



Test Report issued under the responsibility of:



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>TEST REPORT</b><br><b>IEC 62619</b><br><b>Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                            |
| Report Number..... : SHES250400703201<br>Date of issue ..... : 2025-10-13<br>Total number of pages ..... : 33 Pages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                            |
| Name of Testing Laboratory preparing the Report .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. |
| Applicant's name ..... : Shandong Pomepower Technology Co., Ltd.<br>Address ..... : Building 2, Zhidong Industrial Park, Zhangfan Subdistrict, High-tech Zone, Zaozhuang, Shandong, China                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            |
| Test specification:<br>Standard ..... : IEC 62619:2022<br>Test procedure..... : CB Scheme<br>Non-standard test method..... : N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                            |
| TRF template used ..... : IECEE OD-2020-F1:2022, Ed.1.5<br>Test Report Form No. .... : IEC62619B<br>Test Report Form(s) Originator .... : UL Solutions (Demko)<br>Master TRF ..... : Dated 2023-02-24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                            |
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|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>Test item description..... :</b>                                                               | Rechargeable Li-ion Battery System                                                                                                                                                                                                                                                                                                                       |                                                                  |
| <b>Trademark(s) ..... :</b>                                                                       | <br>POMEPOWER<br>重能能源                                                                                                                                                                                                                                                   |                                                                  |
| <b>Manufacturer ..... :</b>                                                                       | Same as applicant                                                                                                                                                                                                                                                                                                                                        |                                                                  |
| <b>Model/Type reference ..... :</b>                                                               | XC-CWC314/52/D, XC-CWC314/104/D, XC-CWC314/156/D, XC-CWC314/209/D, XC-CWC314/261/D, XC-CWC314/313/D, XC-CWC314/365/D, XC-CWC314/418/D                                                                                                                                                                                                                    |                                                                  |
| <b>Ratings ..... :</b>                                                                            | Rated Voltage:<br>For model XC-CWC314/52/D, 166,4 V<br>For model XC-CWC314/104/D, 332,8 V<br>For model XC-CWC314/156/D, 499,2 V<br>For model XC-CWC314/209/D, 665,6 V<br>For model XC-CWC314/261/D, 832 V<br>For model XC-CWC314/313/D, 998,4 V<br>For model XC-CWC314/365/D, 1164,8 V<br>For model XC-CWC314/418/D, 1331,2 V;<br>Rated Capacity: 314 Ah |                                                                  |
| <b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b> |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <input checked="" type="checkbox"/>                                                               | <b>CB Testing Laboratory:</b>                                                                                                                                                                                                                                                                                                                            | SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.       |
| <b>Testing location/ address..... :</b>                                                           |                                                                                                                                                                                                                                                                                                                                                          | 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China. |
| <b>Tested by (name, function, signature)..... :</b>                                               |                                                                                                                                                                                                                                                                                                                                                          | JJ Yang<br>Project Engineer                                      |
| <b>Approved by (name, function, signature).... :</b>                                              |                                                                                                                                                                                                                                                                                                                                                          | Eric Wang<br>Project Reviewer                                    |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 1:</b>                                                                                                                                                                                                                                                                                                                   | N/A                                                              |
| <b>Testing location/ address..... :</b>                                                           |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <b>Tested by (name, function, signature)..... :</b>                                               |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <b>Approved by (name, function, signature).... :</b>                                              |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 2:</b>                                                                                                                                                                                                                                                                                                                   | N/A                                                              |
| <b>Testing location/ address..... :</b>                                                           |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <b>Tested by (name + signature) ..... :</b>                                                       |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <b>Witnessed by (name, function, signature) . :</b>                                               |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <b>Approved by (name, function, signature).... :</b>                                              |                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 3:</b>                                                                                                                                                                                                                                                                                                                   | N/A                                                              |

|                                                    |                                        |     |  |
|----------------------------------------------------|----------------------------------------|-----|--|
| <input type="checkbox"/>                           | <b>Testing procedure: CTF Stage 4:</b> | N/A |  |
| <b>Testing location/ address.....:</b>             |                                        |     |  |
| <b>Tested by (name, function, signature).....:</b> |                                        |     |  |
| <b>Witnessed by (name, function, signature) .:</b> |                                        |     |  |
| <b>Approved by (name, function, signature)...:</b> |                                        |     |  |
| <b>Supervised by (name, function, signature) :</b> |                                        |     |  |
|                                                    |                                        |     |  |

**List of Attachments (including a total number of pages in each attachment):**

Attachment 1: 28 pages of Photos;  
 Attachment 2: 1 page of Information for safety;  
 Attachment 3: 1 page of Packaging;  
 Attachment 4: 3 pages of Product specification;  
 Attachment 5: 1 page of ISO 9001 Certificate.

**Summary of testing:**

The sample(s) tested complies with the requirements of IEC 62619: 2022.

**Remark:**

1. All battery system models have the same basic battery module (model: 1P52S) and the same high voltage control box (model: XC-PDU-E15-C250-33W), the only difference is the number of modules in series for each system. Model XC-CWC314/52/D, XC-CWC314/104/D, XC-CWC314/156/D, XC-CWC314/209/D, XC-CWC314/261/D, XC-CWC314/313/D, XC-CWC314/365/D and XC-CWC314/418/D has 1, 2, 3, 4, 5, 6, 7, 8 basic battery modules respectively.
2. Battery system model XC-CWC314/52/D was tested as typical model. Test results of this model are considered to be representative of other models of this series listed in this report. The component cell (model: PF173-314A) was certified according to IEC 62619: 2022 by TÜV Rheinland (CB test report No.: CN23BTKL 001, Certif. No.: JPTUV-156588);
3. The functional safety requirement in clause 8 was also evaluated according to Annex H of IEC 60730-1:2022 & Annex H of EN 60730-1:2022 (SGS Report No. SHFS250400020571).

**Tests performed (name of test and test clause):**

- ☐ 7.2.1 External short-circuit test (cell or cell block)  
☐ 7.2.2 Impact test (cell or cell block)  
☒ 7.2.3 Drop test (cell or cell block, and battery system), 2025-05-12  
☐ 7.2.4 Thermal abuse test (cell or cell block)  
☐ 7.2.5 Overcharge test (cell or cell block)  
☐ 7.2.6 Forced discharge test (cell or cell block)  
☐ 7.3.2 Internal short-circuit test (cell)  
☐ 7.3.3 Propagation test (battery system)  
☒ 8.2.2 Overcharge control of voltage (battery system), 2025-05-09  
☒ 8.2.3 Overcharge control of current (battery system), 2025-05-11  
☒ 8.2.4 Overheating control (battery system), 2025-05-11

**Testing location: (CBTL, SPTL, CTF, Subcontractor)**

SGS-CSTC Standards Technical Services  
 (Shanghai) Co., Ltd.  
 588 West Jindu Road, Xinqiao, Songjiang, 201612  
 Shanghai, China

**Summary of compliance with National Differences (List of countries addressed):**

EU Group Differences, GB

☒ **The product fulfils the requirements of EN IEC 62619: 2022 and BS EN IEC 62619: 2022.**

**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.

Shandong Pomepower Technology Co., Ltd.

POMEPOWER  
星储能源

#### Rechargeable Li-ion Battery System

| Operating Voltage Range          |                 |                                        | 145.6 V - 1497.6 V  |                         |
|----------------------------------|-----------------|----------------------------------------|---------------------|-------------------------|
| Maximum Dis-/Charge Current      |                 |                                        | 157 A               |                         |
| High Voltage Control Box Model   |                 |                                        | XC-PDU-E15-C250-33W |                         |
| No                               | Model           | Designation                            | Nominal Voltage     | Operating Voltage Range |
| 1                                | XC-CWC314/52/D  | IFpP74/176/209(((26S)2S)E/-20+50/90    | 166.4 V             | 145.6 V - 187.2 V       |
| 2                                | XC-CWC314/104/D | IFpP74/176/209(((26S)2S)2S)E/-20+50/90 | 332.8 V             | 291.2 V - 374.4 V       |
| 3                                | XC-CWC314/156/D | IFpP74/176/209(((26S)2S)3S)E/-20+50/90 | 499.2 V             | 436.8 V - 561.6 V       |
| 4                                | XC-CWC314/209/D | IFpP74/176/209(((26S)2S)4S)E/-20+50/90 | 665.6 V             | 582.4 V - 748.8 V       |
| 5                                | XC-CWC314/261/D | IFpP74/176/209(((26S)2S)5S)E/-20+50/90 | 832 V               | 728 V - 936 V           |
| 6                                | XC-CWC314/313/D | IFpP74/176/209(((26S)2S)6S)E/-20+50/90 | 998.4 V             | 873.6 V - 1123.2 V      |
| 7                                | XC-CWC314/365/D | IFpP74/176/209(((26S)2S)7S)E/-20+50/90 | 1164.8 V            | 1019.2 V - 1310.4 V     |
| 8                                | XC-CWC314/418/D | IFpP74/176/209(((26S)2S)8S)E/-20+50/90 | 1331.2 V            | 1164.8 V - 1497.6 V     |
| Number of Battery Module (1≤n≤8) |                 |                                        |                     |                         |
| Rated Capacity                   |                 |                                        | 314 Ah              |                         |
| Nominal Charge Current           |                 |                                        | 157 A               |                         |
| Nominal Discharge Current        |                 |                                        | 157 A               |                         |
| Charging Temperature Range       |                 |                                        | 0 °C - 55 °C        |                         |
| Discharging Temperature Range    |                 |                                        | -20 °C - 55 °C      |                         |
| Manufacture Data                 |                 |                                        | 2025-04             |                         |

