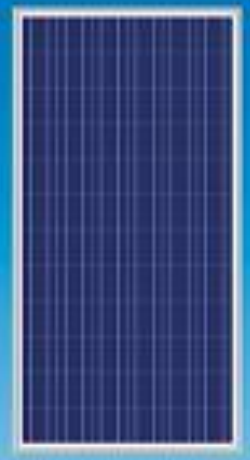
PACIFIC GROUP

Pacific Group
“La decisión verde”

ENERGIA SOLAR FOTOVOLTAICA

La energía solar fotovoltaica es un procedimiento de obtención de energía eléctrica a través de módulos fotovoltaicos.

Estos módulos son elementos colectores formados por dispositivos semiconductores, tipo diodo, que sufren saltos electrónicos provocados por los fotones de la radiación solar al incidir sobre ellos y que genera una débil diferencia de potencial en sus extremos. La disposición en serie de varios de estos fotodiodos permite la obtención de diferencias de voltaje adecuadas para su uso industrial.



High Efficiency
Polycrystalline Solar Modules

WARRANTY
- Product: 5 years
- Power production: 90% 10 years
  80% 25 years

Características eléctricas / Electrical characteristics :

www.tuv.com ID: 0000024168 TÜVRheinland
- Qualified, IEC 61215
- Periodic Inspection

Modelo / Model	PG/B1-P210W
Max Power	210 Wp
Power tolerance	(+/- 5%)
Voltage at Pmax (Vmp)	29.2 V
Current at Pmax (Imp)	7.19 A
Open circuit voltage (Voc)	36.1 V
Short circuit current (Isc)	8.00 A
Max system voltage (VDC)	DC715/1000V
Cell	156x156 mm.
Temperature Coefficient of Vm	(-0.38%/ºC)
Temperature Coefficient of Imp	(+0.1%/ºC)
Nominal operanting cell temperature	(-40ºC ~ 85ºC)

Características mecánicas / Mechanical characteristics :	
Modelo / Model	**PG/B1-P210W**

On the certification, we have passed the ISO 9001:2000 management systems.

Our samples have being tested in the labs for the IEC61215 and IEC61730.

Dimension:	
Largo / Length	1660 mm
Ancho / Width	992 mm
Espesor / Height	46 mm
Peso / Weight	19.5 kg
Nº of draining holes in frame	

Construction:	
Glass	High transmission tempered glass
Glass height	3.2 mm
Encapsulation	EVA
Back side	TPT/TPE
Junction box	
Frame	Clear anodized aluminum frame

Modelo / Model	PG/B1-P210W

Certificación / Certification:	
1,-	SHEMO080900228PTX01 SGS
2,-	ISO9001:2000 TÜV (44 100 062486)
3,-	CSA Mark 2150347

Packaging configuration	
Packaging configuration	2 pcs in one carton
Quantity/Pallet	17 cartons on one pallet 1710x1050 mm
Loading capacity	20 ft: 204 units in 6 pallets, 40 ft: 442 units in 13 pallets

Condiciones de Medidas Estandar STC / Values at Standard Test Conditions STC (1)

High Efficiency
Monocrystalline Solar Modules

WARRANTY
- Product: 5 years
- Power production: 90% 10 years
  80% 25 years

www.tuv.com
TÜVRheinland
ID: 0000024168

- Qualified, IEC 61215
- Periodic Inspection

Características eléctricas / Electrical characteristics :

Modelo / Model	PG/A1-M180W
Max Power	180 Wp
Power tolerance	(+/- 3%)
Voltage at Pmax (Vmp)	36.5 V
Current at Pmax (Imp)	4.93 A
Open circuit voltage (Voc)	44.2 V
Short circuit current (Isc)	5.35 A
Max system voltage (VDC)	1000 V (IEC), 600 V (UL)
Cell Efficiency (Ø 165mm)	16.4%
Cell Efficiency (Ø 150mm)	17.0%
Module efficiency	14.1%
Number and type of cell	72 pcs. Monocrystalline (6x12)
Nº of bypass diodes (pcs)	3
Max. series fuses (A)	10A
Temperature Coefficient of Pmax	(-0.48%/ºC)
Temperature Coefficient of Voc	(-0,34%/ºC)
Temperature Coefficient of Isc	0.02%/ºC
Nominal operanting cell temperature	47 +/- 2 ºC

