Cell Specification Approval Sheet
电池芯规格书

Model/型号： 72C3356-01

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	Signature 签名	Date 日期
Customer Approval 审核-客户		
	Company Name： 公司名称	
	Company Stamp ： 公司盖章	

AMENDMENT RECORDS

修改记录

Revision/ **版本**	**Description/** **描述**	**Date/** **日期**	**Prepared/** **准备**	**Approval/** **审核**
Ref. A0	For customer reference 供客户参考	2024-07-01	Bob Hu/胡海波	Sunny Sun/孙晓玲

CONTENTS/内容

1. General Information/基本信息

1.1. Scope/范围

This document describes the Product Specification of the Rechargeable Lithium-ion Battery **72C3356-01** supplied by Li-Fun (Li-Fun Technology Co., Ltd).Reference Standard: GB 38031-2020,GB 43854-2024.

本产品规格书描述的是由湖南立方新能源科技有限责任公司供应的型号为 **72C3356-01** 之锂离子二次电池。参考标准：GB 38031-2020,GB 43854-2024。

1.2. Model/型号: *72C3356-01*

1.3. Application/应用:

Rechargeable Lithium-ion Battery for **EV** or **ESS** Application..**电动车** 或 **储能系统** 用锂离子二次电池。

2. Specification/规格

2.1. Normal Specification/基本规格*

No./ 序号	Items/ 项目	Specifications/ 规格	
1	Charge voltage (V)/充电截至电压	4.20	
2	Nominal voltage (V)/标称电压	3.65	
3	*Minimal capacity(Ah @ 0.33C Discharge)/最小容量(C_m)	30.0	
4	*Typical capacity(Ah @ 0.33C Discharge)/标称容量(C_t)	31.5	
5	Standard Charging method(@25±2°C)/标准充电方法	0.33C Constant Current Charge to 4.20V, then CV to 0.05C cutoff 0.33C 恒流充电到 4.20V，转恒压充电 0.05C 截止	
	Standard Discharging method(@25±2°C)/标准放电方法	0.33C Constant Current discharge to 3.0V cut off 0.33C 恒流放电到 3.0V 截止	
6	Charging time (h)(Ref.)(@25±2°C)/充电时间	3.2	
7	Max Continues/Pulse charge current (C)/最大连续/脉冲(10S)充电电流	1.2/2.0	
8	Max. continue discharge current (C)/最大连续放电电流	4.0	
9	Max. 10S pulse discharge current (C)/最大 10S 脉冲放电电流	5.0	
10	Recommended 1.0C Discharge Cut-off Voltage (V)/推荐的 1.0C 放电截至电压	@ > 0 °C	3.00
		@ ≤ 0 °C	2.50
11	Operating temperature (Include all charging modes) (°C)/ 充放电温度窗口(包含所有充电模式)	Charging temperature/ 充电温度： -20 ~ 50 Discharging temperature/ 放电温度： -30 ~ 60	
12	Storage environment (°C)/ 存储环境	-30 to 45	1month recovery capacity≧94% 存储 1 个月后恢复容量≥94%
		-30 to 35	3month recovery capacity≧94% 存储 3 个月后恢复容量≥94%
		-30 to 25	12month recovery capacity≧94% 存储 12 个月后恢复容量≥94%
		After ~50% charged cell are stored at 35°C for 3months or RT for 12months or 45°C for 1 month, measures the recovered capacity with Standard charge/discharge method @ RT environment ≥94% of initial capacity. 在约50%SOC荷电状态下，存储在35℃环境下3个月，25℃环境下12个月，45℃环境下1个月，使用标准方法测试可恢复容量，≥初始状态下容量的94%。	

13	*ACIR@RT with 50%SOC (mohm)/交流阻抗	**≤1.5**
14	Weight Approx.(g)/典型重量	599

Throughout this specification, numeric criteria annotated by “*” means such criteria are only applicable to fresh unused product within 30 days from manufacture by LI-FUN. Products either have been used or stored for a period longer than 30 days by Customer and/or its customer may exhibit an inferior numeric parameter than such criteria. Customer agrees that such occurrence does not constitute non-conformance of specification

本规范中，带“*”的内容适用于立方 30 天内生产的未使用的新产品。已使用的产品或者客户端存储超过 30 天的产品可能会低于此标准。客户同意这种情况不属于违反标准。

