

HQST HSP100D-30AT

HQST Bifacial 100 Watt 12V Solar Panel Instruction Manual

Brand: HQST

Model: HSP100D-30AT

INTRODUCTION

The HQST Bifacial 100 Watt 12V Solar Panel is designed for high efficiency power generation, utilizing advanced bifacial technology to capture sunlight from both sides. This manual provides essential information for the setup, operation, and maintenance of your solar panel to ensure optimal performance and longevity. It is suitable for various off-grid applications including battery charging for boats, caravans, and other remote power needs.

PRODUCT FEATURES

- **Bifacial Technology:** Captures direct sunlight on the front and reflected sunlight (albedo) on the rear, delivering up to 15% more energy output than traditional panels.
- **High Efficiency Cells:** Features Grade A+ 9-busbar monocrystalline solar cells with up to 25% conversion rate, rigorously tested for durability.
- **Enhanced Low-Light Performance:** Advanced PERC solar cell technology maximizes energy conversion even in cloudy or low-light conditions. Built-in bypass diodes prevent overheating and ensure performance under partial shading.
- **Durable Construction:** Rated IP68 for dust and water resistance, with an anti-corrosion aluminum alloy frame. Engineered to withstand 2400 Pa wind resistance and 5400 Pa snow load.



Figure 1: Front and back view of the HQST Bifacial Solar Panel.

