

[Manuals.plus](#) /

› [voo minh tec](#) /

› Voo minh tec 400W Portable ETFE Solar Panel User Manual

## voo minh tec SPL01-400W

# Voo minh tec 400W Portable ETFE Solar Panel User Manual

Model: SPL01-400W | Brand: Voo minh tec

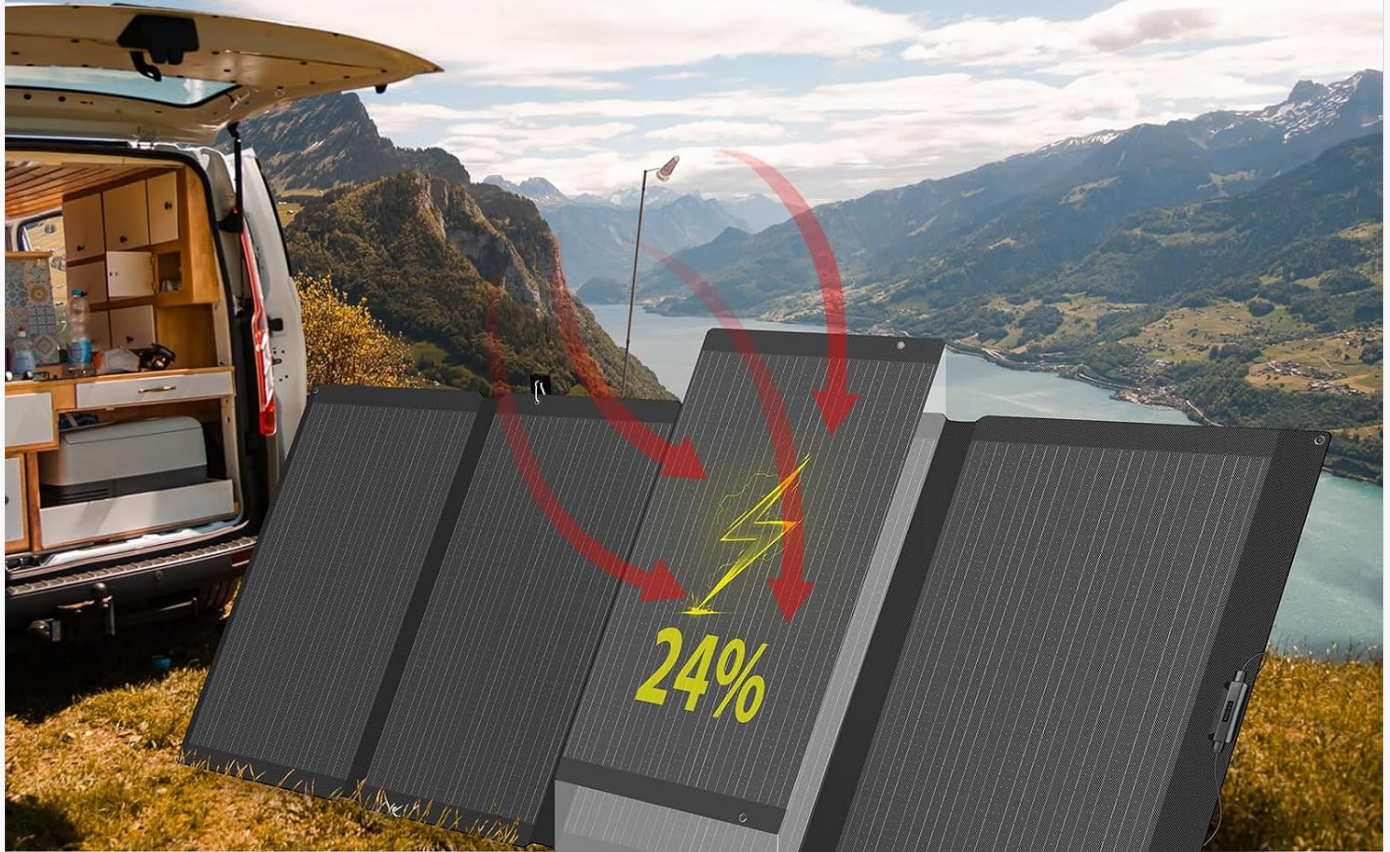
## 1. PRODUCT OVERVIEW

The Voo minh tec 400W Portable ETFE Solar Panel is designed for high-efficiency power generation in various outdoor and off-grid scenarios. Featuring advanced monocrystalline solar modules and durable ETFE lamination, this panel offers up to 24% conversion efficiency and IP68 waterproof protection, ensuring reliable performance even in challenging conditions. Its foldable and lightweight design makes it highly portable for camping, RVs, and emergency power needs.



