LIMXPOWER

LP10588187N41 41Ah 锂离子单体电池

Lithium-ion LP10588187N41 41Ah

产品规格书

Product Specification

产品型号

Product Model：LP10588187N41 41Ah

制表 Prepared by	审核 Checked by	批准 Approved by

LIMX POWER BEYOND LIMITS	LIMXPOWER Co., Ltd.
File No. LP10588187N41 41Ah Version 1.0	LP10588187N41 41Ah 电池产品规格书 Lithium-ion LP10588187N41 41Ah Cell Product Specification

Contents

目 录

1. Application Scope 适用范围 2

2. Product Model 产品型号 2

3. Product Size 产品尺寸 2

4. Product Specification 产品规格 3

5. Product Testing Requirements and Standards 产品测试要求及依据标准 4

6. Battery Performance 电池性能 5

7. Shipment 运输 7

8. Warning 警告 7

9. Cautions 注意事项 8

10. Remarks 备注 10

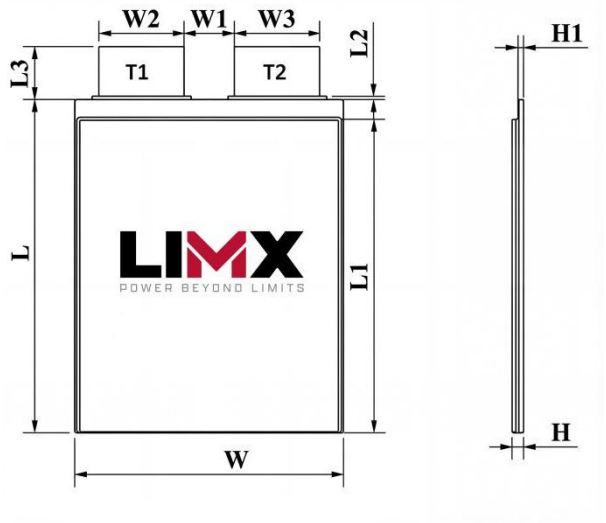
1. Application Scope 适用范围

本产品规格书描述了 LP10588187N41 41Ah 型号锂离子电池产品性能指标。

This product specification describes the performance of LP10588187N41 41Ah lithium-ion batteries.

2. Product Model 产品型号

LP10588187N41 41Ah



3. Product Size 产品尺寸

Item Code 项目代码	Item Name 项目名称	Specification 规格
H	Cell Thickness /电芯最大厚度-50%SOC	10.0mm
	Cell Thickness /电芯最大厚度-100%SOC	10.5mm
W	Wideness of the whole battery/电芯整体宽度	88±1.0mm
L	Length/长度	187±2.0mm
W1	Tab Spacing/极耳间距	15±1mm

W2/W3	Tab Wideness /极耳宽度	25±0.2mm
T1	Cell Tab Thickness-Al/铝极耳厚度	0.4±0.02mm
T2	Cell Tab Thickness-Ni-Cu-Ni/铜镀镍极耳厚度	0.3±0.02mm
L1	Packaging Film Length/电芯包装膜长度	180±0.2mm
L2	Exposed Height of Tab Glue/极耳胶外露高度	0.2~2.5mm
L3	Tab Length/极耳长度	28±2mm
H1	Packaging Film Depth/包装膜坑深	5.25±0.1mm

4. Product Specification 产品规格

No. 序号	Item 项目	Specification 规格	Remark 备注
1	Material system 材料体系	NCM/Si-C	/
2	Charge Ending Voltage 充电截止电压	4.3V	CC/CV
3	Discharge Ending Voltage 放电截止电压	2.5V（T≥0°C) 2.0V（T<0°C)	CC
4	Nominal Voltage 标称电压	3.5V	0.2C discharge
5	Nominal Discharge Capacity 标称容量	41Ah	0.2C discharge
6	AC Initial Impedance 初始内阻	≤1.0 mΩ	Measured at AC 1KHz
7	Charge Current（Std.） 标准充电电流	0.2C	
8	Maximum Charge Current 最大充电电流	1C	15°C~ +40°C

