



Product Specification

Huizhou Yiwei Lithium Energy Co.

File Ref: LF304-72174

Version: A

Date: 2020-01-05

Product Name: Square Aluminium Lithium Iron Phosphate Battery

Product Model: LF304

Product Specification: 3.2V/304Ah

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1 Scope of application

This standard describes the product type, basic performance, test methods and precautions for square aluminum casing lithium iron phosphate batteries produced by Huizhou Yiwei Lithium Energy Co. This product is applicable to vehicle power system and energy storage system.

2 Product Type

2.1 Product Name: Square Aluminum Lithium Iron Phosphate Battery

2.2 Model: LF304

3 Nominal technical parameters

No.	Item		Parameters	Remark
1	Nominal Capacity		304Ah	(25±2)°C, standard charge and discharge.
2	Nominal Voltage		3.2V	
3	Internal resistance (1KHz)		≤0.5mΩ	
4	Standard Charge and Discharge	Charge/discharge current	0.5C/0.5C	(25±2)°C
		Charge/discharge cut-off voltage	3.65V/2.5V	
5	Maximum charge/discharge current	Continuous charging/discharging	250A/1C	Reference to Appendix VI
		Pulse charge/discharge (30s)	2C/2C	
6	Recommended state of charge (SOC) window		10%~90%	N.A.
7	Charging Operating Temperature		0°C~55°C	Reference to Appendix VI (1C current > 250A, according to 250A)
8	Discharging Operating Temperature		-20°C~55°C	
9	Storage temperature	Short-term (within 1 month)	-20°C~45°C	N.A.
		Long-term (within 1 year)	0°C~35°C	
10	Storage Humidity Month		<95%	
11	Self-discharge rate		≤3%/month	(25±2)°C, 30%~50%SOC Storage

12	Dimensions	Width	174.0±1.0mm	Refer to Appendix I.
13		Thickness (30%-40% SOC)	72.0±1.0mm	
14		Height (total height)	207.0±1.0mm	
15		Height (main body height)	205.0±1.0mm	
16		Pole Center Distance	123.0±0.3mm	
17	Battery weight	5.41±0.3kg		

4 Test conditions

4.1 Test Environment Conditions

Temperature: (25±2)°C

Relative Humidity: 75% - 90%

Atmospheric Pressure: 86kPa~106kPa

4.2 Standard Charging

Under the conditions of (25±2)°C, charge the battery with a constant current of 0.5C (A) until the charging limit voltage of 3.65V is reached, then switch to constant voltage charging until the current is less than or equal to 0.05C (A).

4.3 Standard Discharging

Under the conditions of (25±2)°C, discharge the battery with a constant current of 0.5C (A) until the cutoff voltage of 2.5V is reached. If there are special requirements, the battery can be directly discharged to the cutoff voltage of 2.5V.

5 Battery Performance

5.1 Electrical Performance

No.	Item	Technical Requirements	Test Methods
1	25°C Rate Discharge Performance	Discharge capacity = Rated capacity × 100%. A) 0.5C(A) ≥ 100% B) 1.0C(A) ≥ 100%	After standard charging of the battery, if it is left to rest for 1 hour and then discharged to 2.5V at rates of 0.5C(A) and 1.0C(A), respectively, and if the discharge capacity does not meet the technical requirements, this test may be repeated up to 3 times.

