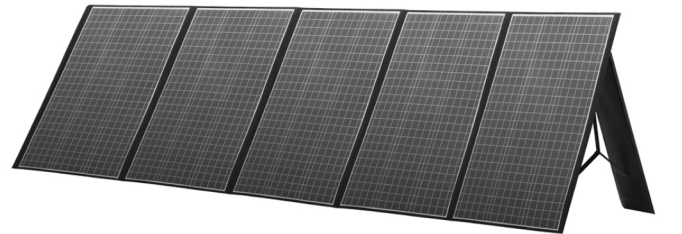


SP037 V3.0



AP-SP-037-BLA



User Manual

This is a fold-and -go solar panel which is made for charging the most portable solar generators on the market. The efficient solar cells belongs to physical batteries which is recyclable, different from chemistry ones which have a limited cycle life because of the lamination of battery material itself. Even after 5 years the power of solar cells still can achieve more than 80% .

Specifications

Peak Power : **400W±5%**

Open Circuit Voltage (Voc) : **45.3V**

Short Circuit Current (Ioc) : **11.45A**

Maximum Power Voltage (V_{mp}) : **37.4V**

Maximum Power Current (I_{mp}) : **10.6A**

Solar energy conversion rate: **19%-22%**

Operating Temperature : **-10°C~60°C**

All technical data at standard test condition (STC: E=1000W/m²

TC=25°C AM=1.5)

Unfolded Size : **1048x2660x5mm / 41.26*104.72*0.2inch**

Folded Size : **1048x532x65mm / 41.26*20.94*2.56inch**

Net Weight : **18.5KG / 40.79lb**

How it works

1. Place your solar panel to an area where you can get the most possible sunlight and adjust the angel to sun.



● All solar panels must be exposed to direct sunlight, avoid any possible shelters like buildings and trees .

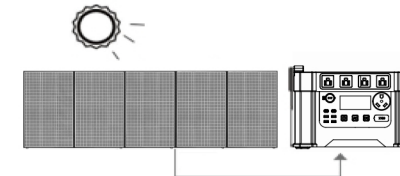
● Solar panels angled at 30-60 degree , making solar panel perpendicular to solar directly to get the best charging effect.

● If your panels must be adhere to other surface, you need to avoid the damp or irregular surface as they might bring a bit distortion after long time sunlight exposure. (we can rescue it after a second long time exposure.)

● Please choose the sunny hours in a day (9:00 am to 5:00 pm) and panels operate at peak efficiency when the sun is most direct - typically around mid-day (am 12:00-1:00 pm)

● In the natural environment, it is normal to finally get 260-320W due to the angle and intensity of sunlight.

2. Build connection between the solar panel and the solar generator



Before the charging, please turn off your devices to decrease the screen's consumption thus it can shorten the charging time.

● Solar panels generate electricity when panels meet sunlight, so please protect them with clothes before you plug in a device.

● Plug the cable in the input of your device, another end of cable go towards the out put of the solar panel firstly, then unfold solar panel to charge.

● Remove the clothes and you will find a charging sign on your laptop, if not, please build the connection again or replace another charging cable.

● If there shows up a charging sign, you can settle your device to a cool place for better heat dissipation and turn off your device to save the loss of energy during its running hours especially for laptops.

3. How to chain multiple solar modules together

It is also designed for charging 12V/24V lead-acid batteries, including lithium and other equipment, pls do pair the charging with a solar regulator to protect the batteries system from overcharging.

● You can add more panels together with MC4 Y connectors to get different output: voltages are additive when Panels are connected directly in series, and the currents are additive when panels are connected directly in parallel.

● Only panels with similar electrical output should be connected in the same string to avoid mismatch effects.

● Solar panels are connected in series (+ to -, - to +): the voltage is added, the power is added, and the current is unchanged.

● Parallel connection of solar panels (+ to +, - to -): the voltage does not change, the power is added, and the current increases.

● Excessive solar input voltage would damage portable power station. Please check the solar input parameter voltage of portable power station first, and connect solar panels within the voltage range.

