中国认可
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检测
TESTING
CNAS L11527

TEST REPORT

IEC 60529

Degrees of protection provided by enclosures (IP Code)

Report Reference No.....:	**ZKT-2504167129S**
Date of issue.....:	Apr. 22, 2025
Total number of pages.....	16 Pages
Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name.....:	**BSL NEW ENERGY TECHNOLOGY CO., LTD.**
Address.....:	8F,Building D-2-3,1F, Building D-2-3, 8F, Building D-2-2, No. 6, Xingyuan North Road, Starting AreaChina-Korea Huizhou Industrial Park, Zhongkai District, Huizhou City, Guangdong, P.R. China
Test specification:	
Standards.....:	IEC 60529:1989+A1:1999+A2:2013
IP Code.....:	IP65
Non-standard test method……..:	N/A
This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of ZKT Test.	
Test item description.....:	Li-Pro SERIES
Trade Mark.....:	N/A
Manufacturer.....:	BSL NEW ENERGY TECHNOLOGY CO., LTD. 8F,Building D-2-3,1F, Building D-2-3, 8F, Building D-2-2, No. 6, Xingyuan North Road, Starting AreaChina-Korea Huizhou Industrial Park, Zhongkai District, Huizhou City, Guangdong, P.R. China
Model/Type reference.....:	Li-Pro 10240

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Date of Test.....:	Apr. 16, 2025 to Apr. 22, 2025
Tested by (name + signature).....:	Lynn ling
Reviewed by (name + signature).....:	Peter Huang
Approved by(name + signature).....:	Awen He

Testing procedure and testing location:
List of Attachments: **Attachment** 1: 6 pages of Photo Documentation
Test item particulars..... :
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..... :** Apr. 16, 2025 **Date (s) of performance of tests..... :** Apr. 16, 2025 to Apr. 22, 2025
General remarks: 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 testing laboratory. "(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.**
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<table>
<tr><td colspan="4">IEC 60529</td></tr>
<tr><td>Clause</td><td>Requirement – Test</td><td>Result – Remark</td><td>Verdict</td></tr>
<tr><td></td><td>GENERAL CONDITIONS FOR THE TESTS</td><td></td><td>--</td></tr>
<tr><td>13.1</td><td>Test means and the main test conditions are given in table 7.

Table 7 œ Test means for the tests for protection against solid foreign objects
<table>
<tr><th>First character-istic numeral</th><th>Test means (object probes and dust chamber)</th><th>Test force</th><th>Test conditions, see</th></tr>
<tr><td>0</td><td>No test required</td><td>--</td><td>--</td></tr>
<tr><td>1</td><td>Rigid sphere without handle or guard 50+0.050 mm diameter</td><td>50 N ± 10 %</td><td>13.2</td></tr>
<tr><td>2</td><td>Rigid sphere without handle or guard 12.5+0.20 mm diameter</td><td>30 N ± 10 %</td><td>13.2</td></tr>
<tr><td>3</td><td>Rigid steel rod 2.5+0.050 mm diameter with edges free from burrs</td><td>3 N ± 10 %</td><td>13.2</td></tr>
<tr><td>4</td><td>Rigid steel rod 1.0+0.050 mm diameter with edges free from burrs</td><td>1 N ± 10 %</td><td>13.2</td></tr>
<tr><td>5</td><td>Dust chamber figure 2, with or without underpressure</td><td>--</td><td>13.4 + 13.5</td></tr>
<tr><td>6</td><td>Dust chamber figure 2, with under-pressure</td><td>--</td><td>13.4 + 13.6</td></tr>
</table></td><td></td><td>--</td></tr>
<tr><td>13.4</td><td>Dust test for first characteristic numerals 5 and 6</td><td>IP6X</td><td>P</td></tr>
<tr><td></td><td>The test is made using a dust chamber

incorporating the basic principles shown in figure 2 whereby the power circulation pump may be relaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be the nominal width of a gap between wires 75um. The amout of talcum power 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.</td><td></td><td>P</td></tr>
<tr><td></td><td>Category 1:

enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air. For example, due to thermal cycling effects.</td><td></td><td>N/A</td></tr>
</table>

