

Prüfbericht-Nr.: Test Report No.:	CN25B5DU 001	Auftrags-Nr.: Order No.:	326110802	Seite 1 von 24 Page 1 of 24
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	2025-05-19	
Auftraggeber: Client:	SUZHOU XINLVZHOU ELECTRONICS CO., LTD. SHANJI ROAD 158,XIANGCHENG DISTRICT,SUZHOU CITY,JIANGSU,CHINA.			
Prüfgegenstand: Test item:	Lithium Cell			
Bezeichnung / Typ-Nr.: Identification / Type No.:	CR2032			
Auftrags-Inhalt: Order content:	TÜV Rheinland Test Report			
Prüfgrundlage: Test specification:	EN IEC 60086-1: 2021, EN IEC 60086-2: 2021			
Wareneingangsdatum: Date of sample receipt:	2025-05-23			
Prüfmuster-Nr.: Test sample No.:	N/A			
Prüfzeitraum: Testing period:	2025-05-23 to 2025-07-19			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shanghai) Co., Ltd. Kunshan Branch			
Prüflaboratorium: Testing laboratory:	See page 4			
Prüfergebnis*: Test result*:	Pass			
erstellt von: created by:	genehmigt von: authorized by:			
Datum: 2025-07-29 Date:	Datum: 2025-07-29 Date:			
Stellung / Position	Yu Ma Project Engineer	Stellung / Position	Carl Xue Authorizer	
Sonstiges / Other: This report does not evidence compliance of the provided sample with the relevant standards but only with the referred tests. This test report documents the findings of examination conducted on the delivered product mentioned above only. This report does not entitle the applicant to carry any safety mark on this or similar products. Further for sales or other application purposes of the tested product, any reference to TÜV Rheinland or a test through TÜV Rheinland is only permissible with prior written consent of TÜV Rheinland				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		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				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

V05

TEST REPORT IEC 60086-1 & IEC 60086-2 Primary Battery - Part 1: General Primary Battery - Part 2: Physical and electrical specifications	
Report Number.:	CN25B5DU 001
Date of issue	See cover page
Total number of pages	See cover page
Name of Testing Laboratory preparing the Report	See cover page
Applicant's name	See cover page
Address	See cover page
Test specification: Standard: IEC 60086-1:2021 in conjunction with IEC 60086-2:2021 Test procedure.....: TÜV Rheinland Test Report Non-standard test method.....: N/A	
TRF template used: IECEE OD-2020-F1:2021, Ed.1.4 Test Report Form No.....: IEC60086_1&2B Test Report Form(s) Originator.....: DEKRA Certification B.V. Master TRF: Dated 2022-01-06	
Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
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. This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The this Test Report and its contents can be verified by contacting the NCB, responsible for this	

Test item description..... :	Lithium Cell
Trade Mark(s)..... :	N/A
Manufacturer	Same as applicant of cover page
Model/Type reference..... :	CR2032
Ratings	3.0V

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	Testing Laboratory:	TÜV Rheinland (Shanghai) Co., Ltd. Kunshan Branch
Testing location/ address.....:		No.38, Jingfan Road, Bacheng, Kunshan, Jiangsu, China
Tested by (name, function, signature).....:		See cover page
Approved by (name, function, signature)....:		See cover page
☐	Testing procedure: CTF Stage 1:	
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Approved by (name, function, signature)....:		
☐	Testing procedure: CTF Stage 2:	
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)....:		
☐	Testing procedure: CTF Stage 3:	
☐	Testing procedure: CTF Stage 4:	
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)....:		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): Attachment 1: Photo documentation (1 pages).	
Summary of testing:	
Tests performed (name of test and test clause): IEC 60086-1:2021 5.8 Leakage and deformation IEC 60086-2:2021 8.1.4 Category 1 Specifications:CR1220 -- Dimensional drawing: CR1220 -- Service output test Tests are made with the number of samples specified in IEC 60086-1:2021 5.3 a).	Testing location: Battery Testing Laboratory, Institute of Electrochemical Power Sources of Light Industry Building B-4. Shazhou Lake Technological Innovation Park, Zhanjiagang, Jiangsu, China
Summary of compliance with National Differences (List of countries addressed): N/A	
☒ The product fulfils the requirements of <u>EN 60086-1: 2021, EN 60086-2: 2021</u>	
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.