2.2. Recommended Charge Specification/建议充电规格

2.2.1 General requirements/一般要求

No/ 序号	Item/ 项目	Specification/ 规格	Condition/ 条件
1	Standard Charge/ 标准充电	0.33***Cm** (A)	Constant Current 恒流充电电流
		4.20V	Constant Voltage 恒流充电截止电压/恒压充电电压
		0.05***Cm** (A)	Cut off Current 恒压充电截止电流
		25±2°C	Temperature 电芯温度
2	Semi-fast Charge/ 中速充电	0.5***Cm** (A)	Constant Current 恒流充电电流
		Max 4.20V	Constant Voltage 恒流充电截止电压/恒压充电电压
		0.05***Cm** (A)	Cut off Current 恒压充电截止电流
		23~50°C	Temperature 电芯温度
3	Fast Charge/ 快速充电	1.2* **Cm** (A)	Constant Current 恒流充电电流
		Max 4.00V	Constant Voltage 恒流充电截止电压/恒压充电电压
		Without CV	无 CV 阶段
		27~40°C	Temperature 电芯温度
4	Charge Map/ 充电窗口	1. See the following charging tables for details./详见充电协议表。 2. These tables be real-time updates based on development stage./充电表将根据开发阶段实时更新。 Charge (CC Charge)/ 3. “CC” means “Constant Current”/ “恒定电流” 4. “COV” means “Cut Off Voltage”/ “截止电压” 5. “TOC” means “Temperature of cell”/ “电芯温度” 6. “BOL” means “Before Of Life”/The state of cells within 7 days after manufacture of products complete and products are putted in the warehouse. 指电池自产品制造完成日起算，且正常仓储条件下 7 天以内状态的电芯。 7. “SOH”means “State Of Health”/ “健康状态”，通常用与新鲜电芯状态容量的百分比表示。 8. It is the charging rate in the table, the actual charging current is charging rate *Cm A. /表中指的是充电倍率，实际充电电流为充电倍率*最小容量，单位为安培。 9. The current switches with the temperature. When the temperature is ≤25℃, the small principle is adopted (For example, when the temperature is -13℃, the current value of the -15℃ jump point is used for charging; when the temperature is 19℃, the current value of the 15℃ jump point is used for charging). When the temperature is ＞25℃, the large principle is adopted (For example, if the temperature is 43 ° C, the current value of the 45 ° C jump point is used for charging). 电流随温度切换，当温度≤25℃时采用取小原则（例如在温度为-13℃，则采	

		用-15℃跳转点的电流值充电，温度为 19℃，则采用 15℃跳转点的电流值充电），当温度＞25℃时采用取大原则（例如温度在 42℃，则采用 45℃跳转点的电流值充电）。 10. The current varies according to the voltage in a single step. When the voltage is greater than or equal to the Step value (such as 3.95V), the current will jump. Even if the voltage is less than the Step value (such as 3.95V), the current will not rebound. 电流按电压单向阶梯变化，当电压大于等于该步长值（如 3.95V）跳转电流，即使后面电压小于该步长值（如 3.95V）也不再回弹； 11. The charging rate changes with aging. After aging, the charging rate is BOL charging rate *SOH./充电倍率随老化变化，老化后充电倍率为 BOL 充电倍率*SOH。 12. The voltage range in the table bellow: 3.0~4.2V. The operating temperature range is -20~50℃. 下表使用电压范围：3.0~4.2V；使用温度范围-20~50℃。

2.2.2 Recommended Charging Table/推荐充电表

COV(V) / TOC(℃)	3.3	3.75	3.8	3.85	3.9	3.95	4	4.05	4.1	4.15	4.2
＜-20	不可充电/ Do not charge										
[-20, -15)	0.05	0.10	0.08	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.01
[-15, -10)	0.05	0.10	0.10	0.10	0.10	0.10	0.05	0.03	0.02	0.02	0.01
[-10, -5)	0.05	0.10	0.10	0.10	0.10	0.10	0.05	0.05	0.03	0.02	0.01
[-5, 0)	0.05	0.15	0.15	0.15	0.15	0.15	0.10	0.10	0.03	0.02	0.01
[0, 5)	0.05	0.20	0.20	0.20	0.15	0.15	0.10	0.10	0.05	0.02	0.01
[5, 10)	0.05	0.33	0.33	0.33	0.33	0.20	0.20	0.15	0.07	0.05	0.02
[10, 15)	0.05	0.20	0.20	0.50	0.50	0.50	0.40	0.20	0.10	0.05	0.05
[15, 20)	0.05	1.00	1.00	1.00	0.70	0.50	0.50	0.40	0.20	0.10	0.05
[20, 25)	0.05	1.20	1.20	1.20	1.20	1.00	1.00	0.70	0.40	0.20	0.10
[25, 30)	0.05	1.20	1.20	1.20	1.20	1.20	1.20	1.00	0.70	0.33	0.20
[30, 35)	0.05	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.00	0.60	0.33
[35, 40)	0.05	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.00	0.60	0.50
[40, 45)	0.05	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70	0.50	0.33
[45, 50)	0.05	1.00	1.00	1.00	0.70	0.70	0.70	0.70	0.50	0.50	0.33
＞50	不可充电/ Do not charge										

