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› DOKIO 800W Solar Panels User Manual

DOKIO FBA-2pc-DSP400M

DOKIO 800W Solar Panels User Manual

Model: FBA-2pc-DSP400M

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your DOKIO 800W Solar Panel system. Please read this manual thoroughly before installation and use to ensure optimal performance and safety.

The DOKIO 800W Solar Panel system consists of two 400 Watt monocrystalline solar panels designed for high efficiency and durability in various off-grid applications, including RVs, caravans, yachts, and portable power stations.

2. PRODUCT OVERVIEW AND FEATURES

The DOKIO 800W Solar Panel system is engineered with advanced technology to provide reliable power generation. Key features include:

- **High-Quality Materials:** Constructed with corrosion-resistant aluminum material and low-iron tempered glass for extended outdoor life.
- **High Efficiency:** Features Grade A+ monocrystalline cells with up to 22% conversion efficiency, utilizing half-cut cell technology for improved performance under partial shading.
- **Durability:** Designed to withstand strong winds (2400Pa) and snow loads (5400Pa). The IP65 rated junction box and IP67 rated MC4 connectors ensure protection against environmental particles and low-pressure water jets.
- **Easy Installation:** Each panel includes pre-drilled holes for straightforward mounting in various configurations.
- **Versatile Application:** Suitable for 12V/24V systems, ideal for off-grid setups in RVs, caravans, boats, and remote cabins.
- **Extended Cable Length:** Comes with an extra-long 3-meter (9.84 ft) cable for flexible placement.

