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LVYUAN CSSB-400W

LVYUAN 400W Portable Solar Panel

USER MANUAL

1. Introduction

Thank you for choosing the LVYUAN 400W Portable Solar Panel. This foldable solar panel is designed to provide efficient and reliable power for your outdoor adventures, camping trips, RVs, and emergency power needs. Featuring high-efficiency monocrystalline silicon cells, it offers superior energy conversion and portability. This manual provides essential information on setting up, operating, maintaining, and troubleshooting your solar panel to ensure optimal performance and longevity.



Figure 1: LVYUAN 400W Portable Solar Panel and included accessories.

2. Product Features

- **High Conversion Efficiency:** Made of high-quality monocrystalline silicon material, allowing for a conversion efficiency of up to 22.5%.
- **Wide Compatibility:** Compatible with most portable power stations on the market, including various connector sizes (MC4 to DC5525/DC7909/DC5521/XT60).
- **Lightweight and Portable:** Features 8 foldable panels with a folded size of 23.62 x 20.67 x 2.36 inches and a weight of 21.49 lbs, making it easy to carry.
- **Durable and Weatherproof:** IP67 rated for protection against scratches, dust, and water splashes, suitable for various outdoor conditions.
- **Versatile Mounting:** Includes 10 buckles for hanging on tents or RVs, ideal for mountaineering, camping, road travel, and hiking.

LIGHT AND COMPACT

Folded Dimension:600*525*60mm Dimensions:2410*1190mm Net Weight:9.75kg

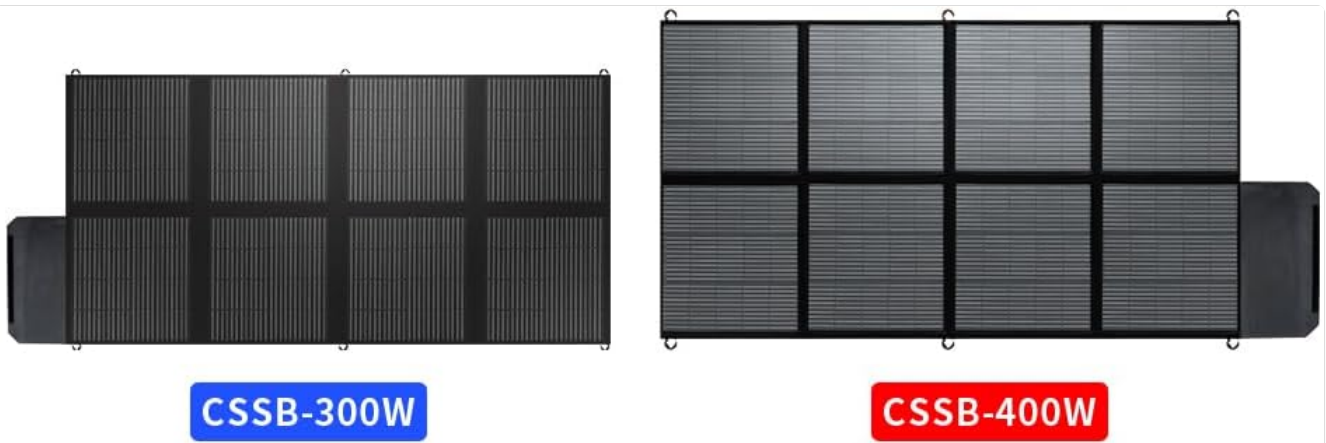


Figure 2: Folded and unfolded dimensions of the solar panel, highlighting its compact and portable design.

3. What's Included

The LVYUAN 400W Portable Solar Panel package includes the following components:

- 1 x 400W Portable Solar Panel
- 1 x 2m (78.74 inch) cable with MC4 connector
- 1 x MC4 to DC5521/DC5525/DC7909/XT60 adapter cable
- 10 x Buckles
- 1 x User Manual (this document)



RATED MAXIMUM POWER	300W	400W
VOLTAGE AT P _{MAX} (V _{MP})	37V	35V
CURRENT AT P _{MAX} (I _{MP})	8.11A	11.43A
OPEN-CIRCUIT VOLTAGE (V _{OC})	43.66V	41.3V
SHORT-CIRCUIT CURRENT (I _{SC})	8.92A	12.57A
DIMENSIONS (mm)	2330*940	2410*1190
FOLDED DIMENSION(mm)	480*500*60	600*525*60
NET WEIGHT (kg)	6.75	9.75
OUTPUT	2m cable with MC4 connector	

Figure 3: Visual representation of the included accessories and the folded solar panel.

