

## VERIFICATION OF COMPLIANCE

No.: LVD SZES2211007049BA

Applicant: Guangzhou Sanjing Electric Co., Ltd.  
No. 9, Lizhishan Road, Science City, Guangzhou High-Tech  
Zone, Guangzhou, Guangdong, China

Manufacturer: Same as applicant

Product Name: Rechargeable Li-ion Battery Module

Product Description: --

Model No.: B2-5.0-LV1, B2-5.0-LV2

Trade Mark: 

Rating: 51,2 Vd.c., 100 Ah; Voltage range: 44.8-57.6Vd.c.  
Max. charge current: 100A, Max. discharge current: 100A

Protection against Electric Shock: Class I

Additional Information: The battery pack can be used in the non-isolated  
power conversion system (PCS), the estimated  
overvoltage category III.

Sufficient samples of the product have been tested and found to be in conformity with

Test Standard: EN 62477-1:2012 + A12:2021  
as shown in the

Test Report Number(s): SZES221100704901

This Verification of Compliance has been granted to the applicant based on the results of tests, performed by Laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on sample of the above-mentioned product in accordance with the provisions of the relevant harmonized standards under the Low Voltage Directive 2014/35/EU. The CE marking as shown below can be affixed, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The affixing of the CE marking presumes in addition that the conditions in annexes III and IV of the Directive are fulfilled.

  
Rocky Wang  
Manager  
SGS-CSTC



2023-01-12

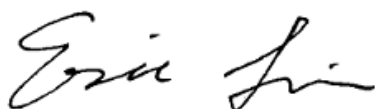
This verification is issued by the company under its General Conditions of Services accessible at <https://www.sgs.com/en/terms-and-conditions>. Attention is drawn to the limitations of liability defined therein and in the Test Report here above mentioned which findings are reflected in this verification. 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.

Member of SGS Group (Société Générale de Surveillance)

## ***VERIFICATION OF COMPLIANCE***

Verification No.: KSEM221100227501ATC  
 Applicant: Guangzhou Sanjing Electric Co., Ltd.  
 Address of Applicant: No.9,Lizhishan Road,Science City,Guangzhou High-Tech Zone,Guangdong,China.  
 Product Description: Rechargeable Li-ion Battery Module  
 Model No.: B2-5.0-LV1,B2-5.0-LV2  
 Sufficient samples of the product have been tested and found to be in conformity with  
 Test Standards: EN IEC 61000-6-1: 2019  
 EN IEC 61000-6-2: 2019  
 EN IEC 61000-6-3: 2021  
 EN IEC 61000-6-4: 2019  
 As shown in the  
 Test Report Number(s): KSEM221100227501

This verification of EMC Compliance has been granted to the applicant based on the results of the tests, performed by laboratory of Compliance Certification Services (Kunshan) Inc. on the sample of the above-mentioned product in accordance with the provisions of the relevant specific standards under Directive 2014/30/EU. The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Eric Lin  
Laboratory Manager



Date: 2022-12-13

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# TEST REPORT

**Product:** Rechargeable Li-ion Battery Module

**Model No.:** B2-5.0-LV1

**Applicant:** Guangzhou Sanjing Electric Co., Ltd.

**Manufacturer:** Guangzhou Sanjing Electric Co., Ltd.

**Issued by:** Shenzhen Chengxin Technology Service Co., Ltd.

**Lab Location:** Dafu Factory, 13 Aiqun Road North, Shangwu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, China.



**Tel:** +86-755-21128889 **Fax:** +86-755-21138889

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## Test Report

Applicant.....: Guangzhou Sanjing Electric Co., Ltd.

Applicant Address.....: No.9, Lizhishan Road, Science City, Guangzhou High-tech  
Zone,Guangdong, P.R.China.

Manufacturer.....: Guangzhou Sanjing Electric Co., Ltd.

Manufacturer Address.....: No.9, Lizhishan Road, Science City, Guangzhou High-tech  
Zone,Guangdong, P.R.China.

Factory.....: Guangzhou Sanjing Electric Co., Ltd.

Factory Address.....: No.9, Lizhishan Road, Science City, Guangzhou High-tech  
Zone,Guangdong, P.R.China.

