

6 Watt solar panel

Fourth generation amorphous silicon technology

Reliable technology

Free Energy Europe produces stable and reliable amorphous silicon cells. After initial stabilization during the first two months of outdoor use, the amorphous silicon cell will be stable for decades.

The expected lifetime of the 4th generation amorphous silicon panels is 20 years.

Protection from corrosion

The main quality improvement of the 4th generation amorphous silicon technology is advanced protection against corrosion.

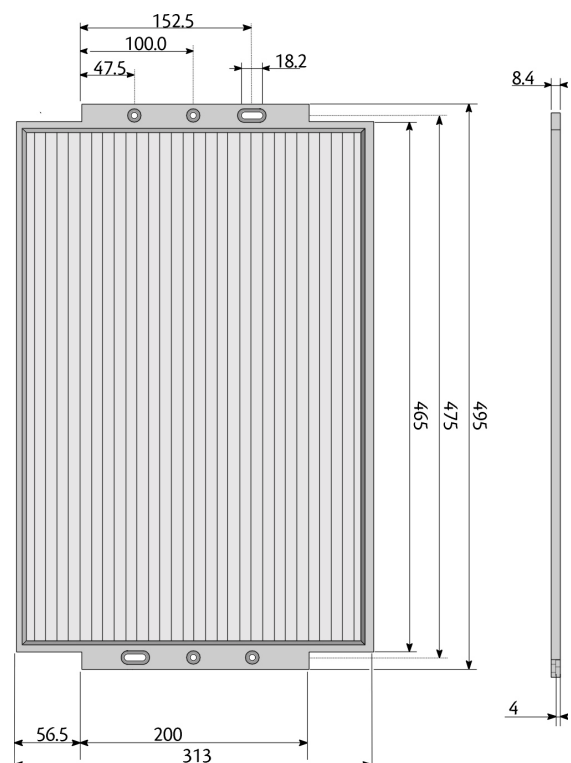
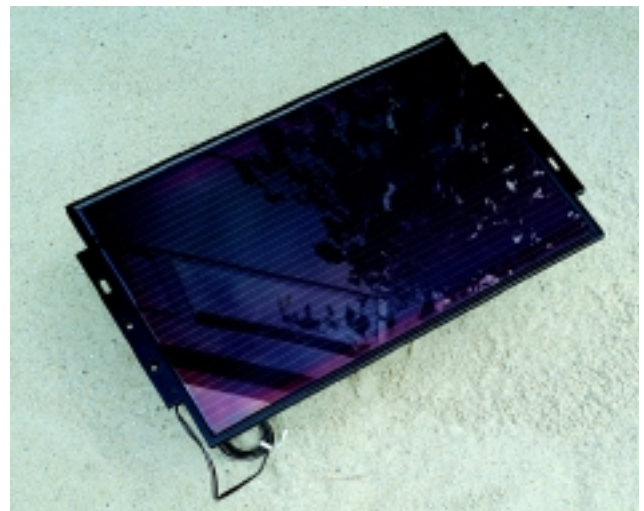
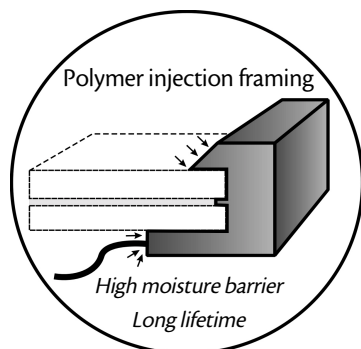
If the thin film solar cell is not adequately protected from moisture intrusion, it will easily be destroyed by corrosion. Long term quality therefore depends largely on the encapsulation of the cells.

Free Energy Europe found that the aluminum framing did not give adequate protection against corrosion, notably in hot and humid conditions.

Injection moulded frame

Free Energy Europe now applies an injection moulded polymer frame. This technology has been developed internally and optimized in a three year research effort and is unique to the Free Energy Europe products.

Only this advanced framing technology allows us to offer high quality solar panels.



Main panel characteristics

Technology	4 th generation amorphous silicon
Encapsulation	Glass-to-glass encapsulation with moulded polymer injection framing
Expected lifetime	20 years minimum
Operating conditions	-40 °C to +85 °C

Electrical characteristics

Rated power	6 Watt peak
Current at 16 V	0.38 Ampere
Short circuit current	0.45 Ampere
Open circuit voltage	22.0 Volts
Normal operating cell temperature	45 °C (800 W/m ² , ambient temperature 21 °C)

Electrical data refer to standard test conditions (STC: 1000W/m² irradiance, 25 °C cell temperature, spectrum AM1.5). The rated electrical parameters may vary ± 10%.

Temperature coefficients

Voltage	- 0.29% / °C
Current	+ 0.08% / °C

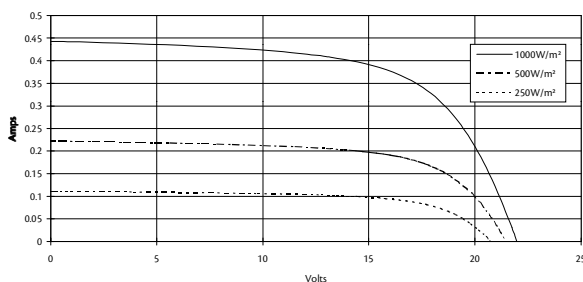
Dimensions

Dimensions	495 mm x 313 mm
Thickness	8.5 mm
Weight	1.9 kg

Connections

Cable	1 meter twin cable (2 x 0.75 mm ²)
Polarity	Black cable = +, marked cable = -
Fixing	Countersunk holes for easy installation (using M6 screws or bolts)

I-V curves as a function of irradiation, temperature = 25 °C



I-V curves as a function of temperature, irr.= 1000W/m²

