Model	INR18650/35V	Spec. No.	PBRI-INR18650/35V-D06-05	Version No.	D

PRODUCT SPECIFICATION

Lithium-ion rechargeable cell

Model: INR18650/35V

Designed	RD Checked	QC Checked	Sales Checked	Approved
郑晓睿	邹素月	令博	赵建	李跃飞

Customer signature
Company name:
Approved by:
Date:

March, 2025

EVE Energy Co., Ltd.

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Customer Request

If the customer has any particular application or operating conditions different from those described in this document, please list below and communicate with us in advance.

No.	Customer Special Requirements	Specifications
1		
2		
3		
4		
5		

Customer Code: _____

Signature: _____

Date: _____

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Revision history

Revision No.	Date	Page	Item	Description	Author
A	2019-12-20	/	/	First Edition	Sherwin Ai
B	2022-03-28	3	7.7	For cycle life:0.2C/0.2C 70% changed as 0.5C/1C 70%	Terence Zhong
C	2023-06-01	2	3.11	Update storage temperature	Lory Zheng
		5	9	Update safety test method	
D	2025-3-10	/	/	Upgrade product specification template	Lory Zheng

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1. Scope

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

2. Description and Model

2.1 Description Lithium-ion rechargeable cell

2.2 Model name INR18650/35V

3. Nominal Specifications

Item	**Specification**
3.1 Standard Discharge Capacity	Minimum 3400mAh Nominal 3500mAh Charge: 0.68A(0.2C), 4.20V, CCCV 0.068A cut-off Discharge: 0.68A(0.2C), 2.50V cut-off *1C=3.4A
3.2 Nominal Voltage	3.65V
3.3 Standard Charge	0.68A(0.2C), 4.20±0.05V, CCCV 0.068A cut-off
3.4 Maximum Charge	3.4A(1C), 4.20±0.05V, CCCV 0.068A cut-off (Not for cycle life)
3.5 Standard Discharge	0.68A(0.2C), 2.50V cut-off
3.6 Maximum Discharge	10.2A(3C), 2.50V cut-off (Not for cycle life)
3.7 Charge/Discharge Voltage Range	4.20~2.50V
3.8 Cell Weight	50.0g Max.
3.9 Cell Dimension	Height: 65.10±0.15mm Diameter: 18.35±0.10mm
3.10 Operation Temperature (Cell Surface Temperature)	Ambient Temperature: Charge: 0 to 45°C Discharge: -20 to 60°C
	Charge Temperature: 0 to 60°C (recommended recharge release <45°C) Discharge Temperature: -20 to 70°C (recommended re-discharge release <60°C)

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3.11 Storage Temperature (At Shipping SOC)	1 year	-20~25°C
	3 months	-20~45°C
	1 month	-20~60°C

Remark: The recovery capacity is more than 90% of standard discharge capacity (=3400mAh) after storage at the condition of 3.11.

4. Outline Dimensions

See the attachment (Fig. 1).

5. Appearance

There shall be no such defects as rust, discoloration, leakage which may adversely affect commercial value of the cell.

6. Standard Test Condition

6.1. Environment Condition

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

6.2. Measuring Equipment

(1) Amp-meter and volt-meter

The amp-meter and volt-meter should have an accuracy of the grade 0.5mA and 0.5mV or higher.

(2) Slide caliper

The slide caliper should have 0.01mm scale.

(3) Impedance meter

The impedance meter with AC 1 kHz should be used.

7. Characteristics

7.1. Standard Charge

Standard charge means charging the cell CCCV with charge current 0.68A (0.2C), constant voltage 4.20V and 0.068A cut-off in CV mode at 25°C for capacity.

7.2. Maximum Charge

Maximum charge means charging the cell CCCV with charge current 3.4A (1C), constant voltage 4.20V and 0.068A cut-off in CV mode at 25°C.

