

Model 型号	INR21700/40P	Spec. No. 规格书编号	PBRI-INR21700/40P-D06-11	Version No. 版本	B
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### 1. Scope (适用范围)

This product specification has been prepared to specify the rechargeable lithium-ion cell to be supplied to customer by EVE Energy CO., LTD.

本产品规格书适用于由惠州亿纬锂能股份有限公司生产的锂离子电芯。

### 2. Description and Model (基本信息)

2.1. Description (描述)      Lithium-ion rechargeable cell (锂离子电芯)

2.2. Model name (型号)      INR21700/40P

### 3. Nominal Specifications (规格参数)

Item 项目	Specification 标准	
3.1. Standard Discharge Capacity 标准放电容量	Minimum 3950mAh 最小容量 3950mAh	Nominal 4000mAh 标准容量 4000mAh
	Charge: 2.0A(0.5C), 4.20V, CCCV 0.1A cut-off 充电: 2.0A(0.5C)恒流充电至 4.20V, 恒压充电截止电流 0.1A	
	Discharge: 0.8A(0.2C), 2.50V cut-off 放电: 0.8A(0.2C) 恒流放电至 2.50V 截止	
	*1C=4.0A	
3.2. Nominal Voltage 标称电压	3.60V	
3.3. Standard Charge 标准充电	CCCV, 2.0A(0.5C), 4.20±0.05V, 0.1A cut-off 2.0A(0.5C)恒流充电至 4.20±0.05V, 恒压充电截止电流 0.1A	
3.4. Maximum Charge 最大充电	CCCV, 6A(1.5C), 4.20±0.05V, 0.1A cut-off 6A(1.5C)恒流充电至 4.20±0.05V, 恒压充电截止电流 0.1A	
3.5. Standard Discharge 标准放电	0.8A(0.2C), 2.50V cut-off 0.8A(0.2C)恒流放电至 2.50V 截止	
3.6. Maximum Discharge 最大放电	50A(12.5C), 2.50V cut-off	T <sub>Recommended</sub> : 75°C
	50A(12.5C)恒流放电至 2.50V	T <sub>max</sub> : 80°C
3.7. Charge/Discharge Voltage Range 充电/放电电压区间	4.20~2.50V	
3.8. Cell Weight 电池重量	70.0g Max	最大 70.0g
3.9. Cell Dimensions 电芯尺寸	Height: 70.15±0.15mm	高度: 70.15±0.15mm
	Diameter: 21.15±0.10mm	直径: 21.15±0.10mm

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3.10. Operation Temperature (Cell Surface Temperature) 使用温度范围 (电芯表面温度)	Ambient Temperature Charge: 0 to 45 °C Discharge: -20 to 60°C		环境温度 充电: 0 to 45 °C 放电: -20 to 60°C		
	Charge Temperature: 0 to 60°C (recommended recharge release <45°C) Discharge Temperature: -20 to 80°C (recommended re-discharge release <60°C)		充电温度: 0 to 60°C (建议重新充电温度<45°C) 放电: -20 to 80°C (建议重新放电温度<60°C)		
3.11. Storage Temperature (At Shipping SOC) 存储温度 (出货态 SOC)	1 year    1 年 3 months    3 个月 1 month    1 个月	-20~25°C -20~45°C -20~60°C			

Remark: The Recovery capacity is more than 90% of standard discharge capacity (=3950mAh) after storage at the condition of 3.11.

备注: 在 3.11 条件下储存后, 恢复容量超过标准放电容量 (=3950mAh) 的 90%。

#### 4. Outline Dimensions (外形尺寸)

See the attachment (Fig. 1). (详见附图 1)

#### 5. Appearance (外观)

There shall be no such defects as rust, discoloration, leakage which may adversely affect commercial value of the cell.  
电芯不能有生锈、变色、漏液等可能对电芯产生不利影响的缺陷。

#### 6. Standard Test Condition (标准测试条件)

##### 6.1. Environment Condition (环境条件)

Unless otherwise specified, all tests stated in this specification are conducted at temperature 25±2°C and humidity under 65% RH.

若无特别要求, 此规格书上的产品测试条件均为温度: 25±2°C, 湿度: <65% RH。

##### 6.2. Measuring Equipment (测量设备)

###### (1) Amp-meter and volt-meter (电流表和电压表)

The amp-meter and volt-meter should have an accuracy of the grade 0.5mA and 0.5mV or higher.  
电流表和电压表的精度应分别为 0.5mA 和 0.5mV 或以上。

###### (2) Slide caliper (游标卡尺)

The slide caliper should have 0.01mm scale.

游标卡尺的测试精度应为 0.01mm。

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### (3) Impedance meter (电压内阻测试仪)

The impedance meter with AC 1 kHz should be used.