Diagram of parallel connection:

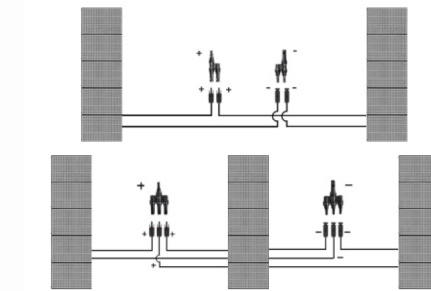
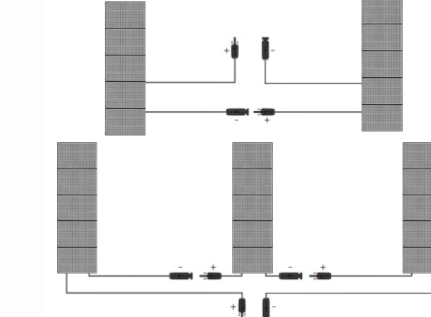


Diagram of series connection:



MC4 connectors

1. Keep connectors dry and clean, and ensure that connector caps are hand tight before connecting the panel.
2. Do not attempt making an electrical connection with wet, soiled, or

otherwise faulty connectors.

3. To better preserve its service life, please avoid sunlight exposure and water immersion of the connectors, and avoid connectors resting on the ground or roof surface.

4. Faulty connections can result in electrical shock. Please check that all electrical connections at least once every 6 months. Make sure that all locking connectors are fully fastened and locked.

Warm Tips

1. Please do not try to modify the PCB circuit inside the back junction box unless you are a professional technician, or we are not responsible for such a result.

2. Quality assurance: 3 years material and workmanship guarantee; ensure that the output power is 80% within 5 years, 50% within 10 years. There is a loss of 3% of the component's power during the period of installation.

3. The solar panel charger is built with a anti-flow resistant preventer inside, it will not occur the backflow phenomenon.

4. Do not step, stand or jump on the surface of the solar panel. Heavy or sharp objects may scratch the solar panel and cause small cracks, affecting the output power or scratching the human body.

5. If the solar panel is broken, please stop using it and contact professional maintenance personnel or the manufacturer's after-sales service mailbox. A professional will fix it rather than fix it yourself.

6. The waterproof coefficient of the solar panel is IP66, which is rainproof and can be immersed in water for a short time, but it is forbidden to immerse in water for a long time. Once it is short-circuited due to water immersion, please stop using it and contacting the seller.

Maintenance:

1. This suitcase is mainly for emergency charging purpose, we do not suggest a long time outdoor exposure as it may shorten the lifespan of this product.

2. Not bendable, please handle the solar panel with care, and avoid hitting it with sharp objects or knocking heavily on it.

3. If your panels must be adhere to other surface, you need to avoid the damp or irregular surface as they might bring a bit distortion after long time sunlight exposure. (we can rescue it after a second long time exposure.)

4. It is normal that solar panels got hotter during working hours and please store them with the box after they become cool down.

5. Dirt and dust can accumulate on the surface over time, this can cause a general decrease of power output, we recommends periodic cleaning for panel with a mild, non-abrasive cleaning agent.

6. It is not suggested to leave it charge any devices unguarded in vehicles especially in hot summer days as the temperature in front of the dashboard might goes up to 65-70°C.

7. The waterproof rating is IP66, which can completely prevent dust from entering, and it will not enter the interior if it is directly sprayed by water in any direction, but it is forbidden to immerse the whole product in water for a long time.

Disposal Guide

If circumstances permit, ensure that the product is disposed of in a designated recycling bin. Please follow local laws for more details.

Contact Us

Installing solar PV system may require specialized skills and knowledge. Otherwise, it is suggested to have it designed or inquired with an qualified installer. Besides, we have 18 months warranty on our products (from the date of its original purchase), if you have any questions or problems concerning your solar system, please email us at **support@allpowers.com**, we will offer help within 1 business day!

Website: **www.allpowers.com**