HiXiMi 280Ah

HiXiMi EVE LiFePO4 Cell 3.2V 280Ah Battery Instruction Manual

1. Introduction

This manual provides essential information for the safe and effective use of your HiXiMi EVE 3.2V 280Ah LiFePO4 battery cell. Please read these instructions thoroughly before installation and operation to ensure optimal performance and safety.

2. Specifications

Battery Type	EVE 3.2V 280Ah LiFePO4 battery cell (Lithium Iron Phosphate)
Nominal Voltage	3.2V
Capacity	280Ah
Max. Continuous Discharge Rate	1C
Max. Continuous Charging Rate	1C
Internal Resistance	<0.2mΩ
Working Voltage Range	2.5V ~ 3.65V
Charging Temperature Range	32 ℉ ~ 131 ℉ (0 ℃ ~ 55 ℃)
Discharge Temperature Range	-4 ℉ ~ 140 ℉ (-20 ℃ ~ 60 ℃)
Dimensions (L x W x H)	6.85 x 8.14 x 2.83 inches (174 x 207 x 72 mm)
Weight	11.9 lb (5.4 kg)
Cycle Life	5000+ cycles (up to 8000 cycles with ≥70% capacity retention at 25℃ 0.5C/0.5C)

3. Safety Information

- **Battery Management System (BMS):** These cells do not contain an integrated LiFePO4 BMS.**Before using these cells, it is crucial to connect a suitable BMS for charging and discharging.** A BMS provides multi-protection safety features essential for battery longevity and user safety.
- **Handling:** Handle cells with care. Avoid dropping or subjecting them to strong impacts.
- **Short Circuit Prevention:** Ensure that the positive and negative terminals do not come into contact with each other or with conductive materials.
- **Temperature:** Operate and store the cells within the specified temperature ranges to prevent damage and ensure safety.
- **Ventilation:** Ensure adequate ventilation when assembling or operating battery packs.
- **Disposal:** Dispose of batteries according to local regulations. Do not incinerate.

4. Setup and Installation

These EVE LiFePO4 cells are designed for DIY battery pack assembly. They support multiple series or parallel connections. When building a battery pack, consider the following:

- **Cell Matching:** All cells are brand new A-grade and are matched for internal resistance, voltage, and capacity. They are balanced upon delivery.
- **Busbars and M6 Nuts:** The cells come with busbars and M6 nuts for connection. Ensure secure and proper connections to prevent resistance and overheating.
- **BMS Integration:** A suitable LiFePO4 Battery Management System (BMS) is required for any battery pack built with these cells. The BMS protects against overcharge, over-discharge, overcurrent, and short circuits, and balances cell voltages.

- **Series/Parallel Connections:** Carefully plan your series and parallel connections to achieve the desired voltage and capacity for your application. Consult relevant electrical engineering guidelines for safe battery pack assembly.