IEC 60529			
Clause	Requirement – Test	Result – Remark	Verdict
	Category 2: enclosres whrere on pressure difference relative to the surrounding air is present.		P

14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle. Test test is made using one of the two test devices described in Figure 4 and in Figure 5 in accordance with the relevant product standard.	IPX5	N/A
	The conditions to be observed are as follows:		N/A
	The oscillating tube has spray holes over the whole 180° of the semicircle. The total flow rate is adjusted as specified in Table IX and is measured with a flow meter.		N/A
	Delivery rate: 0.07l/min		N/A
	The tube is caused to oscillate throuth an angle of almost 360°, 180° on either side of the vertical, the time for one complets oscillation (2 x 360°) being about 12 s。		N/A
	The duration of the test is 10 min。		N/A
	If not specified otherwise in the relevant product standard, the support for the enclosure under test is perforated so as to avoid acting as baffle and the enclosure is sprayed from every direction by oscillating the tube to the limit of its travel in each direction。		N/A
14.2.5	Test for second characteristic numeral 5 with the 6,3 mm nozzle	IPX5	P
	The test is made by spraying the enclosure form all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.		P
	Test conditions to be observed are as follows:		--
	-- internal diameter of the nozzle:6.3mm		--
	-- delivery rate: 12.5l/min ± 5%;		--
	-- water pressure: to be adjusted to achieve the specified delivery rate;		--
	-- core of the substantial stream: circle of approximately 40mm diameter at 2.5m distance form nozzle;		--
	-- test duration per square metre of enclosure surface area likyly to be sprayed: 1 min;		--

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Clause	Requirement – Test	Result – Remark	Verdict
	-- minimum test duration:3min;		--
	-- distance from nozzle to enclosure surface: between 2.5mm and 3mm.		--
14.2.6	Test for second characteristic numeral 6 with the 12.5mm nozzle	IPX5	N/A
	The test is made by spraying the enclosure form all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.		N/A
	The conditions to be observed are as follows:		--
	-- internal diameter of the nozzle: 12.5mm;		--
	-- delivery rate: 100 l/min ± 5%		--
	-- water pressure: to be adjusted to achieve the specified delivery rate;		--
	-- core the substantial stream: circle of approximately 120 mm diameter at 2.5m distance from nozzle;		--
	-- test duration per square metre of enclosure surface area likely to be sprayed: 1 min;		--
	-- minimum test duration: 3 min;		--
	-- distance from nozzle to enclosure surface: between 2.5m and 3m.		--
14.3	Acceptance conditions 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. 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.		P
	In general, if any water has entered, it shall not:		P
	be sufficient to interfere with the correct operation of the equipment or impair safety;		P
	deposit on insulation parts where it could lead to tracking along the creepage distances;		P
	reach live parts or windings not designed to operate when wet;		P
	accumulate near the cable end or enter the cable if any.		N/A

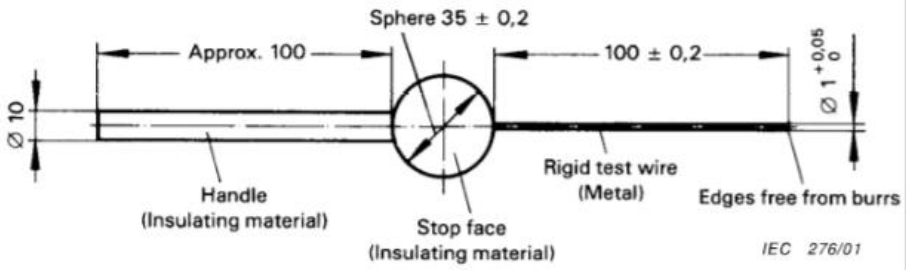
IEC 60529			
Clause	Requirement – Test	Result – Remark	Verdict
	If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment.		N/A