#### Cautions:

- 1) It is very important and necessary to read the user manual carefully before installing or using the battery.
- 2) After unpacking, check the product and packing list first and contact your local retailer if you find damage or missing parts.
- 3) The battery system must be installed, moved, or maintained with the grid disconnected and the battery switched off.
- 4) The battery must be wired correctly. Incorrect polarity connections or accidental short-circuiting to external equipment is strictly prohibited.
- 5) Ensure the battery system's electrical parameters are compatible with all connected equipment. Never connect the battery to faulty or mismatched equipment.
- 6) Do not disassemble the battery.
- 7) Keep the battery away from water and fire.
- 8) In case of fire, only dry powder fire extinguishers should be used, not liquid fire extinguishers.



Polarity marking on battery module



Polarity marking on high voltage control box

**Remark:**

Disposal instructions and recommended charge instructions were included in Battery System Information for safety and Specification, see attachment 2 and attachment 4 for details.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 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 .....: 2025-04-23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |
| Date (s) of performance of tests .....: 2025-05-08 to 2025-05-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                    |
| General remarks:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                    |
| <p>"(See Enclosure #)" refers to additional information appended to the report.</p> <p>"(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>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.</p> <p>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.</p> |                                                                                    |
| Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60060-2:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                    |
| 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 .....:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> 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:**

|                                                      |                                                                                                                                       |                                                                                                                                                                                  |                   |                            |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|
| Specification of battery system                      |                                                                                                                                       |                                                                                                                                                                                  |                   |                            |
| Model series                                         | XC-CWC314/52/D, XC-CWC314/104/D, XC-CWC314/156/D, XC-CWC314/209/D, XC-CWC314/261/D, XC-CWC314/313/D, XC-CWC314/365/D, XC-CWC314/418/D |                                                                                                                                                                                  |                   |                            |
| Model                                                | Designation                                                                                                                           | Nominal voltage (V)                                                                                                                                                              | Voltage range (V) | Number of module in series |
| XC-CWC314/52/D                                       | IFpP74/176/209[(26S)2S]E/-20+50/90                                                                                                    | 166,4                                                                                                                                                                            | 145,6 - 187,2     | 1                          |
| XC-CWC314/104/D                                      | IFpP74/176/209[((26S)2S)2S]E/-20+50/90                                                                                                | 332,8                                                                                                                                                                            | 291,2 - 374,4     | 2                          |
| XC-CWC314/156/D                                      | IFpP74/176/209[((26S)2S)3S]E/-20+50/90                                                                                                | 499,2                                                                                                                                                                            | 436,8 - 561,6     | 3                          |
| XC-CWC314/209/D                                      | IFpP74/176/209[((26S)2S)4S]E/-20+50/90                                                                                                | 665,6                                                                                                                                                                            | 582,4 - 748,8     | 4                          |
| XC-CWC314/261/D                                      | IFpP74/176/209[((26S)2S)5S]E/-20+50/90                                                                                                | 832                                                                                                                                                                              | 728 - 936         | 5                          |
| XC-CWC314/313/D                                      | IFpP74/176/209[((26S)2S)6S]E/-20+50/90                                                                                                | 998,4                                                                                                                                                                            | 873,6 - 1123,2    | 6                          |
| XC-CWC314/365/D                                      | IFpP74/176/209[((26S)2S)7S]E/-20+50/90                                                                                                | 1164,8                                                                                                                                                                           | 1019,2 - 1310,4   | 7                          |
| XC-CWC314/418/D                                      | IFpP74/176/209[((26S)2S)8S]E/-20+50/90                                                                                                | 1331,2                                                                                                                                                                           | 1164,8 - 1497,6   | 8                          |
| Specification for all models of battery system       |                                                                                                                                       |                                                                                                                                                                                  |                   |                            |
| Product description:                                 |                                                                                                                                       | Rechargeable Li-ion Battery System                                                                                                                                               |                   |                            |
| Rated capacity:                                      |                                                                                                                                       | 314 Ah                                                                                                                                                                           |                   |                            |
| Standard charging method (declared by manufacturer): |                                                                                                                                       | Charge at constant current 157 A (0,5 C) until the voltage of battery system reaches 187,2*n V ("n" means number of module model 1P52S in series, can be 1 to 8, increment by 1) |                   |                            |
| Maximum charge current:                              |                                                                                                                                       | 157 A                                                                                                                                                                            |                   |                            |
| Maximum discharge current:                           |                                                                                                                                       | 157 A                                                                                                                                                                            |                   |                            |
| Charging temperature range:                          |                                                                                                                                       | 0 °C - 55 °C                                                                                                                                                                     |                   |                            |
| Discharge temperature range:                         |                                                                                                                                       | -20 °C - 55 °C                                                                                                                                                                   |                   |                            |
| Specification of battery module                      |                                                                                                                                       |                                                                                                                                                                                  |                   |                            |
| Production description:                              |                                                                                                                                       | Rechargeable Li-ion Battery Module                                                                                                                                               |                   |                            |
| Model:                                               |                                                                                                                                       | 1P52S                                                                                                                                                                            |                   |                            |
| Designation:                                         |                                                                                                                                       | IFpP74/176/209[(26S)2S]E/-20+50/90                                                                                                                                               |                   |                            |
| Normal voltage:                                      |                                                                                                                                       | 166,4 V                                                                                                                                                                          |                   |                            |
| Max. charging voltage:                               |                                                                                                                                       | 187,2 V                                                                                                                                                                          |                   |                            |
| End of discharge voltage:                            |                                                                                                                                       | 145,6 V                                                                                                                                                                          |                   |                            |
| Rated capacity:                                      |                                                                                                                                       | 314 Ah                                                                                                                                                                           |                   |                            |
| Standard charging current:                           |                                                                                                                                       | 157 A                                                                                                                                                                            |                   |                            |
| Maximum charging current:                            |                                                                                                                                       | 157 A                                                                                                                                                                            |                   |                            |
| Charging temperature range:                          |                                                                                                                                       | 0 °C - 55 °C                                                                                                                                                                     |                   |                            |
| Discharge temperature range:                         |                                                                                                                                       | -20 °C - 55 °C                                                                                                                                                                   |                   |                            |
| Number of cells in battery module:                   |                                                                                                                                       | (26S)2S                                                                                                                                                                          |                   |                            |
| Specification of cell                                |                                                                                                                                       |                                                                                                                                                                                  |                   |                            |

|                                 |                            |
|---------------------------------|----------------------------|
| Model of cell:                  | PF173-314A                 |
| Rated voltage of cell:          | 3,2 V                      |
| Rated capacity of cell:         | 314 Ah                     |
| Maximum charge current of cell: | 157 A                      |
| Designation of cell:            | IFpP74/176/209/E/-30+60/95 |

## Remark:

Each battery system consists of n battery modules and 1 high voltage control box connected in series ("n" may be 1 to 8 in this series model, which represents the number of modules in the battery system). Each battery module consists of 52 Li-ion cells connected in (26S)2S.  
See attachment 4 for more details.

