IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-109978

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	Cylindrical Li-ion Cell
Name and address of the applicant	Chongqing Tianhui Energy Technology Co.,Ltd. Building 5, Standard Workshop of 120,000 square meters, Wuyang New District Park, Chongqing, P.R. China Zhongxian Industrial
Name and address of the manufacturer	Chongqing Tianhui Energy Technology Co.,Ltd. Building 5, Standard Workshop of 120,000 square meters, Wuyang New District Park, Chongqing, P.R. China Zhongxian Industrial
Name and address of the factory	Chongqing Tianhui Energy Technology Co.,Ltd. Building 5, Standard Workshop of 120,000 square meters, Wuyang New District Park, Chongqing, P.R. China Zhongxian Industrial
Ratings and principal characteristics	Refer to the test report.
Trademark (if any)	
Customer's Testing Facility (CTF) Stage used	N/A
Model / Type Ref.	LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, For model differences, refer to the test report.
Additional information (if necessary may also be reported on page 2)	
A sample of the product was tested and found to be in conformity with	IEC 62133-2:2017 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate	60373730 001

This CB Test Certificate is issued by the National Certification Body

TÜVRheinland®

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Global Technology Assessment Center
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Date: 12.06.2020

Signature: A. Chen

1. Chongqing Tianhui Energy Technology Co.,Ltd.
Building 5, Standard Workshop of 120,000 square meters, Wuyang New District, Zhongxian Industrial Park, Chongqing, P.R. China

Additional information (if necessary)
Information complémentaire (si nécessaire)

Report Ref. No.: 60373730 001

Additional models:
LNCMR18650-2300mAh, LNCMR18650-2400mAh
LNCMR18650-2500mAh

Date: 12.06.2020

Signature: A. Chen

TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

Chongqing Tianhui Energy Technology Co.,Ltd.

Date : 12.06.2020
Our ref. : CUIE SZ
Your ref.: 168265136

Building 5, Standard Workshop of 120,000
square meters, Wuyang New District,
Zhongxian Industrial Park,
Chongqing

Ref : CB Certificate Japan

Type of Equipment : Cylindrical Li-ion Cell
Model Designation : See Certificate
Certificate No. : JPTUV-109978
Report No. : 60373730 001

Dear Ladies and Gentlemen,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services.

Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body

A. Chen

Enclosure

TÜV Rheinland (China) Ltd.
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Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT

IEC 62133-2

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems

Report Number. ..... :	**60373730 001**
Date of issue ..... :	2020-06-11
Total number of pages ..... :	31 pages
Name of Testing Laboratory preparing the Report ..... :	**ATS Electronic Technology Co., Ltd**
Applicant's name ..... :	Chongqing Tianhui Energy Technology Co.,Ltd.
Address ..... :	Building 5, Standard Workshop of 120,000 square meters, Wuyang New District Zhongxian Industrial Park, Chongqing, P.R. China
Test specification:	
Standard ..... :	IEC 62133-2:2017
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62133_2A
Test Report Form(s) Originator .... :	DEKRA
Master TRF ..... :	Dated 2017-08-10

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Cylindrical Li-ion Cell
Trade Mark ..... :	N/A
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh
Ratings ..... :	See page 6

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	**ATS Electronic Technology Co., Ltd**	
Testing location/ address.....:		3/F, Building A, No. 1 Hedong Three Road, Jinxia Community, Changan Town, Dongguan City, Guangdong, China	
Tested by (name, function, signature).....:		Matt Zhao (Engineer)	Matt Zhao
Approved by (name, function, signature)...:		Jason Pan (Reviewer)	Jason Pan

☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			

☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			

☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):
Attachment 1: Photo documentation (4 pages).

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
cl.7.1 Charging procedure for test purposes; cl.7.2.1 Continuous charging at constant voltage (cells); cl.7.3.1 External short circuit (cells); cl.7.3.3 Free fall (cells); cl.7.3.4 Thermal abuse (cells); cl.7.3.5 Crush (cells); cl.7.3.7 Forced discharge (cells); cl.7.3.9 Design evaluation - Forced internal short circuit (cells) Tests are made with the number of cells specified in IEC 62133-2: 2017 (Edition 1.0) Table 1.	**ATS Electronic Technology Co., Ltd** 3/F, Building A, No. 1 Hedong Three Road, Jinxia Community, Changan Town, Dongguan City, Guangdong, China

Summary of compliance with National Differences (List of countries addressed):
N/A

☒ **The product fulfils the requirements of EN 62133-2: 2017**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

For model LNCMR18650-1300mAh:

	Cylindrical Li-ion Cell LNCMR18650-1300mAh INR19/66	
+	1300mAh, 3.7V, 4.81Wh	-
	YYYYMMDD Chongqing Tianhui Energy Technology Co.,Ltd.	

For model LNCMR18650-1800mAh:

	Cylindrical Li-ion Cell LNCMR18650-1800mAh INR19/66	
+	1800mAh, 3.7V, 6.66Wh	-
	YYYYMMDD Chongqing Tianhui Energy Technology Co.,Ltd.	

For model LNCMR18650-2000mAh:

	Cylindrical Li-ion Cell LNCMR18650-2000mAh INR19/66	
+	2000mAh, 3.7V, 7.4Wh	-
	YYYYMMDD Chongqing Tianhui Energy Technology Co.,Ltd.	

For model LNCMR18650-2500mAh:

	Cylindrical Li-ion Cell LNCMR18650-2500mAh INR19/66	
+	2500mAh, 3.7V, 9.25Wh	-
	YYYYMMDD Chongqing Tianhui Energy Technology Co.,Ltd.	

Remark: YYYYMMDD represents the date of manufacture, YYYY represents the year, MM represent the month, DD represent the day.

Test item particulars.....:	
Classification of installation and use.....:	N/A
Supply Connection.....:	Terminal contact
Recommend charging method declared by the manufacturer.....:	Charging the cell with 0.5C constant current and 4.2V constant voltage until the current reduces to 0.02C at ambient 20°C±5°C
Discharge current (0,2 It A).....:	260mA for model LNCMR18650-1300mAh, 360mA for model LNCMR18650-1800mAh, 400mA for model LNCMR18650-2000mAh, 500mA for model LNCMR18650-2500mAh
Specified final voltage.....:	2.75V
Upper limit charging voltage per cell.....:	4.2V
Maximum charging current.....:	3C
Charging temperature upper limit.....:	45°C
Charging temperature lower limit.....:	0°C
Polymer cell electrolyte type.....:	☐ gel polymer ☐ solid polymer ☒ N/A
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2020-05-06
Date (s) of performance of tests.....:	2020-05-06 to 2020-05-28
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	Same as applicant

General product information and other remarks:

This cell consists of the positive electrode plate, negative electrode plate, separator and electrolyte. The positive and negative electrode plates are housed in the case in the state being separated by the separator.

This series cover 11 models: LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh, Cylindrical Li-ion Cell, these cells are identical except capacity and model name. The models LNCMR18650-1300mAh, LNCMR18650-1800mAh, LNCMR18650-2000mAh, LNCMR18650-2500mAh, are selected to be tested for represent other models.