9	Standard Discharge Current 标准放电电流	0.2C	/
10	Maximum Discharge Current 最大放电电流	2C	/
11	Max.Momentary Discharge Current 瞬间最大放电电流	10C@10s	SOC > 50%
12	Operating Temperature 工作温度	Charge Operating Temperature:10~50℃ 充电工作温度：10~50℃ Discharge Operating Temperature:-20~55℃ 放电工作温度：-20~55℃	
13	Storage Temperature 存储温度	1 month -20～45℃; ≤3 months -20～35℃;≤1 year -20～25℃ (≤50%SOC) 储存相对湿度 Storage Relative Humidity ≤85%	
14	Cell Weight 电芯重量	About 367±15g 约 367±15g	
15	Shipping Voltage 出货电压	3.6~3.8V	

5. Product Testing Requirements and Standards 产品测试要求及依据标准

5.1Test Conditions 测试条件

Standard charge (25±2℃): 0.2C constant current (CC) charge to 4.3V, then 4.3V constant voltage charge to a current less than or equal to 0.05C.

标准充电 (25±2℃)：0.2C 恒流恒压充电至 4.3V；截止电流 0.05C。

Standard discharge (25±2℃): 0.2C constant current (CC) discharge to discharge ending voltage.

标准放电 (25±2℃)：0.2C 恒流放电至放电截止电压。

5.2 Requirements of Testing Clamping force 测试夹具力要求

All the tests shall be conducted with splints. (Unless otherwise specified) The clamping force shall be 50±5Kgf/pcs.

所有测试均需在带夹板状态下进行。（除非特别说明）夹具力：50±5 Kgf/pcs。

6. Battery Performance 电池性能

6.1 Electrochemical Characteristics 电化学性能

序号 NO.	Test Item 测试项目	Specification 技术要求	Test Method and Condition 测试方法及条件
1	Discharge performance 放电性能	Discharging Capacity 0.2C ≥nominal capacity 100% 1C ≥nominal capacity 95% 2C ≥nominal capacity 90% 放电容量 0.2C ≥标称容量*100% 1C ≥标称容量*95% 2C ≥标称容量*90%	The capacity shall be measured when the cell is discharged to a cut-off voltage of 2.5V at a discharge current of 0.2C, 1C, or 2C after standard charge. 电池按标准充电方式结束后，分别以 0.2C,1 或 2C 电流放电 到终止电压 2.5V 时的测量值。
2	Different Temperature discharge Characteristics 不同温度放电特性	Discharging Capacity -20℃≥nominal capacity 80% 55℃≥nominal capacity 95% 放电容量 -20℃≥标称容量*80% 55℃≥标称容量*95%	After standard charge, a cell is stored in an environment of specific temperature for 5 hours, then 0.2CCCto2.5V 电芯在经过标准充电后，储存在特定温度的环境中 5h，后以 0.2C 恒流放电至截止电压 2.5V。
3	Storage Characteristics at 25℃ 25℃储存特性	Capacity retention≥ 95% Capacity recovery ≥97% 容量保持率≥95% 容量恢复率≥97%	The capacity retention shall be measured when the battery is discharged to a cut-off voltage of 2.5V at a discharge current of 0.2C after standing for 28 days at 25±2℃ at the end of standard charge. The capacity recovery shall be measured when the battery is discharged to a cut-off voltage of 2.5V at a discharge current of 0.2C at the end of standard charge after measuring the capacity retention. 容量保持量应在电池按标准充电方式结束后，在环境温度为 25±2℃条件下；将电池开路搁置 28 天；再以 0.2C 电流进行放电到终止电压 2.5V 时测量；而容量恢复量在测量容量保持量后按标准充电方式结束后；以 0.2C 电流放电到终止电压 2.5V 时测量。