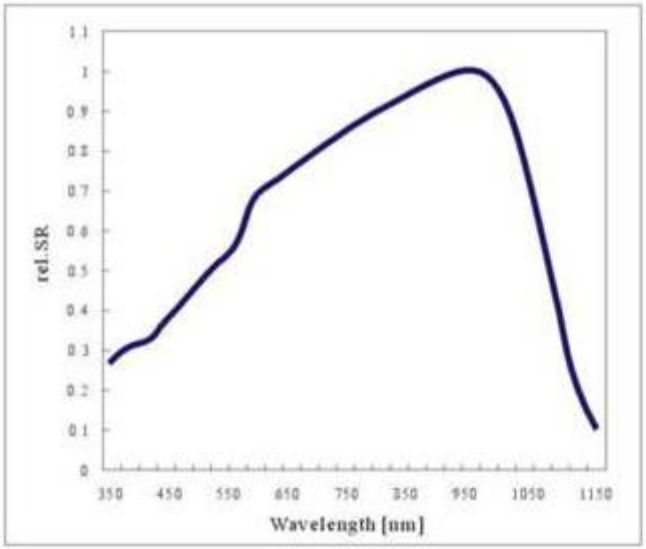
Modelo / Model	PG/A1-M180W

All data at standard testing condition: STC=1000W/m², AM 1.5, 25℃, Pmax: 1.5% rel., Efficiency: 0.2% abs.
The tolerance of current and voltage is ±2%.