Figure 1.1: Voominhtec 400W Portable ETFE Solar Panel with accessories (MC4 cable, 4-in-1 cable, carabiners, carrying bag).

# 400W Portable Solar Panel



|                              |                         |
|------------------------------|-------------------------|
| <b>Solar Cell Lamination</b> | ETFE                    |
| <b>Rated Power</b>           | 400W( $\pm 10$ W)*      |
| <b>Cell Type</b>             | Monocrystalline silicon |
| <b>Efficiency</b>            | 24%                     |
| <b>Dimensions</b>            | 38.4 x 98.5 x 0.5 in    |
| <b>Open Circuit Voltage</b>  | 48.6V (Vmp 42.6V)       |
| <b>Short Circuit Current</b> | 10.1A (Imp 9.4A)        |



Figure 1.2: Unfolded solar panel demonstrating 24% high conversion efficiency.

## 2. KEY FEATURES

- **High Performance:** Equipped with advanced monocrystalline solar modules, capable of converting up to 24% of sunlight into usable electricity. This high efficiency shortens charging time and maximizes energy capture, even in cloudy conditions.
- **Durable Design:** Features advanced ETFE lamination technology, providing a heat-resistant and dust-proof film on the surface. This protects cells from moisture and sun damage, making the panel more durable, scratch-resistant, and moisture-proof.
- **Foldable, Portable, and Lightweight:** Designed for easy transport, this foldable solar panel can be carried in its included handbag. The handbag also features an integrated stand for convenient angled positioning. With dimensions of 96.8 x 68.1 x 6.1 cm (folded) and a weight of 16.8 kg, it's ideal for on-the-go power.
- **Wide Compatibility:** Includes an integrated MC4 cable and a separate 4-in-1 cable, ensuring broad compatibility

with most solar generators on the market, including popular brands like Jackery, Ecoflow, Bluetti, and Anker. Can also charge 3V to 36V batteries (USE, Gel, LI, FLD, SLD) with an optional Voominhtec MPPT controller and alligator clips.

- **Waterproof Design:** IP68 waterproof surface protects against water splashes and withstands various weather conditions, making it suitable for diverse outdoor adventures.

