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### Callsun CS-R100W12V-W

# Callsun Flexible Solar Panel 100W Instruction Manual

Model: CS-R100W12V-W

## 1. INTRODUCTION

This manual provides detailed instructions for the Callsun 100W Flexible Solar Panel, Model CS-R100W12V-W. It covers installation, operation, maintenance, and safety information to ensure optimal performance and longevity of your solar panel. Please read this manual thoroughly before using the product.



The Callsun 100W Flexible Solar Panel, designed for adaptability and ease of use.

The Callsun 100W Flexible Solar Panel is engineered for various applications, including RVs, boats, campervans, and off-grid living. Its flexible and lightweight design allows for easy integration into curved surfaces and portable setups.



A sailboat equipped with Callsun flexible solar panels, illustrating their use in marine environments and highlighting features like PERC cells, busbar technology, and bypass diodes.

## 2. SAFETY INFORMATION

Observe the following safety precautions to prevent injury and ensure proper operation of your solar panel:

- Electrical Hazard:** Solar panels generate electricity when exposed to light. Always handle with care and avoid touching exposed wires or terminals.
- Proper Connections:** Ensure all electrical connections are secure and correctly polarized (positive to positive, negative to negative) to prevent damage to the panel or connected equipment.
- Avoid Damage:** Do not step on, drop, or place heavy objects on the solar panel. Avoid sharp objects that could puncture the panel surface.
- Installation Environment:** Install the panel in a well-ventilated area, away from flammable materials or gases. Ensure the mounting surface is stable and can support the panel's weight.
- Water and Moisture:** While the panel is IP68 rated, ensure connectors are dry before making connections. Do not immerse the panel in water.
- Children and Pets:** Keep the solar panel and associated wiring out of reach of children and pets.

## 3. PRODUCT FEATURES

The Callsun 100W Flexible Solar Panel incorporates advanced technology for reliable and efficient power generation:

- Ultra Lightweight & Flexible:** The panel can be bent to a maximum radius of 500mm, allowing it to conform to curved surfaces. It is approximately 85% lighter than traditional rigid solar panels, enhancing portability.
- All-Weather Performance:** Equipped with IP68 rated waterproof material and bypass diodes, the panel is designed to withstand heavy snow loads (up to 5400 Pa) and high winds (up to 2400 Pa). Bypass diodes ensure continued power generation even if a portion of the panel is shaded.
- High Efficiency Cells:** Utilizes 182 PERC (Passivated Emitter Rear Contact) cell technology and 11 busbars, enhancing solar light capture and electrical performance to achieve up to 23% output efficiency.
- ETFE Material for Durability:** Constructed with upgraded professional-grade ETFE material, which provides enhanced impact resistance, abrasion resistance, and prevents delamination. It also features anti-scratch, self-cleaning, and sand-resistant properties for a longer service life.

# Why Choose Callsun Solar Panels ?

Ours



- ✓ **23%** High Efficiency
- ✓ **11BB** Busbars Tech
- ✓ Equipped With **Bypass Diode**
- ✓ Grade **A+** 166MM Solar Cell
- ✓ **182** PERC
- ✓ **IP68** Waterproof

