

Item no.	Specifications
	<p><b>SolarWorld Sunmodule Protect SW 260 mono black</b></p> <p>Crystalline glass-glass solar module, framed</p> <p>Available power classes: 260 W                      Manufactured in: Germany</p> <p><b>Structure:</b>                      Dimensions: 1675 mm x 1001 mm x 33 mm                      Weight: 21.5 kg                      Cell type: monocrystalline, solid black appearance                      Cells per module: 60                      Cell layout: 6 strings of 10 cells each                      Cell size: 156 mm x 156 mm                      Covering material: Highly transparent, reflective, tempered solar glass; 2 mm                      Encapsulation: Solar cell matrix embedded in EVA film                      Back material: Highly transparent, reflective, tempered solar glass; 2 mm                      Frame: black aluminum frame with hollow-chamber profile, corners with drainage opening and mounting flange with grounding holes (enables rear screws to prevent slipping)</p> <p>Junction box: SolarWorld junction box with integrated 3 bypass diodes, IP65, welded contacts, fully encapsulated</p> <p>Cable: Solar cable with 1000 mm length, 4 mm<sup>2</sup> conductor cross-section                      Plugs: H4 UTX touch-proof plug connectors with polarity reversal protection</p> <p><b>Permitted ambient conditions/system parameters:</b>                      Power sorting: Positive, -0 Wp to +5 Wp over nominal power Pmax                      Maximum system voltage: PC II 1000 V / 600 V according to UL 1703                      Maximum reverse current: 25 A                      Roof load (snow load): 8.5 kN/m<sup>2</sup> (8,500 Pa)                      Dynamic load (wind load): 2.4 kN/m<sup>2</sup> (2,400 Pa)                      Permitted operating temperature: -40°C to +85°C</p> <p><b>Certifications and approvals:</b></p> <p><b>Product:</b>                      DIN EN / IEC 61215 Ed 2.: Crystalline silicon terrestrial photovoltaic modules - design qualification and type approval                      DIN EN 61730 incl. PC II: Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction                      UL 1703: Flat-plate photovoltaic modules and panels                      MCS 010-1.5: Generic Factory Production Control (FCP) Requirements                      MCS 005-2.3: Product Certification Requirements for Solar Photovoltaic Modules                      VDE certified safety: Sunmodule Plus in combination with Sunfix plus system and frame technology                      IEC 62804: draft 2013-12: Highly resistant to potential-induced degradation = PID                      IEC 61701 ed. 2.0: Salt mist corrosion testing of photovoltaic modules (very well suited for use near the coast)                      IEC 62716 ed. 1.0: Ammonia resistance (very well suited for use in agricultural operations)                      IEC 60068-2-68 Lc2 plus: Blowing Sand Test severity level Lc 2 (very well suited for use in dusty or sandy areas e.g. near deserts)                      VKF Nr. 23544: Hail resistance class 4 (HW4)                      EN 13 501-1: Fire classification: normal flammability according to reaction-to-fire performance class E                      UNI 9177: Fire reaction class 1                      DIN V ENV 1187-1: General appraisal certificate from the building authorities in combination with Sundeck (thus considered a hard roof covering)                      DIN EN 13 501-5: Classification as BROOF (t1)                      DIN EN 13 501-5: Classification as BROOF (t1)</p>

# Tender Text



PV+Test:	Top mark "excellent" in independent product test carried out by Solarpraxis and TÜV Rheinland for quality, durability, and performance
Ökotest:	Top mark "excellent" by consumer magazine
<b>Company:</b>	
ISO 9001:	Quality management system
ISO 14001:	Environmental management system
BS OHSAS 18001:	Occupational health and safety management systems
ISO 50001:	Energy management system
Power controlled:	TÜV Rheinland inspection mark for guaranteed compliance with stated nominal power of solar modules; verified externally at regular intervals
Green Brand:	Seal of quality for demonstrated environmental sustainability
Deutschlands Kundenchampions:	2015 German Customer Champions label for excellent customer-oriented management
<b>Warranties:</b>	
10-year product warranty	
Linear 30-year performance warranty (the actual power is at least 97% of the nominal power in the first year; no more decline than 0.35% annually beginning in the second year, with power of at least 86.85% guaranteed after 30 years)	
<b>Technical data:</b>	
<b>Data under STC:</b>	
Nominal power P <sub>max</sub> :	260 Wp
Module efficiency:	15.51%
Cell efficiency:	19.10 %
Open circuit voltage U <sub>oc</sub> :	38.9 V
Rated voltage U <sub>mp</sub> :	30.7 V
Short circuit current I <sub>sc</sub> :	9.18 A
Nominal current I <sub>mp</sub> :	8.56 A
Partial load behavior:	97% (+/- 3%) of the STC efficiency (1000 W/m <sup>2</sup> ) is achieved at 200 W/m <sup>2</sup> .
<b>Temperature coefficients:</b>	
NOCT:	48°C
TC I <sub>sc</sub> :	0.044%/K
TC U <sub>oc</sub> :	-0.31%/K
TC P <sub>mp</sub> :	-0.43%/K