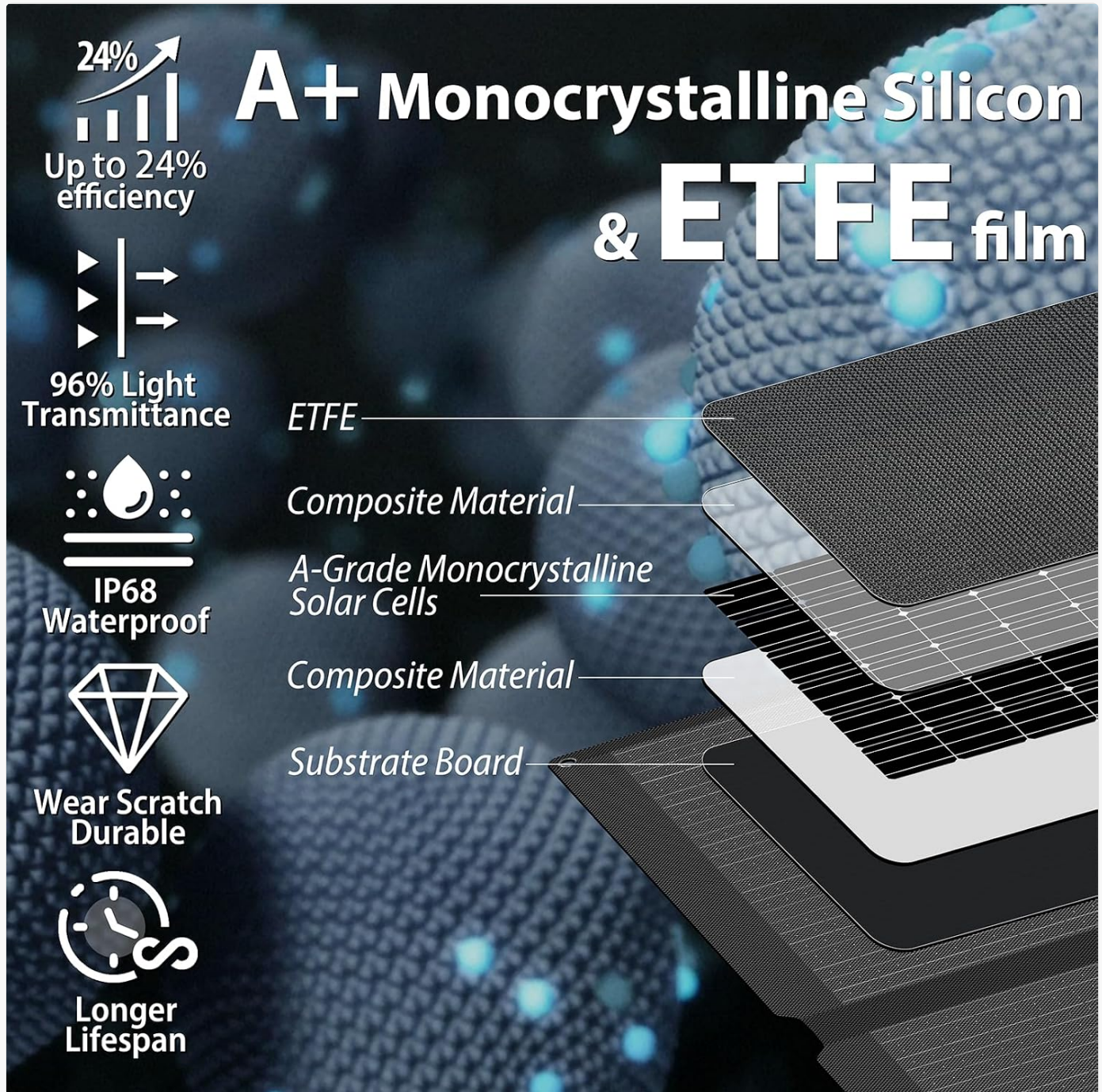


Figure 2.1: Illustration of the durable ETFE film and monocrystalline silicon cell structure.

### 3. INCLUDED COMPONENTS

Your Voominhtec 400W Portable ETFE Solar Panel package includes the following items:

- Voominhtec 400W Portable ETFE Solar Panel
- MC4 4-in-1 Cable

- Carrying Bag (doubles as a stand)
- User Manual (this document)