7.3. Standard Discharge Capacity

Standard discharge capacity is measured with discharge current of 0.68A (0.2C) with 2.50V cut-off at 25°C within 1 hour after the standard charge.

Standard Discharge Capacity ≥ 3400mAh

(Referring IEC61960 standard)

7.4. Initial Internal Impedance

Initial internal impedance is measured at AC 1kHz at shipping SOC.

Initial Internal Impedance ≤ 30mΩ

7.5. Discharge Rate Capabilities

Discharge capacity is measured with the various currents in the following table and 2.50V cut-off after the standard charge.

Item	Discharge Condition	
Current	0.68A	10.2A
Rate	0.2C	3C
Relative Capacity	100%	≥90%

Note: Relative capacity is divided by the standard discharge capacity (=3400mAh).

7.6. Temperature Dependence of Discharge Capacity

Capacity comparison at each temperature, measured after 3 hours storage at the test environment with discharge constant current 0.68A (0.2C) and 2.50V cut-off after the standard charge at 25°C.

Item	Discharge temperature		
Temperature	-20°C	25°C	55°C
Storage Time	3h	3h	3h
Relative Capacity	≥70%	100%	≥90%

Note: Relative capacity is divided by the standard discharge capacity (=3400mAh).

7.7. Cycle Life

Charge: 1.7A (0.5C) to 4.2V, CCCV 0.17A cut-off.

Discharge: 3.4A (1C) to 3.0V cut-off.

Rest time: 10min after charge and 30min after discharge.

Capacity after 800 cycles.

Capacity ≥ 70% C_i

Note: C_i is the first discharge capacity of cycle life test at 25±2℃.

7.8. Storage Characteristics

Recovery Capacity: The capacity of standard discharge of three times cycles after fully standard charged storage at condition as follows:

After storage for 28days at 25℃.

Recovery Capacity ≥ 3060mAh (90% of Standard Discharge Capacity (=3400mAh))

After storage for 7days at 60℃.

Recovery Capacity ≥ 3060mAh (90% of Standard Discharge Capacity (=3400mAh))

7.9. Status of the Cell as of Ex-factory

The cell should be shipped in 3.450V to 3.600V charging voltage range.

8. Mechanical Characteristics

8.1. Free Fall Test

Test method: Each fully charged cell is dropped three times from a height of 1.0m onto a concrete floor. The cells are dropped so as to obtain impacts in random orientations. After the test, the cells shall be put on rest for 1h and then a visual inspection shall be performed.

Criteria: No fire, no explosion.

Free fall test is according to the IEC62133 standard.

8.2. Vibration Test

Test method: For X and Y axis with cylindrical cell 7Hz→200Hz→7Hz for 15min, repetition 12 times totally 3 hours, the acceleration 1g during 7 to 18Hz, then amplitude 1.6mm and maximum 8g up to 200Hz.

Criteria: No fire, no explosion, no leakage, with less than 10% of OCV drop.

Vibration test is according to the UN38.3 standard.

9. Safety

9.1. Overcharge Test

Test method: Fully standard discharged cell is charged with 4.6V and 10.2A (3C) for 7h.

Criteria: No fire, no explosion.

Overcharge test is according to the UL1642 standard.

9.2. External Short-circuit Test

Test method: Fully standard charged cell is to be short-circuited by connecting the positive and negative terminals of the cell with a circuit load having are resistance load of 80±20mΩ at 55±5°C. The cell remains on test for 24h or until the surface temperature declines by 20% of the maximum temperature rise, whichever is the sooner.

Criteria: No fire, no explosion.

External short-circuit test is according to the IEC62133 standard.

9.3. Forced Discharge Test

Test method: A discharged cell is subjected to a reverse charge at 3.4A (1C) for 90 min.

Criteria: No fire, no explosion.

Forced discharge test is according to the IEC62133 standard.

