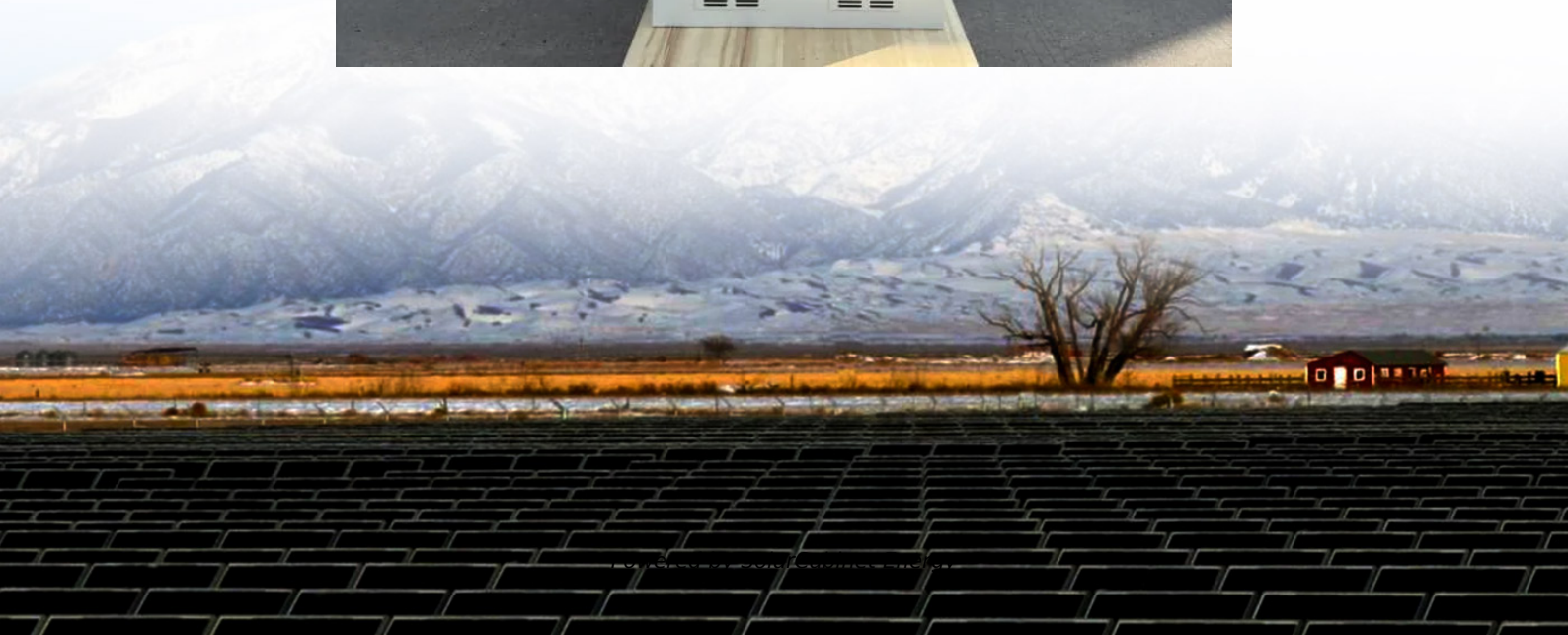


How to Match Batteries with a 36V 160W Photovoltaic Panel





Overview

How many watts is a 36V panel?

So, for example, let's say you put two 18V 100W panels in series, which will give you ~5.5A at 36V. You could then wire one 36V panel parallel to the string of two 18volders because they are both putting out the same voltage. How many watts is that 36V panel?

Let's say for example that it is a 300W panel putting out 8.33A at 36V.

How much power can a 160 watt solar panel generate?

The most power your 160 watt solar panel array generate in a day with a battery system is $160 \text{ watts} \times 4 \text{ hours} \times 66\% \text{ efficiency factor} = 422 \text{ watt hours}$ at best. Ok to size the battery properly you select a size based on 20% discharge per day. So with 422 wh we can multiply by 5, so $422 \text{ wh} \times 5 = 2110 \text{ wh}$ capacity.

How many watts can a 36V controller charge?

So, your two parallel strings would be 5.5A at 36V and 8.33A at 36V, for a total of 13.83A at 36V. That is equal to 498W of panels total. $498\text{W}/13\text{V charging} = 38.3\text{A}$. So, that combination would be OK for your controller, because the max amperage is less than 40. Now, what if you have three 18V panels?

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How many solar panels should a solar array have?

If you decide to apply a mixed connection, it's practical your solar array to comprise an even number of panels (a multiple of 2), for example, 4 panels (2 in series and 2 in parallel) or 6 panels (3 in series and 2 in parallel).

How much power do you need to charge a 24v battery?

Panels made for charging 12v batteries can be as small 10-watts and as large



as 200-watts, but panels for 24v batteries begin at around 300-watts, minimum. So, depending on your needs, you'll need to get a 24v panel of at least 300-watts. When charging 48v batteries, you're going to need a ton of power.

Can I replace 18V panels with 36V panels?

The panels will deliver 36v ". This suggests to me that you could either be removing the 18V panels and replacing them with an unknown number of 36V panels, or alternatively adding new 36V panels along side the original panels. Both are still doable, but with caveats mentioned above.



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