Battery jacket

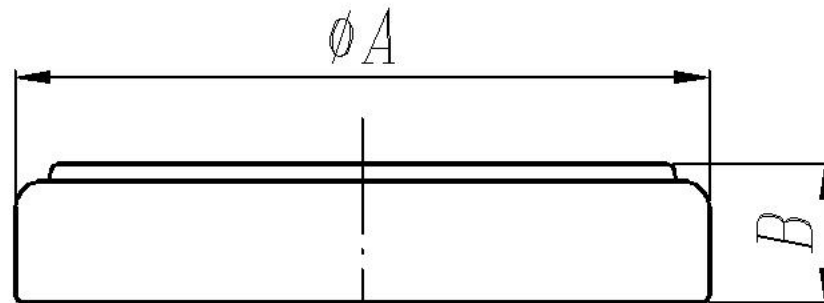
General product information and other remarks:

The batteries CR2032 consist of the positive electrode, negative electrode, separator, electrolyte, steel can, current collector and assembled sealing cap. The positive and negative electrodes are housed in the can in the state being separated by the separator, and the assembled sealing cap is fit to the can. The battery will not be sold to customers directly, And no smallest packaging.

The main features of the battery are shown as below:

Model	Nominal capacity	Nominal voltage	Maximum discharge current	Discharge cut-off voltage	Dimensions
CR2032	40mAh	3V	--	2V	See below

Construction:



A:20.0(-0.3)mm B:3.2(-0.3)mm
CR2032

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	REQUIREMENTS		P
4.1	General		P
4.1.1	Design		P
	Additionally, information on equipment design can be found in Annex B		P
4.1.2	Battery dimensions	See appended table)	P
	The dimensions for individual types of batteries are given in IEC 60086-2 and IEC 60086-3		P
4.1.3	Terminals		P
4.1.3.1	General		P
	Terminals are in accordance with Clause 6 of IEC 60086-2		P
	Their physical shape is designed in such a way that they ensure that the batteries make and maintain good electrical contact at all times		P
	They are made of materials that provide adequate electrical conductivity and corrosion protection		P
4.1.3.2	Contact pressure resistance	Not required, Not stated in the battery specification tables or the individual specification sheets in IEC 60086-2.	N/A
	Where stated in the battery specification tables or the individual specification sheets in IEC 60086-2, the following applies		N/A
	A force of 10 N applied through a steel ball of 1 mm diameter at the centre of each contact area for a period of 10 s does not cause any apparent deformation which might prevent satisfactory operation of the battery		N/A
4.1.3.3	Cap and base	CR2032	P
	This type of terminal is used for batteries which have their dimensions specified according to Figures 1 and 7 of IEC 60086-2 and which have the cylindrical side of the battery insulated from the terminals		P
4.1.3.4	Cap and case		N/A
	This type of terminal is used for batteries which have their dimensions specified according to Figures 8, 9, 10, 14, 15 and 16 of IEC 60086-2, but in which the cylindrical side of the battery forms part of the positive terminal		N/A
4.1.3.5	Screw terminals		N/A
	This contact consists of a threaded rod in combination with either a metal or insulated metal nut		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.3.6	Flat contacts		N/A
	These are essentially flat metal surfaces adapted to make electrical contact by suitable contact mechanisms bearing against them		N/A
4.1.3.7	Flat or spiral springs		N/A
	These contacts comprise flat metal strips or spirally wound wires which are in a form that provides pressure contact		N/A
4.1.3.8	Plug-in-sockets		N/A
	These are made up of a suitable assembly of metal contacts, mounted in an insulated housing or holding device and adapted to receive corresponding pins of a mating plug		N/A
4.1.3.9	Snap fasteners		N/A
4.1.3.9.1	General		N/A
	These contacts are composed of a combination comprising a stud (non-resilient) for the positive terminal and a socket (resilient) for the negative terminal		N/A
	They are suitable metal so as to provide efficient electrical connection when joined to the corresponding parts of an external circuit		N/A
4.1.3.9.2	Snap fastener		N/A
	This type of terminal consists of a stud for the positive terminal and a socket for the negative terminal. These are made from nickel plated steel or other suitable material		N/A
	They are designed to provide a secure physical and electrical connection, when fitted with similar corresponding parts for connection to an electrical circuit		N/A
4.1.3.10	Wire	No wire.	N/A
	Wire leads are single or multi-strand flexible insulated tinned copper		N/A
	The positive terminal wire covering is red and the negative black		N/A
4.1.3.11	Other spring contacts or clips		N/A
	These contacts are generally used on batteries when the corresponding parts of the external circuit are not precisely known		N/A
	They are made of spring brass or of other material having similar properties		N/A
4.1.4	Classification (electrochemical system)	Letter: L	P

