



Test Report issued under the responsibility of:



TEST REPORT
IEC 60086-4
Primary batteries
Part 4: Safety of lithium batteries

Report Number: SZES260400298101

Date of issue.....: 2026-04-21

Total number of pages: 15 Pages

Name of CB Testing Laboratory preparing the Report.....: SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Applicant's name: Zhaoqing New Leader Battery Industry Co., Ltd.

Address: New Leader Industry Building, Tenth Area Chuang Ye Road, Ding Hu New Town, Zhaoqing, Guangdong, China

Test specification:

Standard: IEC 60086-4:2025

Test procedure: CB Scheme

Non-standard test method: N/A

TRF template used: IECEE OD-2020-F1:2024, Ed.1.7

Test Report Form No......: IEC60086_4D

Test Report Form(s) Originator: DEKRA Certification B.V.

Master TRF: Dated 2025-06-04

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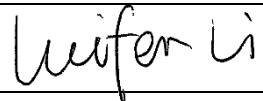
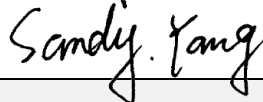
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This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.

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Test item description :	Lithium Manganese Dioxide Button Cell	
Trademark(s) :		
Manufacturer :	Same as applicant	
Model/Type reference :	CR1220	
Ratings :	Rated Voltage: 3,0 V d.c. Rated Capacity: 42 mAh	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ CB Testing Laboratory:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	
Testing location/ address :	No.2, Jianghao Industrial Factory Area, No.430, Jihua Road, Bantian Street, Longgang District, Shenzhen, Guangdong, China	
Tested by (name, function, signature) :	Lucifer Li / Project Engineer	
Approved by (name, function, signature) .. :	Sandy Yang / Report Reviewer	
☐ 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: 2 pages of Photos;
 Attachment 2: 5 pages of Information for safety;
 Attachment 3: 1 page of Packaging;
 Attachment 4: 1 page of Product specification;
 Attachment 5: 1 page of ISO9001 Certificate.

Summary of testing:

The sample(s) tested complies with the requirements of IEC 60086-4:2025 (Sixth Edition).

All test data are copied from original CB test report ref. No. SZES231000659001 dated 2023-11-18, with follow changes:

- Upgraded standard version from IEC 60086-4: 2019 to IEC 60086-4:2025;
- Updated the ISO 9001 Certificate.

After comparison, no additional test was considered necessary.

Remark:

1. Client declared that cell wasn't intended for direct sale in consumer-replaceable applications;
2. Only cell was considered and tested according to standard in this report.
3. The battery is supplied to 'CAINZ CORPORATION'.

Tests performed (name of test, test clause and date test performed):

- ☒ 6.4.1 Altitude
- ☒ 6.4.2 Thermal cycling
- ☒ 6.4.3 Vibration
- ☒ 6.4.4 Shock
- ☒ 6.5.2 External short-circuit
- ☐ 6.5.3 Impact
- ☒ 6.5.4 Crush
- ☒ 6.5.5 Forced discharge
- ☒ 6.5.6 Abnormal charging
- ☒ 6.5.7 Free fall
- ☒ 6.5.8 Thermal abuse
- ☐ 6.5.9 Incorrect installation
- ☐ 6.5.20 Overdischarge

Testing location: (CBTL)

SGS-CSTC Standards Technical Services Co., Ltd.
 Shenzhen Branch
 No.2, Jianghao Industrial Factory Area, No.430,
 Jihua Road, Bantian Street, Longgang District,
 Shenzhen, Guangdong, China

Summary of compliance with National Differences

- IEC EE Member countries that are also CENELEC members
 Compliance with Group Differences evaluated ☐ yes ☐ No ☒ N/A
- IEC EE Member countries with published National Differences which were evaluated:
 N/A
- IEC EE Member countries that did not publish any National Differences:
 N/A

To support compliance with published National Differences, attach a compilation of relevant ND and/or GD TRFs to the CB Test Report

Use of uncertainty of measurement for decisions on conformity (decision rule):

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other: ... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.



Remark: The safety sign on cells shall have a diameter of 6 mm or larger.

Test item particulars: --	
Classification of installation and use: --	
Supply Connection: --	
.....: --	
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: Original receipt date: 2021-03-16	
Date (s) of performance of tests: Original test date: 2021-03-18 to 2021-04-15	
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. Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60086-4:2025:	
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:	
The product fulfils the requirements of EN IEC 60086-4:2025.	
Product description:	Lithium Manganese Dioxide Button Cell
Systems:	Lithium / Manganese Dioxide
Model of cell:	CR1220
Designation of cell:	CR1220
Nominal voltage of cell:	3,0 V
Rated capacity of cell:	42 mAh
Max. continuous discharge current:	2 mA
Remark: See Attachment 4 for more detail.	