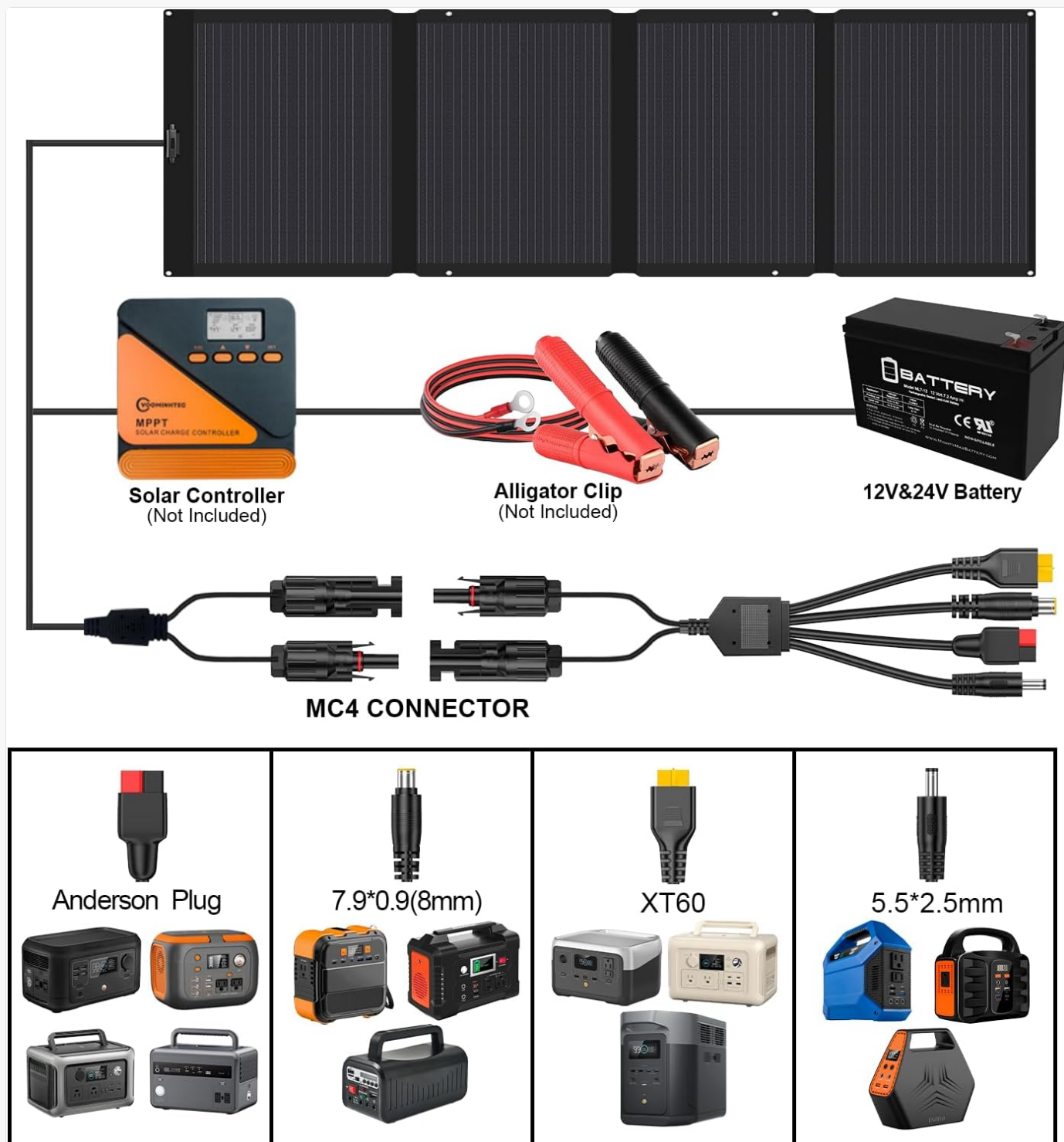


Figure 3.1: Overview of included cables and common connection types (controller and battery not included).

## 4. SETUP GUIDE

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

1. **Unfold the Panel:** Carefully unfold the solar panel from its carrying bag. Ensure all sections are fully extended.
2. **Position for Optimal Sunlight:** Place the unfolded panel in a location that receives direct, unobstructed sunlight. For best results, angle the panel directly towards the sun. The integrated stand in the carrying bag can be used to

prop up the panel at an optimal angle.



Figure 4.1: The dual-purpose carrying case functions as a sturdy stand.

### 3. Connect to Your Device:

- **For Power Stations:** Use the integrated MC4 cable or the provided 4-in-1 cable to connect the solar panel to your compatible portable power station (e.g., Jackery, Ecoflow, Bluetti, Anker). Ensure the correct adapter plug is used for your specific power station.
- **For Batteries (with MPPT Controller - not included):** If charging a 3V to 36V battery directly, you will need a Voominhtec MPPT solar charge controller and alligator clips (both not included). Connect the solar panel to the controller via the MC4 connectors, and then connect the controller to your battery using alligator clips.

# Versatile Compatibility

Suitable for most portable power stations and battery types in a variety of scenarios

## Batteries:



## Portable Power Station:

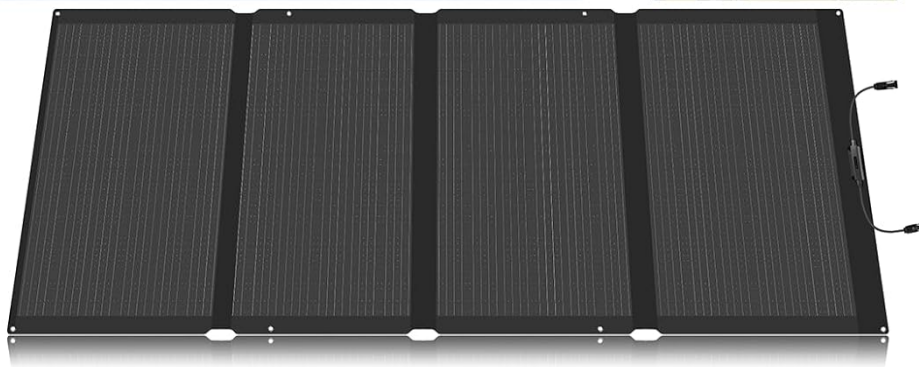


Figure 4.2: Examples of compatible batteries and portable power stations.

4. **Secure the Panel:** If necessary, use the integrated eyelets or carabiners (if included) to secure the panel against wind or accidental displacement, especially in outdoor environments.