Product. ....: Rechargeable Li-ion Battery Module

Model No. ....: B2-5.0-LV1

Rating. ....: See page 3

Test Standards.....: IEC 60529:1989+A1:1999+A2:2013 《Degrees of protection  
provided by enclosures (IP Code)》

Tested by .....: *Wu YongXing*

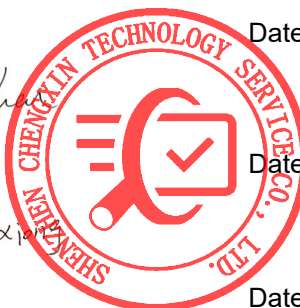
Signature Date 2022.12.29

Reviewed by.....: *Tong Tao*

Signature Date 2022.12.29

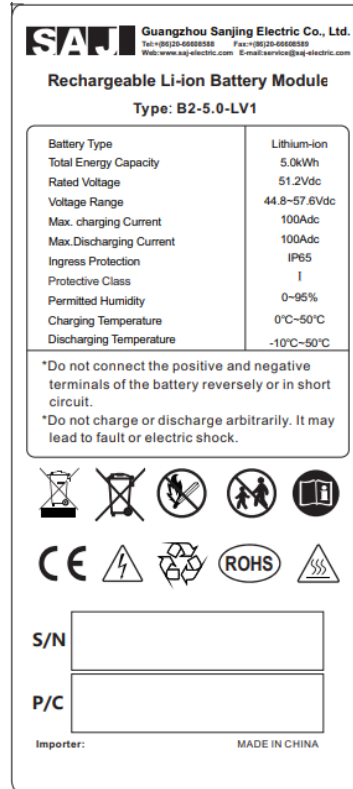
Approved by.....: *Chen Weixing*

Signature Date 2022.12.29



## Product Description

### Product label or user manual



### Items list:

13	Tests for protection against solid foreign objects indicated by the first characteristic numeral
14	Test for protection against water indicated by the second characteristic numeral

### Sample description and configuration

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

11	General requirements for tests		P
11.1	Atmospheric conditions for water or dust tests		P
	The recommended atmospheric conditions during the tests are as follow:		P
	Temperature range: 15°C to 35°C	22°C	P
	Relative humidity: 25% to 75%	53%	P
	Air pressure: 86 kPa to 106 kPa	101kPa	P
11.2	Test samples	One samples	P

**IEC 60529:1989+A1:1999+A2:2013**

Clause	Requirement + Test	Result - Remark	Verdict
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11.3	Application of test requirements and interpretation of test results		P
11.4	Combination of test conditions for the first characteristic numeral		P
	Designation with a first characteristic numeral implies that all test conditions are met for this numeral.	Test for protection against access to hazardous parts and solid foreign objects.	P
11.5	Empty enclosures	The whole unit.	P

<b>13</b>	<b>Tests for protection against solid foreign objects indicated by the first characteristic numeral</b>		P
13.1	Test means		P
13.2	Test conditions for first characteristic numerals <b>1, 2, 3, 4</b>		N/A
13.3	Acceptance conditions for first characteristic numerals <b>1, 2, 3, 4</b>		N/A
13.4	Dust test for first characteristic numerals <b>5 and 6</b>		P
	The test is made using a dust chamber incorporating the basic principles shown in figure 2 of this standard whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber.		P
	The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50µm and the nominal width of a gap between wires 75µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.		P
	Enclosures are of necessity in one of two categories:		P
	<b>Category 1:</b> Enclosures where the normal working cycle of the equipment causes reductions in air pressure within		P

**IEC 60529:1989+A1:1999+A2:2013**

Clause	Requirement + Test	Result - Remark	Verdict
	the enclosure below that of the surrounding air, for example, due to thermal cycling effects.		
	<b>Category 2:</b> Enclosures where no pressure difference relative to the surrounding air is present.		N/A
	Category 1 enclosures:		
	The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump. The suction connection shall be made to a hole specially provided for this test. If not otherwise specified in the relevant product standard, this hole shall be in the vicinity of the vulnerable parts.		P
	If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole. If there are other holes (for example, more cable inlet holes or drain-holes) these shall be treated as intended for normal use on site.	Make a hole in the weak part of the shell	P
	The object of the test is to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa (20 mbar) on the manometer shown in figure 2.		P
	If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h.		N/A
	If, with a maximum depression of 2 kPa (20 mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8 h has elapsed.	The extraction rate 30 volumes per hour	P
	Category 2 enclosures:		N/A
	The enclosure under test is supported in its normal operating position inside the test chamber, but is		N/A

