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How to Calculate Your Peak Sun-Hours

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As energy costs continue to rise, more and more people are looking to solar power as a more efficient option for both their homes and businesses. On top of the economic benefits of solar power, solar energy produces no pollution and has [no negative environmental effects](#), making it an attractive option for those concerned about the environmental effects of traditional energy production as well.

Solar power is created through the harnessing of energy from the sun. Solar panels — which are typically made of crystalline silicon and use a system of lenses or mirrors to maximize the light that reaches them — create an electric current when exposed to sunlight, which is then used to produce electricity.

Solar panels need direct sunlight in order to produce the maximum solar output. Even in [cloudy weather](#), however, solar panels can absorb solar energy to produce power, though it will be at a significantly reduced rate compared to sunny days — usually between 25 and 40%.

To maximize the amount of sunlight your panels receive, they should face south and be installed in an area where they will not be shaded by trees or other nearby buildings during the majority of daylight hours. While a solar professional can help you determine the best placement for your panels, you can [plot a sun chart](#) or buy or rent a [solar pathfinder](#) to determine how much sun your solar panels are likely to receive on a typical day.

What Are Peak Sun-Hours?

While the amount of sunlight your panels receive is important, a more accurate representation of the amount of energy your panels can produce is peak sun-hours. It is important, first of all, to note that “peak sun-hours” are not the same as “hours of daylight.” Peak sun-hours refers specifically to how much solar energy is available in an area during a typical day. A peak sun-hour, specifically, is an hour during which the intensity of sunlight is 1,000 watts per square meter.

- **Season:** Sun-hours increase during the summer due to the sun's higher position in the sky.
- **Geography:** Solar energy increases near the equator, as it is closer to the sun.

While your panels may receive an average 7 hours of daylight per day, the average [peak sun-hours](#) may actually be closer to 3 or 4. Weather is also a factor. States like [California](#) or [Florida](#) can expect more clear and sunny days.

How to Calculate Your Peak Sun-Hours

Most of the United States averages between 3 and 5 peak sun-hours, though many areas may experience less during the winter and more during the summer. Knowing the yearly and seasonal average peak sun-hours in your area is a helpful tool for deciding whether or not solar panels are a worthwhile investment for your home or business.

An [insolation map](#) can show you the amount of solar energy your location receives on an average day during the worst month of the year. Several [charts](#) and [lists](#) have compiled more specific data for North America, including monthly and seasonal averages, that you can use to determine the average number of peak sun-hours your panels are likely to receive.

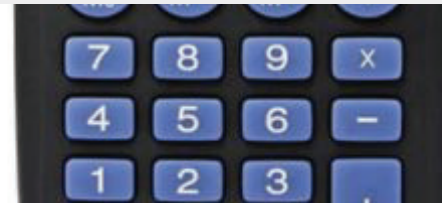
If you want to calculate the exact amount of insolation that your solar panels will receive, you can purchase an [insolation meter](#) or [make your own](#). Put the meter in direct sunlight and wait for a reading. It will give you facts regarding temperature, solar power supply, and current light intensity.



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September 4, 2016 at 1:30 am

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May 6, 2017 at 10:51 am

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August 31, 2017 at 3:40 am

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