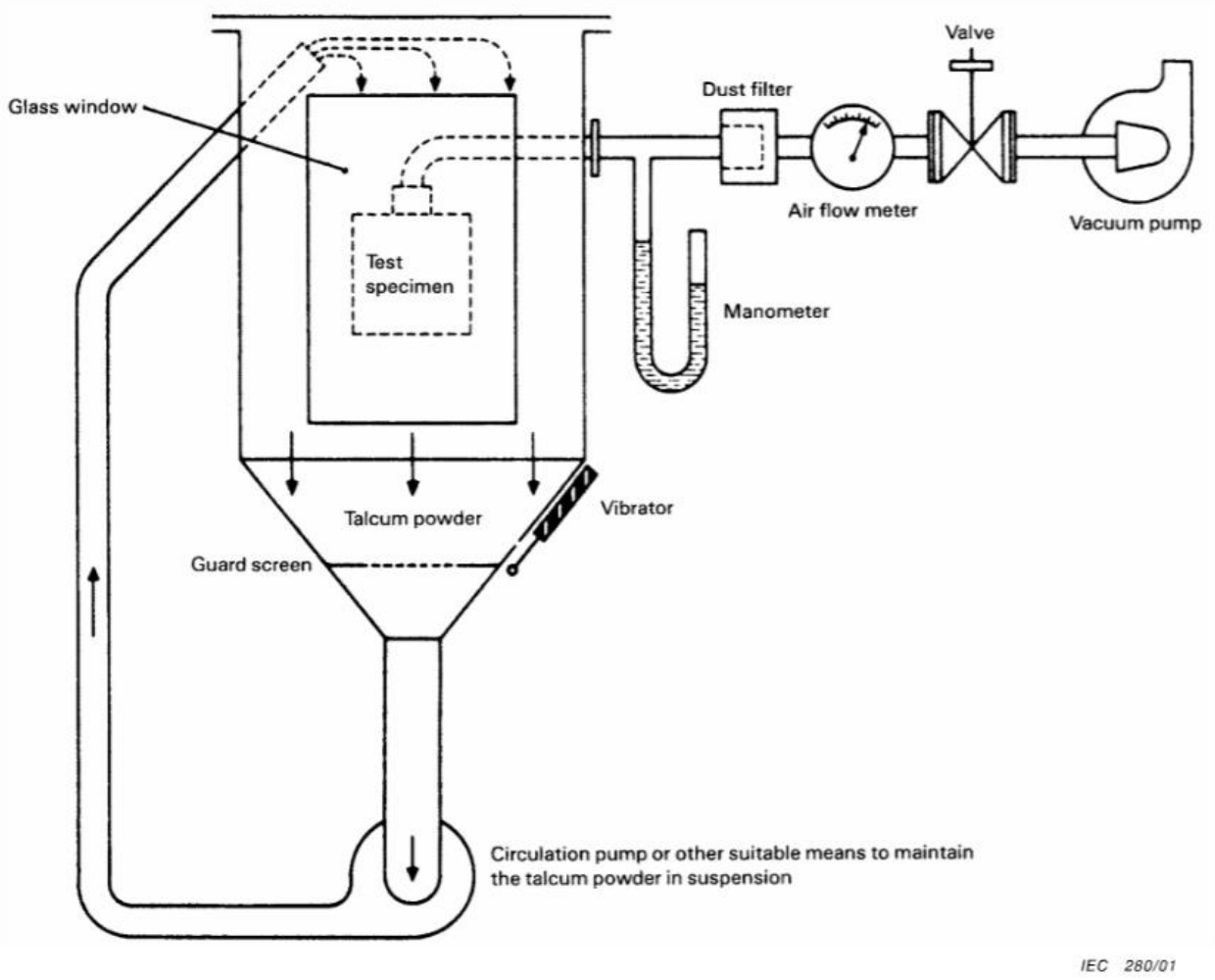
After the test of IP65, following tests was conducted