**IEC 60529:1989+A1:1999+A2:2013**

Clause	Requirement + Test	Result - Remark	Verdict
	not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of the test. The test shall be continued for a period of 8 h.		
	Category 1 and category 2 enclosures: – If it is impracticable to test the complete enclosure in the test chamber, one of the following procedures shall be applied:		N/A
	– testing of individually enclosed sections of the enclosure;		N/A
	– testing of representative parts of the enclosure, comprising components such as doors, ventilation openings, joints, shaft seals, etc., in position during test;		N/A
	– testing of a smaller enclosure having the same full-scale design details.		N/A
	In the last two cases, the volume of air to be drawn through the enclosure under test shall be the same as for the whole enclosure in full scale.		N/A
13.5	Special conditions for first characteristic numeral <b>5</b>		N/A
13.5.1	Test conditions for first characteristic numeral <b>5</b>		N/A
	The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2.		N/A
13.5.2	Acceptance conditions for first characteristic numeral <b>5</b>		N/A
	The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety.		N/A
	Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creepage distances.		N/A
13.6	Special conditions for first characteristic numeral <b>6</b>		P



**IEC 60529:1989+A1:1999+A2:2013**

Clause	Requirement + Test	Result - Remark	Verdict
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13.6.1	Test conditions for first characteristic numeral <b>6</b>		P
	The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.		P
13.6.2	Acceptance conditions for first characteristic numeral <b>6</b>		P
	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.		P

<b>14</b>	<b>Test for protection against water indicated by the second characteristic numeral</b>		<b>P</b>
14.1	Test means		P
14.2	Test conditions		P
	During the tests for IPX1 to IPX6 the water temperature should not differ by more than 5 K from the temperature of the specimen under test. If the water temperature is more than 5 K below the temperature of the specimen a pressure balance shall be provided for the enclosure. For IPX7 details of the water temperature are given in 14.2.7.		P
14.2.1	Test for second characteristic numeral 1 with the drip box		N/A
14.2.2	Test for second characteristic numeral 2 with the drip box		N/A
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle		N/A
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle		N/A
14.2.5	Test for second characteristic numeral 5 with 6.3 mm nozzle		P
	The test is made by spraying the enclosure from all practicable directions with a stream of water from a		P

**IEC 60529:1989+A1:1999+A2:2013**

Clause	Requirement + Test	Result - Remark	Verdict
	standard test nozzle as shown in figure 6		
	The conditions to be observed are as follows:		P
	-- internal diameter of the nozzle: 6.3 mm		P
	-- delivery rate: 12.5 L/min $\pm$ 5 %		P
	-- water pressure: to be adjusted to achieve the specified delivery rate		P
	-- core of the substantial stream: circle of approximately 40 mm diameter at 2.5 m distance from nozzle;		P
	-- test duration per square metre of enclosure surface area likely to be sprayed: 1 min:		P
	-- minimum test duration 3 min		P
	-- distance from nozzle to enclosure surface: 2.5 m and 3 m		P
14.2.6	Test for second characteristic numeral 6 with 12.5 mm nozzle		N/A
14.2.7	Test for second characteristic numeral 7 : temporary immersion between 0.15 m and 1 m		N/A
14.2.8	Test for second characteristic numeral 8 : continuous immersion subject to agreement		N/A
14.3	Acceptance conditions		P
	After testing in accordance with the appropriate requirements of 14.2.1 to 14.2.8 the enclosure shall be inspected for ingress of water	No water enters	P
	It is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test, if any.	After test, No breakdown.	P
	In general, if any water has entered, it shall not: <ul style="list-style-type: none"> <li>– be sufficient to interfere with the correct operation of the equipment or impair safety;</li> <li>– deposit on insulation parts where it could lead to tracking along the creepage distances;</li> <li>– reach live parts or windings not designed to</li> </ul>		P