4. Setup Instructions

Follow these steps to set up your LVYUAN 400W Portable Solar Panel:

- 1. Unfold the Solar Panel:** Carefully unfold the solar panel completely and lay it flat in an area with direct sunlight. Ensure no shadows are cast on the panel for optimal performance.
- 2. Positioning:** Adjust the angle of the solar panel towards the sun to maximize solar exposure. The integrated kickstands (if applicable) can help achieve the best angle.
- 3. Connect to Power Station (Direct Charging):**
 - Connect the MC4 connectors from the solar panel to the MC4 adapter cable.
 - Select the appropriate DC connector (DC5521, DC5525, DC7909, or XT60) from the adapter cable that matches your portable power station's input port.
 - Plug the adapter cable into your power station's input port. The power station should begin charging.
- 4. Connect to Battery with MPPT Controller (Indirect Charging):**

- Connect the MC4 connectors from the solar panel to the MPPT solar charge controller's solar input terminals.
- Connect the MPPT controller's battery output terminals to your battery. Ensure correct polarity (positive to positive, negative to negative).
- If using an inverter, connect the inverter to the battery terminals.

5. **Secure the Panel:** Use the included buckles to secure the solar panel to a stable structure like a tent, RV, or ground stakes to prevent it from being moved by wind.

Solar panel - energy storage power supply wiring

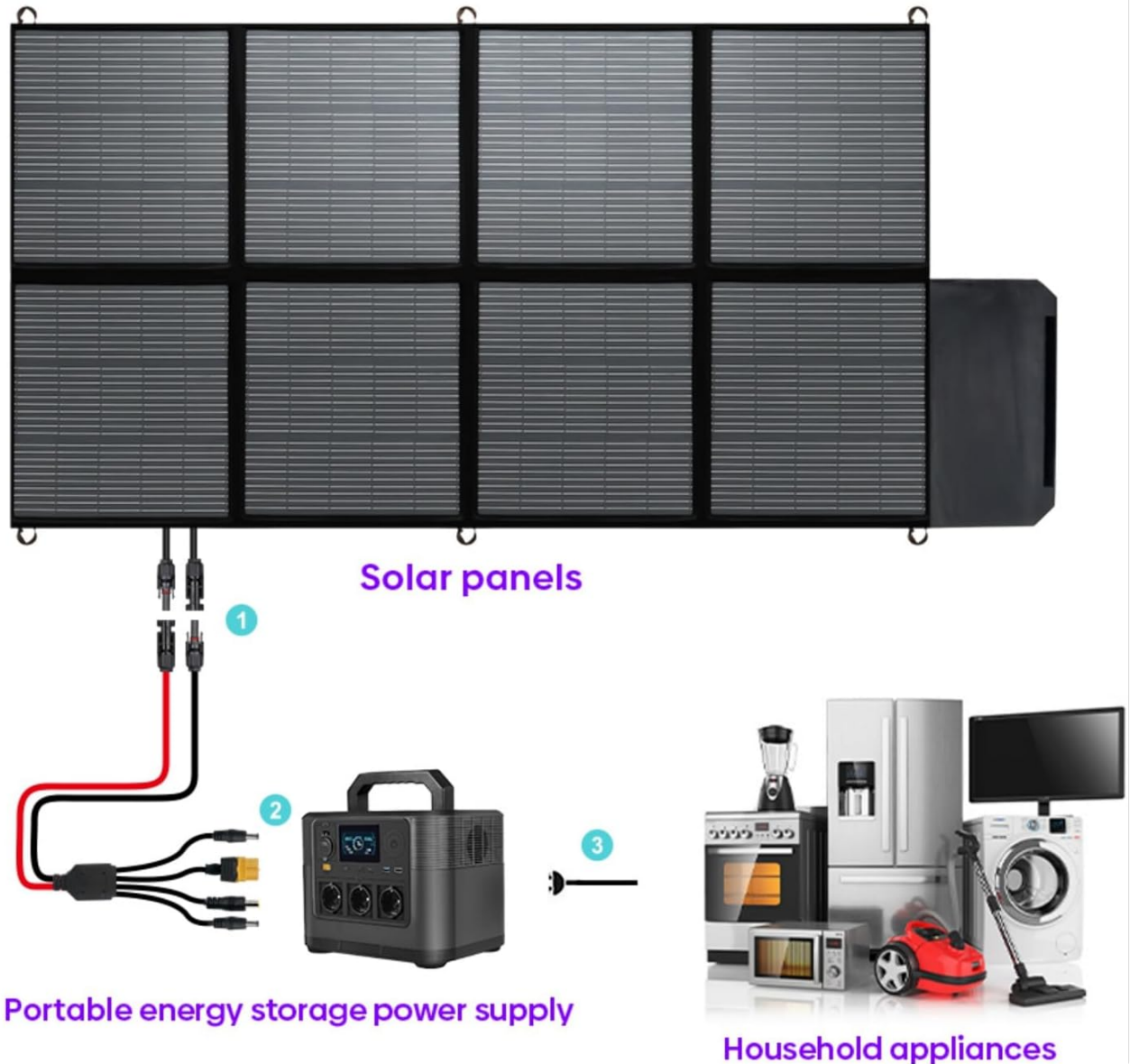


Figure 4: Wiring diagram for connecting the solar panel to a portable energy storage power supply.

