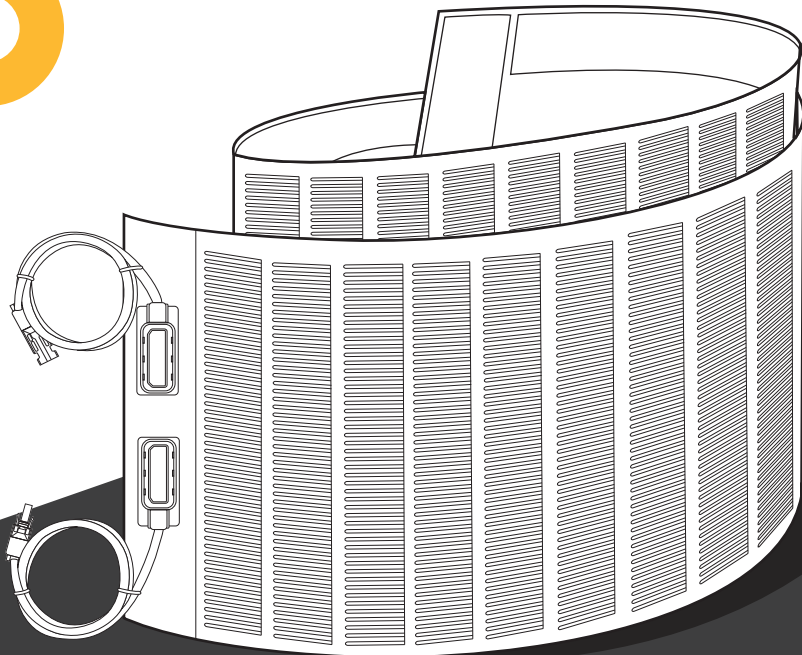


User Manual

CIGS Thin-film Solar Panel



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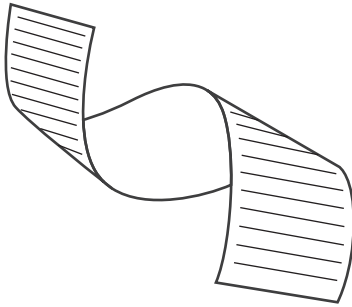
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0 Features

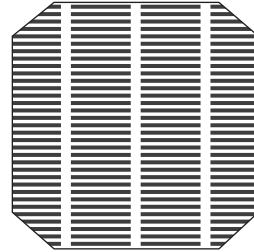
CIGS solar cell, in full copper indium gallium selenide solar cell, thin-film photovoltaic device that uses semiconductor layers of copper indium gallium selenide (CIGS) to absorb sunlight and convert it into electricity.

- 1. Flexible** — Can fit around curved structures, flexible for all shapes.
- 2. Stable output** — Stable output can still be guaranteed in shadow occlusion environments.
- 3. Waterproof** — No worry about using in wet environments.
- 4. Lightweight** — No frames, no special stands or mounting brackets needed.
- 5. Glass Free** — Nothing to be broken.

○ CIGS Thin-film Modules vs. Polysilicon



CIGS Thin-film Modules



Polysilicon

Flexible

- Can fit around curved structures.
- Can be integrated into materials.

Durable

- Won't break / Resistant to vandalism.
- No risk of microcracks to cells.

Lightweight

- No retrofitting required.
- Can be used in applications such as consumer goods where weight is a concern.

Bonded Directly to Surface

- Lower installation costs.
- Resistant to theft.

Aesthetically Pleasing

- Uniform "black-tie" appearance.
- Dark interconnect wires.

Safer

- FLEX modules are lightweight-won't injure people or property in high wind or earthquake.
- No cell degradation at high voltage.
- No grounding wires to corrode.

Rigid

- Not bendable.
- Requires racking to install.

Breakable

- Can shatter.
- Cells can develop microcracks.

Heavy

- Roofs require reinforcement to support weight.

Requires Mounting Hardware

- Drives up installation costs.
- Subject to theft.

Clunky-looking

- Checkerboard appearance.
- Bulku paneling does not conform to the roof.

Dangerous in environmental emergencies

- Metal racks + box modules can damage people and property in an earthquake.
- Metal racks + box modules hazardous in the event of wind pull-off.



Safety Instructions



Please follow the safety instructions for operation, the damage caused by not following the safety instructions shall be borne by the individual.

Please save these instructions

If you need to use the PDF version of the manual, you can contact us:
service@bougerv.com.