2	Discharge performance at different temperatures	Discharge capacity / Rated capacity × 100% A) At 55°C: ≥95% B) At -20°C: ≥70%	A) After standard charging of the battery, leave it at 55±2 °C for 5h and discharge it to 2.5V at 1.0C(A); B) After standard charging of the battery, it is placed at -20±2 °C for 24h and discharged at 1.0C(A) to 2.5V.
3	25°C charge retention and recovery capability	Remaining capacity ≥ nominal capacity×95% Recovered capacity ≥ nominal capacity × 97	After standard charging of the battery, let it sit open-circuit for 28 days. Then, discharge it at 1.0C(A) to 2.5V and record this as the remaining capacity. After another standard charge, let it sit for 30 minutes, then discharge it again at 1.0C(A) to 2.5V and record this as the recovered capacity.
4	Cycle life at 25°C	≥3500 times @250A/250A	At (25±2)°C, under a 300 kgf fixture: charge the battery with a constant current of 250A to 3.65V, with a cutoff current of 0.05C(A). After 30 minutes of rest, discharge the battery at 250C(A) to 2.5V, let it rest for 30 minutes, and then proceed with the next cycle. Continue this process until the capacity decreases to 80% of the rated capacity.
5	45°C cycle life	≥1800 times @250A/250A	At (45±2)°C, under a 300 kgf fixture: charge the battery with a constant current of 250A to 3.65V, with a cutoff current of 0.05C(A). After 30 minutes of rest, discharge the battery at 250A to 2.5V, let it rest for 30 minutes, and then proceed with the next cycle. Continue this process until the capacity degrades to 80% of the rated capacity.
6	End-of-life management	Capacity/nominal capacity <70%	During the use of the battery, if it exceeds the specified end-of-life limits, the battery should be discontinued from use.

5.2 Safety performance

No.	Item	Technical Requirements	Test Methods
1	Over-discharge	No explosion, no fire, no liquid leakage	Reference: GB/T 31485-2015 "Safety Requirements and Test Methods for Power Batteries for Electric Vehicles"
2	Overcharge	No explosion, no fire	
3	Short circuit	No explosion, no fire	
4	Drop	No explosion, no fire, no liquid leakage	

5	Heating	No explosion, no fire	
6	Squeeze.	Non-explosive, non-flammable	
7	Seawater immersion	Non-explosive, non-flammable	
8	Temperature cycling	Non-Explosive, Non-Flammable, Non-Leaking	
9	Low air pressure	Non-Explosive, Non-Flammable, Non-Leaking	
10	Thermal runaway	Non-explosive, non-flammable	Reference: Safety Technical Conditions for Electric Buses

6 Delivery

The battery should be packaged in a box with a state of charge (SOC) between 30% and 50% for transportation. During transport, it should be protected from severe vibrations, impacts, or pressure, and should be kept away from direct sunlight and rain.

