

# Spower Lithium LiFePO4 Battery



## What is a LiFePO4 Battery?

LiFePO4, or Lithium Iron Phosphate, batteries are a type of lithium-ion technology. Unlike standard lithium-ion batteries, the LiFePO4 chemistry is safer, more durable, and more durable. It offers advantages such as high energy density, long charge-discharge cycle life, and low internal resistance.

## Advantages of LiFePO4 Battery

**Long Life:** LiFePO4 batteries have a much longer lifespan than other lithium batteries. They typically offer 3000 to 5000 charge cycles, which means an average lifespan of 10-15 years.

**High Safety:** LiFePO4 has a more stable chemistry compared to other lithium batteries, making it much safer against the risk of explosion or fire.

**Fast Charging and High Efficiency:** These batteries can be charged quickly and there is very little energy loss during the energy storage process.

**Low Weight:** LiFePO4 batteries are lighter than lead-acid batteries of the same capacity, providing portability and ease of use.

**Environmentally Friendly:** Due to their chemical composition, LiFePO4 batteries are less toxic and less harmful to the environment.

**Temperature Resistance:** LiFePO4 batteries maintain their performance and efficiency even in extremely hot or cold environments.

## How to Charge?

LiFePO4 batteries can be charged with a standard lithium-ion charger, however, for the most efficient charging it is recommended to use LiFePO4 specific chargers.

The battery charging process is carried out with direct current (DC). Thanks to the advanced BMS (Battery Management System), the battery automatically protects itself while charging.

The charging voltage and current are adjusted according to the capacity of the battery. Generally, it can be fast charged to 80-90% of the battery capacity, and the remaining 10% is completed by slow charging.

Sources such as solar panels, grid electricity or solar generators can be used to charge LiFePO4 batteries.

## How is it discharged?

LiFePO4 batteries convert energy into alternating current (AC) when energy is requested and provide it for use. During this process, the battery protects itself from over-discharging situations thanks to the BMS system.

Offering high current output, LiFePO4 batteries can respond instantly to large energy demands.

It is generally recommended not to discharge below 20% to avoid completely discharging the battery. This will extend the life of the battery.

## Where is LiFePO4 Battery Used?

**Solar Energy Systems:** LiFePO4 batteries are widely used in solar energy systems. The energy collected from the sun is stored in these batteries and made available for use at night or in cloudy weather.

**Electric Vehicles:** LiFePO4 batteries are widely used in vehicles such as electric cars, motorcycles and bicycles. They are preferred for their light weight and long-lasting performance.

**Portable Generators:** Portable solar generators use LiFePO4 batteries as energy storage and reliable power source.

**Telecommunication Systems:** LiFePO4 batteries are preferred to provide reliable energy in base stations and remote communication systems.

**Uninterruptible Power Supplies (UPS):** LiFePO4 batteries provide long-lasting energy backup in UPS systems, especially used in data centers and important infrastructures.

**Marine and Caravans:** LiFePO4 batteries are preferred in marine vehicles and caravans due to their reliable energy supply capacity.

## Is LiFePO4 Battery Dangerous?

**Safety:** LiFePO4 batteries are safer compared to other lithium batteries. There is almost no risk of explosion or fire. Therefore, they are considered safer than lead-acid or other lithium-ion batteries.

**Environmentally Harmful:** The components of LiFePO4 batteries are less harmful to the environment and are suitable for recycling.

**Overheating:** LiFePO4 batteries are resistant to overheating situations and manage these situations with advanced BMS. Therefore, it is one of the best options for safe use.

**Conclusion** LiFePO4 batteries are long-lasting, safe, environmentally friendly and high-performance energy storage solutions. They can be used in many areas from electric vehicles to solar energy systems and provide reliable energy. These batteries have a low risk of explosion, a long service life and high temperature resistance, making them an ideal solution for energy storage systems.

There are several important reasons why LiFePO4 batteries are preferred over gel batteries. Here are the differences between the two battery types and why LiFePO4 batteries are superior:

### 1. Life and Charge Cycle

**LiFePO4 Battery:** Provides an average of 3000 to 5000 charge cycles, which equates to a lifespan of approximately 10-15 years.

**Gel Battery:** Generally provides 500-1000 charge cycles and its life is much shorter than LiFePO4 batteries, about 3-5 years.

**The result:** LiFePO4 batteries last much longer than gel batteries and need to be replaced less frequently.

### 2. Weight

**LiFePO4 Battery:** It has a lighter structure than gel batteries. This provides advantages especially for applications such as portable energy solutions and electric vehicles.

**Gel Battery:** Heavier, which makes mobility difficult.

**Conclusion:** Lightweight makes LiFePO4 batteries preferred in areas such as portable devices and electric vehicles.

### 3. Charging Speed

**LiFePO4 Battery:** Can be charged quickly. Fast charging up to 80-90% capacity, the remaining 10% is completed more slowly.

**Gel Battery:** Charging time is longer and cannot handle fast charging. If charged quickly, its life will be shortened.

**Conclusion:** LiFePO4 batteries are more suitable for applications requiring fast charging.

### 4. Deep Discharge Tolerance

**LiFePO4 Battery:** It can deep discharge to 80-90% and even in this case maintains its long life.

**Gel Battery:** If deep discharged, its life will be significantly shortened. It is generally recommended to use it before it falls below 50%.