**IEC 60529:1989+A1:1999+A2:2013**

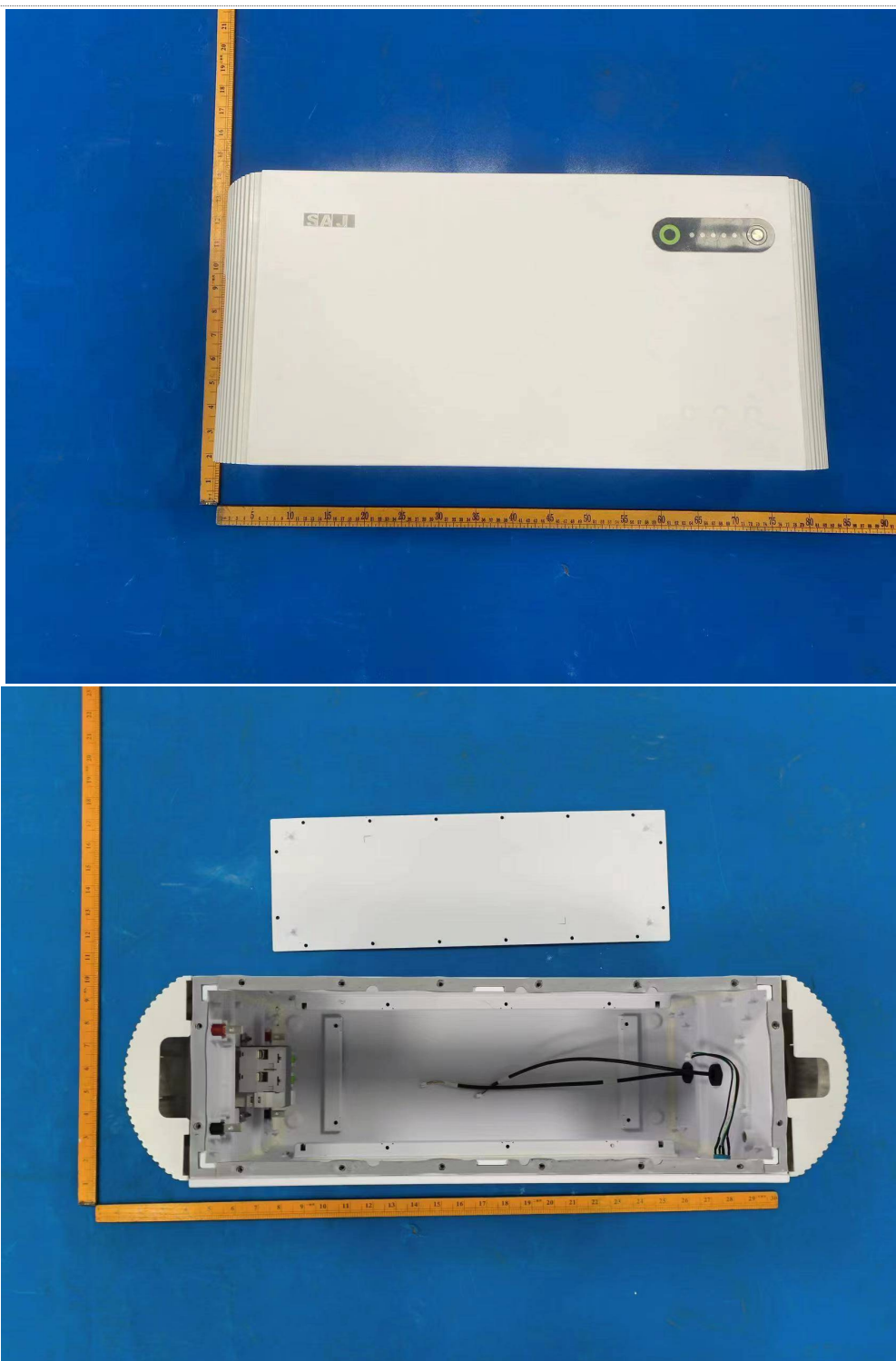
Clause	Requirement + Test	Result - Remark	Verdict
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	operate when wet; – accumulate near the cable end or enter the cable if any.		
	If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment.		P
	For enclosures without drains-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts.		P