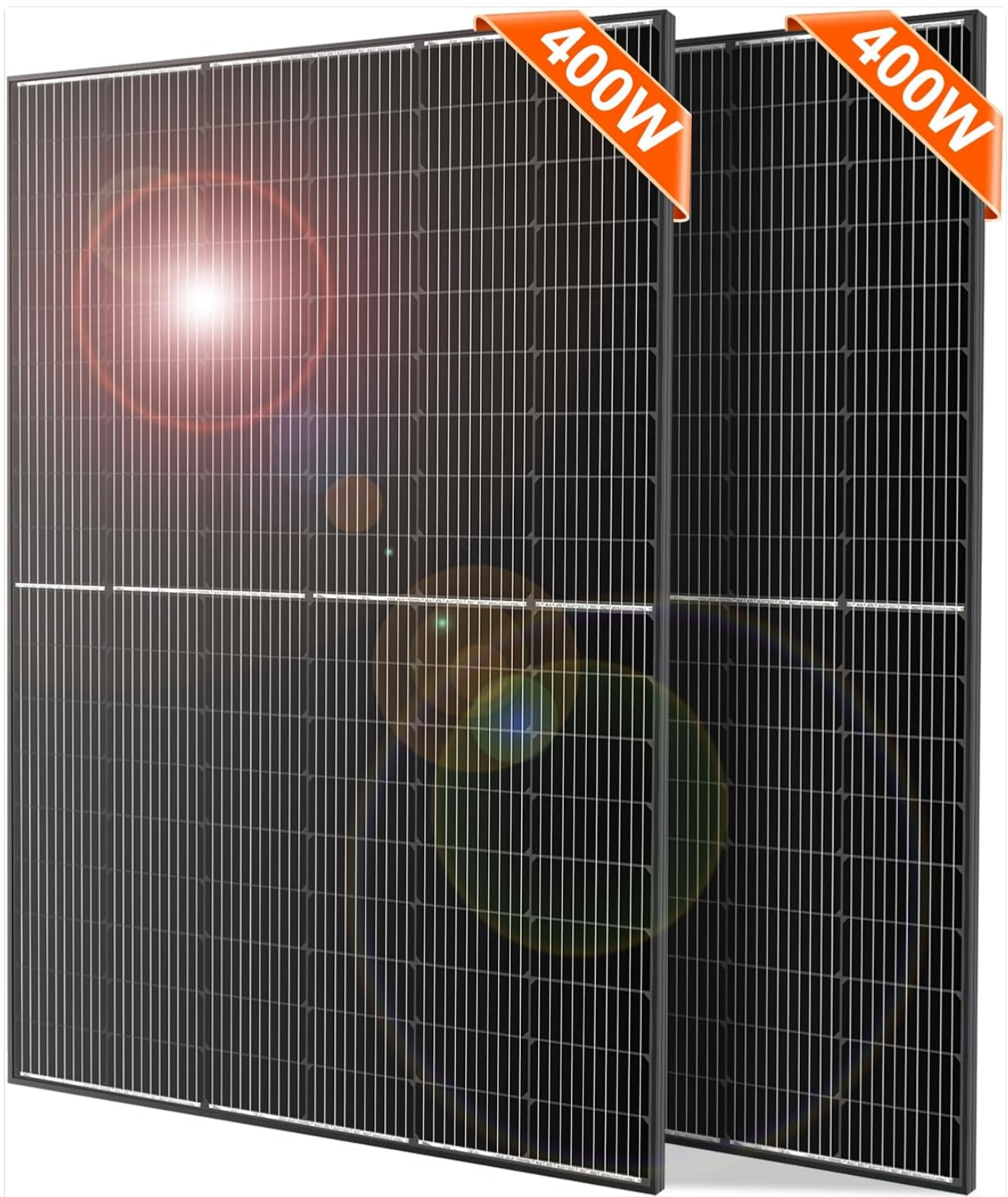


Figure 2.1: Two DOKIO 400W Solar Panels, forming an 800W system.

