EBL ESP-100

EBL 100W Portable Solar Panel User Manual

Model: ESP-100

1. Introduction

This manual provides essential information for the safe and efficient operation of your EBL 100W Portable Solar Panel. Please read these instructions thoroughly before use and retain them for future reference. This portable solar panel is designed to convert sunlight into electrical energy, suitable for charging compatible power stations and other electronic devices.

2. Safety Instructions

- Do not attempt to disassemble, repair, or modify the solar panel. Unauthorized modifications may cause damage or injury.
- Keep the solar panel away from fire, heat sources, and flammable materials.
- Avoid exposing the solar panel to extreme temperatures or direct sunlight for prolonged periods when not in use.
- Ensure all connections are secure and correct before operating the device. Incorrect connections can lead to damage.
- While the panel is IP65 water-resistant, it is not waterproof. Do not immerse it in water or expose it to heavy rain.
- Handle the solar panel with care to prevent physical damage.

3. Package Contents

Verify that all items listed below are included in your package:

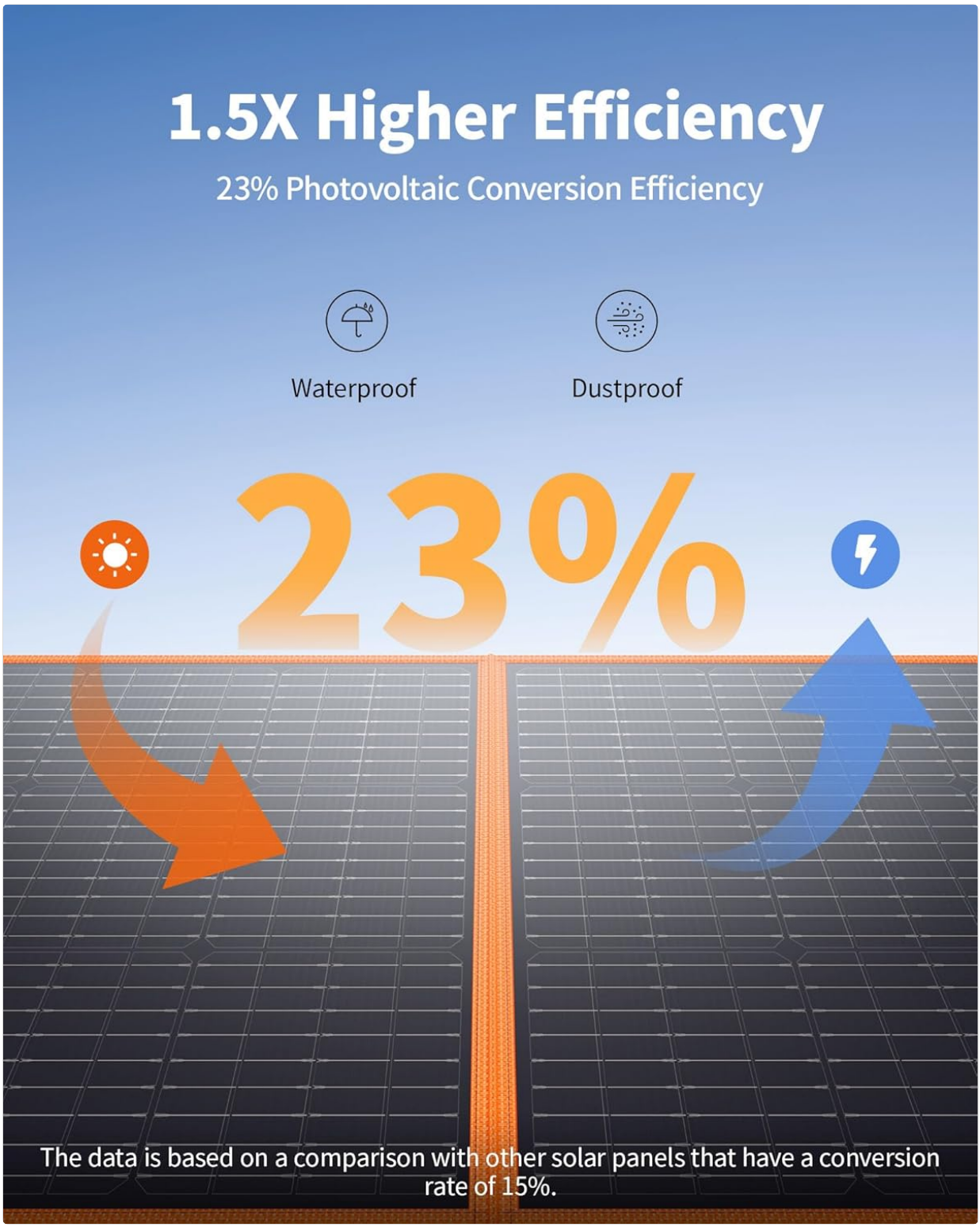
- 1x EBL Solar Apollo 100W Solar Panel
- 1x MC4 TO ANDERSON Cable
- 1x MC4 TO DC5521 Cable
- 1x 5.5*2.1mm to 5.5*2.5mm Adapter
- 1x 5.5*2.1mm to 7.9*0.9mm Adapter
- 1x 5.5*2.1mm to 3.5*1.5mm Adapter