The main features of the cell are shown as below (clause 7.1.1):

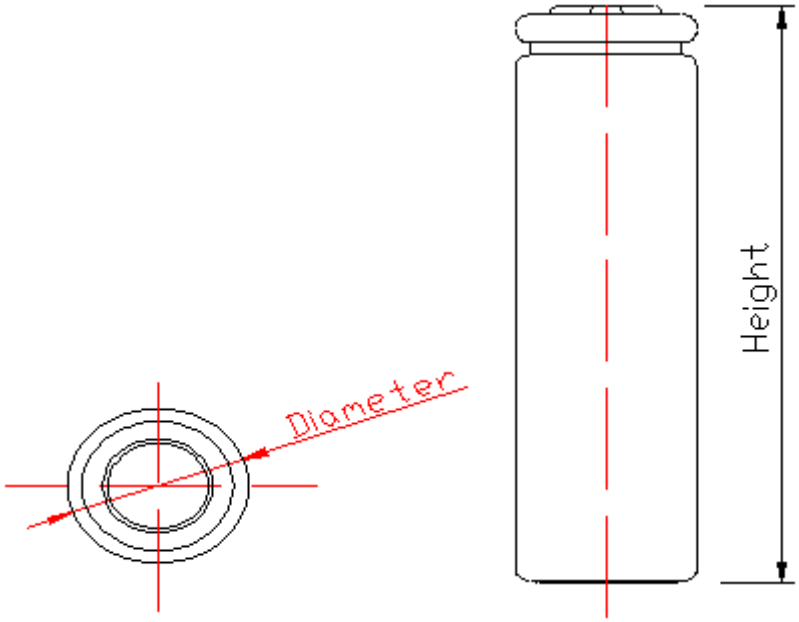
Model	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
LNCMR18650-1300mAh	1300mAh	3.7V	650mA	650mA	3900mA	6500mA	4.2V	2.75V
LNCMR18650-1400mAh	1400mAh	3.7V	700mA	700mA	4200mA	7000mA	4.2V	2.75V
LNCMR18650-1500mAh	1500mAh	3.7V	750mA	750mA	4500mA	7500mA	4.2V	2.75V
LNCMR18650-1800mAh	1800mAh	3.7V	900mA	900mA	5400mA	9000mA	4.2V	2.75V
LNCMR18650-1900mAh	1900mAh	3.7V	950mA	950mA	5700mA	9500mA	4.2V	2.75V
LNCMR18650-2000mAh	2000mAh	3.7V	1000mA	1000mA	6000mA	10000mA	4.2V	2.75V
LNCMR18650-2100mAh	2100mAh	3.7V	1050mA	1050mA	6300mA	10500mA	4.2V	2.75V
LNCMR18650-2200mAh	2200mAh	3.7V	1100mA	1100mA	6600mA	11000mA	4.2V	2.75V
LNCMR18650-2300mAh	2300mAh	3.7V	1150mA	1150mA	6900mA	11500mA	4.2V	2.75V
LNCMR18650-2400mAh	2400mAh	3.7V	1200mA	1200mA	7200mA	12000mA	4.2V	2.75V
LNCMR18650-2500mAh	2500mAh	3.7V	1250mA	1250mA	7500mA	12500mA	4.2V	2.75V

The main features of the cell are shown as below (clause 7.1.2):

Model	Upper limit charge voltage	Taper-off current	Lower charge temperature	Upper charge temperature
LNCMR18650-1300mAh	4.2V	65mA	0ºC	45ºC
LNCMR18650-1400mAh	4.2V	70mA	0ºC	45ºC
LNCMR18650-1500mAh	4.2V	75mA	0ºC	45ºC

LNCMR1865 0-1800mAh	4.2V	90mA	0ºC	45ºC
LNCMR1865 0-1900mAh	4.2V	95mA	0ºC	45ºC
LNCMR1865 0-2000mAh	4.2V	100mA	0ºC	45ºC
LNCMR1865 0-2100mAh	4.2V	105mA	0ºC	45ºC
LNCMR1865 0-2200mAh	4.2V	110mA	0ºC	45ºC
LNCMR1865 0-2300mAh	4.2V	115mA	0ºC	45ºC
LNCMR1865 0-2400mAh	4.2V	120mA	0ºC	45ºC
LNCMR1865 0-2500mAh	4.2V	125mA	0ºC	45ºC

Construction:



Diameter (max.): Height (max.) = 18.3mm: 66.0mm (for all models)
Cell (Unit: mm)

Circuit diagram:
None, cell only

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
4	**PARAMETER MEASUREMENT TOLERANCES**		**P**
	Parameter measurement tolerances		P
5	**GENERAL SAFETY CONSIDERATIONS**		**P**
5.1	**General**		P
	Cells and batteries so designed and constructed that they are safe under conditions of both intended use and reasonably foreseeable misuse		P
5.2	**Insulation and wiring**		N/A
	The insulation resistance between the positive terminal and externally exposed metal surfaces of the battery (excluding electrical contact surfaces) is not less than 5 MΩ	Cell only.	N/A
	Insulation resistance (MΩ) ..... :		—
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		N/A
	Orientation of wiring maintains adequate clearance and creepage distances between conductors		N/A
	Mechanical integrity of internal connections accommodates reasonably foreseeable misuse		N/A
5.3	**Venting**		P
	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition	Venting mechanism exists on top side of the cylindrical cell.	P
	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief		N/A
5.4	**Temperature, voltage and current management**	Cell only.	N/A
	Batteries are designed such that abnormal temperature rise conditions are prevented		N/A
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer		N/A
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that specified chargers are designed to maintain charging within the temperature, voltage and current limits specified		N/A
5.5	**Terminal contacts**		P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current	Complied.	P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance		P
	Terminal contacts are arranged to minimize the risk of short-circuit		P
5.6	**Assembly of cells into batteries**	Cell only.	N/A
5.6.1	General		N/A
	Each battery have an independent control and protection for current, voltage, temperature and any other parameter required for safety and to maintain the cells within their operating region		N/A
	This protection may be provided external to the battery such as within the charger or the end devices		N/A
	If protection is external to the battery, the manufacturer of the battery provide this safety relevant information to the external device manufacturer for implementation		N/A
	If there is more than one battery housed in a single battery case, each battery have protective circuitry that can maintain the cells within their operating regions		N/A
	Manufacturers of cells specify current, voltage and temperature limits so that the battery manufacturer/designer may ensure proper design and assembly		N/A
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate circuitry to prevent operation of cells outside the limits specified by the cell manufacturer		N/A
	Protective circuit components added as appropriate and consideration given to the end-device application		N/A
	The manufacturer of the battery provide a safety analysis of the battery safety circuitry with a test report including a fault analysis of the protection circuit under both charging and discharging conditions confirming the compliance		N/A
5.6.2	Design recommendation		N/A
	For the battery consisting of a single cell or a single cellblock, it is recommended that the charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Table 2		N/A

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that the voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Table 2, by monitoring the voltage of every single cell or the single cellblocks		N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that charging is stopped when the upper limit of the charging voltage is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks		N/A
	For batteries consisting of series-connected cells or cell blocks, nominal charge voltage not be counted as an overcharge protection		N/A
	For batteries consisting of series-connected cells or cell blocks, cells have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer		N/A
	It is recommended that the cells and cell blocks not discharged beyond the cell manufacturer's specified final voltage		N/A
	For batteries consisting of series-connected cells or cell blocks, cell balancing circuitry incorporated into the battery management system		N/A
5.6.3	Mechanical protection for cells and components of batteries		N/A
	Mechanical protection for cells, cell connections and control circuits within the battery provided to prevent damage as a result of intended use and reasonably foreseeable misuse		N/A
	The mechanical protection can be provided by the battery case or it can be provided by the end product enclosure for those batteries intended for building into an end product		N/A
	The battery case and compartments housing cells designed to accommodate cell dimensional tolerances during charging and discharging as recommended by the cell manufacturer		N/A
	For batteries intended for building into a portable end product, testing with the battery installed within the end product considered when conducting mechanical tests		N/A
5.7	**Quality plan**		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	The manufacturer prepares and implements a quality plan that defines procedures for the inspection of materials, components, cells and batteries and which covers the whole process of producing each type of cell or battery	Complied. Quality plan provided.	P
5.8	**Battery safety components**	Cell only.	N/A
	According annex F		N/A