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
4	REQUIREMENTS FOR SAFETY		P
4.1	Design		P
	a) Abnormal temperature rise above the critical value is prevented		P
	b) Temperature increases in the battery is controlled		P
	c) Lithium cells and batteries are designed to relieve excessive internal pressure or to preclude a violent rupture under conditions of transport, intended use and reasonably foreseeable misuse	Gasket was used as pressure relief mechanism to relieve excessive internal pressure.	P
	The organisational requirements described in Annex G applied in particular cases		P
4.2	Quality plan		P
	Manufacturer prepares and implements a quality plan defining the procedures for the inspection of materials, components, cells and batteries during the course of manufacture, to be applied to the total process of producing a specific type of battery	ISO9001 certificate was submitted. See Attachment 5 for detail.	P
	Manufactures understand their process capabilities and institute the necessary process controls as they relate to product safety		P
5	TYPE TESTING AND SAMPLING		P
5.1	Validity of testing		P
5.2	Test samples		P
6	TESTING AND REQUIREMENTS		P
6.1	General		P
6.1.1	Test application matrix	(See table 2 in the standard)	P
	s: cell or single cell battery	Cell	P
	m: multi cell battery		N/A
6.1.3	Ambient temperature (°C)	20°C ± 5°C	--
6.1.4	Parameter measurement tolerances		P
6.1.5	Predischarge		P
6.1.6	Additional cells		N/A
6.2	Evaluation of test criteria		P
6.2.1	Short-circuit		P
6.2.2	Excessive temperature rise		P
6.2.3	Leakage		P
6.2.4	Venting		P
6.2.5	Fire		P
6.2.6	Rupture		P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.7	Explosion		P
6.3	Tests and requirements – Overview		P
6.4	Tests for intended use		P
6.4.1	Test A: Altitude	(See appended table 1)	P
6.4.2	Test B: Thermal cycling	(See appended table 1)	P
6.4.3	Test C: Vibration	(See appended table 1)	P
6.4.4	Test D: Shock	(See appended table 1)	P
6.5	Tests for reasonably foreseeable misuse		P
6.5.1	General		P
	For batteries not specified in IEC 60086-2, additional requirements apply which are described in Annex G		N/A
6.5.2	Test E: External short-circuit	(See appended table 1)	P
6.5.3	Test F: Impact	Coin cell	N/A
6.5.4	Test G: Crush	(See appended table 1)	P
6.5.5	Test H: Forced discharge	(See appended table 1)	P
6.5.6	Test I: Abnormal charging	(See appended table 1)	P
6.5.7	Test J: Free fall	(See appended table 1)	P
6.5.8	Test K: Thermal abuse	(See appended table 1)	P
6.5.9	Test L: Incorrect installation	Button cell, no spiral construction	N/A
6.5.10	Test M: Overdischarge	Button cell, no spiral construction	N/A
6.6	Information to be given in the relevant specification		P
	a) PredischARGE current or resistive load and end-point voltage specified by the manufacturer.....	62 K Ω to 2,0 V end-point voltage	P
	b) Method to measure the energy of an explosion, if any	Energy of an explosion is cell will not penetrate a wire mesh screen as describe in clause 6.2.7 a).	P
	c) Shape: prismatic, flexible, coin or cylindrical Diameter: less than 18 mm or not less than 18 mm	Coin cell Diameter: 12,5 mm, no more than 18 mm	P
	d) Maximum continuous discharge current specified by the manufacturer for test H	2 mA in the cell specification	P
	e) Rated capacity specified by the manufacturer for test H.....	Rated capacity is 42 mAh	P
	f) Abnormal charging current declared by the manufacturer for test I.....	1 mA declared by the manufacturer	P
	g) Nominal capacity specified by the manufacturer :	Nominal capacity is 42 mAh	P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
	h) Normal reverse current declared by the manufacturer which applied to the battery during its operating life	0,1 mA declared by the manufacturer	P
7	INFORMATION FOR SAFETY		P
7.1	Safety precautions during design of equipment		N/A
7.1.1	General	Should be considered in end product	N/A
7.1.2	Charge protection		N/A
7.1.3	Parallel connection		N/A
7.2	Precautions during handling of batteries		P
7.3	Additional information for safety of coin cells		P
7.4	Packaging		P
7.5	Handling of battery cartons		P
7.6	Transport		P
7.6.1	General		P
7.6.2	Air transport	Had been considered by the applicant.	P
7.6.3	Sea transport		P
7.6.4	Land transport		P
7.7	Display and storage		P
7.8	Disposal		P
8	INSTRUCTIONS FOR USE		P
9	MARKING AND PACKAGING		P
9.1	General		P
	Batteries are marked with the following information		P
	a) designation, IEC or common	CR1220	P
	b) expiration of a recommended usage period or year and month or week of manufacture. The year and month or week of manufacture may be in code	See immediate package	P
	c) polarity of the positive (+) terminal	See marking plate	P
	d) nominal voltage	See marking plate	P
	e) name or trademark of the manufacturer or supplier	See marking plate and immediate packaging	P
	f) cautionary advice	See marking plate and immediate packaging	P