## 5. OPERATING INSTRUCTIONS

Once set up, operating your solar panel is straightforward:

- **Initiate Charging:** After connecting the solar panel to your power station or charge controller, charging should begin automatically when sufficient sunlight is available.
- **Monitor Charging:** Most power stations and charge controllers have a display that shows the input wattage or charging status. Monitor this to ensure the panel is receiving adequate sunlight and charging effectively. Adjust the panel's angle or position if the wattage is lower than expected.
- **Optimal Performance:** For maximum efficiency, ensure the panel is clean and free of obstructions (e.g., leaves, dirt). Direct sunlight is crucial; shadows, even partial ones, can significantly reduce output.

- **Disconnecting:** When finished charging or when moving the panel, disconnect it from your device first, then fold and pack it away.

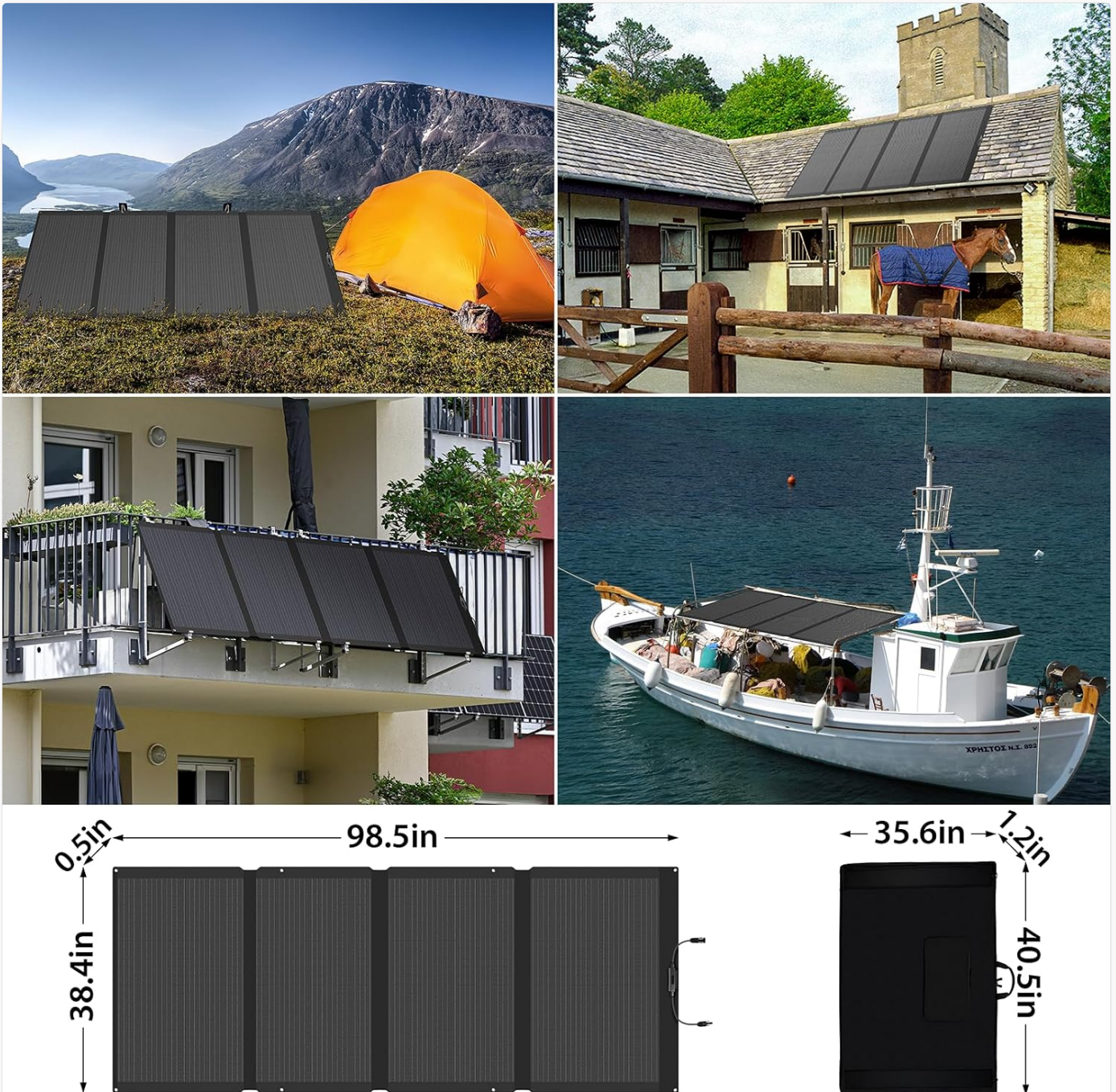


Figure 5.1: The solar panel can be used in diverse outdoor settings.