2.3. Operating Temperature Specification/操作温度规格

No/ 序号	Item/ 项目	Specification/ 规格	Condition/ 条件
1	Continuous Operation 适宜之操作环境	0 ~ 45°C	Continuous operation is a condition where the battery will experience on a frequent basis and maintain its designed performance. 连续工作是指电池频繁工作并保持其设计性能的一种情况。
2	Excursion 拓展之操作环境	-30 ~ 0°C 45 ~ 60°C	Excursion is a condition where the battery may experience on an infrequent basis and be used with

			reduced performance. 拓展操作环境是指电池可能会经历，但不频繁经历，并降低性能使用的一些情况。

2.4. Protection Limit Specification/保护限制

No	Item	Specification	Condition
1	1st Over Voltage Limit/ 一级过充电压保护	4.225V	The battery may experience this voltage on an infrequent basis. When the battery's voltage reaches this limit, the charging power shall be reduced to zero. 电池偶尔会遇到这种电压。当电池电压达到此极限时，充电功率应降至零。
2	2nd Over Voltage Limit/ 二级过充电压保护	4.25V	The battery shall not be used over this limit. 电池不能超过这个限度使用。
3	1st Under Voltage Limit/一级过放电压保护	2.95V	The battery may experience this voltage on an infrequent basis. When the battery's voltage reaches this limit, the discharging power shall be reduced to zero. 电池偶尔会遇到这种电压。当电池的电压达到此极限时，放电功率应降至零。
4	2nd Under Voltage Limit/二级过放电压保护	2.45V	The battery shall not be used below this limit. 电池不得低于此限值使用。

3. Appearance/外观

No./ 序号	Item/ 项目	Specification / 规格
1	Appearance/ 外观	There shall be no such defects as deep scratch, crack, rust, discoloration, leakage, which may adversely affect the commercial value of the cell. 不得有深划伤、裂纹、生锈、变色、渗漏等影响电池商业价值的缺陷。

4. Performance Specification/性能规格

4.1. Standard Test Condition/标准测试条件

No/ 序号	Item/ 项目	Specification/ 规格
1	0.33C Charge/ 0.33C 充电	Unless otherwise specified, "**0.33C charge**" shall consist of charging at constant current of 0.33*Cm **A to 4.20V.**The cell shall then be charged at constant voltage of 4.30V while the charging current is tapering to **0.05*Cm A**. For test purposes, charging shall be performed at 25 ± 2°C. 除非另有说明，"0.33C充电"是指以0.33*Cm A的恒电流充电到4.20V，然后转恒压充电至电流逐渐减小到0.05*Cm A停止充电。当以测试为目的时，充电应在25±2℃条件下进行。
2	0.33C Discharge/ 0.33C 放电	Unless otherwise specified,"**0.33C** Discharge" shall consist of discharging at a constant current of **0.33***Cm **A** to 3.0**V**. Discharging shall be performed at 25±2°C unless otherwise noted (such as capacity versus temperature). 除非另有说明,"0.33C 放电"是指以 0.33*Cm A 的恒电流放电到3.0V 截止。放电应在 25±2℃条件下进行，除非有其他说明（比

		如测试不同温度下的容量时）。
3.1	1.0C-Charge/1.0C--Discharge Cycle/ 1.0C 充电/1.0C 放电循环@RT	Cells shall be discharged at constant current of 1.0*Cm **A** to 3.0**V**. Cells shall be charged at constant current of 1.0*Cm **A** to **4.05V**, then charged at constant current of **0.5***Cm **A** to **4.20V** with end current of 0.05*Cm **A**. Cells shall be left for **15** minutes after both charge and discharge. Cycle shall be performed at 25±2°C unless otherwise noted. 电芯以 1.0*Cm A 恒电流放电至 3.0V，以 1.0*Cm A 恒电流充电至 4.05V，转 0.5*Cm A 恒电流充电至 4.20V，转恒压充电到电流减少到 0.05*Cm A 截止。充电和放电之间放置 15 分钟。除非另有说明，循环测试应在 25±2° C 条件下进行。
3.2	1.0C-Charge/1.0C--Discharge Cycle/ 1.0C 充电/1.0C 放电循环@45℃	Cells shall be discharged at constant current of 1.0*Cm **A** to 3.0**V**. Cells shall be charged at constant current of 1.0*Cm **A** to **4.15V**, then CV with end current of 0.05*Cm **A**. Cells shall be left for **15** minutes after both charge and discharge. Cycle shall be performed at 45±2°C unless otherwise noted. 电芯以 1.0*Cm A 恒电流放电至 3.0V，以 1.0*Cm A 恒电流充电至 4.15V，转恒压充电到电流减少到 0.05*Cm A 截止。充电和放电之间放置 15 分钟。除非另有说明，循环测试应在 45±2° C 条件下进行。
4	1.0C-Discharge@Low Temperature/ 低温下 1.0C 放电	"1.0C Discharge at low temperature" shall consist of discharging at a constant current of 1.0*Cm **A** to 2.5**V**. Discharging shall be performed at testing temperature. "1.0C低温放电"是指以1.0*Cm A恒流放电到2.5V停止。放电应在相应的测试温度条件下进行。

