



Polycrystalline PV module 60 cells



Electrical Characteristics

Model	UP-M220P	UP-M225P	UP-M230P	UP-M235P	UP-M240P
Max Power Pm (W)	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
Cell Efficiency	15.4%	15.8%	16.1%	16.4%	16.8%
Module Efficiency	13.4%	13.8%	14.1%	14.4%	14.8%
Maximum System Voltage (V)	600 (UL) / 1000 (IEC)				
Power Tolerance	± 3%				
Series Fuse Rating (A)	20				

Components & Mechanical Data

Front Glass	High Transparency Tempered Glass, 0.125" - CSG
Junction Box	Huber+Suhner (IP 67) Radox HA3 // Tyco , 1740971-1
Bypass Diode	3 diodes - ST STPG1415 // Tyco SL1515
Output Cables	H+S , Radox smart // Tyco , ZHSCG - IEC and UL approved (0,0062 in ² and 12AWG)(PV Wire Type)
Connectors	MC4 - PV-KBT4/PV-KST4 // IEC and UL approved
Frame	Anodized aluminum alloy type 6063-T5
Encapsulation Material	EVA (0.019" ± 0.001" thickness)
Back Foil	White TPT (0.012" ± 0.001" thickness)
Temperature Range	-40°F to +194°F // -40°C to +90°C
Max Load	45 lbs/ft ² (UL Standards)
Impact Resistance	Steel ball - 1.18 lbs // 535g dropped from 51" high // 1.3m

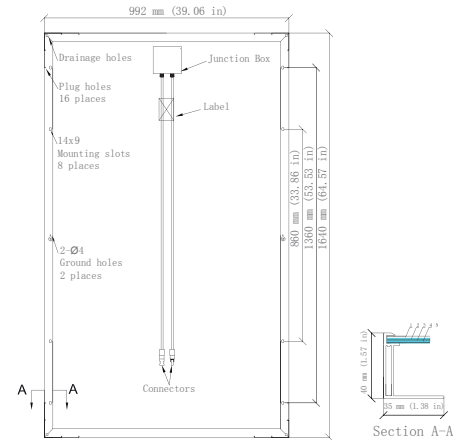
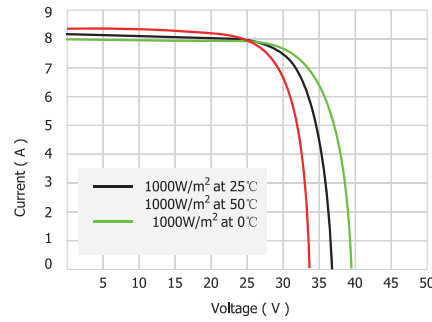
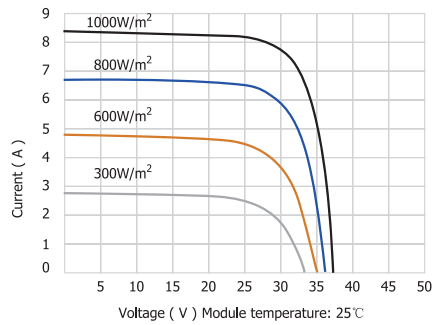
Specifications

Cells	Polycrystalline silicon solar cells 6" x 6" // 152 x 152 mm
Number of cells	60 (6 x 10)
Dimensions (in. // mm)	64.57 x 39.06 x 1.57 // 1640 x 992 x 40
Weight (lb. // kg)	41.9 // 19.0

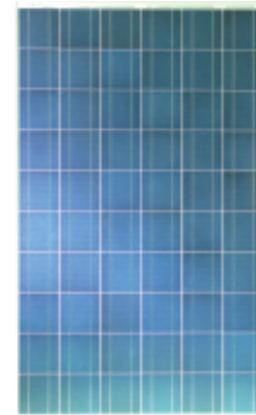
Temperature Coefficients

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



Backview



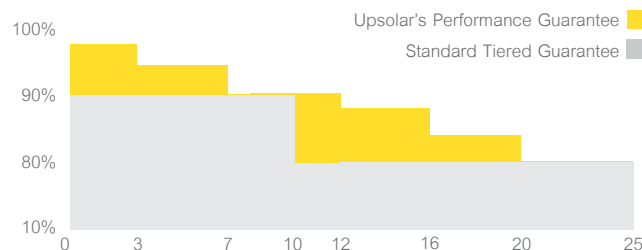
Frontview

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%

WARRANTIES:

Product guarantee: 5 years



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 Co., Ltd. and subsidiary companies.

The Program delivers non-cancellable, 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



AS/NZS 5033 Compliant PV Modules

Laboratories



For product and purchasing inquiries contact: info@ecodirect.com