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Primary batteries are classified according to their electrochemical system		P
	Each system, with the exception of the zinc-ammonium chloride, zinc chloride-manganese dioxide system, has been allocated a letter denoting the particular system		P
	The electrochemical systems that have been standardized up to now are given in Table 1		P
4.1.5	Designation	CR2032	P
	The designation of primary batteries is based on their physical parameters, their electrochemical system as well as modifiers, if needed		P
	A comprehensive explanation of the designation system (nomenclature) can be found in Annex C		P
4.1.6	Marking		P
4.1.6.1	General		P
	With the exception of small batteries too small to mark with all items (see 4.1.6.2), each battery is marked with the following information	Complied. See battery jacket on page 5 and appended table.	P
	a) designation, IEC or common	(See appended table)	P
	b) expiration of a recommended usage period or year and month or week of manufacture	(See appended table)	P
	The year and month or week of manufacture may be in code	(See appended table)	P
	c) polarity of the positive (+) terminal	(See appended table)	P
	d) nominal voltage	(See appended table)	P
	e) name or trade mark of the manufacturer or supplier	(See appended table)	P
	f) cautionary advice	(See appended table)	P
4.1.6.2	Marking of smaller batteries	Not smaller batteries.	N/A
	a) Some batteries, mainly category 3 and category 4 batteries have a surface too small to accommodate all markings shown in 4.1.6.1	Category 1 batteries. Marked on the battery jacket.	N/A
	For these batteries the designation 4.1.6.1a) and the polarity 4.1.6.1c) are marked on the battery		N/A
	All other markings shown in 4.1.6.1 are given on the immediate packing instead of on the battery		N/A
	b) For P-system batteries		N/A
	4.1.6.1a) are on the battery, the sealing tab or the package		N/A
	4.1.6.1c) are marked on the sealing tab and/or on the battery		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	4.1.6.1b), 4.1.6.1d) and 4.1.6.1e) are given on the immediate packing instead of on the battery		N/A
	The nominal voltage is marked either 1,4 V or 1,45 V		N/A
	c) Caution for ingestion of swallowable batteries are given.....		N/A
4.1.6.3	Marking of batteries regarding method of disposal		P
	Marking of batteries with respect to the method of disposal is in accordance with local legal requirements		P
4.1.7	Interchangeability: battery voltage		N/A
	Voltage range 1, $U_r = 1,4$ V: Batteries having a standard discharge voltage $m \times U_s$ equal to or within the range of $n \times 1,19$ V to $n \times 1,61$ V		N/A
	Voltage range 2, $U_r = 3,2$ V: Batteries having a standard discharge voltage $m \times U_s$ equal to or within the range of $n \times 2,72$ V to $n \times 3,68$ V		N/A
4.2	Performance		P
4.2.1	Discharge performance		P
	Discharge performance of primary batteries is specified in IEC 60086-2		P
4.2.2	Dimensional stability		P
	The dimensions of batteries are conform with the relevant specified dimensions as given in IEC 60086-2 and IEC 60086-3 at all times during discharge testing under the standard conditions		P
4.2.3	Leakage		P
	When batteries are stored and discharged under the standard conditions given in this specification, no leakage occur		P
4.2.4	Open-circuit voltage limits		P
	The maximum open-circuit voltage of batteries does not exceed the values given in Table 1	(See appended table)	P
4.2.5	Service output	(See appended table)	P
	Discharge durations, initial and delayed, of batteries are meet the requirements given in IEC 60086-2		P
4.2.6	Safety		P
	When designing primary batteries, safety under conditions of intended use and foreseeable mis-use as prescribed in IEC 60086-4 and IEC 60086-5 are considered		P
4.2.7	Validity of testing	Complied.	P

