

Callsun CN450W

Callsun 450W Bifacial Solar Panel Instruction Manual

Model: CN450W

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Callsun 450W Bifacial Solar Panel. Please read this manual thoroughly before installation and keep it for future reference. The Callsun 450W solar panel features N-Type 16BB monocrystalline cells, a double-glass design, and anti-shade dual-module technology, offering high conversion efficiency and long-term reliability for various applications.

2. SAFETY INFORMATION

Always prioritize safety during handling, installation, and maintenance of solar panels. Failure to follow these safety guidelines may result in serious injury or property damage.

- **Electrical Hazard:** Solar panels generate electricity when exposed to light. Avoid direct contact with electrical terminals. Cover panels with opaque material during installation to prevent electrical shock.
- **Fire Hazard:** Do not install panels near flammable gases or vapors. Ensure proper wiring and overcurrent protection.
- **Physical Injury:** Panels are heavy and fragile. Handle with care. Wear appropriate personal protective equipment (PPE) including gloves, safety glasses, and hard hats.
- **Installation:** Only qualified personnel should install solar panels. Follow all local and national electrical codes.
- **Maintenance:** Disconnect the solar array from the inverter/charge controller before performing any maintenance.

3. PRODUCT FEATURES

- **High-Power N-Type 16BB Cell Technology:** Advanced N-Type monocrystalline cells with 16BB busbar architecture for higher energy yield, lower degradation, and improved long-term stability.
- **Bifacial Design for Higher Total Energy Yield:** Captures sunlight from both front and rear sides, utilizing reflected

and ambient light to boost total energy production, especially effective in ground-mounted and reflective-surface installations.

- **Dual-Module Parallel Anti-Shade Design:** Allows one half of the panel to continue producing power even when the other half is shaded, minimizing power loss from partial shading or uneven sunlight.
- **More Power per Panel, Fewer Modules Required:** Delivers 450W rated power, reducing the number of panels, wiring, and connections needed for high-capacity systems.
- **Optimized for High-Voltage MPPT Solar Systems:** Efficiently pairs with modern MPPT charge controllers and solar inverters, enabling higher-voltage string designs and improved energy harvest.
- **Engineered for Long-Term Outdoor Performance:** Features a double-glass structure, reinforced aluminum frame, and low-iron tempered glass. IP68 rated to withstand strong winds, heavy snow loads, and harsh weather.

One Panel. Less Trouble.

Callsun 450W Panel

- ✓ Single Panel
- ✓ Minimal Wiring
- ✓ Fewer Connections

VS

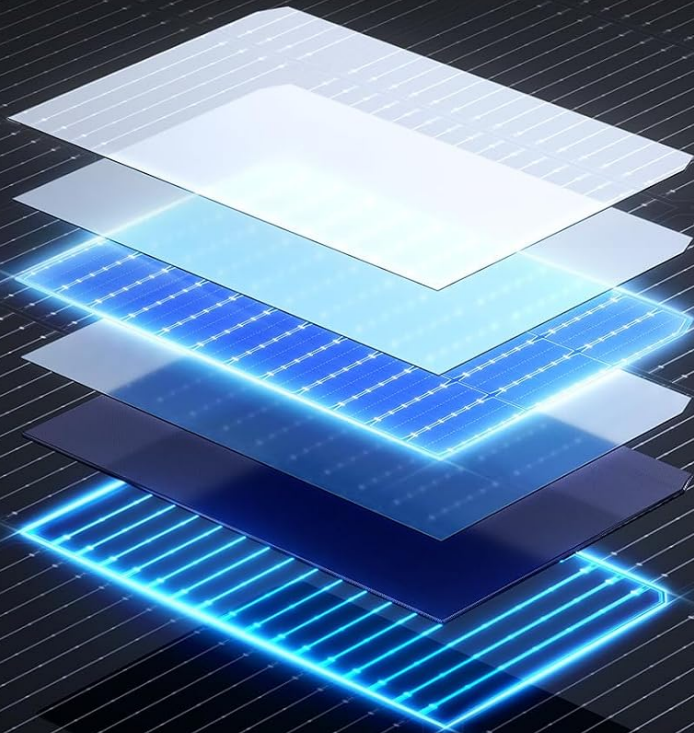
4X100W Panels

- ✗ Multiple Panels
- ✗ Messy Wiring
- ✗ More Connections

Figure 1: Callsun 450W panel offers simplified installation compared to multiple smaller panels.

Next-Gen N-Type Solar Cell Technology

Higher Efficiency · Lower Degradation · Longer Lifespan



Up to 25.6%
Conversion Efficiency



Anti-PID &
Low Lid Loss



Superior Low-Light
Performance

Why N-Type is Better Than P-Type

- ✓ Higher Efficiency
- ✓ Low Degradation
- ✓ Longer Lifespan

- ✗ Standard Efficiency
- ✗ Higher Power Loss
- ✗ Shorter Lifespan

Figure 2: Next-Gen N-Type Solar Cell Technology for superior performance.

