Solar Panel

Product Specifications and Installation





Solar Panel Table of Contents

Declarations **1**
- U.S. Radio Frequency FCC Compliance 1
- ISED RSS Warning 1

Safety Instructions **2**
- Important Safety Instructions To Be Read Prior To Operation 2
- Important Safety Instructions 2

Solar Panel Overview **3**
- Specifications 3
- Dimensions 3
- Solar Panel Parts 3

Before Installation – What You Need To Know **4**
- Consider the Geographic Location of the Installation 4
- Define the Best Location to Install 5
- How Efficiently Will My Solar Panel Perform? 5

Solar Panel Installation **6**
- Installation Using Provided Installation Tape 6
- Attaching “L” Installation Bracket to Window Frame 6
- Connect Optional Extension Cable 7
- Connect to Battery 8

Troubleshooting **8**

Declarations

U.S. Radio Frequency FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

ISED RSS Warning

This device complies with Innovation, Science and Economic Development Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Safety Instructions

- Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- Incorrect installation can lead to serious injury and will void manufacturer's liability and warranty.



Important Safety Instructions To Be Read Prior To Operation

- It is important for the safety of persons to follow the enclosed instructions. Save these instructions for future references.
- Persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge should not be allowed to use this product.
- Keep this product away from children.
- Frequently inspect for improper operations. Do not use if repair or adjustment is necessary.

Important Safety Instructions

- Do not expose to moisture or extreme temperature.
- Do not allow children to play with this device.
- Use or modification outside the scope of this instruction manual will void warranty.
- For use with rechargeable shades and external battery packs only.
- Do not cut power cables.
- NOT suitable for exterior application.
- Do not drill into solar panel body.
- The routing of cable through walls shall be protected by isolating bushing or grommets.
- Ensure power cable is clear and protected from moving parts.
- If cable or power connector is damaged, do not use.



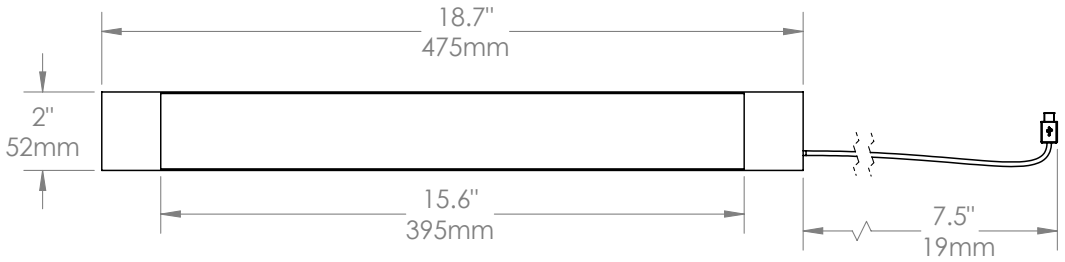
Do not dispose of in general waste.
Please recycle batteries and damaged electrical products appropriately.