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable primary batteries are subjected to the tests, as required in the 60086 series. Test results remain valid until a design change or requirement revision has been made		P
5	PERFORMANCE – TESTING		P
5.1	Capacity testing versus application and service output testing		
	For the preparation of standard methods of measuring performance (SMMP) of consumer goods, refer to Annex E		P
	A capacity of a primary battery is established by electrical discharge tests as detailed in D.2.3		P
	However, under consumer usage conditions, the capacities realised from electrical discharge test methods can vary		P
	The following factors/variables dramatically impact on optimum capacity realisation		P
	a) The current demand from the external electrical circuit/device		P
	b) The frequency of current demand		P
	c) The minimum voltage at which the device will satisfactorily operate		P
	d) The temperature of operation		P
5.2	Discharge testing		P
5.2.1	General		P
	The discharge tests in this standard fall into two categories	Application tests.	P
	– application tests		P
	– service output tests		N/A
5.2.2	Application tests		P
5.2.2.1	General		P
	Application tests are accelerated by discharge load, daily period duty cycle, or both. The specified values for load and time intermittency are take the following factors into consideration		P
	– discharge efficiency of the battery relative to the application		P
	– typical duty cycle use patterns for the application		P
	– total time to conduct the test typically not to exceed 30 days		P
5.2.2.2	Application tests with multiple loads		P