6	**TYPE TEST AND SAMPLE SIZE**		**P**
	Tests are made with the number of cells or batteries specified in Table 1 using cells or batteries that are not more than six months old		P
	Coin cells with resistance ≤ 3 Ω (measured according annex D) are tested according table 1	Not coin cells.	N/A
	Unless otherwise specified, tests are carried out in an ambient temperature of 20 °C ± 5 °C		P
	The safety analysis of 5.6.1 identify those components of the protection circuit that are critical for short-circuit, overcharge and overdischarge protection	Cell only.	N/A
	When conducting the short-circuit test, consideration given to the simulation of any single fault condition that is likely to occur in the protecting circuit that would affect the short-circuit test	Cell only.	N/A

7	**SPECIFIC REQUIREMENTS AND TESTS**		**P**
7.1	**Charging procedure for test purposes**		P
7.1.1	First procedure		P
	This charging procedure applies to subclauses other than those specified in 7.1.2		P
	Unless otherwise stated in this document, the charging procedure for test purposes is carried out in an ambient temperature of 20 °C ± 5 °C, using the method declared by the manufacturer	See page 5.	P
	Prior to charging, the battery have been discharged at 20 °C ± 5 °C at a constant current of 0,2 It A down to a specified final voltage	See page 5.	P
7.1.2	Second procedure		P
	This charging procedure applies only to 7.3.1, 7.3.4, 7.3.5, and 7.3.9		P
	After stabilization for 1 h and 4 h, respectively, at ambient temperature of highest test temperature and lowest test temperature, as specified in Table 2, cells are charged by using the upper limit charging voltage and maximum charging current, until the charging current is reduced to 0,05 It A, using a constant voltage charging method	Charge temperature 0-45°C declared. 45°C used for upper limit tests temperature, -5°C used for lower limit tests temperature.	P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	**Intended use**		P
7.2.1	Continuous charging at constant voltage (cells)	Tested complied.	P
	Fully charged cells are subjected for 7 days to a charge using the charging method for current and standard voltage specified by the cell manufacturer	Charging for 7 days with 0.5C.	P
	Results: No fire. No explosion. No leakage.....:	(See appended table 7.2.1)	P
7.2.2	Case stress at high ambient temperature (battery)	Cell only.	N/A
	Oven temperature (°C).....:		—
	Results: No physical distortion of the battery case resulting in exposure of internal protective components and cells		N/A
7.3	**Reasonably foreseeable misuse**		P
7.3.1	External short-circuit (cell)	Tested complied.	P
	The cells were tested until one of the following occurred:		P
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		P
	Results: No fire. No explosion.....:	(See appended table 7.3.1)	P
7.3.2	External short-circuit (battery)	Cell only	N/A
	The batteries were tested until one of the following occurred:		N/A
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		N/A
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition		N/A
	A single fault in the discharge protection circuit conducted on one to four (depending upon the protection circuit) of the five samples before conducting the short-circuit test		N/A
	A single fault applies to protective component parts such as MOSFET, fuse, thermostat or positive temperature coefficient (PTC) thermistor		N/A
	Results: No fire. No explosion.....:	(See appended table 7.3.2)	N/A
7.3.3	Free fall	Tested complied.	P
	Results: No fire. No explosion	No fire. No explosion.	P
7.3.4	Thermal abuse (cells)	Tested complied.	P
	Oven temperature (°C).....:	130	—
	Results: No fire. No explosion	No fire. No explosion	P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.3.5	Crush (cells)	Tested complied.	P
	The crushing force was released upon:		P
	- The maximum force of 13 kN ± 0,78 kN has been applied; or		P
	- An abrupt voltage drop of one-third of the original voltage has been obtained		N/A
	Results: No fire. No explosion..... :	(See appended table 7.3.5)	P
7.3.6	Over-charging of battery	Cell only	N/A
	The supply voltage which is:		N/A
	- 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or		N/A
	- 1,2 times the upper limit charging voltage resented in Table A.1 per cell for series connected multi-cell batteries, and		N/A
	- Sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached		N/A
	Test was continued until the temperature of the outer casing:		N/A
	- Reached steady state conditions (less than 10 °C change in 30-minute period); or		N/A
	- Returned to ambient		N/A
	Results: No fire. No explosion..... :	(See appended table 7.3.6)	N/A
7.3.7	Forced discharge (cells)	Tested complied.	P
	If the discharge voltage reaches the negative value of upper limit charging voltage within the testing duration, the voltage is maintained at the negative value of the upper limit charging voltage by reducing the current for the remainder of the testing duration		N/A
	If the discharge voltage does not reach the negative value of upper limit charging voltage within the testing duration, the test is terminated at the end of the testing duration		P
	Results: No fire. No explosion..... :	(See appended table 7.3.7)	P
7.3.8	Mechanical tests (batteries)	Cell only.	N/A
7.3.8.1	Vibration		N/A
	Results: No fire, no explosion, no rupture, no leakage or venting. ..... :	(See appended table 7.3.8.1)	N/A
7.3.8.2	Mechanical shock		N/A
	Results: No leakage, no venting, no rupture, no explosion and no fire ..... :	(See appended table 7.3.8.2)	N/A