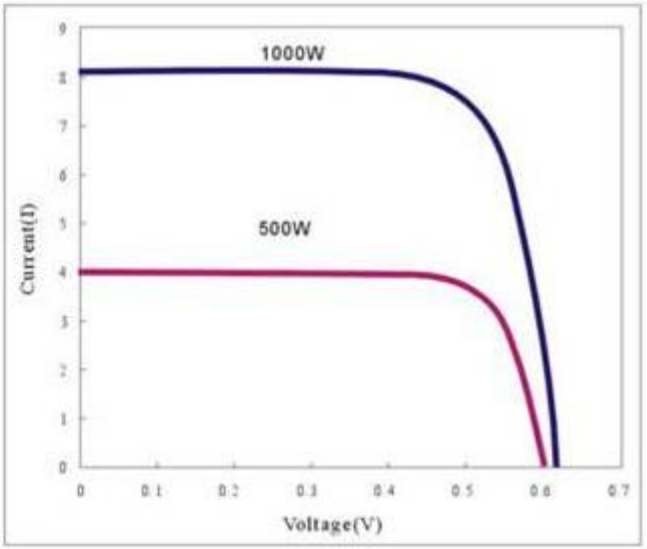
Electrical Characteristics

Performances

Spectral Response

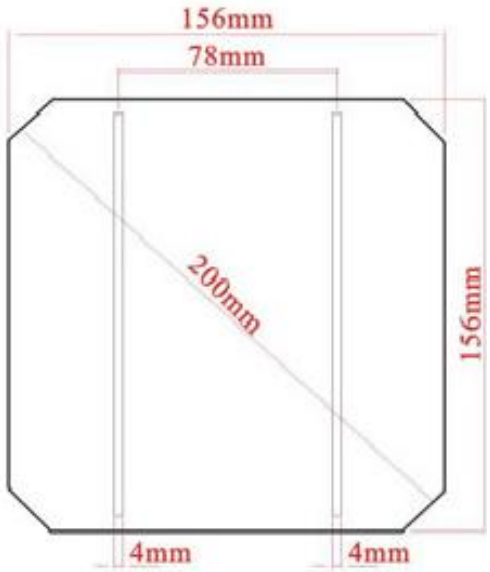


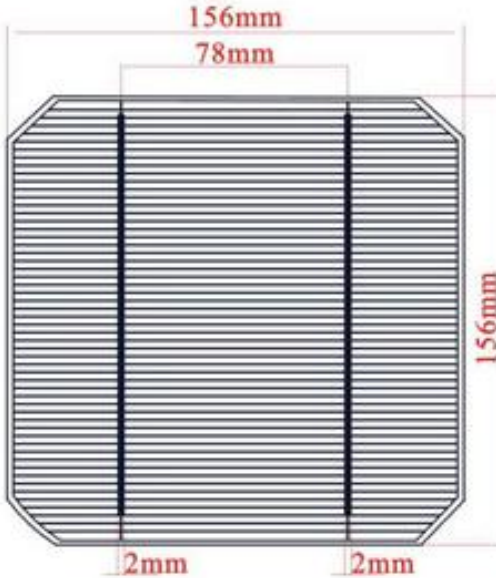
IV Curves



156 Series 156x156mm Mono-Crystalline Cells

High Performance and Advantages





Production and quality control

- Current measurement under STC to avoid module mismatches. Hot spot resistance testing of every single cell via the reverse current characteristic.
- Across-the-board soft handling during production to avoid micro cracks and reduce breakage rates during onward processing.
- High-quality, homogeneous appearance due to mono-crystalline material and steady QC processes.

Electrical Properties

- Excellent long-term electrical stability through crystalline silicon technology.
- Excellent low light behavior thanks to parallel resistance checks on every cell.
- Classification into very narrow current classes.

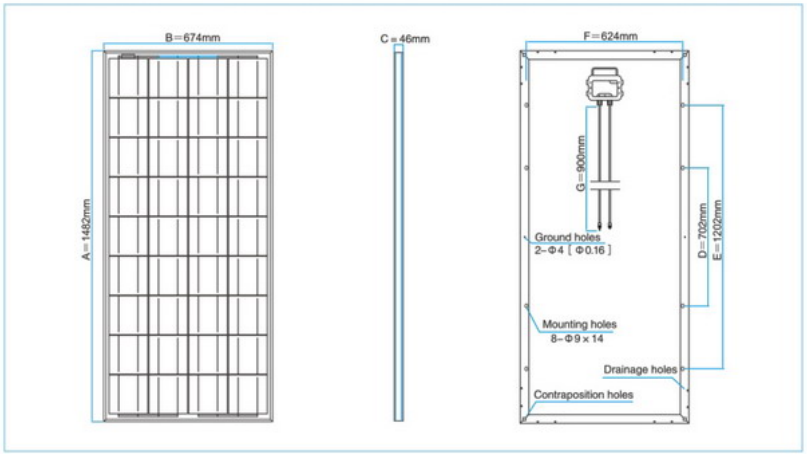
Onward processing recommendations

- Solder joint: tin-coated copper ribbons, coated with 10 -15 μm 62%Sn/36%Pb/2%Ag.

Características mecánicas / Mechanical characteristics :

Modelo / Model	PG/A1-M180W

Dimensions



▶ Caution: Read Safety And Installation Instructions Before Using This Product

Dimension:	
Largo / Length	1580 mm
Ancho / Width	808 mm
Espesor / Height	40 mm.
Peso / Weight	15.4 kg
Nº of draining holes in frame	16

Construction:	
Glass	High transmission, low iron, tempered
Glass height	3.2 mm.
Encapsulation	EVA
Back side	Tedlar, white
Junction box	IP 65 Rated
Frame	Clear anodized aluminum alloy type 6063T5 frame

Cable type, Diameter and Legth	Ø= 4 mm2, L=900 mm, TUV certified
Type of connector	QC0506-1.1B, Compatible type IV, MC4

