

Romag Ltd



Polycrystalline Silicon Photovoltaic Modules

The PowerGlaz[®] SMT 6 (60)P photovoltaic module series has 60 enhanced-efficiency Polycrystalline silicon cells in series. With up to 235 watts of nominal maximum power, it is well-suited to utility grid-supplemental systems, in roof and on roof PV systems and also grid independent systems.

Romag has used its extensive glass processing experience to produce the high quality PowerGlaz[®] SMT 6 (60)P photovoltaic modules using the latest materials. Textured low iron glass is used as the outer component of the laminate to maximize the light transmission to the cells. 60 Polycrystalline

cells are connected in series and encapsulated in EVA bonded to the glass sheet. A final backing layer is laminated to the rear of the module to complete the weather protection. Lead free materials and components are used throughout the manufacture.

Mechanical Characteristics

Weight:	21 Kg
Dimensions:	1640 x 994 x 46mm
Overall tolerances	±3mm

Warranty

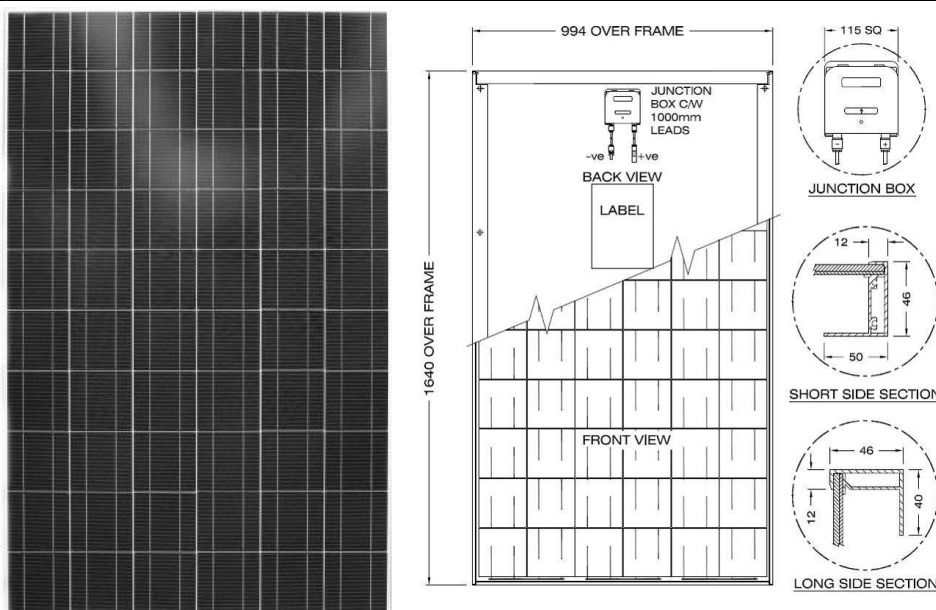
- ◆ 80 % Power output for 25 years
- ◆ Freedom from defects in materials and workmanship for 5 years.

Quality

- ◆ Independently certified to IEC 61215 ed 2 / IEC 61730
- ◆ Suitable use in systems up to 1000 VDC
- ◆ Static loading, front and back, of 5400 pascals.
- ◆ These products are manufactured in our ISO 9000-certified factory to demanding specifications.
- ◆ Factory is subject to periodic inspection by TUV.
- ◆ repetitive cycling between -40°C and 85°C at 85% relative humidity;
- ◆ simulated impact of 25mm (one-inch) hail at terminal velocity;
- ◆ 2200 VDC frame/cell string isolation test;
- ◆ Bypass diodes to counteract shading effects

Advantages

- ◆ High power module manufactured using Polycrystalline cells
- ◆ MC Junction box and connectors to enable quick and easy site connection
- ◆ Sturdy Hollow Section Aluminium frame with drain holes.
- ◆ Black anodized frames and black backing sheet available
- ◆ Glass Structurally bonded to frame for increased safety.
- ◆ Lead Free materials used throughout.
- ◆ Frameless module available on request.
- ◆ Textured low iron glass to maximize light transmission to the cells



En 61215 ed. 2

En 61730



Electrical Characteristics

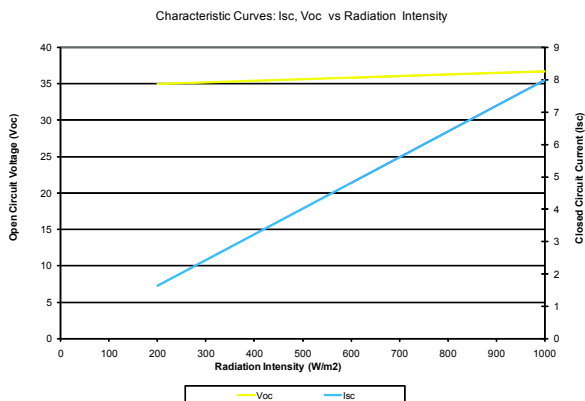
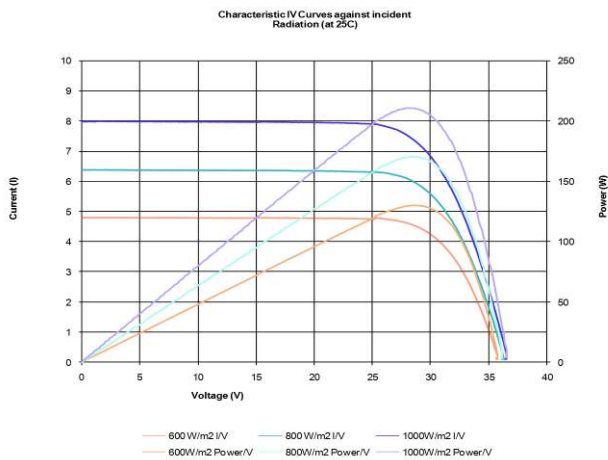
SMT 6 (60)P Module Grade	660235	660230	660225	660220	660220	660210	660205
Maximum power (P_{max}) ₂	235W	230W	225W	220W	215W	210W	205W
Voltage at Pmax (V_{mp})	30.6V	30.3V	29.9V	29.4V	28.9V	28.4V	27.9V
Current at Pmax (I_{mp})	7.7A	7.6A	7.5A	7.5A	7.4A	7.4A	7.3A
Short-circuit current (I_{sc})	8.2A	8.1A	8.0A	8.00A	7.9A	7.9A	7.8A
Open-circuit voltage (V_{oc})	38.5V	37.4V	37.10V	36.8V	36.5V	36.3V	36.1V

Rated power may vary by +/-3% from the above

Temperature Coefficients

Isc 4.2mA/K Voc -132mV/K NOCT 40.4 C

Characteristic Curves



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1. This data represents the performance of typical PowerGlaz® SMT 6 (60)P modules and laminates as measured at their output connectors. The data are based on measurements made in accordance with ASTM E1036 corrected to SRC (Standard Reporting Conditions, also known as STC or Standard Test Conditions), which are:

- illumination of 1 kW/m², (1 sun) at spectral distribution of AM1.5 (ASTM E892 global spectral irradiance);
- cell temperature of 25 °C.

The power of solar cells varies in the normal course of production; specifications of these products reflect that variation.

2. During the stabilization process which occurs during the first few months of deployment, module power may decrease approximately 3% from typical Pmax.

3. The cells in an illuminated module operate hotter than the ambient temperature. NOCT (Nominal Operating Cell Temperature) is an indicator of this temperature differential, and is the cell temperature under Standard Operating Conditions: ambient temperature of 20 °C, solar irradiation of 0.8 kW/m², and wind speed of 1m/s.