4	Storage Characteristics at 55℃ 55℃储存特性	Capacity retention≥ 85% Capacity recovery ≥90% 容量保持率≥85% 容量恢复率≥90%	The capacity retention shall be measured when the battery is discharged to a cut-off voltage of 2.5V at a discharge current of 0.2C after standing for 7 days at 55±2℃ at the end of standard charge. The capacity recovery shall be measured when the battery is discharged to a cut-off voltage of 2.5V at a discharge current of 0.2C at the end of standard charge after measuring the capacity retention. 容量保持量应在电池按标准充电方式结束后，在环境温度为 55±2℃条件下；将电池开路搁置 7 天；再以 0.2C 电流进行放电到终止电压 2.5V 时测量；而容量恢复量是在测量容量保持量后按标准充电方式结束后；以 0.2C 电流放电到终止电压 2.5V 时测量。
5	Cycle Life 循环寿命	Cycle number≥300 (80% nominal capacity) 循环圈数≥300 (80%标称容量)	A cell is cycled at 25±2℃ as follows: Standard charge; Standing for 30 minutes; Discharge the cell at 0.5C to 2.5V; Standing for 30 minutes; Repeat the above Step(Perform a nominal capacity test every 50 cycles.) 在 25±2℃环境温度下，按照以下步骤进行循环实验：标准充电后静置 30 分钟，以 0.5C 电流放电到 2.5V；静置 30 分钟；重复上述步骤（每 50 次循环进行一次标称容量测试）。

6.2 Safety performance 安全性能

序号 NO.	Test Item 测试项目	Specification 技术要求	Test Method and Condition 测试方法及条件
1	External Short Circuit 外部短路	No explosion, no fire 不爆炸，不起火	After standard charge, the cell shall be shorted for 10min by a wire (internal resistance less than 5mΩ), observed for 1h. 电池电池按标准充电方式结束后，用内阻小于 5mΩ的线路短路电池 10min，观察 1h。
2	Over Charge 过充电	No explosion, no fire 不爆炸，不起火	After standard charge, the cell shall be charged at the current of 1C, till the voltage is 4.73V or 115%SOC, observed for 1h. 电池按标准充电方式结束后，电池以 1C 电流充电，直到电压达到 4.73V 或 115%SOC，观察 1h。
3	Over Discharge 过放电	No explosion, no fire 不爆炸，不起火	After standard charge, the cell shall be discharged 90min at 1C, observed for 1h. 电池按标准充电方式结束后，以 1C 放电 90min，观察 1h。
4	Crush Test 挤压测试	No explosion, no fire 不爆炸，不起火	After standard charge, the cell shall be extruded with semi-cylinder (R 75mm) perpendicular to the direction of the plate, at a extrusion rate of (5 ± 1) mm/s until the voltage reaches 0V or the deformation degree reaches 30% or the extrusion pressure reaches 100kN, observed for 1h. 电池按标准充电方式结束后，用 R75mm 半圆柱体垂直于极板方向挤压电池，挤压速度（5±1）mm/s，直至电压达到 0V 或形变量达 30%或挤压力达 100kN 后停止，观察 1h。
5	Free Falling(drop) 自由跌落测试	No explosion, no fire, no leakage 不爆炸，不起火，不漏液	After standard charge, the cell shall be dropped freely from the height of 1.5m to cement board with its positive and negative terminals pointing downward, observed for 1h. 标准充电后，正负端子向下，电池从 1.5m 高度自由跌落到水泥板面，观察 1h。

7. Shipment 运输

Cells should be shipped at about 50% SOC.

电池应该在 50%左右的荷电状态下运输。

8. Warning 警告

- Do not disassemble a cell. Do not pierce the cells with sharp objects.

不要拆解电池。不要使用尖锐物体刺穿电池。

- Do not heat or dispose the cell into fire, water or other liquids.

不要将电池加热或将电池扔进火里，水里或是其它液体中。

- Do not use damaged cells.

不要使用已损坏的电池。

- Do not connect the positive (+) and negative (-) Tab directly.

不要将正负极直接导通。

- Do not mix cells.

不要混用电池。

- Do not mix different types of batteries; avoid pairing new and old batteries, or batteries with different chemical compositions.