A.1	**Insulation resistance test**	---
	Test requirements: Immediately after the moisture treatment, the insulation resistance shall be measured with a d.c. voltage of approximately 500 V, 1 min after application of the unit having an insulating cover or envelope shall be wrapped with metal foil. Test result: Between input and enclosure: Max.____ M Ω > 2 MΩ	N/A

A.2	**Electric strength test**	---
	Test requirement: Immediately after the test of A.1, the insulation is subjected for 1 min to a voltage of substantially sine-wave form at rated frequency. The value of the test voltage and the points of application are as following Test result: Between input and enclosure: 500 VAC There is flashover and breakdown occurred.	P

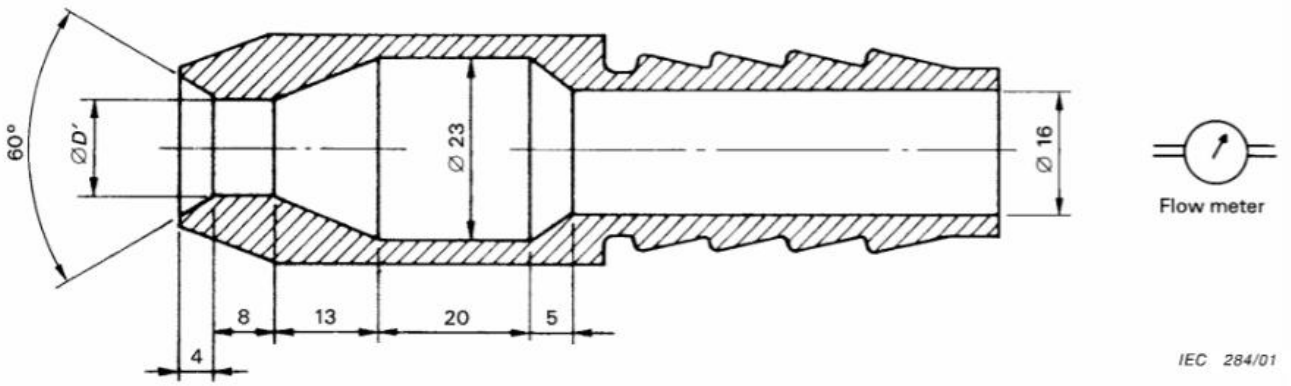
Table 6 – Access probes for the tests for protection of persons against access to hazardous parts

First numeral	Addit. letter	Access probe	Test force
4, 5, 6	D	Test wire 1,0 mm diameter, 100 mm long 	1 N ± 10 %



NOTE See IEC 60068-2-68, figure 2 valid for La2 only.

Figure 2 – Test device to verify protection against dust (dust chamber)