Bifacial Design

Up to 30% Higher Energy Yield

Direct Sunlight

Reflected Light (Albedo)

Snow
Up to **30%**

Sandy Land
Up to **20%**

Grass
Up to **10%**

Figure 3: Bifacial design captures light from both sides for increased energy yield.

Anti-Shading Parallel Architecture

One Module Shaded, The Other Keeps Working

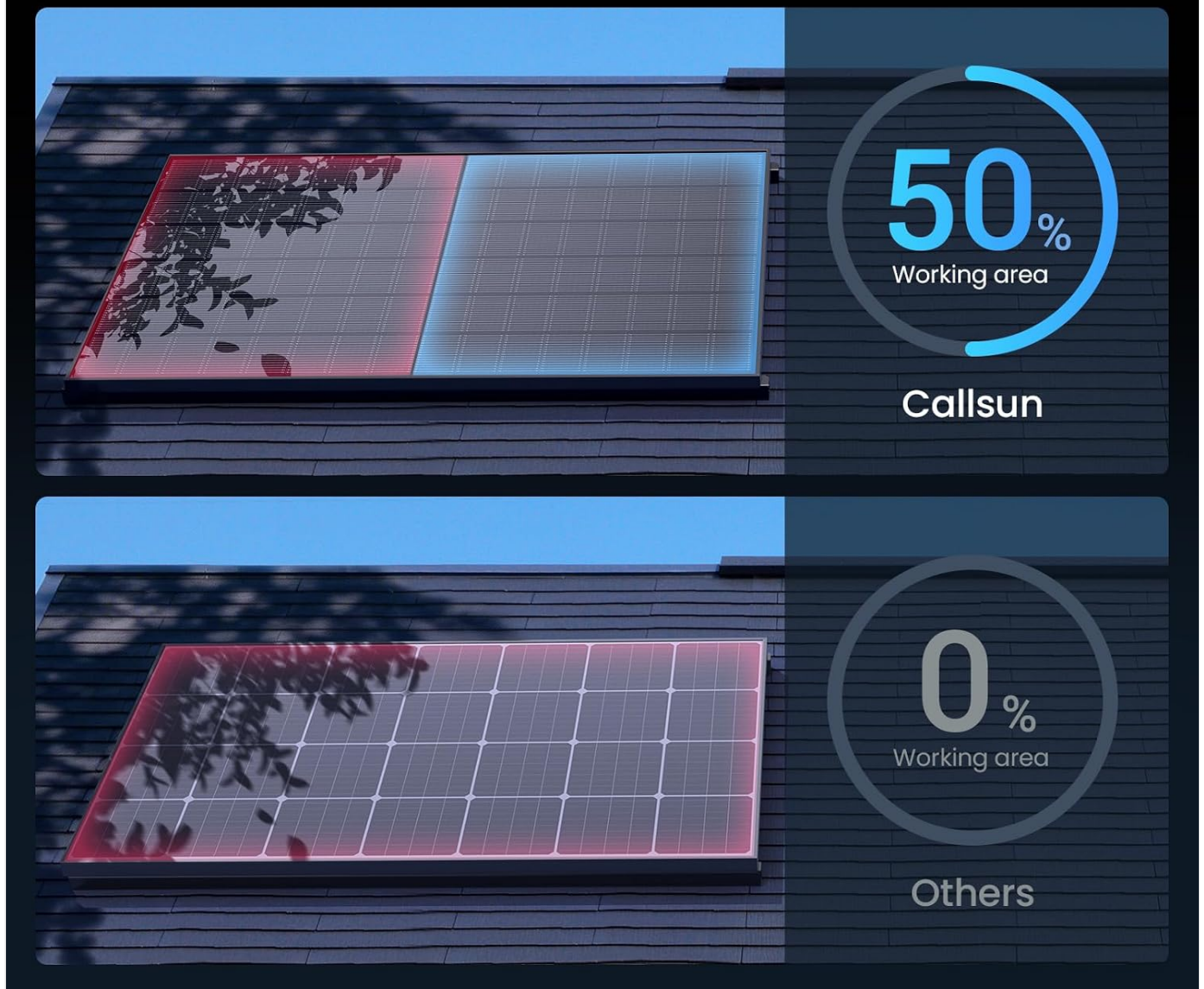


Figure 4: Anti-Shading Parallel Architecture ensures continuous power generation.

Engineered for Long-Term Performance

Tempered Glass

EPE Film

A+N-type Cells

EPE Film

Tempered Glass

Anti-Corrosion Frame



Double
Glass Design



Class A Fire
Resistance



Anti-PID
Protection

25-Year

Performance Guarantee

84.5%
Output Retained

Figure 5: Engineered for Long-Term Performance with robust construction.

