
Solar container outdoor power wattage recommendation

How much power does a solar panel need?

In this example we will be located in Tennessee which has 4 Peak Hours (reference: Average Peak Sun Hours by State). Required Power of Solar Panel (without considering controller and inverter loss) = $6850 \text{ Watt-Hours} / 4 \text{ Hours} = 1712.15 \text{ Watts}$. We will want to use the MPPT Controller since this is a high wattage system and want to minimize loss.

How big a solar inverter do I Need?

Now to figure out how big of an inverter we need; we have to add up the load wattages. Total Load Watts = $700 \text{ Watts} + 125 \text{ Watts} + 1500 \text{ Watts} = 2325 \text{ Watts}$. In this case, a 2500 Watt inverter or higher is required. It would need to be 24 Volts. For details on how to calculate your solar power, see Renogy Solar Calculators.

How many watts can a solar charge controller handle?

You can check the controller specification sheet to see the wattages they can handle. For example, a 30 Amp Controller can handle 400W on 12V, so you know you can have up to 400 Watts on there. *If you want to size it by yourself, please reference Solar Charge Controller Types.

How do you calculate battery capacity for a 24V Solar System?

Assume we are installing a 24V solar system. We need to keep this in mind to size the battery and pick our inverter. Now, when considering the battery size, you'll need to divide the total consumption by the system voltage, in this case, 24V, and then double the result. Battery Capacity = $(6850 \text{ Watt-Hours} / 24 \text{ Volts}) * 2 = 570.83 \text{ AH at } 24\text{V}$.

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