



[Manuals.plus](#) /

› [HQST](#) /

› [HQST-100W 12V Monocrystalline Solar Panel Instruction Manual](#)

## HQST HSP100D-30AT

# HQST-100W 12V Monocrystalline Solar Panel Instruction Manual

Model: HSP100D-30AT

[Safety](#)

[Overview](#)

[Setup](#)

[Operation](#)

[Maintenance  
Support](#)

[Troubleshooting](#)

[Specifications](#)

[Warranty](#)

## INTRODUCTION

---

This manual provides essential information for the safe and efficient use of your HQST-100W 12V Monocrystalline Solar Panel. Please read these instructions thoroughly before installation and operation to ensure optimal performance and longevity of your solar panel system.

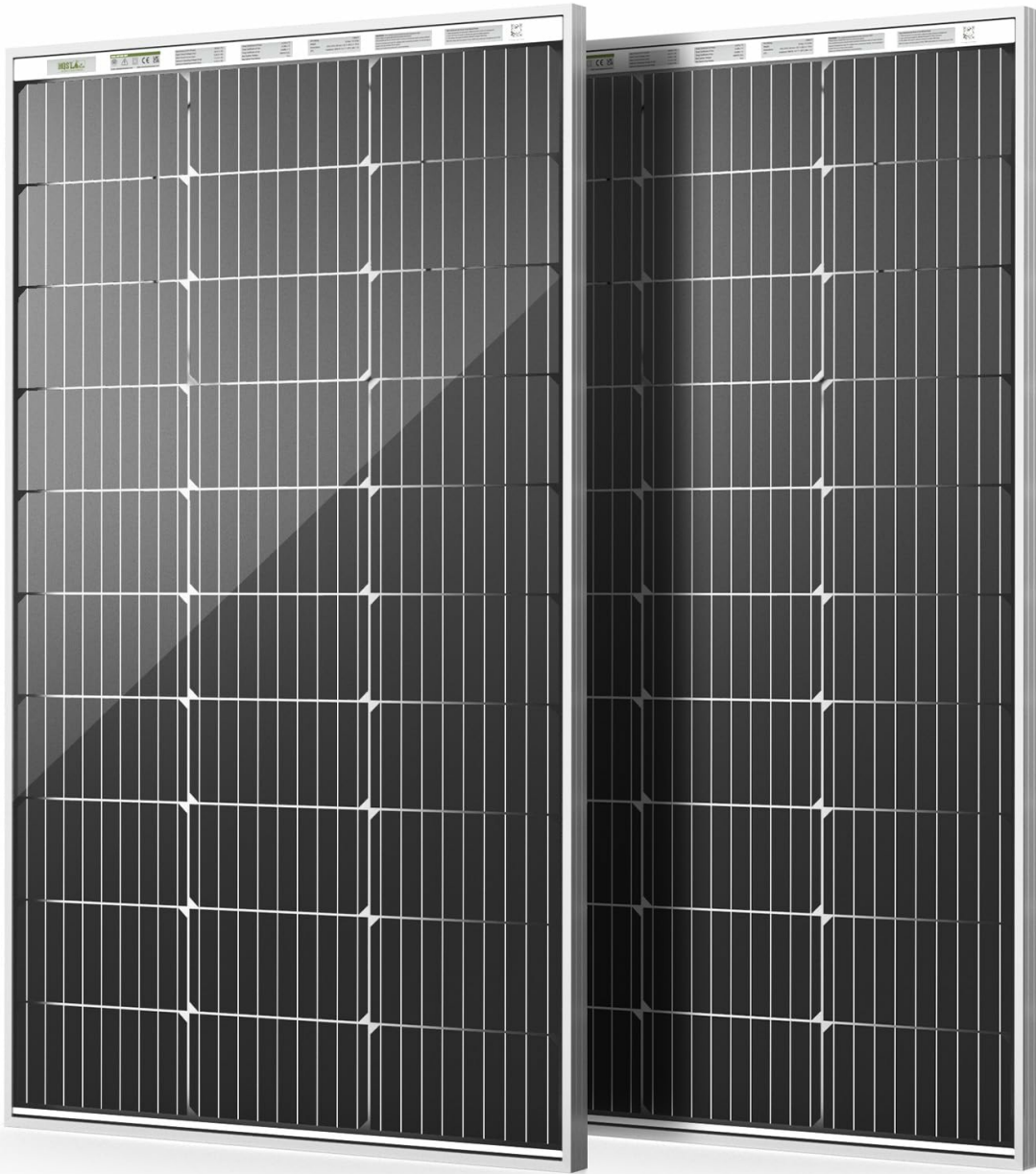


Image: The HQST 100W Monocrystalline Solar Panel, designed for various off-grid applications.

## IMPORTANT SAFETY INFORMATION

---

Always observe the following safety precautions during installation, operation, and maintenance of your solar panels:

- Do not attempt to disassemble or modify the solar panel.
- Wear appropriate personal protective equipment (PPE) including gloves and eye protection during installation.
- Ensure all electrical connections are secure and properly insulated to prevent electric shock.
- Avoid touching the panel's surface when it is wet or during lightning storms.
- Keep children and unauthorized personnel away from the installation area.
- Consult a qualified electrician for complex wiring or if you are unsure about any aspect of the installation.

## PRODUCT OVERVIEW AND FEATURES

---

The HQST-100W Monocrystalline Solar Panel features advanced technology for efficient power generation in various

conditions.

## Bifacial Technology

This solar panel incorporates bifacial technology, allowing it to capture direct sunlight on the front surface and reflected sunlight (albedo) on the rear. This design can increase energy output by up to 15% compared to traditional monofacial panels.

