240W Flexible Solar Panel User Manual



Flexible Solar Panel Model

LS-SP240

Disclaimer

Before using this product, please read this document carefully to ensure that you fully understand it and can use it properly.

After reading this document, keep it in a safe place for future reference.

Improper operation of this product may result in serious injury to yourself or others, or damage to this product and other property.

By using this product you are deemed to have understood, acknowledged and accepted all the terms and conditions of this document.

The Company shall not be liable for any damages caused by the user's failure to operate this product in accordance with the instructions for use.

in accordance with laws and regulations, the Company reserves the right of final interpretation of this document and all documents related to this product.

This document is subject to update without notice, please visit the official website for the latest version.

This manual describes the assembly, installation, commissioning, maintenance and troubleshooting of the next model product.

240W Flexible Solar Panel : LS-SP240

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1.Product Overview

Our Flexible Solar Panel is a lightweight, bendable and waterproof monocrystalline silicon solar panel, which designed for outdoor and mobile applications. Its flexible design allows easy installation on curved surfaces.

Model: FLEX240M(BK)
Applications: RV, camping, yacht, roof, balcony, home/garden, DIY solar systems, etc.

Key Features:

- ✔ **High efficiency (≥ 25.8%)**
- ✔ **Ultra-lightweight (2.6 kg)**
- ✔ **IP67 waterproof & dustproof**
- ✔ **Wide temperature range (-40°C to +85°C)**
- ✔ **Bendable for curved surfaces**

2.Technical Specifications

Parameter	Value
Rated Power	240W
Open Circuit Voltage (Voc)	23.6V
Short Circuit Current (Isc)	11.9A
Maximum Power Voltage (Vm)	21.01V
Maximum Power Current (Im)	11.23A
Maximum Series Fuse	20A
Dimensions	1150mm × 1090mm
Weight	2.6 kg
Cables & Plug Connectors	2x3000mm / 2.5mm²
Conversion Efficiency	≥ 25.8%
Protection Rating	IP67
Maximum System Voltage	600V/DC
Certificate	CE (LVD, EMC), RoHS, UKCA

Standard Test Conditions: 1000W/m², AM1.5 spectrum, 25°C

3. Installation Guide

Before Installation:

- ✔ **Surface Prep: Ensure the mounting area is clean, flat, and free of sharp objects.**
- ✔ **Avoid Shading: Install in a location with maximum sunlight exposure (no trees, shadows, or obstructions).**
- ✔ **Weather Caution: Avoid installation under direct sunlight to prevent hot spots.**
- ✔ **Adhesive/Screw Options:**

  3M Adhesive: Peel and stick, then wait 24 hours for full adhesion.

  Screw Mounting: Use waterproof screws (not included) on pre-drilled edge holes.

Installation Steps:

Positioning: Choose a sun-exposed area (roof, RV, etc.) and optimize tilt angle (15°–30° recommended).

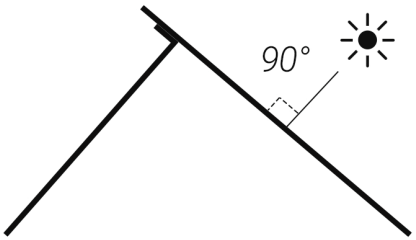
Mounting:

For adhesive: Press firmly and let cure for 24 hours.

For screws: Secure edges with rust-proof screws.