4.2. Electrical Characteristics/电气性能*

No./ 序号	Items/ 项目	Test Method and Condition/ 测试方法和条件	Criteria/ 标准
1	Initial Capacity/ 初始容量	Cells shall be charged per **4.1.1** and discharged with **4.1.2,** Cycle 5times then take the average discharge capacity of the middle three cycles as the Initial capacity. 电芯按4.1.1的方法充电，按4.1.2的方法放电，循环5次，以中间3次循环的平均放电容量作为初始容量。	≥Cm
2	Dependency Capacity@ Different Temperature / 高低温容量	Cells shall be charged per 4.1.1 at 25 ± 2 ℃ and standby @ -20℃for 12hours，then discharged per 4.1.4 at -20°C. (with Clamp JIP) 电芯按4.1.1的方法充电，在-20℃环境下静置12小时后，按4.1.4的方法放电，记录放电容量。(带夹具测试)	>75%*Cm
		Cells shall be charged per 4.1.1 at 25 ± 2 ℃ and standby@55℃ for 12h，then discharge at a consistence current at **0.5*Cm A** to 2.75V at 55°C.电芯按4.1.1的方法充电，在55℃环境下静置12小时后，0.5C放电至3.0V，记录放电容量。	≥99%*Cm
3	Dependency Capacity@ Different discharge	Cells shall be charged per 4.1.1 and discharge at a consistence current at **0.5*Cm A** to 3.0V. 电芯按4.1.1的标准方法充电然后以0.5C恒电流放电到3.0V截止，记录放电容量。	≥96%* Cm

	Rate (@25 ± 2°C)/ 倍率性能	Cells shall be charged per 4.1.1 and discharge at a consistence current at **3.0*Cm A** to 3.0V. 电芯按4.1.1的标准方法充电然后以3.0C恒电流放电到3.0V截止，记录放电容量。	≥92%* Cm
4	Pulse Performance / 脉冲性能	Allowable voltage window for pulse <=10 s @ <0**℃** 允许的10s脉冲电压操作窗口@0℃以下环境。	2.50V~4.00V
		Max allowable <10s peak discharge current (**A** @>=50% SOC, 25±2**℃**) 最大允许的10s脉冲放电电流在大于50%荷电状态，标准环境下。	5.0*Cm
		Max allowable <10s peak charge current (**A** @<=70% SOC, 25±2**℃**) 最大允许的10s脉冲充电电流在小于70%荷电状态，标准环境下。	2.0*Cm

"*" Determined using Begin-Of-Life cell./带有"*"标记的测试项目请使用 BOL 电芯。

4.3. Durability Specification/寿命

No. 序号	Item/ 项目	Specification/ 规格	Condition/ 条件
1	Self-Discharge Rate/ 自放电率	Residual Capacity*≥ 95%* Cm Reversible Capacity*≥ 99% *Cm	Cells at the shipping state shall be stored in a temperature controlled environment at 25±3 °C for 1month. After storage, cells shall be discharged per 4.1.2 and cycled per 4.1.1 and 4.1.2 for 3cycles to obtain the Residual Capacity* & Reversible capacity*. 出货荷电状态下的电芯在25±3℃的温度环境中保存1个月。电池存放后，按4.1.2放电，按4.1.1和4.1.2循环3次，分别得到剩余容量*和可逆容量*。
2	Storage at High Temperature/ 高温存放性能	Residual Capacity*≥ 90%* Cm Reversible Capacity* ≥ 95% *Cm	Cells shall be charged per 4.1.1 and stored in a temperature-controlled environment at 45℃ for 4 weeks. After storage, cells shall be discharged per 4.1.2 and cycled per 4.1.1 and 4.1.2 for 3 cycles to obtain the Residual Capacity* & Reversible capacity*. 电芯按4.1.1标准方法满充后，存储在45℃环境下4周。电芯存放后，按4.1.2放电，按4.1.1和4.1.2循环3次，分别得到剩余容量*和可逆容量*。
3	Cycle Life at 25°C/ 循环寿命	≥80%	Cells shall be charged and discharged per 4.1.3.1, **1500** cycles at 25± 2°C. Then cycled per 4.1.1 and 4.1.2 for 3 cycles to obtain the Reversible capacity* and compare with the **Cm** in percentage. (During the cycle test , should use clamp JIP which applied 0.08~0.12Mpa surface pressure in the thickness direction.) 电池应在25±2℃环境下，按着4.1.3.1循环制式，循环**1500**次。然后按4.1.1和4.1.2循环3次，得到