Others

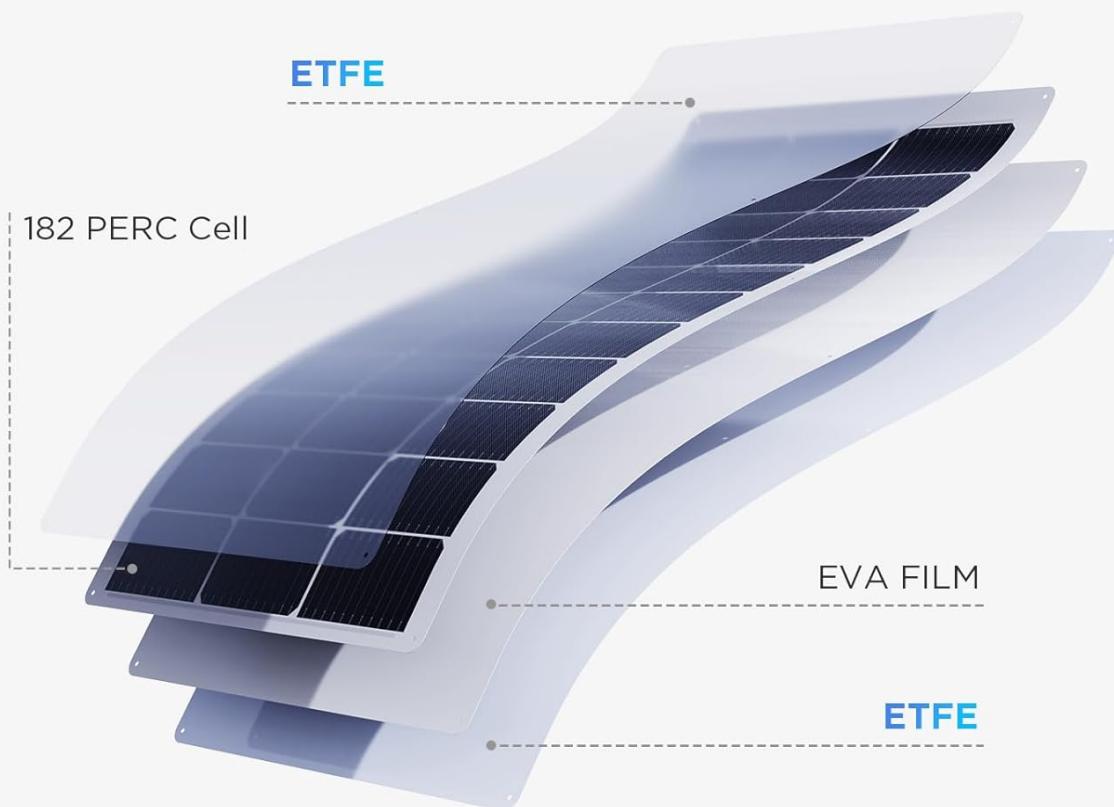


- 20% High Efficiency
- 9BB Busbars Tech
- No
- Grade B+ Solar Cell
- 166 PERC
- IP67 Waterproof

A visual comparison highlighting the superior features of Callsun solar panels, including higher efficiency, advanced busbar technology, and robust waterproofing, compared to other market options.

# ETFE-Longer Service Life

**ETFE material** is resistant to high temperatures, abrasion and scratches, and has good air permeability.



An exploded diagram illustrating the internal layers of the solar panel, emphasizing the durable ETFE material, PERC cells, and EVA film for enhanced longevity and performance.



A diagram illustrating how Callsun's ArchProBypassDiode technology prevents overheating and hotspot damage in solar cells, contrasting it with panels lacking this protection.

## 4. SPECIFICATIONS

Attribute	Value
Brand	Callsun
Model Number	CS-R100W12V-W
Material	ETFE, Monocrystalline Silicon
Product Dimensions (L x W x H)	43.7" x 24.4" x 0.98"
Item Weight	5.7 Pounds (2.59 kg)
Efficiency	23% High Efficiency
Maximum Power	100 Watts
Maximum Voltage	18.61 Volts
AC Adapter Current	5.38 Amps
Upper Temperature Rating	85 Degrees Celsius
Special Features	Portable, Bendable, Pro Anti-Shading, Ultra Lightweight

## 5. SETUP AND INSTALLATION

Proper installation is crucial for the performance and safety of your solar panel. Consider the following steps:

### 5.1 Pre-Installation Checklist

- Inspect Package:** Upon delivery, inspect the package for any damage. Minor cosmetic imperfections from shipping typically do not affect performance.
- Verify Specifications:** Double-check product specifications to ensure they meet your intended usage requirements.
- Gather Tools:** Depending on your mounting method, you may need adhesive, Velcro, screws, or tie-downs.

### 5.2 Mounting the Solar Panel

The flexible design allows for various mounting options:

- Adhesive Mounting:** For permanent installations on curved surfaces like RV roofs, use a suitable adhesive to secure the panel directly.
- Screw/Bolt Mounting:** The panel features 6 metal mounting holes. Use appropriate screws or bolts to secure it to a flat or slightly curved surface.
- Tie-Downs:** For temporary or portable setups, use ropes or bungee cords through the mounting holes to secure the panel.

# Drilling Free Easy Installation



This image illustrates the physical dimensions and key connection components of the solar panel, including the six metal mounting holes for secure installation and standard solar connectors.

## 5.3 RV Installation Guide

When installing on an RV, consider the following steps for optimal placement and performance:

- 1. Measure Roof Space:** Accurately measure the available roof area to determine the number and placement of panels.
- 2. Calculate Power Requirements:** Assess your energy needs to decide how many 100W panels are required.
- 3. Adhere to Surface:** Apply appropriate adhesive to secure the panels directly to the RV surface.
- 4. Leave Walking Space:** Ensure sufficient space is left on the roof for safe movement and maintenance.

