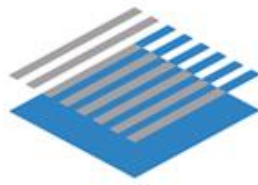


SE 270/60M SE 280/60M

SE 290/60M SE 300/60M

MONOCRYSTALLINE SOLAR MODULE



Solar-Energy

New product line from Solar-Energy highly efficient monocrystalline photovoltaic module with a guarantee of highest quality.

Basic advantages:



Fully automated production line

High precision and repeatability of product.



3-step quality control

Product quality control present at each step of production including electroluminescence testing for micro-cracks.



High resistance 8000 Pa\*



Upper power tolerance guaranteed



Minimized PID effect

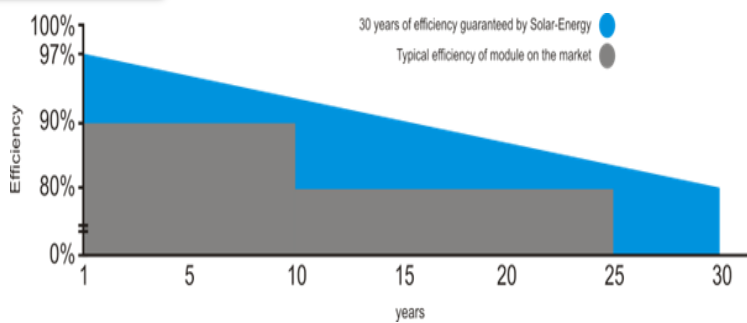


Extended guarantee period

10 years guarantee for the product and 30 years guarantee for performance.

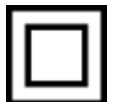


GUARANTEE BY SOLAR-ENERGY



QUALITY AND CERTIFICATES

- ISO 9001:2008 – Quality Management System for the Design and Production of Photovoltaic Modules
- ISO 14001:2004 – Environmental Management System
- IEC 61215:2005 and IEC 61730:2004 Class A granted by TÜV NORD
- Compliance with CE
- Made in Poland



\* Resistance for special orders, for standard orders we guarantee 5400 Pa resistance.

\*\* The guarantee details are included in the guarantee conditions available at [www.solar-energy.pl](http://www.solar-energy.pl) in a document named: "Specific conditions of warranty and guarantee for modules manufactured by the Solar-Energy S.A. company".

SOLAR-ENERGY S.A.  
 HEADQUARTERS:  
 PAŃSKA ST 73  
 00-832 WARSAW, POLAND  
 PRODUCTION FACILITY:  
 PRZEMYSŁOWA ST 1  
 84-214 BOŻEPOLE WIELKIE

E-MAIL: BIURO@SOLAR-ENERGY.PL  
 WWW: WWW.SOLAR-ENERGY.PL

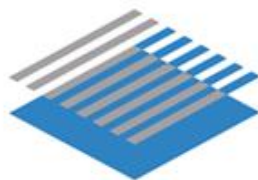
TEL.: +48 (22) 487-51-78  
 FAX: +48 (22) 465-14-87

