

yeagulch YS95345

yeagulch 12V 50Ah LiFePO4 Lithium Battery Instruction Manual

Model: YS95345

1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your yeagulch 12V 50Ah LiFePO4 Lithium Battery. This battery is designed for energy storage applications, offering high energy density and a long cycle life. Please read this manual thoroughly before installation and operation.



Image 1: The yeagulch 12V 50Ah LiFePO4 Lithium Battery, featuring a compact design and a durable handle for portability.

2. SAFETY INFORMATION

Adherence to safety guidelines is crucial to prevent injury and damage. Always handle the battery with care.

- **Do Not Use for Engine Starting:** This 12.8V 50Ah LiFePO4 battery is designed solely for energy storage. It is not suitable for starting devices, golf carts, or jacks.
- **Avoid Short Circuits:** Ensure proper polarity when connecting. A short circuit can cause severe damage to the battery and connected equipment, and poses a fire risk.
- **Ventilation:** While LiFePO4 batteries are generally safer, ensure adequate ventilation during charging and discharging to prevent heat buildup.
- **Temperature Limits:** Operate the battery within the specified temperature ranges. Extreme temperatures can affect performance and lifespan.
- **Physical Damage:** Do not drop, puncture, or expose the battery to strong impacts. If the battery is damaged, do not use it.
- **Disassembly:** Do not attempt to disassemble or modify the battery. This can lead to dangerous

situations and voids the warranty.

- **Water Exposure:** Avoid exposing the battery to water or excessive moisture, despite its IP67 test passing for impact resistance.



Image 2: The integrated Battery Management System (BMS) provides protection against low/high temperature, overcharge, over-discharge, over-current, and short circuits.

3. PRODUCT OVERVIEW AND FEATURES

The yeagulch 12V 50Ah LiFePO4 Lithium Battery is engineered for reliability and performance in various applications.

Key Features:

- **Ultra-Lightweight & Compact:** Weighing only 11.5 lbs and measuring 7.72 x 6.57 x 6.69 inches, it is significantly lighter and smaller than traditional lead-acid batteries, enhancing portability and installation flexibility.
- **Advanced BMS Protection:** Equipped with a 50A Battery Management System (BMS) that safeguards against overcharge, over-discharge, short-circuit, overheating, over-current, and ensures cell balancing. This system is UL Listed for safety.
- **Extended Cycle Life:** Delivers over 4000 cycles at 100% Depth of Discharge (DOD) and up to 15,000 cycles at 60% DOD, offering a lifespan 3-5 times longer than lead-acid batteries.
- **Wide Operating Temperature Range:** Operates flawlessly from -40°C to 60°C (-40°F to 140°F). Features low-temperature protection that intelligently manages charging and discharging in cold environments.
- **Durable Construction:** Features an ABA casing for impact resistance and passes rigorous vibration and IP67 tests, ensuring reliability in challenging conditions.
- **Versatile Applications:** Ideal for RVs, camping, solar power systems, off-grid setups, security cameras, lighting, boats, and home energy storage.



Image 3: Comparison highlighting the superior capacity, lighter weight, longer lifespan, and integrated BMS of LiFePO4 batteries compared to lead-acid alternatives.



Image 4: Illustrates various applications including RVs, solar panels, home storage, monitoring systems, and trolling motors.

4. SPECIFICATIONS

Attribute	Value
Model Number	YS95345
Nominal Voltage	12.8V
Capacity	50Ah (640Wh)
Weight	11.5 lbs
Dimensions (L x W x H)	7.72 x 6.57 x 6.69 inches
BMS Output Current	50A
Cycle Life (100% DOD)	4000+ cycles
Cycle Life (60% DOD)	15,000 cycles
Operating Temperature Range	-40°C to 60°C (-40°F to 140°F)
Charging Temperature Range	0°C to 60°C (32°F to 140°F)
Discharging Temperature Range	-20°C to 60°C (-4°F to 140°F)
Terminal Type	M8



Image 5: Detailed dimensions of the battery (L7.72" x W6.57" x H6.69") and specifications for the M8 terminal (8mm diameter, 16mm length).

5. SETUP AND INSTALLATION

Proper setup is essential for optimal performance and safety.

5.1 Initial Inspection

- Upon receiving the battery, inspect it for any signs of physical damage.
- Verify that all components, including terminal bolts and caps, are present.

