



5-Watt Rechargeable Solar Panel

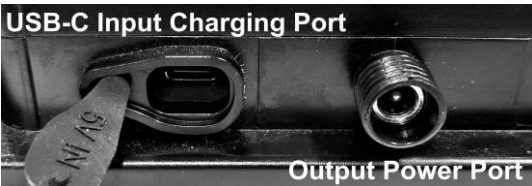


OVERVIEW

- This 5-Watt, rechargeable solar panel can withstand the rigors of the outdoor environment and is rated for exposure to the elements such as water, moisture, dirt, and temperature extremes and has an IP66 ingress outdoor rating. If you have an outdoor electronic device that is powered by conventional batteries, and the electronic device is not near an AC outlet, and you are tired of constantly replacing dead batteries, then this solar panel is the perfect solution. This solar panel charges during the day and stores up energy in its internal Li-Ion batteries allowing your outdoor electronic device to remain powered during daytime periods of cloudiness and throughout the night.
- The solar panel has a standard 1/4"-20 female tripod screw mount on the back of the housing which supports a variety of mounting options with either the included tree mount screw bracket and swivel head or our optional mounting accessories. The solar panel measures 6.91" wide x 6.91" tall x 1.38" thick making it a great choice for applications where you want the solar panel to be as inconspicuous as possible yet powerful enough to keep your electronic devices powered. The rechargeable solar panel can also be charged with the built-in USB-C female socket charging port which is great for making sure the internal Li-Ion rechargeable batteries are fully charged after the solar panel has been stored or out of service for extended periods of time or when adding or changing out the internal Li-Ion rechargeable batteries.
- This rechargeable solar panel can hold up to 6 x 18650 Li-Ion batteries and comes with a waterproof 3.3-ft (1m) power cable. One end of the power cable has a proprietary connector that screws into the output power port of the solar panel, and the other end has a waterproof 5.5mm x 2.1mm male barrel plug with an M12-1.75 screw nut which works with our outdoor battery eliminator kits and outdoor power extension and power splitter cables.
- A unique feature of this solar panel is if the internal batteries become discharged due to long periods of cloudiness, the solar panel will automatically turn back on once the internal batteries are sufficiently charged back up after adequate exposure to sunlight or through the USB-C input charging port. This eliminates the need to manually turn the solar panel back ON if it turns OFF due to over-discharge of the internal batteries.

IMPORTANT

Please charge the solar panel through the USB-C input charging port prior to use.



FEATURES

- Can Power Outdoor Electronic Devices Such as Automatic Sprinklers, Outdoor & Landscape Lighting, Trail & Security Cameras, Animal & Pest Deterrents, Motion & Infrared Detectors, Automatic Pet Feeders, Automatic Fish Feeders, Smart Bird Feeders, Weather Stations, Outdoor Thermometers, Water Feature & Small Pond Pumps, Seasonal Decorations, Electronic Timers, Etc.
- Works With Our Outdoor Rated Power Extension & Power Splitter Cables
- Works with Our Outdoor Battery Eliminator Kits, Components & Accessories
- Internal Lithium-Ion Batteries Charge During the Daytime to Provide 24-Hour Power to Your Outdoor Electronic Devices
- 5W Solar Working Power
- 24.3% Solar Conversion Efficiency
- Compact Size - 6.91" Wide x 6.91" Tall x 1.38" Thick
- Includes Tree Mount Screw Bracket and Swivel Head
- Swivel Head Allows for Adjusting Elevation and Azimuth Angles, so Solar Panel Can be Optimally Aimed at Sun
- Standard 1/4"-20 Female Tripod Screw Mount on Back of Housing Supports a Variety of Mounting Options
- Solar Panel is Made of Monocrystalline Silicon and Covered with Tempered Glass Which Doesn't Fade or Turn Brown Over Time
- 30-36 Hour Charge Time in Full Sunlight
- 15-18 Hour Charge Time via USB-C Input Charging Port
- Housing, Cable, and Connector are Weather Resistant - Water, Dust and Temperature Resistant and Able to Withstands the Rigors of the Outdoor Environment (IP66 Ingress Rating)
- LED Indicators – Solar Panel ON, Solar Panel OFF, Output Voltage Present, Battery Charging Status, Battery Charge Status
- ON/OFF/STATUS Push-Button
- 3.3-ft (1m) Power Cable Has IP66 Rated 5.5mm x 2.1mm Male Barrel Plug with M12-1.75 Screw Threads for a Weathertight, Secure and Reliable Connection
- Broad Ambient Operational Temperature Range: -4°F to +140°F (-20°C to +60°C)
- Output Over-Current & Short-Circuit Protection
- Internal Battery Overcharge Protection & Reverse Insertion Polarity Protection
- Comes with 3.7VDC, 18650 Rechargeable Lithium-Ion Batteries Pre-Installed Which Can Be Expanded to 6
- If the Internal Batteries Become Discharged Due to Long Periods of Cloudiness, the Solar Panel Will Automatically Turn Back on Once the Internal Batteries are Sufficiently Charged Up After Adequate Exposure to Light and/or via the USB-C Input Charging Port