Dual-Sided Power Generation

UP
TO
15%
EXTRA ENERGY OUTPUT

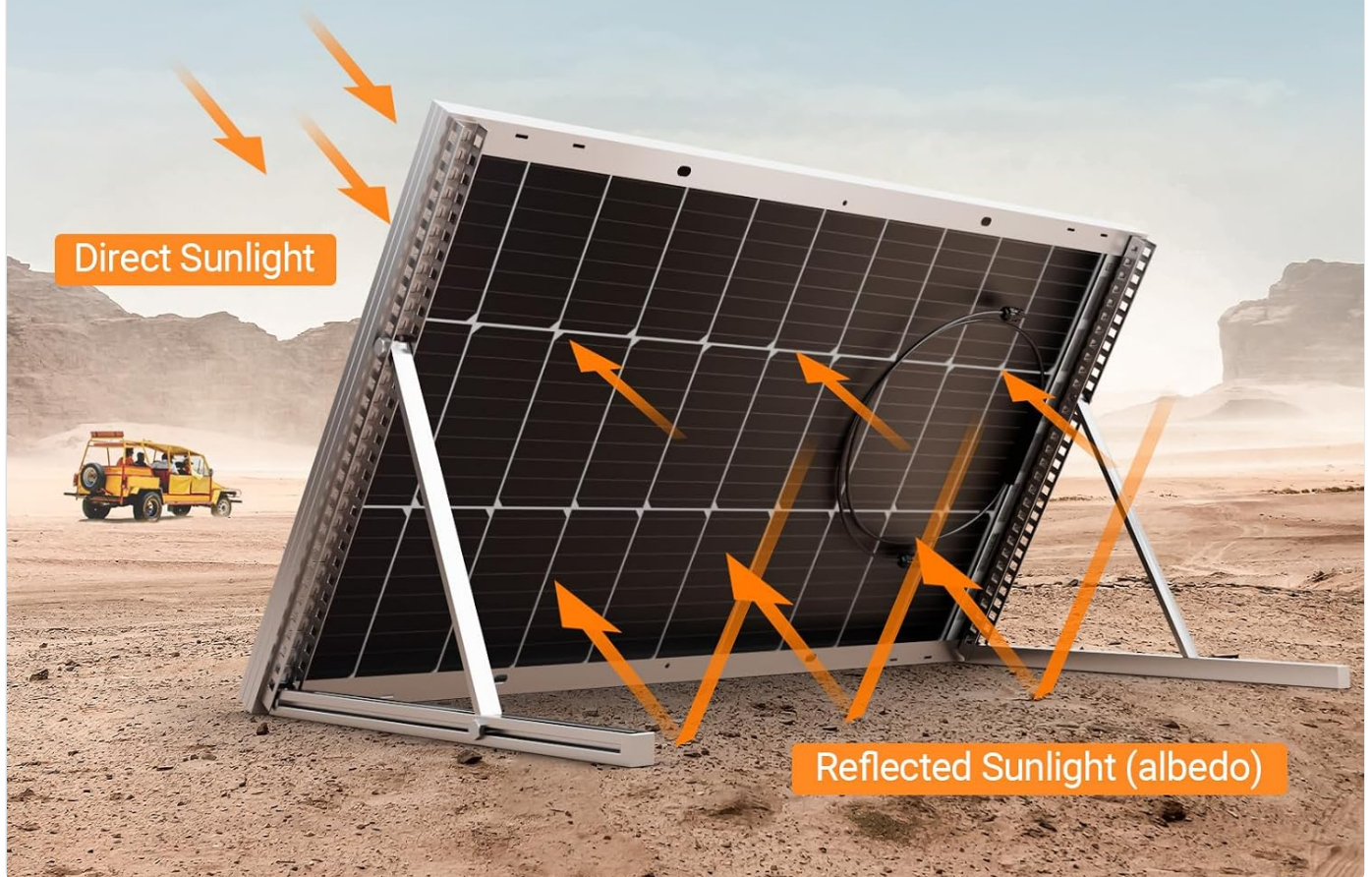


Figure 2: Illustration of dual-sided power generation.

Better Cells, More Power

Up to **25%**
Conversion Rate

Grade
A+

9
Busbar

Large
182mm

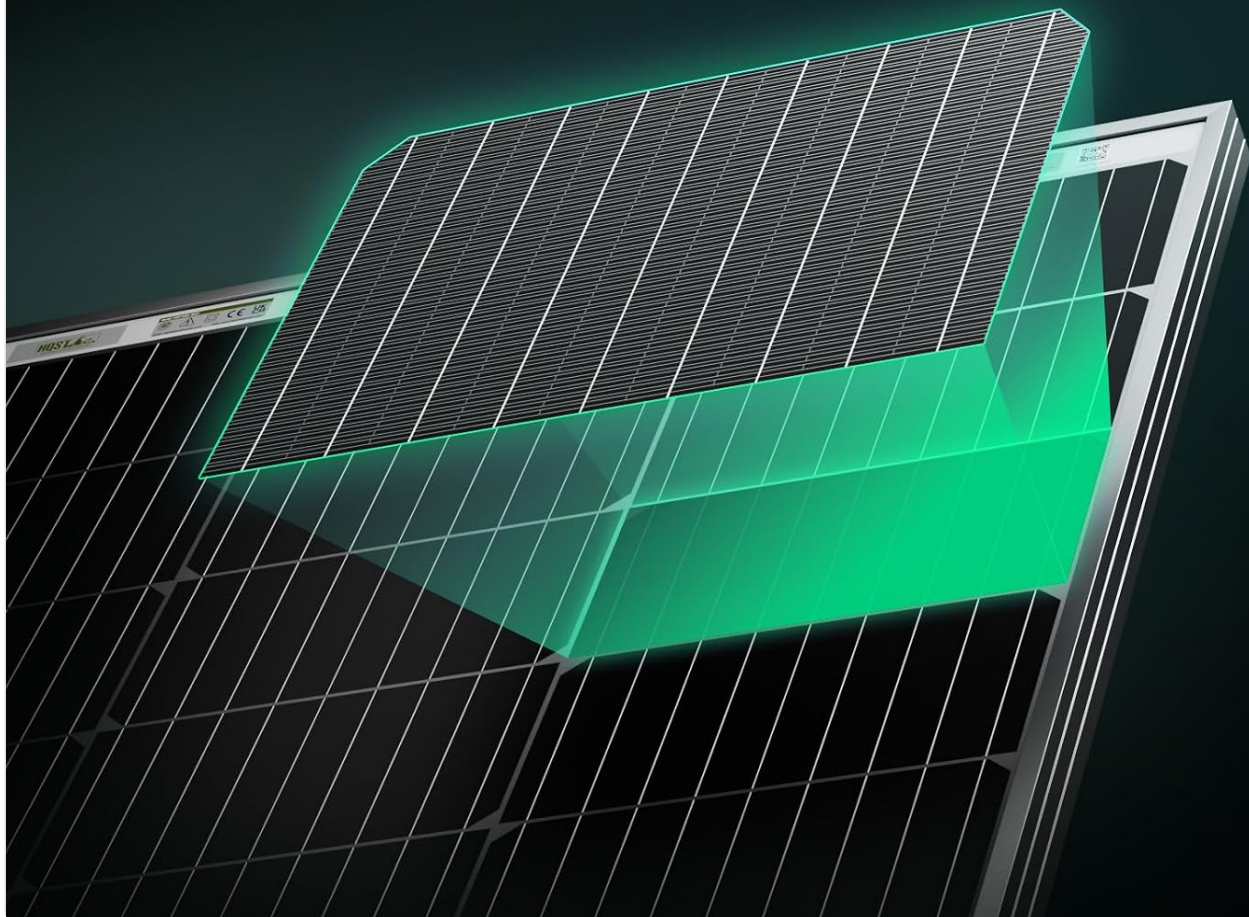


Figure 3: Detail of Grade A+ 9-busbar solar cells.