			可逆容量*，并与最小容量做百分比。(循环过程中，使用夹具施加0.08~0.12Mpa的面压在电池的厚度方向）
4	Cycle Life at 45°C/ 循环寿命	≥80%	Cells shall be charged and discharged per 4.1.3.2, 7**00** cycles at 45± 2°C. Then cycled per 4.1.1 and 4.1.2 for 3 cycles to obtain the Reversible capacity* and compare with the **C_m** in percentage. (During the cycle test , should use clamp JIP which applied 0.08~0.12Mpa surface pressure in the thickness direction.) 电池应在45±2℃环境下，按着4.1.3循环制式，循环7**00**次。然后按4.1.1和4.1.2循环3次，得到可逆容量*，并与最小容量做百分比。(循环过程中，使用夹具施加0.08~0.12Mpa的面压在电池的厚度方向）

4.4. Safety Specification/安全特性*

No/ 序号	Item/ 项目	Specification/ 规格	Condition/ 条件
1	Over-discharge Test/ 过放电测试	No Explode, No Fire 不爆炸，不起火	Cells charged per 4.1.1 shall be discharged at constant Current of 1.0C**t** for 90minutes. (Please to see the GB 38031-2020 8.1.2） 电芯应按4.1.1充电的电池应恒定放电电流1.0Ct，持续90分钟。(详见GB 38031-2020 8.1.2)
2	Overcharge 过充测试	No Explode, No Fire 不爆炸，不起火	Cells should be charged per 4.1.1 , then overcharged at 1*C_m A constant current with one power source applied ≥ 5.0V on the cell terminals , when the voltage be charged to 4.62V(1.1times of standard charge cut-off voltage) or SOC reached to 115%,the test should be stopped. Then observe for 1 hour at testing environment. (Please to see the GB 38031-2020 8.1.3). (With Clamp JIP). 电芯应按4.1.1充电，然后在电池端施加≥5.0V的电源，以1C恒流过充电，当电压充电到4.62V(标准充电截止电压的1.1倍)或SOC达到115%时，应停止试验。然后在测试环境下观察1小时。(详见GB 38031-2020 8.1.3) (带夹具测试)
3	External Short-Circuiting Test/ 外短路测试	No Explode, No Fire 不爆炸，不起火	Cells shall be charged as per 4.1.1, and the positive and the negative terminal relates to a total resistance of 30±10mΩ for 10 minutes. Then observe for 1 hour at testing environment.(With Clamp JIP) 电芯按4.1.1充电，然后再正极和负极之间连接总电阻30±10mΩ，短路10分钟，观察1小时。(带夹具测试)
4	Heating Test/ 热冲击测试	No Explode, No Fire 不爆炸，不起火	Cells charged per 4.1.1, and the cell shall be heated in a circulating air oven at a rate of 5°C per minute. The test shall be terminated when the temperature of the cell reaches 130°C for 30 minutes. Then observe for 1 hour at

			testing environment. (Please to see the GB 38031-2020 8.1.5). (With Clamp JIP) 电池按4.1.1充电，然后放在烘箱中以每分钟5℃的速度加热，当电池温度达到130℃并持续30分钟时，应终止试验。然后在测试环境下观察1小时。(详见GB 38031-2020 8.1.5)。(带夹具测试)
5	Thermal cycle Test/温度循环	No Explode, No Fire 不爆炸，不起火	Cells charged per 4.1.1, and the cell shall be put it into the temperature-controlled box, and the temperature of the box is adjusted according to Table 1 and Figure 1. Cycled 5 times. Then observe for 1 hour at testing environment. (Please to see the GB 38031-2020 8.1.6) 按照4.1.1对电池进行充电，将电池放入温控箱中，温控箱温度根据表1和图1进行调节。循环5次。然后在测试环境下观察1小时。(详见GB 38031-2020 8.1.6)
6	Crush Test/ 挤压测试	No Explode, No Fire 不爆炸，不起火	Cells charged per 4.1.1 are to be crushed against the crushing apparatus (GB 38031-2020-8.1.7). The test shall be terminated at a displacement of 15% of the cell's height, or the force does 100KN or 1000*weigh of cell, or the cell voltage reaches 0V. The test shall be performed in the direction perpendicular to the plate of the cell. 按4.1.1充电的电池应在挤压设备上进行挤压测试(详见GB 38031-2020-8.1.7)。试验应在电池高度的15%的位移，或力达到100KN或1000*电池重量，或电池电压达到0V时终止。试验应在垂直于电池板的方向上进行。