SPECIFICATIONS

Output Voltage & Current	• 3.3VDC@1.5A max • 5VDC@2.6A max • 6VDC@2.4A max • 9VDC@1.4A max • 12VDC@0.9A max
Solar Panel	• Size: 6.91" Wide x 6.91" Tall x 1.38" Thick (17.55cm x 17.55cm x 3.51cm) • Power Conversion Efficiency (PCE): 24.3% • Solar Working Power: 5-Watts • Maximum Solar Working Voltage: 6V@0.85A • Material: Monocrystalline Silicon • Protective Material: Tempered Glass
Batteries	• Chemistry: Lithium-Ion (Li-Ion) • Voltage: 3.7VDC Average Nominal Voltage • Size: Standard 18650 (18.29mm±0.11mm Diameter x 65.05mm max Height) • Quantity: Up to 6 in Parallel • Capacity (C): 2,600mAh/8.58Wh nom Each Battery, Expandable to 15,600mAh/51.48Wh nom Total • Charging Voltage: 4.25VDC max
Battery Charging Time	• 30-36-Hours with Full-Sunlight Exposure (50,000 Lux avg) • 15-18 Hours via USB-C Input Charging Port (5VDC@1A)
Power & Status Button	Push to Click ON, Push to Click OFF, Push to No Click STATUS
Protections	• Output Short-Circuit • Battery Overcharging • Battery Reverse Polarity Insertion
Housing	• Material: Black ABS Plastic • Back Panel Attached with 8 Screws for Access to Batteries (Screws Covered with Small Round Removable Rubber Plugs) • Standard 1/4"-20 Tripod Mount Female Screw Threads
Included Mounting Hardware	• Tree Mount Screw Bracket • Swivel Head • Hollow Wall Anchor
Working Temperature	-4°F to +140°F (-20°C to +60°C)
Location Rating	IP66 Outdoor Rated (Weatherproof)

SPECIFICATIONS (CONTINUED)

Power Cable	• Cable Type: Round Jacketed • Insulating Material: Black PVC • Wire Type: 2-Conductors, Copper, 22AWG Stranded Each Conductor • Cable Length: 3.3-ft (1m) Length • Cable Diameter: 0.138" nom (3.5mm nom) • Connector Type: 5.5mm x 2.1mm Male Barrel Plug with Rubber O-Ring and Screw Nut with M12-1.75 Interior Threads (12mm Inside/Major Diameter and 1.75mm Thread Pitch) • Connector Polarity: (+) Tip/Inner Conductor, (-) Ring/Outer Conductor • Other: Connector Will Mate with Regular (Non-Weatherproof) 5.5mm x 2.1mm DC Female Barrel Sockets, But Connection Will No Longer Be IP66 Outdoor Rated (Weatherproof)
Certifications	FCC, CE, RoHS

WHAT'S INCLUDED

- 5-Watt Rechargeable Solar Panel
- Internal Li-Ion Batteries (Installed)
- Power Cable (Tagged Indicating Which End Connects to Solar Panel)
- Tree Mount Screw Bracket
- Swivel Head
- Hollow Wall Anchor
- Back Panel Rubber Screw Covers



READING THE LEDs

There are 5 LEDs on the rear cover of the solar panel – 1 square LED and 4 round LEDs. The following is a summary of how to read these LEDs.

1 Square LED (Solar Panel Charging Status)

- **Steady Green** - If the square LED is steady green, then the solar panel is being exposed to light, and the batteries are being charged.
- **Steady Red** - If the square LED is steady red, then the solar panel is connected to an external 5VDC power source via the USB-C input charging port, and the batteries are being charged.
- **Steady Green & Steady Red** - If the square LED is steady green and steady red, then the solar panel is connected to an external 5VDC power source via the USB-C input charging port, and the solar panel is being exposed to light, and the batteries are being charged by both of these sources.
- **Flashing Green** - If the square LED is flashing green, then the solar panel is being exposed to light, but no batteries are installed.
- **Flashing Red** - If the square LED is flashing red, then the solar panel is connected to an external 5VDC power source via the USB-C input charging port, but no batteries are installed.
- **Flashing Green and Flashing Red** - If the square LED is flashing green and flashing red, then the solar panel is connected to an external 5VDC power source via the USB-C input charging port, and the solar panel is being exposed to light, but no batteries are installed.

