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> Dumfume 12.8V 50Ah LiFePO4 Lithium Battery User Manual

dumfume 12.8V 50Ah

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Model: 12.8V 50Ah

1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your Dumfume 12.8V 50Ah LiFePO4 Lithium Battery. Designed for portable applications such as RVs, camping, solar systems, and home energy storage, this battery offers a compact, lightweight, and high-performance power solution. Key features include a compact size of 7.72 x 6.57 x 6.69 inches, a weight of only 11.5 lbs, a 640Wh capacity, 4000+ life cycles, a built-in 50A Battery Management System (BMS), and low-temperature protection.



Image: The Dumfume 12.8V 50Ah LiFePO4 battery is suitable for a wide range of applications including RVs, camping, solar power systems, and home energy storage.

2. SAFETY INFORMATION

Read all safety instructions carefully before operating the battery to prevent injury or damage.

- The built-in 50A Battery Management System (BMS) provides comprehensive protection against overcharge, over-discharge, overcurrent, short circuits, and high temperatures. The BMS will automatically disconnect the battery if the discharge current exceeds $170\pm 30A$ to ensure optimal safety.
- Do not use this 12V 50Ah battery as a starting battery for vehicles, golf carts, or jacks. It is not designed for high cranking current applications.
- Battery charging performance requires ambient temperatures of $5^{\circ}C$ ($41^{\circ}F$) or higher. Charging below this temperature may result in damage.
- The battery can operate in extreme temperatures from $-20^{\circ}C$ to $70^{\circ}C$ ($-4^{\circ}F$ to $158^{\circ}F$).
- Charge and discharge the battery once every six months during storage to prevent damage from disuse.



Image: The battery features multiple protection mechanisms including short-circuit, over-charge, over-temperature, over-voltage, over-current, and anti-static protection.

3. PRODUCT OVERVIEW

The Dumfume 12.8V 50Ah LiFePO₄ Lithium Battery is a compact and lightweight power storage unit. It utilizes advanced LiFePO₄ cell technology for a long lifespan and high energy efficiency. The battery includes an integrated carrying strap for portability and robust terminals for secure connections.



Image: The Dumfume 12.8V 50Ah LiFePO4 Lithium Battery, showcasing its compact design.

Compact and Lightweight Design

This battery is significantly smaller and lighter than traditional lead-acid batteries, making it ideal for portable applications. It is approximately 35% smaller and 75% lighter than a comparable 100Ah lead-acid battery.

12.8V50Ah

LITHIUM BATTERY

35%
Smaller

75%
Lighter



Image: The battery's compact size and light weight offer enhanced portability.

Dimensions

The physical dimensions of the battery are 7.72 inches (L) x 6.57 inches (W) x 6.69 inches (H).

DIMENSIONS

L7.68×W6.5×H6.8IN



Image: Detailed dimensions of the 12.8V 50Ah LiFePO4 battery.

Performance Comparison

Compared to a 12V 100Ah lead-acid battery, the Dumfume LiFePO4 battery offers superior capacity, lighter weight, longer lifespan, and includes a Battery Management System (BMS).

Ours	Others
 <p data-bbox="357 696 692 741">640Wh Capacity</p> <hr/> <p data-bbox="344 801 673 846">11.68lbs Weight</p> <hr/> <p data-bbox="331 902 707 947"><10 Years Lifespan</p> <hr/> <p data-bbox="276 1010 748 1055">4000~15000 Life Cycles</p> <hr/> <p data-bbox="453 1106 624 1151">Yes BMS</p> <hr/> <p data-bbox="459 1240 555 1330">✓</p>	 <p data-bbox="935 696 1264 741">600Wh Capacity</p> <hr/> <p data-bbox="919 801 1248 846">63.93lbs Weight</p> <hr/> <p data-bbox="911 902 1257 947">1-3Years Lifespan</p> <hr/> <p data-bbox="919 1010 1294 1055">200-500 Life Cycles</p> <hr/> <p data-bbox="1034 1106 1198 1151">No BMS</p> <hr/> <p data-bbox="1023 1240 1118 1330">✗</p>

Image: Comparison of Dumfume LiFePO4 battery features against traditional lead-acid batteries.

