



150W CRYSTALLINE SOLAR PANEL



User's Manual

Congratulations on your Sunforce Purchase. Every effort has been made to ensure this product is designed to the highest technical specifications and standards. It should supply years of maintenance free use. Please read these instructions thoroughly prior to installation, then store in a safe place for future reference.

## **Crystalline Solar Panel 150W**

**Power Rating:** Maximum rating 150 Watts (under ideal conditions)

**Current:** 8.7 Amps @ 17.1 Volts

### **Warning:**

- Avoid Electrical Hazards when installing, wiring, operating, and maintaining your Solar Module. The solar module included generates DC electricity when exposed to sunlight or other light sources.
- For use in 12-Volt systems only
- Observe proper polarity throughout entire power cable wiring route.
- Work Safely. Do not wear jewelry when working with electrical or mechanical equipment. Use protective eyewear when working with batteries or drills. Use extreme caution when on ladders or on roof.
- Follow all Safety Precautions of the Battery Manufacturer. Some batteries can release flammable hydrogen gas. Do not produce sparks when working in locations where flammable gases or vapors exist. Shield skin and eyes from battery acid. Wash thoroughly with water if skin or clothing comes into contact with acid or any corrosive matter, which may have accumulated, on the battery. Keep the terminals and casing clean.
- Use a Charge Controller for wattages above 15 Watts
- Do not attempt to charge non-rechargeable batteries
- Always connect charge controller to battery first
- When disconnecting, always disconnect battery last

### **Features**

- Shade tolerance
- Powerful crystalline solar technology
- Overcharge and Discharge protected
- Rugged Aluminum Frame
- Industry leading Twenty five year warranty.
- Weatherproof
- Pre-drilled installation holes

### **MOUNTING THE SOLAR PANEL:**

Choose an appropriate location that provides the most direct sunlight and can support the solar panel, and is free from shade. Be aware of surrounding objects; although an object seems far from the mounting location it may still obscure the sun from the panel. The ideal year round position for a solar panel in the Northern Hemisphere is facing due south tilted at an angle equal to your latitude. For most North American locations any angle between 30 and 50 degrees is suitable. Note: Mounting a solar panel vertically will optimize low winter sun position but is not beneficial in the summer months.

### **CONNECTION TO CHARGE CONTROLLER (Not Included)**

#### ***Connect to Battery:***

Connect the Solar Charge Controller (SCC) battery side positive to the positive battery terminal and the negative wire to the negative battery terminal

#### ***Connect to Solar Panel:***

Each panel comes with a Junction Box – Observe Polarity when connecting panels to controllers and/or batteries. Connect positive to positive and negative to negative of SCC. Ensure connections are secure. Use wire nuts to connect wire to the leads coming out of panel. Use of an experienced installer is recommended. Included Wiring is for single panel connections. Thicker wiring required for multiple panel linking.

**FAQ:****What types of batteries can I recharge?**

You can recharge all types of 12 volt rechargeable batteries including lead-acid automotive batteries, deep cycle (traction type) batteries, gel-cell batteries, and heavy duty (stationary type) batteries. When using the Solar Module to run appliances on a regular basis, we recommend the use of deep cycle marine batteries which are designed to withstand frequent charge and discharge cycles.

**Can the Solar Module drain my battery at night?**

Once the solar charge controller is installed there is no danger of reverse current, so you may leave your panel installed overnight.

**Can the Solar Module overcharge my battery?**

Yes, but only if used without the charge controller. That is why it is important to use a solar charge controller. Do not connect the panel directly to the battery with wattages of 15Watts or higher. Always use in conjunction with an appropriately sized solar charge controller.

**Can I run my 110 volt appliances with my solar power system?**

Yes. You can run your 110 volt appliances with the use of an inverter, which would attach to your battery to change the battery's 12 volt (DC) energy into 110 volt (AC) or 220 volt (AC). Inverter is not included.

**Can my panel be left outdoors without a protective covering?**

Yes. The Solar Module has been weatherproofed and can be mounted outdoors without any additional protection.

**Do I have to disconnect the panels from the battery when I drive my RV or while I am recharging my battery by other means?**

No, solar panels are designed to be permanently connected to the battery. There is no need to disconnect them while driving a RV for example, or when charging the batteries by other means such as AC chargers, or a vehicle's generator or alternator.

**GENERAL TESTING PROTOCOL**

Always test outdoors under optimal sunlight conditions.

***Test Solar Panels for Voltage.***

Connect Voltmeter to each individual panel separately and observe Open Voltage. Open Voltage can range from 16 Volts to 24 Volts.

**Maintenance Instructions:**

Cleaning of the glass may be performed by the user, utilizing a clean damp cloth.

Any other maintenance to the unit should be performed by qualified service personnel or contact our experienced customer service team.