"*" Determined using Begin-Of-Life cell./带有"*"标记的测试项目请使用 BOL 电芯。

4.5. Standard environmental test condition/标准测试环境条件

Unless otherwise specified, all tests stated in this Product Specification are conducted at below conditions:
除特殊注明外，本规格指定的所有测试应在以下环境中进行。

Temperature /温度: 25 ± 2 °C

Humidity/相对湿度: 65 ± 20% RH

5. Product end of life management 产品寿命终止管理

This cell is designed to service with a finite life time. Client shall develop and implement an active tracking system to monitor and record impedance of each Product in its entire service life. Client and/or its customer shall stop using any of the Products when its impedance exceeds 180% or capacity less than 70% (25℃) of the value when it was fresh. Failure to comply with this requirement shall render Li-Fun's warranties under the Contract inapplicable, thereby releasing Li-Fun from any liability in connection therewith./电池的使用期限是有限的。客户应该建立有效的跟踪系统监测并记录每个使用期限内电池的内阻（内阻的测量方法和计算方法需要客户和立方新能源共同讨论和双方同意）。当使用中的电池的内阻超过这个电池最初的内阻的 180%或容量小于 70%（25℃）时，应停止使用电池。违反该项要求，将免除立方新能源依据产品销售协议以及本规格书所应承担的产品质量保证责任。

6. Caution and Prohibition in Handing/操作提示和禁止事项

Below is warning for using the lithium-ion rechargeable battery. Mishandling of the battery may cause heat, fire and deterioration in performance. Be sure to observe the following. /以下为锂离子二次电池的操作提示及禁止事项。

Cautions/注意事项

◆ When using the application equipped with the battery, refer to the user's manual before usage. Please read the specific charger manual before charging. /使用设备前请参照用户手册.给电池充电前请阅读专用充电器操

作手册。

- When the cell is not charged after long exposure to the charger, discontinue charging. /长时间置于充电器上而不充电，请切断充电。
- Please check the positive (+) and negative (-) direction before packing. /进行成组前，请检查电池的正负极性。
- When a lead plate or wire is connected to the cell for packing, check out insulation not to short-circuit. /当使用导柱或线材进行电池包组装时，做好绝缘防护，避免短路。
- Battery must be stored separately. /电池必须隔离存放。
- Battery must be stored in a dry area with low temperature (≤25°C) for long-term storage. /电池如需长期存储，应存储在干燥和低温(≤25°C)环境下。
- Do not place the battery in direct sunlight or heat.不要将电池放在阳关直射处或热源附件。
- Do not use the battery in high static energy environment where the protection device can be damaged. /不要将电池放置在可能损害电池保护装置的高能态环境下。
- When rust or smell is detected on first use, please return the product to the seller immediately. /在第一次使用电池时，如发现有生锈或有味道，请立即退回厂商。
- The battery must be away from children or pets. /电池必须远离儿童或宠物。
- When cell life span shortens after long usage, please exchange to new cells. /当电池长期使用后至寿命终止后，请更换新电池。
- Do not wear metallic objects (ex. ring, watch, accessory, etc.) while handling battery cells. /不要穿戴金属物品（例如：戒指、手表等配饰）操作电池。
- When use cells for an assembly of module or pack, the “first-in, first-out” (FIFO) principle should be applied. /当用电芯组装模组或电池组时，适用“先入先出的原则”。
- Charge time should not be longer than specified in the manual. /充电时间不应超出手册中规格。
- Do not expose the battery to the outside of the operating temperature range specified in this document. /不要超出规定的温度范围操作电池。
- Do not charge and discharge with the maximum current for uninterrupted cycle. /规格书中的最大充电或放电电流不适用于不间断循环。
- Prevent draining any Product down to over discharge state. A Product may be permanently damaged internally when the Products voltage is lower than 2.75V (25℃≤T≤60℃), 2.5V (10℃≤T<25℃), 2.3V (0℃≤T<10℃) or 2.1V (-30℃≤T<0℃) and therefore should be strictly prohibited, failing which Li Fun’s warranties under the Contract shall cease to apply, thereby releasing the Lifun from any liability in connection therewith. After discharge cut-off in accordance with this specification, internal power consumption of the system should be reduced to a minimum to prolong the idle time before recharge. Client undertakes to educate the users of the Products or other parties who may come to handle the Products to recharge the Products at minimum time intervals to prevent reaching the over discharge state./避免电池到达过放状态。电池电压低于 2.75V（25℃≤T≤60℃）、2.5V （10℃≤T<25℃）、2.3V（0℃≤T<10℃）或 2.1V （-30℃≤T<0℃）时，电池内部可能会遭到永久性的损坏，此时立方新能源的产品质量保证责任失效。根据本规格书当放电截止电压低于标准放电截至电压时，系统内部能耗降低到最小， 并在重新充电之前延长休眠时间。客户需要培训使用者在最短的时间内重新充电，防止电池进入过放状态。
- When the products are intended to be stored for a prolonged period of time (more than one month), reduce SOC to around 55%. After three months of 55% SOC storage, should be charged and discharged once, reduce SOC to 55% .55% SOC storage lasts for more than 6 months, irreversible capacity loss will be about 4% without charge-discharge maintenance. If 55% SOC storage exceeds 9 months without charge and discharge maintenance, Li-Fun will not be responsible for quality protection due to capacity loss or other defects. Method

