

SOLAR MODULE



Sunways SM 240U multicrystalline

Sunways SM 240U Solar Modules are exclusively equipped with state-of-the-art multicrystalline Sunways Solar Cells and have a capacity of up to 250 Wp. The textured cell surface in conjunction with the 3-busbar technology ensures a homogeneous appearance and a high yield. The innovative P3 Technology ensures planning security, high yields and high efficiency from the start.

Exclusive P3 Technology High efficiency from the beginning

Protected against light-induced degradation ("LID-Effect")
Protected against potential induced degradation ("PID-Effect")
Incorporating German made high-performance Sunways Solar Cells

Guaranteed performance and safety

Performance guarantee 90% over 12 years, 80% over 25 years according to the current warranty conditions
Safety through a market leading product warranty of 10 years

High yields

High efficiencies and minimised module mismatch through tight cell and module tolerances

Innovative Anti-reflective solar glass

Reflection is minimised whilst energy yield – and savings – are increased

OutputPlus+

With Sunways 'Positive tolerance' measured power always exceeds the specified rated output (0 to 5 W)



Product characteristics

Category:	multicrystalline
Module size (L x W x T):	1642 mm x 994 mm x 40 mm
Area:	1.63 m ²
Weight:	20 kg
Output classes:	250 / 240 / 235 / 230 / 230 Wp
Cells:	60 Sunways Solar Cells, multi-textured, 3 busbars
Cell format:	156 x 156 mm, full-square

Design

Front:	Anti-reflective coated safety solar glass, 3.2 mm
Encapsulation:	EVA (ethylene vinyl acetate)
Rear:	Polyamide laminated film
Frame:	hollow section profile, light anodized aluminium
Junction box:	certified junction box IP65 with 6 bypass diodes
Connectors & cables:	MC4 compatible, 2 x 1.2 m, cable cross-section 4 mm ²



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Technical Data SM 240U

Model No.	SM240U 230W	SM240U 235W	SM240U 240W	SM240U 245W	SM240U 250W
Article No.	SM230UD2A	SM235UD2A	SM240UD2A	SM245UD2A	SM250UD2A
Output classes	230	235	240	245	250

Electrical data at STC ¹⁾

Rated output P_{MPP} (W)	230	235	240	245	250
Voltage U_{MPP} (V)	29.9	29.9	30.0	30.0	30.1
Current I_{MPP} (A)	7.68	7.83	8.00	8.14	8.30
Open-circuit voltage V_{OC} (V)	36.7	36.8	36.8	36.9	37.2
Short-circuit current I_{SC} (A)	8.40	8.51	8.52	8.52	8.65
Reverse current capacity (A)	16.0	16.0	16.0	16.0	16.0

1) STC-Standard Test Conditions: Air mass AM 1.5 – Irradiance 1000 W/m² – Cell temperature 25°C; Measuring tolerance +/-3%

Electrical data at NOCT ²⁾

Rated output P_{MPP} (W)	167	170	174	178	181
Voltage U_{MPP} (V)	27.4	27.4	27.5	27.5	27.6
Current I_{MPP} (A)	6.10	6.22	6.35	6.46	6.59
Open-circuit voltage V_{OC} (V)	33.8	33.9	33.9	34.0	34.3
Short-circuit current I_{SC} (A)	6.80	6.89	6.90	6.90	7.00
Reverse current capacity 200 W/m ² (%) ³⁾	< 6%	< 6%	< 6%	< 6%	< 6%

2) The NOCT values are typical values. NOCT: Nominal operating cell temperature (45°C); Measuring tolerance +/-3%

Typical cell temperature with: Irradiance 800 W/m² – Ambient temperature 20°C – Wind speed 1 m/s

3) Efficiency reduction for irradiance reduction from 1000 W/m² to 200 W/m², ambient temperature 25°C, EN60904-1 comp.

Other electrical parameters

Maximum system voltage (V)	1000
Temperature coefficient I_{SC} (% / K)	0.06
Temperature coefficient U_{OC} (% / K)	-0.31
Temperature coefficient P_{MPP} (% / K)	-0.42

Application

Permissible module temperature	-40°C ... +85°C
Snow sload	5,400 Pa corresponds to 550 kg/m ² , i.e. snow load zone 3
Wind load	130 km/h (800 Pa), factor 3 for wind gusts
Hail test	Ice balls: Ø 25 mm, speed: 23 m/s
Application class	A
Installation / operation	Follow the installation and operating manual !

Qualifications and Certificates

IEC 61215 Ed.2, IEC 61730, CE, Protection class II

Internal quality checks: at least twice the load specified in IEC Standard

Dimensional drawings