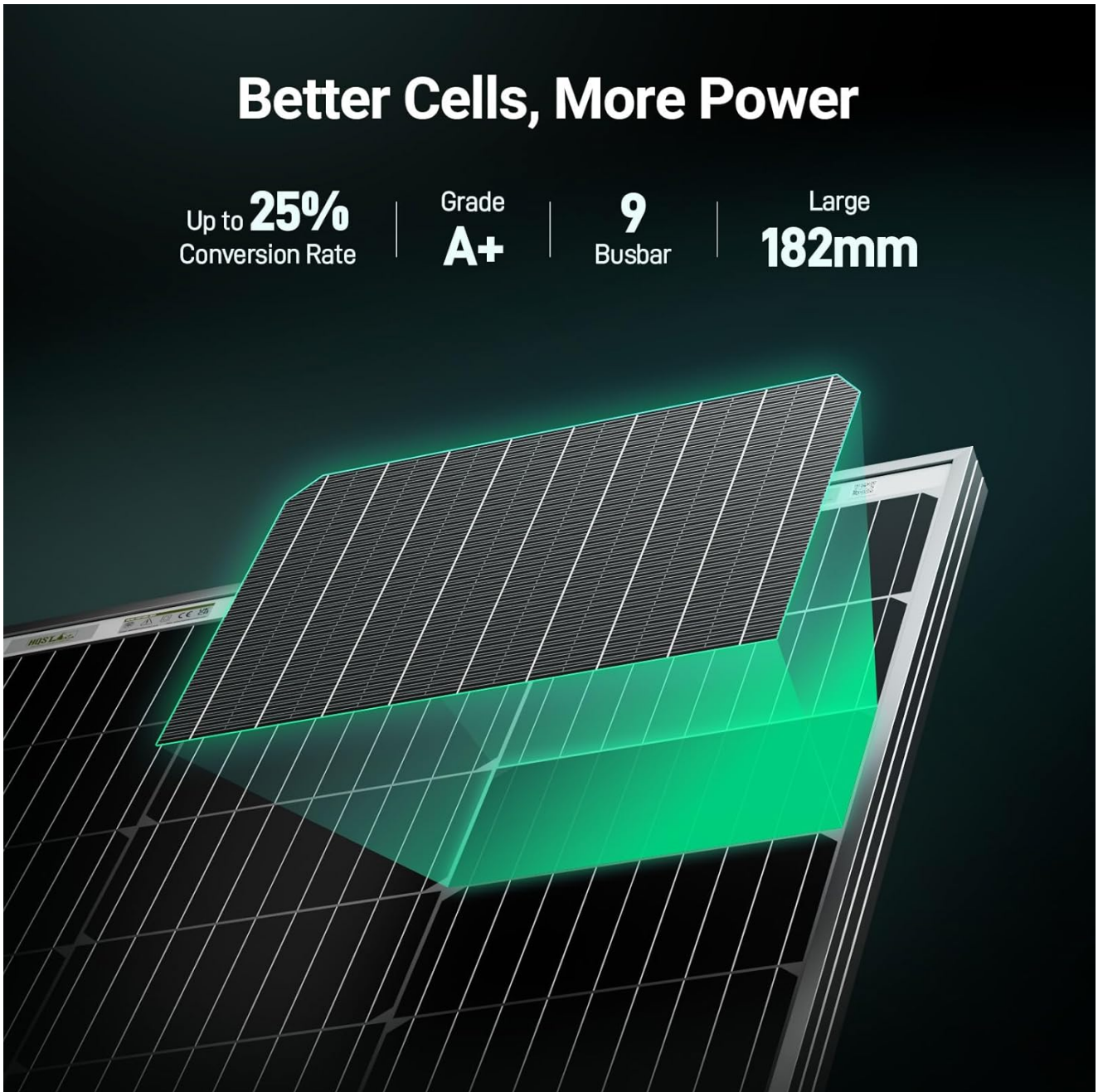


Image: Diagram illustrating how the bifacial solar panel captures both direct and reflected sunlight for enhanced energy generation.

## High Efficiency Cells

Equipped with Grade A+ 9-busbar solar cells, the panel offers a conversion rate of up to 25%. These cells are rigorously tested to ensure durability and performance.

# Better Low-Light Performance

PERC cells perform well during cloudy days or in the morning and evening, as they utilize a broader spectrum of light.



Image: Close-up view of the Grade A+ 9-busbar solar cells, highlighting their design for improved efficiency.

## Enhanced Low-Light Performance

Advanced PERC solar cell technology maximizes energy conversion by reflecting unused sunlight back into the cell, including low-energy infrared. This ensures efficient performance even in cloudy or low-light conditions. Built-in bypass diodes prevent overheating and maintain performance under partial shading.

# Built to Withstand Any Storm



**IP68**

Dust and Water Proof



**2400 Pa**

High Wind Resistance



**5400 Pa**

Heavy Snow Loads



Image: A solar panel operating effectively under cloudy skies, demonstrating its enhanced low-light performance.

## Product Video: HQST 100 Watt 9BB Bifacial Solar Panel

Your browser does not support the video tag.

Video: An official HQST video showcasing the features and benefits of the 100 Watt 9BB Bifacial Solar Panel.

## SETUP AND INSTALLATION

Proper installation is crucial for maximizing the energy output of your HQST solar panel. The panel is compatible with tilt mounting brackets and Z-brackets for easy installation.

### Installation Tips for Maximum Power Output

- Install bifacial solar panels on reflective surfaces or mount them above the ground to capture more rear-side sunlight.
- For optimal results, set the solar panels at an angle between 20° and 45° in highly reflective areas such as snow, cement, sand, grass, or white surfaces.
- Ensure adequate spacing between panels and from the mounting surface to allow for proper airflow and reflected light

