

## Things to Remember When Using Solar Panel

1. Power output of solar panels depends upon Sun light intensity, Sun light Spectrum, Angle of panel facing the sun and temperature of the solar panel due to factors such as weather conditions, seasonal changes etc. The usage and connection of the product should follow instructions in this reference guide.
2. Solar Module Fabric Splash proof and the solar Module is water Splash proof. The output terminal connection points should not be put in water or Shorted Circuited or Connected Direct to battery.
3. This product should not be exposed to highly corrosive substances, or be immersed in corrosive liquids.
4. Avoid Storing or Using Solar panels near open Flames or near Heat generating equipment's like Automobile engine, engine exhaust pipe.
5. Do not use sharp objects on the surface of the panel, and do not knock, Flip front down onto ground surface or impact the product.
6. Do not apply pressure or use pressure water washer or bend the panel or allow the panel to be dropped on any of its corners, sides or front surface or Do not step or place heavy objects on the panel. Such actions may result in damage to the solar panel.
7. The panel must not be dropped face down or flipped over on ground, exposed to heavy pressure, or bent during transport or moving around. We recommend the panel be kept in a vertical position when being moved or stored.
8. The panel should not be used outdoors under strong wind, hail or other severe weather conditions.
9. Do not use Artificial light or Focus light on solar panel surface
10. When storing the panel, always ensure that the power outlet terminals are not exposed to sunlight.
11. Do not open the power outlet terminal as the same should be opened or disassembled by qualified personnel.
12. Unwanted solar panels must be disposed of in accordance with the local regulatory requirements.
13. When using the product, please follow the instructions and prohibit hanging.

**Avoid**



Subjecting to above will damage the solar panel, will cause the cell inside the solar panel to crack and efficiency drop, or even unusable. The free warranty period does not cover damage resulting from improper use of the product.

Example: Does the 60W Solar Panel generate a full 60W of power?

In most cases, it is normal for a solar panel not to deliver its full nominal power. Some of the reasons why this happens, as well as some suggestions for getting closer to the nominal power figure, are given below.

1. Light Intensity. The variations in intensity of Sun light shining on the panel will result in changes in Solar module power output. The modules is most likely to generate nominal power output figures closer to those obtained under test conditions when using the product on a clear day during the midday sun, than when using the product in the morning or later in the afternoon. Weather conditions will also affect the intensity, spectrum of sunlight that shines on the panel. For example, you are much less likely to achieve the figures for nominal power in hazy, cloudy or rainy conditions.

2. Surface Temperature. The temperature of the solar panel surface will also affect the amount of power generated. The lower the surface temperature of the panel, the more power will be produced. For example, solar panels generate more power when used during the winter than during the summer, and this is completely normal. Solar panels generally reach temperatures close to 60°C (140°F) during summer. This reduces nominal power while sun shine is ; the panel.

3. Sunlight Angle. In optimal light conditions, the sun's rays should remain perpendicular to the surface of the panel for best performance. The difference of  $\pm 10$  degrees of 90 degrees of sunlight hitting the panels has little effect on the power.

4. Panel Shading. The surface of the solar panel should not be shaded during use. Shading caused by shadows, foreign objects and glass can all greatly reduce power output.

Performance Issues Caused by Malfunctioning Panels: If the panel still isn't generating power or its output remains far below expected nominal power figures after addressing the issues above, there may be an issue with the panel itself. Please contact Customer Support for assistance.

How much power can the 60W Solar Panel generate under normal conditions?

This depends first and foremost on weather conditions. Generally speaking, on a clear day with no clouds in the sky, sunlight hitting the panel at a 90° angle usually generates. (Current light conditions are normally 800W–900W/m<sup>2</sup> (74.3W–83.6W/ft<sup>2</sup>) with a panel temperature of 50°C (122°F) under test conditions. Nominal power ratings are based on 1000W/m<sup>2</sup> (92.9W/ft<sup>2</sup>) in AM1.5 conditions with a panel temperature of 25°C (77°F) under test conditions. Power output figures close nominal values were normally observed in the midday sun during the winter.)

What should I know about the operating temperature, storage and use of the 60W Solar Panel?

The operating temperature of the Solar Panel is -10°C–55°C. The panel should be folded into its original shape and stored in its Protective Case (Kickstand), which provides sufficient protection for the product. To extend the service life of the panel, ensure that the product is not exposed to external forces/impacts when not in use. The solar panel must not be dropped, pierced, bent. Avoid keeping foot or heavy object or sitting on panel in all conditions. These actions may break the cell and render the panel unusable. Any such damage will not be covered in warranty.