

S-ENERGY

High-efficiency photovoltaic module using silicon nitride polycrystalline cells.

SM-XXXPLO Series

200 ~ 230Watt Photovoltaic Module

Performance

Rated power (P_{max})	200~230W
Power tolerance	$\pm 3\%$
Limited Warranty	30 years



Electrical Characteristics

Model	230PLO	225PLO	220PLO	215PLO	210PLO	205PLO	200PLO
Maximum power (P_{max}), W	230	225	220	215	210	205	200
Voltage at Pmax (V_{mp}), V	29.5	29.3	29.2	29.4	26.8	26.5	26.2
Current at Pmax (I_{mp}), A	7.8	7.7	7.54	7.33	7.85	7.74	7.64
Warranted minimum P_{max} , W	223	218	213	208	203	198	194
Short-circuit current (I_{sc}), A	8.39	8.27	8.17	8.06	8.45	8.33	8.21
Open-circuit voltage (V_{oc}), V	36.9	36.6	36.5	36.7	33.3	33.1	32.9
Temperature coefficient of I_{sc}	0.05%/°C	0.05%/°C	0.05%/°C	0.05%/°C	0.05%/°C	0.05%/°C	0.05%/°C
Temperature coefficient of V_{oc}	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C
Temperature coefficient of power	-0.45%/°C	-0.45%/°C	-0.45%/°C	-0.45%/°C	-0.45%/°C	-0.45%/°C	-0.45%/°C
NOCT (Air 20°C; Sun 0.8kW/m ² ; Wind 1m/s)	47±2°C	47±2°C	47±2°C	47±2°C	47±2°C	47±2°C	47±2°C
Maximum series fuse rating, A	15	15	15	15	15	15	15
Maximum system voltage, V	1000	1000	1000	1000	1000	1000	1000
Module efficiency	14.48%	14.17%	13.85%	13.54%	14.68%	14.33%	13.98%
Dimensions	1620mm x 980mm Depth:50mm				1460mm x 980mm Depth:50mm		
Weight	19Kg				18Kg		
Solar cells	60 cells (6 x 10 matrix)				54 cells (6 x 9 matrix)		

Mechanical Characteristics

Frame	Anodized aluminum frame; Color : silver or black
Output Cables	Cable with polarized weatherproof DC rated connectors; Cable length-1000mm (+ -)
Construction	Front : High-transmission 3.2mm low iron tempered glass; White back sheet Encapsulant; EVA

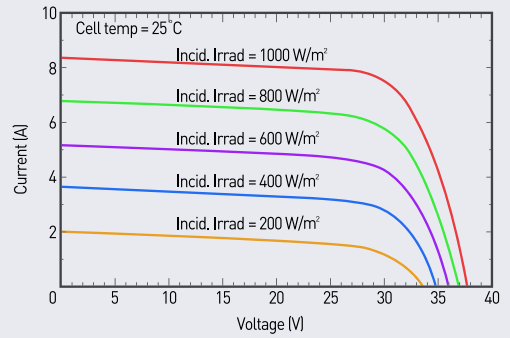
- Warrant : Power output for 30 years (90% of minimum output power for 10 years, 80% of minimum output power for 30 years).
Freedom from defects in materials and workmanship for 10 years.
- These data represent the performance of typical SM-XXXPLO Series products, and are based on measurements made in accordance with ASTM E1038 corrected to SRC (STC)

Quality Assurance

S-Energy photovoltaic modules have passed the following tests,

Thermal shock / cycling test	Mechanical loading test
UV preconditioning test	Hot-spot endurance test
Humidity - Freeze test	Water proof test
Electrical insulation test	Outdoor exposure test
Damp-heat test	Hail impact test

Irradiance coefficient

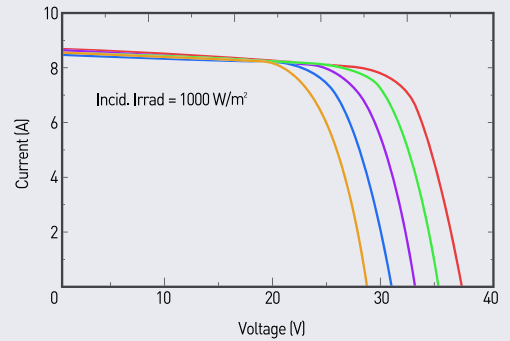


Qualification Test Parameters

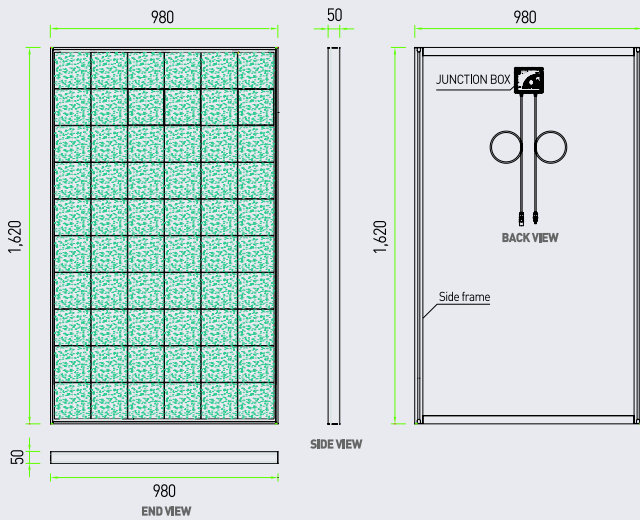
Tests are proceeded by IEC 61215 standard,

Thermal cycling range	-40°C to +85°C
Humidity freeze, damp heat	85% RH
Static load front and back	816kg/m²
Hailstone impact	25mm at 23 m/s
STC	1000W/m² ; 25°C ; AM 1.5

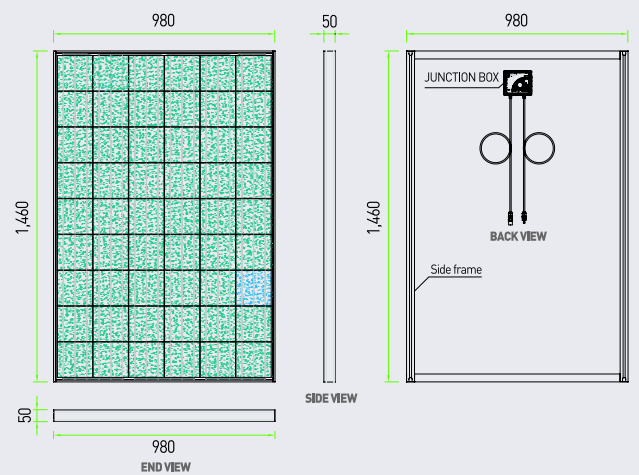
Temperature coefficient



Module Diagram



Module : SM-230PL0, SM-225PL0, SM-220PL0



Module : SM-215PL0, SM-210PL0, SM-205PL0, SM-200PL0

NOTE : This publication summarizes product warranty and specification, which are subject to change without notice



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