9.4. Heating Test

Test method: To heat up the standard charged cell at heating rate 5°C per minute up to 130°C and keep the cell in oven for 10 minutes.

Criteria: No fire, no explosion.

Heating test is according to the UL1642 standard.

9.5. Low Pressure Test

Test method: Fully standard charged cell is to be stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature.

Criteria: No fire, no explosion and no leakage with less than 10% of OCV drop.

Low pressure test is according to the UN38.3 standards.

10. Warranty

The cell warranty is one year since the date of delivery. The warranty period is subject to this EVE INR18650/35V Specification and EVE shall exemption from the circumstances below:

The cell has been damaged by force majeure factors, including but not limits on natural disasters: typhoons, earthquakes and floods, government actions: expropriation and requisition; and social abnormal events: strikes, riots and etc.

The cell has been damaged by clients' abuse, misuse or inappropriate using (not follow the instruction list in this specifications);

The cell has been damaged while the using condition exceed the limits of this specifications;

The cell has met the trouble while mating the electric circuit, cell pack and charger;

The cell has met the trouble while assembling after acceptance.

11. Precautions and Safety Instructions

Abuse of Rechargeable Lithium-ion cells can cause damage to the cell and/or personal injury. Please read and observe the standard cell precautions below before using.

Note 1. Customer shall contact and confirm with EVE in advance if intends to use the cell exceed the limitations which has clarified within this specifications.

Note 2. EVE will take no responsibility for any accident that occurs when the cell is used under conditions other than those described in this document.

Note 3. For the sake of safety assurance, if there are special requirements or special use scenarios for the design of lithium-ion battery packs, related control systems and protection circuit settings, including but not limited to its using condition, current, rapid charge requirements and etc, it is necessary to confirm in writing in advance with the EVE. Otherwise, EVE will not be liable for cell failures or accidents caused by cells that are not suitable for the special requirements or special usage scenarios.

12. Guide for the Use of Lithium-ion Cells

12.1. General

This chapter has been prepared to describe the appropriate cautions and prohibitions, which the customer should take or employ when the customer uses and handles the lithium ion cell to be manufactured and supplied by EVE Energy CO., LTD., in order to obtain optimal performance and safety.

12.2. Charging

12.2.1. Charging current

Charging current shall be less than maximum charge current specified in the specification.

12.2.2. Charging voltage

Charging shall be done by voltage less than that specified in the specification.

12.2.3. Charging temperature

The cell shall be charged within a range of specified temperatures in the specification.

12.2.4. Reverse charging

The cell shall be connected, confirming that its poles are correctly aligned. Inverse charging shall be strictly prohibited. If the cell is connected improperly, it may be damaged. EVE is not liable for any damages resulting therefrom.

12.3. Discharging

12.3.1. Discharging current

The cell shall be discharged continuously at less than maximum discharging current specified in the specification. In case of the higher discharging current should be set, it shall be discussed with EVE.

12.3.2. Discharging temperature

The cell shall be discharged within a range of temperatures specified in the specification. Otherwise, it may cause loss of performance characteristics.

12.3.3. Over-discharging

The system should equip with a device to prevent the cut-off voltage while discharging exceed the recommended limits, the limits has been specified in this specification.

Over-discharging may lead to the loss of cell performance. Over-discharging may occur by self-discharging if the cell is stored for a very long time without usage.

The charger should equip with a device to detect voltage of cell box and to determine recharging procedures.

12.4. Storage

12.4.1. Storage conditions

The cell should be stored within a range of temperatures specified in the specification. Otherwise, it may cause loss of performance characteristics, leakage and/or rust.

12.4.2. Long term storage

The cell should be used within a short period after charging because long-term storage may cause loss of performance by self-discharging. If long-term storage is required the cell should be stored at lower voltage within a range specified in this specification, as higher voltage storage may also lead to loss of performance.

12.5. Cycle Life

12.5.1. The cell can be charged & discharged repeatedly up to times with a certain level of capacity specified in specification.