9.2	Marking of batteries too small to accommodate all markings		P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Some batteries have a surface too small to accommodate all markings shown in 9.1. For these batteries the designation 9.1 a) and the polarity 9.1 c) are marked on the battery, while all other markings shown in 9.1 are given on the immediate packaging instead of on the battery		P
9.3	Additional requirements for swallowable coin cells and batteries		P
	For swallowable coin cells and batteries, that are intended for direct sale in consumer replaceable applications, caution for ingestion is also marked on the immediate packaging	Client declared that cell wasn't intended for direct sale in consumer-replaceable applications	N/A
	Swallowable coin cells and batteries that are intended for direct sale in consumer replaceable applications and have a diameter of 16 mm or more is packaged in child resistant packaging		N/A
9.4	Safety pictograms		P
ANNEX A	(INFORMATIVE) GUIDELINES FOR THE ACHIEVEMENT OF SAFETY OF LITHIUM BATTERIES		P
ANNEX B	(INFORMATIVE) GUIDELINES FOR DESIGNERS OF EQUIPMENT USING LITHIUM BATTERIES		N/A
ANNEX C	(INFORMATIVE) ADDITIONAL INFORMATION ON DISPLAY AND STORAGE		P
ANNEX D	(INFORMATIVE) SAFETY PICTOGRAMS		P
D.1	General		P
D.2	Pictograms		P
D.3	Instruction for use		P
ANNEX E	(NORMATIVE) CHILD RESISTANT PACKAGING OF COIN CELLS		N/A
E.1	General		N/A
E.2	Applicability		N/A
E.3	Packaging tests		N/A
E.3.1	General		N/A
E.3.2	Test items		N/A
E.3.3	Test procedure		N/A
E.3.4	Criteria		N/A
ANNEX F	(NORMATIVE) USE OF THE KEEP OUT OF REACH OF CHILDREN SAFETY SIGN		P
F.1	General		P
F.2	Safety sign		P
F.3	Marking on the packaging		P
	a) Refer to Table 10 for marking requirements on packaging		P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
	b) The safety sign is on contrasting background. The background cover at least 50 % of the area of the pictogram		P
	c) The size of the safety sign is 6 mm in diameter or larger		P
	d) If the text KEEP OUT OF REACH OF CHILDREN is used, it contrasts with the background color on which it is printed		P
F.4	Marking on the cell		N/A
	a) Refer to Table 10 for marking requirements on coin cells		N/A
	b) The safety sign is applied durably and indelibly. No colour is required. Engraving, etching, embossing or stamping are acceptable		N/A
	c) The safety sign on cells has a diameter of 6 mm or larger		N/A
ANNEX G	(NORMATIVE) MEASURES AGAINST MISUSE OF BATTERIES NOT INTENDED FOR CONSUMER REPLACEMENT		P
G.1	Background		P
G.2	Additional measures for the prevention of confusion of primary batteries not intended for consumer replacement with secondary batteries		P
G.2.1	Identification of primary (non-rechargeable) batteries not intended for consumer replacement		P
	Primary batteries are considered to present a particular risk when inserted in battery chargers if they have the following properties:		P
	a) The battery belongs to voltage range 2 according to IEC 60086-1:2021, 4.1.7. This voltage range is characterized by a standard discharge voltage in the range from 2,72 V to 3,68 V; and		P
	b) The battery is not specified in IEC 60086-2 but is dimensionally interchangeable with a battery type specified in IEC 60086-2; and		N/A
	c) The battery meets one of the following conditions:		P
	-The battery is not intended for consumer replaceable applications; or		P
	-The battery does not fulfil the design requirements of 4.1 c)		N/A
G.2.2	Marking and information requirements for primary batteries not intended for consumer replacement		P
	Primary batteries that have been identified according to G.2.1 as presenting a particular risk are placed on the market in such a way that they cannot end up in the reach of end users.		P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict
	They are sold into applications where they can be replaced and inserted in equipment by the end user	Client declared that cell wasn't intended for direct sale in consumer-replaceable applications.	N/A
	Where it cannot be prevented that such batteries end up in the reach of end users, the following additional measures are taken:		N/A
	a) The batteries are packed individually in an immediate packaging, e.g. in a cardboard box or in a plastic bag; and		N/A
	b) The batteries are marked visibly, legibly, and permanently according to the requirements of the local product safety legislation with an indication that they are not rechargeable and not intended for consumer replaceable applications; and		N/A
	c) If this marking, due to lack of space, cannot be applied on the battery itself, the marking required in list item b) is confirmed on the immediate packaging; and		N/A
	d) The indication according to list item b) is applied in connection with offers for sale in such a way that it can easily be found and read. Offers for sale on the internet is set up in such a way that the buyer, before completing the purchase, has to confirm separately that he has read and understood the indication		N/A
G.2.3	Information responsibility of manufacturers and distributors		P

