1. Preface

The product specification covers the general performance, test method and quality requirements for the rechargeable lithium ion battery, 2295H4, manufactured and supplied by **LiFeBATT, Inc.**

2. Description

2.1	Description	Rechargeable Lithium-ion Battery
2.2	Dimension	

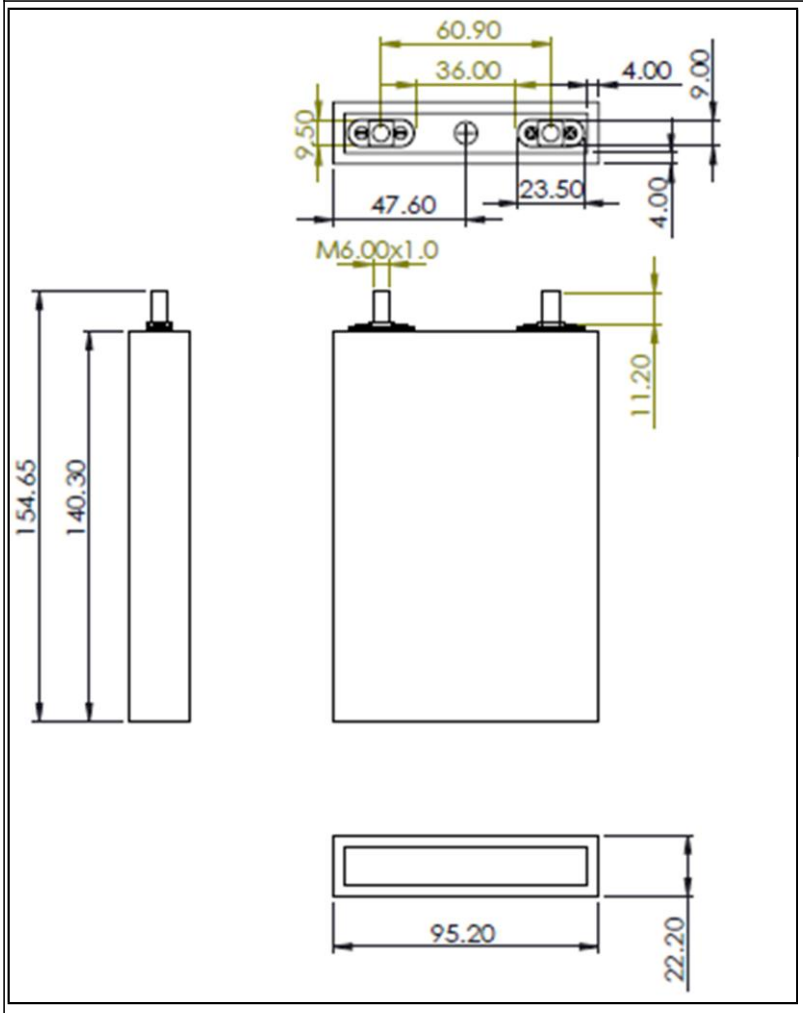
	Typ. (mm)	Max (mm)
T	22.2	23.0
W	95.2	95.5
H	140.3	140.8

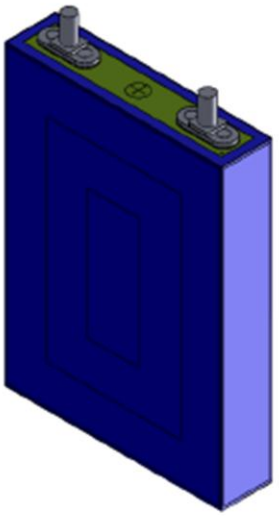
2.3	Weight	Approx. 610 g

3. Specifications

3.1	Nominal Capacity	20000mAh
3.2	Minimum Capacity	19500mAh
3.3	Charging Voltage	3.65 V+0.20/-0.05V
3.4	Typical Voltage	3.30 V
3.5	Cut-off Discharge Voltage	2.10 V
3.6	Charging Method	CC/CV (Constant Current/Constant Voltage)
3.7	Maximum Discharge Current (continuous)	240A
	Maximum Discharge Current (1`s pulse)	500 A
3.8	Maximum Charge Current	100A
3.9	Cycle Life	2000 - 3000
3.10	Operation Temperature	
	Charge Temperature Range	-10~50℃
	Discharge Temperature Range	-40~60℃
3.11	Short Period (1 month)	-30~45℃
	Long Period (6 month)	0~35℃
3.12	Initial Internal Impedance	＜4 mΩ

4. Outline Dimension





5. Appearance

Appearance shall be free from any remarkable scratches, flaws, rust, discoloration or electrolyte leakage

6. Standard Test Conditions

6.1 Environmental Conditions

Unless otherwise specified, all tests stated in this Product Specification are conducted within the temperature range of 28±2℃ and the humidity range of 50±20%RH.