**ANNEX: Photos of Product**



Before the dust test



After the dust test

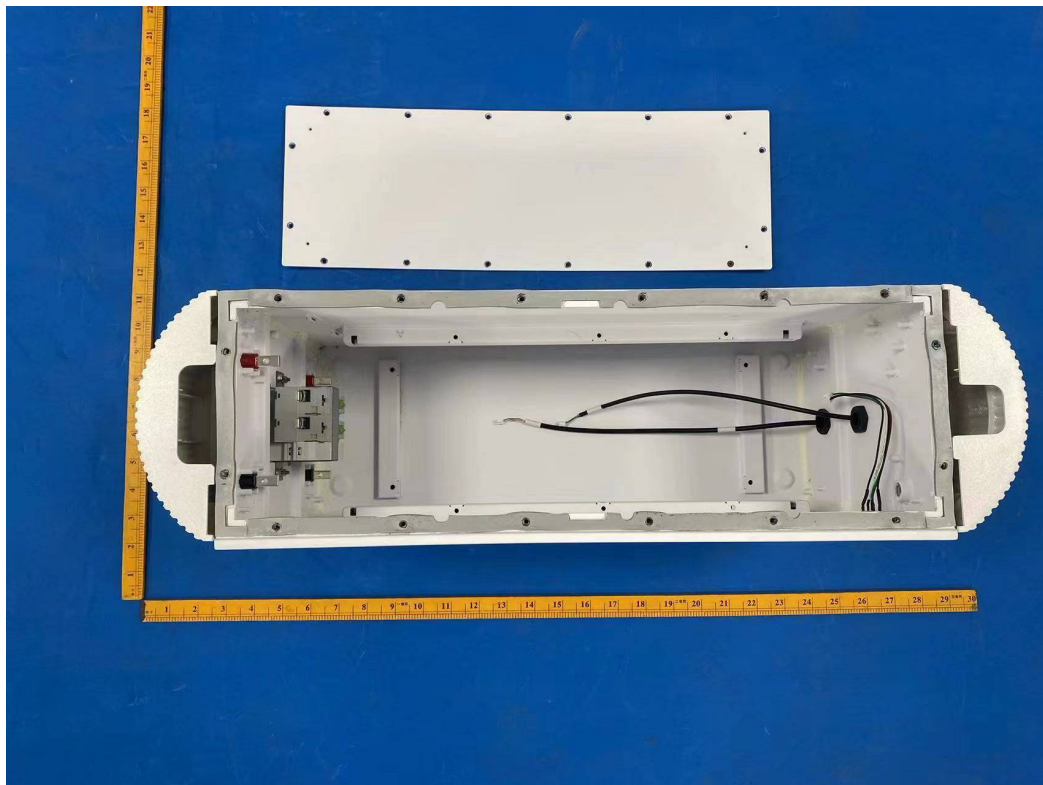


Before the Waterproofing test



Waterproofing test





After waterproofing test

## Test Equipment

Equipment name	Model	Device ID	Calibration validity period
Sand and dust test chamber	AGIP56X0	TS18080129	2023/11/10
IP waterproofing device	JX1203C	TS20110002	2023/01/13



## STATEMENT

1. The test report is invalid without stamp of laboratory.
2. The test report is invalid without signature of person(s) testing and authorizing.
3. The test report is invalid if erased and corrected.
4. Test results of the report are valid to the test samples if sampling by client.
5. The test report shall not be reproduced except in full, without written approval of the laboratory.
6. If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

### **SHENZHEN CHENGXIN TECHNOLOGY SERVICE CO., LTD.**

Address: Dafu Factory, 13 Aiqun Road North, Shangwu Community, Shiyan Street ,Baoan District,  
Shenzhen, Guangdong, China.

Tel: +86-755-21128889

Fax: +86-755-21138889

http: [www.ctsco.cn](http://www.ctsco.cn)

E-Mail: [manager@ctsco.cn](mailto:manager@ctsco.cn)



Ref. Certif. No.