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For application test with multiple loads, the load order during a cycle starts with the heaviest load and move to the lightest load unless otherwise specified		P
5.2.3	Service output tests		N/A
	For service output tests, the value of the load resistor are selected such that the service output approximates 30 days		N/A
5.3	Conformance check to a specified minimum average duration		P
	In order to check the conformance of a battery to any discharge tests specified in IEC 60086-2 and 60086-3, the test is carried out		P
5.4	Guidance for considering proposed value of minimum average duration		P
5.5	OCV testing		P
	Open-circuit voltage is measured with the voltage measuring equipment specified in 6.8.1		P
5.6	Insulation resistance		P
	For batteries with insulating labels, cases or jackets, the resistance between externally exposed surfaces of the battery and either terminal is equal to or greater than 5 MΩ :		P
5.7	Battery dimensions		P
	Dimensions are measured with the measuring equipment specified in 6.8.2		P
5.8	Leakage and deformation	Tested complied.	P
	After the service output has been determined under the specified environmental conditions, the discharge is continued in the same way until the closed circuit voltage drops for the first time below 40 % of the nominal voltage of the battery		P
	The requirements of 4.1.3, 4.2.2 and 4.2.3 are met		P
6	PERFORMANCE – TEST CONDITIONS		P
6.1	Storage and discharge conditions		P
	Storage before discharge testing and the actual discharge test are carried out under well-defined conditions. Unless otherwise specified, the conditions given in Table 3 are apply :	(See appended table)	P
6.2	Commencement of discharge tests after storage	Not included delayed discharge test	N/A
	The period between the completion of storage and the start of a delayed discharge test is not exceed 14 days		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	During this period the batteries are kept at $(20 \pm 2) ^\circ\text{C}$ and $(55 \pm 20 / -40) \% \text{ RH}$ (except for P-system batteries where the relative humidity is $(55 \pm 10) \% \text{ RH}$)		N/A
	At least one day in these conditions is allowed for normalization before starting a discharge test after storage at high temperature		N/A
6.3	Discharge test conditions		P
6.3.1	General		P
	In order to test a battery it is discharged as specified in IEC 60086-2 or IEC 60086-3 until the voltage on load drops for the first time below the specified end-point	Complied.	P
6.3.2	Compliance		P
	When IEC 60086-2 or IEC 60086-3 specify service outputs for more than one discharge test, batteries are meet all of these requirements in order to comply with this specification		P
6.4	Load resistance		N/A
	When formulating new tests, the resistive load is, whenever possible, be as shown in Table 4 together with their decimal multiples or sub-multiples		N/A
6.5	Time periods		N/A
	The periods on-discharge and off-discharge are as specified in IEC 60086-2		N/A
	When formulating new tests, whenever possible, one of the following daily periods is adopted from Table 5		N/A
	Other cases are specified in IEC 60086-2, if necessary		N/A
6.6	Test condition tolerances	Complied.	P
	Unless otherwise specified, the tolerances given in Table 6 are apply		P
6.7	Activation of 'P'-system batteries		N/A
	A period of at least 10 min is elapse between activation and the commencement of electrical measurement		N/A
6.8	Measuring equipment	Complied.	P
6.8.1	Voltage measurement		P
6.8.2	Mechanical measurement		P
7	SAMPLING AND QUALITY ASSURANCE		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The use of production and incoming inspection sampling plans or product quality indices are agreed between the manufacturer and the purchaser		N/A
8	BATTERY PACKAGING		N/A
	A code of practice for battery packaging, shipment, storage, use and disposal can be found in Annex G		N/A
A	ANNEX A (NORMATIVE) CRITERIA FOR THE STANDARDIZATION OF BATTERIES		N/A
	Batteries and electrochemical systems are meet the following requirements to justify their initial inclusion or ongoing retention in the IEC 60086 series		N/A
	a) The battery or batteries of this electrochemical system are in mass production		N/A
	b) The battery or batteries of this electrochemical system are available in several market places of the world		N/A
	c) Patent items are conform to the requirements contained in 2.14 of the ISO/IEC Directives, Part 1		N/A
	d) The battery is produced in at least two different countries or, alternatively, if produced in only one country, the battery is purchased by other international and independent battery manufacturers and sold under their company label		N/A
B	ANNEX B (INFORMATIVE) RECOMMENDATIONS FOR EQUIPMENT DESIGN		N/A
B.1	Technical liaison		N/A
	It is recommended that companies producing battery-powered equipment maintain close liaison with the battery industry. The capabilities of existing batteries are taken into account at design inception. Whenever possible, the battery type selected are one included in IEC 60086-2		N/A
	The equipment is permanently marked with the IEC designation, grade and size of battery which give optimum performance		N/A
B.2	Battery compartment		N/A
B.2.1	General		N/A
	The dimensions and design of compartments and contacts are such that batteries complying with this standard are accepted		N/A
	The design of the negative contact are make allowance for any recess of the battery terminal		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clearly indicate the type of battery to use, the correct polarity alignment and directions for insertion		N/A
	Use the shape and/or the dimensions of the positive (+) and negative (–) battery terminals in compartment designs to prevent the reverse connection of batteries		N/A
	Positive (+) and negative (–) battery contacts are visibly different in form to avoid confusion when inserting batteries		N/A
	Battery compartments are electrically insulated from the electric circuit and positioned so as to minimize possible damage and/or risk of injury		N/A
	Battery compartments with parallel connections are not recommended since a wrongly placed battery result in charging conditions		N/A
	Equipment designed to be powered by air-depolarized batteries of either the "A" or "P" system are provide for adequate air access		N/A
	When the battery compartment cannot be completely isolated from the equipment, it are positioned so as to minimize possible damage		N/A
	The battery compartment are clearly and permanently marked to show the correct orientation of the batteries		N/A
	Battery compartments are designed so that a reversed battery will result in no electrical circuit		N/A
	The associated circuitry do not make physical contact with any part of the battery except at the surfaces intended for this purpose		N/A
	Designers are strongly advised to refer to IEC 60086-4 and IEC 60086-5 for comprehensive safety considerations		N/A
B.2.2	Limiting access by children		N/A
	Apparatus are designed to prevent children from removing the battery		N/A
B.3	Voltage cut-off		N/A
	The equipment voltage cut-off is not below the battery manufacturers' recommendation		N/A
C	ANNEX C (NORMATIVE) DESIGNATION SYSTEM (NOMENCLATURE)		N/A
C.1	General		N/A
C.2	Designation system in use up to October 1990		N/A
C.2.1	General		N/A
C.2.2	Cells		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
C.2.3	Electrochemical system		N/A
C.2.4	Batteries		N/A
C.2.5	Modifiers		N/A
C.2.6	Examples		N/A
C.3	Designation system in use since October 1990		N/A
C.3.1	General		N/A
C.3.2	Round batteries		N/A
C.3.3	Non-round batteries		N/A
C.3.4	Ambiguity		N/A
D	ANNEX D (INFORMATIVE) STANDARD DISCHARGE VOLTAGE US – DEFINITION AND METHOD OF DETERMINATION		N/A
D.1	Definition		N/A
D.2	Determination		N/A
D.2.1	General considerations: the C/R-plot		N/A
D.2.2	Determination of the standard discharge resistor Rs		N/A
D.2.3	Determination of the standard discharge capacity Cs and standard discharge time ts		N/A
D.3	Experimental conditions to be observed and test results		N/A
E	ANNEX E (INFORMATIVE) PREPARATION OF STANDARD METHODS OF MEASURING PERFORMANCE (SMMP) OF CONSUMER GOODS		N/A
E.1	General		N/A
E.2	Performance characteristics		N/A
E.3	Criteria for the development of test methods		N/A
F	ANNEX F (INFORMATIVE) GUIDANCE FOR PROPOSING VALUE OF MINIMUM AVERAGE DURATION		N/A
F.1	General		N/A
F.2	Sampling		N/A
F.3	Calculation method		N/A
G	ANNEX G (NORMATIVE) CODE OF PRACTICE FOR PACKAGING, SHIPMENT, STORAGE, USE AND DISPOSAL OF PRIMARY BATTERIES		N/A
G.1	General		N/A
G.2	Packaging		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3	Transport and handling		N/A
G.4	Storage and stock rotation		N/A
G.5	Displays at sales points		N/A
G.6	Selection, use and disposal		N/A
G.6.1	Purchase		N/A
G.6.2	Installation		N/A
G.6.3	Use		N/A
G.6.4	Replacement		N/A
G.6.5	Disposal		N/A
H	ANNEX H (INFORMATIVE) COMPLIANCE CHECKLIST		N/A