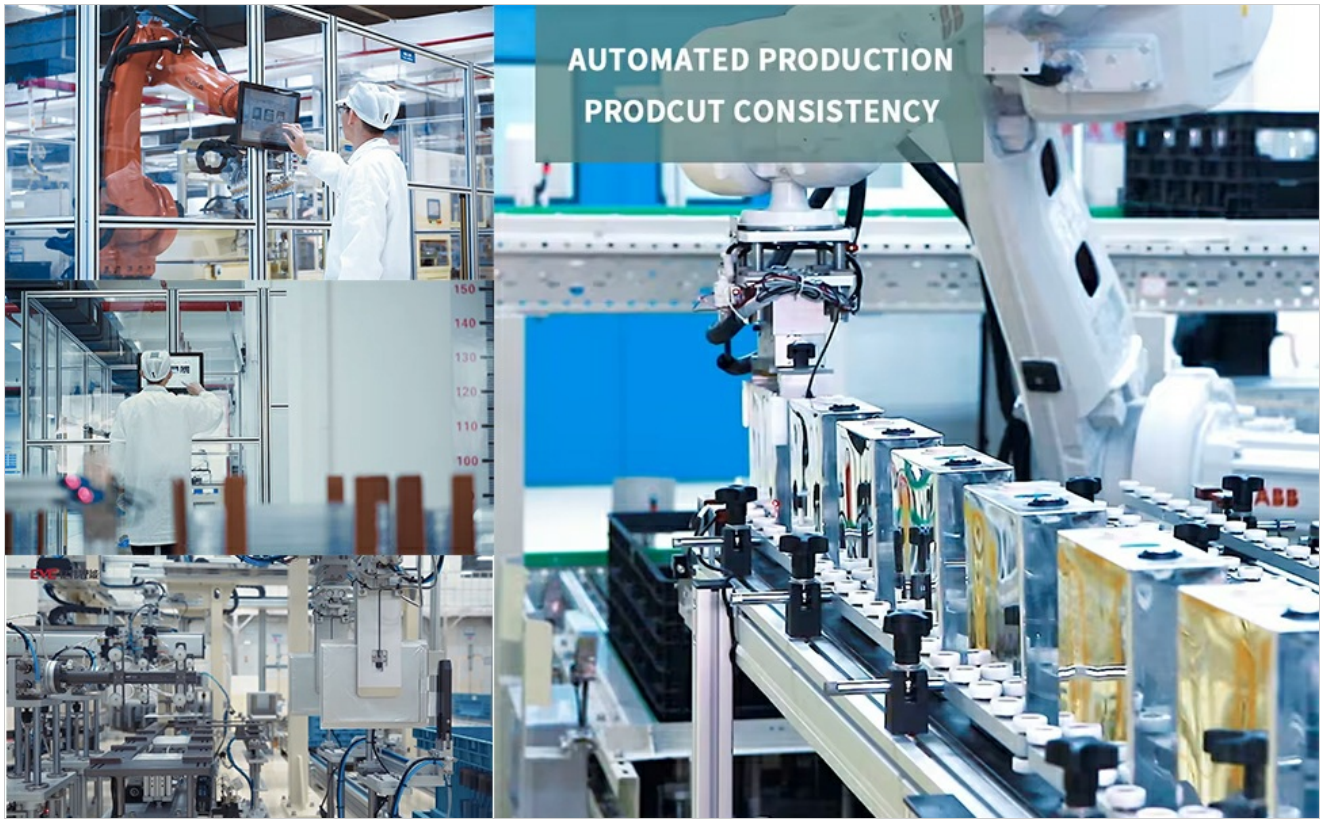

Image: HiXiMi EVE LiFePO4 cell showing its dimensions and included accessories like busbars and M6 nuts for assembly.

5. Operating Instructions

- **Charging:** Charge the battery pack using a charger compatible with LiFePO4 batteries and controlled by a BMS. The maximum continuous charging current is 1C. Ensure charging occurs within the specified temperature range of 0 °C to 55 °C.
- **Discharging:** Discharge the battery pack within the working voltage range of 2.5V to 3.65V per cell. The maximum continuous discharge current is 1C. Ensure discharging occurs within the specified temperature range of -20 °C to 60 °C.
- **Voltage Monitoring:** Regularly monitor the voltage of individual cells within your battery pack, especially during charging and discharging, to ensure they remain within safe operating limits. The BMS should manage this automatically.

6. Maintenance

- **Regular Inspection:** Periodically inspect the battery cells and connections for any signs of damage, corrosion, or loose terminals.
- **BMS Functionality:** Ensure your BMS is always functioning correctly to protect the cells. Refer to your BMS manual for specific maintenance procedures.
- **Storage:** For long-term storage, store the cells at approximately 50% state of charge (around 3.2V-3.3V per cell) in a cool, dry place within the recommended temperature range.
- **Cycle Life:** These cells are designed for 5000+ cycles, offering a long service life. Proper use and BMS protection will help achieve this lifespan.

7. Applications

HiXiMi EVE LiFePO4 cells are versatile and suitable for a wide range of applications, including:

- Off-grid solar power systems
- Recreational Vehicles (RV)
- Marine and boat applications
- General energy storage solutions
- Camping and outdoor activities
- Fish finders
- House alarm security systems
- Emergency lighting
- Uninterruptible Power Supplies (UPS)
- Backup power supply systems

Image: Visual representation of diverse applications for LiFePO4 battery cells, such as RVs, marine vessels, solar energy systems, and general power backup.