# Longer Lifespan, Smarter Investment

**30** Years  
POWER OUTPUT

**5** Years  
MATERIALS &  
WORKMANSHIP  
WARRANTY

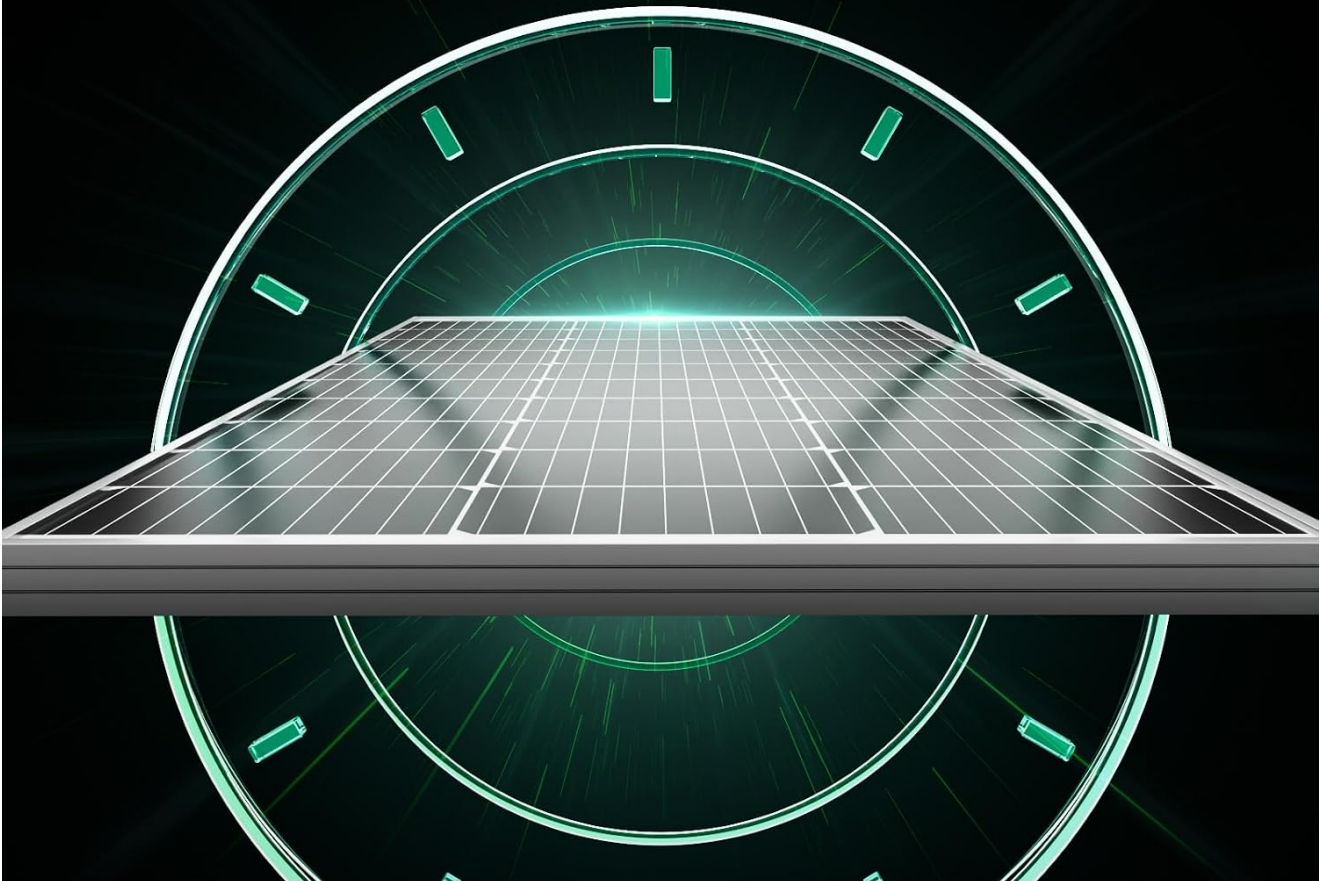


Image: Detailed view of the solar panel's dimensions (38.2"L x 22.7"W x 1.18"H), weight (12.13 lb), 9A fuse, 4 mounting holes, and plug-and-play solar connectors (MC4).

## Product Video: 100W 9BB Bifacial Solar Panels Unboxing

Your browser does not support the video tag.

Video: An official HQST video demonstrating the unboxing process for the 100W 9BB Bifacial Solar Panels, showing packaging and initial inspection.

## OPERATION

Once installed, your HQST solar panel will convert sunlight into DC electricity. This power can be used to charge 12V batteries or power compatible off-grid devices through a charge controller and inverter (sold separately).