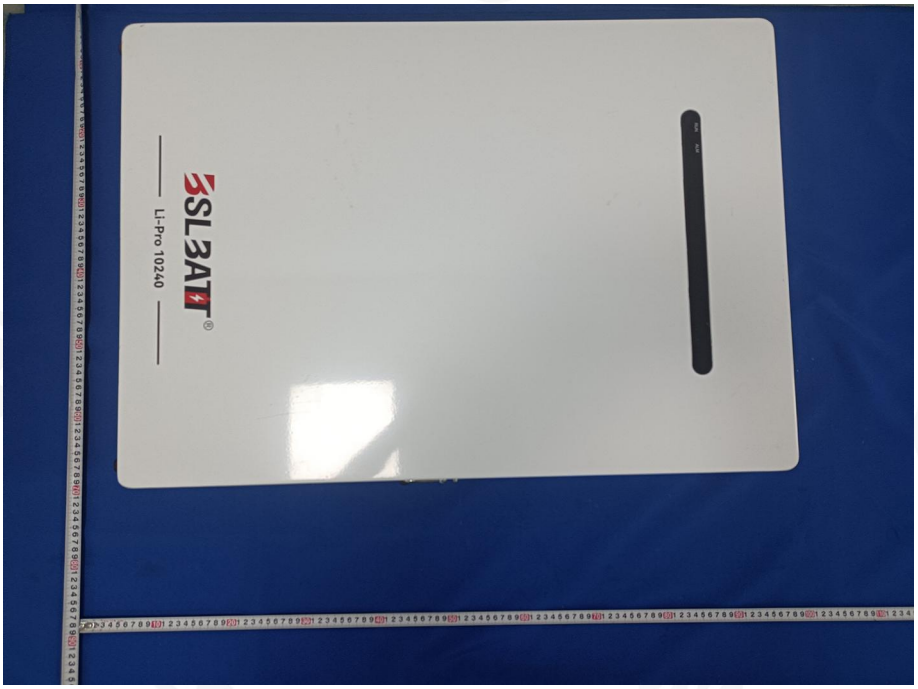
Dimensions in millimetres

D′ = 6,3 for the test of 14.2.5 (second characteristic numeral 5)
D′ = 12,5 for the test of 14.2.6 (second characteristic numeral 6)

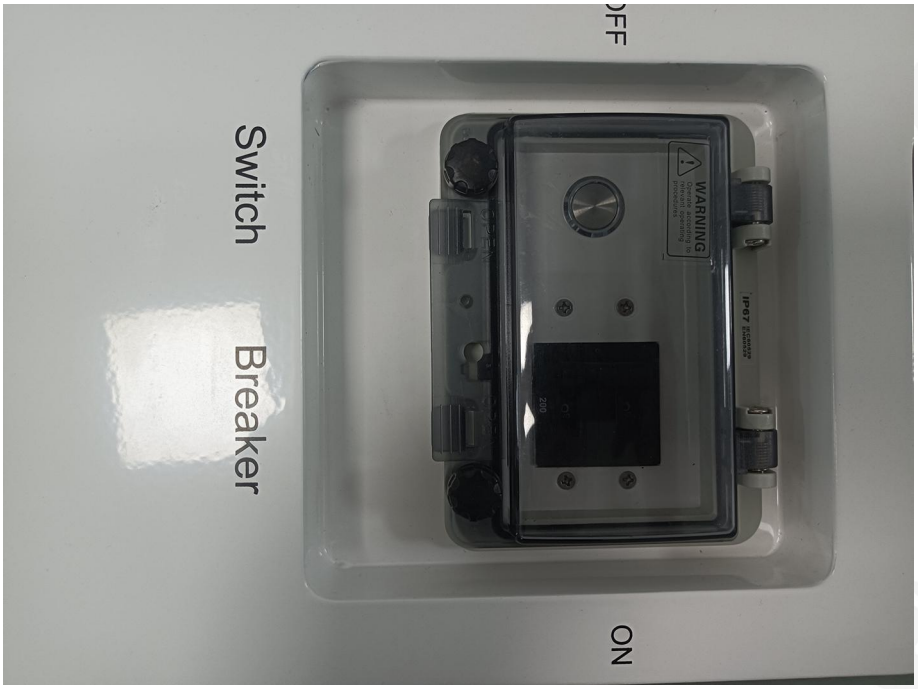
Figure 6 – Test device to verify protection against water jets (hose nozzle)