| IEC 62619 |                                         |                 |          |
|-----------|-----------------------------------------|-----------------|----------|
| Clause    | Requirement + Test                      | Result - Remark | Verdict  |
| <b>4</b>  | <b>PARAMETER MEASUREMENT TOLERANCES</b> |                 | <b>P</b> |
|           | Parameter measurement tolerances        |                 | P        |

|            |                                                                                                                                                                    |                                                                                                                                            |          |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>5</b>   | <b>GENERAL SAFETY CONSIDERATIONS</b>                                                                                                                               |                                                                                                                                            | <b>P</b> |
| <b>5.1</b> | <b>General</b>                                                                                                                                                     |                                                                                                                                            | <b>P</b> |
|            | Cells and batteries are safe under conditions of both intended use and reasonably foreseeable misuse... :                                                          | Clause 6, Clause 7, 8.1, and 8.2. See also table 5.1 for Critical components information                                                   | P        |
|            | Reduce the risk of injuries from moving parts                                                                                                                      |                                                                                                                                            | P        |
| <b>5.2</b> | <b>Insulation and wiring</b>                                                                                                                                       |                                                                                                                                            | <b>P</b> |
|            | Voltage, current, altitude, and humidity requirements                                                                                                              |                                                                                                                                            | P        |
|            | Adequate clearances and creepage distances between connectors and live parts at different voltages or between live parts and non-current-carrying accessible parts |                                                                                                                                            | P        |
|            | Protect from hazardous live parts, including during installation                                                                                                   |                                                                                                                                            | P        |
|            | The mechanical integrity of internal connections                                                                                                                   |                                                                                                                                            | P        |
| <b>5.3</b> | <b>Venting</b>                                                                                                                                                     |                                                                                                                                            | <b>P</b> |
|            | Pressure relief function                                                                                                                                           | Pressure relief mechanism exists on the cell and module enclosure.                                                                         | P        |
|            | Encapsulation used to support cells within an outer casing                                                                                                         | Metal encapsulation were used to support cells, will not cause the system to overheat during normal operation nor inhibit pressure relief. | P        |
| <b>5.4</b> | <b>Temperature/voltage/current management</b>                                                                                                                      |                                                                                                                                            | <b>P</b> |
|            | The design prevents abnormal temperature-rise                                                                                                                      | BMS was used to prevent abnormal temperature-rise                                                                                          | P        |
|            | Voltage, current, and temperature limits of the cells                                                                                                              | Overcharge, over current and overheating protect circuit used in this battery. See tests of clause 8.                                      | P        |
|            | Specifications and charging instructions for equipment manufacturers                                                                                               |                                                                                                                                            | P        |
| <b>5.5</b> | <b>Terminal contacts of the battery pack and/or battery system</b>                                                                                                 |                                                                                                                                            | <b>P</b> |
|            | Polarity marking(s)                                                                                                                                                |                                                                                                                                            | P        |
|            | Polarity marking not provided for keyed external connector                                                                                                         |                                                                                                                                            | N/A      |
|            | Capability to carry the maximum anticipated current                                                                                                                |                                                                                                                                            | P        |

| IEC 62619  |                                                                                                                                         |                                                                                                                                                                                                                    |          |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Clause     | Requirement + Test                                                                                                                      | Result - Remark                                                                                                                                                                                                    | Verdict  |
|            | External terminal contact surfaces                                                                                                      |                                                                                                                                                                                                                    | P        |
|            | Terminal contacts are arranged to minimize the risk of short circuits                                                                   |                                                                                                                                                                                                                    | P        |
| <b>5.6</b> | <b>Assembly of cells, modules, or battery packs into battery systems</b>                                                                |                                                                                                                                                                                                                    | <b>P</b> |
| 5.6.1      | General                                                                                                                                 |                                                                                                                                                                                                                    | P        |
|            | Independent control and protection method(s)                                                                                            |                                                                                                                                                                                                                    | P        |
|            | Recommendations of cell operating limits, mounting advice, storage conditions and other design recommendations by the cell manufacturer |                                                                                                                                                                                                                    | P        |
|            | Batteries designed for the selective discharge of a portion of their series connected cells                                             |                                                                                                                                                                                                                    | N/A      |
|            | Protective circuit component(s) and consideration to the end-device application                                                         |                                                                                                                                                                                                                    | P        |
| 5.6.2      | Battery system design                                                                                                                   |                                                                                                                                                                                                                    | P        |
|            | The voltage control function                                                                                                            |                                                                                                                                                                                                                    | P        |
|            | Maximum charging/discharging current of the cell are not exceeded                                                                       |                                                                                                                                                                                                                    | P        |
| <b>5.7</b> | <b>Operating region of lithium cells and battery systems for safe use</b>                                                               |                                                                                                                                                                                                                    | <b>P</b> |
|            | The cell operating region..... :                                                                                                        | Voltage range: 2,5 V to 3,65 V<br>Maximum continuous charge current: 157 A<br>Maximum continuous discharge current: 157 A<br>Charge temperature range: 0 °C - 55 °C<br>Discharge temperature range: -30 °C - 60 °C | P        |
|            | Designation of battery system to comply with the cell operating region                                                                  |                                                                                                                                                                                                                    | P        |
| <b>5.8</b> | <b>System lock (or system lock function)</b>                                                                                            |                                                                                                                                                                                                                    | <b>P</b> |
|            | Non-resettable function to stop battery operation                                                                                       | Non-resettable function would be considered to evaluation in end-product.                                                                                                                                          | P        |
|            | Manual with procedure for resetting of battery operation                                                                                |                                                                                                                                                                                                                    | P        |
|            | Emergency battery final discharge                                                                                                       |                                                                                                                                                                                                                    | N/A      |
| <b>5.9</b> | <b>Quality plan</b>                                                                                                                     |                                                                                                                                                                                                                    | <b>P</b> |
|            | Manufacturing quality plan (for example: ISO9001, etc.) prepared and implemented..... :                                                 | ISO 9001 certificate was submitted.                                                                                                                                                                                | P        |
|            | The process capabilities and the process controls                                                                                       |                                                                                                                                                                                                                    | P        |

| IEC 62619  |                                                                                     |                                                                   |          |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------|
| Clause     | Requirement + Test                                                                  | Result - Remark                                                   | Verdict  |
| <b>6</b>   | <b>TYPE TEST CONDITIONS</b>                                                         |                                                                   | <b>P</b> |
| <b>6.1</b> | <b>General</b>                                                                      |                                                                   | <b>P</b> |
| <b>6.2</b> | <b>Test items</b>                                                                   |                                                                   | <b>P</b> |
|            | Cells or batteries that are not more than six months old (See Table 1 of IEC 62619) |                                                                   | P        |
|            | Capacity confirmation of the cells or batteries                                     |                                                                   | P        |
|            | Default ambient temperature of test, 25 °C ± 5 °C                                   | Tests were carried out in an ambient temperature of 25 °C ± 5 °C. | P        |

|            |                                                                                     |                                                                                                                                   |          |
|------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>7</b>   | <b>SPECIFIC REQUIREMENTS AND TESTS</b>                                              |                                                                                                                                   | <b>P</b> |
| <b>7.1</b> | <b>Charging procedure for test purposes</b>                                         |                                                                                                                                   | <b>P</b> |
|            | The battery discharged to a specified final voltage prior to charging               | Battery system model XC-CWC314/52/D was tested as representative. Discharge to 145,6 V with a constant current of 62,8 A (0,2 C). | P        |
|            | The cells or batteries charged using the method specified by the manufacturer ..... | Charge at constant current 157 A (0,5 C) until the voltage reaches 187,2 V.                                                       | P        |
| <b>7.2</b> | <b>Reasonably foreseeable misuse</b>                                                |                                                                                                                                   | <b>P</b> |
| 7.2.1      | External short-circuit test (cell or cell block)                                    | Approval cell used.                                                                                                               | N/A      |
|            | Short circuit with total resistance of 30 m ± 10 m at 25 °C ± 5 °C                  |                                                                                                                                   | N/A      |
|            | Results: no fire, no explosion                                                      |                                                                                                                                   | N/A      |
| 7.2.2      | Impact test (cell or cell block)                                                    | Approval cell used.                                                                                                               | N/A      |
|            | Cylindrical cell, longitudinal axis impact                                          |                                                                                                                                   | N/A      |
|            | Prismatic cell, longitudinal axis and lateral axis impact                           |                                                                                                                                   | N/A      |
|            | Results: no fire, no explosion.                                                     |                                                                                                                                   | N/A      |
| 7.2.3      | Drop test (cell or cell block, and battery system)                                  |                                                                                                                                   | P        |
| 7.2.3.1    | General                                                                             |                                                                                                                                   | P        |
| 7.2.3.2    | Whole drop test (cell or cell block, and battery system)                            |                                                                                                                                   | N/A      |
|            | Description of the Test Unit..... :                                                 |                                                                                                                                   | —        |
|            | Mass of the test unit (kg)..... :                                                   |                                                                                                                                   | —        |
|            | Height of drop (m)..... :                                                           |                                                                                                                                   | —        |
|            | Results: no fire, no explosion                                                      |                                                                                                                                   | N/A      |
| 7.2.3.3    | Edge and corner drop test (cell or cell block, and battery system)                  |                                                                                                                                   | P        |