of storage maintenance to 55%SOC:Discharge at the rated current or power to the minimum cut-off voltage specified by the system manufacturer. Charge at the rated current or power to the maximum cut-off voltage specified by the system manufacturer.Discharge to 55% of the rated capacity of the system with the rated current or power specified by the system manufacturer./若预计将电池存放 30 天以上的，应将SOC 调整为55%左右。55%SOC 存储 3 个月后，应做一次充放电并调整 SOC 到 55%。55%SOC 存储超过 6 个月不做一次充放电维护将造成不可逆容量损失 4%左右。55%SOC 存储超过 9 个月不做充放电维护对电池造成的容量损失或其他缺陷，立方新能源将不承担质量保护责任。到 55%SOC 存储条件的方法：电池系统以一定倍率电流或功率放电至规格书规定的下限截止电压。电池系统以一定倍率电流或功率充电至规格书规定的上限截止电压。电池系统以一定倍率电流或功率放电 55%的额定容量。

- Prevent charging the Products at a temperature which is not allowed under the specification hereunder (including standard charge, optional fast charge, emergency charge and regeneration), otherwise unnecessary degradation of the capacity of the Products may occur. Follow the specification on minimum charging and regeneration temperature and use the BMS to control it. Charging at temperature lower than the specification hereunder shall render Li-Fun's warranties under the Contract inapplicable, thereby releasing Li fun from any liability in connection therewith./电池避免在本规格书禁止的低温条件下充电（包括标准充电，快充，紧急情况充电和再生充电），否则可能出现意外的容量降低现象。电池管理系统应依照最小的充电和再生充电温度进行控制。禁止在低于本规格书规定的温度条件下充电，否则，立方新能源不承担质量保证责任。
- The heat dissipation of the Products should be fully considered in the design of the battery system. Because of the overheating damage of the Products caused by the heat dissipation design of the battery system. Li fun will not responsible for quality assurance./电箱设计中应充分考虑电芯的散热问题，由于电箱散热设计问题导致的电芯或电池过热损坏，立方不承担质量保证责任。
- The problem of waterproof and dust-proof of the battery system should be fully considered. The battery system must meet the waterproof and dust-proof grades stipulated by the relevant national standards. Li fun are not responsible for quality assurance due to damages (such as corrosion, rust, etc.) of Products caused by waterproof and dust-proof problems.电池系统设计中应充分考虑电芯的防水、防尘问题，电池系统必须满足国家有关标准规定的防水、防尘等级。由于防水、防尘问题而导致的电芯或电池的损坏（如腐蚀、生锈等），立方新能源不承担质量保证责任。
- It is forbidden to mix different P/N Products in the same battery system , otherwise Li-Fun will not responsible for quality protection./禁止不同料号电芯在同一电池系统中混用，否则立方新能源不承担质量保护责任。

Prohibitions/禁止

- Do not use different charger. /禁止使用非标配充电器。
- Do not charge with more than maximum charge rate. /禁止超出最大充电倍率充电。
- Do not disassemble or reconstruct the battery. 禁止拆解和重组电池。
- Do not throw or cause impact.禁止丢抛电池或其他可能引起撞击的动作。
- Do not pierce a hole in the battery with sharp things. (such as nail, knife, pencil, drill) /禁止尖锐物插入电池
- Do not use with other batteries or cells. /禁止和其他电池混用。
- Do not solder on battery directly. /禁止直接在电池上面上锡。
- Do not press the battery with overload in manufacturing process. /禁止在制程中过度挤压。
- Do not use old and new cells together for packing. /禁止新老电芯在同一个电池模组内混搭使用。
- Do not expose the battery to high heat. (such as fire) /禁止将电池暴露在高温或过热处,例如火中。
- Do not put the battery into a microwave or High-Pressure container. /禁止将电池放入微波或高压容器内。
- Do not use the battery reversed. /禁止反转。
- Do not connect positive (+) and negative (-) with conductive materials (such as metal, wire). /禁止正负极直接短接（如使用金属、电线等）