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.3.9	Design evaluation – Forced internal short-circuit (cells)	Tested complied.	P
	The cells complied with national requirement for .....:	France, Japan, Republic of Korea and Switzerland.	—
	The pressing was stopped upon:		P
	- A voltage drop of 50 mV has been detected; or		N/A
	- The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) has been reached	800 N	P
	Results: No fire ..... :	(See appended table 7.3.9)	P
8	**INFORMATION FOR SAFETY**		**P**
8.1	**General**		P
	Manufacturers of secondary cells ensure that information is provided about current, voltage and temperature limits of their products	Information for safety mentioned in manufacturer's specifications	P
	Manufacturers of batteries ensure that equipment manufacturers and, in the case of direct sales, end-users are provided with information to minimize and mitigate hazards		N/A
	Systems analyses performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product		N/A
	As appropriate, any information relating to hazard avoidance resulting from a system analysis provided to the end user		N/A
	Do not allow children to replace batteries without adult supervision		N/A
8.2	**Small cell and battery safety information**	Not small cell.	N/A
	The following warning language is to be provided with the information packaged with the small cells and batteries or equipment using them:		N/A
	- Keep small cells and batteries which are considered swallowable out of the reach of children		N/A
	- Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2 h of ingestion		N/A
	- In case of ingestion of a cell or battery, seek medical assistance promptly		N/A
9	**MARKING**		**P**
9.1	**Cell marking**		P
	Cells marked as specified in IEC 61960, except coin cells	The cell is marked in accordance with IEC 61960-3, also see page 4.	P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Coin cells whose external surface area is too small to accommodate the markings on the cells show the designation and polarity		N/A
	By agreement between the cell manufacturer and the battery and/or end product manufacturer, component cells used in the manufacture of a battery need not be marked		N/A
9.2	**Battery marking**	Cell only.	N/A
	Batteries marked as specified in IEC 61960, except for coin batteries		N/A
	Coin batteries whose external surface area is too small to accommodate the markings on the batteries show the designation and polarity. Batteries also marked with an appropriate caution statement		N/A
	Terminals have clear polarity marking on the external surface of the battery		N/A
	Batteries with keyed external connectors designed for connection to specific end products need not be marked with polarity markings if the design of the external connector prevents reverse polarity connections		N/A
9.3	**Caution for ingestion of small cells and batteries**		N/A
	Coin cells and batteries identified as small batteries according to 8.2 include a caution statement regarding the hazards of ingestion in accordance with 8.2	Not small cell.	N/A
	When small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion given on the immediate package		N/A
9.4	**Other information**		P
	Storage and disposal instructions	Information for storage and disposal instructions mentioned in manufacturer's specifications.	P
	Recommended charging instructions	Information for recommended charging instructions mentioned in manufacturer's specifications.	P
10	**PACKAGING AND TRANSPORT**		P
	Packaging for coin cells not small enough to fit within the limits of the ingestion gauge of Figure 3		P
	The materials and packaging design are chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX A	**CHARGING AND DISCHARGING RANGE OF SECONDARY LITHIUM ION CELLS FOR SAFE USE**		**P**
A.1	**General**		P
A.2	**Safety of lithium ion secondary battery**	Complied.	P
A.3	**Consideration on charging voltage**	Complied.	P
A.3.1	General		P
A.3.2	Upper limit charging voltage	4.2V	P
A.3.2.1	General		P
A.3.2.2	Explanation of safety viewpoint		P
A.3.2.3	Safety requirements, when different upper limit charging voltage is applied	4.2V applied.	P
A.4	**Consideration of temperature and charging current**		P
A.4.1	General		P
A.4.2	Recommended temperature range	See A.4.2.2.	P
A.4.2.1	General		P
A.4.2.2	Safety consideration when a different recommended temperature range is applied	Charging temperature declared by client is: 0-45°C	P
A.4.3	High temperature range	Not higher than the temperature range specific in this standard.	N/A
A.4.3.1	General		N/A
A.4.3.2	Explanation of safety viewpoint		N/A
A.4.3.3	Safety considerations when specifying charging conditions in the high temperature range		N/A
A.4.3.4	Safety considerations when specifying a new upper limit in the high temperature range		N/A
A.4.4	Low temperature range	Charging low temperature declared by client is: 0°C.	P
A.4.4.1	General		P
A.4.4.2	Explanation of safety viewpoint		P
A.4.4.3	Safety considerations, when specifying charging conditions in the low temperature range		P
A.4.4.4	Safety considerations when specifying a new lower limit in the low temperature range	No documents provided by manufacturer explaining the lower limit exceed 10°C, -5°C applied for testing in this report for safety considerations.	P
A.4.5	Scope of the application of charging current		P
A.4.6	Consideration of discharge		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
A.4.6.1	General		P
A.4.6.2	Final discharge voltage and explanation of safety viewpoint	Cell specified final voltage 2.75V, not exceed 2.75V specified by cell manufacturer.	P
A.4.6.3	Discharge current and temperature range		P
A.4.6.4	Scope of application of the discharging current		P
A.5	**Sample preparation**		P
A.5.1	General		P
A.5.2	Insertion procedure for nickel particle to generate internal short		P
A.5.3	Disassembly of charged cell		P
A.5.4	Shape of nickel particle		P
A.5.5	Insertion of nickel particle in cylindrical cell		P
A.5.5.1	Insertion of nickel particle in winding core		P
A.5.5.2	Marking the position of the nickel particle on both ends of the winding core of the separator		P
A.5.6	Insertion of nickel particle in prismatic cell		N/A
A.6	**Experimental procedure of the forced internal short-circuit test**		P
A.6.1	Material and tools for preparation of nickel particle		P
A.6.2	Example of a nickel particle preparation procedure		P
A.6.3	Positioning (or placement) of a nickel particle		P
A.6.4	Damaged separator precaution		P
A.6.5	Caution for rewinding separator and electrode		P
A.6.6	Insulation film for preventing short-circuit		P
A.6.7	Caution when disassembling a cell		P
A.6.8	Protective equipment for safety		P
A.6.9	Caution in the case of fire during disassembling		P
A.6.10	Caution for the disassembling process and pressing the electrode core		P
A.6.11	Recommended specifications for the pressing device		P
ANNEX B	**RECOMMENDATIONS TO EQUIPMENT MANUFACTURERS AND BATTERY ASSEMBLERS**		P
ANNEX C	**RECOMMENDATIONS TO THE END-USERS**		P
ANNEX D	**MEASUREMENT OF THE INTERNAL AC RESISTANCE FOR COIN CELLS**		N/A
D.1	**General**	Not coin cells.	N/A

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
D.2	**Method**		N/A
	A sample size of three coin cells is required for this measurement..... :	(See appended table D.2)	N/A
	Coin cells with an internal resistance of less than or equal to 3 Ω are subjected to the testing according to Clause 6 and Table 1		N/A
	Coin cells with an internal resistance greater than 3 Ω require no further testing		N/A
ANNEX E	**PACKAGING AND TRANSPORT**		P
ANNEX F	**COMPONENT STANDARDS REFERENCES**		N/A

	TABLE: Critical components information				P
Object / part No.	**Manufacturer / trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Cell	Chongqing Tianhui Energy Technology Co.,Ltd.	LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh	3.7V, 1300mAh, 3.7V, 1400mAh, 3.7V, 1500mAh, 3.7V, 1800mAh, 3.7V, 1900mAh, 3.7V, 2000mAh, 3.7V, 2100mAh, 3.7V, 2200mAh, 3.7V, 2300mAh, 3.7V, 2400mAh, 3.7V, 2500mAh	IEC 62133-2: 2017	Tested with appliance
-Positive electrode	Henan Fusen New Energy Technology Co., Ltd.	FSS523D	$Li(NiCoMn)O_2$	--	--
	Zhejiang Jinying New Energy Technology Development Co.,Ltd.	WL-M02C	$LiMnO_2$		
-Negative electrode	Inner Mongolia Sanxin New Material Technology Co., Ltd.	S1	Graphite	--	--
-Separator	Shenzhen Yuanvitona Technology Co., Ltd.	20um PP	PP, Shutdown temperature: 135°C	--	--
-Electrolyte	Shanghai Shenshi Battery Technolo Co., Ltd	L-6521	$LiPF_6$	--	--
-Case	Wuxi Shuangqing Co., Ltd	18650	Stainless steel	--	--

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

7.2.1	TABLE: Continuous charging at constant voltage (cells)			P
Sample no.	**Recommended charging voltage Vc (Vdc)**	**Recommended charging current I_{rec} (A)**	**OCV before test (Vdc)**	**Results**
For model LNCMR18650-1300mAh:				
ATSP2005013A A-001	4.20	0.65	4.18	P
ATSP2005013A A-002	4.20	0.65	4.17	P
ATSP2005013A A-003	4.20	0.65	4.18	P
ATSP2005013A A-004	4.20	0.65	4.18	P
ATSP2005013A A-005	4.20	0.65	4.17	P
For model LNCMR18650-1800mAh:				
ATSP2005013A A-054	4.20	0.90	4.17	P
ATSP2005013A A-055	4.20	0.90	4.17	P
ATSP2005013A A-056	4.20	0.90	4.18	P
ATSP2005013A A-057	4.20	0.90	4.18	P
ATSP2005013A A-058	4.20	0.90	4.17	P
For model LNCMR18650-2000mAh:				
ATSP2005013A A-107	4.20	1.00	4.18	P
ATSP2005013A A-108	4.20	1.00	4.18	P
ATSP2005013A A-109	4.20	1.00	4.18	P
ATSP2005013A A-110	4.20	1.00	4.18	P
ATSP2005013A A-111	4.20	1.00	4.17	P
For model LNCMR18650-2500mAh:				
ATSP2005013A A-160	4.20	1.25	4.17	P
ATSP2005013A A-161	4.20	1.25	4.18	P
ATSP2005013A A-162	4.20	1.25	4.18	P
ATSP2005013A A-163	4.20	1.25	4.18	P
ATSP2005013A A-164	4.20	1.25	4.18	P
Supplementary information: - No fire or explosion - No leakage				