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE 1 (clause 6.4.1 – 6.5.9)					P
Tests	Cell / battery type	Discharge state	Number of test sample	Test result	Verdict
A to E	Cells or single cell batteries	Undischarged	10	A: NL, NV, NC, NR, NE, NF	P
				B: NL, NV, NC, NR, NE, NF	P
				C: NL, NV, NC, NR, NE, NF	P
				D: NL, NV, NC, NR, NE, NF	P
				E: NT, NR, NE, NF	P
		Fully discharged	10	A: NL, NV, NC, NR, NE, NF	P
				B: NL, NV, NC, NR, NE, NF	P
				C: NL, NV, NC, NR, NE, NF	P
				D: NL, NV, NC, NR, NE, NF	P
				E: NT, NR, NE, NF	P
	Multi-cell batteries	Undischarged	4		N/A
					N/A
					N/A
					N/A
					N/A
		Fully discharged	4		N/A
					N/A
					N/A
F	Cells or single cell batteries	Undischarged	5		N/A
		Fully discharged	5		N/A
	Multi-cell batteries	Undischarged	5 component cells		N/A
		Fully discharged	5 component cells		N/A
G	Cells or single cell batteries	Undischarged	5	NT, NE, NF	P
		Fully discharged	5	NT, NE, NF	P
	Multi-cell batteries	Undischarged	5 component cells		N/A
		Fully discharged	5 component cells		N/A
H	Cells or single cell batteries	Fully discharged	10	NE, NF	P
	Multi-cell batteries	Fully discharged	10 component cells		N/A

IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict

I	Cells or single cell batteries	Undischarged	5	Tests I: NE, NF	P
	Multi-cell batteries	Undischarged	5		N/A
J	Cells or single cell batteries	Undischarged	5	Tests J: NV, NE, NF	P
	Multi-cell batteries	Undischarged	5		N/A
K	Cells or single cell batteries	Undischarged	5	Tests K: NE, NF	P
	Multi-cell batteries	Undischarged	5		N/A
L	Cells or single cell batteries	Undischarged	20		N/A
M	Cells or single cell batteries	50 % predischarged (CR-type)	10		N/A
		Fully discharged (CR-type)	10		N/A
		50 % predischarged (FR-type)	20		N/A
		Fully discharged (FR-type)	20		N/A

Supplementary information:

NC: No short-circuit

NE: No explosion

NF: No fire

NL: No leakage

NR: No rupture

NT: No excessive temperature rise

NV: No venting

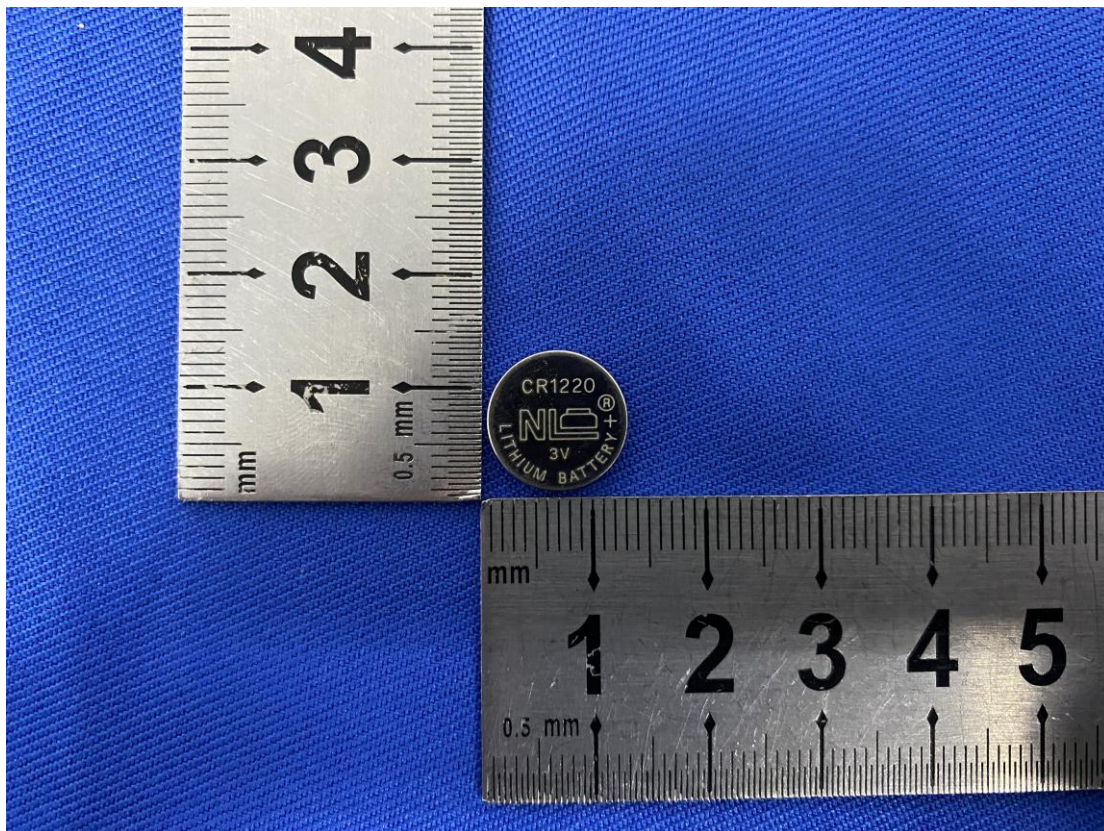
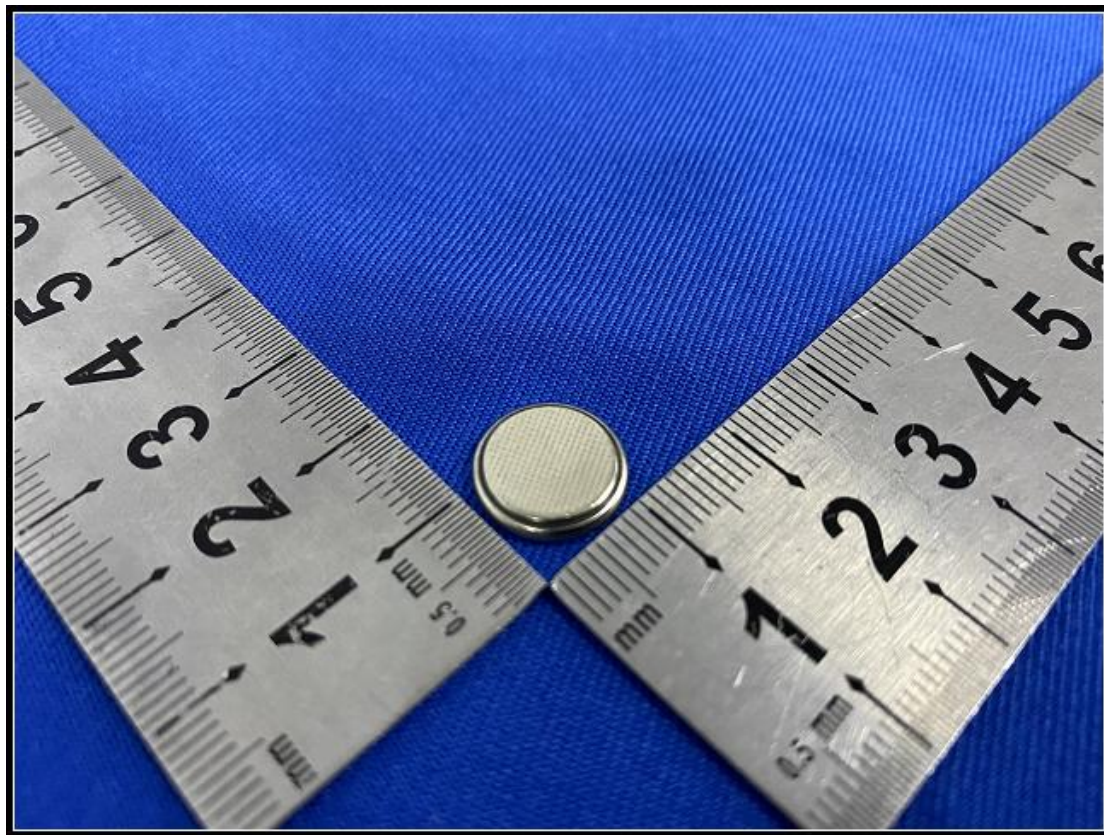
IEC 60086-4			
Clause	Requirement + Test	Result - Remark	Verdict

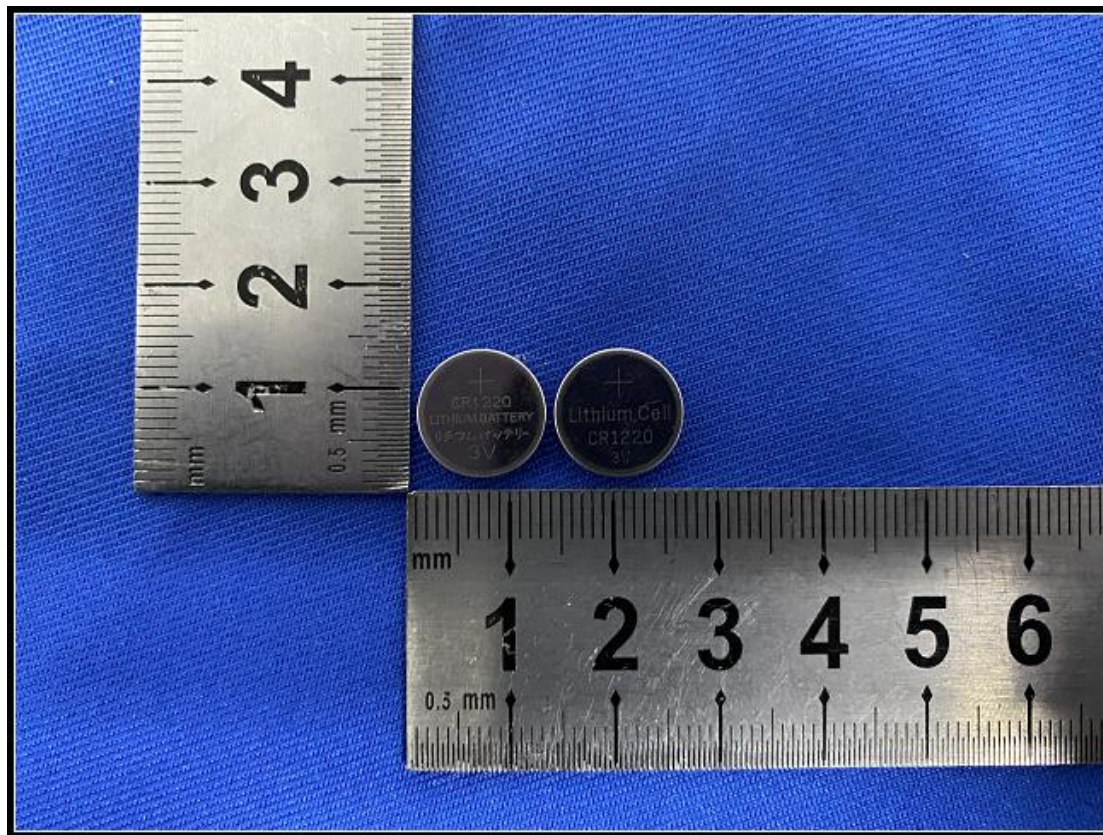
TABLE: Critical components information					--
Object / part No.	Manufacturer / trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Cell	Zhaoqing New Leader Battery Industry Co., Ltd.	CR1220	3,0 V 42 mAh	IEC 60086-4: 2025 EN IEC 60086-4:2025	Tested with appliance
- Electrolyte	Zhaoqing New Leader Battery Industry Co., Ltd.	--	LiClO ₄ Conductivity: 9,6 mS/cm	--	--
- Separator	Zhaoqing New Leader Battery Industry Co., Ltd.	--	PP Dimensions: 11 mm * 0,10 mm Shutdown temperature: 140°C	--	--
- Positive electrode	Zhaoqing New Leader Battery Industry Co., Ltd.	--	MnO ₂ , Dimensions: 11mm* 1,1 mm Specific capacity: 308 mAh/g	--	--
- Negative electrode	Zhaoqing New Leader Battery Industry Co., Ltd.	--	Li Specific capacity: 3846 mAh/g	--	--
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

--- End of Report ---

Attachment 1 Photo documentation

Whole unit



Attachment 1 Photo documentation

--- End of Attachment 1 ---

Attachment 2 Information for safety

Precautions during handling of batteries

When used correctly, lithium batteries provide a safe and dependable source of power. However, if they are misused or abused, leakage, venting or in extreme cases, explosion and/or fire can result.

a) Keep batteries out of the reach of children

In case of ingestion of a cell or battery, seek medical assistance promptly.

Swallowing coin cells or batteries can cause chemical burns, perforation of soft tissue, and in severe cases can cause death. They need to be removed immediately if swallowed.

b) Do not allow children to replace batteries without adult supervision

c) Always insert batteries correctly with regard to polarity (+ and –) marked on the battery and the equipment

When batteries are inserted in reverse they might be short-circuited or charged. This can cause overheating, leakage, venting, rupture, explosion, fire and personal injury.

d) Do not short-circuit batteries

When the positive (+) and negative (–) terminals of a battery are in electrical contact with each other, the battery becomes short-circuited. For example loose batteries in a pocket with keys or coins, can be short-circuited. This can result in venting, leakage, explosion, fire and personal injury.

e) Do not charge batteries

Attempting to charge a non-rechargeable (primary) battery can cause internal gas and/or heat generation resulting in leakage, venting, explosion, fire and personal injury.

f) Do not force discharge batteries

When batteries are force discharged by means of an external power source, the voltage of the battery will be forced below its design capability and gases will be generated inside the battery. This can result in leakage, venting, explosion, fire and personal injury.

g) Do not mix new and used batteries or batteries of different types or brands

When replacing batteries, replace all of them at the same time with new batteries of the same brand and type. When batteries of different brand or type are used together or new and used batteries are used together, some batteries might be over-discharged / force discharged due to a difference of voltage or capacity. This can result in leakage, venting, explosion or fire, and can cause personal injury.

h) Exhausted batteries should be immediately removed from equipment and properly disposed of

When discharged batteries are kept in the equipment for a long time, electrolyte leakage can occur causing damage to the equipment and/or personal injury.

i) Do not heat batteries

When a battery is exposed to heat, leakage, venting, explosion or fire can occur and cause personal injury.

j) Do not weld or solder directly to batteries

The heat from welding or soldering directly to a battery can cause leakage, venting, explosion or fire, and can cause personal injury.

k) Do not dismantle batteries

When a battery is dismantled or taken apart, contact with the components can be harmful and can cause personal injury or fire.

l) Do not deform batteries

Batteries should not be crushed, punctured, or otherwise mutilated. Such abuse can cause leakage, venting, explosion or fire, and can cause personal injury.

m) Do not dispose of batteries in fire

When batteries are disposed of in fire, the heat build-up can cause explosion and/or fire and personal injury. Do not incinerate batteries except for approved disposal in a controlled incinerator.

n) A lithium battery with a damaged container should not be exposed to water

Lithium metal in contact with water can produce hydrogen gas, fire, explosion and/or cause personal injury.

o) Do not encapsulate and/or modify batteries

Encapsulation or any other modification to a battery can result in blockage of the pressure relief mechanism(s) and subsequent explosion and personal injury. Advice from the battery

Attachment 2 Information for safety

manufacturer should be sought if it is considered necessary to make any modification.

p) Store unused batteries in their original packaging away from metal objects. If already unpacked, do not mix or jumble batteries

Unpacked batteries could get jumbled or get mixed with metal objects such as keys, coins, etc. This can cause battery short-circuiting which can result in leakage, venting, explosion or fire, and personal injury. One of the best ways to prevent this from happening is to store unused batteries in their original packaging.

q) Remove batteries from equipment if it is not to be used for an extended period of time unless it is for emergency purposes

It is advantageous to remove batteries immediately from equipment which has ceased to function satisfactorily, or when a long period of disuse is anticipated (e.g. camcorders, digital cameras, photoflash, etc.). Although most lithium batteries on the market today are highly leak resistant, a battery that has been partially or completely exhausted might be more prone to leak than one that is unused.

Packaging

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and packaging design shall be chosen so as to prevent the development of unintentional electrical contact, short-circuit, shifting and corrosion of the terminals, and afford some protection from the environment.

Handling of battery cartons

Battery cartons should be handled with care. Rough handling might result in batteries being short-circuited or damaged. This can cause leakage, explosion, or fire.

Display and storage

a) Store batteries in well ventilated, dry and cool conditions

High temperature or high humidity can cause deterioration of the battery performance and/or surface corrosion.

b) Do not stack battery cartons on top of each other exceeding a specified height

If too many battery cartons are stacked, batteries in the lowest cartons might be deformed and electrolyte leakage can occur.

c) Avoid storing or displaying batteries in direct sun or in places where they get exposed to rain

When batteries get wet, their insulation resistance might be impaired and self-discharge and corrosion can occur. Heat can cause deterioration.

d) Store and display batteries in their original packing

When batteries are unpacked and mixed they can be short-circuited or damaged.

Disposal

Batteries may be disposed of via communal refuse arrangements provided no local rules to the contrary exist.

During transport, storage and handling for disposal, the following precautions should be considered:

a) Do not dismantle batteries

Some ingredients of lithium batteries might be flammable or harmful. They can cause injuries, fire, rupture or explosion.

b) Do not dispose of batteries in fire except under conditions of approved and controlled incineration

Lithium burns violently. Lithium batteries can explode in a fire. Combustion products from lithium batteries can be toxic and corrosive.

c) Store collected batteries in a clean and dry environment out of direct sunlight and away from extreme heat

Dirt and wetness might cause short-circuits and heat. Heat might cause leakage of flammable gas. This can result in fire, rupture or explosion.

d) Store collected batteries in a well-ventilated area

Used batteries might contain a residual charge. If they are short-circuited, abnormally charged or force discharged, leakage of flammable gas might be caused. This can result in fire, rupture or explosion.

e) Do not mix collected batteries with other materials

Used batteries might contain residual charge. If they are short-circuited, abnormally charged

Attachment 2 Information for safety

or force discharged, the generated heat can ignite flammable wastes such as oily rags, paper or wood and cause a fire.

f) Protect battery terminals

Protection of terminals should be considered by providing insulation, particularly for those batteries with a high voltage. Unprotected terminals might cause short-circuits, abnormal charging and forced discharge. This can result in leakage, fire, rupture or explosion.

Instructions for use

a) Always select the correct size and type of battery most suitable for the intended use.

Information provided with the equipment to assist correct battery selection should be retained for reference.

b) Replace all batteries of a set at the same time.

c) Clean the battery contacts and also those of the equipment prior to battery installation.

d) Ensure that the batteries are installed correctly with regard to polarity (+ and –).

e) Remove exhausted batteries promptly.

Attachment 2 Information for safety

Safety Pictogram

The pictogram recommendations and cautionary advice are given in Table

Reference	Safety pictogram	Cautionary advice
A		DO NOT CHARGE
B		DO NOT DEFORM OR DAMAGE
C		DO NOT DISPOSE OF IN FIRE
D		DO NOT INSERT INCORRECTLY
NOTE The grey shading highlights a white margin appearing when the pictogram is printed on coloured or black background.		