Limited Warranty

BougeRV provides **18-month** warranty service for the solar panel. Please read and follow the **safety instructions** in the manual carefully. The warranty service takes effect from the date of purchase. Please provide the **order number** of the purchased product and the serial number (**bar code**) attached to the front of the solar panel when applying for warranty.



service@bougerv.com



www.bougerv.com



1-669-232-7427



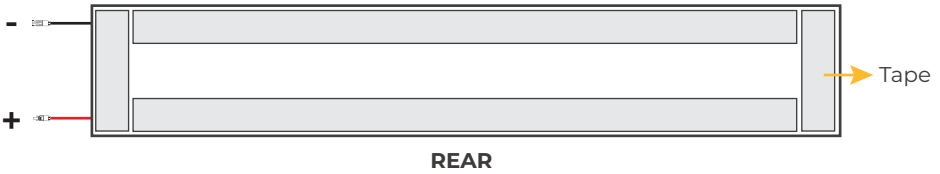
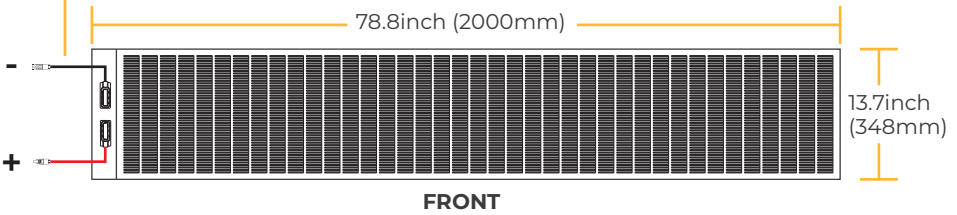
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Safety Instructions: The Limited Warranties do not apply to any of the following: The solar panel which in BougeRV's absolute judgment have been subjected to misuse, abuse, neglect or accident, alteration, or improper installation, application, or removal. This includes, but is not limited to, installation, application, or removal by any party other than a BougeRV authorized dealer; non-observance of BougeRV's installation, safety instructions; power failure surges, lightning, flood, fire, accidental breakage, or other events beyond BougeRV's control.

Solar Panel Dimension

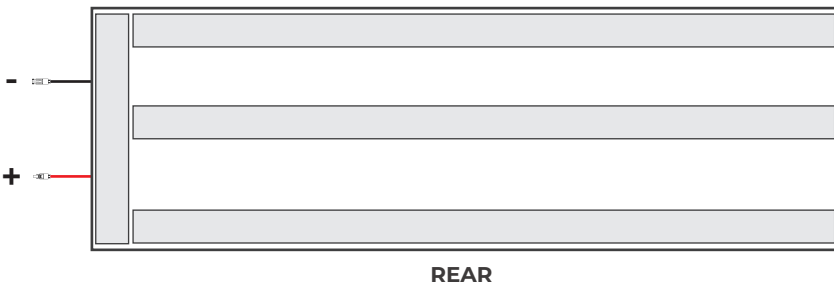
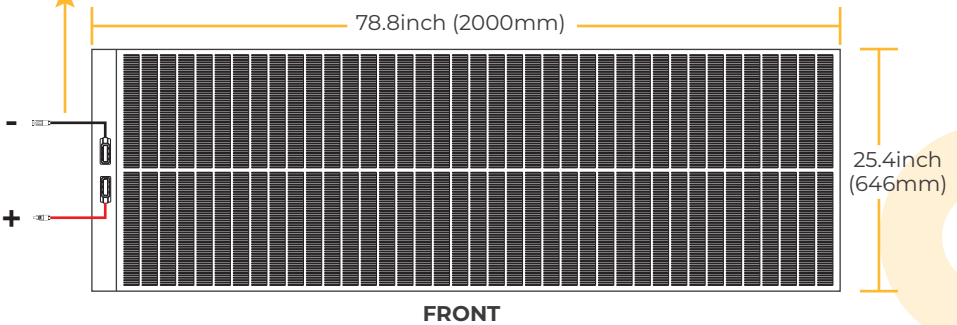
100W Dimension

