

# How big a lithium battery should I use for a 48v inverter



## Overview

Note! The battery size will be based on running your inverter at its full capacity  
 Assumptions 1. Modified sine wave inverter efficiency: 85% 2. Pure sine wave inverter efficiency: 90% 3. Lithium Battery: 100% Depth of discharge limit 4. lead-acid Battery: 50% Depth of discharge limit  
 Instructions! To calculate the battery capacity for your inverter use this formula  

$$\text{Inverter capacity (W)} \times \text{Runtime (hrs)} / \text{solar system voltage} = \text{Battery Size} \times 1.15$$
 Multiply the result by 2 for lead-acid type. You would need around 24v 150Ah Lithium or 24v 300Ah Lead-acid Battery to run a 3000-watt inverter for 1 hour at its full capacity  
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I hope this short guide was helpful to you, if you have any queries Contact us do drop a. Here's a battery size chart for any size inverter with 1 hour of load runtime Note! The input voltage of the inverter should match the battery voltage. (For example 12v battery for 12v.



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A 48V 100Ah lithium battery (4.8kWh) paired with a 5000W inverter works because  $48V \times 100Ah \times 1C = 4800W$ . Always account for inverter efficiency losses (typically 85-95%).

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