Attachment I: Photo-documentation

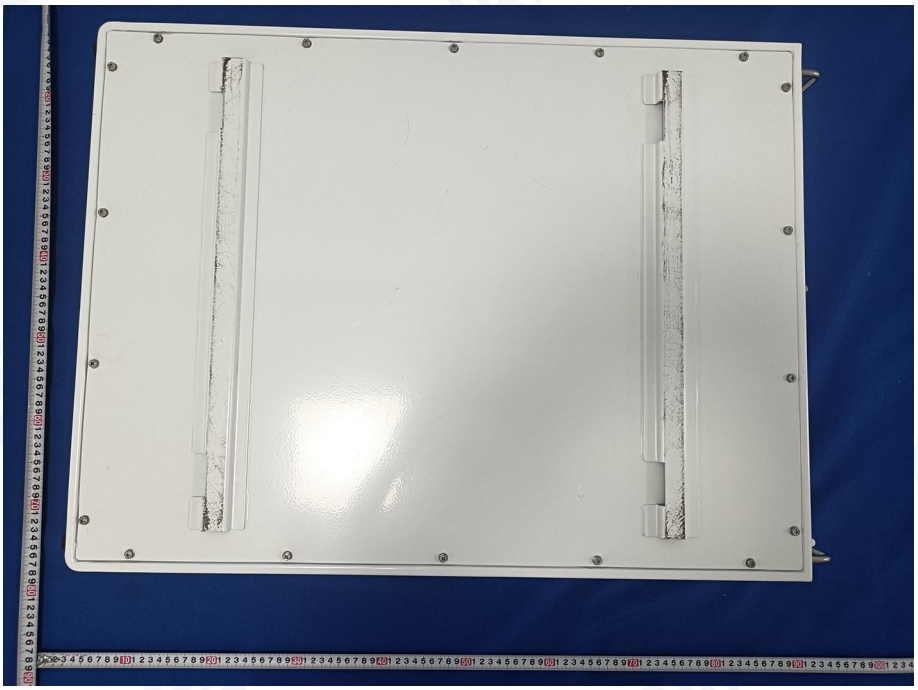
EUT Photo 1



EUT Photo 2

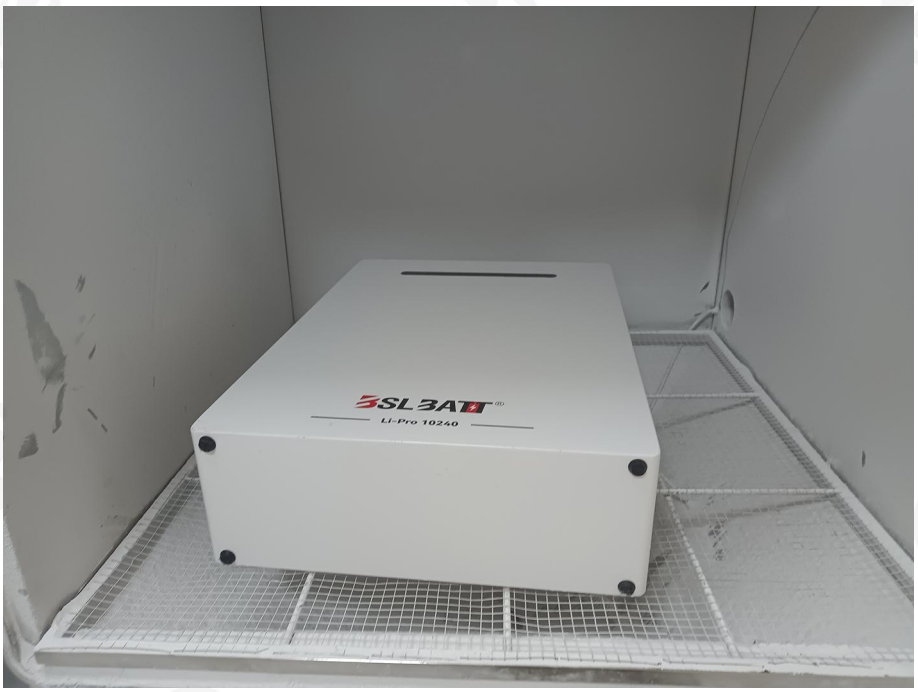


EUT Photo 3

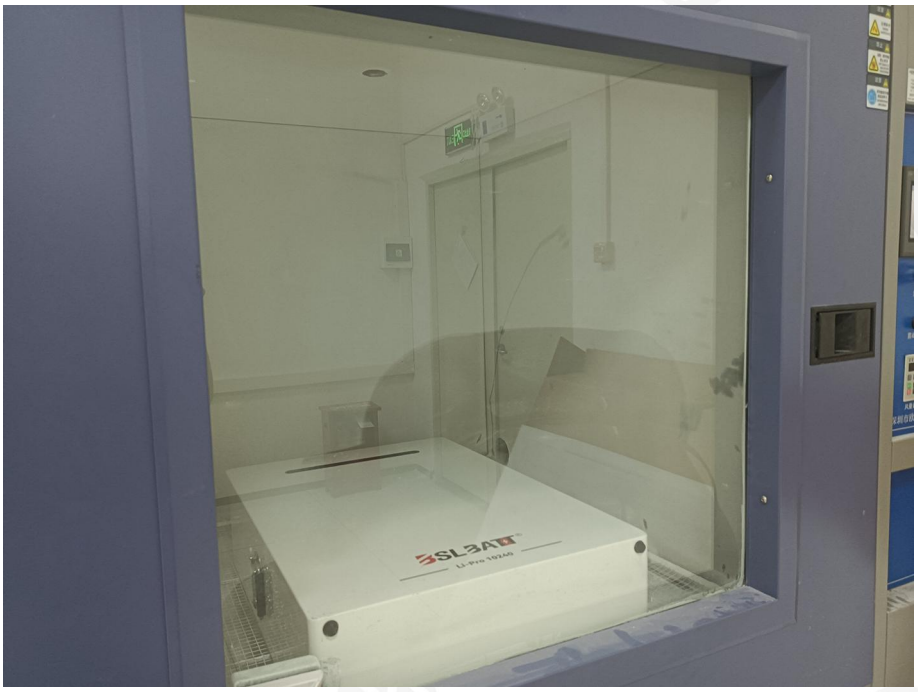