4 x Round LEDs (State of Charge of Batteries)

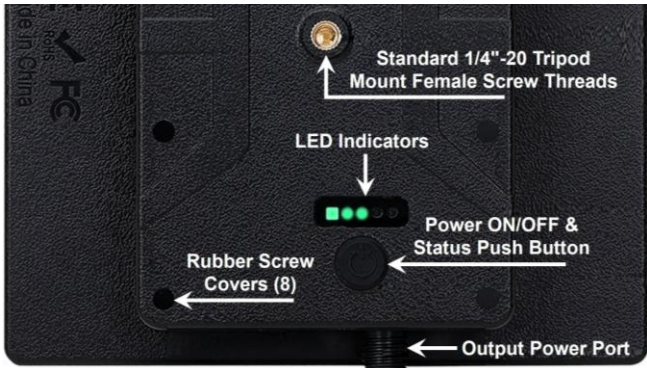
- **Power & Status Button is Pushed to Click to the ON State** – If the button is firmly pushed until it clicks, and then some of the 4 round LEDs illuminate steady green for 8 seconds and then the first round LED next to the square LED begins flashing green, then the unit has been turned ON, and there is output voltage present at the output power port.
- **Power & Status Button is Pushed to Click to the OFF State** – If the button is firmly pushed until it clicks, and none of the round LEDs illuminate, then the unit has been turned OFF, and no output voltage is present at the output power port.
- **Power & Status Button is Lightly Pushed but No Click to the STATUS State** – If the button is lightly pushed and released so that the button does not click, then the 4 round LEDs will indicate the state of charge of the batteries if the unit is turned ON or OFF.
 - **If Unit Was Turned ON (First Round LED Next to Square LED Flashing Green)** - Some of the 4 round LEDs will illuminate steady green for 8 seconds indicating the state of charge of the batteries. The unit will remain ON, and there will still be output voltage present at the output power port (first round LED next to the square LED will go back to flashing green).
 - **If the Unit Was Turned OFF** - Some of the 4 round LEDs will illuminate steady green for 8 seconds indicating the state of charge of the batteries.

The unit will remain OFF, and there will not be any output voltage present at the output power port, and the 4 round LEDs will turn off.

TURNING THE PANEL ON, OFF & CHECKING STATUS

The solar panel has a push ON / push OFF power & status button on the back of the housing. The button has 3 states - ON, OFF & STATUS as described below.

- **Power Button is Pushed to Click to the ON State** – If the power button is firmly pushed until it clicks, and then some of the 4 round LEDs illuminate steady green for 8 seconds and then turn off, but the first round LED next to the square LED begins flashing green, then the unit has been turned ON, and there is output voltage present at the output power port.
- **Power Button is Pushed to click to the OFF State** – If the power button is firmly pushed until it clicks, and none of the round LEDs illuminate, then the unit has been turned OFF, and there is no output voltage present at the output power port.
- **The Power Button is Lightly Pushed but No Click (STATUS State)** – If the power button is lightly pushed and released so that the button does not click, then some of the 4 round LEDs will illuminate steady green to indicate the state of charge of the batteries if the unit is turned ON or OFF.
 - **If Unit Was Turned ON (First Round LED Next to Square LED Flashing Green)** - Some of the 4 round LEDs will illuminate steady green for 8 seconds indicating the state of charge of the batteries. The unit will remain ON, and there will be output voltage present at the output power port (first round LED next to the square LED will go back to flashing green).
 - **If Unit Was Turned OFF** - Some of the 4 round LEDs will illuminate steady green for 8 seconds indicating the state of charge of the batteries. The unit will remain OFF, and there will not be any output voltage present at the output power port, and all 4 of the round LEDs will turn off.



MOUNTING & POSITIONING THE SOLAR PANEL

Find a good location near the electronic device you want to power and mount the included tree mount screw bracket and swivel head to a tree, a wooden post or wall. A hollow wall anchor is included which can be used if needed. The location should receive a decent amount of direct sunlight throughout the day, so the solar panel can charge up as much as possible during the daytime. Aim and tilt the solar panel by adjusting the swivel head, so the sunlight hits the solar panel as square as possible keeping in mind the path the sun takes throughout the day. The path and height of the sun will vary depending on your geographic location and the season, so make sure to keep this in mind when determining the best position for the solar panel. If you are unsure of the path the sun takes at your location, watch its path throughout the day. It might be necessary to clear a path that's free of obstacles such as branches, trees, leaves, buildings, houses, etc. It's important to have as clear a view of the sky as possible to optimize the amount of direct sunlight the solar panel receives throughout the day. The more sunlight the solar panel receives throughout the day, the more its batteries are charged up and the longer the solar panel can power your electronic device. Maximizing the solar panel's exposure to direct sunlight on clear sunny days is critical because overcast and rainy days are a certainty, so having as much reserve battery charge as possible is necessary in providing uninterrupted power during prolonged periods of cloudiness and rain. The solar panel will still charge during periods of cloudiness and rain, but not as rapidly as when exposed to direct sunlight.