- 1x User Manual

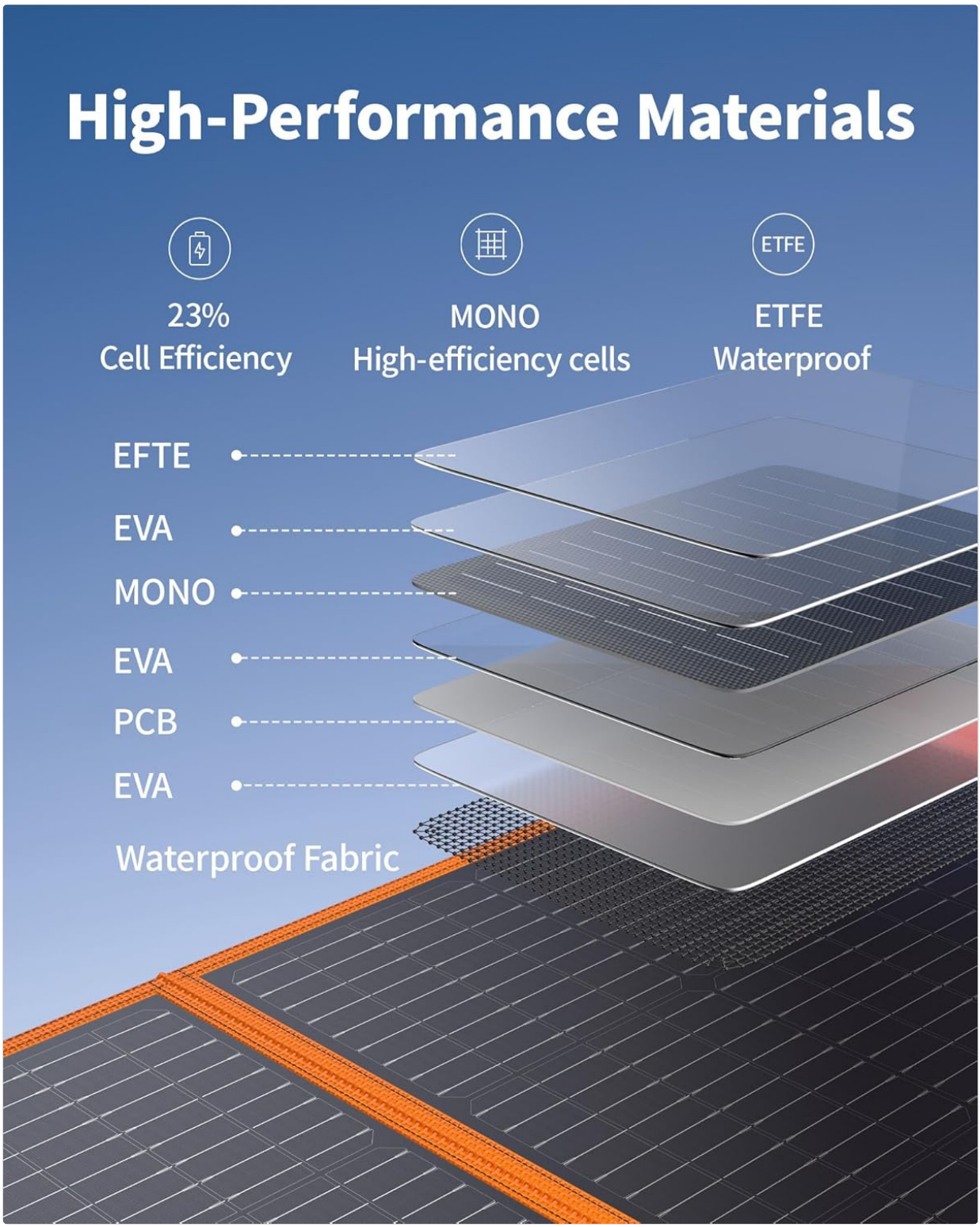
This image displays the EBL 100W Portable Solar Panel in its compact, folded state, alongside all the connection cables and adapters provided for versatile compatibility with different power stations.

4. Product Features

- **Universal Compatibility:** Equipped with multiple connectors (MC4 to Anderson, MC4 to DC5521, and various DC adapters) to support most portable power stations.
- **High Energy Conversion:** Features upgraded monocrystalline cells with up to 23% efficiency for effective power generation.
- **Smart IC Technology:** Provides protection against overcharging, overheating, and short-circuits.
- **Portable Design:** Foldable with a magnetic handle for easy transport and storage.
- **Adjustable Kickstand:** Integrated kickstands allow for optimal angling (e.g., 45°) towards the sun to maximize solar intake.
- **Durable and Water-Resistant:** Constructed with advanced laminated technology and long-lasting ETFE material, offering IP65 water resistance against splashes and dust.



