

Solar Cells

Due to reduced reflection, the surface of the textured multicrystalline Solar Cell results in a high cell output while at the same time offering a uniform dark-blue appearance. Three instead of two busbars result in an optimum current pick-up and contribute to a further optimisation of the cell efficiency. The improved contact and surface design enable excellent further processing and guarantee a high area output of the modules.



Product description

Category:	Multicrystalline textured, 3-busbar
Format:	156 +/-0.5 mm x 156 +/-0.5 mm
Cell thickness:	200 +/-40 μ m
Temperature coefficients:	Output -0.43 %/K, Open-circuit voltage -0,36 %/K, Short-circuit current 0,06 %/K
Surface:	Acidically textured
Current class sorting:	following 100 % electronic measurement with measuring equipment calibrated in acc. with ISO 9001:2000

Electrical key data

Current class as per I (V _{FIX})	Efficiency [%]	Output at V _{FIX} [W]	I (V _{FIX} = 500 mV) [A]	Fill factor [%]	V _{OC} [mV]	I _{SC} [A]
CA507800	16,0%	3,90	7,80	78,0	615	8,15
CA507700	15,8%	3,85	7,70	77,9	613	8,07
CA507600	15,6%	3,80	7,60	77,7	612	8,01
CA507500	15,4%	3,75	7,50	77,5	609	7,95
CA507400	15,2%	3,70	7,40	77,3	607	7,89
CA507300	15,0%	3,65	7,30	77,0	605	7,83
CA507200	14,8%	3,60	7,20	76,7	604	7,78
CA507100	14,6%	3,55	7,10	76,1	604	7,75

All figures are averages, all figures +/- 3 %. Cell class measurement at V_{FIX} = 500 mV.

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Recommendations for further processing

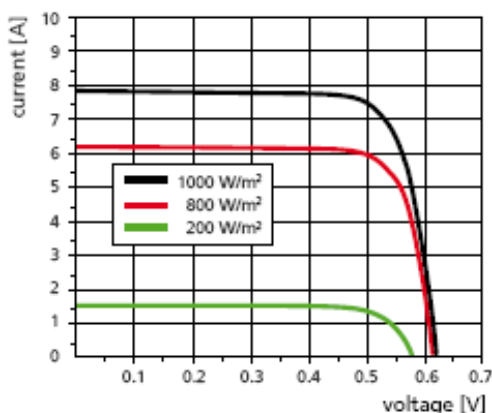
The multicrystalline Solar Cell can be processed further with tin-plated copper strips (2 - 2.5 mm x 0.18 mm). These are coated with 10-15 μm Sn (62%), Pb (36%) and Ag (2%). We recommend the use of no clean flux. The solar cells should be preheated to 80°C - 150°C and soldered at a temperature of 250 - 350 °C. Contact is made via the three continuous busbars on the front of the solar cells with 1.54+/-0.15 mm and with 2.5+/-0.5 mm on the back. A maximum of 20 textured multicrystalline cells may be connected in series per bypass diode.

Production and Packing

Each Solar Cell runs through a mechanical and visual quality check. Then the individual solar cells are classified in closely defined current classes. The classification is carried out according to $I(V_{\text{FIX}} = 500 \text{ mV})$. The solar cells are sealed in foil packages of 100 pieces. The foam packing material can hold 2 x 4 packing units (= 800 solar cells) and offers optimum protection for transport.

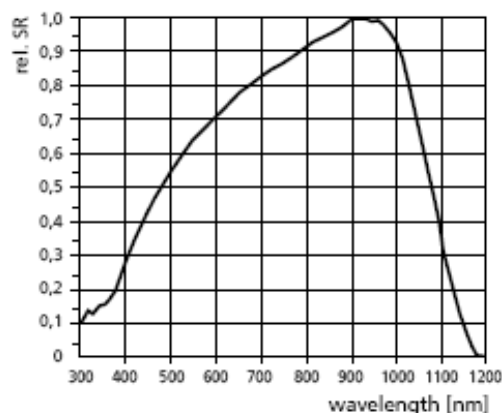
Electrical parameters

IV curves



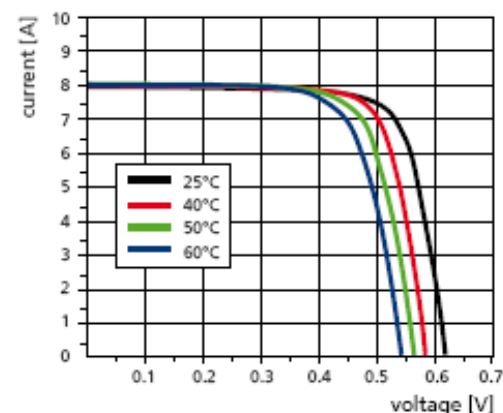
IV behaviour at various degrees of irradiation intensity.

spectral response



Spectral sensitivity curve.