Modelo / Model	PG/A1-M180W

Customer Designed

Slice up / Combination

Output and dimensions varies depends on applications

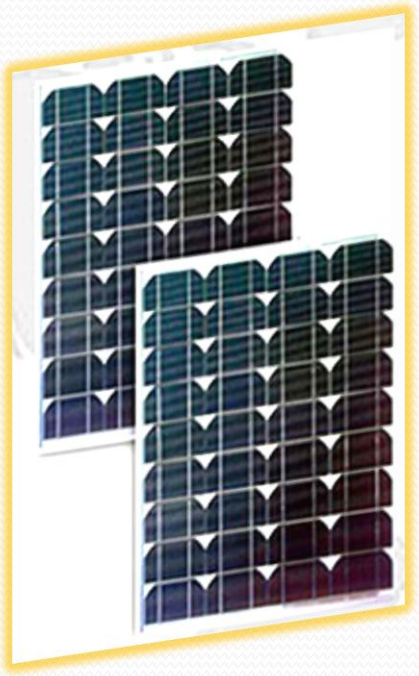
Test Condition
STC (25℃,1000W/m², AM1.5G)

Qualification test parameters:	
Dielectric insulation voltage	3000 VDC max
Operanting temperature	(-40 to +85 ºC)
Max load	5400 pascals
Hailstone impact	25 mm at 23 m/s

Certificación / Certification:	
1,-	TüV Report 21208716
2,-	Declaration of Conformity (CE)
3,-	IEC
4,-	ISO9001:2000 UKAS 2008Q7885
5,-	ETV intertek 3189198

Condiciones de Medidas Estandar STC / Values at Standard Test Conditions STC (1)

Modelo / Model	PG/A1-M180W



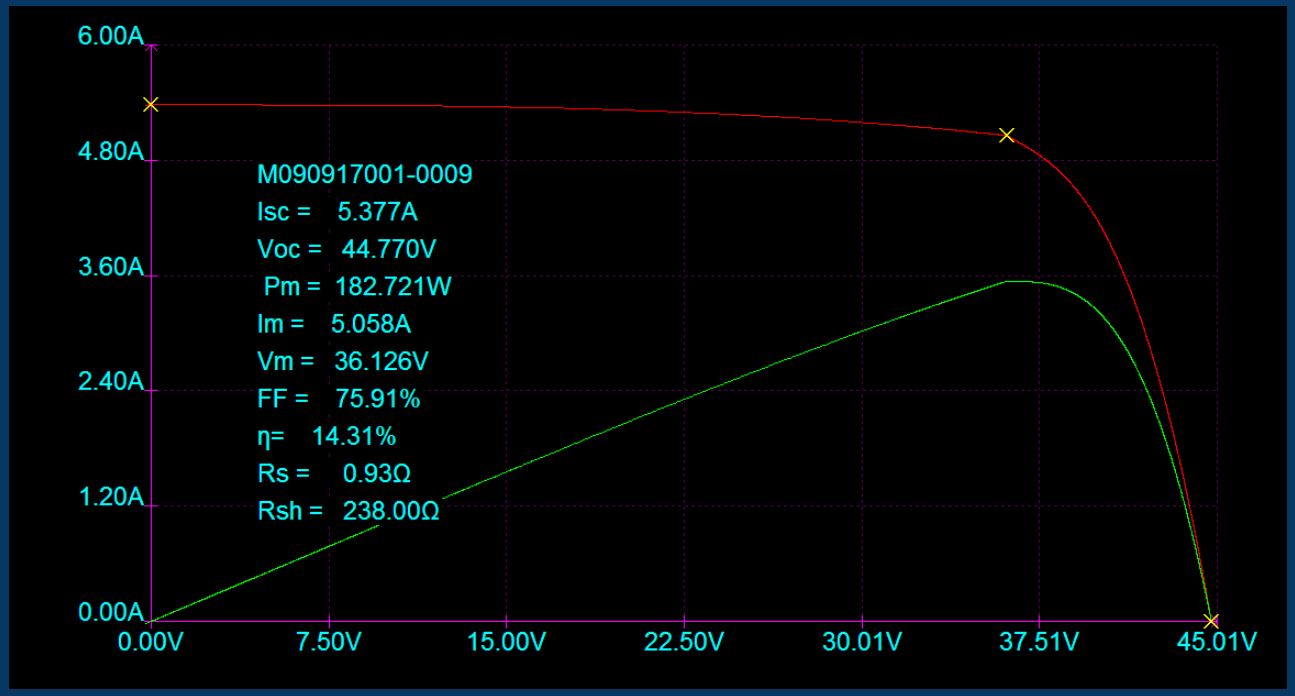
Packaging configuration	
Packaging configuration	24 pcs/box
Quantity/Pallet	1 box/pallet
Loading capacity	672 pcs/40 ft

