



SOLAR MODULES

90 WATTS MULTI CRYSTALLINE PHOTOVOLTAIC MODULE

GES/PV/90 crystalline solar modules are available in framed and laminate versions. Both modules feature a rugged laminate design. GES/PV/90 use high efficient crystalline solar cells known for their high efficiency and quality to provide maximum energy production throughout the day. The modules have rated output of 90 Wp & available in both 12 volt and 24 volt version. The efficient design of these modules, with its large surface area, is ideally suited for medium and high power applications. The module is designed for easy interconnection to achieve voltage and current configurations for grid-connected systems as well as stand-alone systems.

MODULE DESIGN

72 crystalline solar cells form the crux of the module. These full square cells offer a homogeneous appearance, optimal use of the area and are known for high energy yields. Due to its construction of Glass/EVA/Tedlar, the module is light in weight in addition to protecting the module/cells against harsh environmental conditions. A torsion resistant module frame made of anodized aluminum guarantees high mechanical strength, making the module resistant to extreme wind and snow loads. Three bypass diodes integrated into the terminal-cover protect the cells when there is partial shading. Also installation becomes more convenient through the terminal-cover which provides safe handling.

QUALITY

GES/PV/90 has established high quality standards. Constant checks and inspections guarantee uniformly high quality. Each module which leaves the production line is subjected to thorough visual inspections as well as mechanical and electrical tests.

LIMITED WARRANTIES

- Power output for 25 years.
- Freedom from defects in materials and workmanship for 1 year.

CERTIFICATIONS

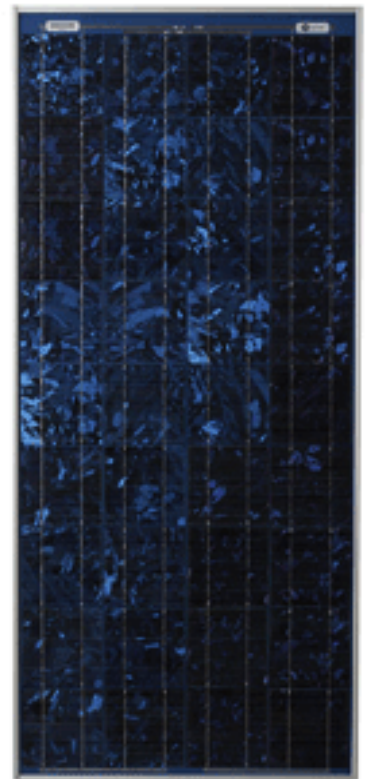
GES/PV/90 module has been type approved as per the requirements of CEI/IEC 61215 standards by JRC, Italy and also conforms to the requirements of Electrical Protection Class II and EWG guideline 89/932 (CE). Besides GESOLAR has a quality management system that is compliance with the International Quality System Standard ISO 9001.

OPTIONS

Modified versions of the module are offered with pre-installed PV-cable and Multi-contact plugs. Also a 24 volt variant of the same module is available.

ELECTRICAL DATA (NOMINAL)

The electrical data apply to stand test conditions (STC): Irradiance at the module level of 100 W/m² with spectrum AM 1.5 and a cell temperature of 25 °C the rated power may only vary by ± 3% and all other electrical parameters by ± 10% .



TECHNICAL DATA

Power (MAX)	P max	90Wp
Configuration	V	12 V
voltage at max power point	Vmp	17.20 V
Current at Max power point	Imp	5.23 A
Open-circuit voltage	Voc	21.20V
short circuit current	Isc	5.71A

DIMENSION AND WEIGHTS

Dimension and weights	Module	lamine
dimensions(tolerance ± 2 mm)	807 x 1617mm ²	800 x 1610 mm ²
Thickness	42mm	4.8 mm
Overall height including connection box(tolerance ± 1 mm)	42mm	32.5 mm
Weight	7.8 Kg	6.1 kg

CHARACTERISTIC DATA

Solar Cells per module	72
Type of Solar Cell	High efficiency SunPower Cells(12.5 x 12.5 cm ,Pseudo-square)
Connection	Terminal box with screw terminals
Cable Entry	Prepared for cable glands(M 12)
Connection	4mm Suhner-cable with MC-Connectors

CELL TEMP. COEFFICIENTS

Power	Tk(Pn)	-0.38%/°C
Voltage	Tk(U ∞)	-1.9mV/°C

LIMITS

Max.system Voltage	700Voc
Operating Module Temperature	-40.....+90° C
Storm Resistance	Wind speed of 130Km/h and safety factor of 3