不要将不同型号的电池混用；避免将新的和旧的、不同化学成份的电池配对。

9. Cautions 注意事项

9.1 Operating Temperature 操作温度

The cells shall be operated (stored, charged and discharged) within a proper temperature range specified by this specification.

电池的储存、充电、放电温度应遵照本规格书的相关规定。

Keep away from heat sources. Do not place cell near a heat source or exposed it to direct sunlight for long periods of time; Elevated temperatures will result in reduced cell service life.

远离热源。不要将电池放置在热源附近或长时间暴露在阳光下；温度的上升会缩短电池的使用寿命。

9.2 Charge 充电

Use only chargers and procedures licensed by the manufacturer. Improper charging method may result in overheating or damage to the cell;

Do not charge the cell with a current or voltage higher than the specified maximum value in this specification; Prohibit reverse charging of the cell (reversing the positive and negative terminals), No floating charge shall be applied to lithium cell charging.

应使用制造商许可的充电器和充电程序；不恰当的充电方式会导致电池过热或损坏；不要使用高于本规格书规定的最大电流或电压充电；严禁反充电池（正负极接反），禁止浮充。

9.3 Discharge 放电

Discharge current should not be higher than the specified maximum current in this specification; If you plan to use a discharge current higher than the maximum current, please consult us first;

Do not over discharge the cell. Over discharging the cell may result in cell obsolescence and cause safety hazard.

放电电流应该不高于本规格书规定的最大电流放电；如计划使用高于最大电流的电流放电，请先咨询本司；避免过放电；若电池过放电，将导致电池报废并产生安全隐患。

9.4 Avoid Cell Short Circuit 电池短路

A short circuit can result in overheating, which may even lead to fire and danger.

电池短路会使电池发热，严重的会导致起火，发生危险。

9.5 Cell Operation 电池操作

Avoid the contact of cell tabs with aluminum plastic film.

避免电池极耳接触铝塑膜。

Avoid deforming the cell by external force, do not bend, fold or throw the cell which may damage the cell even result in cell swelling, leakage, ignition or explosion.

避免外力使电池变形，不要将电池弯曲、折叠或抛掷；这样会破坏电池，严重会导致电池鼓涨、漏液、起火或爆炸。

Do not open or arbitrarily fold the folded edges of the cell.

不要打开或任意地折叠电池的折边。

9.6 Cell Warranty 电池质保

If possible, please charge and discharge the cells every three months for maintenance. With proper storage and maintenance methods, the cells' life can be prolonged.

如果条件允许，请每三个月充放电维护一次。适当的存储和维护方法，可以延长电池的寿命。

From the date of shipment, the warranty period of the cell depends on the contract. However, within this period, LIMXPOWER Co., Ltd. does not promise to replace the cells free of charge if the quality problems of the cells are not caused by LIMXPOWER Co., Ltd. but by the improper use of the customers.

自出货之日起，电芯的保质期限依合同而定。但是在此期限内，如果不是 LIMXPOWER 公司的原因，而是客户的误用造成的电芯质量问题，LIMXPOWER 公司不承诺免费更换。

LIMXPOWER Co., Ltd. accepts no liability for problems arising from operation in violation of the safety rules.

LIMXPOWER 公司对违反安全守则操作所产生的问题不承担任何责任。

LIMXPOWER Co., Ltd. accepts no liability for problems arising from the use of circuits, cell packs, and chargers.

LIMXPOWER 公司对与电路、电池组、充电器搭配使用所产生的问题不承担任何责任。

The defective cells generated by the customers during the assembly process of the cell after shipment are not within the scope of the warranty of LIMXPOWER Co., Ltd.

出货后客户在电芯组装过程中产生的不良电芯不在 LIMXPOWER 公司质量保证的范围之内。

10.Remarks 备注

If there is any objection to this specification, both parties can address the problem in a spirit of consensus. Other matters such as accidents occur when fail to operate as specified shall have no liability for us.

如对本规格有异议，双方可协商解决。其他事项如不按以上规定操作导致发生意外，与本司无关。

l If there are any items not mentioned in this specification, please consult us.

任何本规格书中未提及的事项，请咨询本公司。