Rechargeable Lithium-ion Battery Specification Approval Sheet

Company: EGbatt Energy Co., Ltd. **Model:** 60145 (50Ah 3.2V) **File Number:** EG-CD60145-LFP-SPEC-002 **Effective Date:** September 26, 2025 **Version:** A3 **Page:** 1 of 10

CUSTOMER NO: _____

Prepared By/Date: _____ **Checked By/Date:** _____ **Approved By/Date:** _____

Signature: _____ **Date:** _____

Customer Receiving Company Name: _____ **Company Stamp:** _____

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1. Scope of Validity This specification is applied exclusively to describe the specified battery supplied by EGbatt Energy Co., Ltd.

2. Model: 60145-50Ah

3. Cell Specifications

No.	Items	Specifications	Notes
1	Rated capacity	50Ah	1.0C standard discharge
2	Delivery capacity	≥50Ah	1.0C standard discharge
3	Rated energy	160Wh	
4	Nominal voltage	3.2V	
5	End-of-discharge voltage	2.5V	
6	Charge limit voltage	3.65V	
7	Charging upper limit voltage	3.8V	
8	Discharge cut-off voltage	2.0V	
9	Standard charging current	1.0C (50A)	1.0C CC/CV to 3.65V, cut off at 0.05C
10	Standard discharging current	1.0C (50A)	1.0C constant current to 2.5V
11	Max. charging current	3.0C (150A)	Instantaneous charging, not for cycling
12	Max. discharging current	5.0C (250A)	Instantaneous discharging, not for cycling
13	Internal impedance (single cell)	≤0.8mΩ	1kHz AC
14	Max. charging temperature	50° C	
15	Max. discharging temperature	50° C	
16	Min. charging temperature	0° C	
17	Min. discharging temperature	-20° C	

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4. Battery/Cell Performance Test Criteria

4.1 Visual Inspection of Appearance There shall be no visible defect such as flaw, crack, rust, stain or leakage that may adversely affect the commercial value of the batteries.

4.2 Test Conditions Temperature: 25 ± 5° C Relative Humidity: 60% ± 25% R.H.

4.3 Environment Properties

No.	Items	Testing Method & Condition	Criteria
1	RT Cycle Life (0.5C)	0.5C CC to 3.65V (0.05C cut-off), 0.5C CC to 2.5V, cycle to 80% of initial capacity	≥3000 cycles
2	RT Cycle Life (1C)	1C CCCV to 3.65V (0.05C cut-off), 1C CC to 2.5V, cycle to 80% of initial capacity	≥2000 cycles
3	-20° C Discharge	1C discharge to 2.0V at -20° C	Capacity retention ≥80%
4	RT Capacity Retention & Recovery	Charge at 25° C, store 28 days at 25° C, then test 0.5C capacity at 25° C	Retention ≥96%, Recovery ≥97%
5	60° C Capacity Retention & Recovery	Charge at 25° C, store 7 days at 60° C, then test 0.5C capacity at 25° C	Retention ≥94%, Recovery ≥95%

4.4 Mechanical Properties

- **Crush Test:** Crush with 10kN or until voltage = 0V or deformation = 30%. No fire or explosion.
- **Vibration Test:** 10–55Hz, 1.6mm amplitude, 30 min per axis (X,Y,Z). No fire, leakage or explosion.
- **Free Fall Test:** Drop from 1.5m (terminals down) onto concrete. No fire, leakage or explosion.

4.5 Safety Performance

- **Thermal Impact Test:** 130° C ±2° C for 30 min. No fire, leakage or explosion.
- **Short-Circuit Test:** External short ≤80mΩ for 10 min at 25° C. No fire or explosion.
- **Over-Charge Test:** 1C charge to 110% of cut-off voltage or 1.15h. No fire or explosion.
- **Over-Discharge Test:** 1C discharge for 90 min. No fire, leakage or explosion.
- **Low Pressure Test:** ≤11.6 kPa for 6h. No fire, leakage or explosion.
- **Soak Test:** Immerse in 3.5% NaCl for 2h. No fire or explosion.

5. Initial Cell Dimensions

No.	Items	Criteria
1	Diameter	60.35 ± 0.50 mm
2	Height (including pole)	148.33 ± 0.50 mm
3	Weight	920 ± 15 g
4	Pole column height	2.5 ± 0.05 mm
5	Pole column spacing	34 ± 0.1 mm
6	Pole column diameter	Ø13.5 ± 0.1 mm

6. Notice for Battery Pack Assembly Avoid impacts, high temperature, or contact with sharp objects during assembly.

7. Others

7.1 Cell Connection

- Direct soldering to cell terminals is strictly prohibited.
- Lead tabs must be spot-welded first.

7.2 Prevention of Short Circuit Use adequate insulation between wires and cells.

7.3 Prohibition of Disassembly Never disassemble cells. Electrolyte is harmful.

7.4 Prohibition of Disposal into Fire Do not dispose cells into fire — risk of explosion.

7.5 Prohibition of Immersion Do not soak cells in any liquid (water, seawater, drinks, etc.).

7.6 Battery Cell Replacement Must be performed by supplier only.

7.7 Prohibition of Using Damaged Cells Do not use cells with damage, leakage, or abnormal smell.

8. Warranty 2 years from date of shipment. Replacement for manufacturing defects only.

9. Storage of the Batteries Store at room temperature, charged to 30–50% capacity. Recharge every 6 months to prevent over-discharge.

10. Other Chemical Reactions Battery performance deteriorates over time due to chemical reactions. Operate within specified conditions to avoid leakage or damage.