



## Sunmodule<sup>®</sup> SW 220/230 mono



The Sunmodule from SolarWorld represents one of the best values in the PV industry. The Sunmodule's tight power tolerance of +/-3% ensures the highest system efficiency without the need for on-site module sorting. The fully automated manufacturing process at SolarWorld's ISO 9001-2000 factories produces modules with consistently high quality. Choosing the Sunmodule<sup>®</sup> will ensure high kWh yields for the long term.

To guarantee long term yields, Sunmodules are built to last. SolarWorld bonds the tempered glass laminate deep into the aluminum frame with a continuous bead of silicone adhesive. This method guarantees exceptional rigidity for the entire module and prevents the frame from loosening or pulling away from the glass in cases such as the sliding of heavy snow or handling. Tests carried out in accordance with IEC 61215, which applies loads of up to 113 lb/sf (5.4 kN/m<sup>2</sup>) demonstrate that the module can withstand high loads such as heavy accumulations of snow and ice.

The Sunmodule<sup>®</sup> features a patented, low profile junction box with integrated 25A Schottkey bypass diodes that is completely sealed against corrosion. The ability to rapidly dissipate excess heat allows the diodes and junction box to operate at lower temperatures. The junction box is reliably connected by a solid, welded bond to guarantee lasting functionality and is factory-equipped with high-quality, robust cables and locking connectors. All Sunmodules carry a 25-year performance warranty and can be returned to SolarWorld at their end of life for recycling



## SW 220/230 mono

### Performance under standard test conditions

		SW 220	SW 230
Maximum power	$P_{max}$	220 Wp	230 Wp
Open circuit voltage	$V_{oc}$	36.6 V	36.9 V
Maximum power point voltage	$V_{mpp}$	29.3 V	29.6 V
Short circuit current	$I_{sc}$	8.18 A	8.42 A
Maximum power point current	$I_{mpp}$	7.51 A	7.76 A

### Performance at 800 W/m<sup>2</sup>, NOCT, AM 1.5

		SW 220	SW 230
Maximum power	$P_{max}$	157 Wp	164 Wp
Open circuit voltage	$V_{oc}$	33.1 V	33.4 V
Maximum power point voltage	$V_{mpp}$	26.3 V	26.6 V
Short circuit current	$I_{sc}$	6.76 A	6.96 A
Maximum power point current	$I_{mpp}$	5.98 A	6.18 A

Minor reduction in efficiency under partial load conditions at 25°C: at 220 W/m<sup>2</sup>, 95% (+/- 3%) of the STC efficiency (1000 W/m<sup>2</sup>) is achieved.

### Component materials

Cells per module	60
Cell type	monocrystalline silicon
Cell dimensions	6.14 x 6.14 in <sup>2</sup> (156 x 156 mm <sup>2</sup> )

### System integration parameters

Maximum system voltage SC II	1,000 V <sub>DC</sub>
Maximum system voltage USA NEC	600 V <sub>DC</sub>
Maximum series fuse rating	15 A
Maximum reverse current	Do not apply external voltages larger than $V_{oc}$ to the module

### Thermal characteristics

NOCT	46°C
TC $I_{sc}$	0.036 %/K
TC $V_{oc}$	-0.33 %/K
TC $P_{max}$	-0.47 %/K

### Additional data

Power tolerance	+/- 3 %
Junction box	IP 65
Connector	MC type 4