Energy Capacity

With a total energy capacity of 640Wh, this battery can power various appliances for extended periods. For example, it can run a 1000W air conditioner for 0.64 hours, a 150W refrigerator for 4.2 hours, a 500W heater for 1.28 hours, or an 800W electric kettle for 0.8 hours.

HOPEFUL EXPECTATION & POWERFUL ENERGY

640 Wh



Air Conditioner(1000W)
0.64hours



Refrigerator(150W)
4.2hours



Heater(500W)
1.28hours



Electric Kettle(800W)
0.8hours

Image: Examples of appliance run times based on the battery's 640Wh capacity.

4. SETUP

Follow these steps for initial setup and connection of your battery.

- Initial Charge:** Before initial use, ensure the battery is fully charged using a compatible LiFePO4 charger.
- Connection:** Connect the battery to your system (e.g., solar charge controller, inverter) using appropriate cables and connectors. Always ensure correct polarity: positive (+) to positive (+) and negative (-) to negative (-).
- Series/Parallel Configuration:** For expanding your power system, the battery supports up to 4S4P (4 series, 4 parallel) configurations, allowing for a maximum system of 51.2V 400Ah. When connecting batteries in series or parallel, ensure the voltage difference between each battery is controlled within 0.1V before making connections.
- System Parameters:** Refer to the 'Controller/Inverter Setting Parameters' for optimal configuration of your charge controller and inverter.

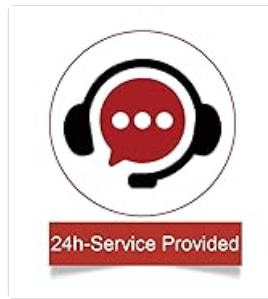


Image: Recommended controller and inverter settings for optimal battery performance in a solar setup.

5. OPERATING INSTRUCTIONS

To ensure optimal performance and longevity of your Dumfume LiFePO4 battery, adhere to the following operating guidelines:

- **Charging:** The battery can be fully charged within approximately 2 hours using the recommended charging current. Always ensure charging occurs at ambient temperatures of 5°C (41°F) or higher. The BMS will intelligently cut off charging if temperatures are too low (below 0°C / 32°F).
- **Discharging:** The battery is designed to operate efficiently in a wide temperature range from -20°C to 70°C (-4°F to 158°F). The BMS will stop discharging if the temperature drops below -20°C (-4°F).
- **Voltage and Current Deviations:** Note that under various temperature and humidity measurement methods and instruments, voltage and current may deviate by 1% to 5%.



Image: The battery features intelligent low-temperature cut-off protection for both charging and discharging.

6. MAINTENANCE

Proper maintenance ensures the longevity and performance of your battery.

- **Regular Charging/Discharging:** If the battery is stored for an extended period, charge and discharge it once every six months to prevent damage from prolonged disuse.
- **Terminal Care:** Keep battery terminals clean and free from corrosion. Use a wire brush if necessary and ensure connections are tight.
- **Storage:** Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures. The recommended storage temperature range is -10°C to 45°C.

