



# PIONOVASION

## Advanced CIGS Solar Cloth Technologies

Pionovasion manufactures the most efficient thin-film solar cells in the world. Our highly flexible, high power modules are less than 5% the thickness of conventional silicon cells, and are 30% more efficient than other market standard thin film technologies. We help innovators from all sorts of industries imagine, design, create, and maintain ground breaking solar solutions.

### Applications

We are dreamers at heart and help industry leaders design solar solutions. Among other things, our CIGS solar cloth powers airships, universities, helicopters, and cellphones.



Pionovasion solar airship and transportable charger.

Because our solar cloth is excellent at gathering scattered light, it can be applied to any shape or product. Our solar cloth has been embedded in walls, roofs, bags, gloves, tents and sculptures.

### Product Characteristics

Our cells are some of the most advanced in the world. We design and tailor our modules to fit any surface and dimension.

Efficiency	14%
Max Power output per m2	140 W
KWh provided per m2 per year	192
Carbon offset per m2 per year	191 Kg CO <sub>2</sub>
Lowest Weight (gram per Watt)	30g

Our solar cloth installations are supported by Smart Meter Technology. This means that with any internet connection you can see the amount of power being generated, the amount of carbon emissions offset, and the income you are generating. Our solar cloth also comes with a 20-year guarantee.

### Make that surface profitable

Solar cloth can make things profitable. The energy produced offsets existing power bills, and is sold back to the grid when there is a surplus. A [500kW] station will leave you about [894610 RMB] better off, every year, for at least twenty years.

Size of station	[500kW]
Equivalent surface area (m2)	3400
Reduction in energy bill (RMB)	548000
Government subsidy attracted (RMB)	287700
Revenue from electricity sale (RMB)	58910
<b>Total income (RMB)</b>	<b>894610</b>

This is based on standard commercial electricity rates in China and sunlight conditions in Shanghai

### Goodness for the world

We think solar power should be for everyone. So we work with underprivileged communities and schools in China to bring them reliable, clean, and free energy. With our solar installations and the kind support of our partners, over the past year we've provided electricity to over 1,500 students in rural China and offset 160 tons of carbon emissions.





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## 1.25W CIGS Solar Cloth

This thin-film solar panel is made of CIGS material which is very flexible. It performs 14% solar energy transformation efficiency which is much higher than that of other thin-film solar panels.

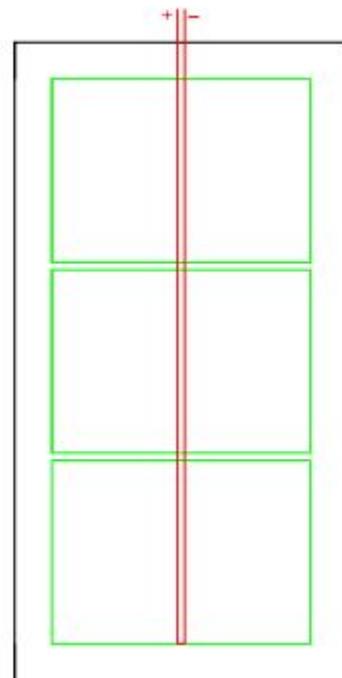
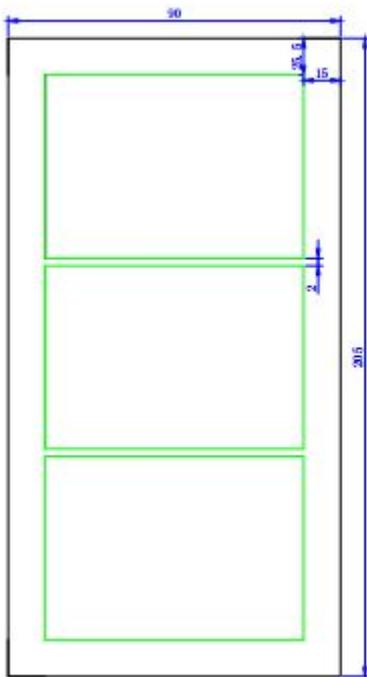
In addition to its high efficiency, our solar panel is build on an ultra-thin back sheet which can be rolled 360 degrees. It packages with special ETFE film which is durable and high light transmittance.