Solar Panel Overview

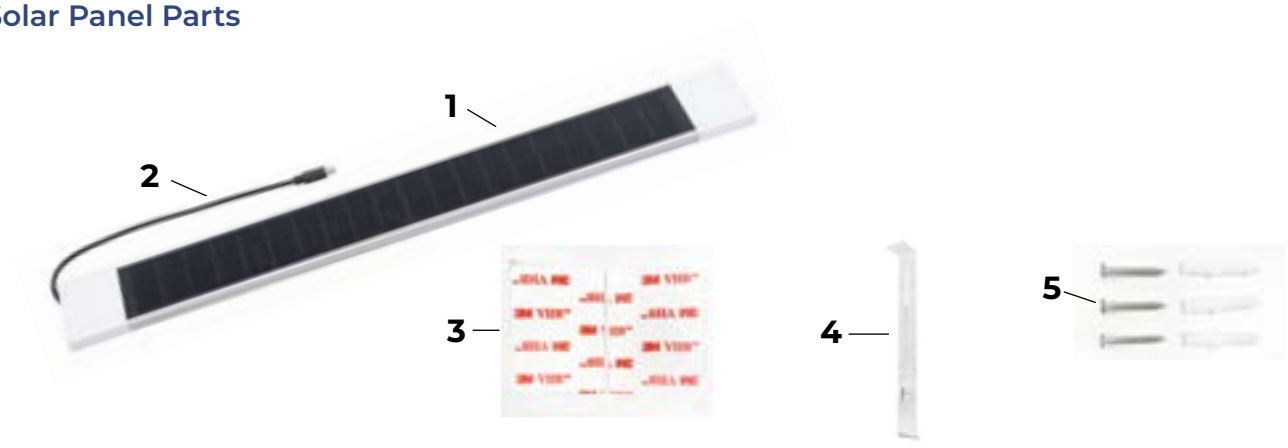
Specifications

Working Voltage (Vm):	5V		Electrical performance tolerance:	voltage ± 10%; current ± 10%
Open circuit voltage (Voc):	6.3V		International solar energy inspection standards:	solar radiation 1000W/m2; 1.5 Air Mass; humidity 25° C
Short-circuit current (Isc):	659mA		Electricity requirements (each solar panel includes solar battery cells):	conversion efficiency 21%; open circuit voltage (Voc) 6.3V
Working current (Im):	606mA		IP Rating:	IP55
Max. Output Power (Under 1000W/m2):	3W		Temp Working Range:	14°F to122°F (-10°C to 50°C)

Dimensions



Solar Panel Parts



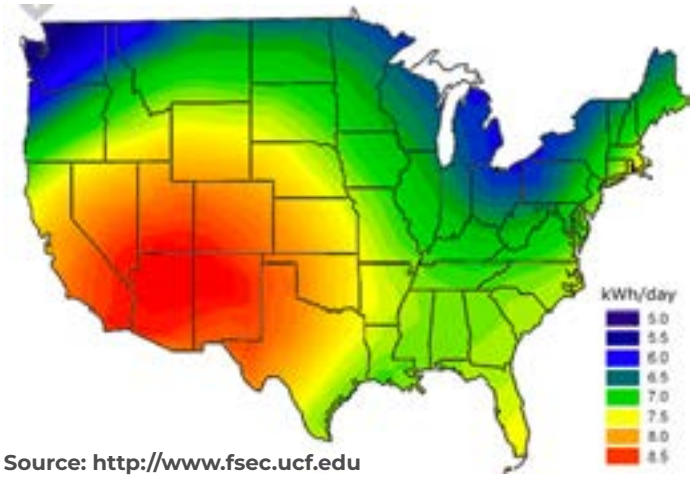
1. Solar Panel
2. Cable: USB-C (compatible with all rechargeable battery products).
3. VHB™ Installation tape (Recommended method).
4. Metal “L” Installation Bracket (Alternative method).
5. Screws and Anchors (x3 pcs).

NOTE: An optional extension cable can be purchased if additional length is required to reach the shade.

Before Installation – What You Need To Know

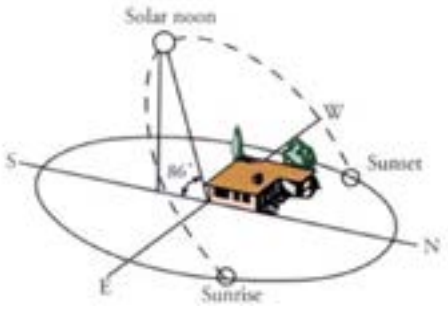
Consider the Geographic Location of the Installation

Understanding the sun's motion relative to a site is a crucial element to predict the solar panel performance. In other words, a solar panel located in Texas will harvest more energy than a unit installed in Canada (considering both facing south, using similar window). The same can be said between summer and winter harvest performance.

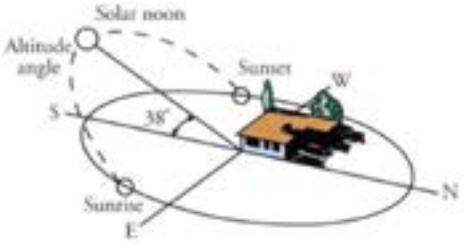


Source: http://www.fsec.ucf.edu

As a main recommendation, installations on northern areas are recommended only for small and middle size shades (up to 48" x 60"), with up to one cycle per day. Consider all factors that would affect the solar panels performance, including placement of the solar panel, the window's direction towards the sun, geographic regions, seasonal performance, the size of the shade, and how often the shade will be operated.