- Do not allow the battery to be emerged in or wet with water or sea-water. /不允许将电池浸入水中和被水淋。
- Do not deform the battery cell (e.g. bending the terrace area or the pouch sealing area) without written agreement with the battery manufacturer. /在没有征得制造商书面同意前，禁止将电池弄变形(例如弯折易于形变的台阶或封装区域)。

Others/其他

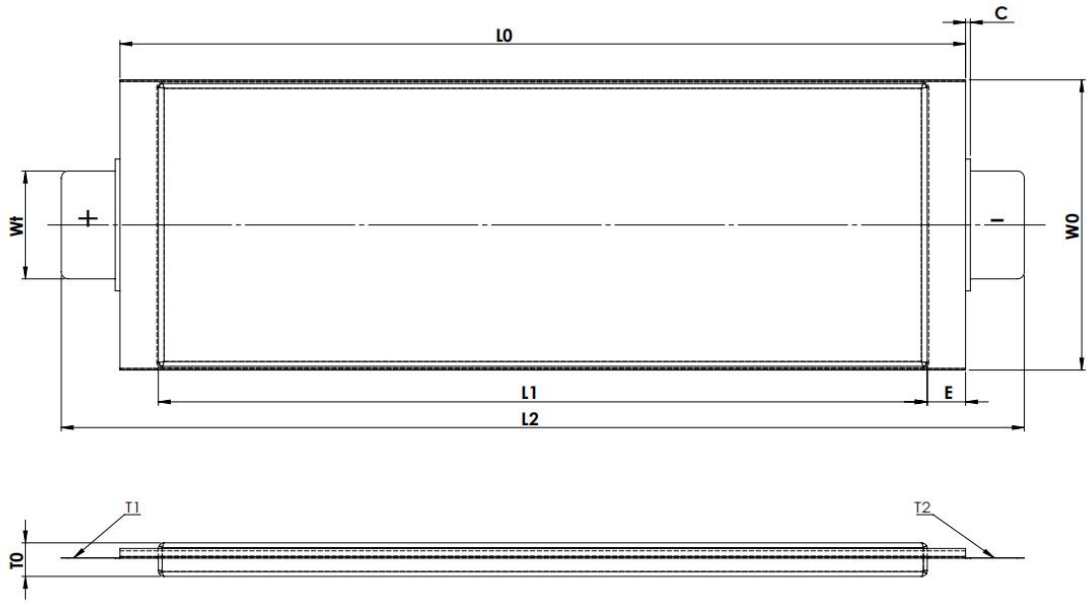
Any matters that this specification does not cover should be conferred between the customer and Li-Fun. /本规格书中之未尽事宜需客户与敝司共同确认。

Disclaimer/免责申明

- If the product demand company is not used according to the regulations in the specification, the social influence is caused, and the reputation of the Li-Fun is influenced, the Li-Fun will be investigated for the responsibility of the requirement unit. According to the degree of influence on the Li-Fun, the product demand company needs to provide compensation for the Li-Fun. /如果由于产品需要单位不按本说明书中的规定进行使用，造成社会性影响，并对立方的声誉造成影响的，立方将会追究需求单位的责任。根据对立方造成的影响程度，产品需求单位需向立方提供赔偿。
- Li-Fun reserves the right to modify the specifications and performance parameters of the product. The buyer needs to confirm the latest status of the Li Fun in advance before ordering the Li-Fun product. If the customer has different opinions on the appearance of the cell, both parties shall solve it through friendly negotiation./立方保留对产品的规格及性能参数修改的权利。买方在订购立方产品前，需要与立方提前确认产品的最新状态。若客户对电芯外观有不同意见，双方友好协商解决。

7. Drawing /图纸

(all unit in mm, not in scale/单位为毫米，未按比例绘制)



Items	Description	Dimension
T0	Thickness for shipping with mylar and side tape(mm), measure with 100±5kgf pressure	≤7.2
W0	Width(mm)	≤123.0
L0	Length(mm)-Cell body	≤356.0
L2	Length(mm)-with Tab Lead	≥385
L1	Length without top sealing(mm)	322.0±2.0
Wt	Tab width(mm)	45.0±0.2
T1	Cathode tab thickness(mm)	0.40±0.03
T2	Anode tab thickness(mm)	0.30±0.03
E	Top sealing width (mm)	16.0±2.0
C	Sealant outside length(mm)	0.5~3.5

Customer Inquiry/客户调查

Model/型号: **72C3356-01**

The customer is requested to write down your information and contact Li-Fun in advance, if and when the customer needs applications or operating conditions other than those described in this document. Li-Fun could design and build such products according to your special request.

尊敬的客户，如您需要在此规格书描述之外的范围内应用产品，可将需求信息反馈给敝司。立方将根据您的特殊要求设计和制造相关产品。

No.	Special Request /要求	Criteria /条件
1		
2		
3		
4		
5		

Company Name：_____ Signature：_____ Date：_____