

## Silicium solar cell no. 4885.00 and 4885.10

17.12.10

Ae 4885.x0

Solar cells are used for transforming sun rays, daylight or even the light from electricity lamps into electrical energy.

Solar cells are typically able to transform 12-16% of the sun light into electricity. Solar cells may be connected in parallel or in series, thus satisfying the actual demand for current and voltage output.

The raw material for producing solar cells is sand available in large quantities along the shores and from the sea – 27% of the earth is sand. The sand has to go through a number of refining processes in order to produce silicium of an extremely high purity.

The solar cells are made of monocrystalline silicium cut in very thin disks – thickness approx. 0.4 mm. Other types, the multi crystal types, are made of thin moulded disks. This type comprises a large number of singular crystals which electrically acts as one crystal.

The material has been mounted thus, that the light sensitive surface the n-side is facing the rays, and with the p-side face down. The solar cells surface is covered with a greyish blue layer facilitating the penetration of light and preventing reflections. The antireflective side is equipped with thin metal electrodes dividing it in stripes almost like a comb. The metal electrodes have the function of draining off the voltage/current produced. The upper side is the negative pole and the rear side (metal coated) is the positive do.

### Supplementary equipment:

4885.35 Solar modul, comprising 10 solar cells. Output voltage 5 V. The module is supplied on a solid base.

5015.00 Electric motor with propeller, mounted on a 10 mm dia rod. Especially well suited for use with solar cells, simple electric cells etc.

Solar cells are quite fragile and vulnerable, for which reason they are often mounted in a housing for protection against breakage etc.

### Technical specifications:

#### Electrical data:

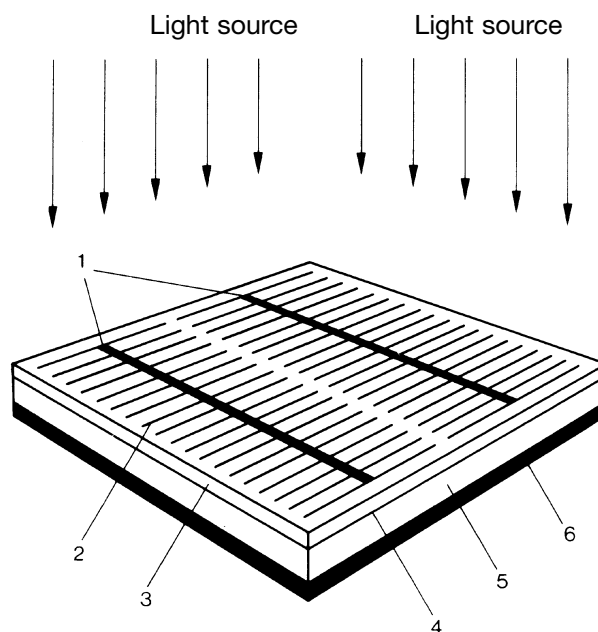
(At standard test conditions: Light intensity 1000 W/m<sup>02</sup>, Tc = 25 °C, AM = 1,5)

Maximum effect:	1.4 W
Maximum current:	3.1 A
Voltage unloaded:	580 mV
Nominal voltage:	0.48 V
Temperature range:	-40 to +125 °C

#### Dimensions:

Area: 98 ±2 cm<sup>2</sup>. thickness 0.4± 0.1mm.

### Diagram of a solar cell



- 1 = contact electrodes, neg. pole
- 2 = contact "grills"
- 3 = n-area
- 4 = n/p "borderland"
- 5 = p-area
- 6 = positive pole, metal plated