**SG SGS-00047****IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE)  
CB SCHEME****CB TEST CERTIFICATE**

Product

Rechargeable Li-ion Battery Module

Name and address of the applicant

Guangzhou Sanjing Electric Co., Ltd.  
No. 9, Lizhishan Road, Science City, Guangzhou High-Tech Zone,  
Guangzhou, Guangdong, China

Name and address of the manufacturer

Guangzhou Sanjing Electric Co., Ltd.  
No. 9, Lizhishan Road, Science City, Guangzhou High-Tech Zone,  
Guangzhou, Guangdong, China

Name and address of the factory

Note: When more than one factory, please report on page 2

Guangzhou Sanjing Electric Co., Ltd.  
No. 9, Lizhishan Road, Science City, Guangzhou High-Tech Zone,  
Guangzhou, Guangdong, China

Ratings and principal characteristics

Rated voltage: 51.2 Vdc;  
Rated capacity: 100 Ah

Trademark / Brand (if any)



Customer's Testing Facility (CTF) Stage used

-

Model / Type Ref.

B2-5.0-LV1, B2-5.0-LV2

Additional information (if necessary may also be  
reported on page 2)

-

**National Differences:**  
EU Group Differences, GBA sample of the product was tested and found  
to be in conformity with

IEC 62619:2022

As shown in the Test Report Ref. No. which  
forms part of this Certificate

CQES221200026501

This CB Test Certificate is issued by the National Certification Body

SGS Testing & Control Services Singapore Pte Ltd  
30 Boon Lay Way  
#03-01 Singapore 609957**SGS**

Date: 10/01/2023

Signature:

Rocky Wang  
Certifier



本证书证实以下机构

**广州三晶电气股份有限公司**

广东省广州市高新技术产业开发区科学城荔枝山路9号

已通过中鉴认证有限责任公司的认证，  
其质量管理体系符合以下国际质量管理体系标准的要求：

**ISO9001:2015**

特此准予注册。任何时候，与认证有关的规则和条件均须被遵守

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太阳能发电产品（光伏逆变器/储能逆变器）及其配套件的设计开发、  
生产及销售；工业控制设备变频器、智能控制系统（智能家居控制器）  
的设计开发、生产及其销售

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证书签发日期

2022年03月11日

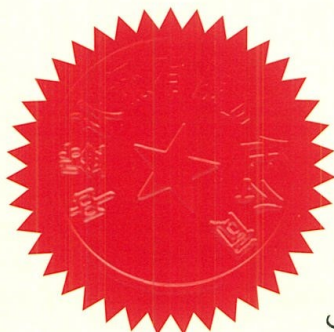
有效日期

2025年03月10日

统一社会信用代码：914401017783916045

证书编号：U0022Q50048R2M

获证组织必须定期接受监督审核并经审核合格此证书方继续有效



胡家华



0158

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用规定，将可  
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证书时效及适用性可向认证机构查询：网址：[www.gzcc.org.cn](http://www.gzcc.org.cn) 或致电：020-66390902。  
中国广东省广州市广州大道中227号华景大厦4楼（510600）中鉴认证有限责任公司





# GUANGZHOU SANJING ELECTRIC CO., LTD.

NO.9, LIZHISHAN ROAD, SCIENCE CITY, HIGH-TECH. INDUSTRIAL DEVELOPMENT ZONE,  
GUANGZHOU CITY, GUANGDONG PROVINCE

*Has been assessed by Zhongjian Certification Co., Ltd  
in respect of their Quality Management  
Systems and to comply with:*

**ISO9001:2015**

*Approval is hereby granted for registration providing the  
rules and conditions relating to certification are observed at  
all times*

## CERTIFICATION SCOPE:

DESIGN, DEVELOPMENT, MANUFACTURE AND SALE OF SOLAR POWER GENERATION PRODUCTS  
(PHOTOVOLTAIC INVERTERS/ENERGY STORAGE INVERTER) AND ACCESSORIES; DESIGN,  
DEVELOPMENT, MANUFACTURE AND SALE OF FREQUENCY INVERTER FOR INDUSTRIAL CONTROL  
MACHINERY EQUIPMENT, INTELLIGENT CONTROL SYSTEM (SMART HOME CONTROLLER)