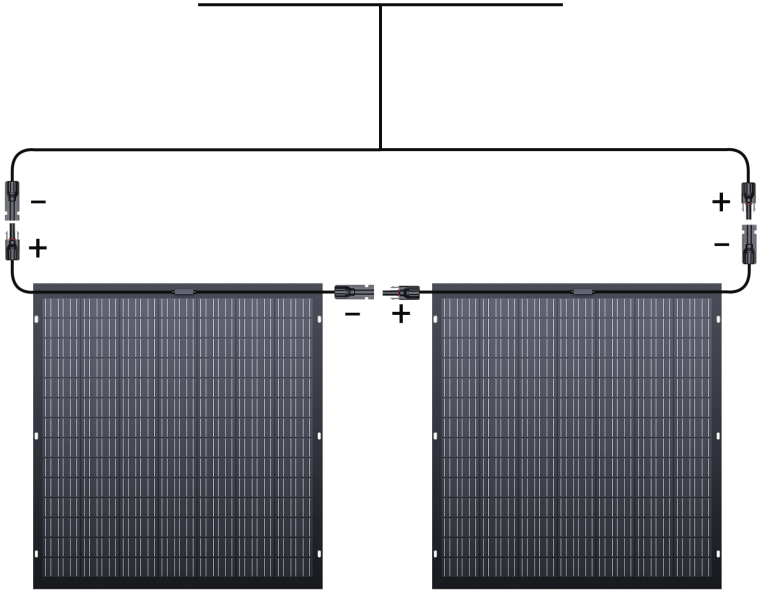
Wiring:

Connect the controller/battery (see the wiring diagram below, pay attention to match polarity: + to +, - to -).

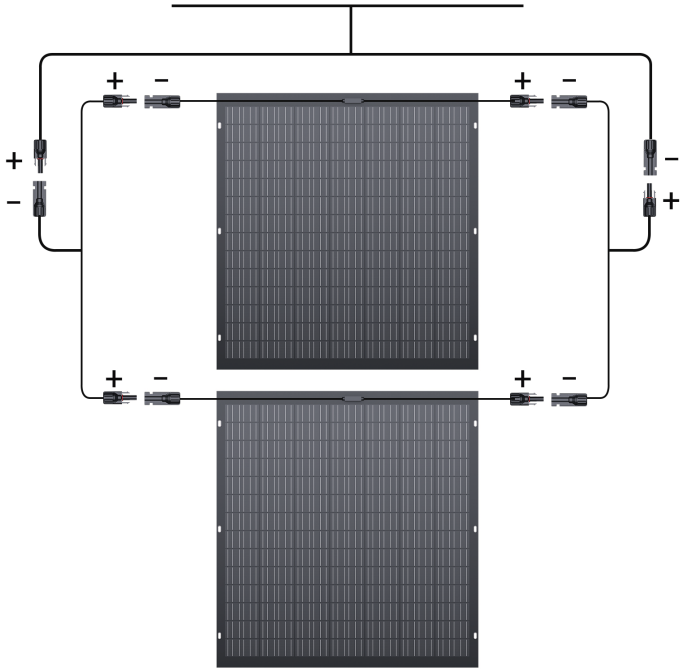


To harvest solar energy most efficiently try to ensure that the sun's rays hit the panel at a 90° angle and that the panel is not shaded.

A series connection is shown in the diagram:



A parallel connection is shown in the diagram:



4.Usage & Maintenance

We recommend that you carry out the following maintenance to ensure optimal performance of the module:

1.Clean Regularly: Clean the flexible surface of the module with water and a soft sponge or cloth when necessary. Stubborn dirt can be removed with mild detergent. Avoid using sharp and/or hard cleaning tools. it is recommended that you only clean in the morning and evening when the sun is weak (irradiance ≤200 W/m²(18.6 W/ft²));

2.Avoid Damage: Do not step on, bend forcefully, or place heavy objects on the panel.

3.Winter Care: Clear snow promptly to maintain efficiency.

4. inspect electrical and mechanical connections every six months to confirm that they are clean, secure and undamaged.

5. Prevent leaves and other objects from covering the surface of the solar panel. Partially shading the solar panel will not only affect the efficiency of power generation, but may also cause excessive current at some places and burn out the components.

6.Storage: Keep in a dry, dark place if unused for long periods.

In case of any issues, always have a qualified expert investigate and follow the maintenance instructions for all components used in the system, such as brackets, charge regulators, inverters, batteries, etc

5.Safety Warnings

DO NOT:

Fold, puncture, or bend excessively.