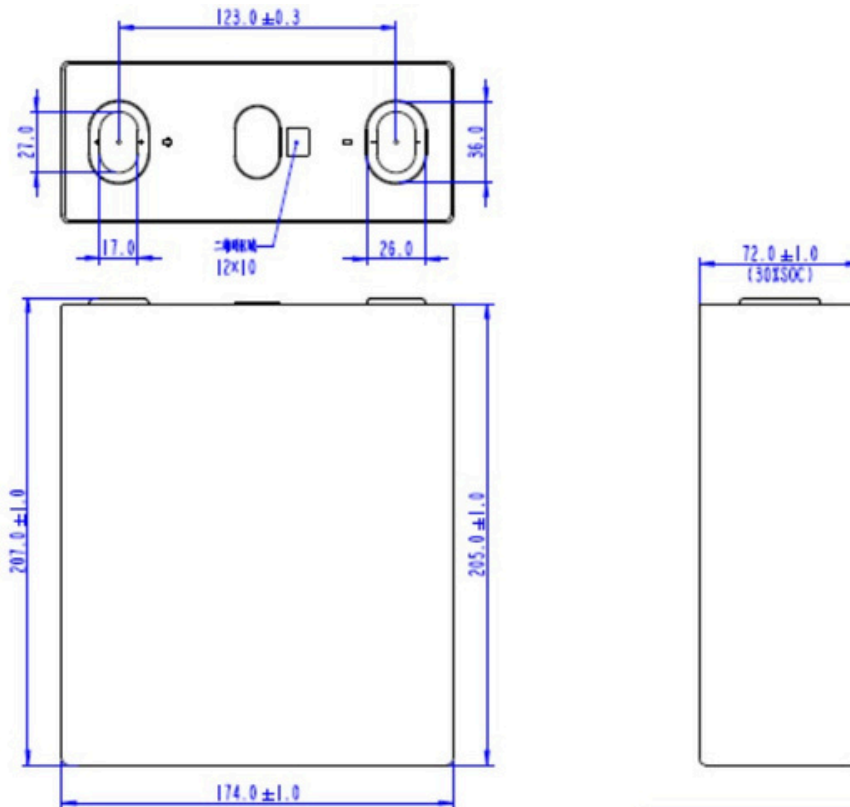
7 Storage

The battery should be stored (for more than 1 month) in a clean, dry, and well-ventilated indoor environment with a temperature range of 0°C to 35°C. Every 6 months, the battery should undergo a charge and discharge cycle, maintaining a state of charge (SOC) between 30% and 50%.

