

High-efficiency photovoltaic module using silicon nitride polycrystalline cells.

Performance

| | |
|---------------------------|----------|
| Rated power (P_{max}) | 220W |
| Power tolerance | ± 3% |
| Nominal voltage | 24V |
| Limited Warranty | 25 years |

Configuration

SM-220PA2 Bronze frame with output cables



Electrical Characteristics

SM-220PA2

| | |
|---|-----------|
| Maximum power (P_{max}) | 220W |
| Voltage at Pmax (V_{mp}) | 29.2V |
| Current at Pmax (I_{mp}) | 7.55A |
| Warranted minimum P_{max} | 213W |
| Short-circuit current (I_{sc}) | 8.20A |
| Open-circuit voltage (V_{oc}) | 36.6V |
| Temperature coefficient of I_{sc} | 4.40mA/°C |
| Temperature coefficient of V_{oc} | -129mV/°C |
| Temperature coefficient of power | -0.46%/°C |
| NOCT (Air 20°C; Sun 0.8kW/m ² ; Wind 1m/s) | 47±2°C |
| Maximum Series fuse rating | 10A |
| Maximum system voltage | 1000V |

Mechanical Characteristics

| | | | |
|---------------|---|---------------|--------------|
| Dimensions | Length : 1620mm | Width : 980mm | Depth : 50mm |
| Weight | 19 kg | | |
| Solar Cells | 60 cells (156mm x 156mm) in a 6 x 10 matrix connected in series | | |
| Output Cables | RHW-2, 12AWG (4mm ²) 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 | | |
| Frame | Anodized aluminum frame; Color: silver | | |

1. Warrant : Power output for 25 years (10% of minimum output power per 10 years). Freedom from defects in materials and workmanship for 3 years.
2. These data represent the performance of typical SM-220PA2 products, and are based on measurements made in accordance with ASTM E1038 corrected to SRC (STC)
3. During the stabilization process that occurs during the first few months of deployments, module power may decrease by up to 3% from typical P_{max}

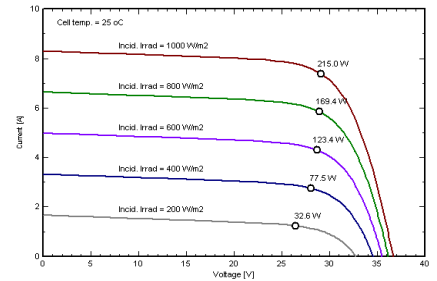
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Quality Assurance

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

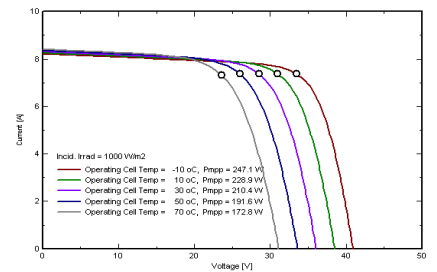


Qualification Test Parameters

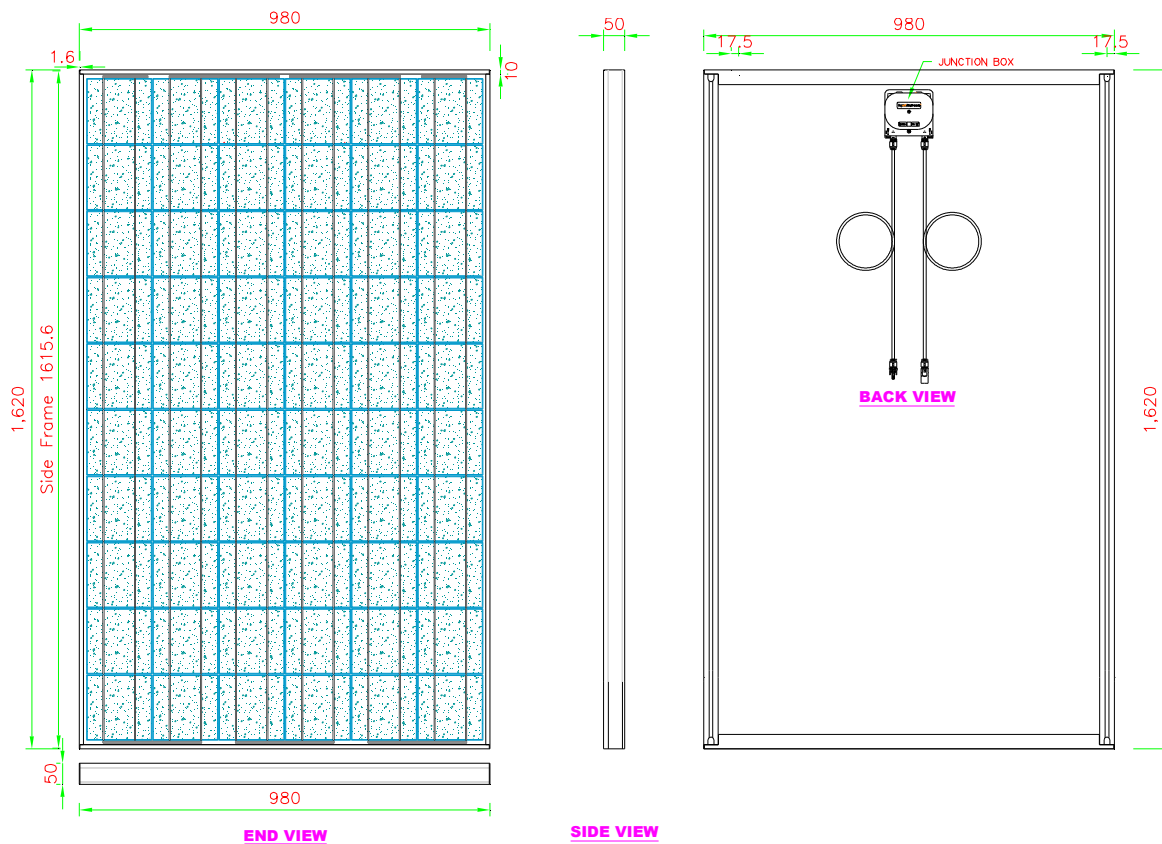
Tests are proceeded by IEC 61215 standard.

| | |
|----------------------------|--------------------------|
| Thermal cycling Range | -40°C to +85°C |
| Humidity Freeze, damp heat | 85% RH |
| Static load front and back | 540kg/m² |
| Hailstone impact | 25mm at 23 m/s |
| STC | 1000W/m² ; 25°C ; AM 1.5 |

Temperature coefficient



Module Diagram



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