Built to Withstand Any Storm



IP68

Dust and Water Proof



2400 Pa

High Wind Resistance



5400 Pa

Heavy Snow Loads



Figure 4: Enhanced low-light performance.

Easy Installation

Compatible with tilt mounting brackets and Z-brackets for easy installation.

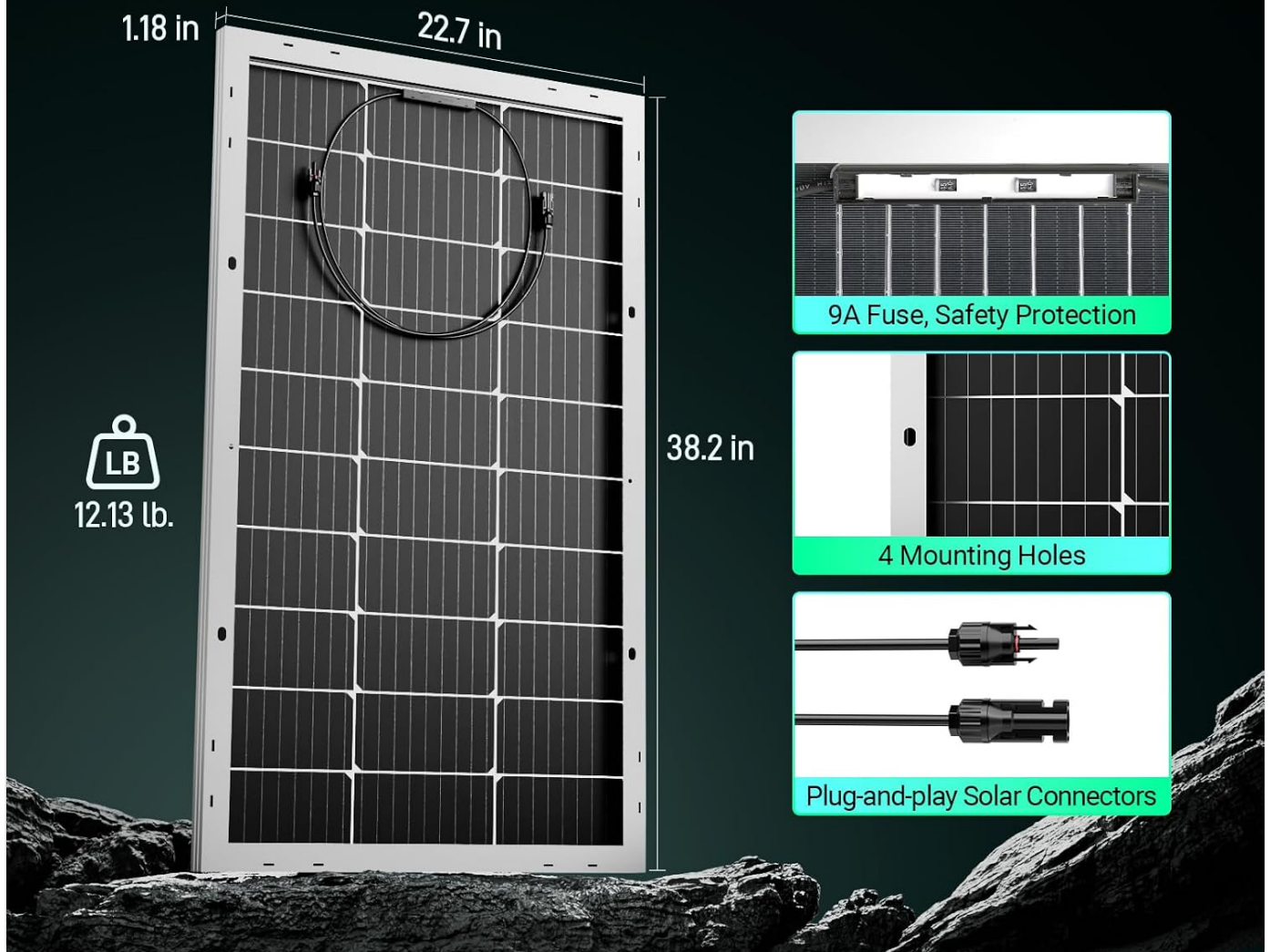


Figure 5: Durability features of the solar panel.

