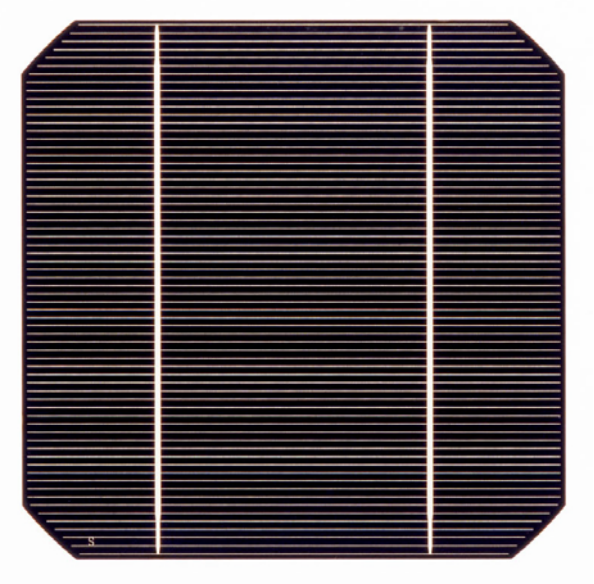
SOLAR CELLS

Sunways Solar-Cells



Monocrystalline Sunways Solar-Cells achieve efficiency rates of up to 17.3 %. The homogeneous surface gives the solar cells a black appearance. Our high standards of quality guarantee trouble-free production throughput during subsequent processing. Continuing increase in efficiency of the solar cells and grading in narrowly defined current classes are the basis for high-performance solar modules.

Product description

Category:	monocrystalline, 2 busbars
Dimensions:	pseudo-square 156 $^{+/-0.5}$ mm x 156 $^{+/-0.5}$ mm diagonal 200 $^{+/-2.5}$ mm
Cell depth:	200 $^{+/-40}$ µm
Temperature coefficients:	Power -0.44 %/K, Open circuit voltage -2.1 mV/K, Short circuit current 2.1 mA/K

Quality

- 100% camera-based, visual final check for an even appearance of the solar cells in the module
- 100% electric measurement with measuring equipment, calibrated according to ISO 9001:2000

Electrical key data

Current class acc. to $I(V_{FIX})$	Efficiency rate [%]	Power at V_{FIX} [W]	I (V_{FIX} = 510 mV) [A]	Fill factor [%]	V_{OC} [mV]	I_{SC} [A]
AH908100	17.3	4.13	8.10	77.1	618	8.64
AH908000	17.1	4.08	8.00	76.8	617	8.61
AH907900	16.9	4.03	7.90	76.5	616	8.57
AH907800	16.6	3.98	7.80	76.2	615	8.53
AH907700	16.4	3.93	7.70	75.8	614	8.47
AH907600	16.2	3.88	7.60	75.3	614	8.43

All figures are averages, all figures +/- 3 %. Cell class measurement at V_{FIX} = 510 mV.

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Photovoltaic Technology

Solar Cells

Recommendations for subsequent processing

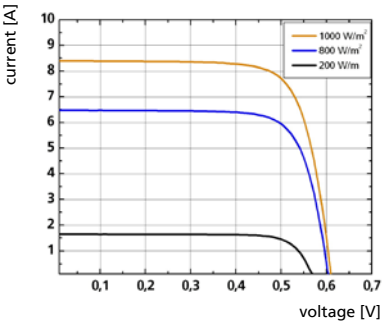
Monocrystalline Sunways Solar Cell can be processed using tin-coated copper bands (2 - 2.5 mm x 0.18 mm), which are coated with 10 -15 µm Sn (62%), Pb (36%) and Ag (2%). We recommend the use of no clean flux. The solar cells should be pre-heated to 80°C - 150°C and soldered at a temperature of 250 - 350 °C. Contact is provided by two continuous busbars on the front of the solar cell measuring $1.54^{+/-0.15}$ mm and on the rear side with a width of $4^{+/-0.5}$ mm.

Production and packaging

Each Sunways Solar Cell is subjected to mechanical and optical quality control before the individual cells are divided into narrowly defined current classes, and classified according to I (V_{FIX} = 500 mV). The solar cells are sealed in foil packaging of 100 cells each. The foam packaging can hold up to 2 x 4 packaging units (= 800 solar cells) and offers optimal protection during transportation.

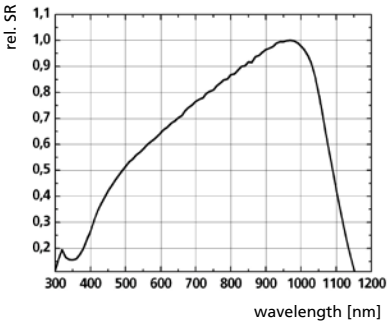
Electrical parameters

IV curves



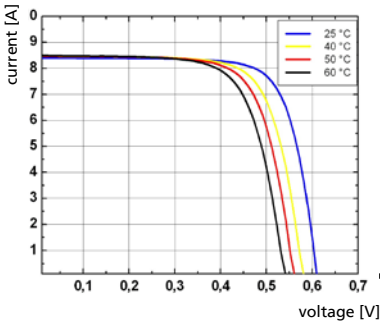
IV behaviour at various degrees of irradiation intensity.

spectral response



Spectral sensivity curve.

IV curves



IV behaviour for various temperatures.

Calibration by Fraunhofer ISE Freiburg. All data were derived under standard test conditions.

Standard test conditions (STC): Light spectrum AM = 1.5. Irradiation intensity E = 1000 W/m². Cell temperature T_C = 25 °C.

Metallization drawing