| IEC 62619  |                                                                                                            |                                                                                             |            |
|------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------|
| Clause     | Requirement + Test                                                                                         | Result - Remark                                                                             | Verdict    |
|            | Description of the Test Unit..... :                                                                        | A battery module (model: 1P52S) and a high voltage control box (model: XC-PDU-E15-C250-33W) | —          |
|            | Mass of the test unit (kg)..... :                                                                          | Approx. 365 kg                                                                              | —          |
|            | Height of drop (m)..... :                                                                                  | 2,5 cm                                                                                      | —          |
|            | Results: no fire, no explosion                                                                             |                                                                                             | P          |
| 7.2.4      | Thermal abuse test (cell or cell block)                                                                    | Approval cell used.                                                                         | N/A        |
|            | Results: no fire, no explosion                                                                             |                                                                                             | N/A        |
| 7.2.5      | Overcharge test (cell or cell block)                                                                       | Approval cell used.                                                                         | N/A        |
|            | For those battery systems that are provided with only a single protection for the charging voltage control |                                                                                             | —          |
|            | Results: no fire, no explosion..... :                                                                      |                                                                                             | N/A        |
| 7.2.6      | Forced discharge test (cell or cell block)                                                                 | Approval cell used.                                                                         | N/A        |
|            | Cells connected in series in the battery system .....                                                      |                                                                                             | N/A        |
|            | Redundant or single protection for discharge voltage control provided in battery system .....              |                                                                                             | N/A        |
|            | Target Voltage .....                                                                                       |                                                                                             | N/A        |
|            | Maximum discharge current of the cell, $I_m$ ..... :                                                       |                                                                                             | N/A        |
|            | Discharge current for forced discharge, $1.0 I_t$ .....                                                    |                                                                                             | N/A        |
|            | Discharging time, $t = (1 I_t / I_m) \times 90$ (min.) .....                                               |                                                                                             | N/A        |
|            | Results: no fire, no explosion..... :                                                                      |                                                                                             | N/A        |
| <b>7.3</b> | <b>Considerations for internal short-circuit – Design evaluation</b>                                       |                                                                                             | <b>N/A</b> |
| 7.3.1      | General                                                                                                    |                                                                                             | N/A        |
| 7.3.2      | Internal short-circuit test (cell)                                                                         | Approval cell used.                                                                         | N/A        |
|            | Samples preparation procedure:<br>In accordance with Clause A.5 and A.6 of IEC 62133-2:2017                |                                                                                             | N/A        |
|            | Tested per 7.3.2 b) in an ambient temperature of $25\text{ °C} \pm 5\text{ °C}$ .                          |                                                                                             | N/A        |
|            | The appearance of the short-circuit location recorded by photograph or other means .....                   |                                                                                             | —          |
|            | The pressing was stopped<br>- When a voltage drop of 50 mV was detected; or                                |                                                                                             | N/A        |
|            | - The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) was reached                   |                                                                                             | N/A        |
|            | Results: no fire..... :                                                                                    |                                                                                             | N/A        |

| IEC 62619 |                                                                                    |                                                                    |         |
|-----------|------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------|
| Clause    | Requirement + Test                                                                 | Result - Remark                                                    | Verdict |
| 7.3.3     | Propagation test (battery system)                                                  | Internal short-circuit test has been considered in cell CB report. | N/A     |
|           | Method to create a thermal runaway in one cell ... :                               |                                                                    | N/A     |
|           | Results: No external fire from the battery system, no battery case rupture ..... : |                                                                    | N/A     |

|            |                                                                                                                           |                                                                                                                                                          |          |
|------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>8</b>   | <b>BATTERY SYSTEM SAFETY (CONSIDERING FUNCTIONAL SAFETY)</b>                                                              |                                                                                                                                                          | <b>P</b> |
| <b>8.1</b> | <b>General requirements</b>                                                                                               |                                                                                                                                                          | <b>P</b> |
|            | Functional safety analysis for critical controls                                                                          | The functional safety requirement was evaluated according to Annex H of IEC 60730-1:2022 & Annex H of EN 60730-1:2022 (SGS Report No. SHFS250400020571). | P        |
|            | Conduct of a process hazard analysis for both the cell manufacturing process and the battery system manufacturing process |                                                                                                                                                          | P        |
|            | Conduct of risk assessment and mitigation of the battery system                                                           |                                                                                                                                                          | P        |
| <b>8.2</b> | <b>Battery management system (or battery management unit)</b>                                                             |                                                                                                                                                          | <b>P</b> |
| 8.2.1      | Requirements for the BMS                                                                                                  |                                                                                                                                                          | P        |
|            | The safety integrity level (SIL) target of the BMS                                                                        | Class B per Annex H of IEC 60730-1:2022 & Annex H of EN 60730-1:2022                                                                                     | P        |
|            | The charge control evaluated by tests in clauses 8.2.2 to 8.2.4                                                           |                                                                                                                                                          | P        |
| 8.2.2      | Overcharge control of voltage (battery system)                                                                            |                                                                                                                                                          | P        |
|            | The exceeded charging voltage applied to the whole battery system                                                         |                                                                                                                                                          | P        |
|            | The exceeded charging voltage applied to only a part of the battery system, such as the cell(s) ..... :                   |                                                                                                                                                          | N/A      |
|            | Results: no fire, no explosion..... :                                                                                     | See Table 8.2.2                                                                                                                                          | P        |
|            | The BMS terminated the charging before exceeding the upper limit charging voltage                                         |                                                                                                                                                          | P        |
| 8.2.3      | Overcharge control of current (battery system)                                                                            |                                                                                                                                                          | P        |
|            | Results: no fire, no explosion..... :                                                                                     | See Table 8.2.3                                                                                                                                          | P        |
|            | The BMS detected the overcharging current and controlled the charging to a level below the maximum charging current       |                                                                                                                                                          | P        |
| 8.2.4      | Overheating control (battery system)                                                                                      |                                                                                                                                                          | P        |

| IEC 62619 |                                                                                    |                 |         |
|-----------|------------------------------------------------------------------------------------|-----------------|---------|
| Clause    | Requirement + Test                                                                 | Result - Remark | Verdict |
|           | The cooling system, if provided, was disconnected                                  |                 | P       |
|           | Elevated temperature for charging, 5 °C above maximum operating temperature..... : | 60 °C           | P       |
|           | Results: no fire, no explosion..... :                                              | See Table 8.2.4 | P       |
|           | The BMS detected the overheat temperature and terminated charging                  |                 | P       |
|           | The battery system operated as designed during test                                |                 | P       |

|          |                                                                             |                                                                                                                                                |          |
|----------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>9</b> | <b>EMC</b>                                                                  |                                                                                                                                                | <b>P</b> |
|          | Battery system fulfil EMC requirements of the end-device application..... : | The EMC requirement of battery system was evaluated according to EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019 (SGS Report No. AHM250400037101) | P        |

|           |                                                                                                                                 |                  |          |
|-----------|---------------------------------------------------------------------------------------------------------------------------------|------------------|----------|
| <b>10</b> | <b>INFORMATION FOR SAFETY</b>                                                                                                   |                  | <b>P</b> |
|           | The cell manufacturer provides information about current, voltage and temperature limits of their products                      |                  | N/A      |
|           | The battery system manufacturer provides information regarding how to mitigate hazards to equipment manufacturers or end-users. | See attachment 2 | P        |

|           |                                                                                                              |            |          |
|-----------|--------------------------------------------------------------------------------------------------------------|------------|----------|
| <b>11</b> | <b>MARKING AND DESIGNATION (REFER TO CLAUSE 5 OF IEC 62620)</b>                                              |            | <b>P</b> |
|           | The marking items shown in Table 1 in IEC 62620 indicated on the cell, battery system or instruction manual. | See page 6 | P        |
|           | Cell or battery system has clear and durable markings                                                        |            | P        |
|           | Cell designation                                                                                             |            | N/A      |
|           | Battery designation                                                                                          | See page 8 | P        |
|           | Battery structure formulation                                                                                |            | P        |

|           |                                |  |          |
|-----------|--------------------------------|--|----------|
| <b>12</b> | <b>PACKAGING AND TRANSPORT</b> |  | <b>P</b> |
|           | Refer to Annex D               |  | P        |

|                |                                               |  |            |
|----------------|-----------------------------------------------|--|------------|
| <b>ANNEX A</b> | <b>OPERATING REGION OF CELLS FOR SAFE USE</b> |  | <b>N/A</b> |
|----------------|-----------------------------------------------|--|------------|