SETUP AND INSTALLATION

Proper installation is crucial for maximizing the energy output of your HQST Bifacial Solar Panel. Consider the following tips:

- **Optimal Installation Angle:** For best results, set the solar panels at an angle between 20° and 45°. This allows both the front and rear sides to capture maximum sunlight.
- **Reflective Surfaces:** Install bifacial solar panels on reflective surfaces such as snow (15% reflectivity), cement (10%), sandy land (12%), grass (8%), or white surfaces. Mounting them above the ground helps capture more rear-side sunlight.
- **Clear Obstructions:** Ensure the panel is free from shadows or obstructions throughout the day, as shading can significantly impact energy output.
- **Secure Connections:** Use the provided MC4 connectors for secure and waterproof electrical connections.

- **Mounting:** The panel is compatible with tilt mounting brackets and Z-brackets for easy installation. It features 4 mounting holes for secure attachment.



Figure 6: Panel dimensions and connection points.

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Video 1: How to Maximize the Performance of Bifacial Solar Panel. This video provides visual guidance on optimal installation angles and placement for bifacial solar panels.

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Video 2: 100W 9BB Bifacial Solar Panels Unboxing. This video demonstrates the unboxing process and initial setup of the solar panel.

OPERATING INSTRUCTIONS

Once installed, the HQST Bifacial Solar Panel will automatically begin converting sunlight into electrical energy. To ensure continuous and efficient operation:

- **Connect to Charge Controller:** Always connect the solar panel to a compatible charge controller before connecting to batteries. This protects your batteries from overcharging and ensures stable power delivery.
- **Monitor Output:** Regularly check the output of your solar panel using a compatible monitoring device to ensure it is performing optimally.
- **Adjust for Sun Path:** For maximum daily output, consider adjusting the panel's angle periodically to align with the sun's path throughout the day and across seasons.

MAINTENANCE

Minimal maintenance is required for your HQST solar panel due to its durable design. However, regular checks can prolong its lifespan and efficiency:

- **Cleaning:** Keep the surface of the solar panel clean from dirt, dust, leaves, and snow. Use a soft cloth and water to gently clean the glass surface. Avoid abrasive materials or harsh chemicals.
- **Inspect Connections:** Periodically check all electrical connections (MC4 connectors, wiring) for any signs of corrosion, damage, or looseness. Ensure they are securely fastened.
- **Clear Debris:** Remove any accumulated debris around the panel's frame or mounting area that could obstruct airflow or sunlight.

TROUBLESHOOTING

If you experience issues with your solar panel's performance, consider the following:

- **Low Power Output:**
 - Check for shading on the panel surface.
 - Ensure the panel is angled correctly towards the sun.
 - Clean the panel surface if it's dirty.
 - Verify all connections are secure and free from corrosion.
 - Check the charge controller for error codes or proper operation.
- **No Power Output:**
 - Confirm direct sunlight is hitting the panel.
 - Inspect all wiring for disconnections or damage.
 - Test the open-circuit voltage (Voc) of the panel directly using a multimeter to ensure it's producing voltage.

SPECIFICATIONS

Attribute	Value
Brand	HQST
Model Number	HSP100D-30AT
Material	Monocrystalline Silicon, Encapsulation Materials, Aluminum, Junction Box Material
Product Dimensions	38.2"L x 22.7"W x 1.18"H
Item Weight	12.13 Pounds
Efficiency	25% High Efficiency
Connector Type	MC4
Maximum Voltage	12 Volts
Maximum Power	100 Watts
UPC	810009717102

Model	HSP100D-30AT
Max Power at STC (Pmax)	100 W + 5%
Open-Circuit Voltage (Voc)	20.4 V + 3%
Short-Circuit Current (Isc)	6.46 A + 5%
Optimum Operating Voltage (Vmp)	17.4 V + 3%
Optimum Operating Current (Imp)	6.15 A + 5%
Temp Coefficient of Pmax	-0.37% / °C
Temp Coefficient of Voc	-0.28% / °C
Temp Coefficient of Ioc	0.048% / °C
Max System Voltage	600VDC (UL)
Max Series Fuse Rating	15A
Fire Rating	Class C
Weight	5.5 kg / 12.13 lbs
Dimensions	576 x 970 x 30 mm / 22.7 x 38.2 x 1.18 in
STC	Irradiance 1000W / m ² , T = 25°C, AM = 1.5



Figure 7: Detailed electrical specifications.

WARRANTY AND SUPPORT

The HQST Bifacial Solar Panel is a long-lasting investment, delivering powerful energy output for up to 30 years. It comes with a 5-year warranty covering materials and workmanship.

HQST prioritizes product quality and service. We provide a quick response service whenever you encounter any issues during usage. For support, please refer to the contact information provided in your product packaging or visit the official HQST website.

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Figure 8: Warranty information.

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

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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