Warranty:	
Product	5 years
Power production:	
10 years	90%
25 years	80%

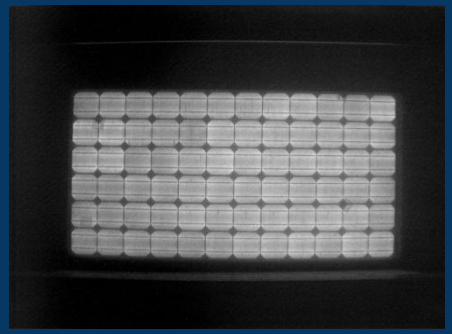
Modelo / Model	PG/A1-M180W

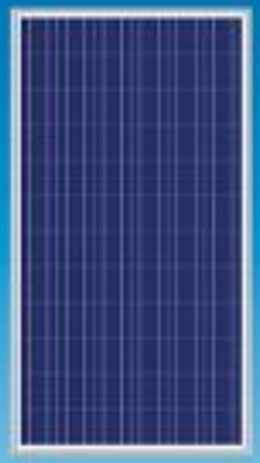
Flash Report(Electrical properties)

Monocrystaline module



(1)180W module
EL Test Image





High Efficiency
Polycrystalline Solar Modules

WARRANTY
- Product: 5 years
- Power production: 80% 10 years
  80% 25 years

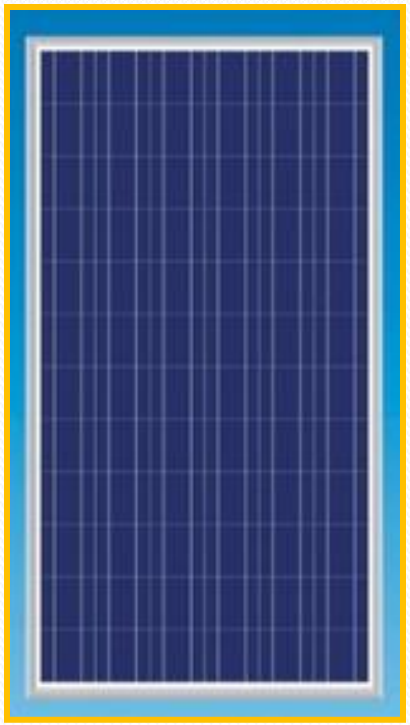
IEC CE ISO

Características eléctricas / Electrical characteristics :

Modelo / Model	PG/A2-P280W
Max Power	280 Wp
Power tolerance	(+/- 3%)
Voltage at Pmax (Vmp)	36.4 V
Current at Pmax (Imp)	7.70 A
Open circuit voltage (Voc)	44.5 V
Short circuit current (Isc)	8.28 A
Max system voltage (VDC)	1000 V (IEC), 600 V (UL)
Cell Efficiency (Ø 165mm)	16.2%
Cell Efficiency (Ø 150mm)	-
Module efficiency	14.4%
Number and type of cell	72 pcs. Polycrystalline (6x12)
Nº of bypass diodes (pcs)	3
Max. series fuses (A)	15A
Temperature Coefficient of Pmax	(-0.48%/ºC)
Temperature Coefficient of Voc	(-0,34%/ºC)
Temperature Coefficient of Isc	0.02%/ºC
Nominal operanting cell temperature	47 +/- 2 ºC