6.2 Test Equipment

6.2.1 Charger and voltmeter

The charger and voltmeter should have an accuracy of ±0.01A and ±0.01V.

6.2.2 Slide Caliper

The slide caliper should have a scale of 0.05mm

6.2.3 Impedance meter

The impedance meter should be operated at 1kHz.

7. Reliability Test Procedure and Criteria

Item		Test Procedure	Criteria
7.1	Appearance	Visual	No Defect and Leakage
7.2	Dimension	Caliper	As item 2.2
7.3	Weight	Scale	As item 2.3
7.4	Fully Charged	CC/CV (Constant Current / Constant Voltage)	Constant Current 10A Cut off Current 1 A Constant Voltage: 3.65 V
7.5	Open Circuit Voltage (as shipment)	Voltmeter	3250 ~3450 mV
7.6	Internal Impedance	Impedance meter at 1kHz AC	<4 mΩ
7.7	Discharge Capacity	After fully charged, discharge at 0.2C current until the voltage reaches 2.1V.	>19500 mAh
7.8	Cycle Life	Charge: CC/CV, CC, CV at 3.65 V, Cut-off Current: 0.05C. Discharge: 2.1V.	Min 300 cycles, typ 2000

8. Safety Test Procedure and Criteria

Item		Test Method	Criteria
8.1	Short Circuit	At room temperature, connecting the positive and negative terminals of the cell with a maximum resistance load of 0.1 ohm until it is completely discharged and the cell's temperature has returned to near ambient temp.	No fire or explosion. The temperature of the exterior cell shall below 150℃
8.2	Abnormal Charge	The cell is to be subjected to a 0.2C charging current and charged to 5.0V	No fire or explosion

		(CC/CV) for 7 hours at RT	
8.3	Crush	Place the cell between 2 iron plates in parallel. Apply a force of 13 kN on the plate by a 32mm diameter piston. Both the wide and narrow sides are subjected to the crush. Separate samples are to be used for each test.	No fire or explosion
8.4	Impact	Place the cell on a flat surface. Put a Φ15.8±0.1mm bar across the center of the sample. Drop a 9.1 ±0.46Kg weight from a height of 610±25mm onto the sample. Both the wide and narrow sides are subjected to the impact. Separate samples are to be used for each test.	No fire or explosion
8.5	Shock	For each shock the cell is to be accelerated during the initial 3 milliseconds the minimum average acceleration is 75g. The peak acceleration is between 125 and 175g. Each cell shall be applied in a total of three shocks of equal magnitude and in each of three mutually perpendicular directions.	No fire, explosion, vent or leak
8.6	Vibration	The cell is to be subjected to simple harmonic motion with an amplitude of 0.8 mm(1.6mm total excursion). The frequency is to be varied between 10 and 55 Hz at the rate of 1.0Hz/min, and return in not less than 90 nor more than 100 mins. The cell is to be tested in three mutually perpendicular directions.	No fire, explosion, vent or leak
8.7	Drop	The cell is to be dropped 10 times from a height of 1.9m onto a hard wood floor.	No fire, explosion or vent

		Each plane (direction) shall be tested at least 1 times.	
8.8	Heating	Put cell into oven. The temperature of the oven is to be raised at a rate of 5±2 ℃/min to a temperature of 130±2℃ and remain for 10 minutes at the temperature.	No fire or explosion

9.Shipping

The state of charge while battery at shipping is 90±10 % of full capacity.

10. Manufacture code

The manufacture code (lot number, month, year) shall be indicated on the battery.

11. Storage for a long time

1.If the battery will be stored for a long time (longer than 1 months), it is better to preserve the battery at the environment of low humidity and low temperature.

2.Use within 3 months (90days) after shipping

3. Please use the torsion 10 kgf-cm to assemble cells into packs. The studs may be damaged if over force.