

SOLAR MODULE

Sunways Solar Module SM 200L

The advanced design solution:

Sunways Solar Laminates. Packed with know-how from the Sunways Solar Modules for architectural building integration.

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 7.5 W)

• SolidPlus+

4.0 mm hardened safety solar glass for stability and durability

• Guaranteed quality

TÜV Rheinland-certified, including fire test according to IEC 61215 Ed.2 and IEC 61730



Product features

Category:	monocrystalline
Module size: (LxWxD)	1324 mm x 1000 mm x 5 mm
Area:	1.33 m ²
Weight:	16 kg
Output classes:	200 / 195 / 187.5 Wp
Cells:	48 Sunways Solar Cells, mono, 3 Busbars
Cell format:	156 x 156 mm, pseudo-square

Design

Front:	Anti-reflective coated safety solar glass, 4 mm
Encapsulation:	EVA (ethylene vinyl acetate)
Back:	Polyamide laminated film, black
Junction box:	certified junction box IP65 with 6 bypass diodes
Connectors and cables:	MC4 compatible, 2 x 1.0 m, cable cross-section 4 mm ²

Information and Sales

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Sunways
Photovoltaic Technology

Technical Data SM 200L

Article No. in black	SM187LD1A	SM195LD1A	SM200LD1A
Output classes	187.5 ³⁾	195 ⁴⁾	200 ⁴⁾
Electrical data at STC ¹⁾			
Rated output P _{MPP} (W)	187.5	195	200
Voltage U _{MPP} (V)	24.1	24.5	24.7
Current I _{MPP} (A)	7.80	7.96	8.10
Open-circuit voltage V _{OC} (V)	29.5	29.9	30.2
Short-circuit current I _{SC} (A)	8.50	8.60	8.65
Reverse current capacity (A) ²⁾	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%

2) Reverse current capacity: Operation of modules with fed-in external current only admissible employing string fuse < 2 x I_{sc} (STC)

3) Power tolerance: 0 / +7.5

4) Power tolerance: 0 / +5,0

Electrical data at NOCT ⁵⁾			
Rated output P _{MPP} (W)	136	141	145
Voltage U _{MPP} (V)	20.5	20.9	21.0
Current I _{MPP} (A)	6.64	6.78	6.89
Open-circuit voltage V _{OC} (V)	24.9	25.5	25.7
Short-circuit current I _{SC} (A)	6.89	7.32	7.36
Efficiency reduction at 200 W/m ² (%) ⁶⁾	< 6%	< 6%	< 6%


5) 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 1m/s

6) 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)	-0.33
Temperature coefficient P _{MPP} (% / K)	-0.44

Application	
Permissible module temperature	-40°C ... +85°C
Snow load	2400 Pa
Wind load	2400 Pa (Wind speed 130 km/h with safety factor 3)
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

