

Datasheet FEE-20-12

5th Generation a-Si solar panel

Reliable cell 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 advanced amorphous silicon solar cells is at least 20 years.

High energy yield

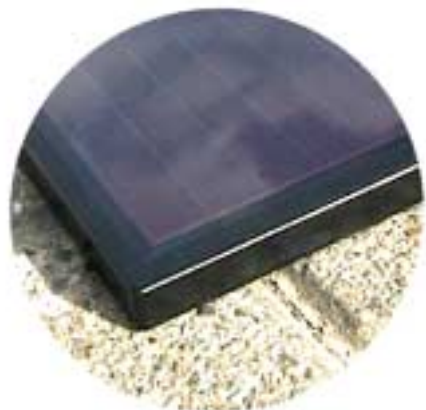
The amorphous silicon solar cells, produced by Free Energy Europe, function better than crystalline silicon solar cells in partial or indirect sunlight. Tests have shown that the annual energy output is approximately 15 % higher per rated Watt-peak power.

Outdoor performance

The outdoor performance of amorphous silicon solar panels depends primarily on their protection against corrosion.

Our 5th generation solar panels use an injected polymer frame, with a very high moisture barrier. The 5th generation panels complies with the requirements of IEC61646. The technology has been developed internally and is unique to the Free Energy Europe products.

This advanced framing technology makes our solar p



Main panel characteristics

Cell technology	Tandem junction amorphous silicon
Panel technology	5 th generation framing (complies with IEC 61646 requirements)
Encapsulation	Glass-to-glass encapsulation with moulded polymer injection framing.
Expected lifetime	20 years minimum
Operating conditions	-40 °C to +85 °C

Electrical characteristics - at Standard Test Conditions*

	<i>Maximum power</i>	<i>Stabilised</i>
<i>Type</i>	<i>FEE-20-12</i>	<i>FEE-20-12</i>
Maximum output power	19 Watt peak	16 Watt peak
Maximum current at 16 V	1.18 Ampere	0.99 Ampere
Short circuit current	1.45 Ampere	1.22 Ampere
Open circuit voltage	22.8 Volts	22.8 Volts

* Data refers to Standard Test Conditions, an approximation of functioning in full sunlight (STC : 1000W/m² irradiance, 25 °C cell temperature, spectrum AM1.5). The rated electrical parameters may vary ± 10%.

Electrical characteristics – at Average Operating Conditions*

	<i>Stabilised</i>
<i>Type</i>	<i>FEE-20-12</i>
Equivalent yield peak power	18 Watt peak

* Data refers to real annual average irradiation in the Netherlands, normalised on average performance of crystalline silicon technology. Rated electrical parameters may vary ± 10%.

Temperature coefficients

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

Dimensions

Dimensions	1015 x 312 mm
Thickness	13.9 mm
Weight	4.6 kg

Connections

Cable	1 meter double insulated cable (2 x 0.75 mm ²)
Polarity	Brown = +, blue = -
Fixing	Easy installation using 4 clips