| IEC 62619 |                                     |                                          |         |
|-----------|-------------------------------------|------------------------------------------|---------|
| Clause    | Requirement + Test                  | Result - Remark                          | Verdict |
| A.1       | General                             | Has been considered in cell test report. | N/A     |
| A.2       | Charging conditions for safe use    |                                          | N/A     |
| A.3       | Consideration on charging voltage   |                                          | N/A     |
| A.4       | Consideration on temperature        |                                          | N/A     |
| A.5       | High temperature range              |                                          | N/A     |
| A.6       | Low temperature range               |                                          | N/A     |
| A.7       | Discharging conditions for safe use |                                          | N/A     |
| A.8       | Example of operating region         |                                          | N/A     |

|                |                                                                                             |  |            |
|----------------|---------------------------------------------------------------------------------------------|--|------------|
| <b>ANNEX B</b> | <b>PROCEDURE OF 7.3.3 PROPAGATION TEST BY LASER IRRADIATION</b>                             |  | <b>N/A</b> |
| <b>B.1</b>     | <b>General</b>                                                                              |  | <b>N/A</b> |
| <b>B.2</b>     | <b>Test conditions</b>                                                                      |  | <b>N/A</b> |
| B.2.1          | Cell test (preliminary test)                                                                |  | N/A        |
|                | The cell fully charged according to the manufacturer recommended conditions .....           |  | —          |
|                | Laser irradiation point on the cell .....                                                   |  | —          |
|                | Output power of laser irradiation .....                                                     |  | —          |
|                | Tested in an ambient temperature of 25 °C ± 5 °C                                            |  | N/A        |
|                | Repeat of cell test for 3 times                                                             |  | N/A        |
| B.2.2          | Battery system test (main test)                                                             |  | N/A        |
|                | The battery system fully charged according to the manufacturer recommended conditions ..... |  | —          |
|                | Target cell to be laser irradiated .....                                                    |  | —          |
|                | The irradiation point on the target cell same or similar as that on the cell test           |  | N/A        |
|                | Output power of laser irradiation .....                                                     |  | —          |
|                | Tested in an ambient temperature of 25 °C ± 5 °C                                            |  | N/A        |

|                |                                                                                        |  |            |
|----------------|----------------------------------------------------------------------------------------|--|------------|
| <b>ANNEX C</b> | <b>PROCEDURE OF 7.3.3 PROPAGATION TEST BY METHODS OTHER THAN LASER</b>                 |  | <b>N/A</b> |
| C.1            | General                                                                                |  | N/A        |
| C.2            | Test conditions:                                                                       |  | N/A        |
|                | – The battery fully charged according to the manufacturer recommended conditions ..... |  | —          |
|                | – Target cell forced into thermal runaway .....                                        |  | —          |

| IEC 62619 |                                                                                                                                                                                                                          |                 |         |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause    | Requirement + Test                                                                                                                                                                                                       | Result - Remark | Verdict |
|           | – A specially prepared sample (e.g. a heater or a hole for nail penetration provided) used for ease of testing..... :                                                                                                    |                 | —       |
| C.3       | Method used for initiating the thermal runaway.<br>1) Heater (Heater, Burner, Laser, Inductive heating<br>2) Overcharge<br>3) Nail penetration of the cell<br>4) Combination of above methods<br>5) Other methods..... : |                 | —       |

| ANNEX D | PACKAGING AND TRANSPORT                                                                                                                                                                  | P |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|         | The materials and pack design chosen in a way as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants | P |
|         | Regulations concerning international transport of secondary lithium batteries                                                                                                            | P |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| 5.1                                            | TABLE: Critical components information             |                                   |                                          |                                       |                                                                         | P |
|------------------------------------------------|----------------------------------------------------|-----------------------------------|------------------------------------------|---------------------------------------|-------------------------------------------------------------------------|---|
| Object / part No.                              | Manufacturer/ trademark                            | Type / model                      | Technical data                           | Standard                              | Mark(s) of conformity <sup>1)</sup>                                     |   |
| Battery module                                 |                                                    |                                   |                                          |                                       |                                                                         |   |
| Cell                                           | CORNEX NEW ENERGY CO., LTD.                        | PF173-314A                        | 3,2 V, 314 Ah                            | IEC 62619: 2022<br>EN IEC 62619: 2022 | TÜV Rheinland<br>(CB Cert. No.: JPTUV-156588, Report No.: CN23BTKL 001) |   |
| Metallic enclosure                             | Anhui Debo Technology Co., Ltd.                    | DB-314-YL-SPCC                    | SPCC, Min. thickness: 1,5 mm             | --                                    | --                                                                      |   |
| Vent                                           | CHIKU                                              | RAM-M40*1.5-12-FSFB-MG-PM-67      | Pressure: 4 kPa ±1 kPa                   | --                                    | --                                                                      |   |
| Positive connector                             | Shanghai Futronics Electronic Technology Co., Ltd. | FSE80180P-50A4B<br>FSE20180P-M8AB | 250 A, 1500 Vdc                          | PPP 51090B                            | TÜV SÜD<br>(Z2 123935 0004 Rev.00)                                      |   |
| Negative connector                             | Shanghai Futronics Electronic Technology Co., Ltd. | FSE80180Q-50B4B<br>FSE20180Q-M8BB | 250 A, 1500 Vdc                          | PPP 51090B                            | TÜV SÜD<br>(Z2 123935 0004 Rev.00)                                      |   |
| MSD                                            | General Connectivity System Co., Ltd.              | AMSDP1<br>AMSDRRS1                | 450 A, 1500 Vdc                          | UL 4128                               | UL<br>(E527614)                                                         |   |
| Fuse                                           | COOPER XI'AN FUSEGEAR CO LTD                       | ESP2D-400                         | 400 A, 250 Vdc                           | UL 248-1<br>UL 248-14                 | UL<br>(E258171)                                                         |   |
| Insulated column                               | BMC CHINA CO LTD                                   | FTI400-1                          | UP, V-0, Min. thickness: 1,5 mm, 130 °C  | UL 94<br>UL 746B                      | UL<br>(E253513)                                                         |   |
| Plastic upper cover                            | Hunan Dobesty Optical Material Co Ltd              | DB98KM                            | PC, VTM-0, Min. thickness: 0,2 mm, 80 °C | UL 94<br>UL 746B                      | UL<br>(E524866)                                                         |   |
| Heat shrinkable tubing for metal packing strap | SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD      | RSFR-H                            | 600 V, 125 °C                            | UL 224                                | UL<br>(E203950)                                                         |   |

| IEC 62619                            |                                                            |                                 |                                                  |                  |              |
|--------------------------------------|------------------------------------------------------------|---------------------------------|--------------------------------------------------|------------------|--------------|
| Clause                               | Requirement + Test                                         |                                 | Result - Remark                                  |                  | Verdict      |
| Heat shrinkable tubing for busbars   | SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD              | RSFR                            | 600 V, 125 °C                                    | UL 224           | UL (E203950) |
| Silicone sealing foam                | JIANGSU KOMPA NEW MATERIAL CO., LTD.                       | KB104FU@                        | -40 °C - 90 °C                                   | UL 157           | UL (MH66775) |
| Thermal conductive silicone          | GUANGZHOU BAIYUN TECHNOLOGY CO., LTD.                      | SMG533                          | Silicone RTV, HB, Min. thickness: 2,0 mm, 105 °C | UL 94<br>UL 746B | UL (E252101) |
| CCS-plastic                          | SHENZHEN TEESUN TECHNOLOGY CO., LTD.                       | CL8811                          | PC, V-0, Min. thickness: 0,25 mm, 80 °C          | UL 94<br>UL 746B | UL (E329660) |
| CCS-NTC                              | Suzhou Huaidian Jingchuang Electronic Technology Co., Ltd. | HA103X                          | Resistance at 25 °C: 10 k ohm<br>Tmoa: 125 °C    | UL 1434          | UL (E540774) |
| Temperature signal acquisition wires | ZHEJIANG CHENGBAO WIRE & CABLE CO LTD                      | 4413                            | 24 AWG, 150 °C, 300 Vac                          | UL 758           | UL (E315651) |
| Voltage signal acquisition wires     | ZHEJIANG CHENGBAO WIRE & CABLE CO LTD                      | 1332                            | 20 AWG, 200 °C, 300 Vac                          | UL 758           | UL (E315651) |
| Grounding wires                      | Suzhou Liyueke Electronic Technology Co Ltd                | 1015                            | 10 AWG, 105 °C, 600 Vac                          | UL 758           | UL (E476385) |
| BMU board                            | Hangzhou Xieneng Technology Co., Ltd.                      | BMU-B31-52-504-A00-113-7A00-001 | --                                               | --               | --           |
| - Plastic enclosure                  | FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV                | AC310(+)                        | PC/ABS, V-0, Min. thickness: 2,3 mm, 85 °C       | UL 94<br>UL 746B | UL (E162823) |
| - PCB                                | Xin Man Da Circuit (Shenzhen) Co Ltd                       | 2                               | V-0, 130 °C                                      | UL 796           | UL (E308011) |