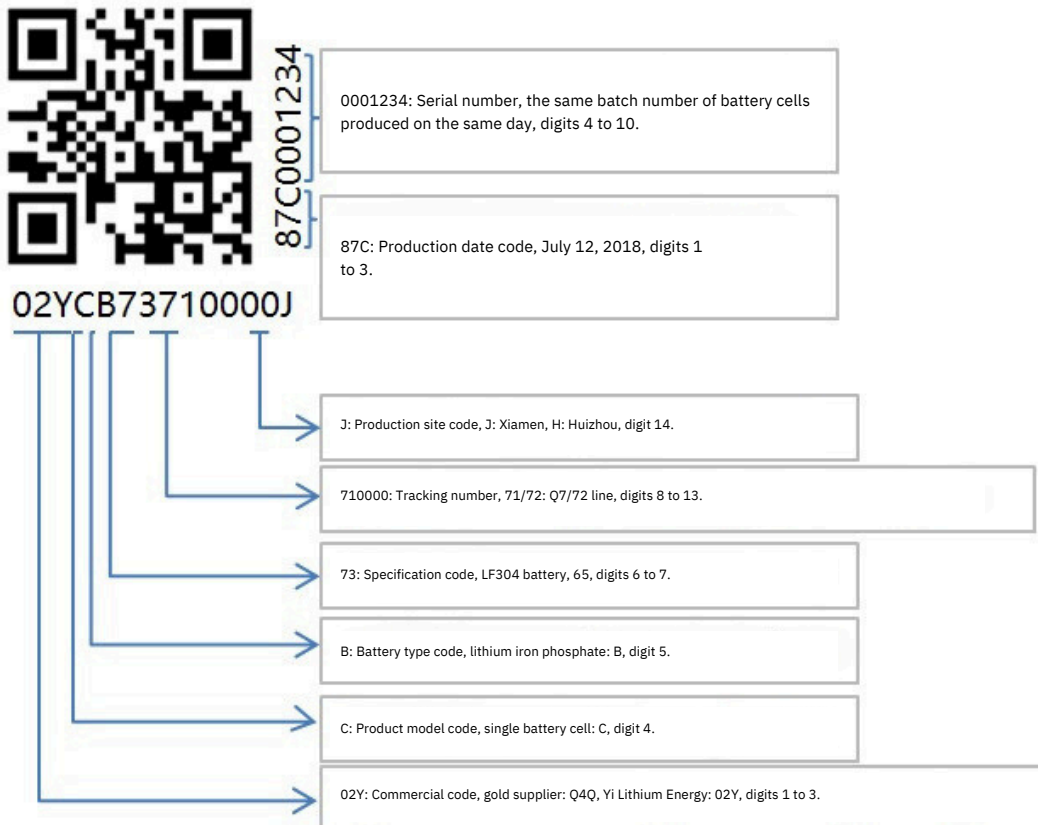
8 Precautions

- 1. Monitoring and Protection:** When charging or discharging the battery, ensure there are conditions for monitoring and protecting the battery's voltage, current, and temperature.
- 2. Avoid Heat and Corrosion:** Keep the battery away from heat sources, open flames, strong acids, strong alkalis, and other corrosive environments.
- 3. Avoid Short Circuits and Incorrect Polarity:** Do not short-circuit the battery or install it with incorrect polarity at any time.
- 4. Do Not Mix Batteries:** Do not mix batteries of different models or from different manufacturers.
- 5. Handle with Care:** Avoid dropping, impacting, or puncturing the battery, and do not disassemble or alter its external structure.
- 6. Storage Conditions:** When not in use for extended periods, store the battery with a charge state between 30% and 50% SOC, and avoid exposure to strong sunlight or high temperatures and humidity.
- 7. Wear Protective Gear:** Use rubber gloves or other protective equipment when handling the battery.
- 8. In Case of Leakage or Damage:** If the battery leaks, smokes, or is damaged, immediately stop using it and contact the manufacturer for assistance.

Appendix I: Battery 2D Diagram



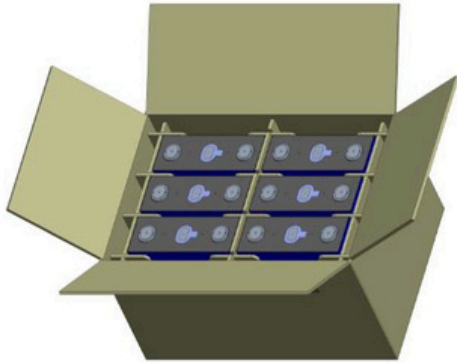
Appendix II: Battery Marking Rules



Appendix III: Battery Appearance Photos



Appendix IV: Battery Packaging Diagrams



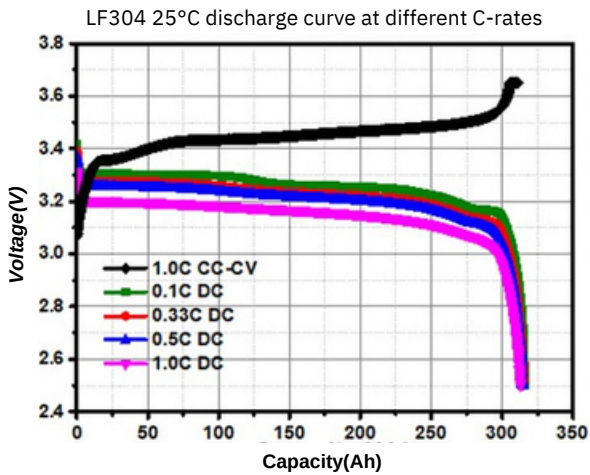
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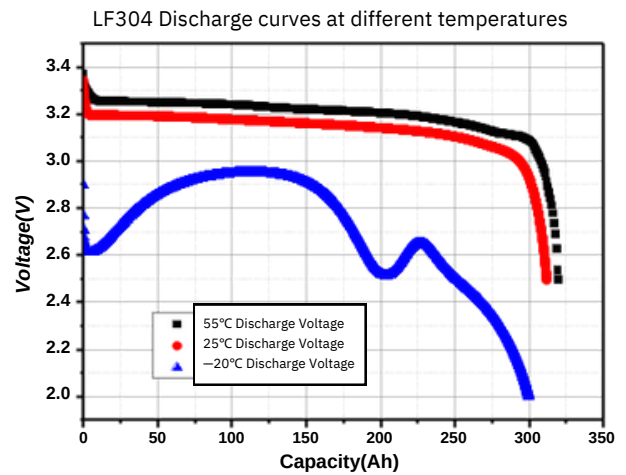
Length × Width × Height: 1300 × 1100 × 1148

Appendix V: Electrical Performance Curves

1. Discharge Rate Curve at 25°C



2. Discharge Curves at Different Temperatures



3. Cycle Curve (1.0C Charge/Discharge 3.65V-2.5V)