Suns path on summer solstice at a southern latitude



Suns path on winter solstice at a southern latitude

The solar panel may not be a good fit for every window. In the summer, the sun rises higher in the sky than in the winter months. The further north, the lower the midday winter sun will be. Due the sun position, solar panels installed facing north produce 4 times less energy than a device installed facing south. For this reason, we do no recommend the use of solar panel on windows facing north.

	Summer Performance	Winter Performance
South Face	100%	70%
West Face	95%	90%
East Face	90%	70%
North Face	60%	25%

Define the Best Location to Install

The solar panel is designed for indoor use only. To maximize the performance of the solar panel, it should be installed as close as possible to the window glass, allowing as much natural light as possible to reach the panel.

IMPORTANT: Any element between the sunlight and the solar panel will impact the charging time, and in some situations, prohibit the use of a solar panel. Overcast weather is an example of possible obstruction that impossible to predict or control, but there are other elements that we should consider before installing a solar panel, like:

- Awnings
- Trees
- Deep Eaves
- Tall buildings and walls
- Insect Screen
- Others

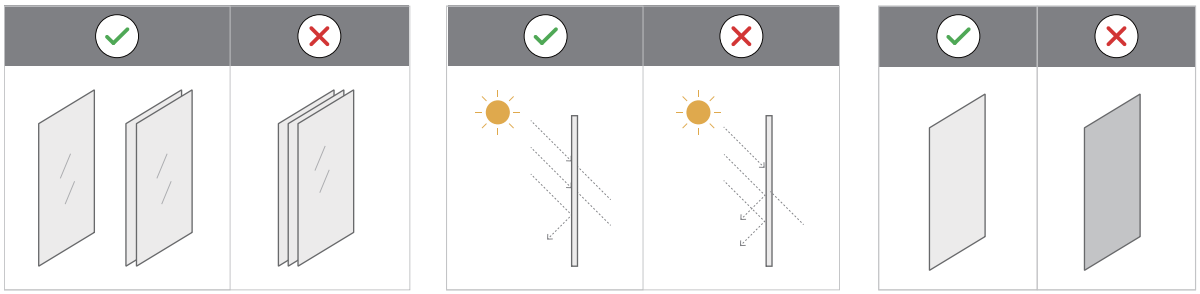
Do Not Use Solar Panel Under Below Conditions



Awnings | Deep Eaves | Vegetation Blocking Light | Insect Screen

Other elements are not so obvious but can make it difficult to use a solar panel. The solar panel will have a low performance when installed on locations with:

- Tinted windows
- High performance glass (also known as energy efficiency glass)
- Multi panel glass
- Any window with treatment that reduces the light transmission below 65%
- Window dividers overlapping solar panel



Single or Double Pane | Triple Pane | Light Transmission | Light Transmission >65% | Clear | Tinted

How Efficiently Will My Solar Panel Perform?

Performance will vary. Beside all the elements already described that impact how much energy will be harvested from the sun, there is also the question of how fast the energy will be drained by the shade itself due to:

- Shade composition (fabric weight)
- Number of cycles per day
- Size of shade (how long the motor will run per cycle)

The answer for these questions should be considered to evaluate if solar panel is the best fit for the application.

Solar Panel Installation

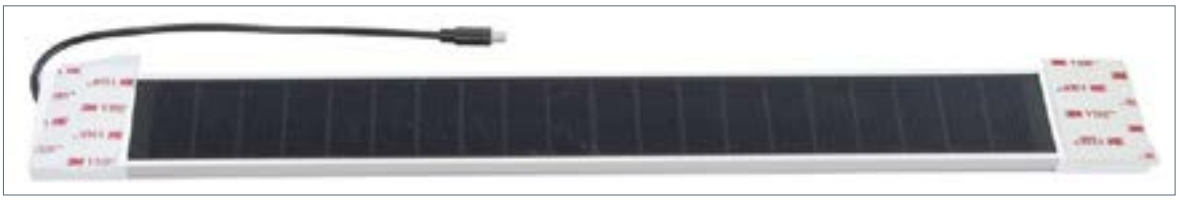
The solar panel must always be install indoors, directly against the window glass to allow as much natural light as possible to reach the panel. For your convenience, the solar panel can be installed using VHB™ installation tape (recommended method) or Metal “L” Installation Bracket (alternative method).

Installation Using Provided Installation Tape

1. Clean solar panel corners and window area using alcohol and a cloth pad. Let dry for a few minutes.



2. On a flat surface, place the solar panel facing up and carefully apply the VHB™ installation tape on both sides of the solar panel.