12.5.2. Cycle life may be determined by conditions of charging, discharging, operating temperature and/or storage.

12.6. Design of System

12.6.1. Connection between the cell and the battery

To prevent the heat generation the cell should be connected with solder which shall be welded on the connector(eg. cell cap or bottom), otherwise the component of the cell such as the separator and insula tor may damaged.

12.6.2. Positioning the battery in the system

The battery should be positioned as possible as far from heat sources and high temperature components. Otherwise, it may cause loss of characteristics. The recommended spacing between the cells is more than 1mm.

12.6.3. Mechanical shock protection of the battery

The battery should be equipped with appropriate shock absorbers in the pack in order to minimize shock, which can damage the cells. Otherwise, it may cause shape distortion, leakage, heat generation and/or rupture and/or open circuit.

12.6.4. Short-circuit protection of the cell

The cell equips with an insulating sleeve to protect short-circuit which may occur during transportation, battery assembly and/or system operation. If the cell sleeve is damaged by some cause such as outside impact, it may cause short-circuit with some wiring inside the battery.

12.6.5. Connection between the battery and charger/system

The battery should be designed to be connected only to the specified charger and system. A reverse connection of the battery, even in the specified system, should be avoided by employing special battery design such as a special terminal.

12.6.6. Pack design

The current consumption of the battery pack should be under 10uA at sleep mode. The system should be equipped with a device to monitor each voltage of cell block to avoid cell imbalance which can cause damage to the cells.

The battery pack or system should have warning system such as over temperature, over voltage, over current, and so on.

12.7. Battery Pack Assembly

12.7.1. Prohibition of usage of damaged cell

The cell should be inspected visually before battery assembly.

The cell should not be used if sleeve-damage, can-distortion and/or electrolyte-smell is detected.

12.7.2. Terminals handing

Excessive force on the negative terminal should be avoided when external strip terminal is welded.

12.7.3. Transportation

If the cell is necessary to be transported to such as the battery manufacturer, careful precautions should be taken to avoid damage of cell.

12.8. Others

12.8.1. Disassembly

The cell should not be dismantled from the battery pack.

Internal short-circuit caused by disassembly may lead to heat generation and/or venting.

If liquid leaking from the battery gets into your eyes, don't rub your eyes and wash them with clean water and go to see a doctor immediately.

12.8.2. Short-circuiting

Short-circuit results in very high current which leads to heat generation.

An appropriate circuitry should be employed to protect accidental short-circuiting.

12.8.3. Incineration

Incinerating and disposing of the cell in fire are strictly prohibited, because it may cause rupture and explosion.

12.8.4. Immersion

Soaking the cell in water is strictly prohibited, because it may cause corrosion and leakage of components to be damaged to functions.

12.8.5. Mixing use

Different types of cell, or same types but different cell manufacturer shall not be used, which may lead to cell imbalance, cell rupture or damage to system due to the different characteristics of cell.

12.8.6. Battery exchange

Although the cell contains no environmentally hazardous component, such as lead or cadmium, the battery shall be disposed according to the local regulations when it is disposed.

The cell should be disposed with a discharged state to avoid heat generation by an inadvertent short-circuit.

12.8.7. Temperature measurement

The temperature monitoring system (K-type thermocouple) is recommended to be placed in the middle of the cell (30mm~34mm up from the bottom of the cell), and the accuracy of the temperature monitoring system should be within ±2℃.

12.8.8. Caution

The battery used in this device may present a risk of fire or chemical burn if mistreated.

Do not disassemble, expose to heat above 100°C or incinerate it.

Do not expose the cell to extreme heat or flame.

Do not short circuit, over-charge or over-discharge the cell.

Do not subject the cell to strong mechanical shocks.

Do not immerse the cell in water or sea water, or get it wet.

Do not reverse the polarity of the cell for any reason.

Do not disassemble or modify the cell.

