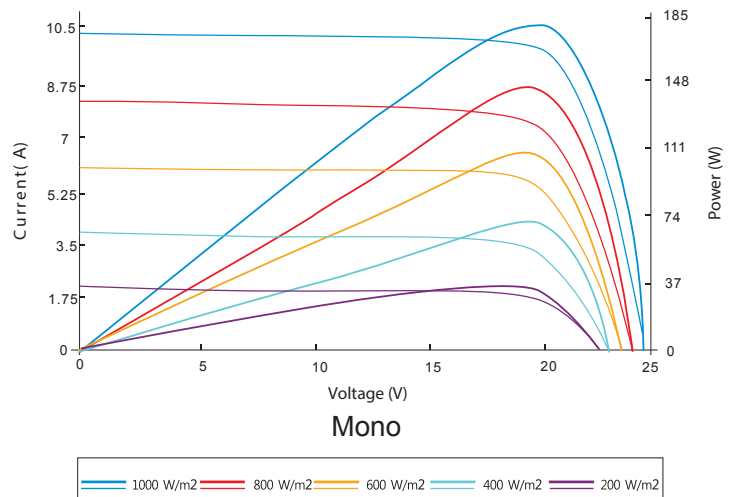
STC	SP-EN190W / SP-EN190W-B
Maximum Power(Pmax)	190W
Optimum Operating Voltage(Vmp)	20.00V
Optimum Operating Current(Imp)	9.50A
Open Circuit Voltage(Voc)	24.80V
Short Circuit Current(Isc)	10.07A
Module Efficiency	17.86%
Operating Module Temperature	-40°C to +85°C
Maximum System Voltage	1000V DC (IEC)
Power Tolerance	0~+5W

STC Irradiance 1000 W/m², module temperature 25°C, AM=1.5; Best in Class AAA solar simulator (IEC 60904-9) used

Engineering Drawing



I-V Curve



Excellent performance under weak light conditions: at an irradiation intensity of 800W/m² (AM 1.5, 25°C), 95.5% or higher of the STC efficiency(1000W/m²) is achieved.

Mechanical Characteristics

Solar Cell	Monocrystalline silicon 158mm x 158mm
No. of Cells	36 (4 x 9)
Dimensions	1500 x 680 x 35mm
Weight	11.5kg
Front Glass	3.2mm (0.13 inches) tempered glass
Frame	Anodized aluminium alloy (available in silver or black)
Junction Box	IP67 rated
Output Cables	TÜV (2Pfg1169:2007) 4.0 mm ² (0.006 inches ²), symmetrical lengths(-) 900mm and (+) 900 mm
Connectors	MC4 connectors

Temperature Characteristics

NOCT	45±2°C
Temperature Coefficient of Pmax	-0.37%/°C
Temperature Coefficient of Voc	-0.30%/°C
Temperature Coefficient of Isc	0.060%/°C



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