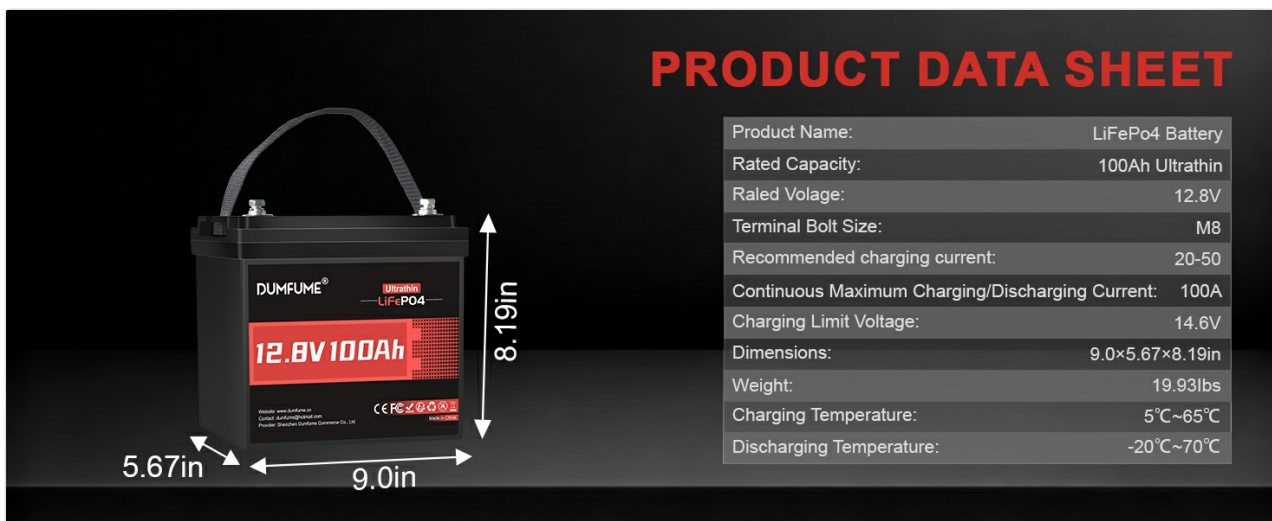
7. TROUBLESHOOTING

If you encounter issues with your battery, refer to the following common troubleshooting steps:

- **Battery Disconnects:** If the battery unexpectedly disconnects, the built-in BMS may have activated a protection feature (e.g., overcurrent, over-discharge, high temperature). Disconnect the load or charger and allow the battery to recover. The battery should automatically reset once the condition is resolved.
- **Charging Issues at Low Temperatures:** If the battery is not charging, ensure the ambient temperature is above 5°C (41°F). The BMS will prevent charging below this temperature.
- **No Power Output:** Check all cable connections for tightness and correct polarity. Verify that the load is within the battery's continuous discharge current limits.
- **Persistent Issues:** For any persistent issues not resolved by these steps, refer to the detailed specifications or contact Dumfume customer support.

8. SPECIFICATIONS

Detailed technical specifications for the Dumfume 12.8V 50Ah LiFePO4 Lithium Battery:



Specification	Value
Product Name:	LiFePO4 Battery
Rated Capacity:	100Ah Ultrathin
Rated Voltage:	12.8V
Terminal Bolt Size:	M8
Recommended charging current:	20-50
Continuous Maximum Charging/Discharging Current:	100A
Charging Limit Voltage:	14.6V
Dimensions:	9.0x5.67x8.19in
Weight:	19.93lbs
Charging Temperature:	5°C~65°C
Discharging Temperature:	-20°C~70°C

Image: Product Data Sheet with key specifications.

Specification	Value
Brand	dumfume
Model	12.8V 50Ah
Rated Voltage	12.8 Volts
Rated Capacity	50Ah
Energy Capacity	640Wh
Built-in BMS	50A
Max Discharge Current (BMS Disconnect)	170±30A
Life Cycles	4000+ cycles
Lifespan	Up to 10 years

Specification	Value
Dimensions (L×W×H)	7.72×6.57×6.69 inches
Item Weight	11.5 lbs (5.9 Kilograms)
Charging Temperature Range	5°C to 65°C (41°F to 149°F)
Discharging Temperature Range	-20°C to 70°C (-4°F to 158°F)
Storage Temperature Range	-10°C to 45°C (14°F to 113°F)
Vehicle Service Type	RV

9. WARRANTY AND SUPPORT

The Dumfume 12.8V 50Ah LiFePO4 battery is constructed with A-grade LiFePO4 cells, designed for exceptional durability and performance, offering 4000+ cycles and a lifespan of up to 10 years under proper usage and maintenance.

For any safety concerns, technical assistance, or warranty claims, the Dumfume Support Team is available 24/7 to provide prompt and helpful responses. Please refer to the official Dumfume website or your purchase platform for specific contact information and warranty details.