

How Much Solar Power Can A 25 AMP In-vehicle Battery Charger Handle?

The BCDC1225D can fully use solar panels up to 375W, but you could also get more benefit if you had bigger panels. The excess rating of bigger panels will not harm 25 amp BCDC's, they will just not be fully used during periods of maximum sunlight. The bigger panels will not be a total waste though, as they will still allow the 25 amp BCDC's to work at maximum capacity in lower lighting conditions than a 375W set up would.

For example:

If you had a 375W panel in full sunlight that allowed the 25 amp BCDC's to deliver its full 25A charging current from 10AM to 2PM*, you could potentially charge at 25A for 4 hours, putting up to 100 Amp Hours of charge into your battery bank (plus the lower charge rates outside these hours).

By comparison, If you had a 600W panel set up in the same installation, it might allow the 25 amp BCDC's to deliver its full 25A charging current from 9AM until 3PM* and you could potentially charge at 25A for 6 hours, putting up to 150 Amp Hours of charge into your battery bank (plus the lower charge rates outside these hours).

So, even though a 600W panel is bigger than the 25 amp BCDC's can fully use, a 600W panel will still get more Amp Hours into your battery each day than a 375W panel.

*Please note these times are as a comparative illustration only. Actual charging times will vary according to circumstances such as latitude, panel angle, cloud cover, shading, panel quality/age/condition Etc, Etc.

Besides panel current, panel voltage must be considered. The BCDC* range of MPPT solar regulators are designed for use with recreational/mobile 12V nominal panels, with a maximum "VOC" (open circuit voltage) of 28V and will not switch on above that voltage.

Domestic/fixed (house) panels have a higher VOC, typically 44V or more and are not suitable. Besides having too high a VOC, being designed to be mounted on a fixed base such as a house (not subject to bumpy roads) they are also not as rugged as good quality recreational panels that ARE designed for the shaking and vibration encountered on the highway and, even more so, off road.

Other REDARC products:

BCDC1240D - Fully uses up to 600W from panels but unlimited maximum power.