使用频率为1kHz的电压内阻测试仪。

## 7. Charging Method (充电方法)

### 7.1. Standard Charge (标准充电)

Standard Charge means charging the cell CCCV with charge current 2.0A (0.5C), constant voltage 4.20V and 0.1A cut-off in CV mode at 25°C for capacity.

标准充电即在环境温度为 25°C 的条件下, 先以恒定电流 2.0A (0.5C) 充电至 4.20V, 然后恒压充电至电流小于 0.1A。

### 7.2. Maximum Charge (最大充电)

Maximum Charge means charging the cell CCCV with charge current 6A (1.5C), constant voltage 4.20V and 0.1A cut-off in CV mode at 25°C.

最大充电即在环境温度为 25°C 的条件下, 先以恒定电流 6A (1.5C) 充电至 4.20V, 然后恒压充电至电流小于 0.1A。

## 8. Electrical Characteristics (电性能)

Item 项目	Test Condition 测试条件	Criteria 检验标准
8.1. Standard Discharge Capacity (标准放电容量)	The Standard Discharge Capacity is measured with discharge current of 0.8A (0.2C) and 2.50V cut-off at 25°C after the standard charge. Referring IEC61960 Standard. 标准放电容量即电芯在 25°C 下按照标准充电方式充满电, 然后以 0.8A (0.2C) 放电至 2.50V 截止的容量。 (参考 IEC61960 标准)	Standard Discharge Capacity ≥ 3950mAh 标准放电容量 ≥ 3950mAh
8.2. Initial Internal Impedance (内阻)	Initial Internal Impedance is measured at AC 1kHz at shipping SOC. 使用频率为 AC 1kHz 的电压内阻测试仪测量出货态电芯的内阻。	Initial Internal Impedance ≤ 12mΩ 内阻 ≤ 12 mΩ

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8.3. Discharge Rate Capabilities (倍率放电性能)	Discharge capacity is measured with the various currents in the following table and 2.50V cut-off after the standard charge at 25°C. Note: Relative capacity is divided by the 10A discharge capacity at 25°C. 电芯在 25°C下按标准充电方式充电后，以不同的放电电流恒流放电至 2.50V 截止电压。 注释：相对容量是电芯在 25°C时不同电流放电容量除以 10A 时放电容量。	Item 项目	Discharge Condition 放电条件				
		Current 电流 (A)	0.8	10	20	30	40
		Rate 倍率(C)	0.2	2.5	5.0	7.5	10.0
		Relative Capacity 相对容量(%)	≥100	100	≥95	≥93	≥90
8.4. Temperature Dependence of Discharge Capacity (不同温度放电性能)	Capacity comparison at each temperature, measured after 3 hours storage at the test environment with discharge constant current 10A (2.5C) and 2.50V cut-off after the standard charge at 25°C. Note: Relative capacity is divided by the 10A discharge capacity at 25°C. 电芯在 25°C环境下按标准充电方式充电后，在不同温度搁置 3h 后以 10A(2.5C) 恒流放电至 2.50V 截止电压。 注释：相对容量是电芯在 25°C时不同电流放电容量除以 10A 时放电容量。	Item 项目	Discharge Temperature 放电温度				
		Temperature 温度(°C)	-20	-10	0	25	60
		Storage Time 存储时间(h)	3	3	3	3	3
		Relative Capacity 相对容量(%)	≥60	≥75	≥80	100	≥90
8.5. Cycle Life (循环寿命)	Charge: 6A(1.5C), 4.20V, 0.1A cut-off. Discharge: 30A(7.5C) discharge, 2.50V or 75°C cut-off. Rest Time: 10min after charge and 30min after discharge. Capacity after 300 cycles. 充电： 6A(1.5C), 4.20V, 0.1A 截止 放电： 30A(7.5C)放电, 2.50V 或 75°C截止 搁置时间： 充电后搁置 10min, 放电后搁置 30min 循环 300 次	Capacity ≥60% C <sub>i</sub> Note: C <sub>i</sub> : the first discharge capacity of cycle life test at 25±2°C. 300 周循环容量≥60%C <sub>i</sub> C <sub>i</sub> : 25±2°C时循环第 1 周的放电容量					

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Attachment (附件) :

Fig 1 (图 1) :