7.3.1	TABLE: External short-circuit (cells)				P
Sample no.	**Ambient T (°C)**	**OCV before test (Vdc)**	**Resistance of circuit (mΩ)**	**Maximum case temperature ~~rise ΔT~~ (°C)**	**Results**
For model LNCMR18650-1300mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013AA-006	55.4	4.18	86	115.6	P
ATSP2005013AA-007	55.4	4.18	85	121.3	P
ATSP2005013AA-008	55.4	4.18	83	110.5	P
ATSP2005013AA-009	55.4	4.18	81	114.7	P
ATSP2005013AA-010	55.4	4.17	79	113.5	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013AA-011	55.4	4.11	86	116.9	P
ATSP2005013AA-012	55.4	4.12	82	110.5	P
ATSP2005013AA-013	55.4	4.11	84	122.3	P
ATSP2005013AA-014	55.4	4.11	86	124.4	P
ATSP2005013AA-015	55.4	4.11	84	120.1	P
For model LNCMR18650-1800mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013AA-059	56.2	4.18	78	115.6	P
ATSP2005013AA-060	56.2	4.17	83	123.1	P
ATSP2005013AA-061	56.2	4.18	85	119.8	P
ATSP2005013AA-062	56.2	4.18	84	116.2	P
ATSP2005013AA-063	56.2	4.18	82	115.4	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013AA-064	56.2	4.12	82	111.4	P
ATSP2005013AA-065	56.2	4.12	83	117.2	P
ATSP2005013AA-066	56.2	4.11	85	116.1	P
ATSP2005013AA-067	56.2	4.11	85	122.9	P
ATSP2005013AA-068	56.2	4.11	84	119.3	P

For model LNCMR18650-2000mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013A A-112	56.0	4.18	76	120.6	P
ATSP2005013A A-113	56.0	4.18	79	123.5	P
ATSP2005013A A-114	56.0	4.18	82	117.6	P
ATSP2005013A A-115	56.0	4.17	82	119.6	P
ATSP2005013A A-116	56.0	4.18	83	116.7	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013A A-117	56.0	4.11	80	120.3	P
ATSP2005013A A-118	56.0	4.11	79	126.4	P
ATSP2005013A A-119	56.0	4.11	82	123.5	P
ATSP2005013A A-120	56.0	4.11	80	118.5	P
ATSP2005013A A-121	56.0	4.12	79	117.9	P
For model LNCMR18650-2500mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013A A-165	55.9	4.17	78	119.6	P
ATSP2005013A A-166	55.9	4.18	82	125.4	P
ATSP2005013A A-167	55.9	4.18	86	121.1	P
ATSP2005013A A-168	55.9	4.18	74	115.4	P
ATSP2005013A A-169	55.9	4.18	79	118.9	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013A A-170	55.9	4.11	78	123.9	P
ATSP2005013A A-171	55.9	4.11	84	127.5	P
ATSP2005013A A-172	55.9	4.11	81	119.8	P
ATSP2005013A A-173	55.9	4.11	83	116.4	P
ATSP2005013A A-174	55.9	4.12	82	122.8	P
Supplementary information: - No fire or explosion					

7.3.2	TABLE: External short-circuit (battery)					N/A
Sample no.	**Ambient T (°C)**	**OCV before test (Vdc)**	**Resistance of circuit (mΩ)**	**Maximum case temperature rise ΔT (K)**	**Component single fault condition**	**Results**

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.3.5	TABLE: Crush (cells)			P
Sample no.	**OCV before test (Vdc)**	**OCV at removal of crushing force (Vdc)**	**Maximum force applied to the cell during crush (kN)**	**Results**
For model LNCMR18650-1300mAh:				
Samples charged at charging temperature upper limit: (45°C)				
ATSP2005013A A-029	4.18	1.29	12.96	P
ATSP2005013A A-030	4.18	2.65	13.05	P
ATSP2005013A A-031	4.17	3.56	12.97	P
ATSP2005013A A-032	4.17	3.06	13.54	P
ATSP2005013A A-033	4.18	4.05	13.12	P
Samples charged at charging temperature lower limit: (-5°C)				
ATSP2005013A A-034	4.11	3.98	13.55	P
ATSP2005013A A-035	4.11	2.36	12.95	P
ATSP2005013A A-036	4.11	3.84	13.46	P
ATSP2005013A A-037	4.11	2.15	12.96	P
ATSP2005013A A-038	4.12	1.32	13.18	P
For model LNCMR18650-1800mAh:				
Samples charged at charging temperature upper limit: (45°C)				
ATSP2005013A A-082	4.18	0.53	12.89	P
ATSP2005013A A-083	4.17	2.56	12.48	P
ATSP2005013A A-084	4.17	1.12	13.31	P
ATSP2005013A A-085	4.17	3.65	13.25	P
ATSP2005013A A-086	4.18	2.97	13.07	P
Samples charged at charging temperature lower limit: (-5°C)				
ATSP2005013A A-087	4.12	0.36	12.66	P
ATSP2005013A A-088	4.11	2.54	12.94	P
ATSP2005013A A-089	4.11	1.28	13.22	P
ATSP2005013A A-090	4.11	3.65	13.05	P
ATSP2005013A A-091	4.11	4.08	12.87	P

For model LNCMR18650-2000mAh:				
Samples charged at charging temperature upper limit: (45°C)				
ATSP2005013A A-135	4.18	0.97	12.88	P
ATSP2005013A A-136	4.18	1.54	12.80	P
ATSP2005013A A-137	4.18	3.85	13.11	P
ATSP2005013A A-138	4.17	1.95	13.04	P
ATSP2005013A A-139	4.17	1.03	13.16	P
Samples charged at charging temperature lower limit: (-5°C)				
ATSP2005013A A-140	4.11	1.65	12.91	P
ATSP2005013A A-141	4.11	2.51	13.22	P
ATSP2005013A A-142	4.12	3.66	13.09	P
ATSP2005013A A-143	4.12	3.51	13.11	P
ATSP2005013A A-144	4.11	2.18	12.87	P
For model LNCMR18650-2500mAh:				
Samples charged at charging temperature upper limit: (45°C)				
ATSP2005013A A-188	4.17	4.05	12.99	P
ATSP2005013A A-189	4.17	2.65	13.14	P
ATSP2005013A A-190	4.17	3.54	13.08	P
ATSP2005013A A-191	4.18	1.15	13.06	P
ATSP2005013A A-192	4.18	3.91	13.31	P
Samples charged at charging temperature lower limit: (-5°C)				
ATSP2005013A A-193	4.11	1.94	13.41	P
ATSP2005013A A-194	4.12	2.89	12.92	P
ATSP2005013A A-195	4.11	1.65	13.37	P
ATSP2005013A A-196	4.11	3.84	13.29	P
ATSP2005013A A-197	4.11	2.71	13.08	P
Note: **A 13kN force applied at the longitudinal side of cylindrical cells.** **Supplementary information:** - No fire or explosion				

7.3.6	TABLE: Over-charging of battery				N/A
Constant charging current (A) .....:					—
Supply voltage (Vdc) .....:					—
Sample no.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**	