(This certificate only covers the sites listed. If the covered scope involves pre-approval of administration permit or compulsory certification requirement, the scope only covers products and services within the permit license or compulsory certification scope)

Date of Issue

2022-03-11

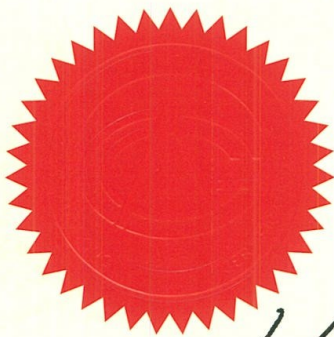
Valid Until

2025-03-10

Certificate Number: **U0022Q50048R2M**

Organization Code: **914401017783916045**

This certificate remains valid only if the certified organization accepts and passes regular surveillance audits.



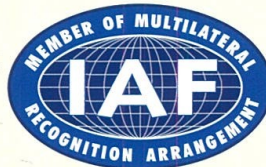
*[Handwritten Signature]*

Authorised Signature for  
ZhongJian Certification Co., Ltd



0158

Lack of fulfillment of  
condition as set out  
in Condition for the  
Use of National  
Accreditation Marks  
by UKAS and UKAS  
Accredited  
Organizations may  
render this  
certificate invalid



This certificate remains the property of  
Zhongjian Certification Co., Ltd of Quality System

The validity of this certificate could be confirmed via official Website Of CNCA ([www.cnca.gov.cn](http://www.cnca.gov.cn))  
Further to the certificate applicability, please enquire the certified organization: visit [www.gzcc.org.cn](http://www.gzcc.org.cn) or contact GZCC 020-66390902  
4/F, Huajing Building, Guangzhou Dadaozhong, Guangzhou City, Guangdong Province, China (510600) Zhongjian Certification Co., Ltd.





Zhongjian Certification Co., Ltd.

## CERTIFICATE OF CONFORMITY OF ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION

No:0070023E50463R2M

This is to certify that the environmental system of

**GUANGZHOU SANJING ELECTRIC CO., LTD.**

NO.9, LIZHISHAN ROAD, SCIENCE CITY, HIGH-TECH. INDUSTRIAL DEVELOPMENT ZONE, GUANGZHOU CITY, GUANGDONG  
PROVINCE

Organization Code: 914401017783916045

is in conformity with

**GB/T 24001-2016/ISO14001:2015 Standard**

This system is valid for the

THE RELATIVE MANAGEMENT ACTIVITIES OF DESIGN, DEVELOPMENT, MANUFACTURE AND SALE OF SOLAR  
POWER GENERATION PRODUCTS (PHOTOVOLTAIC INVERTERS/ENERGY STORAGE INVERTER) AND ACCESSORIES;  
DESIGN, DEVELOPMENT, MANUFACTURE AND SALE OF FREQUENCY INVERTER FOR INDUSTRIAL CONTROL  
MACHINERY EQUIPMENT, INTELLIGENT CONTROL SYSTEM (SMART HOME CONTROLLER)

(This certificate only covers the sites listed. If the covered scope involves pre-approval of administration permit or compulsory certification requirement, the scope only covers products and services  
within the permit license or compulsory certification scope)

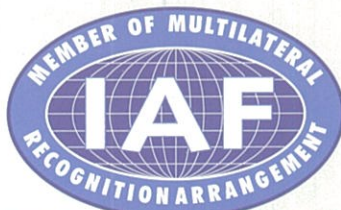
Date of issue: 2023-03-14

Term of validity of this certificate: from 2023-03-14 to 2026-03-13 inclusive

This certificate remains valid only if the certified organization accepts and passes regular surveillance audits.



Representative of The Company



中国认可  
国际互认  
管理体系  
MANAGEMENT SYSTEM  
CNAS C007-M

The validity of this certificate could be confirmed via official Website Of CNCA ([www.cnca.gov.cn](http://www.cnca.gov.cn))  
Further to the certificate applicability, please enquire the certified organization: visit [www.gzcc.org.cn](http://www.gzcc.org.cn) or contact GZCC 020-66390902  
4/F, Huajing Building, Guangzhou Dadaozhong, Guangzhou City, Guangdong Province, China (510600) Zhongjian Certification Co., Ltd.