| IEC 62619                        |                                                        |                     |                                                                               |                       |                 |
|----------------------------------|--------------------------------------------------------|---------------------|-------------------------------------------------------------------------------|-----------------------|-----------------|
| Clause                           | Requirement + Test                                     |                     | Result - Remark                                                               |                       | Verdict         |
| - PCB coating material           | Yantai Seayu New Materials Co Ltd                      | UV3342LV            | V-0, Coating min. thickness: 40 µm                                            | UL 94<br>UL 746E      | UL<br>(E479913) |
| - AFE (U4)                       | Analog Devices Inc.                                    | ADES1831CC SZ       | Supply voltage: 11 V - 80 V<br>Operating temperature range: -40 °C - 105 °C   | --                    | --              |
| - MCU (U6)                       | NATION                                                 | N32L406CBL7         | Supply voltage: 1,8 V - 3,6 V<br>Operating temperature range: -40 °C - 105 °C | --                    | --              |
| - RS485 transceiver (U1, U2)     | Shanghai Belling Co., Ltd.                             | BL3085(I47)         | Supply voltage: 3,3 V - 5,5 V<br>Tvj: -40 °C - 85 °C                          | --                    | --              |
| - Fuse (Fu1, Fu4-Fu16, RB1, FP1) | NANJING SART SCIENCE & TECHNOLOGY DEVELOPMENT CO LTD   | S0603-S-5.0A        | 32 V, 5,0 A                                                                   | UL 248-1<br>UL 248-14 | UL<br>(E319512) |
| - NTC (R84)                      | ShenZhen KangTaiSongLong Electronics Technology Co Ltd | EKT0805N104 F4200FB | Resistance at 25 °C: 100 k ohm<br>Tmoa: 125 °C                                | UL 1434               | UL<br>(E531237) |
| - Transformer (TJ1, TJ2)         | JANSUM ELECTRONICS DONGGUAN CO., LTD.                  | TM0612SR            | Working voltage: 1500 Vdc                                                     | UL 62368-1            | UL<br>(E537506) |
| - DC-DC IC (UP1)                 | JOULWATT                                               | JW5018SOTB #TRPBF   | V <sub>in</sub> : 4,7 V - 40 V<br>Operating temperature range: -40 °C - 125°C | --                    | --              |
| - Connector (JV2)                | JIANGSU YXT PRECISION ELECTRONICS CO., LTD.            | WTB41-B140HW1-001   | 100 V, 3 A, V-0, -40 °C - 125°C                                               | UL 1977               | UL<br>(E532919) |
| - Connector (JV3)                | JIANGSU YXT PRECISION ELECTRONICS CO., LTD.            | WTB41-B136HW1-001   | 100 V, 3 A, V-0, -40 °C - 125°C                                               | UL 1977               | UL<br>(E532919) |
| - Connector (JV4)                | JIANGSU YXT PRECISION ELECTRONICS CO., LTD.            | WTB41-DB140HZ1-001  | 100 V, 3 A, V-0, -40 °C - 125°C                                               | UL 1977               | UL<br>(E532919) |

| IEC 62619                                   |                                                      |                                             |                                                          |                            |                                  |
|---------------------------------------------|------------------------------------------------------|---------------------------------------------|----------------------------------------------------------|----------------------------|----------------------------------|
| Clause                                      | Requirement + Test                                   |                                             | Result - Remark                                          |                            | Verdict                          |
| - Connector (JV5)                           | JIANGSU YXT PRECISION ELECTRONICS CO., LTD.          | WTB41-DB136HZ1-001                          | 100 V, 3 A, V-0, -40 °C - 125°C                          | UL 1977                    | UL (E532919)                     |
| High voltage control box                    |                                                      |                                             |                                                          |                            |                                  |
| Metallic enclosure                          | Hangzhou Cabinet Intelligent Manufacturing Co., Ltd. | PDU-E15-C250-43W                            | SGCC, Min. thickness: 1,5 mm                             | --                         | --                               |
| Positive connector                          | Phoenix Contact Asia-Pacific (Nanjing) Co., Ltd.     | ES-BPC-C 50-70 OG<br>ES-FT-BPC-B/S 35-70 OG | 250 A, 1500 Vdc                                          | PPP 51090A                 | TÜV SÜD (Z2 077026 0023 Rev.03)  |
| Negative connector                          | Phoenix Contact Asia-Pacific (Nanjing) Co., Ltd.     | ES-BPC-C 50-70 BK<br>ES-FT-BPC-B/S 35-70 BK | 250 A, 1500 Vdc                                          | PPP 51090A                 | TÜV SÜD (Z2 077026 0023 Rev.03)  |
| 220 V power supply input & output connector | AMPHENOL SINE SYSTEMS CORP                           | AT06-3S-MM01<br>AT04-3P-PM05                | 13 A, 1500 Vac, -55 °C - 125°C                           | UL 1977                    | UL (E336860)                     |
| Button switch                               | YUEQING DAHE ELECTRIC CO LTD                         | HBDGQ22F-11Z                                | Ui: 250 V, Ith: 5 A                                      | UL 61058-1                 | UL (E481341)                     |
| Silicone sealing foam                       | Zhejiang liniz Amperex Technology Co Ltd             | LZ302Z                                      | -40 °C - 135 °C                                          | UL 157                     | UL (MH66361)                     |
| Epoxy plate                                 | HANGZHOU BLUESUN ELECTRONIC MATERIALS CO LTD         | EPGC-FR4                                    | Epoxy, V-0, Min. thickness: 3 mm, 90 °C                  | UL 94<br>UL 746B           | UL (E517160)                     |
| DC moulded case circuit breaker             | Shanghai Liangxin Electrical Co., Ltd.               | NDM3Z-250V                                  | 250 A, 1500 Vdc, Icu: 20 kA, Uimp: 12 kV                 | EN 60947-2:2017/A1:2020    | TÜV SÜD (N8A 083574 0243 Rev.02) |
| Heat shrinkable tubing                      | SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD        | WTT tube                                    | 600 V, 125 °C                                            | UL 224                     | UL (E203950)                     |
| Fuse                                        | COOPER XI'AN FUSEGEAR CO LTD                         | ESS2H-350                                   | 350 A, 1500 Vdc<br>IR: 250 kA                            | UL 248-1<br>UL 248-14      | UL (E258171)                     |
| Total positive & negative contactor         | Join Electric (Shanghai) Co., Ltd.                   | JEB350A-24S                                 | Coil voltage: 24 Vdc<br>Contact current: 1500 Vdc, 350 A | UL 60947-1<br>UL 60947-4-1 | UL (E514589)                     |

| IEC 62619                                     |                                                              |                           |                                                                                        |                            |                 |
|-----------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------|----------------------------|-----------------|
| Clause                                        | Requirement + Test                                           |                           | Result - Remark                                                                        |                            | Verdict         |
| Pre-charge contactor                          | XIAMEN HONGFA ELECTROACOUSTIC CO LTD                         | HFE82P-20 1500-24-H-Q2J-1 | Coil voltage: 24 Vdc<br>Contact current: 1500 Vdc, 20 A                                | UL 60947-1<br>UL 60947-4-1 | UL<br>(E133481) |
| Pre-charge resistor                           | Shanghai KRAH Electronics Co., Ltd.                          | RXLG-H-F-200W 5R0J        | 200 W, 5 $\Omega$                                                                      | --                         | --              |
| AC-DC power supply                            | DELTA ELECTRONICS INC                                        | PMT-24V150W2BA            | Input: 100 - 120 Vac, 3 A<br>200 - 240 Vac, 1,7 A<br>50/60 Hz<br>Output: 24 Vdc 6,25 A | UL 62368-1                 | UL<br>(E131881) |
| Hall current sensor                           | Sinomags Technology Co., Ltd.                                | STB-CAB500M-52            | 500 A                                                                                  | UL 508                     | UL<br>(E507664) |
| Shunt                                         | Zhejiang Dongya Electronics Co., Ltd.                        | SH-T                      | 400 A                                                                                  | --                         | --              |
| Relay                                         | Omron Corp                                                   | MY2N-GS-R 24VDC           | Coil voltage: 24 Vdc<br>Contact load: 30 Vdc, 10 A or 250 Vac, 10 A                    | UL 508                     | UL<br>(E41515)  |
| Relay socket                                  | Omron Corp                                                   | PYFZ-08-E                 | 10 A, 250 Vac                                                                          | UL 508                     | UL<br>(E87929)  |
| Insulated column                              | Yueqing Tianhua Resin Factory                                | DMC-1                     | UP, V-0, Min. thickness: 1,5 mm, 130 °C                                                | UL 94<br>UL 746B           | UL<br>(E535706) |
| 220 V input & output main control supply wire | JIANGYIN HAOCHENG ELECTRIC APPLIANCE WIRE & CABLE MFG CO LTD | 1332                      | 20 AWG, 200 °C, 300 Vac                                                                | UL 758                     | UL<br>(E227587) |
| Alt.                                          | JIANGYIN HAOCHENG ELECTRIC APPLIANCE WIRE & CABLE MFG CO LTD | 1332                      | 18 AWG, 200 °C, 300 Vac                                                                | UL 758                     | UL<br>(E227587) |

