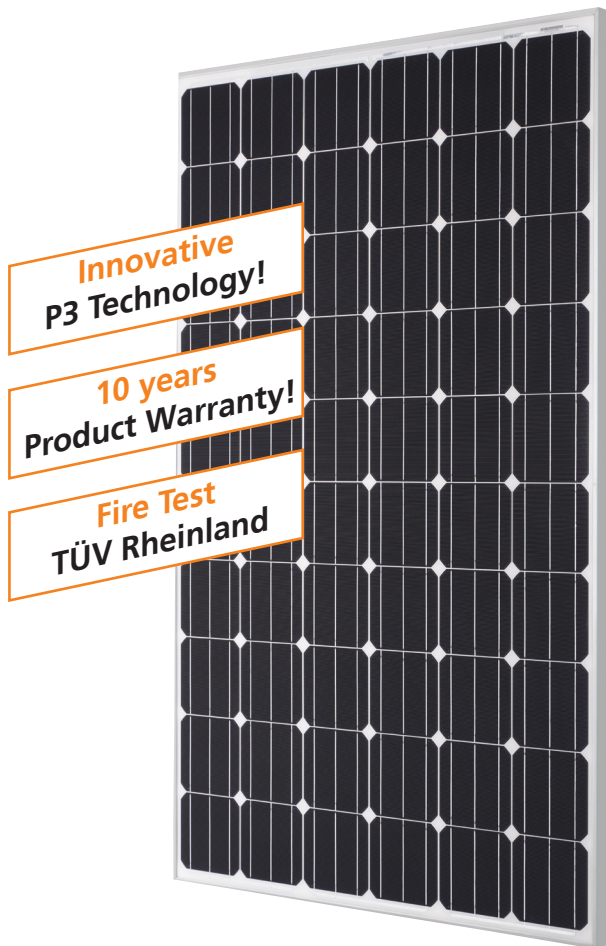


# SOLAR MODULE



## Sunways SM 245M monocrystalline

Sunways SM 245M Solar Modules are exclusively equipped with state-of-the-art monocrystalline Sunways Solar Cells and have a capacity of up to 255 Wp. 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 light-induced degradation („LID-Effect“)  
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:	monocrystalline
Module size (L x W x T):	1642 mm x 994 mm x 40 mm
Area:	1.63 m <sup>2</sup>
Weight:	20 kg
Output classes:	255 / 245 / 240 / 235 / 235 Wp
Cells:	60 Sunways Solar Cells, monocrystalline, 3 busbars
Cell format:	156 x 156 mm, pseudo 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 <sup>2</sup>

### Information and Sales

Sunways AG · Photovoltaic Technology · Macairestraße 3-5  
D-78467 Konstanz · Telephone +49 (0)7531 996 77-0  
Fax +49 (0)7531 996 77-444 · E-Mail info@sunways.de  
www.sunways.de

**sunways**  
Photovoltaic Technology

## Technical Data SM 245M

Article No.	SM235MD2A	SM240MD2A	SM245MD2A	SM250MD2A	SM255MD2A
<b>Output classes</b>	<b>235</b>	<b>240</b>	<b>245</b>	<b>250</b>	<b>255</b>
<b>Electrical data at STC <sup>1)</sup></b>					
Rated output $P_{MPP}$ (W)	235	240	245	250	255
Voltage $U_{MPP}$ (V)	31.8	32.0	32.2	32.4	32.6
Current $I_{MPP}$ (A)	7.37	7.50	7.60	7.71	7.82
Open-circuit voltage $V_{OC}$ (V)	37.1	37.2	37.3	37.4	37.5
Short-circuit current $I_{SC}$ (A)	8.37	8.47	8.56	8.65	8.74
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/m<sup>2</sup> – Cell temperature 25°C; Measuring tolerance +/-3%

<b>Electrical data at NOCT <sup>2)</sup></b>					
Rated output $P_{MPP}$ (W)	170	174	178	181	185
Voltage $U_{MPP}$ (V)	27.3	27.5	27.7	27.8	28.0
Current $I_{MPP}$ (A)	6.22	6.33	6.41	6.51	6.60
Open-circuit voltage $V_{OC}$ (V)	34.2	34.2	34.3	34.4	34.5
Short-circuit current $I_{SC}$ (A)	6.78	6.86	6.93	7.00	7.08
Reverse current capacity 200 W/m <sup>2</sup> (%) <sup>3)</sup>	< 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/m<sup>2</sup> – Ambient temperature 20°C – Wind speed 1m/s

3) Efficiency reduction for irradiance reduction from 1000 W/m<sup>2</sup> to 200 W/m<sup>2</sup>, 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)	-0.33
Temperature coefficient $P_{MPP}$ (% / K)	-0.44

### Application

Permissible module temperature	-40°C ... +85°C
Snow load	5,400 Pa corresponds to 550 kg/m <sup>2</sup> , 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

