



Polycrystalline PV module 60 cells



Electrical Characteristics

Model	UP-M220P	UP-M225P	UP-M230P	UP-M235P	UP-M240P
Max Power Pm (Wp)	220	225	230	235	240
Max Power Voltage Vm (V)	28.7	29.2	29.7	30.0	30.2
Max Power Current Im (A)	7.67	7.71	7.75	7.84	7.95
Open-Circuit Voltage Voc (V)	36.7	37.0	37.2	37.4	37.6
Short-Circuit Current Isc (A)	8.25	8.27	8.30	8.35	8.40
Module Efficiency	13.4%	13.8%	14.1%	14.4%	14.8%
Maximum System Voltage (V)	1000 (IEC) / 600 (UL)				
Power Tolerance	± 3%				
Series Fuse Rating (A)	20				

Components & Mechanical Data

Front Glass	High Transparency Tempered Glass, 3.2 mm - Saint Gobain (Albarino) // Pilkington
Junction Box	Huber+Suhner (IP 67) Radox HA3 // Tyco , 1740971-1
Bypass Diode	3 diodes - ST STPS1545CG // Diotec SL1515
Output Cables	H+S Radox smart // Tyco 1.0 m, ZHSCG (4 mm ² et 12AWG), IEC and UL approved PV Wire
Connectors	MC4 // H+S , IP67, IEC and UL approved
Frame	Anodized aluminum alloy type 6063-T5
Encapsulation Material	EVA (0.50 ± 0.03 mm thickness)
Back Foil	White TPT (0.32 ± 0.03 mm thickness)
Silicone Sealant	Dow Corning
Temperature Range	-40°C to +90°C
Max Load	5400 Pa
Impact Resistance	Steel ball - 535 g dropped from 1.3 m high

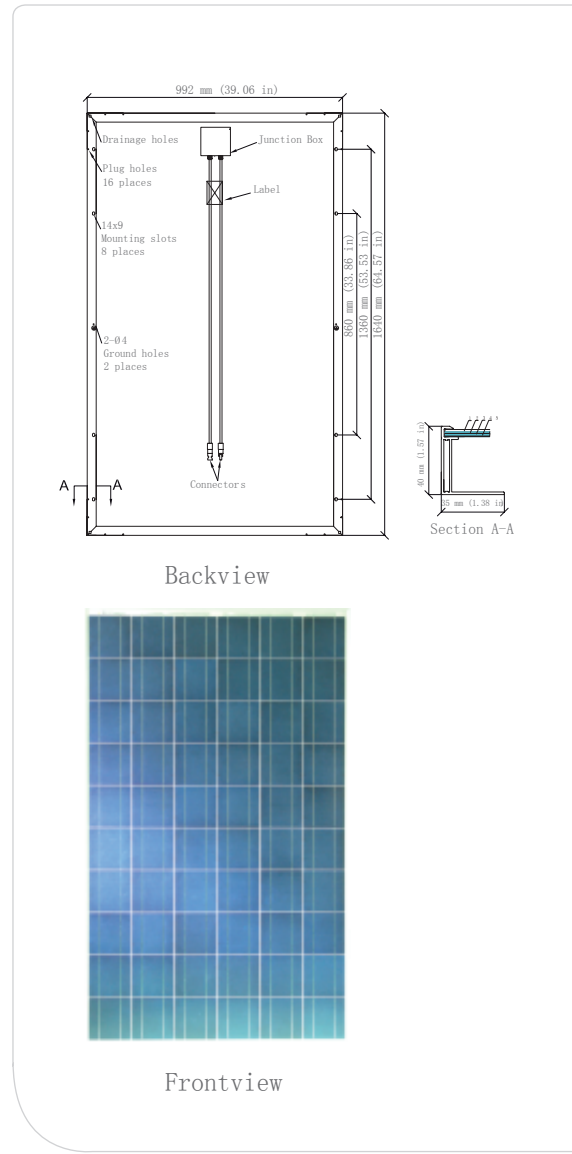
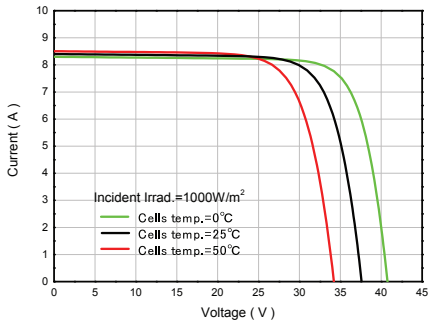
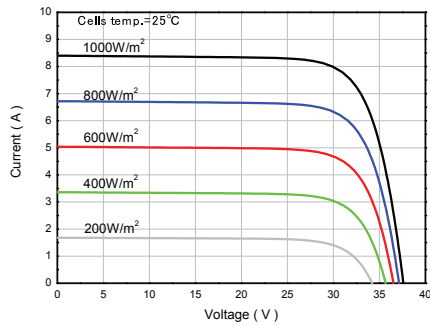
Specifications

Cells	Polycrystalline silicon solar cells 156 mm x 156 mm
Number of cells	60 (6 x 10)
Dimensions (mm)	1640 x 992 x 40
Weight (kg)	19.0

Temperature Coefficients

NOCT (°C)	45 ± 2
Temperature Coefficient of Isc (%/°C)	0.05 ± 0.01
Temperature Coefficient of Voc (%/°C)	-0.32 ± 0.02
Temperature Coefficient of Im (%/°C)	-0.02 ± 0.02
Temperature Coefficient of Vm (%/°C)	-0.42 ± 0.03
Temperature Coefficient of Pm (%/°C)	-0.43 ± 0.05

IV Curves

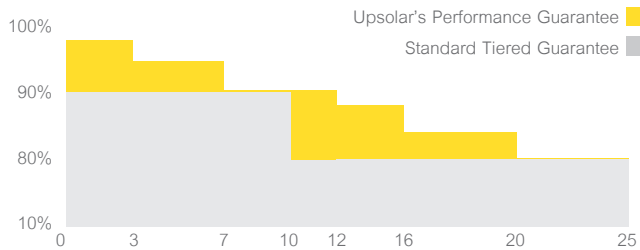


NOTE:

- STC: Irradiance 1000 W/m², Module temperature 25°C, AM = 1.5
- Nominal Operating Cell Temperature above data is only for reference
- Deviation of Vm(V), Im(A), Voc(V) and Isc(A) of ±10%

WARRANTY:

Product Warranty: 10 years



Upsolar is not responsible for damages caused by errors or omissions on this data sheet. All information is subject to change without notice.

PowerGuard Warranty Summary

Upsolar's PowerClip warranty policy protects against design defects, delaminating modules, power output falling outside the established degradation curve and coverage begins immediately.

The Program guarantees the funding of valid claims filed by end-customers pursuant to Upsolar's module warranty; is worldwide and protects all modules sold by Upsolar Group Co., Ltd. and subsidiary companies.

The Program delivers non-cancelable, irrevocable coverage and is fully-paid for; meaning valid claims will be paid out regardless of the solvency or existence of Upsolar over the full 25-year term, by A.M. Best rated "A" (Excellent) or better internationally recognized insurance providers.

Certifications:



Laboratories:

