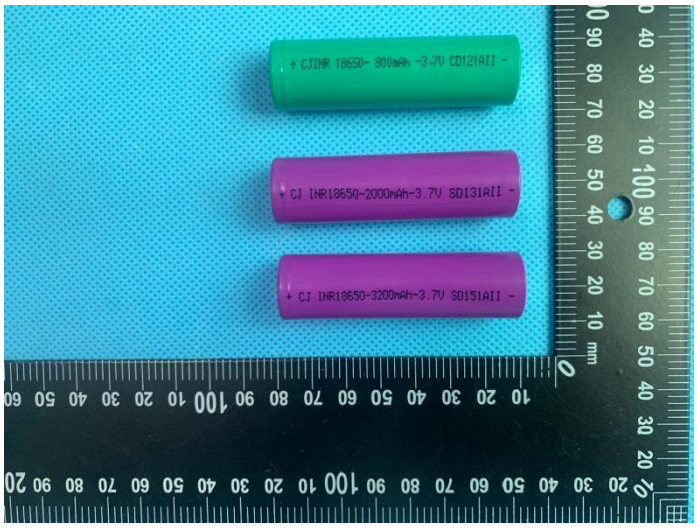
CN22KAIM 001Prüfbericht-Nr.: *Test Report No.*:	**CN22KAIM 001**	**Auftrags-Nr.:** *Order No.*:	168386120	**Seite 1 von 37** *Page 1 of 37*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	2022.05.06	
Auftraggeber: Client:	Jiang Xi Cheng jiang new energy Co.,Ltd Zhongcheng Industrial Park, Wuning County Industrial Park, Jiujiang City, Jiangxi, P.R. China			
Prüfgegenstand: *Test item*:	Li-ion Cell			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	See table 4 on page 5			
Auftrags-Inhalt: *Order content*:	TÜVus mark approval			
Prüfgrundlage: *Test specification*:	UL 1642:2020			
Wareneingangsdatum: *Date of sample receipt*:	2022.05.06			
Prüfmuster-Nr.: *Test sample No.*:	TSZ22040405-P01-C001# ~ TSZ22040405-P01-C345#			
Prüfzeitraum: *Testing period*:	2022.05.09 to 2022.06.17			
Ort der Prüfung: *Place of testing*:	Shenzhen Tiansu Calibration and Testing Co., Ltd.			
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result**:	Pass			



erstellt von: *created by:* **Datum: 2022.08.12** *Date:*	Revan Dai	**genehmigt von:** *authorized by:* **Datum: 2022.08.12** *Date:*	Jeffrey Qin
Stellung / *Position*	Project Engineer	**Stellung /** *Position*	Reviewer

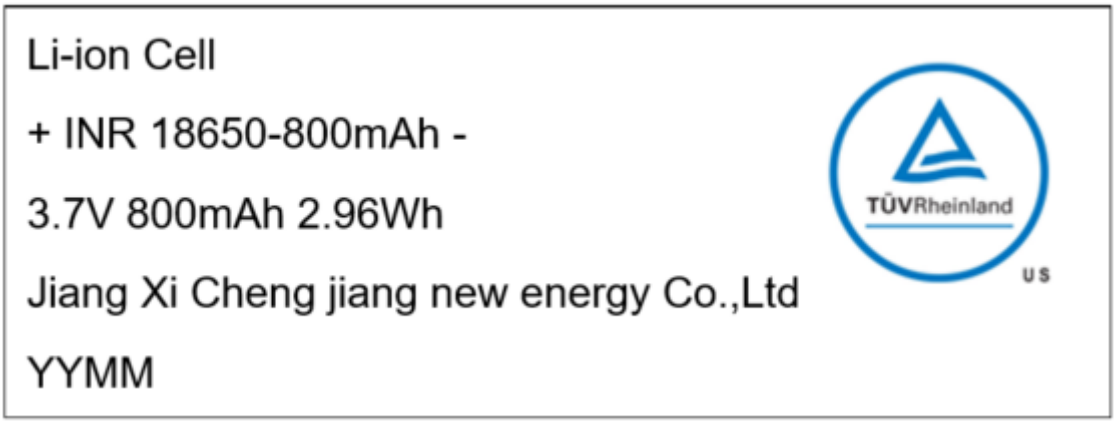
Sonstiges / *Other*: 1. The complete test report includes the following attachments:
- Attachment 1: Equipment list (4 pages);
- Attachment 2: Photo documents (3 pages).

Zustand des Prüfgegenstandes bei Anlieferung:	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

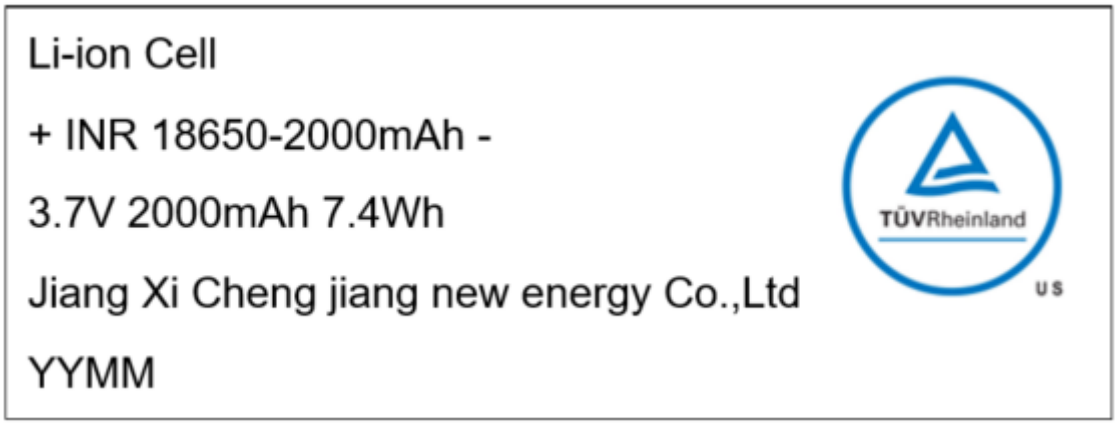
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Test item particulars:	
Information about the product needed to establish a correct test program, such as product mobility, type of power connections and similar.	(Test item particulars are selected by the TRF Originator base on the requirements in the standard)
Designation ..... :	See table 4 on page 5
Trademark ..... :	N/A
Nominal voltage ..... :	3.7V
Rated capacity ..... :	See table 4 on page 5
Maximum charge voltage ..... :	4.2V
Maximum charge current ..... :	1C
Final voltage ..... :	2.75V
Ambient temperature range ..... :	0~50°C (charge), -20~45°C (discharge)
Recommend charging method declared by the manufacturer ..... :	Charge the cell at 0.5C CC to 4.2V, then 4.2V CV until charging current reaches 0.05C at ambient 20±5°C.
Utilization Type ..... :	Technician replaceable cell
Testing:	
Test clauses and results:	
cl.10 Short-Circuit Test ..... :	P
cl.11 Abnormal Charging Test ..... :	P
cl.12 Forced-Discharge Test ..... :	N/A
cl.13 Crush Test ..... :	P
cl.14 Impact Test ..... :	P
cl.15 Shock Test ..... :	P
cl.16 Vibration Test ..... :	P
cl.17 Heating Test ..... :	P
cl.18 Temperature Cycling Test ..... :	P
cl.19 Low Pressure (Altitude Simulation) Test ..... :	P
cl.20 Projectile Test ..... :	P
Testing location:	
Shenzhen Tiansu Calibration and Testing Co., Ltd. Building 1/4, No.2, Jinlong Road, Longgang District, Shenzhen, Guangdong, China	
General remarks:	
This report shall not be reproduced, except in full, without the written approval of the testing laboratory. The test results presented in this report relate only to the object tested. "(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	

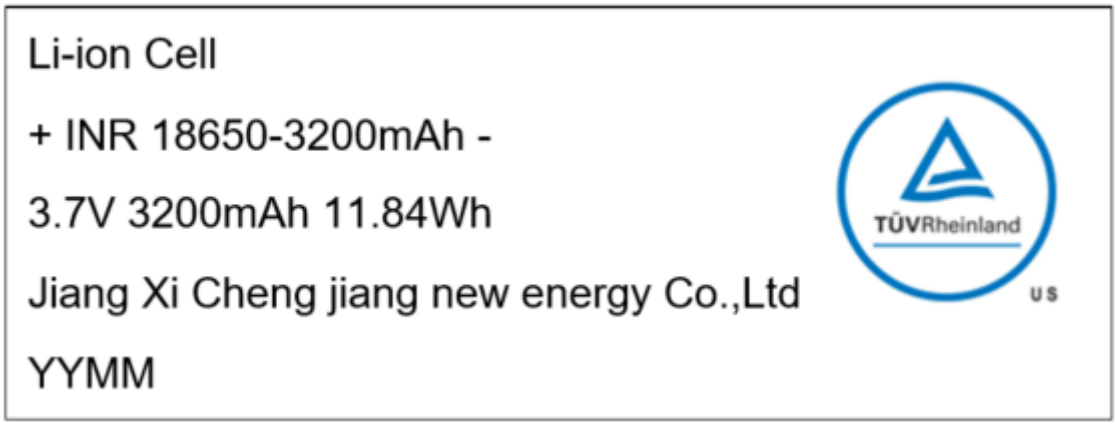
Copy of marking plate:



Label for model: INR 18650-800mAh



Label for model: INR 18650-2000mAh



Label for model: INR 18650-3200mAh

Remark:

1. YYMM represents the date of manufacture. “YY” represents the year, “MM” represents the month, For example, 2207 represents July 2022.
2. Due to similarity of the marking plate, only three representative models listed above.

General product information:

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.

The cell is evaluated in this test report according to UL 1642:2020, and passed all the tests.

1) These tested cells have not been evaluated in combination with charger(s) or host product(s). Additional evaluation to determine compliance may be required on the combination(s) in the end product evaluation.

2) The tested cells were evaluated for a maximum charge current and maximum voltage limit outlined in the Table below. The end product evaluation shall ensure that current and voltage limits noted are maintained.

3) The fifteen models (Model name: INR 18650-800mAh, INR 18650-900mAh, INR 18650-1000mAh, INR 18650-1200mAh, INR 18650-1300mAh, INR 18650-1500mAh, INR 18650-1800mAh, INR 18650-2000mAh, INR 18650-2200mAh, INR 18650-2500mAh, INR 18650-2600mAh, INR 18650-2800mAh, INR 18650-2900mAh, INR 18650-3000mAh, INR 18650-3200mAh) are identical (same shape, same chemical system, using same material), except the model name and the capacity. The tested models (INR 18650-800mAh, INR 18650-2000mAh, INR 18650-3200mAh) are representatives of all models.

4) The charging temperature is 0°C to 50°C and the discharging temperature is -20°C to 45°C.

- Table 1: Electrical parameter of model INR 18650-800mAh:

Model	Rated capacity	Nominal voltage	Nominal Charge current	Nominal discharge current	Max. charge current	Max. discharge current	Max. charge voltage	End discharge voltage
INR 18650-800mAh	800mAh	3.7V	400mA	400mA	800mA	4000mA	4.2V	2.75V

- Table 2: Electrical parameter of model INR 18650-2000mAh:

Model	Rated capacity	Nominal voltage	Nominal Charge current	Nominal discharge current	Max. charge current*	Max. discharge current	Max. charge voltage	End discharge voltage
INR 18650-2000mAh	2000mAh	3.7V	1000mA	1000mA	2000mA	10000mA	4.2V	2.75V

- Table 3: Electrical parameter of model INR 18650-3200mAh:

Model	Rated capacity	Nominal voltage	Nominal Charge current	Nominal discharge current	Max. charge current*	Max. discharge current	Max. charge voltage	End discharge voltage
INR 18650-3200mAh	3200mAh	3.7V	1600mA	1600mA	3200mA	16000mA	4.2V	2.75V

Remark: other models feature, see Table 4.

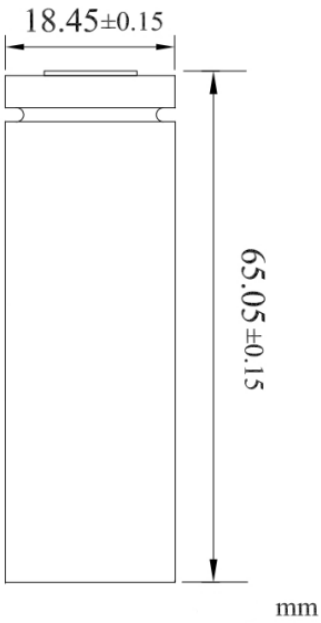
- Table 4: All of the models:

Model	Energy density (Wh/L)	Rated capacity (mAh)	Max. Thickness (mm)	Max. Width (mm)	Max. Height (mm)	Nominal charge current (mA)	Nominal discharge current (mA)	Max. charge current (mA)	Max. discharge current (mA)
INR 18650-800mAh	**167.17**	**800**	**18.60**	**/**	**65.20**	**400**	**400**	**800**	**4000**
INR 18650-900mAh	188.06	900	18.60	/	65.20	450	450	900	4500
INR 18650-1000mAh	208.96	1000	18.60	/	65.20	500	500	1000	5000
INR 18650-1200mAh	250.75	1200	18.60	/	65.20	600	600	1200	6000
INR 18650-1300mAh	271.65	1300	18.60	/	65.20	650	650	1300	6500
INR 18650-1500mAh	313.44	1500	18.60	/	65.20	750	750	1500	7500
INR 18650-1800mAh	376.12	1800	18.60	/	65.20	900	900	1800	9000
INR 18650-2000mAh	**417.92**	**2000**	**18.60**	**/**	**65.20**	**1000**	**1000**	**2000**	**10000**
INR 18650-2200mAh	459.71	2200	18.60	/	65.20	1100	1100	2200	11000
INR 18650-2500mAh	522.39	2500	18.60	/	65.20	1250	1250	2500	12500
INR 18650-2600mAh	543.29	2600	18.60	/	65.20	1300	1300	2600	13000
INR 18650-2800mAh	585.08	2800	18.60	/	65.20	1400	1400	2800	14000

INR 18650-2900mAh	605.98	2900	18.60	/	65.20	1450	1450	2900	14500
INR 18650-3000mAh	626.87	3000	18.60	/	65.20	1500	1500	3000	15000
INR 18650-3200mAh	**668.66**	**3200**	**18.60**	**/**	**65.20**	**1600**	**1600**	**3200**	**16000**

Remark: All the models have the same nominal voltage 3.7V and the same end discharge voltage 2.75V, and have the same Max. charge voltage 4.2V.

Construction:



Cell

Factory:

Jiang Xi Cheng jiang new energy Co.,Ltd
Zhongcheng Industrial Park, Wuning County Industrial Park, Jiujiang City, Jiangxi, P.R. China

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
INTRODUCTION			
1	**Scope**		P
2	**General**		P
3	**Glossary**		P
CONSTRUCTION			
4	**General**		N/A
4.1	Casing		N/A
4.1.1	The casing of a lithium battery shall have the strength and rigidity necessary to resist the abuses to which it may be subjected, without resulting in a risk of fire. The casing of a user-replaceable lithium battery shall have the strength and rigidity necessary to resist the abuses to which it may be subjected without resulting in a risk of injury to persons.	Technician replaceable cell without enclosure.	N/A
4.1.2	A cell of a user-replaceable battery shall be in a rigid casing of sufficient strength to prevent flexing. A tool providing the mechanical advantage of a pliers, screwdriver, or hacksaw shall be the minimum capable of opening the user-replaceable cell casing, if opening of the casing will expose metallic lithium.	See above	N/A
4.2	Electrolyte		N/A
4.2.1	A user-replaceable battery shall not contain pressurized vapor or liquid that could spray materials into the eyes or leak more than 5 mL of liquid when the battery casing is punctured under normal laboratory conditions, 23 ±2°C (73 ±3.6°F).	Technician-replaceable Battery.	N/A
4.3	Use		N/A
4.3.1	A lithium battery shall be protected from abnormal charging currents during use. A battery tested and found acceptable for the charging current, IC (see Section 11), under fault conditions specified by the manufacturer, shall be protected from larger charging currents in the end product application by: a) Two blocking components, such as diodes, or b) One blocking component and one current limiting component, such as a resistor or a fuse. The current limiting component shall limit the charging current to one-third the value used in the Abnormal Charging Test, Section 11.	Single cell only	N/A
PERFORMANCE			
5	**General**		P
5.1	Technician-replaceable Batteries		P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.1	Technician-replaceable lithium cells or batteries are to be tested as described in Sections 10 – 20. Section 12, Forced-Discharge Test, is applicable only to cells intended to be used in series-connected multicell applications such as battery packs. For multicell installations, also see 5.3.1.		P
5.1.2	When a fire or explosion occurs as a result of the Crush Test, Section 13, or the Impact Test, Section 14, or the cell or battery ruptures to the extent that the aluminum test cage is penetrated during the Projectile Test, Section 20; the use of the technician replaceable cell or battery shall be restricted to applications in which it is not exposed to, or is protected from, any conditions shown to cause a fire or explosion.	No fire or explosion occurs	P
5.1.3	Cells and batteries subjected to the Shock Test, Section 15, Vibration Test, Section 16, Temperature Cycling Test, Section 18, and Low Pressure (Altitude Simulation) Test, Section 19, shall also not leak or vent. For these tests, unacceptable leakage is determined to have occurred when the resulting mass loss exceeds the values shown in Table 5.1, Venting and leakage mass loss criteria.	No leak or vent	P
5.2	User-replaceable Batteries		N/A
5.2.1	User-replaceable lithium cells or batteries are to be tested as described in Sections 10 – 20. Section 12, Forced Discharge Test, is applicable only to cells intended to be used in multicell applications such as battery packs. In addition to complying with the requirements for a technician replaceable cell or battery as specified in 5.1.1, a user-replaceable cell or battery shall not explode or ignite when subjected to the Crush Test, Section 13, or the Impact Test, Section14. A user-replaceable battery shall comply with the requirements for Sections 10 – 20 and with the applicable construction requirements outlined in Section 4. Secondary lithium cells shall not be considered user-replaceable.	Technician-replaceable cell	N/A
5.2.2	Sets of five specimens each are to be used for the Projectile Test, Section 20.3; see Table 6.1. When only one specimen from a set of five does not comply with the requirements, another set of five specimens is to be tested. All specimens from this second set shall comply with the requirements.	Technician-replaceable cell	N/A
5.3	Multicell Installations		N/A

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	A technician-replaceable or user-replaceable cell intended for use in multicell installations or battery packs shall also be tested as described in 10.3 and Section 12. No fire or explosion shall occur as a result of these tests. In addition, batteries subjected to the test described in 10.3 shall meet the requirements as described in 5.1.1 and 5.2.1 for a cell or battery subjected to the Short-Circuit Test, Section10.	Single cell.	N/A
6	**Samples**		P
6.1	Fully charged primary cells or batteries and primary cells or batteries that have been conditioned by partial or complete discharge, or both, are to be used for the tests described in Sections 10 – 20. The number of samples to be used in each test for a primary cell or battery is shown in Table 6.1. When a group of cells or batteries of different sizes, but similar chemistries is involved, selected sizes representative of the range are to be tested.	The samples are secondary cells.	N/A
6.2	Fully charged secondary cells or batteries and secondary cells or batteries that have been conditioned by charge-discharge cycling are to be used for the tests described in Sections 10 – 20. The number of samples to be used in each test for a secondary cell or battery is shown in Table 6.2. When a group of cells or batteries of different sizes, and similar chemistries is involved, selected sizes representative of the range are to be tested.	The samples are secondary technician-replaceable cells. Prepared as required.	P
6.3	Prior to conducting the testing in Section 17, the lithium ion cell samples shall be pre-conditioned as outlined in 6.4 and 6.5.	Prepared as required.	P
6.4	For the heating test of Section 17, two sets of five lithium ion cell samples are to be fully discharged (i.e. to the manufacturer's specified end point voltage). The samples are then placed in a test chamber and conditioned for 1 to 4 h (5 samples at the upper temperature limit and 5 samples at the lower temperature limit of the operating region) as outlined in Table 6.3.	Prepared as required.	P
6.5	While still in the test chamber set at the temperature limits, the samples are charged (5 samples at the upper temperature limit and 5 samples at lower temperature limit) at the specified maximum charging current and upper limit charging voltage per Table 6.3, using a constant voltage charging method. Charging is continued until the charge current is reduced to the specified end of charge conditions (i.e. 0.05 times the charge current).	Prepared as required.	P
7	**Conditioning of Samples**		P
7.1	Discharge		N/A

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.1	Primary batteries are to be completely discharged by connecting their terminals through resistors that provide the desired level of discharge within 60 days. Batteries are to be discharged at room temperature. Cells with a liquid cathode such as thionyl chloride or sulfur dioxide, shall also be conditioned by one-half discharge	The samples are secondary cells.	N/A
7.1.2	For solid electrolyte and other types of primary lithium batteries that cannot be discharged within 60 days because of the small currents they inherently produce, longer discharge times plus discharge at higher temperatures may be used to obtain the desired level of discharge. The manufacturer's recommended discharge procedures are to be followed so as to obtain the required discharge level in the minimum time.	The samples are secondary cells.	N/A
7.2	Charge-discharge cycling		P
7.2.1	Secondary cells are to be conditioned at 25°C (77°F). Cells are continuously cycled as per the manufacturer's specifications. The specification shall be such that the full rated capacity of the cell is utilized and the number of cycles accumulated shall be at least equal to 25% of the advertised cycle life of the cell or cycled continuously for 90 days, whichever is shorter. Cycling is to be done either individually or in groups. Cells are to be recharged prior to testing as indicated in Table 6.2.	The samples are cycled at manufacturer's factory before they were sent for test.	P
8	**Important test considerations**		P
8.1	Some lithium batteries are capable of exploding when the tests described in Sections 10 – 20 are conducted. It is important that personnel be protected from the flying fragments, explosive force, sudden release of heat, and noise that results from such explosions. The test area is to be well ventilated to protect personnel from possible harmful fumes or gases.	Prepared the tests as required.	P
8.2	As an additional precaution, the temperatures on the surface of the battery casings shall be monitored during the tests described in Sections 10, 11, 12, 13, and 14. All personnel involved in the testing of lithium batteries are to be instructed never to approach a lithium battery while the surface temperature exceeds 90°C (194°F) and not to touch the lithium battery while the surface temperature exceeds 45°C (113°F).	Prepared the tests as required.	P
8.3	For protection, the Projectile Test, Section 20 is to be conducted in a room separate from the observer.	Prepared the tests as required.	P
9	**Temperature Measurements**		P
9.1	Temperatures are to be measured by thermocouples consisting of wires not larger than 24 AWG (0.21 mm2) and not smaller than 30 AWG (0.05 mm2) and a potentiometer-type instrument.	Prepared the tests as required.	P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
9.2	The temperature measurements on the batteries are to be made with the measuring junction of the thermocouple held tightly against the metal casing of the battery.	Prepared the tests as required. Casing temperature was recorded on the center of the cell surface;	P
TESTS FOR TECHNICIAN-REPLACEABLE AND USER-REPLACEABLE BATTERIES			
ELECTRICAL TESTS			
10	**Short-Circuit Test**		P
10.1	Each test sample battery, in turn, is to be short-circuited by connecting the positive and negative terminals of the battery with a circuit load having a resistance load of 80±20 mΩ. The temperature of the battery case is to be recorded during the test. The battery is to discharge until a fire or explosion is obtained, or until it has reached a completely discharged state of less than 0.2 V and the battery case temperature has returned to ±10°C (±18°F) of ambient temperature. The voltage at the end of the test may not reach 0.2 V due to operation of protective devices in the circuit. The return to near ambient of the battery (cell) casing in an indication of ultimate results.	Tested as required. See table 10	P
10.2	Tests are to be conducted at 20 ±5°C (68 ±9°F) and at 55 ±5°C (131 ±9°F). The batteries are to reach equilibrium at 20 ±5°C or 55 ±5°C, as applicable, before the terminals are connected.	Tested as required.	P
10.3	A battery is to be tested individually unless the manufacturer indicates that it is intended for use in series or parallel. For series or parallel use, additional tests on five sets of batteries are to be conducted using the maximum number of batteries to be covered for each configuration.	Tested as required.	P
10.4	When an overcurrent protective device activates during the test, the test shall be repeated with the battery supply connected to the maximum load that does not cause the protective device to open. Protective devices that are relied upon to meet the compliance criteria for the short circuit test shall comply with 2.3.1.	Only one single Li-ion Cell, no over-current or thermal protective device was integrated into the cell.	N/A
10.5	The samples shall not explode or catch fire.	The test results meet the requirements.	P
11	**Abnormal Charging Test**		P
11.1	Primary cells or batteries shall comply with 11.2 – 11.7.	Secondary cell	N/A
11.2	Cells or batteries conditioned in accordance with Tables 6.1, as applicable, are to be used for this test. The batteries are to be tested in an ambient temperature of 20 ±5°C (68 ±9°F).		N/A

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
11.3	Each test sample battery is to be subjected to a charging current of three times the current Ic, specified by the manufacturer by connecting it in opposition to a dc-power supply. The specified charging current is to be obtained by connecting a resistor of the specified size and rating in series with the battery. The test charging time is to be calculated using the formula: $t_c = \frac{2.5C}{3(I_c)}$, in which tc is the charging time in hour C is the capacity of the cell/batteiy in ampere-hours, and Ic is the maximum charging current, in amperes, specified by the manufacturer. The minimum charging time is to be 7 hours.		N/A
11.4	When a non-resettable overcurrent or protective device operates during the test, the test is to be repeated at a charge current below the level that the protective device operates. When a resettable protective device operates during the test, the protector is allowed to reset to a total of 10 cycles; or until the appropriate charging time has been completed, but not less than 7 hours. Protective devices that are relied upon to meet the compliance criteria for the abnormal charging test shall comply with 2.3.1.		N/A
11.5	The samples shall not explode or catch fire.		N/A
11.6	Secondary cells or batteries shall comply with 11.7 – 11.10.	See table 11, tested as required	P
11.7	Cells or batteries conditioned in accordance with Tables 6.2, as applicable, are to be used for this test. The batteries are to be tested in an ambient temperature of 20 ±5°C (68 ±9°F).	Tested as required.	P
11.8	Each test sample battery is to be discharged at a constant current of 0.2 C/1 h, to a manufacturer specified discharge endpoint voltage. The cell or battery is then to be charged with a constant maximum specified output voltage and a current limit of three times the maximum charging current Ic, specified by the manufacturer. Charging duration is to be 7 hours or the time required to reach the manufacturer's specified end-of-charge condition, whichever is greater.	Tested as required.	P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
11.9	When a non-resettable overcurrent or protective device operates during the test, the test shall be repeated at an overcharging current below the level that the protection device operates. When a resettable protective device operates during the test, the protector is to be allowed to reset to a total of 10 cycles; or until the appropriate charging time has been completed, but not less than 7 hours. Protective devices that are relied upon to meet the compliance criteria for the abnormal charging test shall comply with 2.3.1.	The samples are to be tested without any assistance of over-current or thermal protective devices.	N/A
11.10	The samples shall not explode or catch fire.	No explosion or catch fire during and after the test	P
12	**Forced-Discharged Test**		N/A
12.1	This test is intended for cells that are to be used in series-connected, multicell applications, such as battery packs.	One single cell	N/A
12.2	A fully discharged cell is to be force-discharged by connecting it in series with fully charged cells of the same kind. The number of fully charged cells to be connected in series with the discharged cell is to equal the maximum number less one of the cells to be covered for series use. Five cells are to be completely discharged, at room temperature.		N/A
12.3	Once the fully discharged cell is connected in series with the specified number of fully charged cells the resultant battery pack is to be short circuited.		N/A
12.4	The positive and negative terminals of the sample are to be connected with a copper wire with a resistance load of 80±20mΩ. The sample is to discharge until a fire or explosion is obtained, or until it has reached a completely discharged state of less than 0.2V and the battery case temperature has returned to ±10°C (18°F) of ambient temperature. The voltage at the end of the test may not reach 0.2V due to operation of protective devices in the circuit. The return to near ambient of the cell casing is an indication of ultimate results.		N/A
12.5	When an overcurrent or protective operates during the test, the test shall be repeated with the battery supply connected to the maximum load that does not cause the protective device to open. Protective devices that are relied upon to meet the compliance criteria for the forced discharge test shall comply with 2.3.1.		N/A
12.6	The samples shall not explode or catch fire.		N/A
MECHANICAL TESTS			
13	**Crush Test**		P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
13.1	A battery is to be crushed between two flat surfaces. The force for the crushing is to be applied by a hydraulic ram or similar force mechanism. The flat surfaces are to be brought in contact with the cells and the crushing is to be continued until an applied force of 13 ±1 kN (3000 ±224 lbs) is reached. Once the maximum force has been obtained it is to be released.	Tested as required. See table 13	P
13.2	A cylindrical, pouch or prismatic cell is to be crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus. A prismatic cell is also to be rotated 90° around its longitudinal axis so that both the wide and narrow sides will be subjected to the crushing force. Each sample is to be subjected to a crushing force in only one direction. Separate samples are to be used for each test.	Tested as required. The sample are cylindrical Li-ion Cells.	P
	Exception: For Lithium ion systems, a cylindrical, pouch or prismatic cell is to be crushed with its longitudinal axis parallel to the flat surface of the crushing apparatus. Each sample is to be subjected to a crushing force in only one direction. Test only the wide side of pouch and prismatic cells.	Li-ion cell.	P
13.3	A coin or button battery is to be crushed with the flat surface of the battery parallel with the flat surfaces of the crushing apparatus.	Not a coin or button battery	N/A
13.4	The samples shall not explode or catch fire.	No explosion or catch fire during and after the test	P
14	**Impact Test**		P
14.1	A test sample battery is to be placed on a flat surface. A 15.8 ±0.1-mm (5/8 ±0.004-in) diameter bar is to be placed across the center of the sample. A 9.1 ±0.46-kg (20 ±1-lb) weight is to be dropped from a height of 610 ±25 mm (24 ±1 in) onto the sample. See Figure 14.1.	Prepared the test as required. See table 14	P
14.2	A cylindrical, pouch or prismatic cell is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8-mm (5/8-in) diameter curved surface lying across the center of the test sample. A prismatic cell is also to be rotated 90° around its longitudinal axis so that both the wide and narrow sides are subjected to the impact. Each sample is to be subjected to only a single impact. Separate samples are to be used for each test.	Tested as required. The samples are cylindrical Li-ion Cells.	P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	Exception: For Lithium ion systems, a cylindrical, pouch or prismatic cell is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8-mm (5/8-in) diameter curved surface lying across the center of the test sample. Each sample is to be subjected to only a single impact. Test only the wide side of pouch and prismatic cells.	Li-ion cell.	P
14.3	A coin or button battery is to be impacted with the flat surface of the test sample parallel to the flat surface and the 15.8-mm (5/8-in) diameter curved surface lying across its center.	Not a coin or button battery	N/A
14.4	The samples shall not explode or catch fire.	No explosion or catch fire during and after the test	P
15	**Shock Test**		P
15.1	The cell is to be secured to the testing machine by means of a rigid mount which supports all mounting surfaces of the cell. Each cell shall be subjected to a total of three shocks of equal magnitude. The shocks are to be applied in each of three mutually perpendicular directions unless it has only two axes of symmetry in which case only two directions shall be tested. Each shock is to be applied in a direction normal to the face of the cell. For each shock the cell is to be accelerated in such a manner that during the initial 3 ms the minimum average acceleration is 75 g (where g is the local acceleration due to gravity). The peak acceleration shall be between 125 and 175 g. Cells shall be tested at a temperature of 20 ± 5°C (68 ± 9°F).	Prepared the test as required. See table 15	P
15.2	The samples shall not explode or catch fire. In addition, the sample shall not vent or leak as described in 5.1.1.	No explosion or catch fire, the sample not vent or leak	P
16	**Vibration Test**		P
16.1	A battery is to be subjected to simple harmonic motion with an amplitude of 0.8 mm (0.03 inch) [1.6 mm (0.06 inch) total maximum excursion].	Prepared the test as required. See table 16.	P
16.2	The frequency is to be varied at the rate of 1 Hz/min between 10 and 55 Hz, and return in not less than 90 nor more than 100 min. The battery is to be tested in three mutually perpendicular directions. For a battery that has only two axes of symmetry, the battery is to be tested perpendicular to each axis.	Tested as required.	P
16.3	The samples shall not explode or catch fire. In addition the sample shall not vent or leak as described in 5.1.1.	The test results meet the requirements.	P
ENVIRONMENTAL TESTS			
17	**Heating Test**		P

UL 1642:2020			
Clause	Requirement + Test	Result - Remark	Verdict
17.1	A battery is to be heated in a gravity convection or circulating air oven with an initial temperature of 20 ±5°C (68±9°F). The temperature of the oven is to be raised at a rate of 5 ±2°C (9±3.6°F) per minute to a temperature of 130 ±2°C (266±3.6°F) and remain for 10 min. The sample shall return to room temperature (20±5°C) and then be examined. For batteries specified for temperatures above 100°C (212°F), the conditioning temperature shall be increased from 130 ±2°C (266±3.6°F), to 30±2°C (86±3.6°F) above the manufacturers maximum specified temperature. For a battery of lithium metal chemistry, the conditioning temperature shall be increased to a maximum of 170 ±2°C (338±3.6°F).	Tested as required. Oven temperature: 130°C.	P
17.2	The samples shall not explode or catch fire.	The test results meet the requirements.	P
18	**Temperature Cycling Test**		P
18.1	The batteries are to be placed in a test chamber and subjected to the following cycles: a) Raising the chamber-temperature to 70 ±3°C (158 ±5°F) within 30 minutes and maintaining this temperature for 4 hours. b) Reducing the chamber temperature to 20 ±3°C (68 ±5°F) within 30 minutes and maintaining this temperature for 2 hours. c) Reducing the chamber temperature to minus 40 ±3°C (minus 40 ±5°F) within 30 minutes and maintaining this temperature for 4 hours. d) Raising the chamber temperature to 20 ±3°C (68 ±5°F) within 30 minutes. e) Repeating the sequence for a further 9 cycles. f) After the 10th cycle, storing the batteries for a minimum of 24 hours, at a temperature of 20 ±5°C (68 ±9°F) prior to examination.	Tested as required. See table 18	P
18.2	The samples shall not explode or catch fire. In addition, the samples shall not vent or leak as described in 5.1.1.	The test results meet the requirements.	P
19	**Low Pressure (Altitude Simulation) Test**		P
19.1	Sample batteries are to be stored for 6 hours at an absolute pressure of 11.6 kPa (1.68 psi) and a temperature of 20 ± 3°C (68 ± 5°F).	Tested as required. See table 19	P
19.2	The samples shall not explode or catch fire as a result of the Low Pressure (Altitude Simulation) Test. In addition, the samples shall not vent or leak as described in 5.1.1.	The test results meet the requirements.	P
FIRE EXPOSURE TEST			
20	**Projectile Test**		P
20.1	When subjected to the test described in 20.2 - 20.5 no part of an exploding cell or battery shall penetrate the wire screen such that some or all of the cell or battery protrudes through the screen.	The test results meet the requirements.	P

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Clause	Requirement + Test	Result - Remark	Verdict
20.2	Each test sample cell or battery is to be placed on a screen that covers a 102-mm (4-inch) diameter hole in the center of a platform table. The screen is to be constructed of steel wire mesh having 20 openings per 25.4 mm (1 in) and a wire diameter of 0.43 mm (0.017 in).	Prepared the test as required.	P
20.3	The screen is to be mounted 38 mm (1-1/2 in) above a Meker type burner. The fuel and air flow rates are to be set to provide a bright blue flame that causes the supporting screen to glow a bright red.	Prepared the test as required.	P
20.4	An eight-sided covered wire cage, 610-mm (2-ft) across and 305-mm (1-ft) high, made from metal screening is to be placed over the test sample. See Figure 20.1. The metal screening is to be constructed from 0.25-mm (0.010-in) diameter aluminum wire with 16 -18 wires per 25.4 mm (1 inch) in each direction.	Tested as required.	P
20.5	The sample is to be heated and shall remain on the screen until it explodes or the cell or battery has ignited and burned out. It is not required to secure the sample in place unless it is at risk of falling off the screen before the test is completed. When required, the sample shall be secured to the screen with a single wire tied around the sample.	Tested as required.	P
MARKING			
21	**General**		P
21.1	A battery shall be legibly and permanently marked with: The manufacturer's name, trade name, or trademark or other descriptive marking by which the organization responsible for the product may be identified; A distinctive ("catalog" or "model") number or the equivalent; The date or other dating period of manufacture not exceeding any three consecutive months.	See marking plate on page 3	P
21.2	If a manufacturer produces a battery at more than one factory, each battery package shall have a distinctive marking to identify it as the product of a particular factory.	One factory only.	N/A
22	**Primary Batteries**		N/A
22.1	A primary battery shall be marked with the word "WARNING" and the following or an equivalent statement: "Risk of fire and burns. Do not recharge, open, crush, heat above (the manufacturer's specified temperature rating), or incinerate." If space does not permit marking on the battery, the marking may be on the smallest unit package.	Secondary cell	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.2	The packaging for a user-replaceable battery shall be marked with the word "CAUTION" and the following or equivalent statements: "Risk of fire and burns. Do not recharge, disassemble, heat above (the manufacturer's specified temperature rating), or incinerate. Keep battery out of reach of children and in original package until ready to use. Dispose of used batteries promptly."		N/A
22.3	For user replaceable lithium primary coin cells (3.0 V) the packaging shall also include the following or equivalent: "WARNING – Never put batteries in mouth. Swallowing may lead to serious injury or death. If ingested, immediately seek medical attention and have the doctor phone the National Capital Poison Control Center." This marking may be combined with the marking of 22.2, if the signal word "WARNING" is used instead of "CAUTION."		N/A

10	TABLE: Short-Circuit Test (model: INR 18650-800mAh)				P
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C001#	TSZ22040405-P01 -C002#	TSZ22040405-P01-C003#	TSZ22040405-P01-C004#	TSZ22040405-P01-C005#
Ambient temperature: (at 20±5°C, 23.7°C)	23.7	23.7	23.7	23.7	23.7
Max. casing temp Tmax (°C)	117.2	115.3	120.2	116.7	119.8
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C006#	TSZ22040405-P01-C007#	TSZ22040405-P01-C008#	TSZ22040405-P01-C009#	TSZ22040405-P01-C010#
Ambient temperature: (at 55 ±5°C, 55.4°C)	55.4	55.4	55.4	55.4	55.4
Max. casing temp Tmax (°C)	122.4	118.7	124.3	117.6	120.8
Failure Mode	No	No	No	No	No
Cycled Cell					
Sample No.	TSZ22040405-P01-C011#	TSZ22040405-P01-C012#	TSZ22040405-P01-C013#	TSZ22040405-P01-C014#	TSZ22040405-P01-C015#
Ambient temperature: (at 20±5°C, 23.5°C)	23.5	23.5	23.5	23.5	23.5
Max. casing temp Tmax (°C)	115.7	114.0	119.6	119.7	117.1
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C016#	TSZ22040405-P01-C017#	TSZ22040405-P01-C018#	TSZ22040405-P01-C019#	TSZ22040405-P01-C020#
Ambient temperature: (at 55 ±5°C, 55.4°C)	55.4	55.4	55.4	55.4	55.4
Max. casing temp Tmax (°C)	119.7	123.6	116.3	121.6	117.2
Failure Mode	No	No	No	No	No
Supplementary information: Tmax was recorded on the centre of the cell surface. No explode or catch fire.					

10	TABLE: Short-Circuit Test (model: INR 18650-2000mAh)				P
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C116#	TSZ22040405-P01-C117#	TSZ22040405-P01-C118#	TSZ22040405-P01-C119#	TSZ22040405-P01-C120#
Ambient temperature: (at 20±5°C, 24.1°C)	24.1	24.1	24.1	24.1	24.1
Max. casing temp Tmax (°C)	121.9	117.1	122.0	116.9	122.3
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C121#	TSZ22040405-P01-C122#	TSZ22040405-P01-C123#	TSZ22040405-P01-C124#	TSZ22040405-P01-C125#
Ambient temperature: (at 55 ±5°C, 55.3°C)	55.3	55.3	55.3	55.3	55.3
Max. casing temp Tmax (°C)	117.7	118.0	116.2	123.1	121.9
Failure Mode	No	No	No	No	No
Cycled Cell					
Sample No.	TSZ22040405-P01-C126#	TSZ22040405-P01-C127#	TSZ22040405-P01-C128#	TSZ22040405-P01-C129#	TSZ22040405-P01-C130#
Ambient temperature: (at 20±5°C, 24.9°C)	24.9	24.9	24.9	24.9	24.9
Max. casing temp Tmax (°C)	117.9	119.3	119.6	116.7	121.0
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C131#	TSZ22040405-P01-C132#	TSZ22040405-P01-C133#	TSZ22040405-P01-C134#	TSZ22040405-P01-C135#
Ambient temperature: (at 55 ±5°C, 55.4°C)	55.4	55.4	55.4	55.4	55.4
Max. casing temp Tmax (°C)	117.3	117.4	121.1	122.0	119.3
Failure Mode	No	No	No	No	No
Supplementary information: Tmax was recorded on the centre of the cell surface. No explode or catch fire.					

10	TABLE: Short-Circuit Test (model: INR 18650-3200mAh)				P
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C231#	TSZ22040405-P01-C232#	TSZ22040405-P01-C233#	TSZ22040405-P01-C234#	TSZ22040405-P01-C235#
Ambient temperature: (at 20±5°C, 24.3°C)	24.3	24.3	24.3	24.3	24.3
Max. casing temp Tmax (°C)	116.7	118.9	121.9	121.2	120.3
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C236#	TSZ22040405-P01-C237#	TSZ22040405-P01-C238#	TSZ22040405-P01-C239#	TSZ22040405-P01-C240#
Ambient temperature: (at 55 ±5°C, 55.9°C)	55.9	55.9	55.9	55.9	55.9
Max. casing temp Tmax (°C)	119.1	118.2	117.8	119.6	121.2
Failure Mode	No	No	No	No	No
Cycled Cell					
Sample No.	TSZ22040405-P01-C241#	TSZ22040405-P01-C242#	TSZ22040405-P01-C243#	TSZ22040405-P01-C244#	TSZ22040405-P01-C245#
Ambient temperature: (at 20±5°C, 24.0°C)	24.0	24.0	24.0	24.0	24.0
Max. casing temp Tmax (°C)	119.5	115.0	119.8	115.4	116.7
Failure Mode	No	No	No	No	No
Sample No.	TSZ22040405-P01-C246#	TSZ22040405-P01-C247#	TSZ22040405-P01-C248#	TSZ22040405-P01-C249#	TSZ22040405-P01-C250#
Ambient temperature: (at 55 ±5°C, 55.0°C)	55.0	55.0	55.0	55.0	55.0
Max. casing temp Tmax (°C)	119.5	118.0	121.1	120.7	122.8
Failure Mode	No	No	No	No	No
Supplementary information: Tmax was recorded on the centre of the cell surface. No explode or catch fire.					

11	TABLE: Abnormal Charging Test (model: INR 18650-800mAh)				P
Id	0.16 A		Ue	2.75 V	
Ic	0.8 A		Uc	4.2 V	
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C021#	TSZ22040405-P01-C022#	TSZ22040405-P01-C023#	TSZ22040405-P01-C024#	TSZ22040405-P01-C025#
Ambient temperature: (°C)	23.6	23.6	23.6	23.6	23.6
Max. casing temp Tmax (°C)	30.9	31.1	31.0	30.6	30.3
Failure Mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C026#	TSZ22040405-P01-C027#	TSZ22040405-P01-C028#	TSZ22040405-P01-C029#	TSZ22040405-P01-C030#
Ambient temperature: (°C)	23.6	23.6	23.6	23.6	23.6
Max. casing temp Tmax (°C)	30.2	30.4	30.3	30.2	30.7
Failure Mode	No	No	No	No	No
Supplementary information: Test current is 2.4A. No explode or catch fire.					

11	TABLE: Abnormal Charging Test (model: INR 18650-2000mAh)				P
Id	0.4 A		Ue	2.75 V	
Ic	2.0 A		Uc	4.2 V	
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C136#	TSZ22040405-P01-C137#	TSZ22040405-P01-C138#	TSZ22040405-P01-C139#	TSZ22040405-P01-C140#
Ambient temperature: (°C)	23.6	23.6	23.6	23.6	23.6
Max. casing temp Tmax (°C)	36.4	35.0	35.1	36.0	35.9
Failure Mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C141#	TSZ22040405-P01-C142#	TSZ22040405-P01-C143#	TSZ22040405-P01-C144#	TSZ22040405-P01-C145#
Ambient temperature: (°C)	23.6	23.6	23.6	23.6	23.6
Max. casing temp Tmax (°C)	36.1	34.8	34.8	36.0	34.8
Failure Mode	No	No	No	No	No
Supplementary information: Test current is 6.0A. No explode or catch fire.					

11	TABLE: Abnormal Charging Test (model: INR 18650-3200mAh)				P
Id	0.64 A		Ue	2.75 V	
Ic	3.2 A		Uc	4.2 V	
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C251#	TSZ22040405-P01-C252#	TSZ22040405-P01-C253#	TSZ22040405-P01-C254#	TSZ22040405-P01-C255#
Ambient temperature: (°C)	24.0	24.0	24.0	24.0	24.0
Max. casing temp Tmax (°C)	36.4	36.3	35.6	35.5	35.5
Failure Mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C256#	TSZ22040405-P01-C257#	TSZ22040405-P01-C258#	TSZ22040405-P01-C259#	TSZ22040405-P01-C260#
Ambient temperature: (°C)	24.0	24.0	24.0	24.0	24.0
Max. casing temp Tmax (°C)	36.2	36.1	35.4	35.8	35.0
Failure Mode	No	No	No	No	No
Supplementary information: Test current is 9.6A. No explode or catch fire.					

13	TABLE: Crush Test (model: INR 18650-800mAh)				P
Ambient temperature: 23.5°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C031#	TSZ22040405-P01-C032#	TSZ22040405-P01-C033#	TSZ22040405-P01-C034#	TSZ220404 05-P01-C035#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C036#	TSZ22040405-P01-C037#	TSZ22040405-P01-C038#	TSZ22040405-P01-C039#	TSZ220404 05-P01-C040#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

13	TABLE: Crush Test (model: INR 18650-2000mAh)				P
Ambient temperature: 23.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C146#	TSZ22040405-P01-C147#	TSZ22040405-P01-C148#	TSZ22040405-P01-C149#	TSZ22040405-P01-C150#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C151#	TSZ22040405-P01-C152#	TSZ22040405-P01-C153#	TSZ22040405-P01-C154#	TSZ22040405-P01-C155#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

13	TABLE: Crush Test (model: INR 18650-3200mAh)				P
Ambient temperature: 23.6°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C261#	TSZ22040405-P01-C262#	TSZ22040405-P01-C263#	TSZ22040405-P01-C264#	TSZ220404 05-P01-C265#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C266#	TSZ22040405-P01-C267#	TSZ22040405-P01-C268#	TSZ22040405-P01-C269#	TSZ220404 05-P01-C270#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Crush direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

14	TABLE: Impact Test (model: INR 18650-800mAh)				P
Ambient temperature: 23.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C041#	TSZ22040405-P01-C042#	TSZ22040405-P01-C043#	TSZ22040405-P01-C044#	TSZ220404 05-P01-C045#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C046#	TSZ22040405-P01-C047#	TSZ22040405-P01-C048#	TSZ22040405-P01-C049#	TSZ220404 05-P01-C050#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

14	TABLE: Impact Test (model: INR 18650-2000mAh)				P
Ambient temperature: 23.7°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C156#	TSZ22040405-P01-C157#	TSZ22040405-P01-C158#	TSZ22040405-P01-C159#	TSZ22040405-P01-C160#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C161#	TSZ22040405-P01-C162#	TSZ22040405-P01-C163#	TSZ22040405-P01-C164#	TSZ22040405-P01-C165#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

14	TABLE: Impact Test (model: INR 18650-3200mAh)				P
Ambient temperature: 23.2°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C271#	TSZ22040405-P01-C272#	TSZ22040405-P01-C273#	TSZ22040405-P01-C274#	TSZ2204040 5-P01-C275#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Cycled cell					
Sample No.	TSZ22040405-P01-C276#	TSZ22040405-P01-C277#	TSZ22040405-P01-C278#	TSZ22040405-P01-C279#	TSZ2204040 5-P01-C280#
Catch fire	No	No	No	No	No
Explode	No	No	No	No	No
Impact direction	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface	Longitudinal axis parallel to the flat surface
Failure mode	No	No	No	No	No
Supplementary information: no explosion or catch fire.					

15	TABLE: Shock Test (model: INR 18650-800mAh)				P
Ambient temperature: 23.5°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C051#	TSZ22040405-P01-C052#	TSZ22040405-P01-C053#	TSZ22040405-P01-C054#	TSZ2204040 5-P01-C055#
Mass before test (g)	41.640	41.237	41.334	41.456	40.927
Mass after test (g)	41.631	41.234	41.326	41.445	40.922
Mass loss ratio (%)	0.022	0.007	0.019	0.027	0.012
Cycled cell					
Sample No.	TSZ22040405-P01-C056#	TSZ22040405-P01-C057#	TSZ22040405-P01-C058#	TSZ22040405-P01-C059#	TSZ2204040 5-P01-C060#
Mass before test (g)	41.372	41.243	41.157	41.254	41.085
Mass after test (g)	41.369	41.240	41.146	41.242	41.079
Mass loss ratio (%)	0.007	0.007	0.027	0.029	0.015
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

15	TABLE: Shock Test (model: INR 18650-2000mAh)				P
Ambient temperature: 22.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C166#	TSZ22040405-P01-C167#	TSZ22040405-P01-C168#	TSZ22040405-P01-C169#	TSZ22040405-P01-C170#
Mass before test (g)	41.679	41.501	42.335	42.314	41.555
Mass after test (g)	41.673	41.490	42.332	42.304	41.547
Mass loss ratio (%)	0.014	0.027	0.007	0.024	0.019
Cycled cell					
Sample No.	TSZ22040405-P01-C171#	TSZ22040405-P01-C172#	TSZ22040405-P01-C173#	TSZ22040405-P01-C174#	TSZ22040405-P01-C175#
Mass before test (g)	42.309	41.693	42.374	41.532	41.783
Mass after test (g)	42.302	41.692	42.362	41.531	41.778
Mass loss ratio (%)	0.017	0.002	0.028	0.002	0.012
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

15	TABLE: Shock Test (model: INR 18650-3200mAh)				P
Ambient temperature: 23.5°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C281#	TSZ22040405-P01-C282#	TSZ22040405-P01-C283#	TSZ22040405-P01-C284#	TSZ22040405-P01-C285#
Mass before test (g)	42.089	42.107	42.398	41.810	41.568
Mass after test (g)	42.081	42.102	42.395	41.804	41.559
Mass loss ratio (%)	0.019	0.012	0.007	0.014	0.022
Cycled cell					
Sample No.	TSZ22040405-P01-C286#	TSZ22040405-P01-C287#	TSZ22040405-P01-C288#	TSZ22040405-P01-C289#	TSZ22040405-P01-C290#
Mass before test (g)	42.064	41.770	42.785	42.741	41.765
Mass after test (g)	42.062	41.766	42.779	42.739	41.756
Mass loss ratio (%)	0.005	0.010	0.014	0.005	0.022
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

16	TABLE: Vibration Test (model: INR 18650-800mAh)				P
Ambient temperature: 23.3°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C061#	TSZ22040405-P01-C062#	TSZ22040405-P01-C063#	TSZ22040405-P01-C064#	TSZ220404 05-P01-C065#
Mass before test (g)	41.322	41.075	41.748	41.380	41.151
Mass after test (g)	41.320	41.070	41.743	41.367	41.141
Mass loss ratio (%)	0.005	0.012	0.012	0.031	0.024
Cycled cell					
Sample No.	TSZ22040405-P01-C066#	TSZ22040405-P01-C067#	TSZ22040405-P01-C068#	TSZ22040405-P01-C069#	TSZ220404 05-P01-C070#
Mass before test (g)	41.897	41.763	41.072	41.060	41.096
Mass after test (g)	41.887	41.762	41.065	41.046	41.091
Mass loss ratio (%)	0.024	0.007	0.017	0.034	0.012
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

16	TABLE: Vibration Test (model: INR 18650-2000mAh)				P
Ambient temperature: 24.1°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C176#	TSZ22040405-P01-C177#	TSZ22040405-P01-C178#	TSZ22040405-P01-C179#	TSZ220404 05-P01-C180#
Mass before test (g)	41.552	41.582	41.910	42.113	41.641
Mass after test (g)	41.540	41.567	41.899	42.100	41.629
Mass loss ratio (%)	0.029	0.036	0.026	0.031	0.029
Cycled cell					
Sample No.	TSZ22040405-P01-C181#	TSZ22040405-P01-C182#	TSZ22040405-P01-C183#	TSZ22040405-P01-C184#	TSZ220404 05-P01-C185#
Mass before test (g)	41.647	42.217	41.600	42.066	42.386
Mass after test (g)	41.634	42.201	41.595	42.052	42.370
Mass loss ratio (%)	0.031	0.038	0.012	0.033	0.038
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

16	TABLE: Vibration Test (model: INR 18650-3200mAh)				P
Ambient temperature: 23.6°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C291#	TSZ22040405-P01-C292#	TSZ22040405-P01-C293#	TSZ22040405-P01-C294#	TSZ220404 05-P01-C295#
Mass before test (g)	42.137	41.778	42.236	42.284	42.523
Mass after test (g)	42.130	41.764	42.234	42.280	42.514
Mass loss ratio (%)	0.017	0.034	0.005	0.009	0.021
Cycled cell					
Sample No.	TSZ22040405-P01-C296#	TSZ22040405-P01-C297#	TSZ22040405-P01-C298#	TSZ22040405-P01-C299#	TSZ220404 05-P01-C300#
Mass before test (g)	41.959	42.564	42.018	41.580	41.868
Mass after test (g)	41.953	42.560	42.004	41.565	41.853
Mass loss ratio (%)	0.014	0.009	0.033	0.036	0.036
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

18	TABLE: Temperature Cycling Test (model: INR 18650-800mAh)				P
Ambient temperature: 23.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C091#	TSZ22040405-P01-C092#	TSZ22040405-P01-C093#	TSZ22040405-P01-C094#	TSZ220404 05-P01-C095#
Mass before test (g)	40.926	41.659	40.911	41.526	41.407
Mass after test (g)	40.899	41.630	40.881	41.501	41.389
Mass loss ratio (%)	0.066	0.070	0.073	0.060	0.043
Cycled cell					
Sample No.	TSZ22040405-P01-C096#	TSZ22040405-P01-C097#	TSZ22040405-P01-C098#	TSZ22040405-P01-C099#	TSZ220404 05-P01-C100#
Mass before test (g)	41.763	41.373	41.260	41.258	41.624
Mass after test (g)	41.744	41.345	41.234	41.233	41.602
Mass loss ratio (%)	0.045	0.068	0.063	0.061	0.053
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

18	TABLE: Temperature Cycling Test (model: INR 18650-2000mAh)				P
Ambient temperature: 23.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C206#	TSZ22040405-P01-C207#	TSZ22040405-P01-C208#	TSZ22040405-P01-C209#	TSZ220404 05-P01-C210#
Mass before test (g)	42.121	42.257	42.293	41.856	42.177
Mass after test (g)	42.097	42.240	42.264	41.837	42.157
Mass loss ratio (%)	0.057	0.040	0.069	0.045	0.047
Cycled cell					
Sample No.	TSZ22040405-P01-C211#	TSZ22040405-P01-C212#	TSZ22040405-P01-C213#	TSZ22040405-P01-C214#	TSZ220404 05-P01-C215#
Mass before test (g)	42.299	41.784	41.522	41.758	41.691
Mass after test (g)	42.277	41.761	41.500	41.733	41.665
Mass loss ratio (%)	0.052	0.055	0.053	0.060	0.062
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

18	TABLE: Temperature Cycling Test (model: INR 18650-3200mAh)				P
Ambient temperature: 23.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C321#	TSZ22040405-P01-C322#	TSZ22040405-P01-C323#	TSZ22040405-P01-C324#	TSZ220404 05-P01-C325#
Mass before test (g)	42.541	41.700	42.004	42.701	42.052
Mass after test (g)	42.512	41.674	41.976	42.668	42.034
Mass loss ratio (%)	0.068	0.062	0.067	0.077	0.043
Cycled cell					
Sample No.	TSZ22040405-P01-C326#	TSZ22040405-P01-C327#	TSZ22040405-P01-C328#	TSZ22040405-P01-C329#	TSZ220404 05-P01-C330#
Mass before test (g)	41.613	41.852	42.786	41.945	42.151
Mass after test (g)	41.580	41.823	42.766	41.914	42.134
Mass loss ratio (%)	0.079	0.069	0.047	0.074	0.040
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

19	TABLE: Low Pressure (Altitude Simulation) Test (model: INR 18650-800mAh)				P
Ambient temperature: 22.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C101#	TSZ22040405-P01-C102#	TSZ22040405-P01-C103#	TSZ22040405-P01-C104#	TSZ22040405-P01-C105#
Mass before test (g)	41.620	41.518	41.869	41.438	41.502
Mass after test (g)	41.610	41.498	41.864	41.431	41.494
Mass loss ratio (%)	0.024	0.048	0.012	0.017	0.019
Cycled cell					
Sample No.	TSZ22040405-P01-C106#	TSZ22040405-P01-C107#	TSZ22040405-P01-C108#	TSZ22040405-P01-C109#	TSZ22040405-P01-C110#
Mass before test (g)	41.109	41.728	41.079	41.523	41.421
Mass after test (g)	41.093	41.709	41.072	41.514	41.416
Mass loss ratio (%)	0.039	0.046	0.017	0.022	0.012
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

19	TABLE: Low Pressure (Altitude Simulation) Test (model: INR 18650-2000mAh)				P
Ambient temperature: 22.4°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C216#	TSZ22040405-P01-C217#	TSZ22040405-P01-C218#	TSZ22040405-P01-C219#	TSZ22040405-P01-C220#
Mass before test (g)	42.064	42.407	41.991	41.866	42.284
Mass after test (g)	42.063	42.399	41.981	41.849	42.277
Mass loss ratio (%)	0.002	0.019	0.024	0.041	0.019
Cycled cell					
Sample No.	TSZ22040405-P01-C221#	TSZ22040405-P01-C222#	TSZ22040405-P01-C223#	TSZ22040405-P01-C224#	TSZ22040405-P01-C225#
Mass before test (g)	42.325	42.246	42.340	42.470	41.829
Mass after test (g)	42.324	42.226	42.332	42.469	41.809
Mass loss ratio (%)	0.002	0.047	0.019	0.002	0.048
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

19	**TABLE: Low Pressure (Altitude Simulation) Test (model: INR 18650-3200mAh)**				**P**
Ambient temperature: 22.1°C					
Fully Charged Cell					
Sample No.	TSZ22040405-P01-C331#	TSZ22040405-P01-C332#	TSZ22040405-P01-C333#	TSZ22040405-P01-C334#	TSZ22040405-P01-C335#
Mass before test (g)	41.840	42.204	42.656	42.349	42.890
Mass after test (g)	41.834	42.189	42.653	42.344	42.875
Mass loss ratio (%)	0.014	0.036	0.007	0.012	0.035
Cycled cell					
Sample No.	TSZ22040405-P01-C336#	TSZ22040405-P01-C337#	TSZ22040405-P01-C338#	TSZ22040405-P01-C339#	TSZ22040405-P01-C340#
Mass before test (g)	42.208	41.605	41.913	41.884	42.697
Mass after test (g)	42.191	41.600	41.908	41.876	42.680
Mass loss ratio (%)	0.040	0.012	0.012	0.019	0.040
Supplementary information: no explosion or catch fire, in addition the sample did not vent or leak. Max loss less than 0.1%					

Critical components information

Material: e.g. external enclosure, PCB, closed-end connector, sleeves, cord anchorage etc.

Components with winding: e.g. motor, transformer, magnetic coil etc.

Other components: e.g. switch, thermostat, heater, plug, internal wire, capacitor, relay, varistor etc.

Object/ Part No.	Manufacturer/ trademark	Type/ Model	Technical data	Standard	Mark(s) of conformity
-Positive electrode	Anhui Boshi High-tech New Materials Co., LTD	TM-R01	$LiMn_2O_4$, Particle size D_{50}: 15±3μm, Specific surface area: 0.6±0.2m^2/g, Tap density: ≥1.6g/cm^3	--	--
-Negative electrode	Jiao zuo Rongchuang Graphite Technology Co., Ltd	J-002C	Graphite, C content: ≥99.9%, Particle size D_{50}(μm): 10~14, Specific surface≤2.0	--	--
-Separator	Dongwan towin new materLiaLs in Dustrial Co.,Ltd	60.5*12+4μm	PE, Air permeability (s/100Ml): 120-320, Porosity : ≥40%, Tensile strength (MPa): ≥110, Shutdown temperature (ºC): 135-140, Thickness: 12+4μm	--	--
-Electrolyte	Heyuan Lianmao new manterials Co.,Ltd	LM-CJ5C05	Composition: $LiPF_6$+Solution, Conductivity (Ms/cm^2): 10.2±1	--	--
-Cell case	Taixing Haoyu Satellite Technology Co., Ltd.	17.71*18.15*68.3 *0.22mm	Nylon, Aluminum, CPP, Wall thickness: 0.22mm, Internal diameter: 17.71mm, External diameter: 18.15mm, height: 68.3mm	--	--

--End of report--

List of test equipment used

Testing location:

Shenzhen Tiansu Calibration and Testing Co.,Ltd.

Building 1/4, No.2, Jinlong Road, Longgang District, Shenzhen, Guangdong, China

Clause	Measurement/ testing	Testing/measuring equipment/material used, (equipment ID)	Range used	Last calibration date	Calibration due date
10	Short-Circuit Test	TS-SB-07741/Digital Thermometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-06727/ Temperature chamber/ RJD-DL-HT-400A-C2-B	Temperature: 20 to 80°C	2022/7/7	2023/7/6
		TS-SB-06411 /Resistance tester/ BT3563	Resistance: 1mΩ to 3Ω DC Voltage: 0.01V to 450V	2022/7/7	2023/7/6
		TS-SB-15165/High frequency data collector/ MR8875-30	Voltage: 10mV to 200V Temperature: -100 to 1372°C	2022/7/7	2023/7/6
		TS-SB-15023/Short circuit testing machine/ CZ-DL501T-CH12	Voltage: 0.001 to 30V Current: 0 to 500A Short-circuit resistance: 80±20mΩ Thermostat temperature: 0 to 80°C	2022/7/7	2023/7/6
11	Abnormal Charging Test	TS-SB-06404/Battery charging and discharging system/CT-4008-5V12A-DB	Voltage: 25mV to 5V Current: 24mA to 12A	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
		TS-SB-07744/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-08945/Data collector/LR8431-30	Voltage: 0V to 60V Temperature: -100 to 1372ºC	2022/7/7	2023/7/6
		TS-SB-11726/Cronometro/TF307	Time: 5 to 3600s	2022/7/7	2023/7/6
13	Crush	TS-SB-06728/ Battery Crush Tester/RJD-2J-2T-200	Voltage acquisition: 0.5 to 100V Temperature acquisition: 0 to 300°C Force: 0.4kN to 20kN Speed: 0.1 to 100mm/s	2022/7/7	2023/7/6

		TS-SB-07745/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
14	Impact	TS-SB-06742/ Impact tester/RJD-ZWCJ-1000L	Hammer: 9.1kg±0.1kg Release height: 25 to 1000mm Rod: 15.8mm±0.1mm	2022/7/7	2023/7/6
		TS-SB-07744/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
15	Shock	TS-SB-06747/ Shock Tester/RTZA-63-BT-C10	Height: 100～1500mm Acceleration: 30g～500g Pulse width: 1-30ms	2022/3/05	2023/3/06
		TS-SB-12647/ Electronic balance/ FA2204H	Range: 0.01g to 200g Precision: 0.0001g	2022/7/7	2023/7/6
		TS-SB-06383/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 40°C Humidity: 40%Rh to 80%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
16	Vibration	TS-SB-06375/Vibration tester /DC-2200-26	Frequency range: 5 to 2000Hz MAX load: 300Kg MAX acceleration: 100 m/s^2 MAX displacement: 51mm	2022/3/05	2023/3/06
		TS-SB-12647/ Electronic balance/ FA2204H	Range: 0.01g to 200g Precision: 0.0001g	2022/7/7	2023/7/6
		TS-SB-06383/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 40°C Humidity: 40%Rh to 80%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
17	Heating	TS-SB-06720/ Thermal shock test chambers/ T-RHD-216X2-250P	Temperature: 20°C to 200°C Heating rate: 5.6°C /min	2022/7/7	2023/7/6
		TS-SB-07742/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6

		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
		TS-SB-11726/Cronometro/TF307	Time: 5 to 3600s	2022/7/7	2023/7/6
18	Temperature Cycling	TS-SB-06724 /Constant temperature and humidity testing machine/T-FTH5-288-E	Temperature: -60°C to 150°C Humidity: 40% Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-07741/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-11726/Cronometro/TF307	Time: 5 to 3600s	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
		TS-SB-12647/ Electronic balance/ FA2204H	Range: 0.01g to 200g Precision: 0.0001g	2022/7/7	2023/7/6
19	Low Pressure(Altitude Simulation) Test	Vacuum Oven TS-SB-06741/T-VT-216	200Pa to 3000Pa	2022/7/7	2023/7/6
		TS-SB-07741/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15
		TS-SB-11726/Cronometro/TF307	Time: 5 to 3600s	2022/7/7	2023/7/6
		TS-SB-12647/ Electronic balance/ FA2204H	Range: 0.01g to 200g Precision: 0.0001g	2022/7/7	2023/7/6

20	Projectile	TS-SB-06740/Battery combustion tester/RJD-RS-6130	Diameter of round hole: 102 mm, Diameter of Wire mesh: 0.45mm 20 mesh/inch, Aluminum wire mesh: 0.25mm in diameter, 16 to 18 mesh/inch, Eight masks: the distance between the two parallel sides is 610 mm, and the height is 305mm, Angle iron: upper and lower width 12.7*12.7mm, Combustion time: 0 to 999.9s	2022/7/7	2023/7/6
		TS-SB-07740/Digital temperature and hygrometer/HTC-1	Temperature: -10 to 50°C Humidity: 25%Rh to 98%Rh	2022/7/7	2023/7/6
		TS-SB-12568/Digital multimeter /17B+	DC Voltage: 0 to 1000V DC Current: 0 to 10A	2021/11/16	2022/11/15

Product: Li-ion Cell

Type Designation: INR 18650-800mAh, INR 18650-900mAh, INR 18650-1000mAh, INR 18650-1200mAh, INR 18650-1300mAh, INR 18650-1500mAh, INR 18650-1800mAh, INR 18650-2000mAh, INR 18650-2200mAh, INR 18650-2500mAh, INR 18650-2600mAh, INR 18650-2800mAh, INR 18650-2900mAh, INR 18650-3000mAh, INR 18650-3200mAh

Remark: The tested models (INR 18650-800mAh, INR 18650-2000mAh, INR 18650-3200mAh) are representatives of all models.

Figure 1 Front view of cell (Model: INR 18650-800mAh)

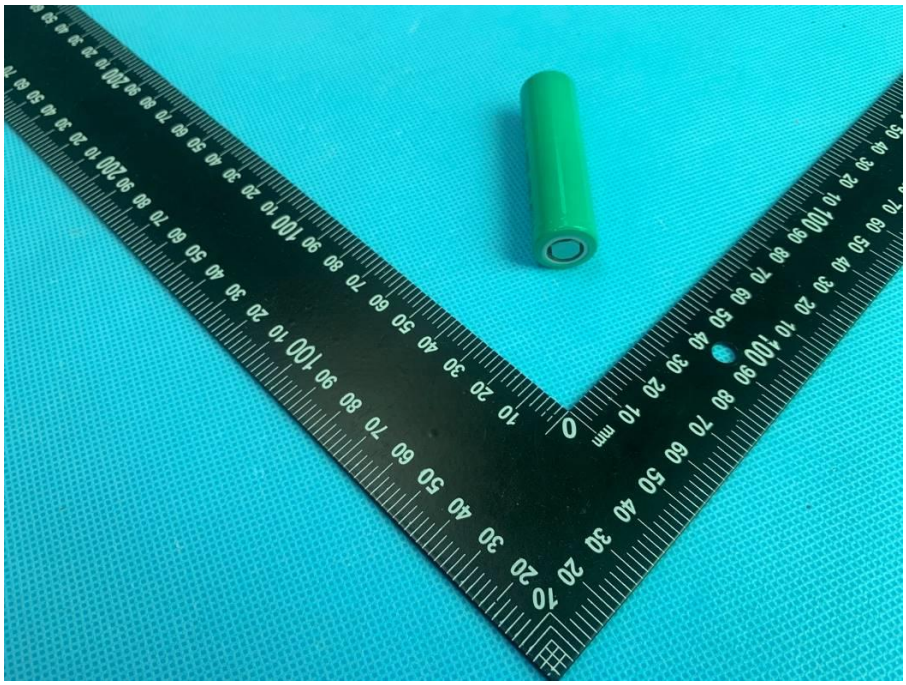

Figure 2 Side view of cell (Model: INR 18650-800mAh)

Product: Li-ion Cell

Type Designation: INR 18650-800mAh, INR 18650-900mAh, INR 18650-1000mAh, INR 18650-1200mAh, INR 18650-1300mAh, INR 18650-1500mAh, INR 18650-1800mAh, INR 18650-2000mAh, INR 18650-2200mAh, INR 18650-2500mAh, INR 18650-2600mAh, INR 18650-2800mAh, INR 18650-2900mAh, INR 18650-3000mAh, INR 18650-3200mAh

Figure 3 Front view of cell (Model: INR 18650-2000mAh)

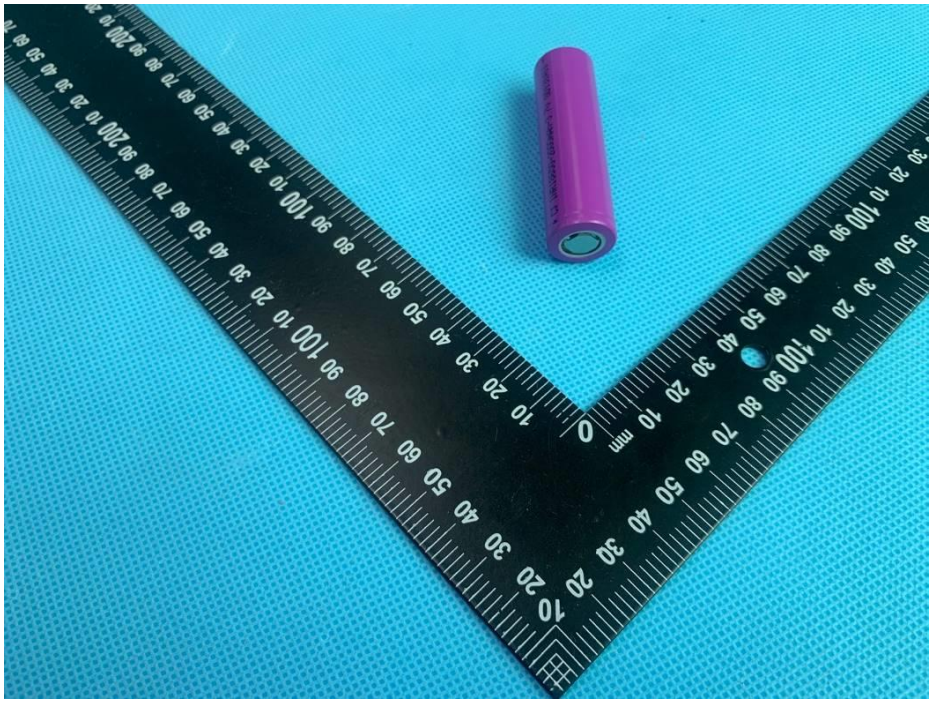

Figure 4 Side view of cell (Model: INR 18650-2000mAh)

Product: Li-ion Cell

Type Designation: INR 18650-800mAh, INR 18650-900mAh, INR 18650-1000mAh, INR 18650-1200mAh, INR 18650-1300mAh, INR 18650-1500mAh, INR 18650-1800mAh, INR 18650-2000mAh, INR 18650-2200mAh, INR 18650-2500mAh, INR 18650-2600mAh, INR 18650-2800mAh, INR 18650-2900mAh, INR 18650-3000mAh, INR 18650-3200mAh

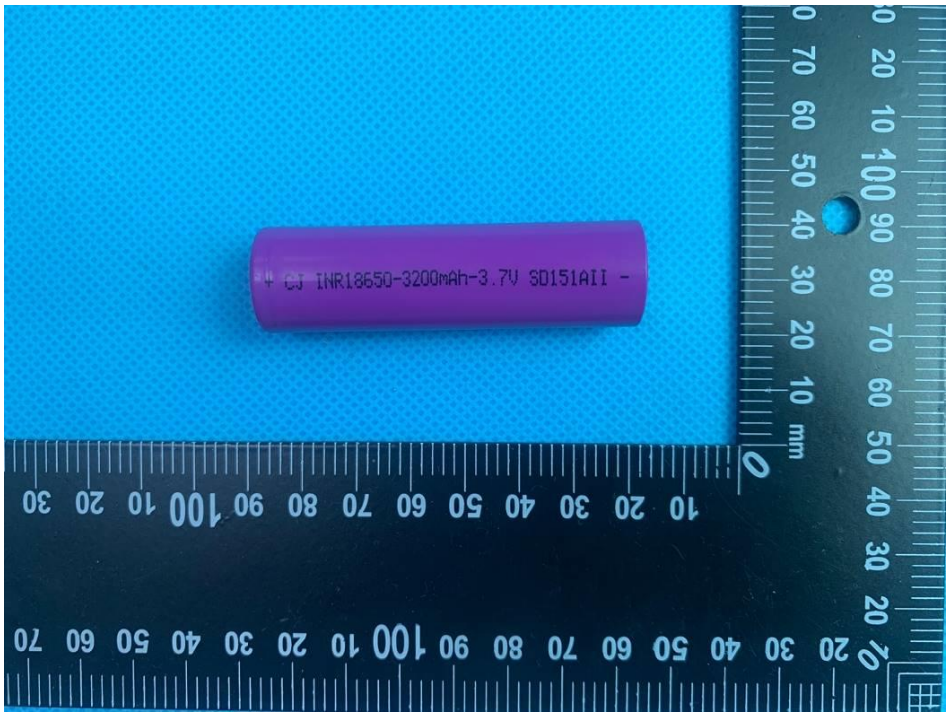

Figure 5 Front view of cell (Model: INR 18650-3200mAh)

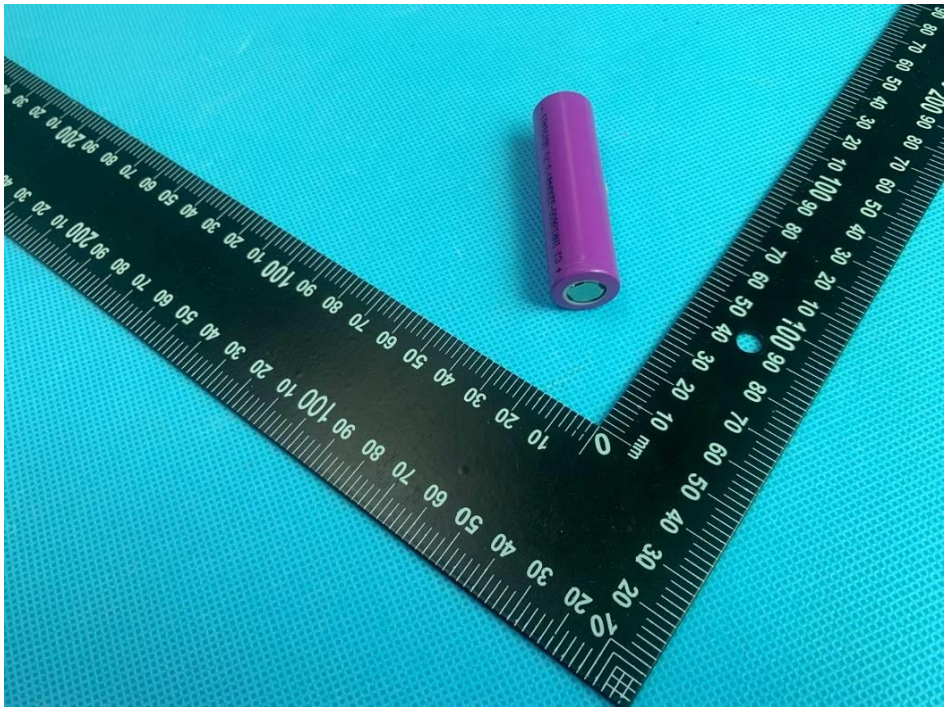

Figure 6 Side view of cell (Model: INR 18650-3200mAh)