

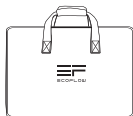
# ECOFLOW

## 220W Bifacial Solar Panel

**Contact Us:**  
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## In the Box



Protective Case (Kickstand)



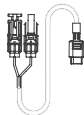
Bifacial Solar Panel



Snap Hook x 4



User Manual and Warranty Card



Solar Charging Cable



MC4 Output Controller

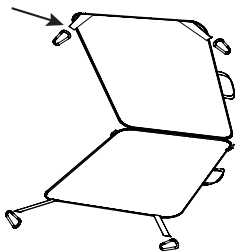
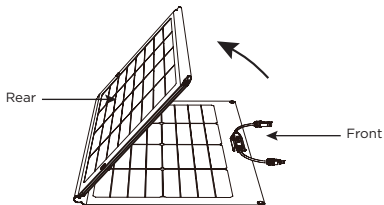
## How It Works

**When using this product, please ensure that the front side of the panel is facing the sun.**

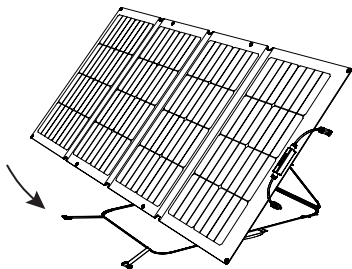
The rear side of the panel is capable of generating electricity from ambient light, boosting the power output of the product. The more light the rear side of the panel is exposed to, the better the results.

If necessary, electricity can also be generated with the rear side of the panel facing the sun. However, this only generates 80% as much power as using the front side of the panel.

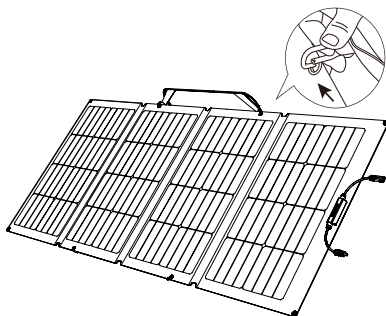
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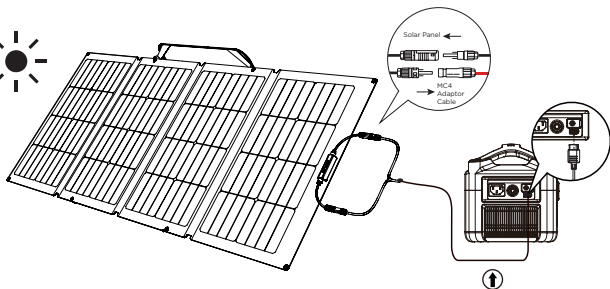
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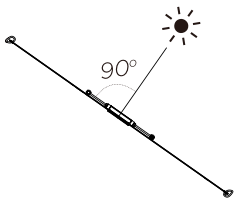


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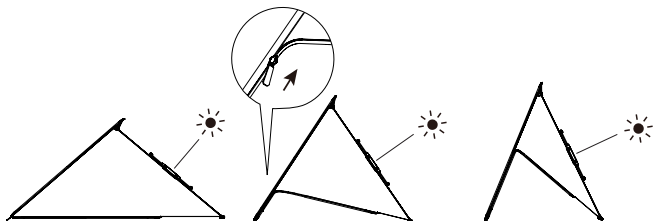
This cable can only be used for connection between solar panels and energy storage. It is prohibited to be used for interconnection between solar panels or other connection purposes.

5



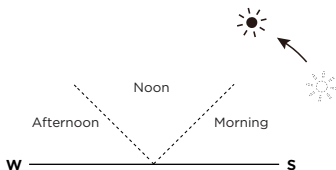
To harvest solar energy most efficiently, try to ensure that the sun's rays hit the panel  $\pm 10^\circ$  is acceptable and that the panel is not shaded.

## 6 Adjust the angle by shooting



For improved charging results, the Protective Case can also be used as a kickstand to prop up the solar panel at a  $30^\circ$ - $80^\circ$  angle.