This diagram visually represents the high 23% photovoltaic conversion efficiency of the solar panel, emphasizing its ability to convert sunlight into energy effectively. It also notes the panel's waterproof and dustproof design.



A detailed cross-section view of the solar panel's construction, showcasing its high-performance materials such as ETFE for durability and weather resistance, EVA for insulation, and monocrystalline cells for efficient power generation.

This illustration demonstrates the wide compatibility of the EBL solar panel, showing how it can connect to numerous power station brands and models using the included multi-size adapters like Anderson, DC3515, DC5525, DC7909, and DC5521.

An outdoor scene featuring the EBL solar panel, highlighting its robust construction designed to be dustproof and weatherproof. A crucial note advises against submerging the panel or exposing it to prolonged heavy rain.

5. Setup

1. **Unfold the Solar Panel:** Carefully unfold the EBL 100W Portable Solar Panel completely.
2. **Position for Optimal Sunlight:** Locate an area with direct sunlight. Extend the integrated kickstands on the back of the panel and adjust them to angle the panel towards the sun. A 45-degree angle is often recommended for maximum efficiency.
3. **Connect to Power Station:**
    - Identify the correct adapter cable for your power station's input port.
    - Connect the MC4 connectors from the solar panel to the appropriate adapter cable (e.g., MC4 to

Anderson or MC4 to DC5521). Ensure positive (+) and negative (-) connections are correctly matched.

- Plug the adapter cable into your power station's solar input port.

4. **Verify Connection:** Check your power station's display to confirm that it is receiving a charge from the solar panel.

The solar panel is shown with its integrated kickstand adjusted to a 45-degree angle, which is recommended for maximizing direct sunlight exposure and improving charging efficiency.

This video demonstrates the step-by-step process of connecting the EBL 100W Portable Solar Panel to a compatible power station using the provided cables and adapters.

6. Operating Instructions

Once the solar panel is set up and connected, it will automatically begin converting sunlight into electricity. The charging status will be displayed on your connected power station. For optimal performance:

- Ensure the solar panel is positioned to receive maximum direct sunlight throughout the day. Adjust its angle periodically as the sun moves.
- Avoid shading the panel with trees, buildings, or other objects, as this can significantly reduce charging efficiency.
- The integrated Smart IC provides protection, but it is advisable to monitor the charging process, especially in extreme weather conditions.

Watch this video for a real-world demonstration of setting up and using the EBL 100W Portable Solar Panel with an EBL 330W Power Station, showcasing its practical application.

7. Maintenance

- **Cleaning:** Regularly clean the surface of the solar panels with a soft, damp cloth to remove dust, dirt, or debris. Avoid using abrasive materials or harsh chemicals that could scratch or damage the panel surface.
- **Storage:** When not in use, fold the solar panel and store it in a cool, dry place away from direct sunlight and moisture. Ensure it is completely dry before folding and storing.
- **Inspection:** Periodically inspect the cables and connectors for any signs of wear, damage, or corrosion. Replace any damaged components immediately.

8. Troubleshooting

Problem	Possible Cause	Solution
No power output or low charging efficiency.	Insufficient sunlight, shading, incorrect angle, dirty panel surface, loose connection.	Reposition the panel for direct sunlight, remove any shading, adjust the angle, clean the surface, check all cable connections.
Power station not recognizing the solar panel.	Incorrect adapter, faulty cable, power station input issue.	Ensure the correct adapter is used, try a different cable, consult your power station's manual.
Panel overheating.	Extreme ambient temperature, poor ventilation.	Move the panel to a cooler, shaded area if possible, ensure adequate airflow around the panel.

9. Specifications

Feature	Detail
Brand	EBL
Model Number	ESP-100

Feature	Detail
Maximum Power	100 Watts
Material	Monocrystalline Silicon
Efficiency	High Efficiency (up to 23%)
Product Dimensions (Folded)	7.48"L x 6.69"W x 1.57"H
Item Weight	11.64 pounds
Water Resistance	IP65 (splash and dust resistant)
Included Components	1x EBL Solar Apollo 100W Solar Panel, 1x MC4 TO ANDERSON Cable, 1x MC4 TO DC5521 Cable, 1x 5.5*2.1mm to 5.5*2.5mm Adapter, 1x 5.5*2.1mm to 7.9*0.9mm Adapter, 1x 5.5*2.1mm to 3.5*1.5mm Adapter, 1x User Manual

10. Warranty and Support

EBL products typically come with a standard manufacturer's warranty. Please refer to the warranty card included in your package or visit the official EBL website for detailed warranty terms and conditions.
For technical support, troubleshooting assistance, or any inquiries regarding your EBL 100W Portable Solar Panel, please contact EBL customer service through their official website or the contact information provided in your product documentation.