5.2 Connecting the Battery

- Ensure all connected devices are turned off before making any connections.
- Connect the positive (+) terminal of the battery to the positive (+) input of your system.
- Connect the negative (-) terminal of the battery to the negative (-) input of your system.
- Use appropriate M8 ring terminals and ensure connections are tight and secure to prevent resistance and overheating.
- It is recommended to use a fuse or circuit breaker between the battery and your load for protection.

5.3 Series and Parallel Connections

The yeagulch 12V 50Ah LiFePO4 battery supports both series and parallel connections to meet various power requirements.

- **Parallel Connection (Increased Capacity):** Connect batteries in parallel to increase the total Amp-hour (Ah) capacity while maintaining the nominal voltage. It is recommended not to exceed 4 batteries in

parallel. Ensure all batteries are at a similar state of charge before connecting in parallel.

- **Series Connection (Increased Voltage):** Connect batteries in series to increase the total voltage. For example, 4 batteries in series will create a 48V system. It is recommended not to exceed 4 batteries in series. Ensure all batteries are of the same model, capacity, and state of charge when connecting in series.

6. OPERATING INSTRUCTIONS

6.1 Charging

- Use a LiFePO4 compatible charger. Chargers designed for lead-acid batteries may not be suitable and could damage the battery.
- Ensure the charging voltage and current are within the battery's specifications.
- The BMS will protect the battery from overcharging.
- **Low-Temperature Charging Protection:** Charging will be cut off if the battery temperature drops below 0°C (32°F). Charging will resume when the temperature rises above 5°C (41°F).

6.2 Discharging

- The battery can be discharged up to 100% Depth of Discharge (DOD) without significant impact on its lifespan.
- The BMS will protect the battery from over-discharging by cutting off power if the voltage drops too low.
- **Low-Temperature Discharging Protection:** Discharging will be cut off if the battery temperature drops below -20°C (-4°F).



Image 6: Diagram illustrating the intelligent low-temperature protection, showing charging cut-off below 0°C/32°F, charging recovery above 5°C/41°F, and discharging cut-off below -20°C/-4°F.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your battery.

- **Terminal Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean terminals with a wire brush if necessary and ensure they are securely tightened.
- **Cleaning:** Keep the battery casing clean and free from dust and debris. Use a dry cloth for cleaning. Do not use solvents or harsh chemicals.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50-70% of its capacity. Store in a cool, dry place away from direct sunlight and extreme temperatures. Recharge every 3-6 months to prevent deep discharge.
- **Avoid Deep Discharge During Storage:** While LiFePO4 batteries tolerate deep discharge during use, prolonged storage at a very low state of charge can reduce overall lifespan.

8. TROUBLESHOOTING

If you encounter issues with your yeagulch LiFePO4 battery, refer to the following common problems and solutions:

- **Battery Not Charging:**

- Check if the charger is compatible with LiFePO4 batteries.
 - Verify all connections are secure and free from corrosion.
 - Ensure the ambient temperature is within the charging range (above 0°C / 32°F). The BMS will prevent charging below this temperature.
 - Check the charger's indicator lights for error codes.
- **No Power Output:**
 - Check battery voltage. If it's too low, the BMS may have activated over-discharge protection. Recharge the battery.
 - Verify all connections to the load are secure.
 - Check for activated circuit breakers or blown fuses in your system.
 - Ensure the ambient temperature is within the discharging range (above -20°C / -4°F). The BMS will prevent discharging below this temperature.
 - **Reduced Capacity or Short Run Time:**
 - Ensure the battery is fully charged.
 - Verify the load connected is not exceeding the battery's continuous discharge current rating.
 - Check for excessive parasitic loads in your system.
 - If the battery is old, its capacity may naturally degrade over time, though LiFePO4 batteries have a very long cycle life.

If troubleshooting steps do not resolve the issue, please contact customer support.

9. WARRANTY AND SUPPORT

The yeagulch 12V 50Ah LiFePO4 Lithium Battery is built with high-quality Grade-A cells, designed for a long operational life. With proper care and usage, the battery is expected to deliver at least a 10-year lifespan. For technical support, warranty inquiries, or any questions regarding your yeagulch battery, please contact us:

- **Email:** Shipping20@outlook.com