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

8.1.4 Category 1 – Specifications: CR2032

Initial discharge test			P
Lot code / date of manufacture	- / yyyy-mm-dd	/	
Storage conditions / duration	$\leq 20^{\circ}\text{C}$, $\leq 70\%$ RH / ≤ 1 year	/	
Discharge conditions ($^{\circ}\text{C}$, % RH)	$-20\sim 70^{\circ}\text{C}$	/	
Date(s) of performance of tests / period	yyyy-mm-dd / -	/	
OCV max. (V)	3.7	/	
1.Service output test	Electronic Load:15k Ω Discharge period:24h per day Terminal voltage:2.0V Minimum average discharge duration (initial) $\geq 920\text{h}$	Test duration: See attached Table 1	
1.Electronic key test	Electronic Load:Current drain 10mA Discharge period:5s on,55s off 24h per day Terminal voltage:1.8V Minimum average discharge duration (initial) $\geq 12.5\text{h}$	Test duration: See attached Table 1	

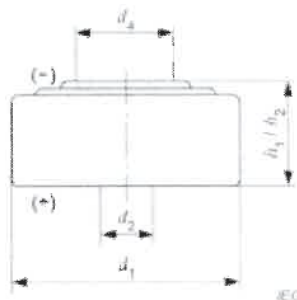


Figure 4 – Dimensional drawing: CR1220

Designation	h ₁ h ₂		d ₁		d ₂	d ₄
	Max.	Min.	Max.	Min.	Min.	Min.
CR2032	3.2	2.9	20.0	19.7	-	8.0

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

Table 8.4.6 Category 1-Specifications:CR2032

		Initial		After Discharge (One of the test samples)					
CR2032		a)	b)	a)	b)	c)	d)	e)	f)
h1(mm)max.	3.2	3.03	3.10	3.04	3.01	2.98	3.02	3.02	2.99
h2(mm)min.	2.9	3.03	3.10	3.04	3.01	2.98	3.02	3.02	2.99
d1(mm)max.	19.7	19.87	19.86	19.90	19.88	19.87	19.89	19.88	19.88
d1(mm)min.	20.0	19.87	19.86	19.90	19.88	19.87	19.89	19.88	19.88
d1(mm)min.	8.0	17.52	17.62	17.73	17.70	17.64	17.62	17.70	17.62
Common designation	--	--	--	--	--	--	--	--	--
Vn (V)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
OCV max (V)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Delayed discharge performance after 12 months(% of MAD)	--	--	--	--	--	--	--	--	--

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

MAD test

Table 1: Service output test -a

Sample No.:	1#	2#	3#	4#	5#	6#	7#	8#
Voltage before test(V)	3.357	3.357	3.357	3.363	3.318	3.361	3.314	3.321
Capacity (mAh)	223.0	215.0	233.9	212.8	221.4	228.5	223.6	224.8
Discharge time (h)	1153.7	1116.4	1220.8	1097.8	1139.8	1180.1	1158.0	1172.6
MAD(h)	1154.9							