| IEC 62619                         |                                                              |                     |                                                                              |                  |              |
|-----------------------------------|--------------------------------------------------------------|---------------------|------------------------------------------------------------------------------|------------------|--------------|
| Clause                            | Requirement + Test                                           |                     | Result - Remark                                                              |                  | Verdict      |
| AC-DC power supply wire           | JIANGYIN HAOCHENG ELECTRIC APPLIANCE WIRE & CABLE MFG CO LTD | 1332                | 18 AWG, 200 °C, 300 Vac                                                      | UL 758           | UL (E227587) |
| Pre-charge wire                   | Jiangsu Qiaopu Wire&Cable Co Ltd                             | 3820                | 11 AWG, 125 °C, 1000 Vac                                                     | UL 758           | UL (E509062) |
| Grounding wire                    | JIANGYIN HAOCHENG ELECTRIC APPLIANCE WIRE & CABLE MFG CO LTD | 1332                | 20 AWG, 200 °C, 300 Vac                                                      | UL 758           | UL (E227587) |
| Communication wire                | Jiangsu Qiaopu Wire&Cable Co Ltd                             | 3266                | 20 AWG, 125 °C, 300 Vac                                                      | UL 758           | UL (E509062) |
| Signal acquisition wire           | JIANGYIN HAOCHENG ELECTRIC APPLIANCE WIRE & CABLE MFG CO LTD | 3239                | 20 AWG, 200 °C, 60 kVdc                                                      | UL 758           | UL (E227587) |
| BCU control board                 | Hangzhou Xieneng Technology Co., Ltd.                        | BCU-B30-201-003-001 | --                                                                           | --               | --           |
| - Plastic enclosure               | FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV                  | AC610G              | PC/ABS, V-0, 60 °C, Min. thickness: 1,5 mm                                   | UL 94<br>UL 746B | UL (E162823) |
| - PCB                             | Xin Man Da Circuit (Shenzhen) Co Ltd                         | 2                   | V-0, 130 °C                                                                  | UL 796           | UL (E308011) |
| - PCB coating material            | Yantai Seayu New Materials Co Ltd                            | UV3342LV            | V-0, Min. thickness: 40 µm                                                   | UL 94<br>UL 746E | UL (E479913) |
| - Connector (J3, J4, J5, J6)      | CHANGJIANG CONNECTORS CO LTD                                 | C4201               | V-2, 600 V, 9 A, - 40 °C - 105 °C                                            | UL 1977          | UL (E326732) |
| - Battery cell controller IC (U2) | NXP                                                          | MC33772BSP 2AE      | Supply voltage: 6,0 V - 30 V<br>Operating temperature range: -40 °C - 150 °C | --               | --           |

| IEC 62619                                      |                                                  |                   |                                                                                                               |                  |              |
|------------------------------------------------|--------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|------------------|--------------|
| Clause                                         | Requirement + Test                               |                   | Result - Remark                                                                                               |                  | Verdict      |
| - MCU (U6)                                     | STMicroelectronics                               | STM32F407ZGT6     | Supply voltage: 1,8 V - 3,6 V<br>Operating temperature range: -40 °C - 125 °C                                 | --               | --           |
| - Digital isolator (UN2, UN4, UN8, UN11, UN12) | Shanghai Chipanalog Microelectronics Co Ltd      | CA-IS3722HS       | Isolation voltage: 3750 Vrms                                                                                  | UL 1577          | UL (E511334) |
| - RS485 transceiver (UN6, UN7, UN9)            | MAXIM                                            | MAX485EESA        | Supply voltage: 3 V - 5,5 V<br>Tvj: -40 °C - 85 °C                                                            | --               | --           |
| - CAN transceiver (UN3, UN5)                   | 3PEAK                                            | TPT1051V-SO1R     | Supply voltage: 4,5 V - 5,5 V<br>Tvj: -40 °C - 150 °C                                                         | --               | --           |
| - Optical isolator (U3, U4, U5, U7)            | TOSHIBA ELECTRONIC DEVICES & STORAGE CORPORATION | TLP293(GB_T PL.E) | Isolation voltage: 3750 Vrms                                                                                  | UL 1577          | UL (E67349)  |
| - Transformer (L1, L2, L3, L4, L5)             | Guangzhou ZHIYUAN Electronics Co., Ltd.          | FG0505-1          | Supply voltage: 4,5 V - 5,5 V<br>Isolation voltage: 3000 Vrms<br>Operating temperature range: -40 °C - 125 °C | --               | --           |
| -- Case                                        | WAH HONG INDUSTRIAL CORP                         | WH-9100(G1)(G2)   | DAP, V-0, Min. thickness: 0,37 mm, 130 °C                                                                     | UL 94<br>UL 746B | UL (E150608) |
| -- Magnet wire                                 | GUANGDONG SUNTEK WIRE CO., LTD.                  | QPN180            | MW83-C, 180 °C                                                                                                | UL 1446          | UL (E234867) |
| -- Silicone                                    | Dow Silicones Corporation                        | 1-2577 #@         | V-0, Coating min. thickness: 102 µm, 130 °C                                                                   | UL 94<br>UL 746E | UL (E81611)  |
| - Transformer (TR1, TR3)                       | U&T                                              | UTA06C06          | Working voltage: 1000 Vdc<br>Operating temperature range: -40 °C - 125 °C                                     | --               | --           |
| -- Case                                        | WAH HONG INDUSTRIAL CORP                         | WH-9100(G1)(G2)   | DAP, V-0, Min. thickness: 0,37 mm, 130 °C                                                                     | UL 94<br>UL 746B | UL (E150608) |

| IEC 62619                                                                                                                                                 |                                                    |                  |                                                                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------|------------------------------------------------------------------|------------------|--------------|
| Clause                                                                                                                                                    | Requirement + Test                                 |                  | Result - Remark                                                  |                  | Verdict      |
| -- Magnet wire                                                                                                                                            | GUANGDONG SUNTEK WIRE CO., LTD.                    | FIW5 180         | MW85-C, 180 °C                                                   | UL 1446          | UL (E234867) |
| -- Silicone                                                                                                                                               | Dow Silicones Corporation                          | 1-2577 #@        | V-0, Coating min. thickness: 212 µm, 130 °C                      | UL 94<br>UL 746E | UL (E81611)  |
| - Insulation IC (TR5)                                                                                                                                     | SHENZHEN SINODRIVE ELECTRIC TECHNOLOGIES CO., LTD. | N12103S          | Working voltage: 1500 Vdc                                        | UL 62368-1       | UL (E523028) |
| - Optical isolator (UH1, UH2, UH3)                                                                                                                        | Xiamen Hualian Semiconductor Technology Co., Ltd.  | HSSR-61A0D-2     | Isolation voltage: 5000 Vrms                                     | UL 1577          | UL (E178703) |
| - Resistance (R14, R15, R16, R33, R35, R36)                                                                                                               | YAGEO Corporation                                  | RC1206FR-071ML   | 1 MΩ ± 1%, 200 V, Operating temperature range: -55 °C - 155 °C   | --               | --           |
| - Resistance (R17, R18, R19, R20, R21, R22, R23, R42, R43, R44, R45, R46, R49, R53, R56, R57, R58, R59, R60, R61, R62, R63, R66, R67)                     | YAGEO Corporation                                  | RC1206FR-072ML   | 2 MΩ ± 1%, 200 V, Operating temperature range: -55 °C - 155 °C   | --               | --           |
| - Resistance (R101, R105, R108, R109, R110, R111, R112, R114, R118, R120, R121, R123, R124, R126, R127)                                                   | Uniohm Corporation                                 | RC1206FR-07100KL | 100 kΩ ± 1%, 200 V, Operating temperature range: -55 °C - 155 °C | --               | --           |
| - Resistance (R72, R73, R74, R75, R76, R77, R80, R82, R83, R92, R129, R130, R131, R132, R133, R134, R135, R136, R148, R149, R150, R151, R152, R153, R154) | YAGEO Corporation                                  | RC1206FR-07300KL | 300 kΩ ± 1%, 200 V, Operating temperature range: -55 °C - 155 °C | --               | --           |