Solar panel battery inverter wiring

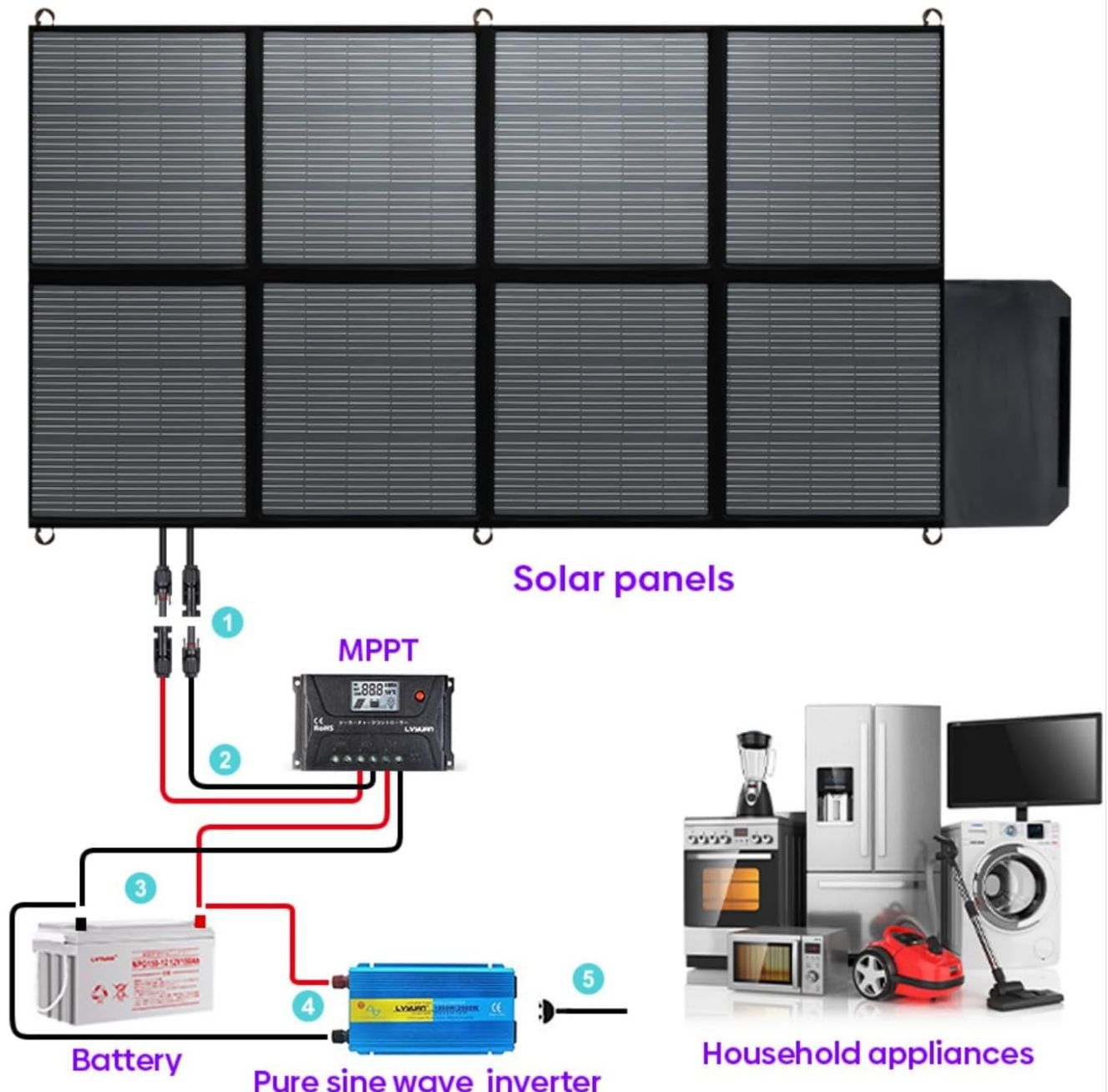


Figure 5: Wiring diagram for connecting the solar panel to an MPPT controller, battery, and inverter system.

Setup and Operation Video Guide

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Video 1: Detailed guide on the operation procedure of the solar panel, including setup and connection steps.

5. Operating Instructions

To ensure efficient power generation from your solar panel:

- **Optimal Sunlight Exposure:** Always position the solar panel in direct sunlight. Avoid shaded areas, as even partial shading can significantly reduce power output.

- **Angle Adjustment:** For best results, adjust the panel's angle to be perpendicular to the sun's rays. This angle changes throughout the day and with seasons.
- **Monitoring Output:** If your power station or MPPT controller has a display, monitor the input wattage to confirm the panel is generating power effectively.
- **Compatibility:** The LUYUAN 400W solar panel is designed to be highly compatible with various portable power stations and battery systems, making it a versatile power source for different applications.



Figure 6: The solar panel in use, recharging a power station to power devices during outdoor activities.

Can handle various places!