Table 2: Electronic key test -a

Sample No.:	1#	2#	3#	4#	5#	6#	7#	8#
Voltage before test(V)	3.363	3.298	3.363	3.352	3.330	3.370	3.342	3.321
Capacity (mAh)	211.7	214.9	211.5	217.1	219.3	207.3	215.7	206.3
Discharge time (h)	20.90	20.97	20.73	21.30	21.21	20.14	21.02	20.27
MAD(h)	20.82							

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

Marking			P
a) Designation, IEC or common	CR2032	A	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		B	P
c) Polarity of the positive (+) terminal	+	A	P
d) Nominal voltage	3V	A	P
e) Name or trade mark of the manufacturer or supplier		B	P
f) Cautionary advice		B	P
A: shall be marked on the battery B: may be marked on the immediate packing instead on the battery C: may be marked on the battery, the sealing tab or the immediate packing D: may be marked on the sealing tab and/or on the battery			
a Caution for ingestion of swallowable batteries shall be given. Refer to IEC 60086-4 and IEC 60086-5 for details.			

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Critical components information						P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Cell	ChangZhou Anyida Power Technology Co., Ltd.	CR2032	3.0V 210mAh	--	--	
-Positive electrode	ChangZhou Anyida Power Technology Co., Ltd.	CR2032	Φ16.0mm, h1.90mm	--	--	
-Negative electrode	Xinghua Far- infrared Component Factory	Lithium metal	99.9% purity	--	--	
-Electrolyte	ZHUHAI SMOOTHWAY ELECTRONIC MATERIALS CO., LTD.	T2017	PC+DME+DOL+	--	--	
-Separator	Changzhou Jiulian Battery Material Co.Ltd	Glass fiber	0.35mm thickness	--	--	
-Case	ChangZhou Anyida Power Technology Co., Ltd.	CR2032K,G	SUS430 stainless	--	--	
-Gasket	ChangZhou Anyida Power Technology Co., Ltd.	CR2032	PP+Rubber			
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance.						

IEC 60086-1			
Clause	Requirement + Test	Result - Remark	Verdict

Product: Lithium Cell

Type Designation: CR2032



Figure 1 Front view of battery

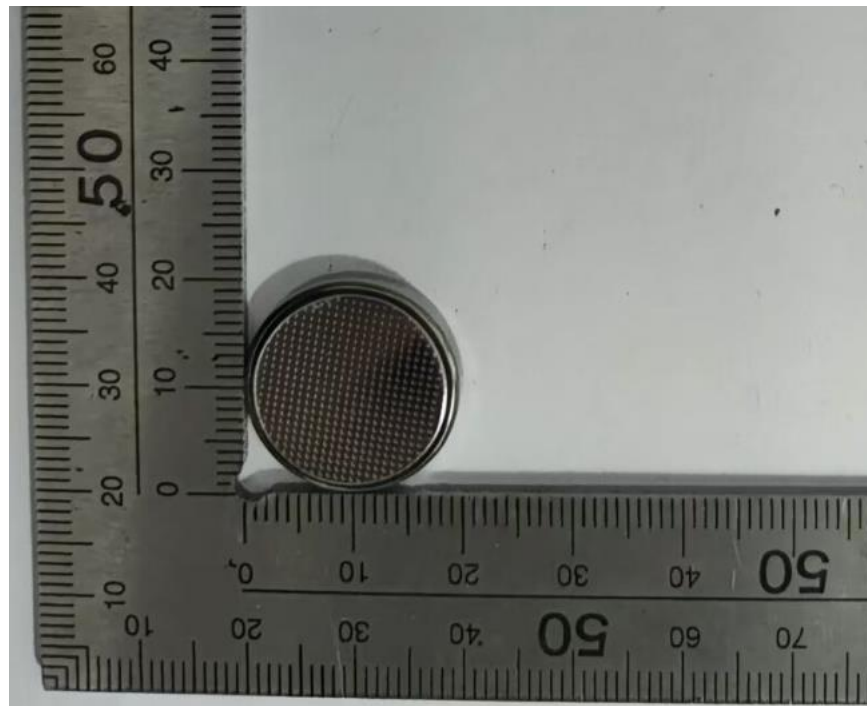


Figure 2 Front view of battery