EUT Photo 4

EUT Photo 5



EUT Photo 6

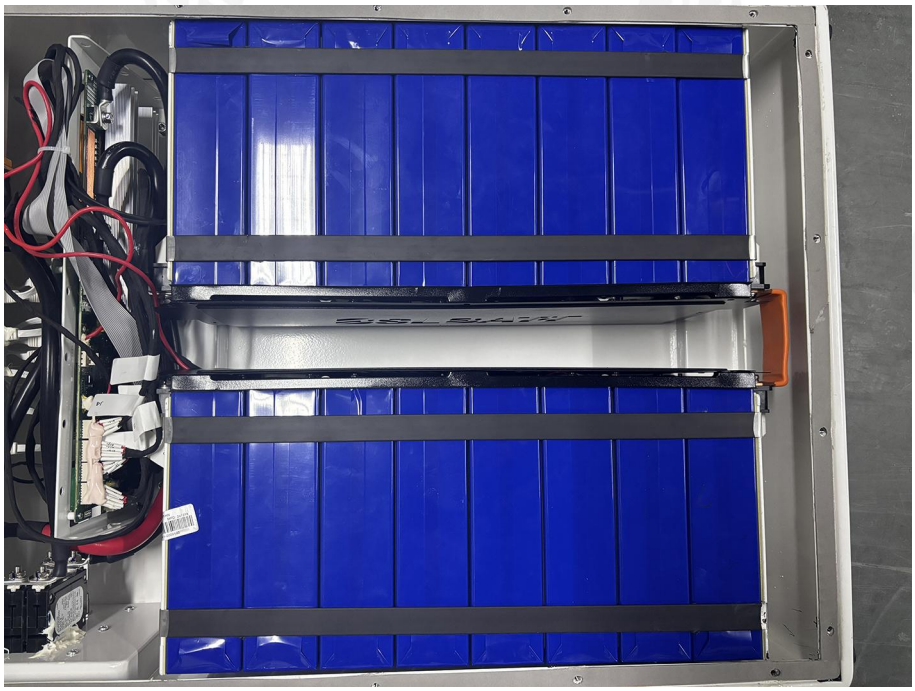


EUT Photo 7

EUT Photo 8

EUT Photo 9

EUT Photo 10



※※※※※ END OF REPORT※※※※※