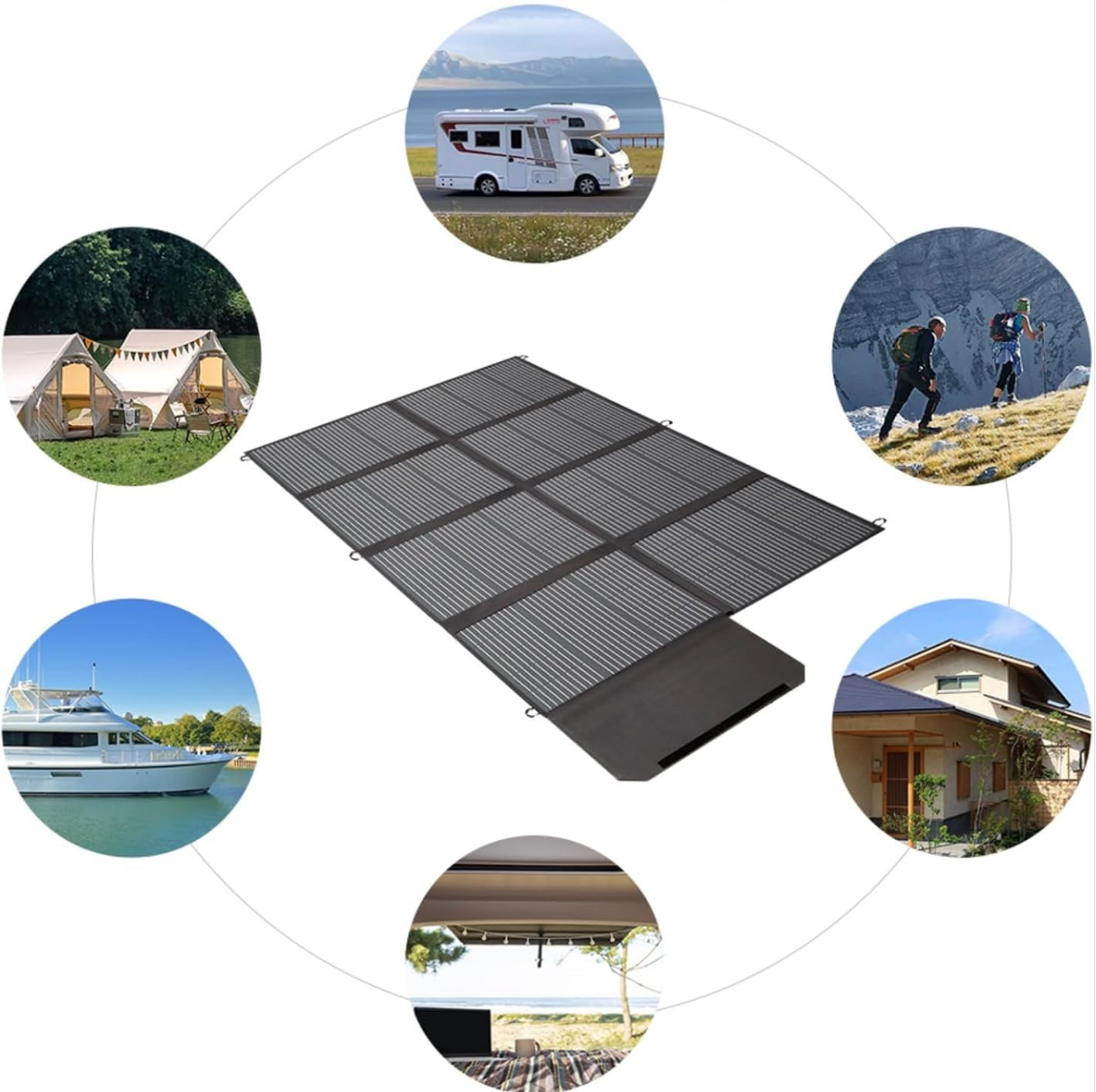


Figure 7: Examples of diverse environments where the LUYUAN solar panel can be effectively utilized.

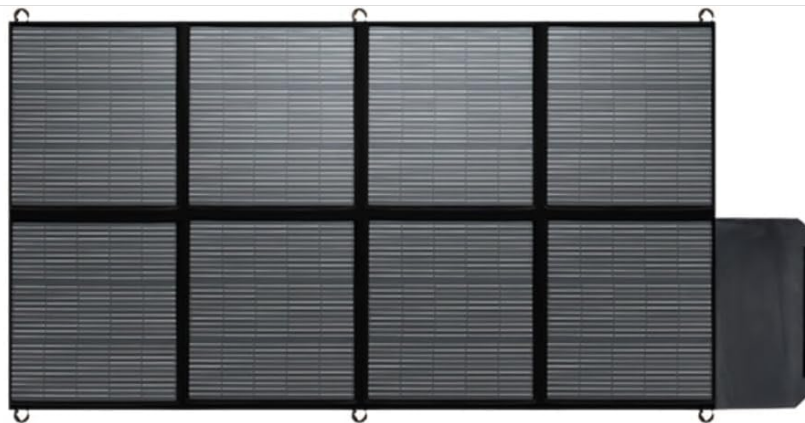
6. Specifications

Detailed technical specifications for the LUYUAN 400W Portable Solar Panel (Model: CSSB-400W):

Specification	Value
Model	CSSB-400W
Rated Maximum Power (Pmax)	400W
Voltage at Pmax (VMP)	35V

Specification	Value
Current at Pmax (IMP)	11.43A
Open-Circuit Voltage (VOC)	41.3V
Short-Circuit Current (ISC)	12.57A
Product Dimensions (Unfolded)	94.88"L x 46.85"W x 0.4"H (2410mm x 1190mm x 10mm)
Folded Dimensions	23.62"L x 20.67"W x 2.36"H (600mm x 525mm x 60mm)
Net Weight	21.49 lbs (9.75 kg)
Material	Monocrystalline Silicon, ETFE
Efficiency	Up to 22.5%
Connector Type	MC4
Included Components	Manual, MC4 to DC5521/DC5525/DC7909/XT60 cable, 10 buckles
IP Rating	IP67

Product specifications



MODEL	CSSB-400W
RATED MAXIMUM POWER	400W
VOLTAGE AT P_{MAX} (V_{MP})	35V
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DIMENSIONS (mm)	2410*1190
FOLDED DIMENSION(mm)	600*525*60
NET WEIGHT (kg)	9.75
OUTPUT	2m cable with MC4 connector

Figure 8: Official product specifications table for the LVYUAN 400W solar panel.

