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.

Product benefits

- **P3 Technology**
  High efficiency from the beginning
  Protected against potential induced degradation („PID-Effect")
  High-performance Sunways Solar Cells, made in Germany
  Guaranteed performance and safety
  Performance guarantee 90% over 12 years, 80% over 25 years according to the current warranty conditions
  Safety through product warranty 10 years
  High yields
  High efficiencies and minimised module mismatch through tight cell and module tolerances
- **Innovative Anti-reflective coating**
  Minimization of reflection while increasing the energy yield
- **OutputPlus+**
  Measured power exceeds the specified rated output (0 to 5 W)
- **SolidPlus+**
  3.2 mm hardened safety solar glass, robust aluminium hollow section profile for stability and durability (5,400 Pa)
- **Guaranteed quality**
  TÜV Rheinland-certified, including fire test according to IEC 61215 Ed.2 and IEC 61730

Product characteristics

Category:	multicrystalline
Module size (L x W x T):	1642 mm x 994 mm x 40 mm
Area:	1.63 m²
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 mm²

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Technical Data SM 240U

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
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/m² (%) [3]	< 6%	< 6%	< 6%	< 6%	< 6%

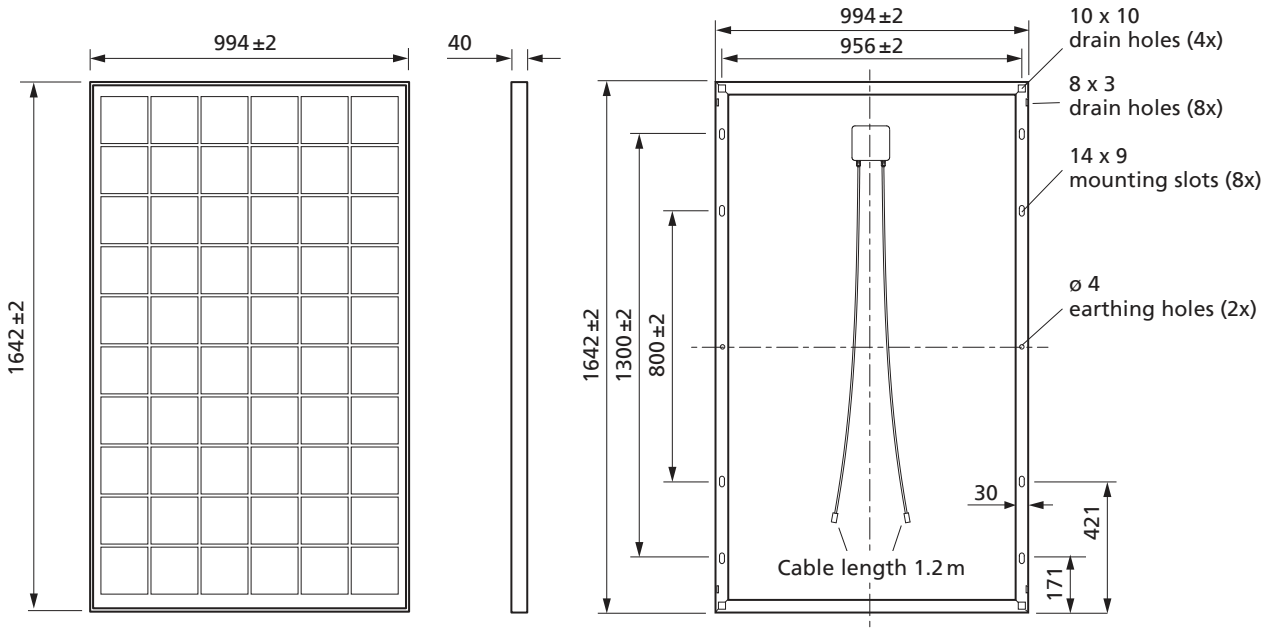
1) STC-Standard Test Conditions: Air mass AM 1.5 – Irradiance 1000 W/ m^2 – Cell temperature 25°C; Measuring tolerance +/-3%

2) The NOCT values are typical values. NOCT: Nominal operating cell temperature (45°C); Measuring tolerance +/-3%
Typical cell temperature with: Irradiance 800 W/m^2 – 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/m², 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



Datasheet compliant with IEC EN 50380. Technical data are preliminary and subject to modification, version 05/2012
This module is also available in B-quality (article numbers SMxxxMD2B)
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