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.3.7	TABLE: Forced discharge (cells)			P
Sample no.	**OCV before application of reverse charge (Vdc)**	**Measured reverse charge I_t (A)**	**Lower limit discharge voltage (Vdc)**	**Results**
For model LNCMR18650-1300mAh:				
ATSP2005013A A-039	3.26	1.3	2.75	P
ATSP2005013A A-040	3.26	1.3	2.75	P
ATSP2005013A A-041	3.25	1.3	2.75	P
ATSP2005013A A-042	3.26	1.3	2.75	P
ATSP2005013A A-043	3.25	1.3	2.75	P
For model LNCMR18650-1800mAh:				
ATSP2005013A A-092	3.25	1.8	2.75	P
ATSP2005013A A-093	3.28	1.8	2.75	P
ATSP2005013A A-094	3.28	1.8	2.75	P
ATSP2005013A A-095	3.28	1.8	2.75	P
ATSP2005013A A-096	3.27	1.8	2.75	P
For model LNCMR18650-2000mAh:				
ATSP2005013A A-145	3.26	2.0	2.75	P
ATSP2005013A A-146	3.25	2.0	2.75	P
ATSP2005013A A-147	3.25	2.0	2.75	P
ATSP2005013A A-148	3.25	2.0	2.75	P
ATSP2005013A A-149	3.27	2.0	2.75	P
For model LNCMR18650-2500mAh:				
ATSP2005013A A-198	3.25	2.5	2.75	P
ATSP2005013A A-199	3.24	2.5	2.75	P
ATSP2005013A A-200	3.25	2.5	2.75	P
ATSP2005013A A-201	3.26	2.5	2.75	P
ATSP2005013A A-202	3.26	2.5	2.75	P
Supplementary information: - No fire or explosion				

7.3.8.1	TABLE: Vibration				N/A
Sample no.	**OCV before test (Vdc)**	**OCV after test (Vdc)**	**Mass before test (g)**	**Mass after test (g)**	**Results**

Supplementary information:

- No fire or explosion
- No rupture
- No leakage
- No venting

7.3.8.2	TABLE: Mechanical shock				N/A
Sample no.	**OCV before test (Vdc)**	**OCV after test (Vdc)**	**Mass before test (g)**	**Mass after test (g)**	**Results**

Supplementary information:

- No fire or explosion
- No rupture
- No leakage
- No venting

7.3.9	TABLE: Forced internal short circuit (cells)				P
Sample no.	**Chamber ambient T (°C)**	**OCV before test (Vdc)**	**Particle location [1)]**	**Maximum applied pressure (N)**	**Results**
For model LNCMR18650-1300mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013AA-044	45	4.18	1	800	P
ATSP2005013AA-045	45	4.17	1	800	P
ATSP2005013AA-046	45	4.17	1	800	P
ATSP2005013AA-047	45	4.18	1	800	P
ATSP2005013AA-048	45	4.18	1	800	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013AA-049	-5	4.11	1	800	P
ATSP2005013AA-050	-5	4.11	1	800	P
ATSP2005013AA-051	-5	4.11	1	800	P
ATSP2005013AA-052	-5	4.12	1	800	P
ATSP2005013AA-053	-5	4.11	1	800	P
For model LNCMR18650-1800mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013AA-097	45	4.18	1	800	P
ATSP2005013AA-098	45	4.18	1	800	P
ATSP2005013AA-099	45	4.17	1	800	P
ATSP2005013AA-100	45	4.17	1	800	P
ATSP2005013AA-101	45	4.18	1	800	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013AA-102	-5	4.11	1	800	P
ATSP2005013AA-103	-5	4.11	1	800	P
ATSP2005013AA-104	-5	4.11	1	800	P
ATSP2005013AA-105	-5	4.11	1	800	P
ATSP2005013AA-106	-5	4.12	1	800	P
For model LNCMR18650-2000mAh:					

Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013A A-150	45	4.18	1	800	P
ATSP2005013A A-151	45	4.17	1	800	P
ATSP2005013A A-152	45	4.17	1	800	P
ATSP2005013A A-153	45	4.18	1	800	P
ATSP2005013A A-154	45	4.17	1	800	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013A A-155	-5	4.11	1	800	P
ATSP2005013A A-156	-5	4.11	1	800	P
ATSP2005013A A-157	-5	4.12	1	800	P
ATSP2005013A A-158	-5	4.11	1	800	P
ATSP2005013A A-159	-5	4.11	1	800	P
For model LNCMR18650-2500mAh:					
Samples charged at charging temperature upper limit: (45°C)					
ATSP2005013A A-203	45	4.18	1	800	P
ATSP2005013A A-204	45	4.17	1	800	P
ATSP2005013A A-205	45	4.17	1	800	P
ATSP2005013A A-206	45	4.17	1	800	P
ATSP2005013A A-207	45	4.17	1	800	P
Samples charged at charging temperature lower limit: (-5°C)					
ATSP2005013A A-208	-5	4.11	1	800	P
ATSP2005013A A-209	-5	4.11	1	800	P
ATSP2005013A A-210	-5	4.11	1	800	P
ATSP2005013A A-211	-5	4.11	1	800	P
ATSP2005013A A-212	-5	4.12	1	800	P

Supplementary information:

[1)] Identify one of the following:

1: Nickel particle inserted between positive and negative (active material) coated area.

2: Nickel particle inserted between positive aluminium foil and negative active material coated area.

- No fire or explosion

D.2	TABLE: Internal AC resistance for coin cells			N/A
Sample no.	**Ambient T (°C)**	**Store time (h)**	**Resistance Rac (Ω)**	**Results [1)]**

Supplementary information:

[1)] Coin cells with internal resistance less than or equal to 3 Ω, see test result on corresponding tables

--End of Report--

Attachment 1 Photo Documentation

Product: Cylindrical Li-ion Cell

Type Designation: LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh

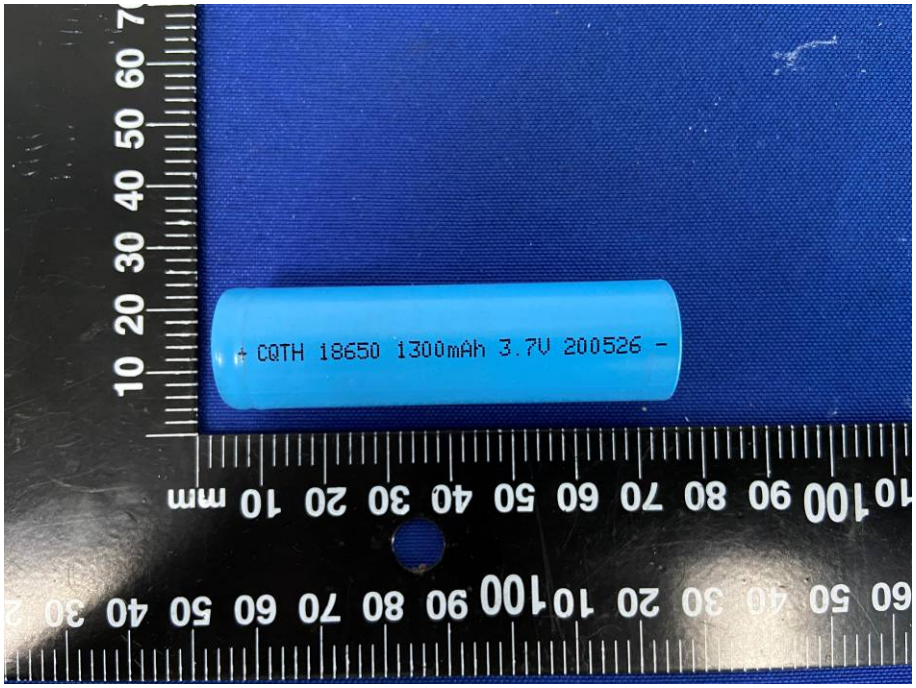


Figure 1 Side view of cell (for model LNCMR18650-1300mAh)