## Maximizing Performance

To ensure your solar panel operates at its peak efficiency, consider the following:

- **Orientation:** Position the panel to face true south (in the Northern Hemisphere) or true north (in the Southern Hemisphere) for maximum daily sun exposure.
- **Tilt Angle:** Adjust the tilt angle seasonally to optimize for the sun's path across the sky. A common recommendation is to match your latitude for year-round average performance, or adjust for winter (steeper angle) and summer (flatter angle) for seasonal optimization.
- **Shading:** Avoid any shading on the panel, as even partial shading can significantly reduce power output.

## Product Video: How to Maximize the Performance of Bifacial Solar Panel

Your browser does not support the video tag.

Video: An official HQST video providing practical tips and methods to maximize the energy output and overall performance of your bifacial solar panel.

## MAINTENANCE

---

The HQST solar panel is designed for minimal maintenance, but regular checks ensure optimal performance and longevity.

### Cleaning

- Clean the panel surface periodically to remove dust, dirt, leaves, or other debris that may accumulate and reduce efficiency.
- Use a soft cloth and water. Avoid abrasive materials or harsh chemicals that could scratch the glass.
- Clean during cooler parts of the day to prevent thermal shock to the panel.

### Inspection

- Regularly inspect the panel for any physical damage, such as cracks in the glass or frame.
- Check all electrical connections for corrosion or looseness. Ensure wiring is intact and not exposed.
- Verify that mounting hardware is secure and the panel remains firmly in place.

### Durability Features

The HQST solar panel is built to withstand harsh outdoor conditions:

- **IP68 Rated:** Provides excellent dust and water resistance, protecting against dirt, splashes, and rain.
- **Robust Construction:** Features an anti-corrosion aluminum alloy frame.
- **Weather Resistance:** Engineered to handle 2400 Pa wind resistance and 5400 Pa snow load capacity.