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your solar panels. Consult a qualified installer if you are unsure about any steps.

4.1 Unpacking

Carefully unpack the solar panels. Inspect for any damage during shipping. Report any damage to the supplier immediately.

4.2 Mounting

The Callsun 450W solar panel is designed for various mounting options including residential rooftops, off-grid cabins, ground-mounted systems, and RVs. Ensure the mounting structure is robust enough to support the weight of the panels and withstand local wind and snow loads.

- Use the 12 pre-drilled mounting holes for secure attachment.
- Orient panels to maximize sun exposure throughout the day and year.
- Maintain adequate spacing between panels and the mounting surface for ventilation to prevent overheating.



Figure 6: Panel dimensions and features for easy setup.



Figure 7: Residential rooftop installation example.



Figure 8: Ground-mounted installation example.



Figure 9: RV installation example.

4.3 Wiring

Connect the solar panels in series or parallel configurations as required by your system voltage and current specifications.

Use appropriate cables and connectors (industry-standard solar connectors) to ensure secure and waterproof connections. The panel's split junction box design simplifies wiring.

Your browser does not support the video tag.

Video 1: Official Callsun video demonstrating the 450W Bifacial Solar Panel, including aspects of its design and potential applications. This video is provided by Callsun Direct.

5. OPERATING INSTRUCTIONS

Once installed and connected to a compatible MPPT charge controller and inverter, your Callsun 450W solar panel system will begin generating electricity when exposed to sunlight.

- **System Monitoring:** Regularly monitor your system's performance through your charge controller or inverter display to ensure optimal power generation.
- **Shading:** While the panel features anti-shade design, significant or prolonged shading can still reduce output. Minimize shading from trees, buildings, or debris.
- **Temperature:** Solar panel performance is affected by temperature. Optimal performance is typically achieved at lower temperatures with high irradiance.



Figure 10: Integration of Callsun 450W panel into a typical solar power system.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your solar panels.

- **Cleaning:** Clean the glass surface of the panels periodically to remove dirt, dust, leaves, and other debris that can reduce efficiency. Use a soft cloth and water. Avoid abrasive materials or harsh chemicals.
- **Inspection:** Annually inspect the panels for any physical damage, such as cracks in the glass, loose frames, or damaged cables. Check electrical connections for corrosion or loosening.
- **Snow Removal:** While the panels are designed to withstand snow loads, heavy snow accumulation can block sunlight. Carefully remove snow using a soft brush or squeegee to avoid scratching the surface.



Figure 11: Panels are reliable in various weather conditions, including snow.

7. TROUBLESHOOTING

If your solar panel system is not performing as expected, consider the following common issues:

Problem	Possible Cause	Solution
Low Power Output	Shading, dirty panel surface, incorrect panel angle, faulty connections.	Check for shading and remove obstructions. Clean panel surface. Adjust panel angle for optimal sun exposure. Inspect and secure all electrical connections.
No Power Output	Complete shading, disconnected cables, faulty inverter/charge controller, severe panel damage.	Ensure panels are exposed to sunlight. Check all cable connections. Verify inverter/charge controller operation. Inspect panels for visible damage.

Problem	Possible Cause	Solution
System Overheating	Insufficient ventilation around panels or inverter.	Ensure proper airflow around panels and inverter. Clear any obstructions.

If issues persist, contact Callsun customer support for assistance.

8. SPECIFICATIONS

Specification	Value
Brand	Callsun
Model Number	CN450W
Maximum Power	450 watts
Efficiency	25.6%
Product Dimensions (L x W x H)	69.37"L x 44.65"W x 1.18"H
Material	Anodized Aluminum Alloy, Low-Iron Tempered Glass, N-Type Monocrystalline Silicon Solar Cells
Amperage Capacity	14.97 A
Maximum Voltage	30.08 volts
Output Voltage	25 volts_of_direct_current
Upper Temperature Rating	85 °C
Special Features	Bifacial Power Generation Design, Double-Glass Construction, Dual-Module Parallel (Anti-Shade), N-Type 16BB Cell Technology
Included Components	2-Pack 450W Solar Panel

9. WARRANTY AND SUPPORT

Callsun stands behind the quality and performance of its products.

- **Materials and Workmanship Warranty:** 10 years of dedicated technical support for materials and workmanship.
- **Performance Warranty:** 25-year commitment to maintain at least 84.5% output.
- **Customer Support:** For product questions, system design assistance, installation guidance, and after-sales support, please contact Callsun customer service.

7/24 · 365-Day

After-Sales Support

Contact Us

→

Issue Verified

→

Solution Provided



Low Output?



Panel Damage?



Connection Issues?



Controller Compatibility?



Figure 12: Callsun offers comprehensive after-sales support.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