7



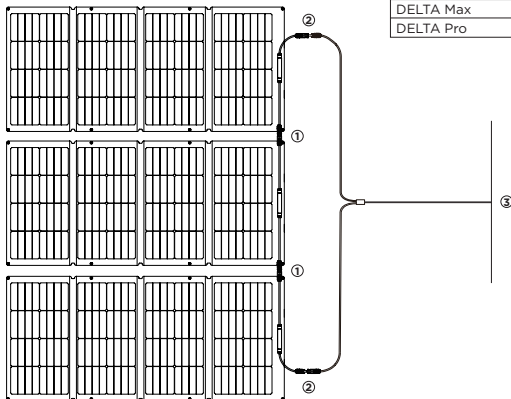
The kickstand feature should only be used before 10:00 am or after 2:00 pm. To use the product during the midday sun, simply place the solar panel flat on the ground.

## Harvesting Energy Even More Quickly

(See image below)

### Max. No. Of Panels Connected in Series to Supported Products

Supported Product	220W
RIVER mini	-
RIVER 600 Series	1
DELTA mini	2 (Recommended)
DELTA	2 (Recommended)
DELTA Max	4
DELTA Pro	6

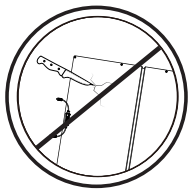
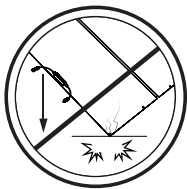


\*Please refer to relevant User Manuals for the number of solar panels that may be attached to other products.

## Things to Remember When Using Your Bifacial Solar Panel

1. As the efficiency of solar panels depends upon light intensity and the tilt angle used, the charging power of the panel may be affected by a number of factors such as weather conditions, seasonal changes and location. The installation and connection of this product should be carried out strictly in accordance with the instructions found in the User Manual.
2. Only the main body of this product is waterproof. The junction box and connection points should not be immersed in water for extended periods.
3. This product must not come into contact with highly corrosive substances, or be immersed in corrosive liquids.
4. To avoid damaging the product, do not use sharp objects on the surface of the panel, and do not knock or impact the product.
5. Do not apply pressure to the panel or allow the panel to be dropped on any of its corners, sides or faces. Such actions may result in damage to the solar panel.
6. The panel must not be knocked, exposed to heavy pressure, or bent during transport, rotation or installation. We recommend that the panel is kept in a vertical position when being moved or stored.
7. When storing the panel, always ensure that the positive and negative terminals of the junction box are not exposed to sunlight.
8. To avoid the risk of injury, this product and its junction box must only be opened or disassembled by qualified personnel.
9. Unwanted solar panels must be disposed of in accordance with the local legal requirements.
10. When using the product, please follow the instructions and prohibit hanging.

## What Not to Do



This Solar Panel contains **glass** inside. Behaviors above that damage the solar panel, will cause the glass inside the solar panel to crack and efficiency drop, or even unusable.

The free warranty period does not cover damage resulting from improper use of the product.

## Q&amp;A

**Does the 220W Bifacial Solar Panel generate a full 220W of power?**

In most cases, it is normal for a solar panel not to deliver its full nominal power. Some of the reasons why this happens, as well as some suggestions for getting closer to the nominal power figure, are given below.

- 1. Light Intensity.** The amount of light shining on the panel will result in fluctuations to the power output. You are more likely to achieve nominal power output figures closer to those obtained under test conditions when using the product on a clear day during the midday sun, than when using the product in the morning or later in the afternoon. Weather conditions will also affect the amount of sunlight that shines on the panel. For example, you are much less likely to achieve the figures for nominal power in hazy, cloudy or rainy conditions.
- 2. Surface Temperature.** The temperature of the solar panel surface will also affect the amount of power generated. The lower the surface temperature of the panel, the more power will be produced. For example, solar panels generate more power when used during the winter than during the summer, and this is completely normal. Solar panels generally reach temperatures close to 60°C (140°F) during summer. This reduces nominal power by 13%, despite the higher levels of light shining on the panel.
- 3. Sunlight Angle.** In optimal light conditions, the sun's rays should remain perpendicular to the surface of the panel for best performance. Power output is only marginally impacted by sunlight hitting the panel within 10° either side this 90° angle.
- 4. Panel Shading.** The surface of the solar panel should not be shaded during use. Shading caused by shadows, foreign objects and glass can all greatly reduce power output.

**Performance Issues Caused by Malfunctioning Panels:** If the panel still isn't generating power or its output remains far below expected nominal power figures after addressing the issues above, there may be an issue with the panel itself. Please contact Customer Support for assistance.