Reference	Safety pictogram	Cautionary advice
E		KEEP OUT OF REACH OF CHILDREN NOTE 1 See 7.2a) for critical safety information NOTE 2 This pictogram has been submitted to ISO TC 145 for standardisation in [18] NOTE 3 See also Annex F
F		DO NOT MIX DIFFERENT TYPES OR BRANDS
G		DO NOT MIX NEW AND USED
H		DO NOT OPEN OR DISMANTLE
I		DO NOT SHORT CIRCUIT
J		INSERT CORRECTLY
NOTE The grey shading highlights a white margin appearing when the safety pictogram is printed on coloured or black background.		

Attachment 2 Information for safety**Instruction for use**

The following instructions are provided for use of the safety pictograms.

- a) Safety pictograms should be clearly legible.
- b) Whilst colours are permitted, they should not detract from the information displayed. If colours are used, the circle and diagonal bar of pictograms A to D and F to I should be red and the background of pictograms E and J should be blue.
- c) Not all of the safety pictograms need to be used together for a particular type or brand of battery. In particular, safety pictograms D and J are meant as alternatives for a similar purpose.

Marking and information requirements for primary batteries not intended for consumer replacement

Primary batteries that have been identified according to G.2.1 as presenting a particular risk shall be placed on the market in such a way that they cannot end up in the reach of end users.

They shall not be sold into applications where they can be replaced and inserted in equipment by the end user.

Where it cannot be prevented that such batteries end up in the reach of end users, the following additional measures shall be taken:

- a) The batteries shall be packed individually in an immediate packaging, e.g. in a cardboard box or in a plastic bag; and
- b) The batteries shall be marked visibly, legibly, and permanently according to the requirements of the local product safety legislation with an indication that they are not rechargeable and not intended for consumer replaceable applications; and
- c) If this marking, due to lack of space, cannot be applied on the battery itself, the marking required in list item b) shall be confirmed on the immediate packaging; and
- d) The indication according to list item b) shall also be applied in connection with offers for sale in such a way that it can easily be found and read. Offers for sale on the internet shall be set up in such a way that the buyer, before completing the purchase, has to confirm separately that he has read and understood the indication.

- - - End of Attachment 2 - - -

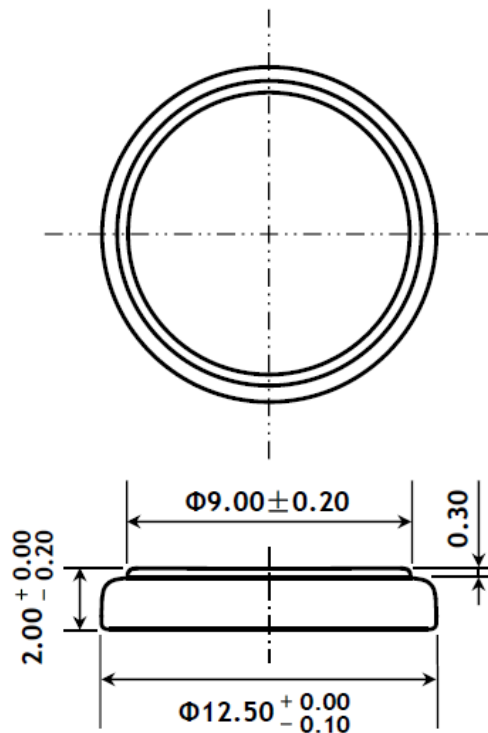
Attachment 3 Packaging

- - - End of Attachment 3 - - -

Attachment 4 Product specification**Specification of Cell****Nominal voltage : 3.0V****5、Nominal Capacity**

42±5%mAh(20±2℃, RH: 45%~75%, Rated at 62KΩ, continuous discharging to the End-point Voltage of 2.0V.)

Max.continuous discharge current	2mA
Standard discharge current	0.1mA
Abnormal charging current	1mA
Normal reverse current	0.1mA



--- End of Attachment 4 ---

Attachment 5 ISO 9001 certificate

Certificate CN02/31015.02

New Leader Battery Industry (Deqing) Co., Ltd.

Zhao Qing New Leader Battery Industry Ltd.

Unified Social Credit Code: 91441200732167164K

Business Registration Address: Chuangye Road, No. 10 Section, Dinghu New Industrial Park, Zhaoqing City, Guangdong Province, P.R. China

Business Operation Address: Chuangye Road, No. 10 Section, Dinghu New Industrial Park, Zhaoqing City, Guangdong Province, P.R. China

Has been assessed under the management system of the certified organisation defined in the main certificate CN02/31015.00 as meeting the requirements of

ISO 9001:2015

For the following activities

Design and manufacture of lithium-manganese button batteries, zinc-manganese cylindrical batteries and zinc-manganese stacked batteries

This certificate is valid from 13 December 2023 until 12 December 2026 and remains valid subject to satisfactory surveillance audits.

Issue 11.

The validity of this certificate depends on the validity of the main certificate.

Jonathan H. Hall

Authorised by

Jonathan Hall

Global Head - Certification Services

SGS United Kingdom Ltd

Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK

t +44 (0)151 350-6666 - www.sgs.com

The certification information can be verified on the web site of Certification and Accreditation Administration of the People's Republic of China www.cnca.gov.cn



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