

# S-ENERGY

High-efficiency photovoltaic module using silicon nitride polycrystalline cells.

## SM-XXXPA8 Series

245 ~ 200Watt Photovoltaic Module

### Performance

Rated power (Pmax)	245~200W
Power tolerance	0~3%
Nominal voltage	24V
Limited Warranty	30 years



### Electrical Characteristics

Model	245PA8	240PA8	235PA8	230PA8	225PA8	210PA8	205PA8	200PA8
Voltage at Pmax (Vmp)	30.1V	29.8V	29.6V	29.4V	29.2V	26.7V	26.4V	26.1V
Current at Pmax (Imp)	8.14A	8.08A	7.95A	7.84A	7.72A	7.89A	7.78A	7.67A
Warranted minimum Pmax	245W	240W	235W	230W	225W	210W	205W	200W
Short-circuit current (Isc)	8.67A	8.63A	8.56A	8.45A	8.34A	8.51A	8.39A	8.29A
Open-circuit voltage (Voc)	37.5V	37.4V	37.1V	36.9V	36.7V	33.3V	33.1V	32.8V
Temperature coefficient of Isc	0.04%/°C	0.04%/°C	0.04%/°C	0.04%/°C	0.04%/°C	0.04%/°C	0.04%/°C	0.04%/°C
Temperature coefficient of Voc	-0.32%/°C	-0.32%/°C	-0.32%/°C	-0.32%/°C	-0.32%/°C	-0.32%/°C	-0.32%/°C	-0.32%/°C
Temperature coefficient of power	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C	-0.35%/°C
NOCT (Air 20°C; Sun 0.8kW/C; Wind 1m/s)	47±2°C	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	10A	10A	10A	10A	10A	10A	10A	10A
Maximum system voltage	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Module efficiency	15.43%	15.12%	14.80%	14.49%	14.17%	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	Static load : 8,000Pa (816Kg/m <sup>2</sup> ) ; Color: Silver/Black ; Anodizing thickness 16μm
Output Cables	RHW-2, 12AWG (4mm <sup>2</sup> ) cable with polarized weatherproof DC connectors; Cable length-1000mm (+ -)
Construction	Front : High-transmission 3.2mm low iron tempered glass; White back sheet; Encapsulant; EVA

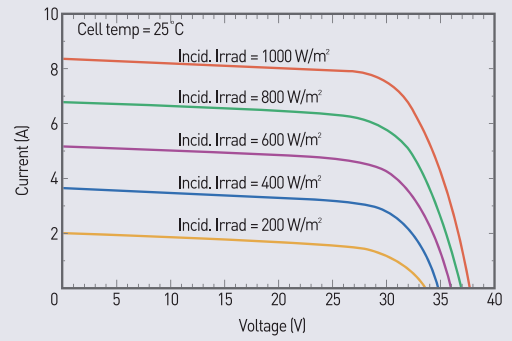
- Warrant : Power output for 30 years (90% of minimum output power per 10 years, 80% of minimum output power per 30 years).  
Freedom from defects in materials and workmanship for 10 years.
- These data represent the performance of typical SM-XXXPA8 Series products, and are based on measurements made 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

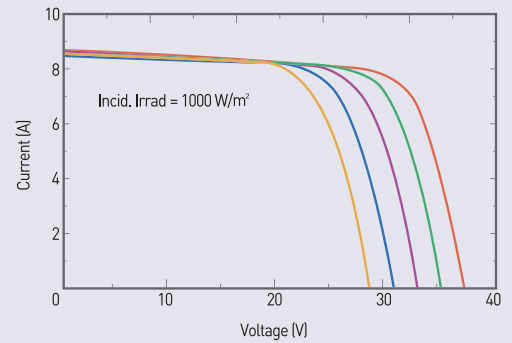


## Qualification Test Parameters

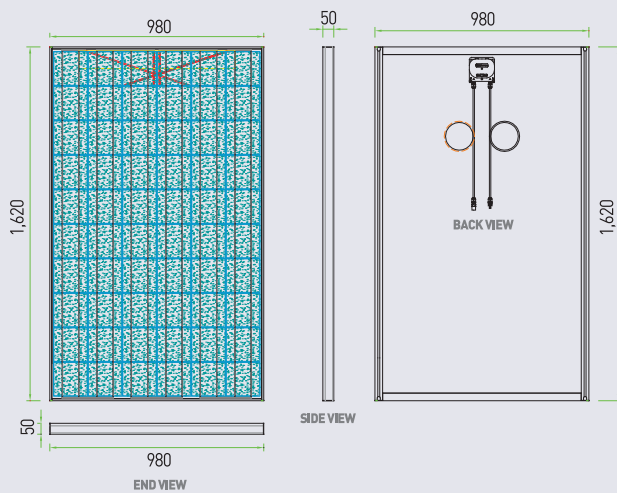
Tests are proceeded by IEC 61215 standard.

Thermal cycling range	-40°C to +85°C
Humidity freeze, damp heat	85% RH
Static load front and back	8,000Pa (816Kg/m²)
Hailstone impact	25mm at 23 m/s
STC	1000W/m² ; 25°C ; AM 1.5

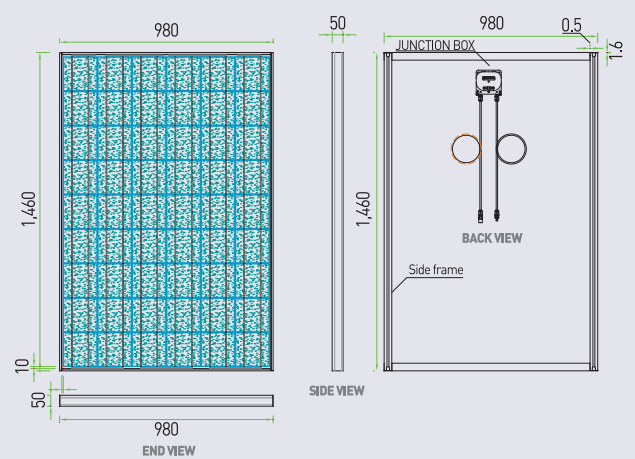
## Temperature coefficient



## Module Diagram



Module : SM-245PA8, SM-240PA8, SM-235PA8,  
SM-230PA8, SM-225PA8



Module : SM-210PA8, SM-205PA8, SM-200PA8

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

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