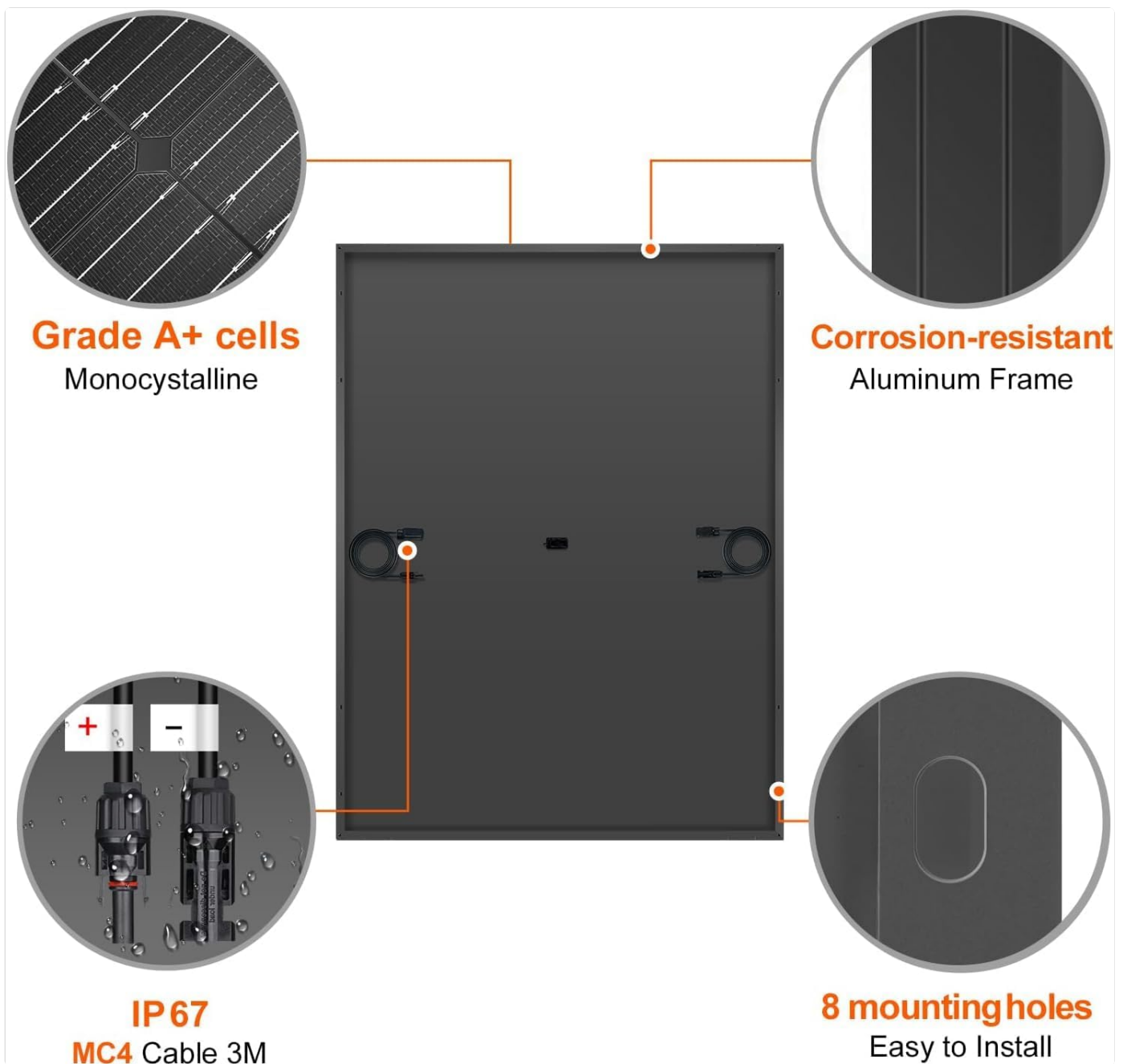
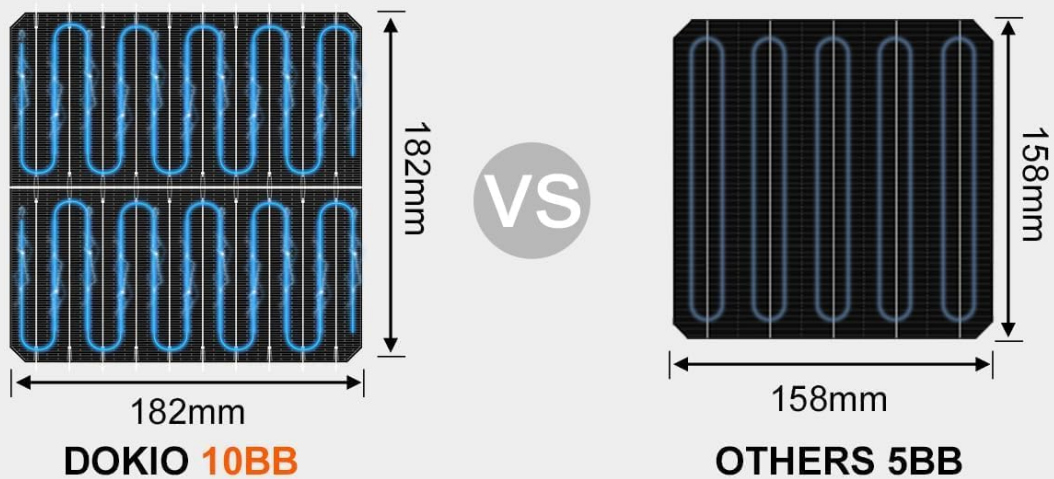


