

## SolarInnovate Energy Solutions

# 21700 cylindrical battery cell



## Overview

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The 21700 battery is a Li-ion battery named after its 21mm × 70mm cylindrical size (diameter × height). When compared to AA size and 18650 type cells, their height and diameter both are larger. What is a 21700 battery?

The 21700 battery is a cylindrical lithium-ion battery with a diameter of 21mm and a length of 70mm. It offers a nominal voltage of 3.7V and a capacity of up to 5,000mAh, making it a powerful and efficient energy source. Its energy density ranges between 250 Wh/kg and 300 Wh/kg, depending on the chemistry.

Are 21700 batteries bigger than 18650?

21700 batteries are larger and offer higher capacity than 18650 cells, which allows for fewer cells per pack and increased runtime in high-demand systems. Do 21700 battery cells require specific holders or enclosures?

Yes. Due to their size, 21700 battery cells must be used with holders and hardware designed specifically for the 21mm x 70mm format.

What is a 21700 cell?

21700 cell, as the name suggests, stands for a cylindrical cell with 21mm width and 70mm height. It was first introduced in 2017 by a Tesla and Panasonic collaboration. 21700 was introduced as an alternative to the long-running 18650 model, which was introduced by Sony in 1991.

How big should a 21700 cell be?

The 21700 cell increased the working volume over the 18650 by a factor of  $>1.4 \times$  21700  $\Rightarrow$  ~21mm in diameter and ~70.0mm long. These dimensions vary between manufacturers. Using data from the Cell Database we can see that 70g is a good nominal figure for the mass of a 21700 cell. The 21700 cell by definition should be 21mm in diameter and 70mm high.

Are 21700 batteries safe?

Unprotected 21700 batteries: Lack built-in safety features and are generally used in battery packs with external battery management systems (BMS). 21700 batteries are widely used in: Electric vehicles, with companies like Tesla and other manufacturers using them in battery packs for improved energy storage and performance.

What is the energy density of a 21700 battery?

The 21700 battery utilizes advanced lithium-ion chemistry, which provides a balance between energy density, safety, and longevity. Depending on the specific chemistry, such as NMC or LCO, the energy density of the 21700 ranges from 250 Wh/kg to 300 Wh/kg.

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### Measurement of thermophysical parameters and thermal modeling of 21,700

Aug 15, 2023 · Currently, the mainly used cylindrical lithium-ion batteries are 18,650 (18 mm diameter, 65 mm height), 26,650 (26 mm diameter, 65 mm height), and 21,700-type cells (21 ...

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