



## High Efficiency Monocrystalline Photovoltaic Module

### Overview

- High efficiency solar cells with high module conversion efficiency and long term output reliability. Virtually maintenance free.
- Rigorous quality control to meet the highest international standards.
- High transmittance, low iron tempered glass with enhanced stiffness and impact resistance.
- Unique frame design with strong mechanical strength for up to 50 lbs/ft<sup>2</sup> wind load and snow load withstanding and easy installation.
- Advanced encapsulation material with multilayer sheet lamination to provide long-life and enhanced cell performance.
- Outstanding electrical performance under high temperature and weak light environments.
- Built in blocking diodes prevent reverse current flow.

### Applications

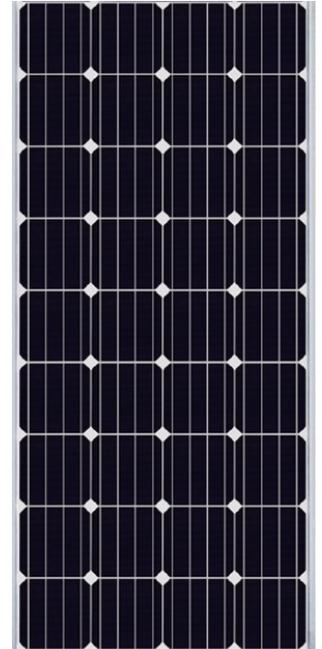
- Any off-grid solar power stations.

### Warranty

- 5 year limited product warranty on materials and workmanship.
- 25 year warranty on >80% power output and 10 year warranty on >90% power output.
- Refer to warranty document for detailed warranty information.

### Certifications

CE IEC61215 IEC61730



### Mechanical Specifications (note: module dimensions may have +/- 1% variance)

Characteristic	Details
Cell Size	156mm x 156mm (6.14" x 6.14")
Module Dimension (L x W x T)	1485mm x 666mm x 40mm (58.4" x 26.2" x 1.57")
No. of Cells	4 x 9 = 36
Weight	12 kg (26.5 lbs)
Cable Length	950mm (37.4") for positive (+) and negative (-)
Type of Connector	MC-IV comparable
Junction Box	IP67 Rated
No. of Holes in Frame	8 installation holes, 8 drainage holes, 2 grounding holes

# MODEL: GS-Star-180W

## Electrical Specifications

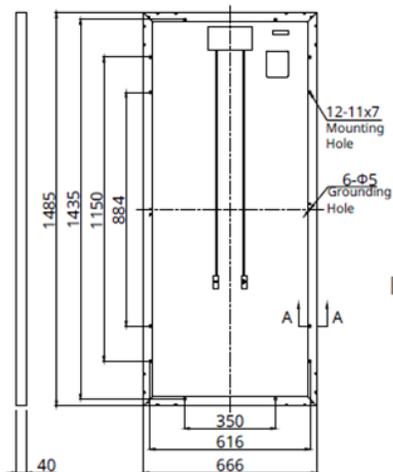
(STC\* = 25 °C, 1000W/m<sup>2</sup> Irradiance and AM=1.5)

Model	GS-Star-180W
Max System Voltage (IEC/UL)	1000V
Maximum Power P <sub>max</sub>	180 W (0%, +5%)
Cell Type	Mono silicon
Voltage at Maximum Power Point V <sub>mpp</sub>	19.5 V
Current at Maximum Power Point I <sub>mpp</sub>	9.24 A
Open Circuit Voltage V <sub>oc</sub>	23.9 V
Short Circuit Current I <sub>sc</sub>	9.89 A
Module Efficiency (%)	18.2 %
Temperature Coefficient of V <sub>oc</sub>	-0.30% /°C
Temperature Coefficient of I <sub>sc</sub>	+0.053% /°C
Temperature Coefficient of P <sub>max</sub>	-0.39% /°C

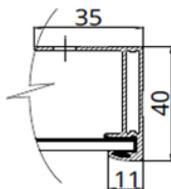
\*Standard Test Conditions

## Physical Specifications mm

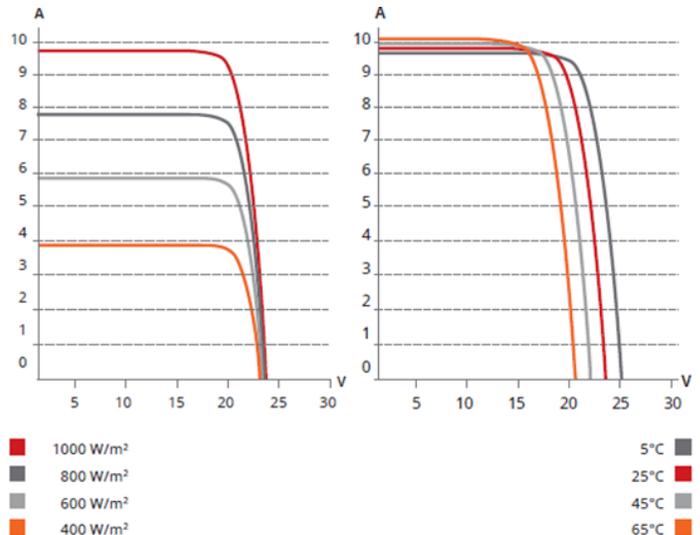
Rear View



Frame Cross Section A-A



Mounting Hole



## Other Performance Data

Power Tolerance	Operating Temperature	Max Series Fuse Rating	NOCT*
0%, +5%	-40 °C to +85 °C	15A	45 °C +/- 2 °C

\*Normal Operating Cell Temperature

[www.GrapeSolar.com](http://www.GrapeSolar.com)

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