Feature:

- Thin-film
- flexible
- Waterproof
- Lightweight

Specification:

- Dimensions: 205\*90\*1( $\pm 0,2$ ) mm
- Open-circuit Voltage: 1.7V
- Voltage: 1.3V
- Current: 950 mA
- Power: 1.25W
- Material: CIGS
- Weight: 22g





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## 2.5W CIGS Solar Cloth

This thin-film solar panel is made of CIGS material which is very flexible. It performs 14% solar energy transformation efficiency which is much higher than that of other thin-film solar panels.

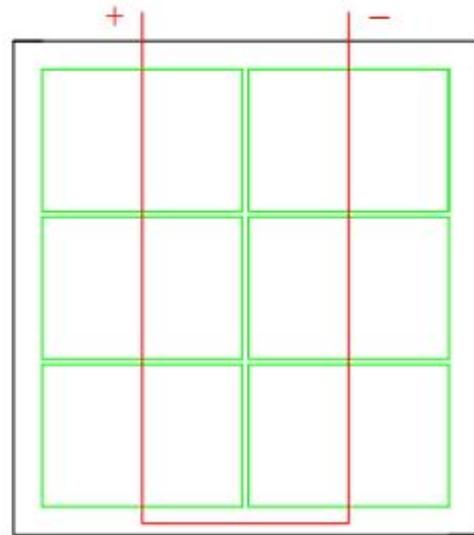
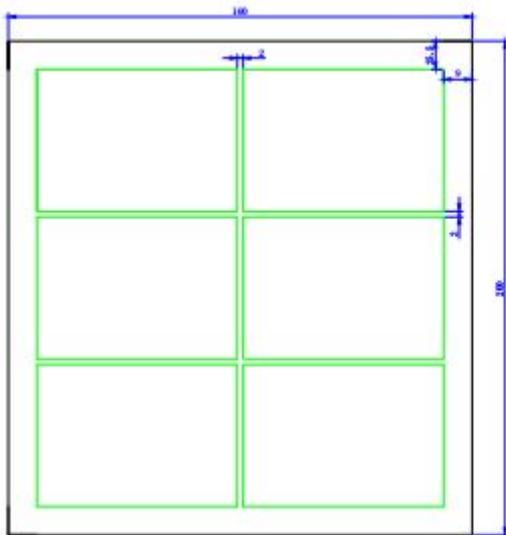
In addition to its high efficiency, our solar panel is build on an ultra-thin back sheet which can be rolled 360 degrees. It packages with special ETFE film which is durable and high light transmittance.

Feature:

- Thin-film
- flexible
- Waterproof
- Lightweight

Specification:

- Dimensions: 200\*160\*1( $\pm 0,2$ ) mm
- Open-circuit Voltage: 3.1V
- Voltage: 2.6 V
- Current: 950 mA
- Power: 2.5W
- Material: CIGS
- Weight: 40g





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## 5W CIGS Solar Cloth

This thin-film solar panel is made of CIGS material which is very flexible. It performs 14% solar energy transformation efficiency which is much higher than that of other thin-film solar panels.

In addition to its high efficiency, our solar panel is build on an ultra-thin back sheet which can be rolled 360 degrees. It packages with special ETFE film which is durable and high light transmittance.

Feature:

- Thin-film
- flexible
- Waterproof
- Lightweight

Specification:

- Dimensions: 355\*160\*1( $\pm 0,2$ ) mm
- Open-circuit Voltage: 6.7V
- Voltage: 5.3 V
- Current: 950 mA
- Power: 5W
- Material: CIGS
- Weight: 66g