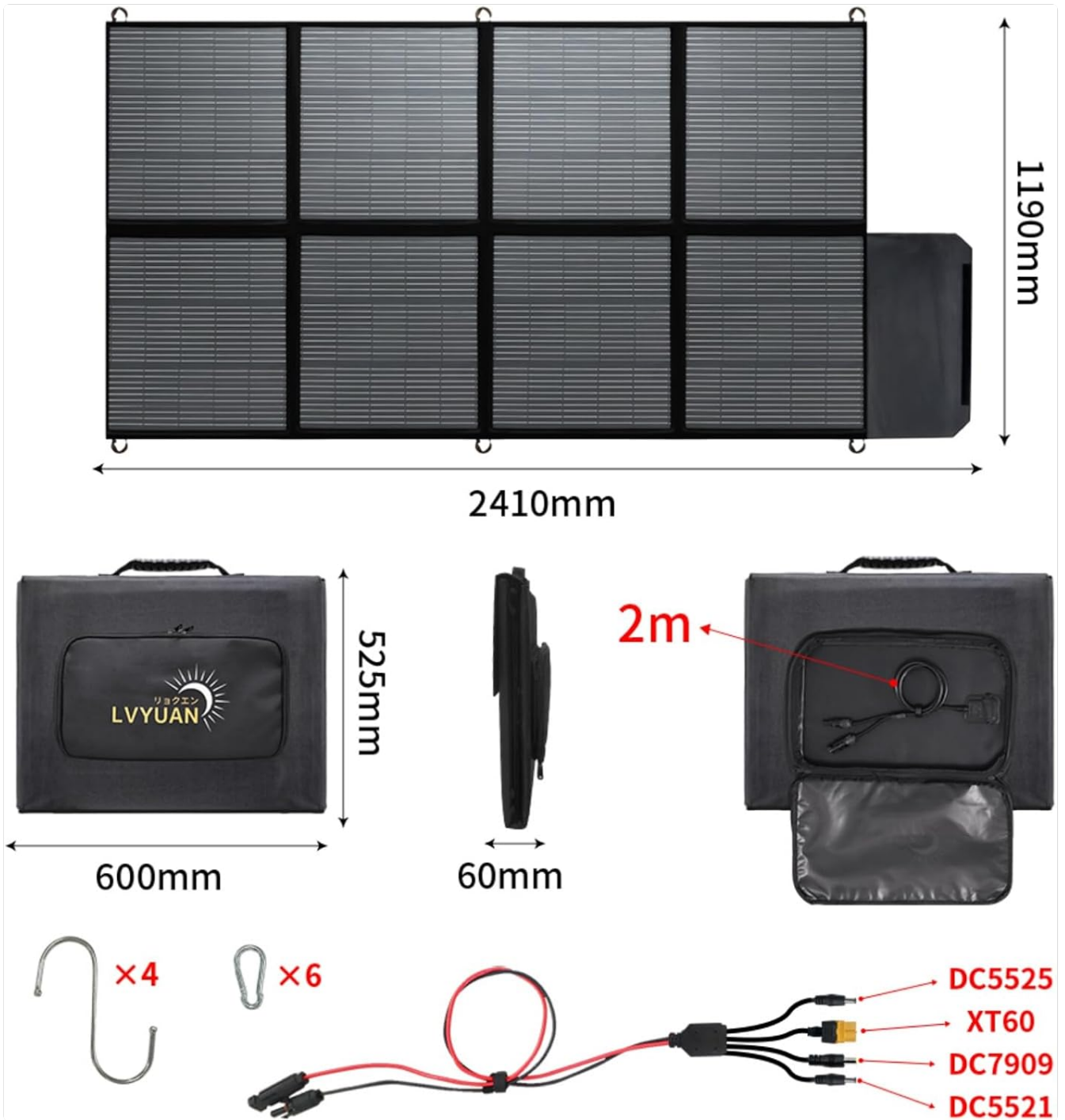
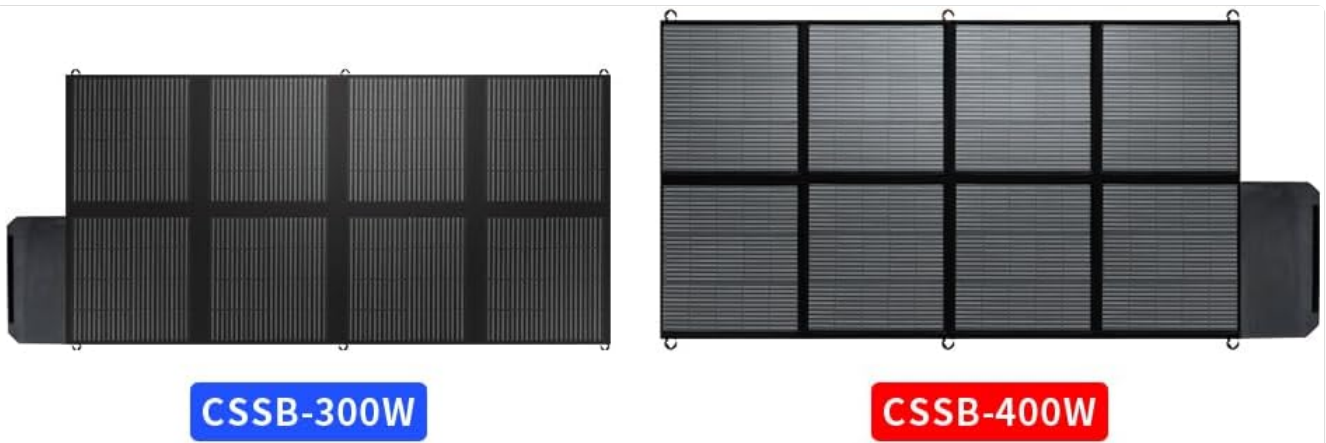