Figure 2.2: Key components of the DOKIO solar panel, highlighting Grade A+ monocrystalline cells, corrosion-resistant aluminum frame, IP67 rated MC4 connectors, and pre-drilled mounting holes.

23% HIGHEST EFFICIENCY



HALF-CUT CELLS

Less Shadow Occultation



Figure 2.3: Illustration of DOKIO's 10BB (Busbar) cell design and half-cut cell technology, contributing to higher efficiency and better performance under shading.

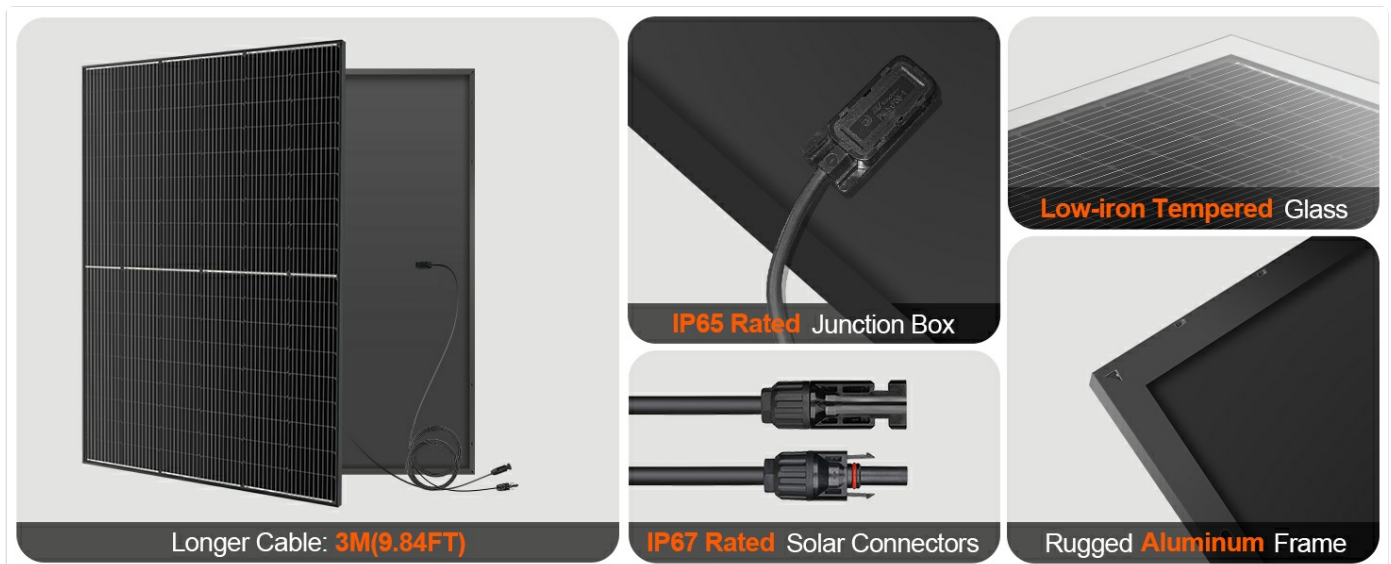


Figure 2.4: Detailed view of the panel's robust construction, including low-iron tempered glass, IP65 rated junction box, IP67 rated MC4

solar connectors, and the durable aluminum frame.

3. COMPONENTS AND WHAT'S IN THE BOX

Your DOKIO 800W Solar Panel package typically includes:

- 2 x DOKIO 400W Monocrystalline Solar Panels
- Integrated MC4 connecting cables (3 meters / 9.84 feet long)
- User Manual (this document)
- *Note: Additional accessories such as charge controllers, batteries, and power inverters are not included and must be purchased separately.*

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your solar panels. Follow these guidelines for setup:

4.1 Site Selection

Choose a location that receives maximum direct sunlight throughout the day, free from shadows cast by trees, buildings, or other obstructions. Consider the angle of the sun relative to your location for optimal energy capture.

4.2 Mounting

The panels are equipped with pre-drilled holes for easy mounting. Secure the panels firmly to a stable surface using appropriate mounting hardware (not included). Common mounting options include:

- Railed/Flat Roof Mounting
- Pole Mounts
- Foundation Mounts



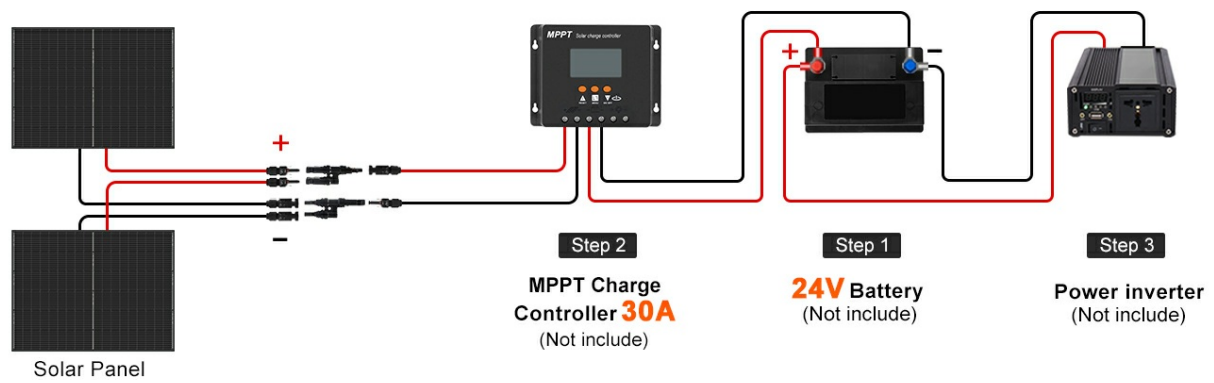
Figure 4.1: Examples of various mounting configurations for DOKIO solar panels.

4.3 Electrical Connection (Parallel)

To achieve an 800W system, the two 400W panels should be connected in parallel. This configuration maintains the voltage while combining the current from both panels. Ensure all connections are secure and waterproof using the provided MC4 connectors.

Important: When connecting in parallel, ensure your MPPT charge controller can accept an input voltage of at least 24V and handle an input current of at least 30A.

