



Solar Cloth

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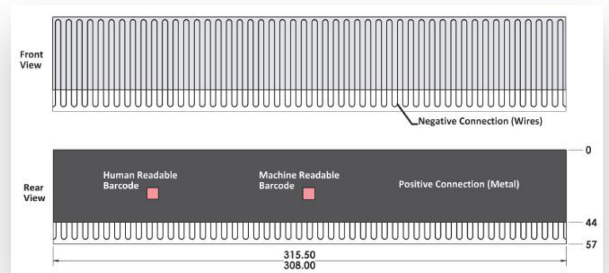
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CIGS Thin Film Solar Module



Solar Cell

Innovative CIGS on stainless steel substrate



10 Qualities • fully encapsulated module

1. **17,6% efficiency**
2. **Thin** (< 1mm) and **light** (1,8kg /m²)
3. **Configurable** shape and fixing method
4. **Ultra flexible** and **shatter-proof** (no glass)
5. **Low carbon footprint**, only 15gr of CO₂ per kWh
6. **Adapting to any surface**: glue, straps, zip, velcro, welding,...
7. At least **20 years of lifespan** and **80% efficiency guarantee in 20 years**
8. **Better resistance to shock and shadow**: 1 bypass diodes every 2 cells (≅ 100+ diodes vs 1 to 3 diodes for regular panels). If several cells are under shadow, only the related cells (2 by 2) will stop and the rest of the panel will still produce energy.
9. **No micro cracks**: if the panel must undergo vibrations, there is much less risk of generating cracks or micro cracks
10. **Better with heat** and indirect sun rays: only -10% efficiency at 55-60°C • start to work with the very first solar rays of the day and the last ones / same for cloudy days

Cell performance

Measurement tolerances: Nominal Power P_{mpp} +/- 5%, all other Electrical Parameters +/- 10%

Performance at Standard Test Conditions (1000 W/m ² , Temp, 25°C, Wind 1m/s, Sepectrum AM 1,5G)		
Nominal Power (P _{max})	W	2.33
Voltage at Nominal Power (V _{mp})	V	0.601
Current at Nominal Power (I _{mp})	A	3.87
Open Circuit Voltage (V _{oc})	V	0.732
Short Circuit Current (I _{sc})	A	4.21

Temperature Coefficients	
Temperature Range	-40°C to +65°C
Temperature Coefficient of Voc	%/C -0.28
Temperature Coefficient of I _{sc}	%/C 0.008
Temperature Coefficient of P _{mp}	%/C -0.38

Mechanical Specifications	
Module Construction	Barrier Foil / Encapsulant / Solar Cells / Encapsulant / Stainless steel substrate
Type of Solar Cells	Flexible CIGS
Dimensions (L x W x T)	315mm x 44mm x 0.8mm
Weight (Cell)	8.7gr
Max mechanical load	5400Pa, 550 kg/m ²
Certifications (Cell)	IEC EN 61646, IEC EN 61730, IEC 62716, IEC 61701 (Salt Spray)
Product Guarantee	2 years workmanship after delivery date
Performance Guarantee	10 years 90%, 20 years 80% (of P _{mp} under STC)



Labels and prices: Solar Impulse, Capenergies, ADEME, Green Growth Label from Ministry of Ecological and Solidarity Transition, i-Nov, Talent Label INPI, USA Nautical Industries Innovation Award...