35.4inch (90mm), 12awg



200W Dimension

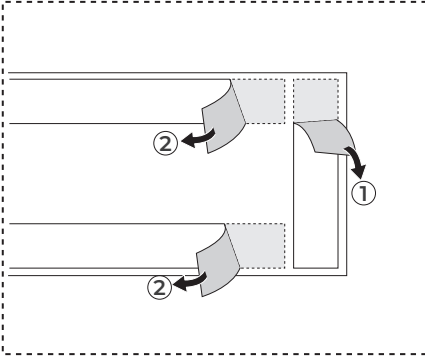
35.4inch (90mm), 12awg



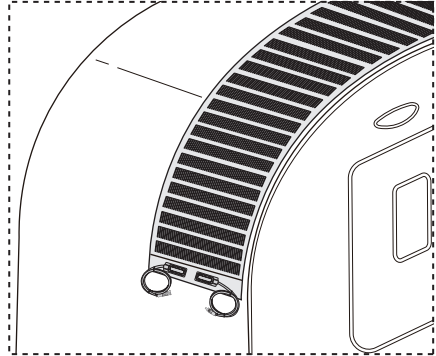
How To Use

1. Solar Off-grid System

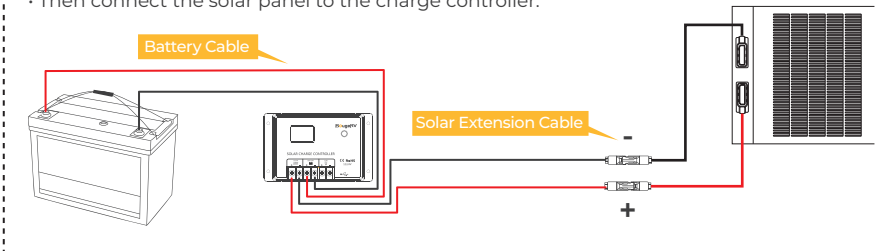
(1) Peel off the protection tape in order.



(2) Attach the solar panel to the ground.



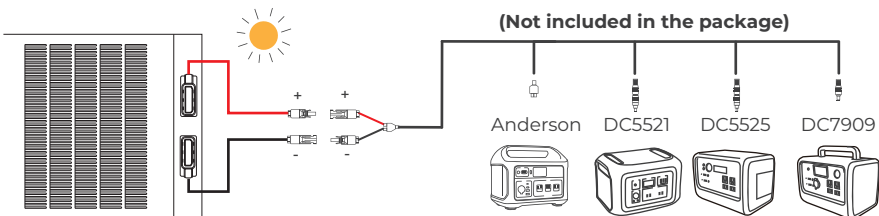
- First connect battery terminal wires to the charge controller.
- Then connect the solar panel to the charge controller.



2. Solar Power Station System

Compatible with various types power stations

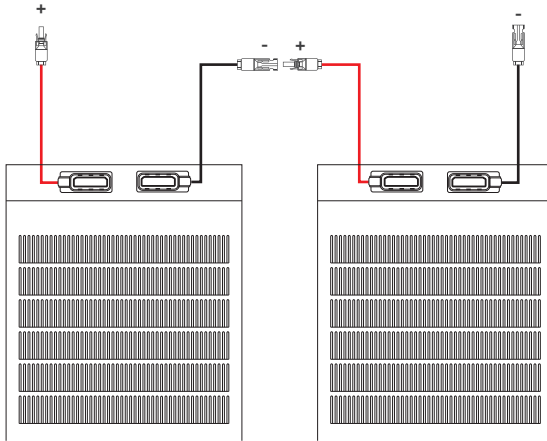
As long as your other cable is equipped with MC4 connectors, then it could connect with our connector of the solar panel.



Note: Connecting the power station does not need connecting with the solar charge controller.

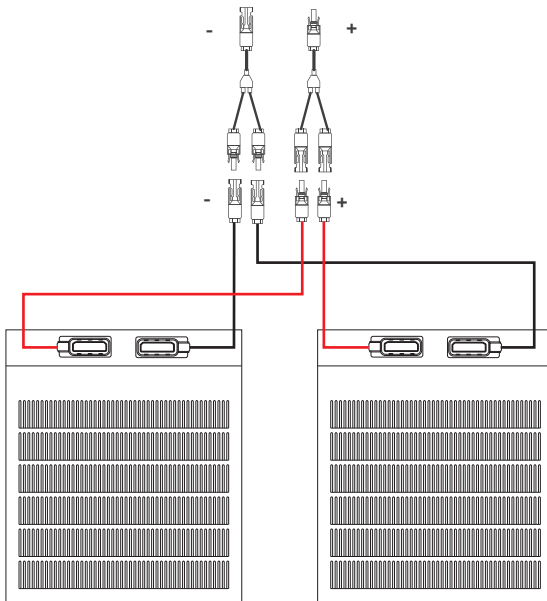
3. Series Connection

The panel can be wired in series to produce the desired voltage output.