Características mecánicas / Mechanical characteristics :

Modelo / Model	PG/A2-P280W



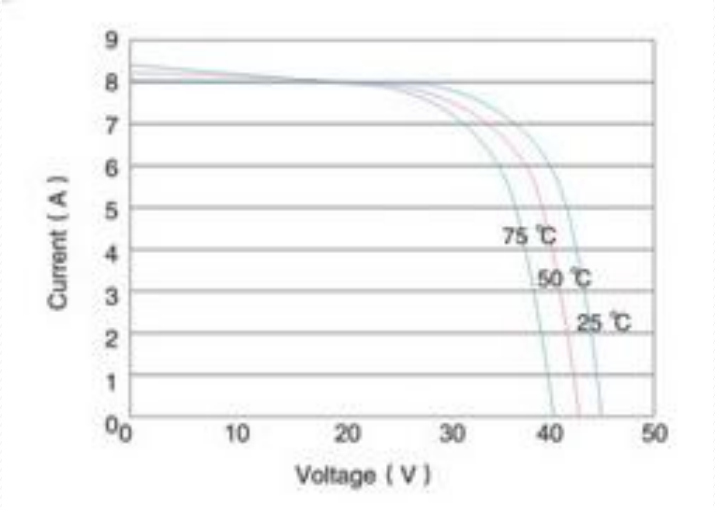
Dimension:	
Largo / Length	1956
Ancho / Width	992
Espesor / Height	50
Peso / Weight	23.2
Nº of draining holes in frame	16

Cable type, Diameter and Legth	Ø= 4 mm2, L=900 mm, TUV certified
Type of connector	MC4, Compatible type IV, Plug&Play Connectors

Construction:	
Glass	High transmission, low iron, tempered
Glass height	3.2 mm.
Encapsulation	EVA
Back side	Tedlar, white
Junction box	IP 65 Rated
Frame	Clear anodized aluminum alloy type 6063T5 frame

Modelo / Model	PG/A2-P280W

I –V Curves of PV module 280 wat at various cell temperatures.



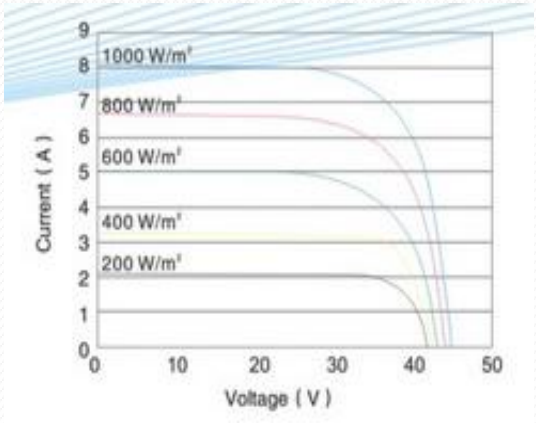
Qualification test parameters:	
Dielectric insulation voltage	3000 VDC max
Operanting temperature	(-40 to +85 ºC)
Max load	5400 pascals
Hailstone impact	25 mm at 23 m/s

Certificación / Certification:	
1,-	TüV Report 12605438
2,-	Declaration of Conformity (CE)
3,-	IEC
4,-	ISO9001:2000 UKAS 2008Q7885
5,-	ETV intertek 3189198