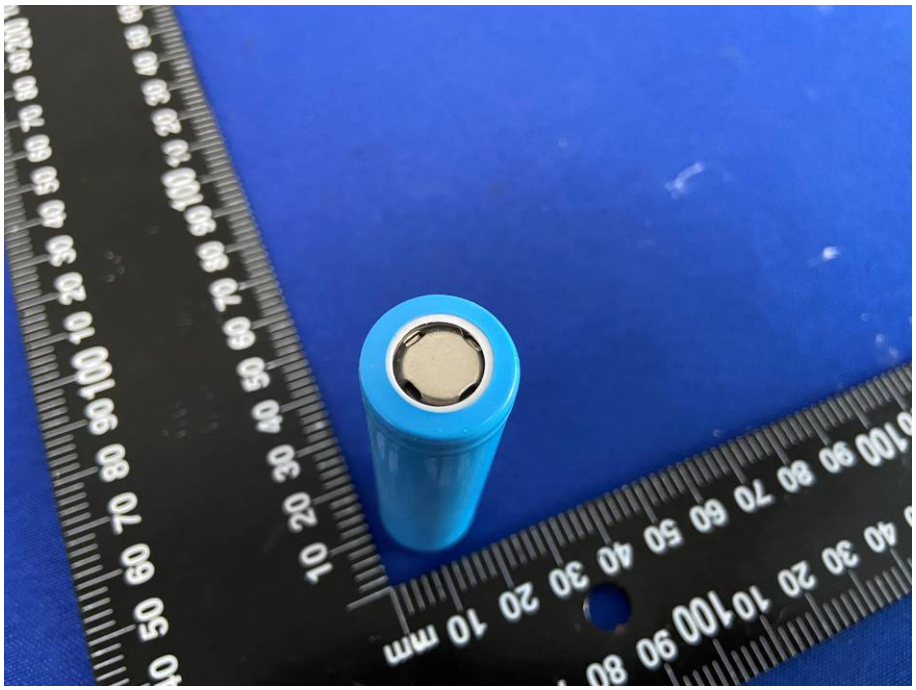


Figure 2 Top view of cell (for model LNCMR18650-1300mAh)

Attachment 1 Photo Documentation

Product: Cylindrical Li-ion Cell

Type Designation: LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh

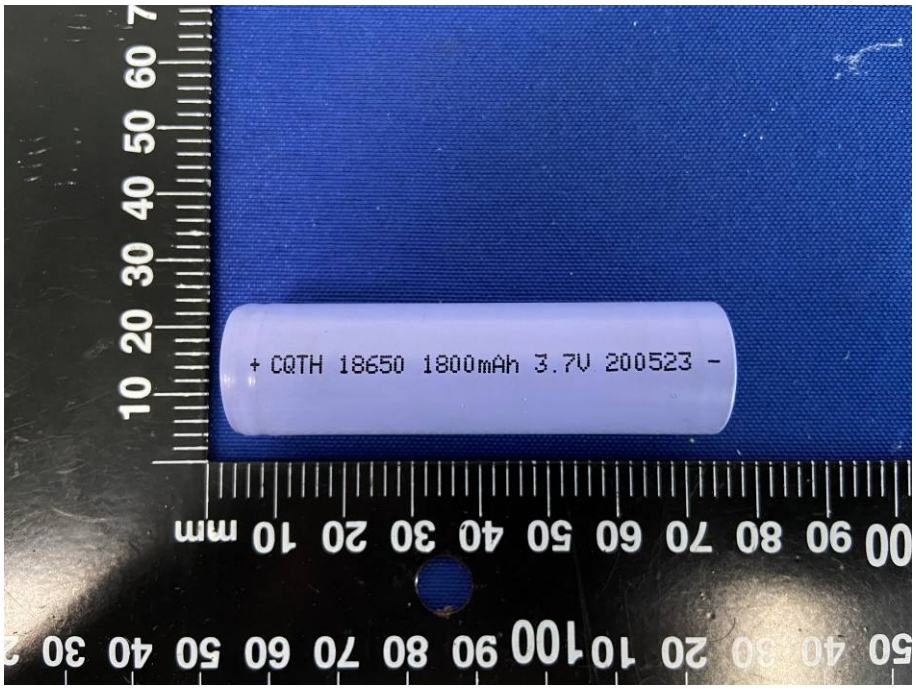


Figure 3 Side view of cell (for model LNCMR18650-1800mAh)

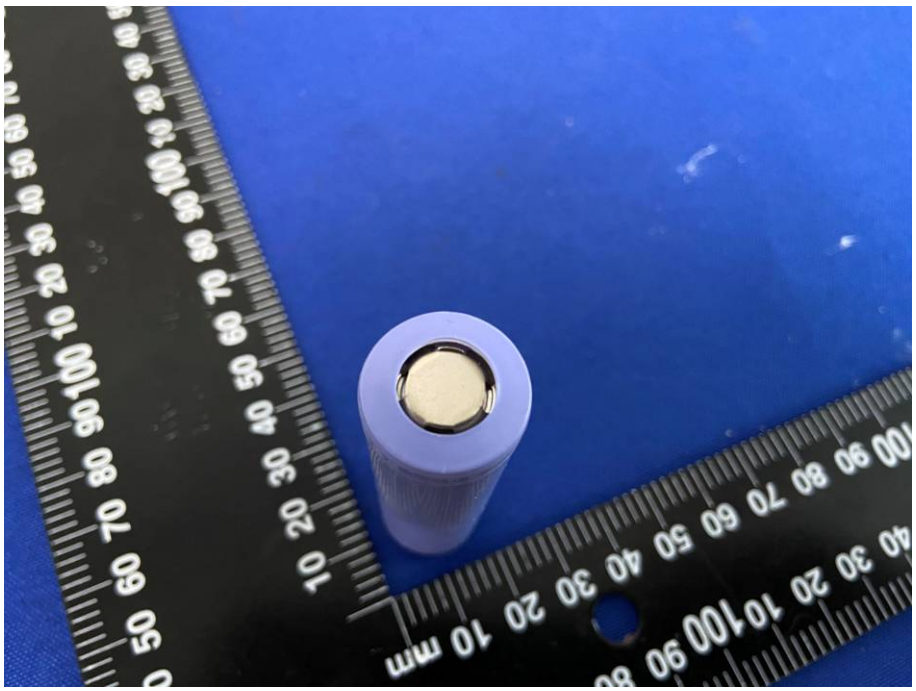


Figure 4 Top view of cell (for model LNCMR18650-1800mAh)

Attachment 1 Photo Documentation

Product: Cylindrical Li-ion Cell

Type Designation: LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh

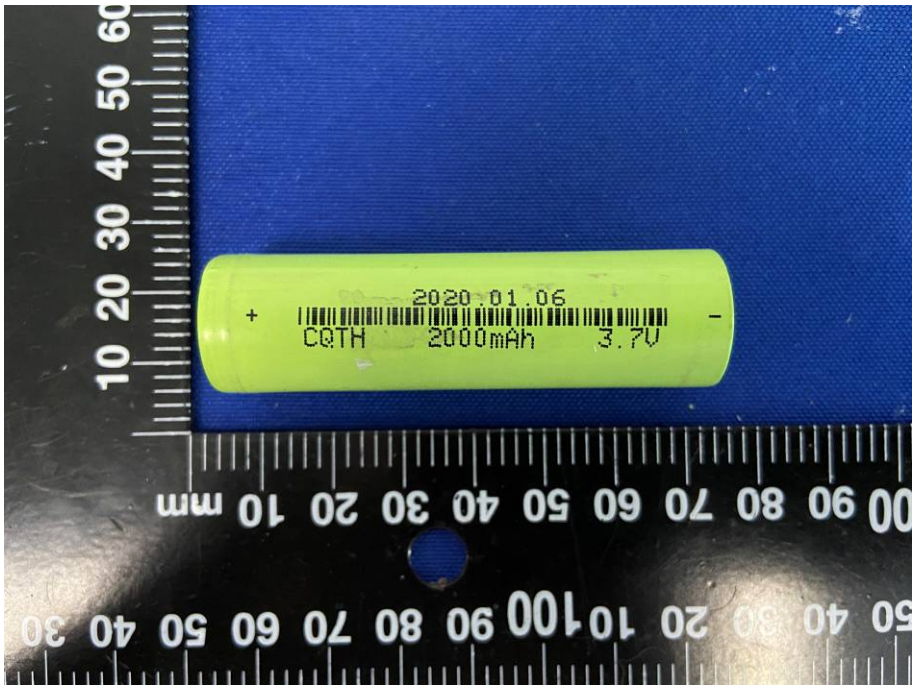


Figure 5 Side view of cell (for model LNCMR18650-2000mAh)