Connect directly to devices—always use a charge controller/inverter.

Disassemble or repair yourself—contact professionals.

Use during thunderstorms (disconnect for safety).

Please Do NOT install the solar panel near flammable materials!!!

Performance varies by environment. Proper installation and maintenance ensure longevity.

6. Troubleshooting

Issue	Possible Cause	Solution
No power output	Loose wiring or shading	Check connections & clear obstructions
Low power	Dirty surface or aging	Clean panel or contact support
Overheating	Short circuit/overload	Disconnect & inspect wiring

7. FAQs

Q1: Why does the 240W Solar Panel fail to deliver as much as stated when in actual use?

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 10-15%,despite the higher levels of light shining on the panel.

3.The Angle of the Sunlight: Under good lighting conditions, the solar panel is able to stay where light hits perpendicular to the surface to achieve better light performance. However, most solar panels installed on the roof of an RV can only be installed in a tiled configuration, which prevents the panel(s) from being installed at the optimal angle, and this difference will result in a power output loss of approximately 5%-10%.

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.

Q2: How much power can the 240W Flexible 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 168W-192W of power in the 240W panel (current light conditions are normally 800-900 W/m²(74.3-83.6 W/ft²) with a panel temperature of 50°c (32°F) under test conditions. Nominal power ratings are based on 1,000 W/m² (92.9 W/ft²) in AM1.5 conditions with a panel temperature of 25°c under test conditions. Power output figures close to nominal values were normally observed in the midday sun during the winter).

Q3: What are the usage temperature range and precautions for use for the 240W Panel?

The operating temperature range of the solar panel is -45°C to 85°c (-113°F to 185°F). Please read the instructions carefully before using the solar panel and minimize large bends during use to avoid damage to the battery core.

The panels are made of a special composite material, which is lightweight and able to bend to a certain degree.allowing them to be used flexibly on different surfaces of the roof. However, the solar panels are made of monocrystalline silicon wafers, and despite their flexibility, they should not be slammed on the ground during installation and use or stepped on or struck with foreign objects, Do not sit on the surface of the panels and do not bend the panels too far in order to prevent the monocrystalline wafers from breaking and affecting use. Damage caused by human force is not covered under the free warranty.

Q4: Does the bend of the 240W Panel have a large impact on power?

The solar panel can be bent on certain surfaces, but the more the panel bends, the less efficient it is. This is because panel power generation is best only when the entire panel has a consistent light source. When bent, different areas of the flexible solar panel are exposed to different amounts of light, reducing power generation efficiency.

Q5: Can I use 240W Solar Panels together in series?

Yes. Please read the description of in series and parallel connections in the User Manual carefully, paying particular attention to energy storage controller requirements and limitations on solar panel output, so as not to cause solar panels with different currents to be used in series without releasing their power and creating a 1+1<2 effect.

Q6: Can I connect 240W Solar Panels in parallel?

Yes. Connecting panels in parallel increases power through doubling the current. The maximum number of 240 W panels allowed in a parallel connection depends on the controller and energy storage equipment of your recreational vehicle. Please ensure that the energy storage system used in your vehicle supports a higher input current, and you should use wires with a diameter suitable to the output current to securely connect the panels in parallel.

Q7: Do I need to clean the 240W Solar Panel regularly?

Yes. There can be a lot of dust and foreign objects on the surface of the solar panel after the panel has been used outdoors for a long time, which block the light to a certain extent, reducing the power output. Regular cleaning can help keep the surface of the solar panel clean and free from obstructions and generate a higher power output. However, when cleaning, be careful to wipe the surface with soft materials to prevent hard materials scratching the surface of the panel and affecting the output.

8. Warranty & Support

If you have any questions about this product, please contact your seller first. The seller will respond to you within 24 hours, excluding holidays and weekends.

Please don't worry, we have a professional technical support department and we will definitely solve your problem.