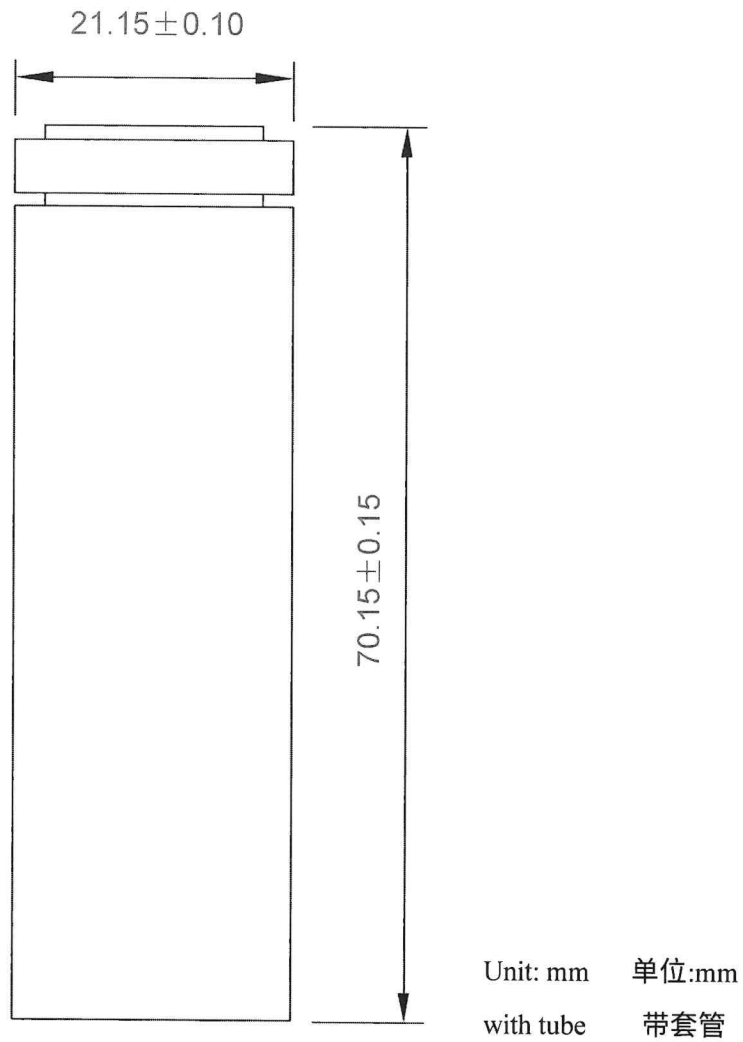


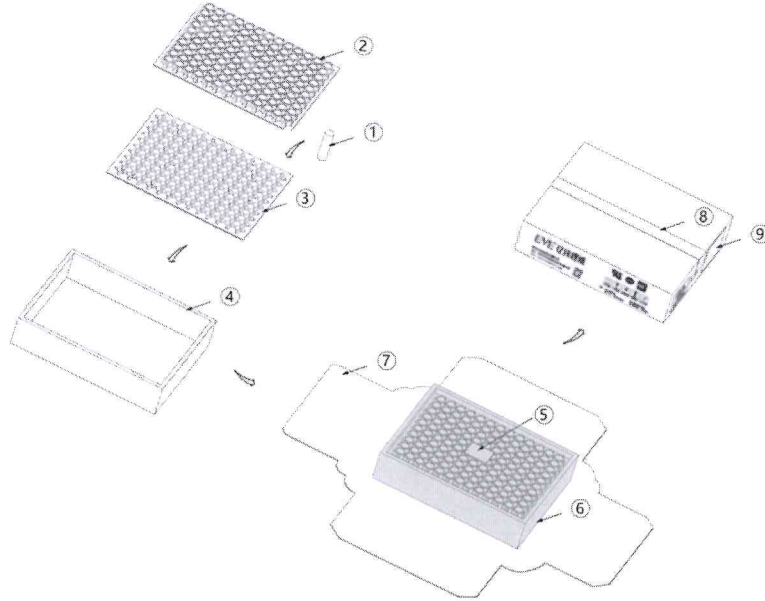
Fig. 1. Outline Dimensions of INR21700/40P

图 1.INR21700/40P 外形尺寸

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Attachment (附件) :

Fig 2 (图 2) :



NO.	Part Name 部件名称	Material 材料	Q'Ty 单位
1	Cell 电芯	型号 INR21700/40P	130 pcs/box
2	Blister upper cover 吸塑上盖	PP 聚丙烯	1 pcs/box
3	Blister lower cover 吸塑下盖	PP 聚丙烯	1 pcs/box
4	Inner box 内箱	K3K Single Wall 单坑瓦楞纸	1 pcs/box
5	Silica Gel 硅胶	Silica Gel 硅胶	1 pcs/box
6	PE Bag 聚乙烯袋	PE 聚乙烯	1 pcs/box
7	Outer box 外箱	H=H Double Wall 双坑瓦楞纸	1 pcs/box
8	Tape 胶带	PE 聚乙烯	0.01 rol/box
9	Label 标签	Art Paper 铜版纸	1 pcs/box