3. Remove the “face” of the applied adhesive. Position the solar panel facing to outdoors, then press entire panel with firm, even pressure into the glass for
   10-15 seconds. The panel is now supported by the adhesive to glass bond but will require 24 hours of cure time to allow full strength characteristics.
   Do not disturb during this period.

Attaching “L” Installation Bracket to Window Frame

The “L” installation bracket is provided as an option when an installation direct on the glass is not possible. A common application is to mount the “L” Bracket on the window frame – either top mount or side mount. Ensure the solar panel and its bracket are not blocking the free movement of the bottom rail.

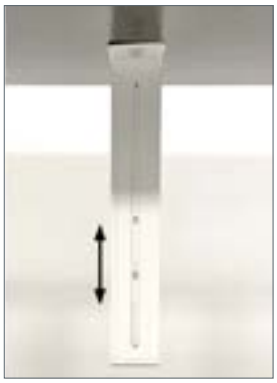




1. Install the mounting bracket to wall/mounting point using the screws provided.



2. Adjust the bracket length by lengthening or shortening the “extendable” bracket with the 2 screws.



3. Attach the solar panel into the installation bracket, positioning the bracket in the center of the solar panel.



Connect Optional Extension Cable

- If additional length is required to reach the charging port, add a charging extension cable (sold separately).
- Connect the female end of the extension cable to the male end of the cable attached to the solar panel.

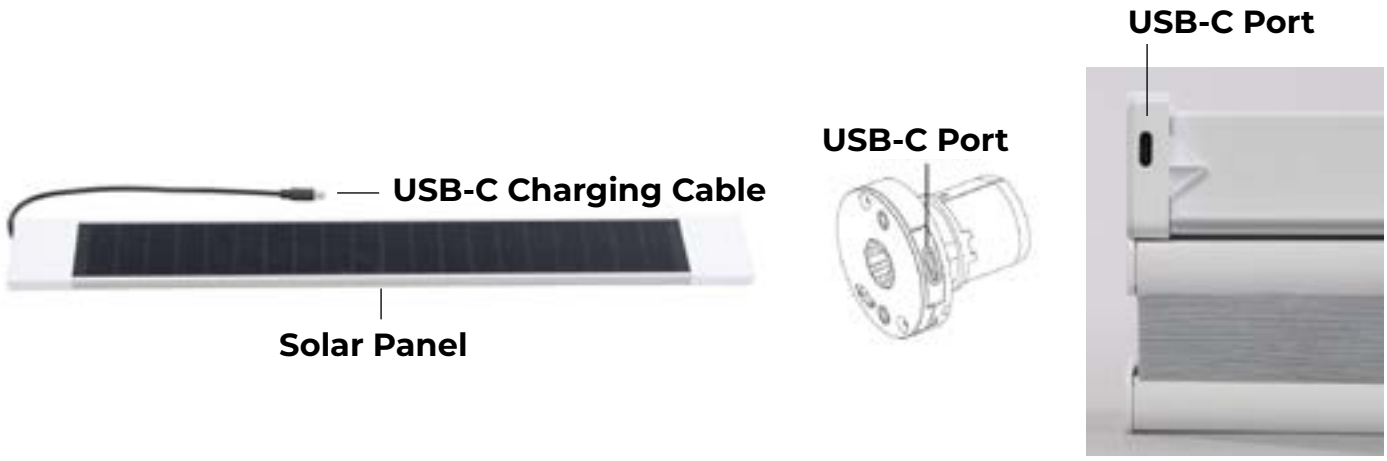
NOTE: After installation, is complete, use wire management tools to secure the cable to the back of the headrail so that it does not interfere with shade operation.

Connect to Battery

Connect the solar panel to your rechargeable shade or external battery. Follow the instructions that apply to your specific product from the options below.

Connect to Internal Rechargeable Battery

- Connect the USB-C charging cable to the USB-C port on the back of the shade.



Connect to External Rechargeable Battery Pack

- Connect the USB-C port on the external rechargeable battery pack.



Troubleshooting

ISSUES	POSSIBLE CAUSES	SOLUTION
The shade will not operate	Battery in motor is depleted	Recharge with compatible charger and check connection and positioning of solar panel
	Insufficient charging from Solar Panel	Check connection and orientation of solar panel