How To Paralle Connection



Parallel: The MPPT controller should be able to accept an input voltage of at least **24V** and be able to handle an input current of at least **30A**.

Figure 4.2: Parallel connection diagram for solar panels to a charge controller, battery, and inverter.

1. **Step 1:** Connect the solar panels to the MPPT Charge Controller (not included). Ensure positive (+) from the panels connects to positive on the controller, and negative (-) to negative.
2. **Step 2:** Connect the MPPT Charge Controller to your 24V Battery (not included).
3. **Step 3:** Connect the Battery to your Power Inverter (not included) if you require AC power.

5. OPERATING YOUR SOLAR PANEL SYSTEM

Once installed and connected, your DOKIO solar panels will begin converting sunlight into electricity. The efficiency of power generation depends on several factors:

- **Sunlight Intensity:** Direct, unobstructed sunlight yields the highest power output.
- **Panel Temperature:** Solar panels perform best at cooler temperatures. Excessive heat can slightly reduce efficiency.
- **Angle and Orientation:** Orienting the panels directly towards the sun (south in the Northern Hemisphere, north in the Southern Hemisphere) and adjusting the tilt angle seasonally will maximize energy harvest.
- **Cleanliness:** Keep the panel surface clean from dust, dirt, snow, or debris.

The system is designed for 12V/24V applications, automatically adjusting to the connected battery bank voltage (with a compatible charge controller).

6. MAINTENANCE

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

- **Cleaning:** Periodically clean the surface of the solar panels with a soft cloth and water to remove dust, dirt, and debris. Avoid abrasive cleaners or harsh chemicals.
- **Inspection:** Regularly inspect the panels, wiring, and connections for any signs of damage, corrosion, or loose connections. Ensure MC4 connectors are securely fastened.
- **Shading:** Monitor for new sources of shading (e.g., growing trees, new structures) and address them if they impact panel performance.
- **Weather Protection:** While designed to withstand harsh weather, ensure panels are securely mounted, especially before strong winds or heavy snowfall.

7. TROUBLESHOOTING

If your solar panel system is not performing as expected, consider the following troubleshooting steps:

- **No Power Output:**
 - Verify direct sunlight exposure. Even partial shading can significantly reduce output.
 - Check all MC4 connections for secure and proper polarity (+ to +, - to -).
 - Inspect cables for any visible damage or cuts.
 - Ensure your charge controller is functioning correctly and is compatible with the panel's voltage and current output.
 - Confirm battery connections are secure and the battery is not fully charged or faulty.
- **Low Power Output:**
 - Clean the panel surface thoroughly.
 - Re-evaluate panel angle and orientation for optimal sun exposure.
 - Check for any new or increased shading throughout the day.
 - Verify that the charge controller settings are appropriate for your battery type and system voltage.
- **System Not Charging Battery:**
 - Ensure the charge controller is correctly wired between the panels and the battery.
 - Check the battery voltage; some charge controllers will not initiate charging if the battery voltage is too low.
 - Confirm the battery itself is in good working condition.

If issues persist after performing these checks, please contact DOKIO customer support for further assistance.

8. SPECIFICATIONS

Detailed technical specifications for the DOKIO 400W Solar Panel (per panel):

Specification	Value
Maximum Power (Pmax)	400W (each panel)
Maximum Power Voltage (Vmp)	31.00V
Maximum Power Current (Imp)	13.09A
Open Circuit Voltage (Voc)	37.08V
Short Circuit Current (Isc)	13.24A
Conversion Efficiency	22.00%
Panel Dimensions (L x W x H)	172.2 x 113.4 x 3 cm (67.8 x 44.6 x 1.2 inches)
Item Weight (each panel)	~48.9 lbs (22.4 kg)
Material	Monocrystalline Silicon, Tempered Glass, Polymer, Aluminum
Connector Type	MC4
IP Rating (Junction Box)	IP65
IP Rating (Connectors)	IP67

Note: Specifications are subject to change without notice.

9. WARRANTY AND SUPPORT

9.1 Warranty Information

DOKIO provides an extra-long transferable power output warranty of 5 years for these solar panels. This warranty covers defects in materials and workmanship under normal use and service conditions.

Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For any questions, technical assistance, or warranty inquiries, please contact DOKIO Solar Panels Service. Our team is dedicated to providing professional solutions and support.

Visit the official DOKIO website or refer to your purchase documentation for contact details.

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