VERSION 2016

SE 270/60M SE 280/60M

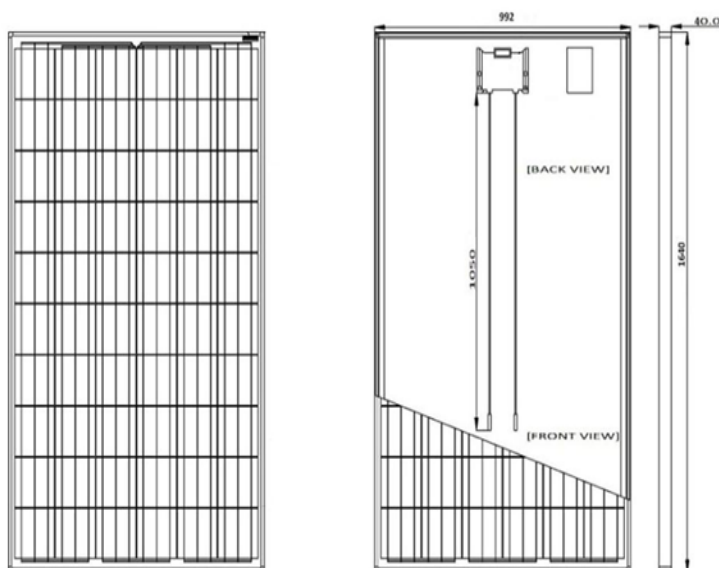
SE 290/60M SE 300/60M

MONOCRYSTALLINE SOLAR MODULE



Solar-Energy

## MODULE SCHEME



## MECHANICAL CHARACTERISTIC

Solar cells	6" monocrystalline cells, 3 bus bar
Cells dimensions	156 x 156 [mm]
No. of cells	60 pcs. (10 x 6)
Internal connection	serial connection
Length	1640 ± 1 [mm]
Width	992 ± 1 [mm]
Thickness	40 [mm]
Nominal mass	18 [kg]
Junction box	Class of protection <b>IP 67</b> , granted by TÜV Rheinland
Wire	2 x solar wires 4 [mm <sup>2</sup> ], 1000 [mm]
Connectors	MC4
Diodes	3 by-pass diodes
Frame	Anodized aluminum
Glass	3,2 [mm], tempered, prismatic mat-mat
Encapsulation	copolymer EVA
Backsheet	multilayer polyester

**Electrical device!**

Do not install by yourself!  
Contact authorized installer.

## ELECTRICAL CHARACTERISTICS

MODULE TYPE	SE 270/60M	SE 280/60M	SE 290/60M	SE 300/60M
<b>*PERFORMANCE AT STC</b>				
Maximum power rating [P <sub>mpp</sub> ]	270 Wp	280 Wp	290 Wp	300 Wp
Open circuit voltage [U <sub>oc</sub> ]	38,5 V	38,7 V	38,9 V	39,1 V
Short circuit current [I <sub>sc</sub> ]	9,4 A	9,6 A	9,8 A	10,0 A
Maximum power voltage [U <sub>mpp</sub> ]	30,5 V	31,9 V	32,8 V	33,7 V
Maximum power current [I <sub>mpp</sub> ]	8,7 A	8,9 A	9,1 A	9,3 A
Tolerance of P <sub>mpp</sub>	0/+4Wp			
Module efficiency	16,2 %	16,9 %	17,6 %	18,3 %

\*Measured at 1000 W/m<sup>2</sup>, module temperature 25°C, AM 1,5

## SYSTEM CHARACTERISTIC

Maximum system voltage	1000 V DC
Maximum protection	15 A

## TEMPERATURE CHARACTERISTIC

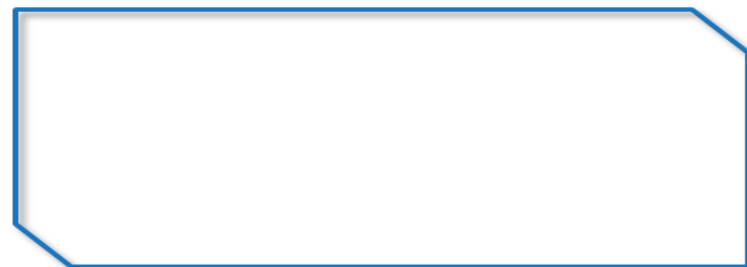
NOCT*	43 ± 2 °C
Temperature rating	-40°C to +85 °C
Current temperature coefficient [I <sub>sc</sub> ]	0,05 %/°C
Voltage temperature coefficient [U <sub>oc</sub> ]	-0,33 %/°C
Power temperature coefficient [P]	-0,39 %/°C

\*Measured at 800 W/m<sup>2</sup>, air temperature 20°C, wind velocity 1 m/s

## PACKING

Method of packing	Modules per pallet	Truck
Cardboard box Pallet dim.: 1,7 x 1,2	26	30 pallets / 780 modules

## PARTNER



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