

# How long can a 12V45A inverter discharge

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How to calculate battery life of a 12V inverter?

Divide the available battery capacity for Inverter by the overall power consumed by the inverter to get an estimate of the 12v battery life.  $\text{Battery Running Time} = \frac{\text{Battery Capacity} \times 12\text{v} \times \text{DOD\%} \times \text{Inverter Efficiency}}{\text{Inverter Rated Power}}$

What is the runtime of a 12V battery with an inverter?

The runtime of a 12v battery with an inverter depends on battery capacity, device power consumption, inverter efficiency, battery health, discharge depth, and environmental conditions.

How long does a 12V battery run on a 3000W inverter?

So, battery running time for a 12V battery with a 3000W inverter (94% efficiency) is 0.3008 hours.  $\text{Battery Running Time} = \frac{100\text{Ah} \times 12\text{v} \times 80\% \times 95\%}{5000\text{W}} = 0.1824$  hours With a 5000W inverter (95% efficiency), a 12V battery will run for 0.1824 hours. Battery running time for a 12V battery with a 5000W inverter (95% efficiency) is 0.1824 hours.

What factors affect the runtime of a 12V battery using an inverter?

The runtime of a 12V battery using an inverter can be affected by several factors, including the battery capacity, the inverter load size, the efficiency of the inverter, and the power consumption of the device being powered. Other factors that can affect the runtime include the temperature, the age of the battery, and the depth of discharge.

Easily calculate battery backup time for UPS, inverter, or solar systems with our free online Battery Backup Calculator. Fast, accurate, and user-friendly.

Jul 17, 2025&nbsp;&#0183;&nbsp;&#0183;Find out how long a portable inverter keeps appliances running--from phones to fridges--with sizing tips, battery math, and Bettsun insights for any blackout.

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