

## Crystalline module with POLY cells



SCHOTT POLY™ 220/225/230/235

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#### At a glance

- Double of the required standard
- High resistance to mechanical loads
- High performance output
- Long-term reliability
- Increased resistance to reverse current
- Improved temperature coefficient

The long-established German company SCHOTT Solar operates worldwide and started with the development and manufacturing of components for the solar industry in 1958.

SCHOTT Solar polycrystalline modules are specifically designed for both roof- and ground-mounted applications. Due to strict internal quality standards, all modules benefit from exceptionally long durability, which results in maximised profitability. The polycrystalline cells within each module are sorted to particularly narrow performance tolerances, thereby allowing series interconnections with minimal mismatch losses.

**Double of the required standard:** SCHOTT Solar tests its modules for twice as long as is required by the IEC.

**High resistance to mechanical loads:** The solid anodised aluminium frame ensures superior torsional resistance. SCHOTT Solar polycrystalline modules are also tested to an extreme loading pressure and suction of 5,400 Pa – which equates to 550 kg per square metre and a reassuring level of security for your investment.

**High performance output:** All SCHOTT Solar polycrystalline modules hold a positive tolerance of their nominal power rating. This ensures a stable high-energy output and a quick return on investment.

**Long-term reliability:** SCHOTT Solar offers a power output guarantee of 25 years and a product warranty of five years.

**Increased resistance to reverse current:** SCHOTT Solar polycrystalline modules have a high resistance to reverse current, minimising the wiring costs.

**Improved temperature coefficient:** The improved temperature coefficient of the modules lead to an increased module efficiency at high ambient temperature.

## Technical Data

### Data at standard test conditions (STC)

Module type		SCHOTT POLY™ 220	SCHOTT POLY™ 225	SCHOTT POLY™ 230	SCHOTT POLY™ 235
Nominal power [Wp]	$P_{mpp}$	≥ 220	≥ 225	≥ 230	≥ 235
Voltage at nominal power [V]	$U_{mpp}$	29.7	29.8	30.0	30.2
Current at nominal power [A]	$I_{mpp}$	7.41	7.55	7.66	7.78
Open-circuit voltage [V]	$U_{oc}$	36.5	36.7	36.9	37.1
Short-circuit current [A]	$I_{sc}$	8.15	8.24	8.33	8.42
Module efficiency (%)	$\eta$	13.1	13.4	13.7	14.0

STC (1000W/m<sup>2</sup>; AM 1.5; cell temperature 25°C)

Power tolerance (as measured by flasher): -0 W / +4.99 W

Power measurement accuracy: ± 4 %

### Data at normal operating cell temperature (NOCT)

Nominal power [Wp]	$P_{mpp}$	158	161	165	169
Voltage at nominal power [V]	$U_{mpp}$	26.7	26.9	27.1	27.2
Open-circuit voltage [V]	$U_{oc}$	33.3	33.5	33.7	33.9
Short-circuit current [A]	$I_{sc}$	6.53	6.60	6.67	6.75
Temperature [°C]	$T_{NOCT}$	47.2	47.2	47.2	47.2

NOCT (800 W/m<sup>2</sup>, AM 1.5, windspeed 1 m/s, ambient temperature 20°C)

Power measurement accuracy: ± 4 %

### Data at low irradiation

At a low irradiation intensity of 200 W/m<sup>2</sup> (AM 1.5 and cell temperature 25°C) 97 % of the STC module efficiency (1000 W/m<sup>2</sup>) will be achieved.

### Temperature coefficients

Power [%/K]	$P_{mpp}$	-0.45
Open-circuit voltage [%/K]	$U_{oc}$	-0.33
Short-circuit current [%/K]	$I_{sc}$	+0.04

### Characteristic data

Solar cells per module	60
Cell type	MAIN-iso (multicrystalline, 156 mm x 156 mm)
Junction box	IP65 with three bypass diodes
Connector	Tyco-Connector IP67
Dimensions junction box [mm]	110 x 115 x 25
Front panel	low iron solar glass 4.0 mm
Backside panel	foil
Frame material	anodised aluminium

### Dimensions and weight

Dimensions [mm]	1,685 x 993
Thickness [mm]	50
Weight [kg]	approx. 23

### Limits

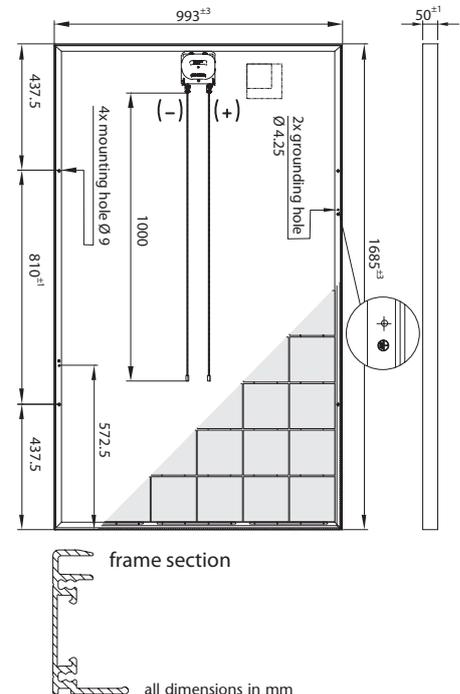
Maximum system voltage [ $V_{DC}$ ]	1000
Maximum reverse current $I_R$ [A]*	20
Operating module temperature [°C]	-40 ... +85
Maximum load (to IEC 61215 ed. 2)	pressure: 5,400 N/m <sup>2</sup> or 550 kg/m <sup>2</sup> suction: 5,400 N/m <sup>2</sup> or 550 kg/m <sup>2</sup>
Application classification (to IEC 61730)	A
Fire classification (to IEC 61730)	C

\* No external voltage in excess of  $U_{oc}$  shall be applied to the module.

### Permission and certificates

The modules are certified to IEC 61215 ed. 2 and IEC 61730, Electrical Protection Class II and the CE-guidelines. Moreover SCHOTT Solar is certified and registered to ISO 9001 and ISO 14001.

The **installation manual** contains additional information on installation and operation. All information complies with the requirements of the standard EN 50380.



SCHOTT Solar AG  
Hattenbergstrasse 10  
55122 Mainz  
Germany

Phone: +49 (0)6131/66-14099  
Fax: +49 (0)6023/91-1700  
solar.sales@schottsolar.com  
www.schottsolar.com

SCHOTT  
solar