Figure 9: Unfolded dimensions of the solar panel in millimeters.



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NET WEIGHT (kg)	6.75	9.75
OUTPUT	2m cable with MC4 connector	

Figure 10: Comparison of key specifications between the 300W and 400W models.

7. Maintenance

Proper maintenance ensures the longevity and efficiency of your solar panel:

- **Cleaning:** Regularly wipe the surface of the solar panel with a soft, damp cloth to remove dust, dirt, and debris. Avoid abrasive cleaners or harsh chemicals that could damage the panel surface.
- **Inspection:** Periodically inspect the panel for any physical damage, such as cracks, dents, or frayed cables. Check all connections to ensure they are secure and free from corrosion.
- **Storage:** When not in use for extended periods, fold the solar panel and store it in a cool, dry place away from direct sunlight and extreme temperatures.
- **Water Resistance:** The panel has an IP67 rating, meaning it is protected against dust ingress and temporary immersion in water (up to 1 meter for 30 minutes). However, avoid prolonged submersion and ensure connectors are dry before use.

Solar panel battery inverter wiring

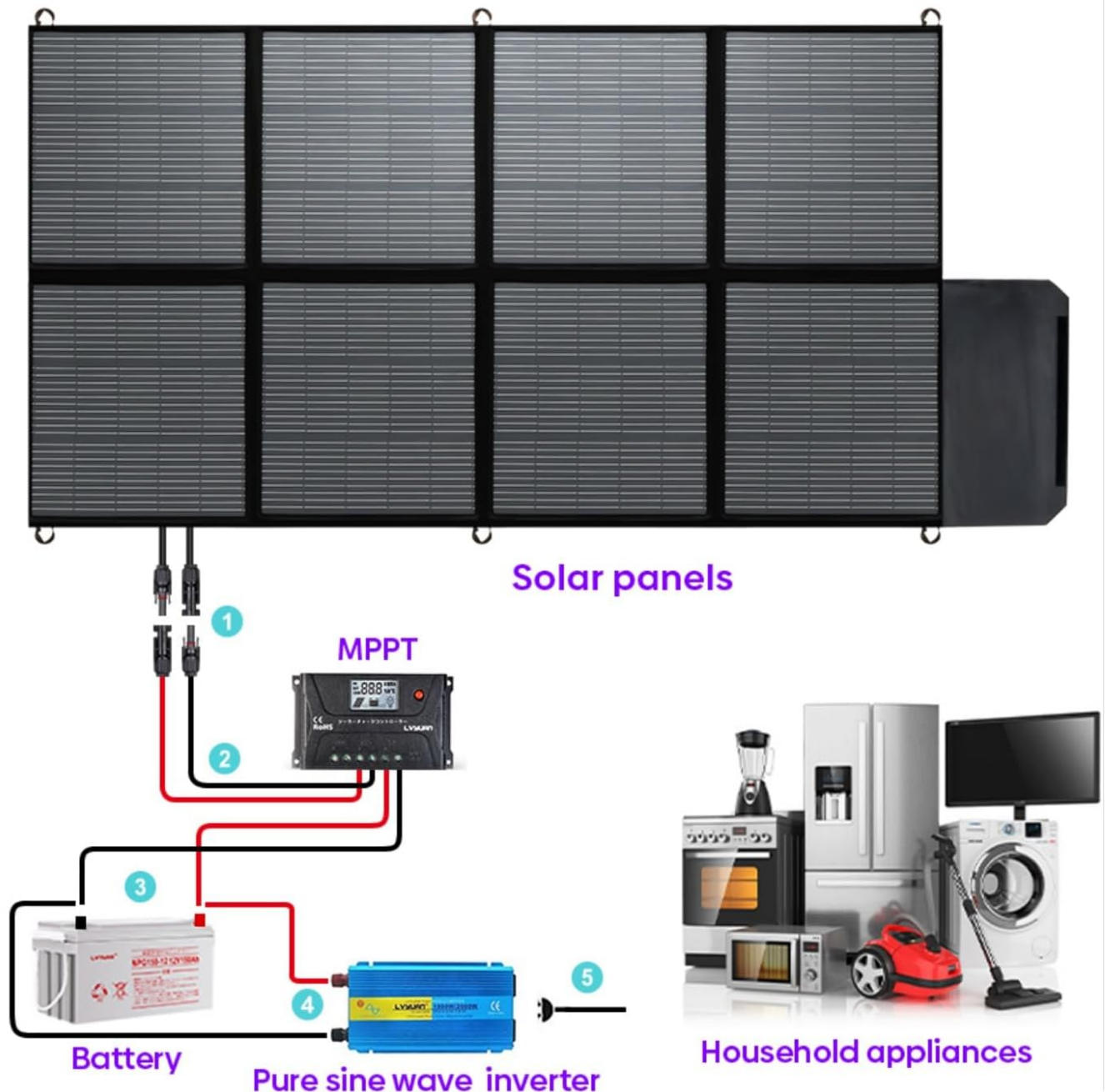


Figure 11: Visual representation of the IP67 protection features, including waterproof connectors.

8. Troubleshooting

If you encounter issues with your solar panel, consider the following common troubleshooting steps:

- **No Power Output:**

- Ensure the panel is in direct sunlight and not shaded.
- Check all cable connections for proper seating and polarity.
- Verify that the power station or MPPT controller is turned on and configured correctly.
- Inspect cables for damage or breaks.

- **Low Power Output:**

- Clean the surface of the solar panel to remove any dirt or dust accumulation.
- Adjust the panel's angle to face the sun directly.
- Check for partial shading from trees, buildings, or other objects.
- Consider environmental factors such as cloud cover or haze, which can reduce efficiency.

- **Connection Issues:**

- Ensure you are using the correct adapter for your power station.
- Check for bent pins or debris in the connectors.
- Make sure the connectors are fully engaged and locked.

If problems persist after following these steps, please contact customer support.

9. Warranty and Support

The LUYUAN 400W Portable Solar Panel comes with an **18-month warranty** from the date of purchase. This warranty covers manufacturing defects and issues arising from normal use.

For technical support, warranty claims, or any questions regarding your product, please refer to the contact information provided on the product packaging or the official LUYUAN website. Our customer service team is available to assist you.