



High Efficiency Poly-crystalline
Photovoltaic Module



Overview

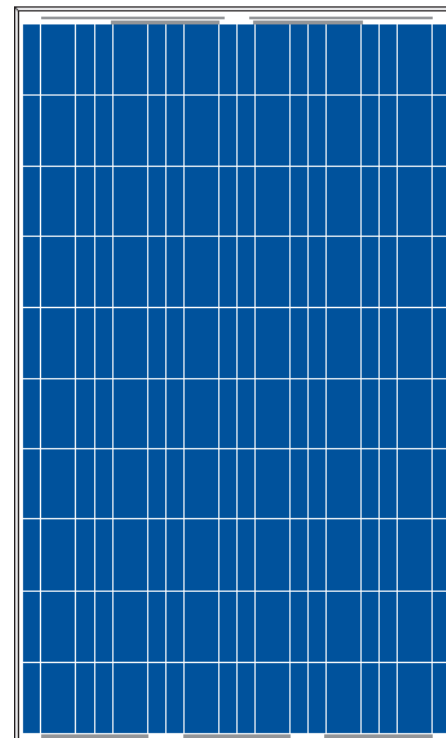
- High cell efficiency with quality silicon material for long term output stability and reliability.
- Rigorous quality control to meet the highest international standards.
- High transmittance, low iron tempered glass with enhanced stiffness and impact resistance.
- Unique frame design with high mechanical strength for easy installation.
- Advanced encapsulation material with multilayer sheet lamination to provide long-life and enhanced cell performance.
- Outstanding electrical performance under high temperature and low irradiance conditions.
- 60 poly-crystalline high-efficiency solar cells (approx. 17%).

Applications

- Any large or small on-grid /off-grid solar power stations.
- Commercial/industrial building roof-top systems.
- Residential roof-top systems.
- Any commercial/industrial ground mount systems.
- Other industrial and commercial applications.

Warranty

- 10 year limited product warranty on materials and workmanship.
- 25 year limited power warranty on power output.
- $\geq 90\%$ power output assurance for 10 years and $\geq 80\%$ power output assurance for 25 years.
- Refer to warranty document for detailed warranty information.



Certifications

- UL1703 ISO 9000:2000
- CE TÜV IEC61215 IEC61730



Mechanical Specifications

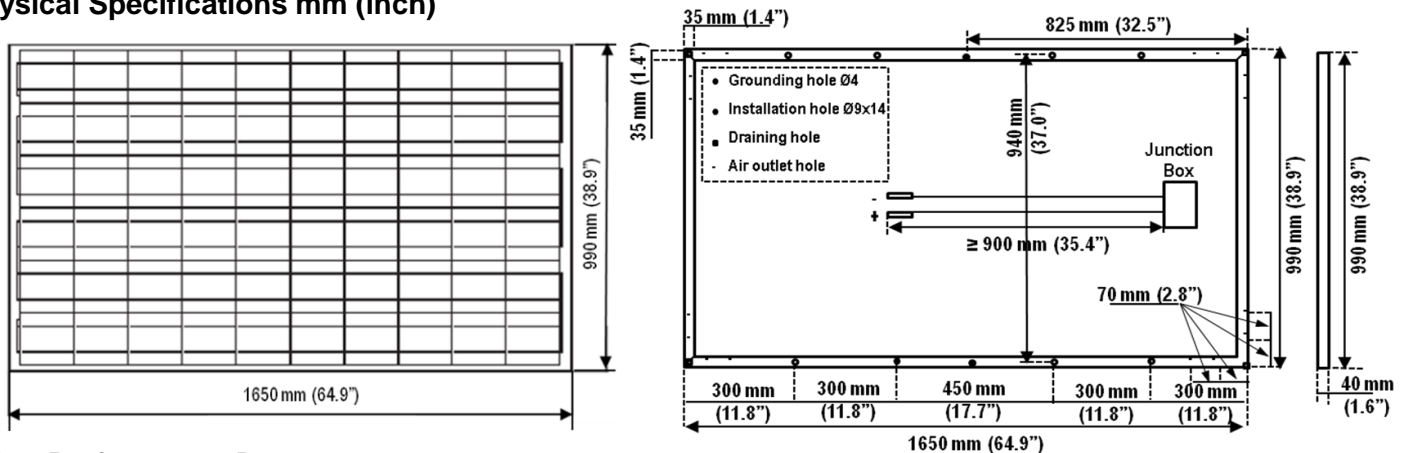
Characteristic	Details
Cell Size	156mm x 156mm (6.14" x 6.14")
Module Dimension (L x W x T)	1650mm x 990mm x 40mm (64.9" x 38.9" x 1.6")
No. of Cells	6 x 10 = 60
Weight	19.5 kg (43.3 lbs)
Cable Length	$\geq 900\text{mm}$ (35.4") for positive (+) and negative (-)
Type of Connector	MC-IV
Junction Box	IP65 Rated
No. of Holes in Frame	4 draining holes, 8 installation holes, 2 grounding holes, 16 air outlet holes.

Electrical Specifications

(STC* = 25 °C, 1000W/m² irradiance and AM=1.5)

Model	CS-P-230-DJ	
Max System Voltage	1000 V	
Maximum Power P _{max}	230 W (0%, +3%)	
CEC Listed PTC Power	203.1 W	
Voltage at Maximum Power Point V _{mpp}	29.7 V	
Current at Maximum Power Point I _{mp}	7.74 A	
Open Circuit Voltage V _{oc}	36.2 V	
Short Circuit Current I _{sc}	8.70 A	
Module Efficiency (%)	14.1%	
Temperature Coefficient of V _{oc}	-0.127 V/°C (-0.35% /°C)	
Temperature Coefficient of I _{sc}	4.4x10 ⁻³ A/°C (0.05% /°C)	
Temperature Coefficient of P _{max}	-1.03 W/°C (-0.45% /°C)	

*Standard Test Conditions

Physical Specifications mm (inch)

Other Performance Data

Power Tolerance	Operating Temperature	Max Series Fuse Rating	NOCT*
0%, +3%	-40 °C to +85 °C	15 A	48 °C ± 2 °C

*Normal Operating Cell Temperature

www.GrapeSolar.com

For service or support call

1-541-349-9000


1305 South Bertelsen Road
Eugene, Oregon 97402, USA
Tel: 541.349.9000 Fax: 541.343.9000