8. Product Images

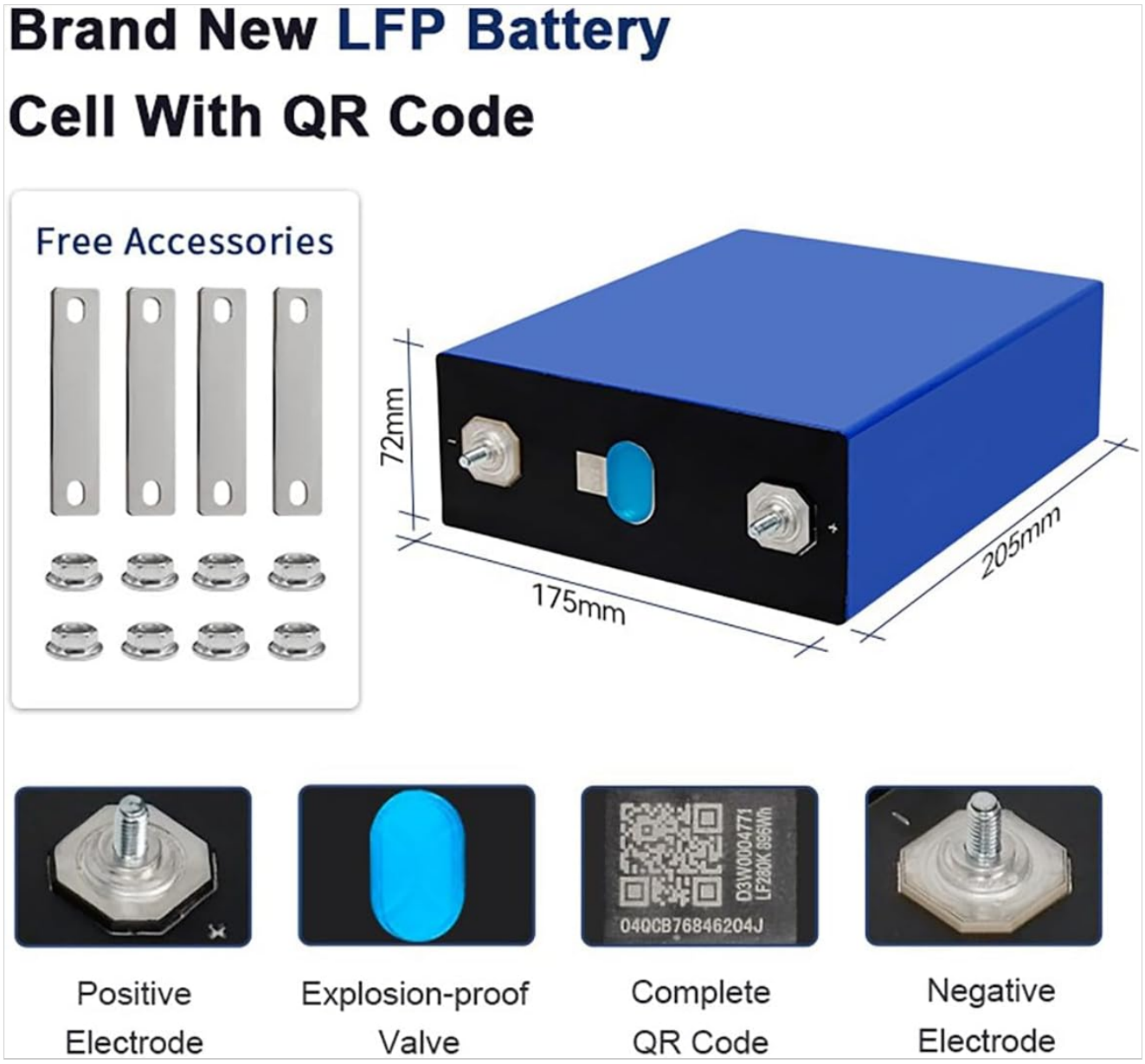

Figure 1: Front view of the HiXiMi EVE 280Ah LiFePO4 battery cell, showing its terminals.

Figure 2: The battery cell with indicators for 280Ah capacity and 3.2V voltage, emphasizing its ultra-long life cycle.

Figure 3: Display of various safety certifications for the LiFePO4 cells, such as GB, CE, UL, IEC, MSDS, and UN38.3, highlighting ultimate safety.

Figure 4: View of an automated production line, emphasizing product consistency in battery cell manufacturing.

9. Product Videos

Automated Production Line of EVE Factory

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Video: This video showcases the fully automated production line at the EVE factory, demonstrating the precision and scale of manufacturing for these battery cells.

LiFePO4 Prismatic Cell Automatic Production Line

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Video: A detailed look at the automatic production line for LiFePO4 prismatic cells, highlighting the manufacturing process and quality control.

10. Troubleshooting

If you encounter issues with your battery cells or assembled pack, consider the following:

- **No Power Output:**
  - Check all connections for tightness and proper polarity.
  - Verify the BMS is correctly installed and not in a protection state (e.g., over-discharge protection).
  - Ensure the battery pack is adequately charged.
- **Charging Issues:**
  - Confirm the charger is compatible with LiFePO4 batteries and functioning correctly.
  - Check the BMS for overcharge protection activation or cell imbalance.
  - Ensure charging temperature is within the specified range.
- **Reduced Capacity/Run Time:**
  - Verify that all cells are balanced. An unbalanced pack can lead to premature BMS cutoff.
  - Check for any damaged cells within the pack.
  - Ensure the battery is not consistently discharged beyond its recommended depth of discharge.
- **Overheating:**
  - Immediately disconnect the load/charger.

- Check for short circuits or excessive current draw.
- Ensure adequate ventilation around the battery pack.

For complex issues, consult a qualified professional or refer to the specific documentation for your Battery Management System.

11. Warranty and Support

HiXiMi LiFePO4 cells are designed for durability and performance, offering a long service life. While specific warranty details for individual cells may vary, the product is generally backed by a quality promise. For warranty claims or technical support, please contact your point of purchase or the manufacturer directly with your product details and purchase information.
It is recommended to retain your purchase receipt and any documentation provided with the cells.