A visual guide outlining the process for installing solar panels on an RV, including measuring, adhering, calculating panel quantity, and ensuring safe walking space.



An RV with multiple flexible solar panels mounted on its side, demonstrating an alternative installation method for camping and outdoor use.

## 5.4 Electrical Connections

The solar panel comes with standard solar connectors (MC4 compatible). Connect the panel to a compatible charge controller, which then connects to your battery bank. Ensure all connections are tight and weatherproof.



A detailed wiring diagram illustrating the components of an RV solar panel system, including solar panels, charge controller, battery, inverter, and connections to various electrical loads.

## 6. OPERATION

Once installed and connected, your Callsun Flexible Solar Panel will begin generating electricity when exposed to sunlight. The amount of power generated depends on several factors, including sunlight intensity, panel angle, temperature, and shading.

### 6.1 Optimizing Performance

- **Maximize Sunlight Exposure:** Position the panel to receive direct sunlight for the longest possible duration. Avoid shading from trees, buildings, or other objects.
- **Cleanliness:** Keep the panel surface clean from dirt, dust, leaves, and snow to ensure maximum light absorption.
- **Temperature:** While panels perform in various temperatures, extreme heat can slightly reduce efficiency. Ensure adequate ventilation around the panel.

## 6.2 RV Solar Panel Setups

The power output of your solar panel system can support various electrical loads. The actual power usage depends on appliance efficiency, sunlight hours, and battery storage capacity.

### Basic Solar Panel Setup (100W-200W):

- Lights
- Charging phones and laptops
- Running a radio or small TV for a few hours

## RV Solar Panel Setups



### 2. Intermediate Solar Panel Setup (200W-400W): All of the above, plus:

- Fans
- Refrigerator (12V)
- Water pump
- More extended TV use

\*However, always remember the actual power usage depends on the efficiency and consumption of each appliance, the number of sunlight hours you get, and the battery's storage capacity.

An image depicting a basic RV solar panel setup (100W-200W) capable of powering lights, charging small devices like phones and laptops, and running a radio or small TV.

### Intermediate Solar Panel Setup (200W-400W):

- All basic setup items
- Fans
- Refrigerator (12V)
- Water pump
- More extended TV use

## RV Solar Panel Setups



### 3. Advanced Solar Panel Setup (400W and above): All of the above, plus:

- Microwave (limited use)
- Coffee maker
- Small air conditioning units or heaters (very limited use)

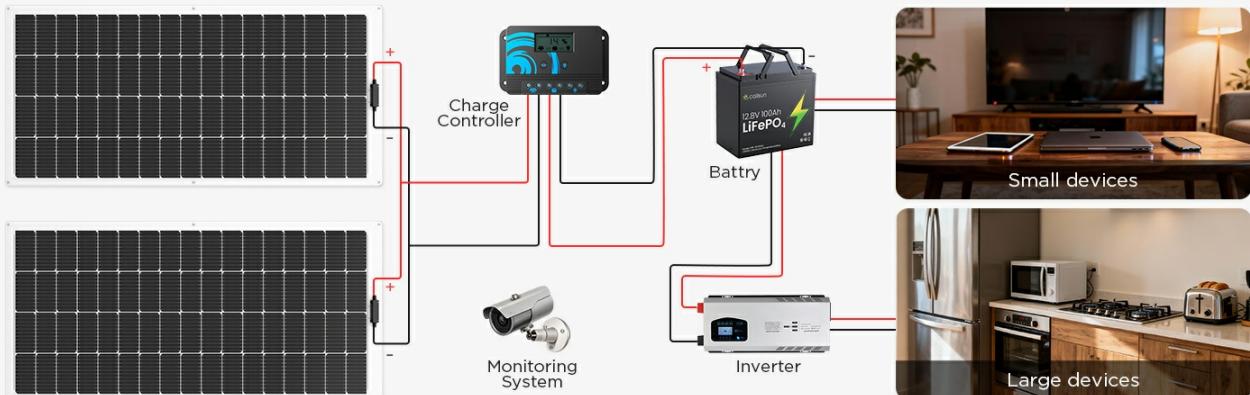
\*However, always remember the actual power usage depends on the efficiency and consumption of each appliance, the number of sunlight hours you get, and the battery's storage capacity.