4. Parallel Connection

The solar panel can be wired in parallel to produce the desired current output with the solar parallel connector.



Electrical Parameters

	100W	200W
Maximum Power (Pmax)	100W	200W
Solar cells Efficiency	16%	16%
Max. Power Voltage (Vmp)	25V	25V
Max. Power Current (Imp)	4.01A	8.02A
Open Circuit Voltage(Voc)	31.5V	31.5V
Short Circuit Current(Isc)	4.32A	8.64A
Max. System Voltage	1000V DC	1000V DC
Operating Temperature Limits	-40°F ~ +185°F	-40°F ~ +185°F
Series Fuse Rating	10A	10A
Temperature Coefficient of Pmax	-0.38%/°C	-0.38%/°C
Temperature Coefficient of Voc	-0.28%/°C	-0.28%/°C
Temperature Coefficient of Isc	-0.008%/°C	-0.008%/°C
Dimensions	13.7*78.7*0.06 inches	25.4*78.7*0.06 inches
Weight	4.06 lbs	6.68 lbs

BougeRV provides you with professional technical services. You can send your needs and the parameter information or instructions of your purchased accessories directly to our email: service@bougeRV.com, we will help you build the ideal DIY solar system.

Frequently Asked Questions

Q1

What causes the low output power or no output during the use of solar panels? How can I solve it?

A1

1. Light intensity: Latitude, altitude, and sun altitude angle will affect the light intensity; multiple measurement results show that high temperature does not equal strong light intensity.

2. Solar installation angle: In the same geographical location, due to the different installation inclination angles, the cumulative amount of sunlight absorbed and the cumulative difference in radiation amount causes the difference in power generation. It works best when the solar panel is roughly perpendicular to the light.

3. Solar panel surface temperature: When the solar panel surface temperature is 77°F, the output power is ideal. When the temperature is higher than 77 degrees Fahrenheit, the output power will decrease.

4. Shadow occlusion: During the working process of the solar panel, due to the partial occlusion of the shadow and the different degrees of dust settlement, the pollution of bird droppings will cause the "hot spot effect", and the shaded part of the solar panel will not provide power contribution and will not be used in the solar panel. The interior becomes an energy-consuming load, and at the same time causes the local temperature of the solar panel to increase. The overheated area can cause the EVA to accelerate aging and turn yellow, which reduces the light transmittance of the area, further deteriorates the hot spot, and leads to aggravated failure of the solar panel. Therefore, when using it, you should avoid blocking things and clean the surface of the solar panel regularly.

5. Load factors: When charging the energy storage, it will be limited by the maximum PV input current and voltage of the energy storage. Therefore, the input power value displayed on the energy storage display does not represent the maximum output of the solar panel. Please confirm the PV input related parameters of the energy storage before use;

Due to the own characteristics of PWM, there is a certain switching loss in the process of connecting with the solar panel, so the input power obtained by the battery will be lower than the maximum output of the solar panel.

Q2

Why the solar panel can't provide 100% of the output energy?

A2

1. **Limited by light intensity.** Please refer to **Q1** for more details.
2. **Limited by the solar charge controller.** The output conversion efficiency of the PWM controller is 75%, and the output conversion efficiency of the MPPT controller is above 90%.
3. **Limited by the power station.** The PV input voltage and PV input current of the power station will limit the output of the solar panel. It'd be better to confirm the input parameters of the power station before building a solar panel system.

Q3

What should I do if the solar panel I received is damaged, missing parts, or has no output?

A3

Please send relevant pictures to our after-sales mailbox **service@bouger.com** immediately, and leave your order number. We will reply one by one according to the chronological order sent by the customers.

Q4

What kind of device can be charged by this solar panel?

A4

1. Solar Power Station
 2. Lead-acid Battery (need the solar charge controller)
 3. Lithium Battery (need the solar charge controller)
- BougerV sells different kinds of MPPT/PWM controllers, lithium iron phosphate battery and power stations to build your solar system.**

Q5

How do I need to install this solar panel?

A5

Tear off the protection tape behind the solar panel, and then stick the solar panel to the ground.

Q6

How should I roll my rollable solar panel?

A6

Always roll the Rollable Solar Panel solar side out. Rolling solar side in will damage the panel and affect performance.

BougeRV Solar Panel comes with an **18-month warranty** that commences from the date of purchase.

If you have any questions during use the product, please feel free to contact us:



service@bouge rv.com



www.bouge rv.com



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BougeRV

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