Do not handle or store with metallic like necklaces, coins or hairpins, etc.

Do not use the cell fall off on the ground

Do not use the cell with conspicuous damage or deformation.

Do not connect cell to the plug socket or car-cigarette-plug.

Do not make the direct soldering onto a cell.

Do not touch a leaked cell directly.

Do not use Lithium-ion cell in mixture.

Do not use or leave the cell under the blazing sun (or in heated car by sunshine).

Keep cell away from children.

Do not drive a nail into the cell, strike it by hammer or tread it.

Replace battery with those of EVE only.

13. Others

13.1. Storage for a Long Time

If the cell or pack is kept for a long time (3 months or more), it is strongly recommended that the cell is performed one cycle， the voltage of the cell is recommended from 3.450V to 3.600V, the environment should be low-temperature (normally 0~25°C), dry and no corrosive gas.

13.2. Others

Any other matters not covered under this specification shall be separately negotiated and confirmed by both parties.

14. Consultation

Address: EVE Energy Co., Ltd.-EVE Industrial Park on No.38, Huifeng 7th Road, Zhongkai Hi-Tech Zone, Huizhou.

Tel No.: 86-752-2630809

Fax No.: 86-752-2606033

Website: Http://www.evebattery.com.cn

Attachment:

Fig 1:

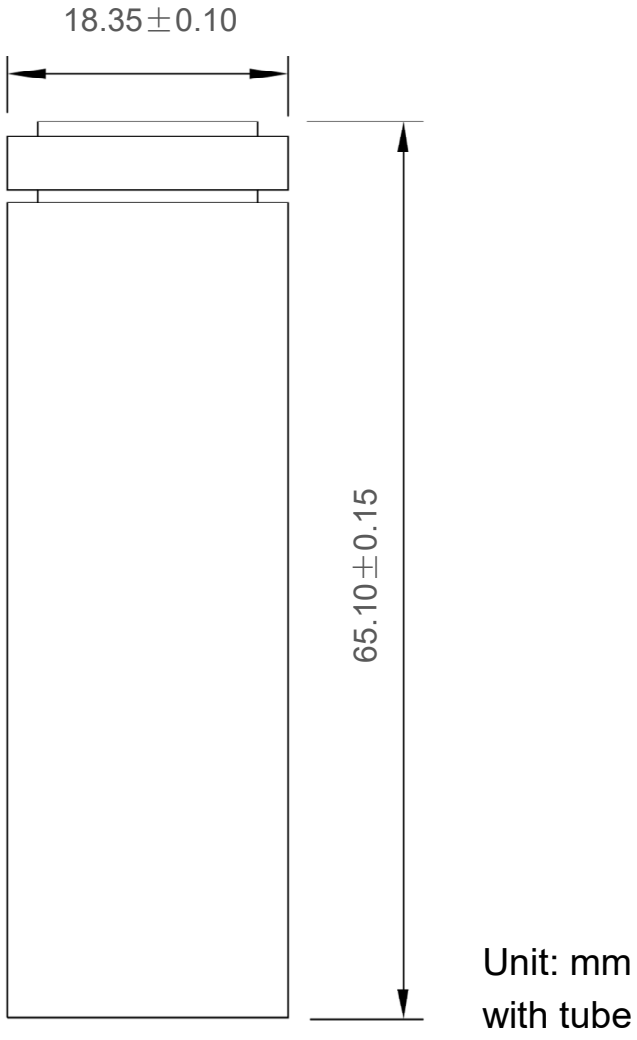
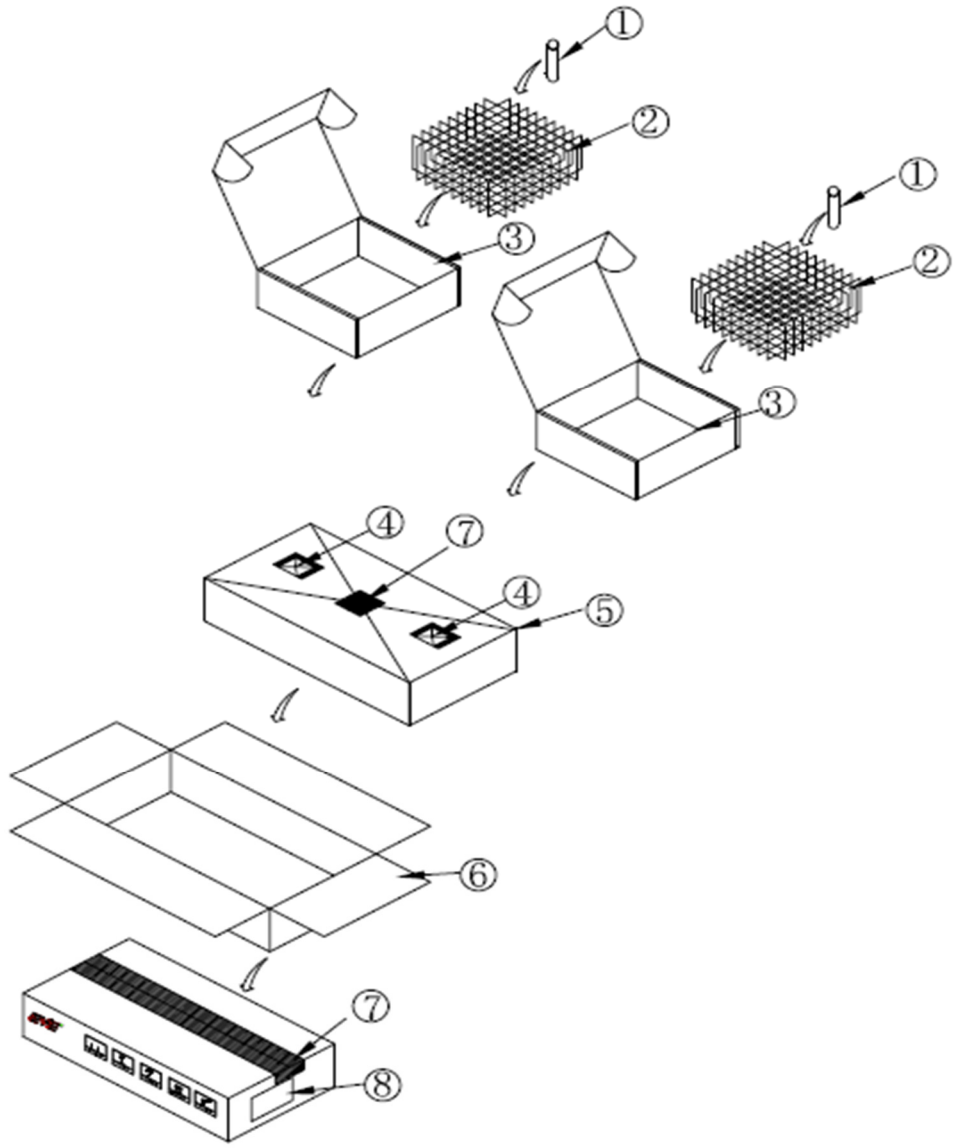


Fig. 1. Outline Dimensions of INR18650/35V

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Attachment:

Fig 2:



NO.	Part Name	Material	Q'Ty
1	Cell	Cylindrical	200 pcs/box
2	Packing Guide	Manila	36 pcs/box
3	Box(Packing Case In)	SW	2 pcs/box
4	Silicagel	Si	2 pcs/box
5	Bag PE	PE	1 pcs/box
6	Box(Packing Case Out)	SW/DW	1 pcs/box
7	Tape	PE	0.01 rol/box
8	Product Label	Art Paper	1 pcs/box

Fig. 2. Package drawing