An image illustrating an intermediate RV solar panel setup (200W-400W) suitable for operating fans, a 12V refrigerator, a water pump, and providing extended TV usage.

## Advanced Solar Panel Setup (400W and above):

- All intermediate setup items
- Microwave (limited use)
- Coffee maker
- Small air conditioning units or heaters (very limited use)

## RV Solar Panel Setups



An image showcasing an advanced RV solar panel setup (400W and above) capable of supporting higher-power appliances such as a microwave, coffee maker, and small air conditioning or heating units.

## 7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your solar panel:

- **Cleaning:** Periodically clean the panel surface with a soft cloth and mild, non-abrasive cleaner to remove dirt, dust, and debris. Avoid harsh chemicals or abrasive materials that could scratch the ETFE surface.
- **Inspection:** Regularly inspect the panel for any physical damage, such as cracks, delamination, or frayed cables. Check all electrical connections for corrosion or looseness.
- **Shading:** Ensure no new obstructions are causing shading on the panel. Trim nearby vegetation if necessary.
- **Bypass Diodes:** The integrated bypass diodes help prevent hot spots. If you notice a significant drop in power output without obvious shading, consult the troubleshooting section or contact support.

## 8. TROUBLESHOOTING

If you experience issues with your Callsun Flexible Solar Panel, consider the following common solutions:

- **No Power Output:**
  - Ensure the panel is exposed to direct sunlight.
  - Check all electrical connections from the panel to the charge controller and battery. Ensure they are secure and correctly polarized.
  - Verify the charge controller is functioning correctly and is compatible with your battery type.
- **Low Power Output:**
  - Clean the panel surface. Dirt, dust, and debris can significantly reduce efficiency.
  - Check for any partial shading on the panel. Even a small amount of shade can impact overall output.
  - Verify the angle and orientation of the panel towards the sun. Adjust for optimal exposure.

- Check ambient temperature. Extremely high temperatures can slightly decrease panel efficiency.

- Physical Damage:**

- If the panel has visible damage (cracks, delamination), it may affect performance and safety. Contact customer support for assistance.

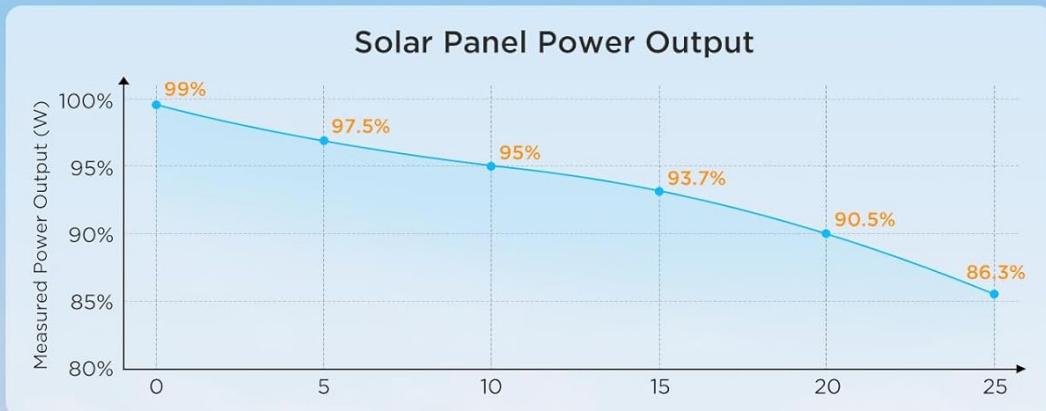
If these steps do not resolve the issue, please contact Callsun customer service for further technical support.

## 9. WARRANTY AND SUPPORT

Callsun is committed to providing high-quality products and customer satisfaction. The Callsun Flexible Solar Panel is designed for a long service life, with Grade A+ materials contributing to an expected lifespan of 25 years under correct usage conditions.

### Made Harvest Solar for 25 Years

under ideal conditions  
5-year Service for Materials and Workmanship



This image shows a person installing a solar panel on an RV, alongside a graph detailing the expected power output performance of the solar panel over a 25-year period under ideal conditions.

For specific warranty details regarding materials and workmanship, please refer to the product documentation provided at the time of purchase or contact Callsun customer service directly.

## Customer Support

If you have any questions, require technical assistance, or need to report an issue, please do not hesitate to contact our customer service team. We are available to provide support and ensure your satisfaction with your Callsun product.

Contact information can typically be found on the Callsun official website or through your purchase platform.

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