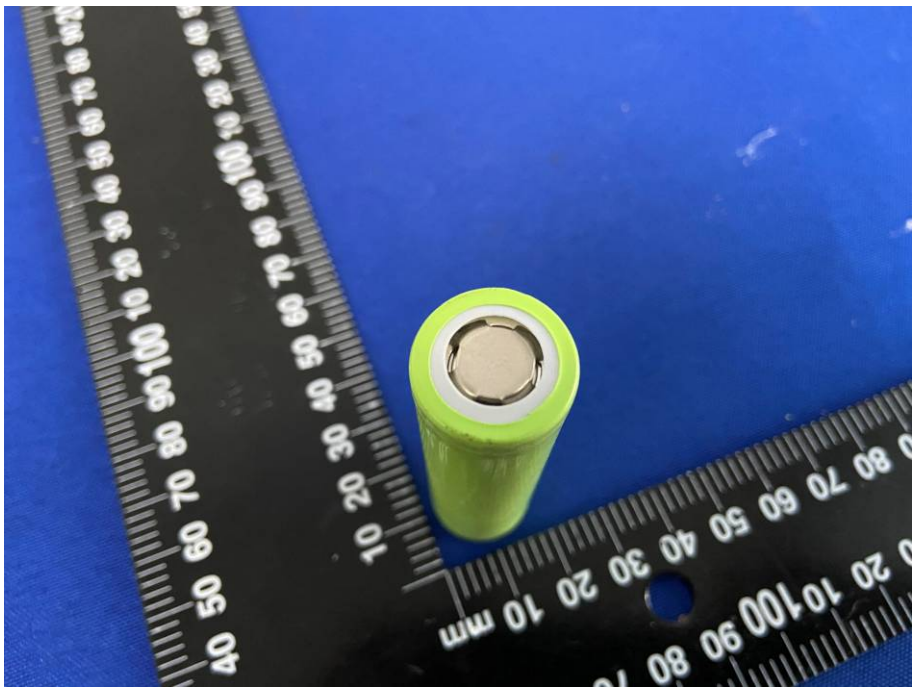


Figure 6 Top view of cell (for model LNCMR18650-2000mAh)

Attachment 1 Photo Documentation

Product: Cylindrical Li-ion Cell

Type Designation: LNCMR18650-1300mAh, LNCMR18650-1400mAh, LNCMR18650-1500mAh, LNCMR18650-1800mAh, LNCMR18650-1900mAh, LNCMR18650-2000mAh, LNCMR18650-2100mAh, LNCMR18650-2200mAh, LNCMR18650-2300mAh, LNCMR18650-2400mAh, LNCMR18650-2500mAh

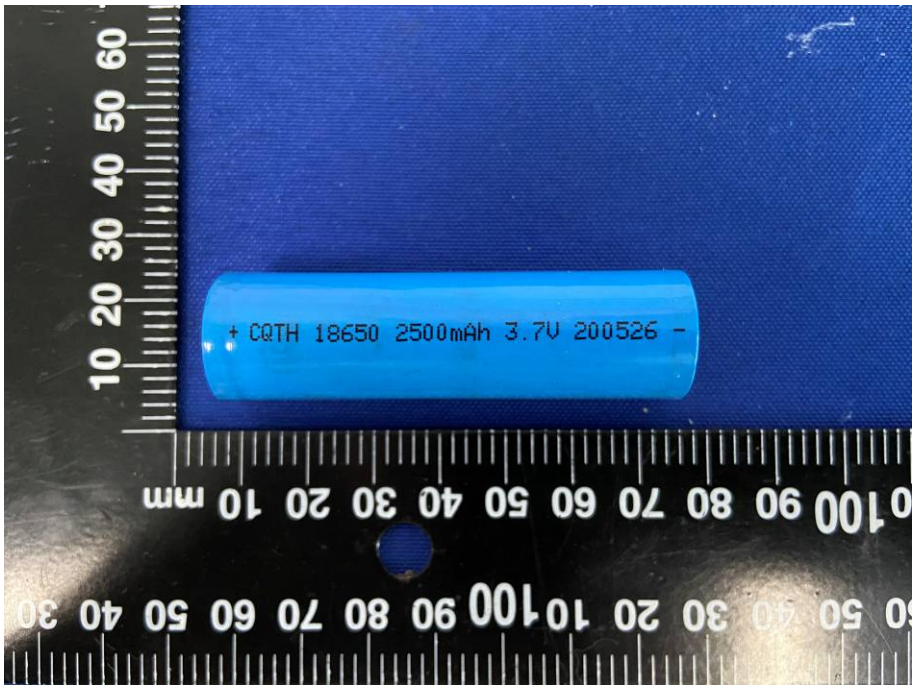


Figure 7 Side view of cell (for model LNCMR18650-2500mAh)

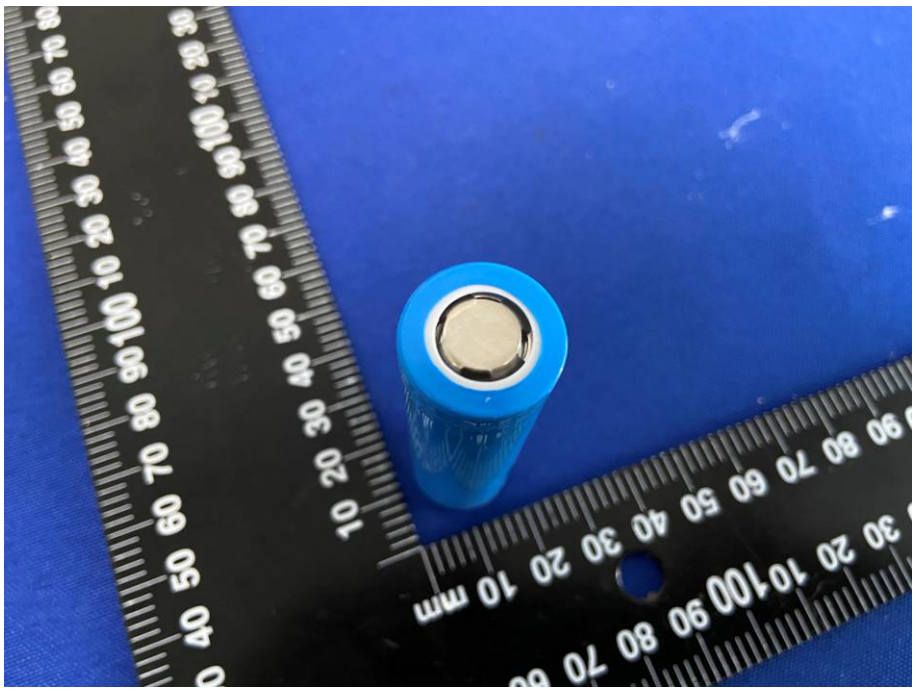


Figure 8 Top view of cell (for model LNCMR18650-2500mAh)