



M 60 - 240 Watt

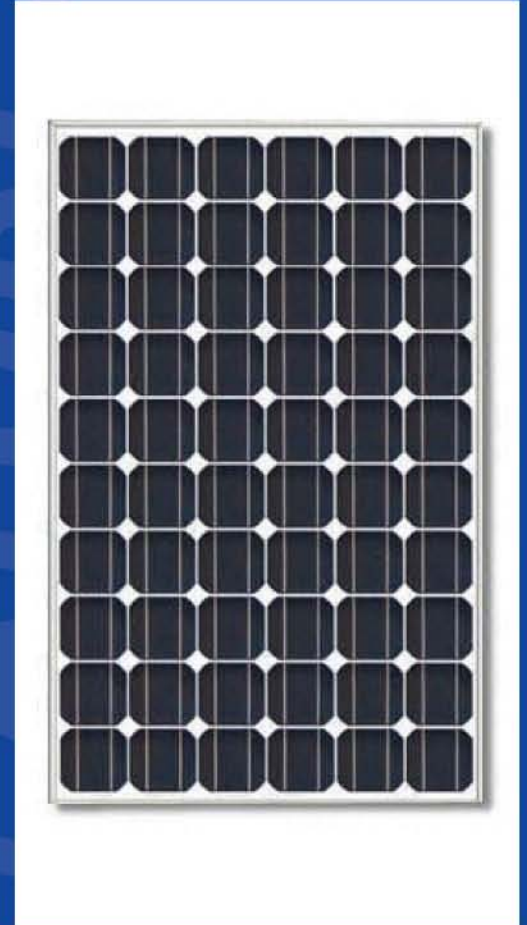
MONO-CRYSTALLINE SOLAR PANEL

PHILADELPHIA SOLAR MODULES

Philadelphia mono-crystalline solar modules in maximum power of 240 Wp are produced with state-of-the-art robotic production line. These modules are suitable for use in most electrical power application and have excellent durability to prevailing weather conditions.

FEATURES

- High-efficiency 6" solar cells ensure high performance of the solar module and create more power under the same conditions.
- Bypass diodes minimize the power drop caused by shade.
- High transparency low-iron tempered glass, EVA laminate and weatherproof back sheet, plus heavy duty anodized/PVDF Coated aluminum frame.
- Output terminals have water proof connectors.
- TUV Certificate (PV-192565-001-TA).
- Produced under systematic quality control covering all processes and factors.



Unique design on drainage slots for vertical and horizontal constructions to avoid deforming due to freezing weather



Our Photovoltaic Modules are successfully qualified according to their Design, Performance and Safety.



High output performance
Long term reliability
Sufficient reverse current
Good resistance to mechanical loads

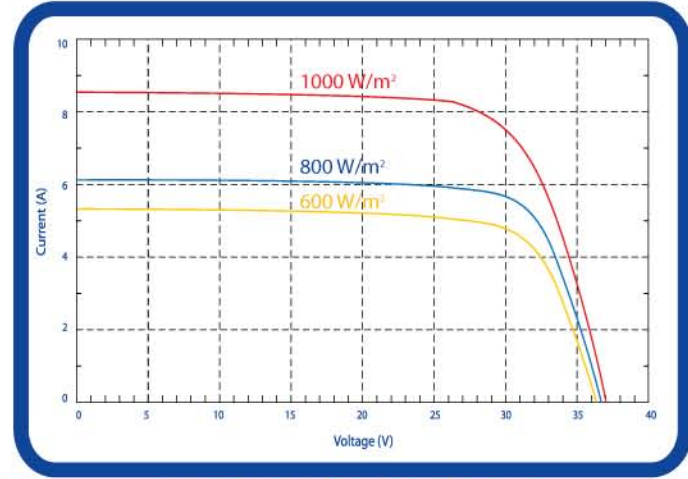


CEI EN 61215 (2006)
CEI EN 61730-1 (2007)
CEI EN 61730-2 (2007)



Product **M 60 - 240**

ELECTRICAL DATA	UNIT	VALUES
Nominal Power $\pm 5\%$ [W_p]	P_{nom}	240
Voltage at Nominal Power [V]	V_{mpp}	30.3
Current at Nominal Power [A]	I_{mpp}	7.93
Open-circuit Voltage [V]	V_{oc}	37.14
Short-circuit Current [A]	I_{sc}	8.56
Voltage Temperature Coefficient	$mV/cell/C^\circ$	-2.11
Current Temperature Coefficient	$mA/cell/C^\circ$	4.62
Power Temperature Coefficient	$\%/C^\circ$	-0.41
Module Efficient [%]	η'	14.6



Current - Voltage Curve

MODULE COMPONENTS	VALUES
Solar Cells per Module	60 (6 x 10) in series
Cell Type	Mono-crystalline silicon, 156 x 156 mm ² - Pseudo Square
Connection	Junction Box IP65 with 3 Bypass diods, Solar Cable (length 0.8m - cross section 4mm ²) with MC4 interconnection
Front Surface	Low Iron 3.2mm Thick Pattern Solar Glass
Frame Material	Anodized / PVDF Coated Aluminum

DIMENTIONS and WEIGHT	VALUES
Dimenions [mm]	1655 x 990 x 45
Weight [kg]	~ 19.8

LIMITS	VALUES
System Voltage [V_{oc}]	1000
Maximum Reverse Current I_{RC} [A]	15
Operating Module Temperature [C°]	-40 to +85
Fire Classification	C

WARRANTY	VALUES
Power Output	10 Years 90% of Minimum Power Output 25 Years 80% of Minimum Power Output
Materials	5 Years Under Normal Conditions