OPTIONAL ACCESSORIES

Optional accessories include additional Li-Ion batteries to increase the energy storage capacity of the solar panel, outdoor rated power extension cables for powering remote devices, outdoor rated power splitter cables for powering multiple devices, and various types of hardware for mounting the solar panel to trees, posts, fences, walls, and even the ground. We also have outdoor rated battery eliminator kits & accessories for powering devices that are normally powered by AA, C and D batteries. Simply replace the regular batteries in the device with the appropriate outdoor battery eliminator kit and plug in the output of the rechargeable solar panel to the active dummy cell battery that comes with the kit.



IMPORTANT NOTES

- The included power cable has a tag on one end to indicate which connector attaches to the output power port connector on the solar panel.
- This rechargeable solar panel includes 8 small, round rubber screw covers. Install these screw covers over the screws on the back of the solar panel. These screw covers help to maintain the water proofness of the solar panel. These screw covers come uninstalled, so you can gain access to the battery compartment to add more 18650 Li-Ion batteries.
- Make sure the mating connector used with this solar panel has M12-1.75 screw threads. M12 specifies the diameter of the threads as 12mm, and 1.75 specifies the pitch of the screw threads as 1.75mm and is the distance between threads in mm. If the mating connector does not have the same thread diameter and the same thread pitch, then the screw nut will not work, and the rubber o-ring will not be properly compressed which is necessary to create a weatherproof seal. The connector on this cable will mate with regular (non-weatherproof) 5.5mm x 2.1mm DC barrel connector female sockets, but the connection will not be weatherproof. We have outdoor power extension and power splitter cables that have connectors that will properly mate with the connector on this solar panel. We also carry outdoor battery eliminator kits that have the proper mating connectors and are intended for use with this solar panel.

REPLACING OR ADDING LI-ION BATTERIES

This rechargeable solar panel comes standard with 2,600mAh, 3.7VDC, 18650 Li-Ion batteries installed (1, 2, 3, etc.) and can be expanded to as many as 6. Simply remove the 8 screws from the back of the solar panel and remove the rear cover for access to the battery compartment. It might be necessary to first remove the 8 small round black rubber screw covers (if installed) to expose the screw heads. To assure battery compatibility, we strongly recommend purchasing our 2,600mAh, 3.7VDC, 18650 Li-Ion batteries. We recommend that all of the batteries be of the same make and capacity. Take care to insert the batteries with the correct polarity to prevent damage to the batteries and/or the solar panel. When re-attaching the rear cover, make sure the black gasket is still properly installed around the perimeter of the housing to maintain the waterproofness of the solar panel. Once the rear cover is re-installed, re-install the small round black rubber screw covers over the screw heads. These screw covers help maintain the water proofness of the solar panel.



TRANSPORTATION & STORAGE

If you plan on transporting the solar panel or storing it for short periods of time, it's best to keep the solar panel turned OFF to prevent the batteries from discharging. If you plan on storing the solar panel for long periods of time, then we recommend removing the batteries from the solar panel. Simply remove the 8 screws from the back panel. It might be necessary to first remove the 8 rubber screw covers (if installed) to expose the screw heads. If you are installing the solar panel in a permanent installation, then it's best to keep the solar panel turned ON, so it can charge the internal Li-Ion batteries during periods of sunshine, so it will be constantly supplying power to your electronic device for uninterrupted service.

CAUTIONS & WARNINGS

- This product is not a toy, so keep away from infants, children and pets.
- Do not expose this product to fire or extreme heat.
- Do not mix Li-Ion batteries of different brands or capacities.
- Do not mix old and new Li-Ion batteries.
- Do not submerge this product in water.
- Remove Li-Ion batteries when not in use for extended periods of time.
- This solar panel is a low-voltage device, so do not attempt to modify the cabling to connect it directly to high voltage sources such as 120VAC.
- Do not attempt to disassemble or modify this solar panel in any way.
- If you notice a burning smell, smoke coming out of the solar panel or if the solar panel is extremely hot, immediately stop using the solar panel and disconnect it from your electronic device and extinguish any flames, or contact someone who can assist in extinguishing any flames.
- This solar panel contains Li-Ion batteries, so please be respectful of the environment and dispose of properly.



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