**How much power can the 220W Bifacial Solar Panel generate under normal conditions?**

This depends first and foremost on weather conditions. Generally speaking, on a clear day with no clouds in the sky, sunlight hitting the panel at a 90° angle usually generates 160W-180W of power in the 220W panel. (Current light conditions are normally 800W-900W/m<sup>2</sup> (74.3W-83.6W/ft<sup>2</sup>) with a panel temperature of 50°C (122°F) under test conditions. Nominal power ratings are based on 1000W/m<sup>2</sup> (92.9W/ft<sup>2</sup>) in AM1.5 conditions with a panel temperature of 25°C (77°F) under test conditions. Power output figures close nominal values were normally observed in the midday sun during the winter.)

**What should I know about the operating temperature, storage and use of the 220W Bifacial Solar Panel?**

The operating temperature of the Bifacial Solar Panel is -20°C-85°C (-4°F-185°F). The panel should be folded into its original shape and stored in its Protective Case (Kickstand), which provides sufficient protection for the product. To extend the service life of the panel, ensure that the product is not exposed to external forces/impacts when not in use. **The solar panel itself is made of glass and must not be dropped, pierced, bent, or sat on. These actions may break the glass and render the panel unusable. Any such damage will not be covered by the free warranty.**

**The 220W Bifacial Solar Panel has two sides. How can I tell which side is which, and how can I optimize power generation using the rear side of the panel?**

The front side of the Bifacial Solar Panel has a junction box. This side of the panel generates power by being positioned perpendicular to the sun's rays. Since the rear side of the panel faces away from the sun, it does not generate electricity in the usual way. Generally speaking, the rear of the panel uses ambient light to increase the overall performance of the product by up to 5%-25%. This figure is higher if mirrors are used, or when ambient light levels are high. Using the product with the rear side of the panel facing the sun generates 80% of the power when compared to using the front side. Using the panel in this way does not have a negative effect on the product.

### **Can I use non-EcoFlow branded power stations with the 220W Bifacial Solar Panel?**

Yes, but only certain types. The power station used must be compatible with MC4 standards in order to work properly. In addition, other brands of power station may not offer the same levels of compatibility as EcoFlow-branded power stations, may have lower nominal power ratings, and may not offer the same levels of performance.

### **Can I connect both 110W and 220W Bifacial Solar Panels together in series?**

Yes, **but this is not recommended**. While the voltages of the two panels are identical, the current ratings are not. This means that when the panels are connected in series, the current will be limited to that of the 110W panel and the full performance potential of the 220W panel cannot be released, resulting in a 1+2<3 scenario. Please purchase panels of the same size if you intend to connect multiple panels in series.

### **Can I connect 220W Bifacial Solar Panel in parallel?**

Yes, **but this is not recommended**. 220W solar panel have a maximum current rating of 12A. Though these panels can be connected in parallel, DELTA and RIVER series power stations only support a maximum current of 12A. Parallel connections increase power output by doubling the current, but connecting the panels in this way would result in a 1+1=1 scenario whereby the current is limited to 12A by the connected devices. We do not recommend connecting the panels in parallel, unless you use a different brand of power station with an input current of 20A or above.



## Technical Specifications

<b>220W Bifacial Solar Panel</b>
<b>Rated Power:</b> 220W (+/-5W)* Front Side / 155W(+/-5W)* Rear Side
<b>Open Circuit Voltage:</b> 21.8V (Vmp 18.4V)
<b>Short Circuit Current:</b> 13A (Imp 12.0A) Front Side / 8.8A(Imp 8.4A) Rear Side
<b>Bifaciality Coefficients:</b> 70%±10%
<b>Efficiency:</b> 22%-23%
<b>Cell Type:</b> Monocrystalline Silicon
<b>Interface Type:</b> MC4
<b>General</b>
<b>Solar Panel Weight:</b> Approx. 9.5kg (20.9lbs)
<b>Unfolded Dimensions:</b> 82.0*183.5*2.5cm (32.3*72.2*1.0in)
<b>Folded Dimensions:</b> 82.0*50.0*3.2cm (32.3*19.7*1.3in)
<b>Warranty Period:</b> 12 Months
<b>Testing and Certification</b>

\*Standard Test Conditions: 1000W/m<sup>2</sup> (92.9W/ft<sup>2</sup>), AM1.5, 25°C (77°F)

## Temperature Coefficient Specifications

<b>TKPower</b>	<b>-(0.39+/-0.02)%/k</b>
<b>TKVoltage</b>	<b>-(0.33+/-0.03)%/k</b>
<b>TKCurrent</b>	<b>+(0.06+/-0.015)%/k</b>