IV curves

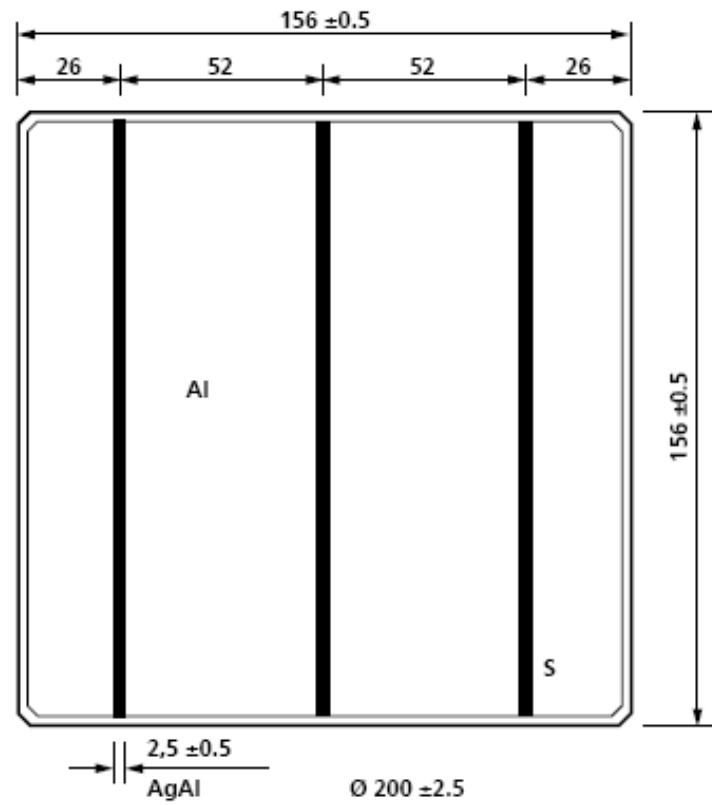
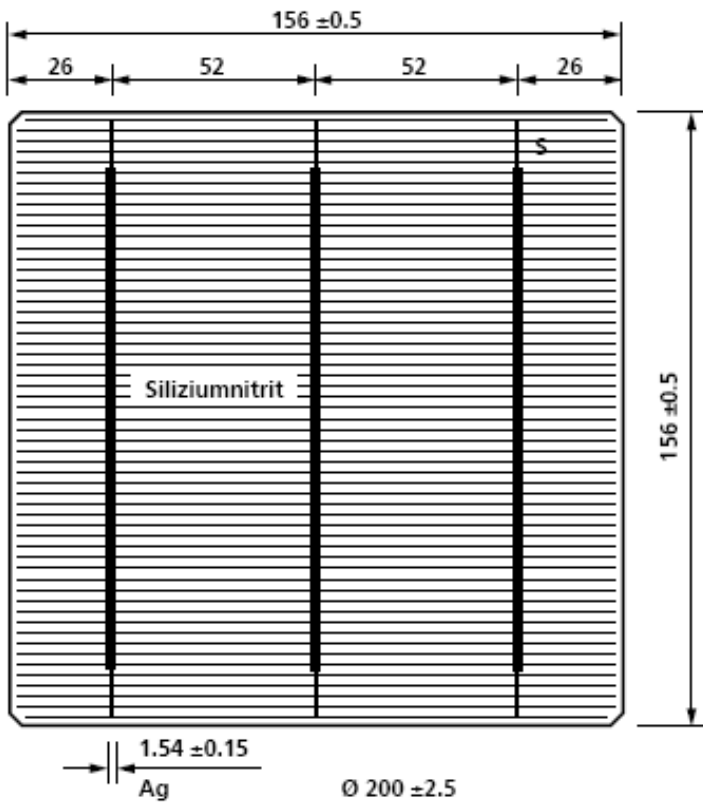


IV behaviour for various temperatures.

Calibration by Fraunhofer ISE, Freiburg, Germany. All data were determined under standard test conditions.

Standard test conditions (STC): Light range AM = 1.5. Irradiation strength $E = 1,000 \text{ W/m}^2$. Cell temperature $T_c = 25 \text{ }^\circ\text{C}$.

Metallization drawing



[Subject to technical changes.]