**Result:** LiFePO4 batteries are resistant to deep discharge and enable more efficient energy use.

### 5. Security

**LiFePO4 Battery:** It is considered the safest form of lithium-ion technology. It has a very low risk of explosion and is resistant to overheating. It is also controlled by an advanced BMS.

**Gel Battery:** Safer, but should be protected from overcharging and overdischarging.

**Conclusion:** LiFePO4 batteries perform much better than gel batteries in terms of safety.

### 6. Environmental Awareness

**LiFePO4 Battery:** Lithium iron phosphate chemistry has less environmental impact than other lithium batteries and is recyclable.

**Gel Battery:** Since it contains lead-acid, it causes more damage to the environment and the recycling process is more difficult and costly.

**Bottom Line:** LiFePO4 batteries are a more environmentally friendly and sustainable option.

### 7. Performance and Efficiency

**LiFePO4 Battery:** Provides high energy efficiency and maintains its capacity for a longer time. It also does not compromise its performance even at high current output.

**Gel Battery:** Performs less efficiently and may lose its capacity quickly when high current is drawn.

**The result:** LiFePO4 batteries deliver consistently high performance and efficiency.

## Why Choose LiFePO4?

Providing long life and more charging cycles,

Being lighter and easier to carry,

Fast charging and deep discharge resistance,

Providing a safe, environmentally friendly and efficient energy solution,

LiFePO4 batteries are more advantageous than gel batteries due to their resistance to high current demands and continuous high performance.

For these reasons, LiFePO4 batteries are a better choice than gel batteries in terms of long-term investment, safety and efficiency.



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Management Office: Ortadoğu Plaza / Şişli / İstanbul / Turkey





## TECHNICAL SPECIFICATIONS AND DIMENSIONS

MODEL	VOLT	AH	SIZE	WEIGHT KG
12105	12	105	Height: 20.5 cm Width: 20.5 cm Depth: 24.5 cm	9,50
12105BT	12	105	Height: 20.5 cm Width: 20.5 cm Depth: 24.5 cm	9,50
12210BT	12	210	Height: 20.5 cm Width: 20.5 cm Depth: 46.5 cm	18,80
12320BT	12	230	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	20,50
12280BT	12	280	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	25,50
12420BT	12	420	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	38,50
24105	24	105	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	19,50
24105BT	24	105	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	19,50
24210BT	24	210	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	38,50
24230BT	24	230	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	41,50
24280BT	24	280	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	50,50
24560BT	24	560	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	100,50
48105BT	48	105	Height: 20.5 cm Width: 43.5 cm Depth: 46.5 cm	38,50
48210BT	49	210	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	78,00
48230BT	48	230	Height: 30.5 cm Width: 43.5 cm Depth: 46.5 cm	83,00
48280BT	48	280	Height: 56.0 cm Width: 43.5 cm Depth: 56.5 cm	100,00
48320BT	48	320	Height: 56.0 cm Width: 43.5 cm Depth: 56.5 cm	114,00

### Conditions:

- Shipping costs are the responsibility of the buyer.
- For bulk and wholesale purchases, please contact our Dealer Manager.
- Our products have a 2-year warranty.
- Warranty tracking is done with serial number.
- Calculations are made using the daily exchange rate.
- Prices vary for special production sizes.
- In case of non-standard use, our products will be out of warranty.
- If the Warranty Label is removed, the product is out of warranty.
- Do not use as a starter battery.
- Our company is not responsible for any problems that may arise during the transportation of the products. Warehouse is recommended.
- Be careful when shipping due to its explosive properties.

All of our products are equipped with prismatic cells and active balanced BMS. Cylindrical cells are not used.

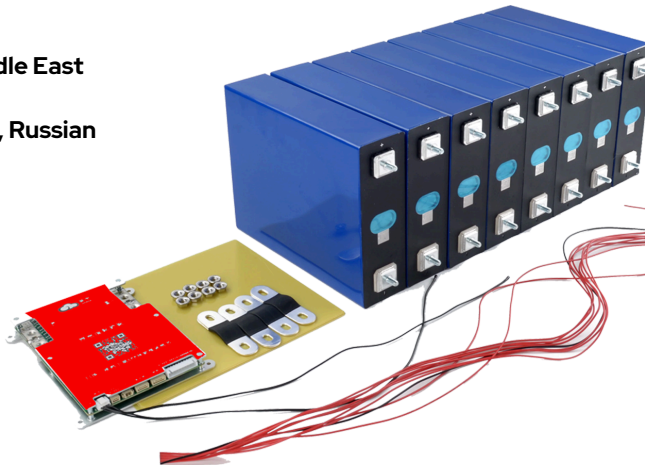
For More Options and Special Use, please contact us.

Support Areas:

Europe, Africa, South Asia, Middle East

Supported Languages:

Turkish, English, Arabic, French, Russian



### AREAS OF USE

- LIGHTING SYSTEMS
- HOUSING SYSTEMS
- SMALL HOME APPLIANCES
- BOAT, CARAVAN SYSTEMS
- CAMERA SYSTEMS
- CAMPING AND TENT SYSTEMS
- INDUSTRIAL DEVICES
- SOLAR GENERATOR SYSTEMS
- SOLAR ENERGY SYSTEMS
- WIND ENERGY SYSTEMS

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