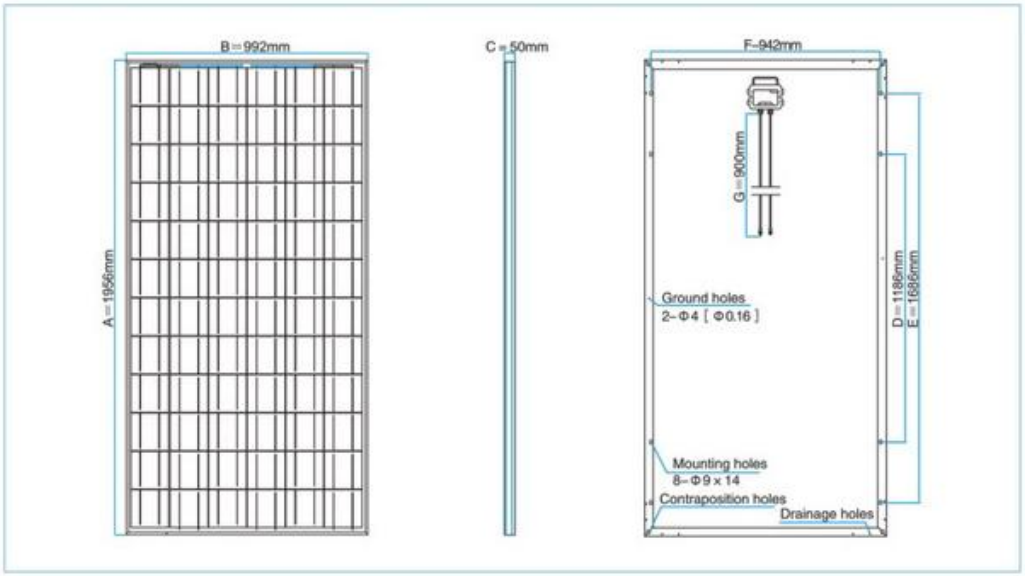
Condiciones de Medidas Estandar STC / Values at Standard Test Conditions STC (1)

Modelo / Model	PG/A2-P280W

I –V Curves of PV module 280 wat at different light power



Dimensions



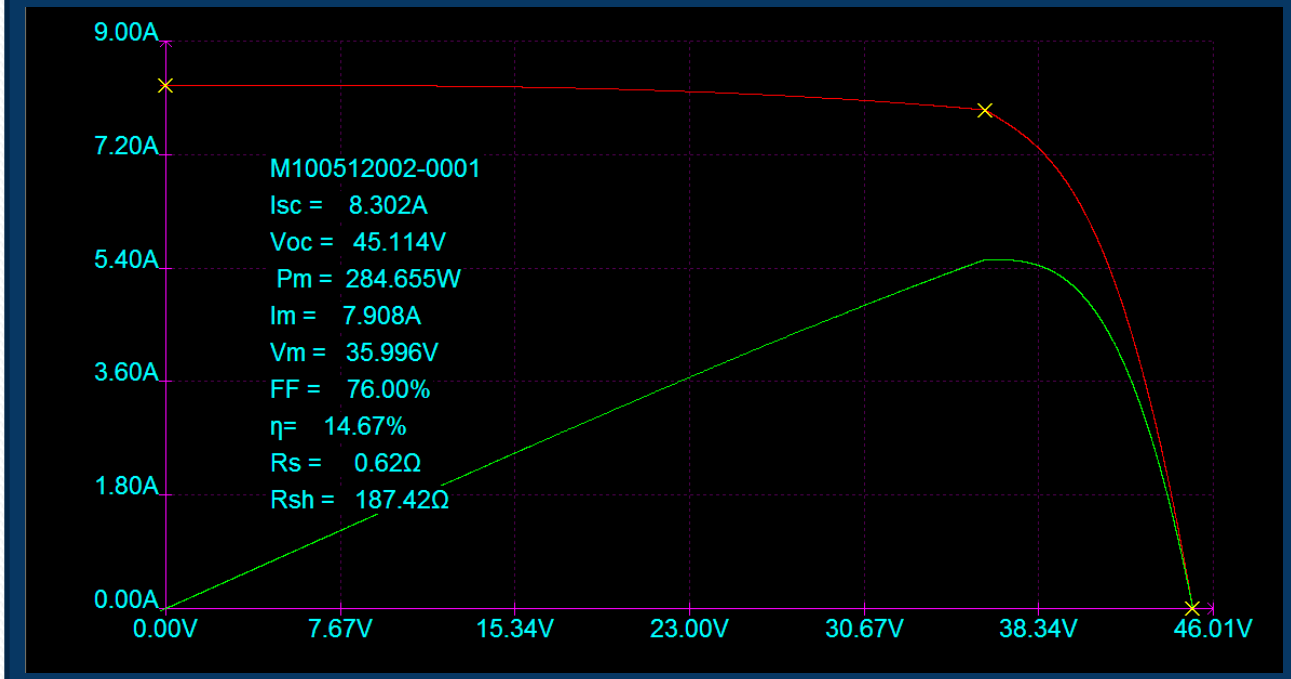
Warranty:	
Product	5 years
Power production:	
10 years	90%
25 years	80%