# Easy Installation

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

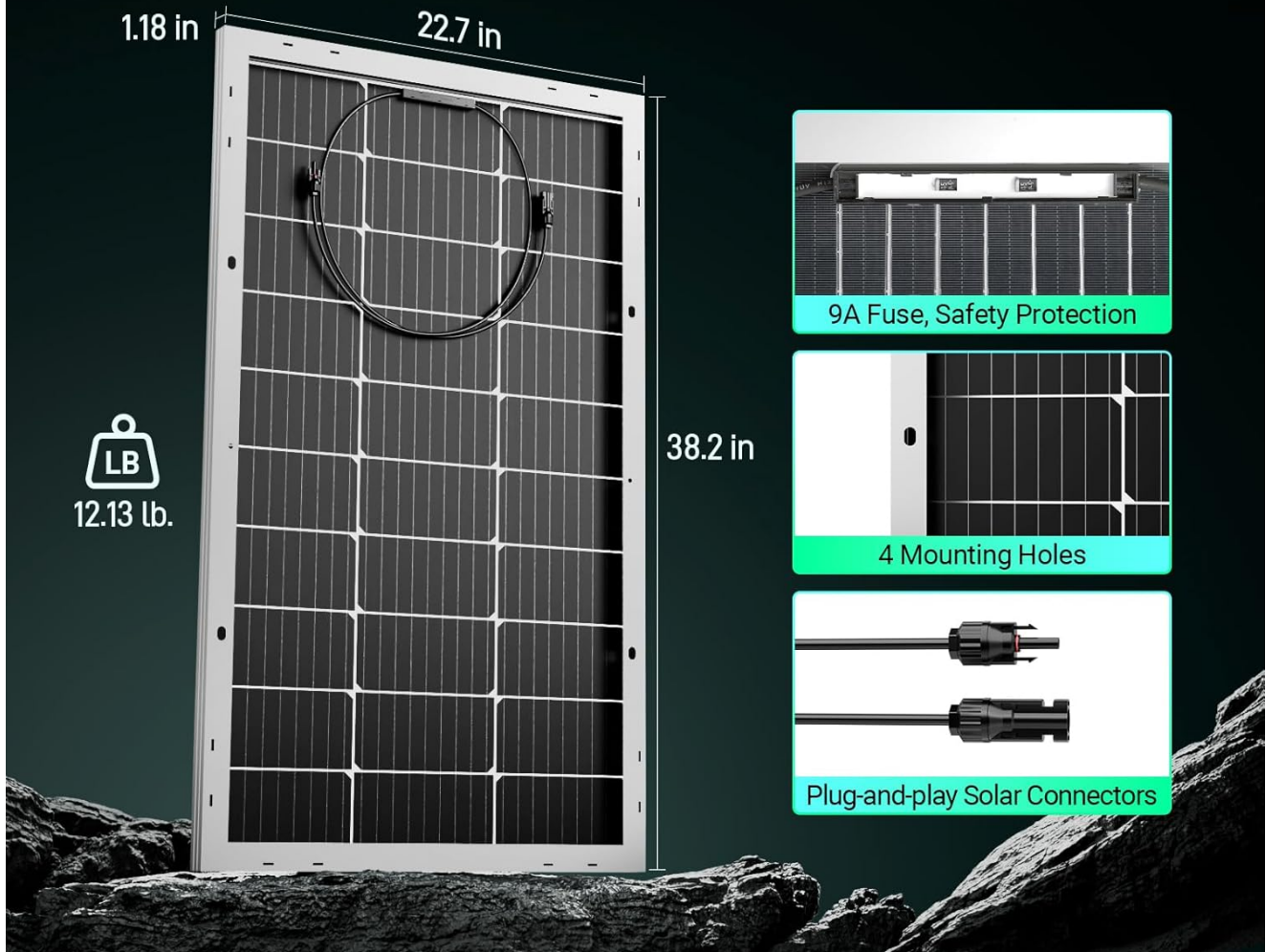


Image: Visual representation of the solar panel's robust design, highlighting its IP68 dust and water resistance, 2400 Pa high wind resistance, and 5400 Pa heavy snow load capacity.

## TROUBLESHOOTING

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

- **Low Power Output:** Check for shading on the panel surface. Ensure the panel is clean and free of debris. Verify that the panel is correctly oriented towards the sun and at an optimal tilt angle.
- **No Power Output:** Inspect all electrical connections (MC4 connectors, wiring to charge controller/battery) for looseness or damage. Check the charge controller for error codes or proper operation. Ensure the battery is not fully discharged or faulty.
- **Overheating:** Ensure there is adequate ventilation around the panel and that bypass diodes are functioning correctly.

For persistent issues, refer to the detailed troubleshooting guide of your charge controller or contact customer support.

## SPECIFICATIONS

Technical specifications for the HQST-100W 12V Monocrystalline Solar Panel (Model: HSP100D-30AT):

Feature	Value
Brand	HQST
Model Number	HSP100D-30AT
Maximum Power (Pmax)	100 Watts
Maximum Voltage	12 Volts
Output Voltage	12 Volts (DC)
Efficiency	Up to 25%
Material	Aluminum, Monocrystalline Silicon, Tempered Glass
Product Dimensions (L x W x H)	38.2" x 22.7" x 1.18"
Item Weight	12.1 Pounds
Connector Type	MC4
IP Rating	IP68
Wind Resistance	2400 Pa
Snow Load Capacity	5400 Pa

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 <sup>2</sup> , T = 25°C, AM = 1.5



Image: A detailed table of the HQST 100W solar panel's electrical and physical specifications.

## WARRANTY INFORMATION

HQST provides the following warranty for the 100W Monocrystalline Solar Panel:

- **Power Output Warranty:** Up to 30 years of reliable power output.
- **Materials & Workmanship Warranty:** 5 years.

Please retain your proof of purchase for warranty claims. The warranty covers defects in materials and workmanship under normal use and service. It does not cover damage caused by improper installation, misuse, abuse, accident, or natural disasters.

## CUSTOMER SUPPORT

For technical assistance, warranty claims, or any questions regarding your HQST-100W 12V Monocrystalline Solar Panel, please contact HQST customer support.

You can typically find contact information on the official HQST website or through the retailer where you purchased the

product. When contacting support, please have your model number (HSP100D-30AT) and proof of purchase readily available.

© 2026 HQST. All rights reserved.