## 6. MAINTENANCE

Proper maintenance will extend the lifespan and ensure optimal performance of your solar panel:

- **Cleaning:** Regularly wipe the surface of the solar panel with a soft, damp cloth to remove dust, dirt, or debris. Avoid abrasive cleaners or harsh chemicals that could damage the ETFE film. Ensure the panel is dry before folding or storing.
- **Storage:** When not in use, fold the panel and store it in its carrying bag. Keep it in a cool, dry place, away from direct sunlight and extreme temperatures. Avoid placing heavy objects on top of the folded panel.
- **Inspection:** Periodically inspect the cables and connectors for any signs of wear, damage, or corrosion. Ensure

connections are secure before each use.

- **Handling:** While the ETFE film provides durability, avoid sharp objects or excessive force that could puncture or damage the panel surface.

## 7. TROUBLESHOOTING

If you encounter issues with your solar panel, refer to the following common problems and solutions:

| Problem                             | Possible Cause                                                                                                                                                                                                                                             | Solution                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No power output or very low output. | <ul style="list-style-type: none"><li>◦ Insufficient sunlight (cloudy, shaded).</li><li>◦ Panel not angled correctly.</li><li>◦ Dirty panel surface.</li><li>◦ Loose or incorrect cable connection.</li><li>◦ Incompatible device/power station.</li></ul> | <ul style="list-style-type: none"><li>◦ Move panel to direct sunlight.</li><li>◦ Adjust panel angle towards the sun.</li><li>◦ Clean the panel surface.</li><li>◦ Check all cable connections; ensure they are secure and correct.</li><li>◦ Verify device compatibility with the solar panel's output specifications.</li></ul> |
| Charging is slow.                   | <ul style="list-style-type: none"><li>◦ Partial shading on the panel.</li><li>◦ Suboptimal panel angle.</li><li>◦ Low light conditions (early morning, late afternoon, overcast).</li><li>◦ Device drawing more power than panel can supply.</li></ul>     | <ul style="list-style-type: none"><li>◦ Ensure no shadows fall on the panel.</li><li>◦ Re-angle the panel for direct sun exposure.</li><li>◦ Charging speed is dependent on light intensity.</li><li>◦ Reduce load on the device if possible, or understand that charging will be slower.</li></ul>                              |
| Panel feels hot.                    | <ul style="list-style-type: none"><li>◦ Normal operation under direct sunlight.</li><li>◦ Poor ventilation.</li></ul>                                                                                                                                      | <ul style="list-style-type: none"><li>◦ This is normal. Ensure adequate airflow around the panel.</li><li>◦ Do not cover the panel or place it on heat-retaining surfaces.</li></ul>                                                                                                                                             |

## 8. SPECIFICATIONS

| Attribute     | Value      |
|---------------|------------|
| Brand         | Voominhtec |
| Model Number  | SPL01-400W |
| Maximum Power | 400 Watt   |

| Attribute                     | Value                                               |
|-------------------------------|-----------------------------------------------------|
| Efficiency                    | 24 %                                                |
| Cell Type                     | Monocrystalline Silicon                             |
| Open Circuit Voltage (Voc)    | 48.6 Volts                                          |
| Maximum Power Voltage (Vmp)   | 42 Volts                                            |
| Short Circuit Current (Isc)   | 10.1 A                                              |
| Maximum Power Current (Imp)   | 9.4 A                                               |
| Product Dimensions (Unfolded) | 250.44 x 96.77 x 0.25 cm (98.5 x 38.1 x 0.1 inches) |
| Folded Size                   | 26.8 x 38.1 x 2.4 inches                            |
| Weight                        | 14.38 kg (31.7 lbs)                                 |
| Waterproof Rating             | IP68                                                |
| Connector Type                | MC4                                                 |
| Color                         | Black                                               |

## 9. WARRANTY AND SUPPORT

Voominhtec stands behind the quality of its products. For specific warranty details, please refer to the warranty card or documentation included with your purchase. Typically, warranty information covers manufacturing defects and material flaws under normal use.

For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact Voominhtec customer service through the retailer where you purchased the product or visit the official Voominhtec website for contact information.

Please note that information regarding spare parts availability is not provided in the product specifications. For any replacement parts, please inquire with Voominhtec customer support.

### 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

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

**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**