Packaging configuration	
Packaging configuration	20 pcs/box
Quantity/Pallet	1 box/pallet
Loading capacity	440 pcs/40 ft

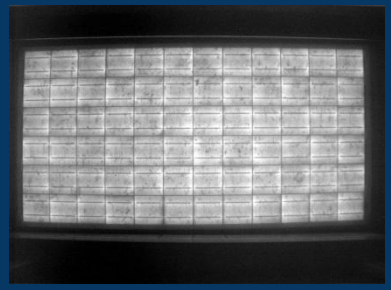
Modelo / Model	PG/A2-P280W

Flash Report(Electrical properties)

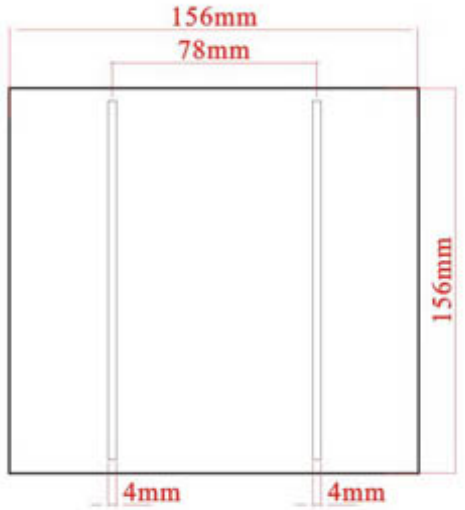
Polycrystaline module



(2)280W module EL Test Image

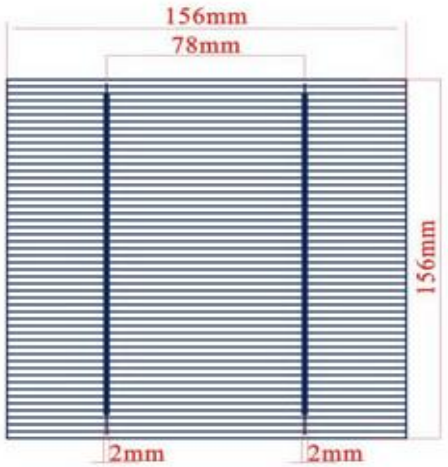


Series 156x156mm Multi-Crystalline Cells



Production and quality control

- Current measurement under STC to avoid module mismatches. Hot spot resistance testing of every single cell via the reverse current characteristic.
- Across-the-board soft handling during production to avoid micro cracks and reduce breakage rates during onward processing.
- High-quality, homogeneous appearance due to multi-crystalline material and steady QC processes.



Electrical Properties

- Excellent long-term electrical stability through crystalline silicon technology.
- Excellent low light behavior thanks to parallel resistance checks on every cell.
- Classification into very narrow current classes.

Onward processing recommendations

- Solder joint: tin-coated copper ribbons, coated with 10 -15 µm 62%Sn/36%Pb/2%Ag.

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