| IEC 62619                                                                   |                                    |                   |                                                                                                    |                       |              |
|-----------------------------------------------------------------------------|------------------------------------|-------------------|----------------------------------------------------------------------------------------------------|-----------------------|--------------|
| Clause                                                                      | Requirement + Test                 |                   | Result - Remark                                                                                    |                       | Verdict      |
| - Metal Oxide Varistors (RVPW1)                                             | BESTBRIGHT ELECTRONICS CO LTD      | 470KD10J          | Operating voltage range ( $V_{1mA}$ ): 18 - 1100 V<br>Operating temperature range: -40 °C - 105 °C | UL 1449               | UL (E327997) |
| - Fuse (FPW1)                                                               | LITTELFUSE INC                     | 0458010.DR        | 10 A, 63 V                                                                                         | UL 248-1<br>UL 248-14 | UL (E10480)  |
| - LDO voltage regulator (UP1)                                               | MAXLINEAR                          | SPX3819M5-L-3-3   | Input: 2,5 V - 16 V<br>Output: 3,3 V<br>Operating temperature range: -40 °C - 125 °C               | --                    | --           |
| - DC-DC IC (U9)                                                             | JOULWATT                           | JW5121ESOP #TRPBF | Input: 4,5 V - 60 V<br>Output: 2 A<br>Operating temperature range: -40 °C - 125 °C                 | --                    | --           |
| - PMIC (UP4)                                                                | JOULWATT                           | JW5018SOTB #TRPBF | Input: 4,7 V - 40 V<br>Operating temperature range: -40 °C - 125 °C                                | --                    | --           |
| Battery system                                                              |                                    |                   |                                                                                                    |                       |              |
| Power wire                                                                  | WUXI XINHONGYE WIRE & CABLE CO LTD | 3932              | 1/0 AWG, 125 °C, 2000 Vac                                                                          | UL 758                | UL (E248566) |
| Communication wire                                                          | Shenzhen Ruicheng Dianye Co Ltd    | 2464              | 22 AWG, 80 °C, 300 Vac                                                                             | UL 758                | UL (E318852) |
| Supplementary information:                                                  |                                    |                   |                                                                                                    |                       |              |
| 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. |                                    |                   |                                                                                                    |                       |              |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| 7.2.1                                                                                                                                                                                                                                                                    | TABLE: External short-circuit test (cell or cell block) |                             |                            |                                       |         | N/A |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------|----------------------------|---------------------------------------|---------|-----|
| Sample No.                                                                                                                                                                                                                                                               | Ambient (at 25°C ± 5°C)                                 | OCV at start of test (V dc) | Resistance of Circuit (mΩ) | Maximum Case Temperature Rise ΔT (°C) | Results |     |
| --                                                                                                                                                                                                                                                                       | --                                                      | --                          | --                         | --                                    | --      |     |
| <b>Supplementary information:</b><br>A – No fire or Explosion<br>B – Fire<br>C – Explosion<br>D – The test was completed after 6 h<br>E – The test was completed after the cell casing cooled to 20% of the maximum temperature rise<br>F – Other (Please explain): ____ |                                                         |                             |                            |                                       |         |     |

| 7.2.5                                                                                                                                                                                                                                                                         | TABLE: Overcharge test (cell or cell block) |                           |                                       |                                          |                                  | N/A     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------|---------------------------------------|------------------------------------------|----------------------------------|---------|
| Sample No.                                                                                                                                                                                                                                                                    | OCV at start of test (V dc)                 | OCV at end of test (V dc) | Measured Maximum Charging Current (A) | Measured Maximum Charging Voltage (V dc) | Max. Cell Case Temperature, (°C) | Results |
| --                                                                                                                                                                                                                                                                            | --                                          | --                        | --                                    | --                                       | --                               | --      |
| <b>Supplementary information:</b><br>Results:<br>A – No fire or Explosion<br>B – Fire<br>C – Explosion<br>D – Test concluded when temperature reached a steady state condition<br>E – Test concluded when temperature returned to ambient<br>F – Other (Please explain): ____ |                                             |                           |                                       |                                          |                                  |         |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| <b>7.2.6</b>                                                                                                                               | <b>TABLE: Forced discharge test (cell or cell block)</b> |                       |                                             |                                                  | <b>N/A</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------|---------------------------------------------|--------------------------------------------------|------------|
| Sample No.                                                                                                                                 | OCV before applying reverse charge, (V dc)               | Target Voltage (V dc) | Measured Reverse Charge Current $I_t$ , (A) | Total Time for Reversed Charge Application (min) | Results    |
| --                                                                                                                                         | --                                                       | --                    | --                                          | --                                               | --         |
| <b>Supplementary information:</b><br>Results:<br>A – No fire or Explosion<br>B – Fire<br>C – Explosion<br>D – Other (Please explain): ____ |                                                          |                       |                                             |                                                  |            |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

|            |                                           |                                 |                               |         |     |
|------------|-------------------------------------------|---------------------------------|-------------------------------|---------|-----|
| 7.3.2      | TABLE: Internal short-circuit test (cell) |                                 |                               |         | N/A |
| Sample No. | OCV at start of test, (V dc)              | Particle location <sup>1)</sup> | Maximum applied pressure, (N) | Results |     |
| --         | --                                        | --                              | --                            | --      |     |

**Supplementary information:**

<sup>1)</sup> Identify one of the following:

1: Nickel particle inserted between positive and negative (active material) coated area.

2: Nickel particle inserted between positive aluminium foil and negative active material coated area.

**Results:**

A – No fire or explosion

B – Fire

C – Explosion

D – Test concluded when 50 mV voltage drop occurred prior to reaching force limit

E – Test concluded when 800/400 N pressure was reached and 50 mV voltage drop was not achieved

F – Test was concluded when fire or explosion occurred

G – Other (Please explain): \_\_\_\_

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| 7.3.3                                                                                                                                                                                                                          | TABLE: Propagation test (battery system)  |                                        |                                     |                                            |         | N/A |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|-------------------------------------|--------------------------------------------|---------|-----|
| Sample No.                                                                                                                                                                                                                     | OCV of Battery System Before Test, (V dc) | OCV of Target Cell Before Test, (V dc) | Maximum Cell Case Temperature, (°C) | Maximum DUT Enclosure Temperature, (°C)    | Results |     |
| --                                                                                                                                                                                                                             | --                                        | --                                     | --                                  | --                                         | --      |     |
| Method of cell failure <sup>1)</sup>                                                                                                                                                                                           |                                           | Location of target cell                |                                     | Area for fire protection (m <sup>2</sup> ) |         |     |
| --                                                                                                                                                                                                                             |                                           | --                                     |                                     | --                                         |         |     |
| <b>Supplementary information:</b>                                                                                                                                                                                              |                                           |                                        |                                     |                                            |         |     |
| <b>1)</b> Cell can be failed through laser exposure, applied heat, overcharge, nail penetration or combinations of these failures or other acceptable methods. See supporting documentation for details on cell failure method |                                           |                                        |                                     |                                            |         |     |
| <b>2)</b> If the battery system has no outer covering, the manufacturer is required to specify the area for fire protection.                                                                                                   |                                           |                                        |                                     |                                            |         |     |
| Results:                                                                                                                                                                                                                       |                                           |                                        |                                     |                                            |         |     |
| A – No fire external to DUT enclosure or area for fire protection or no battery case rupture                                                                                                                                   |                                           |                                        |                                     |                                            |         |     |
| B – Fire external to DUT enclosure or area for fire protection                                                                                                                                                                 |                                           |                                        |                                     |                                            |         |     |
| C – Explosion                                                                                                                                                                                                                  |                                           |                                        |                                     |                                            |         |     |
| D – Battery case rupture                                                                                                                                                                                                       |                                           |                                        |                                     |                                            |         |     |
| E – Other (Please explain): __                                                                                                                                                                                                 |                                           |                                        |                                     |                                            |         |     |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

|                                                                                                                                                                                                         |                                                       |                               |                                           |                                          |         |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------|-------------------------------------------|------------------------------------------|---------|---|
| 8.2.2                                                                                                                                                                                                   | TABLE: Overcharge control of voltage (battery system) |                               |                                           |                                          |         | P |
| Sample No.                                                                                                                                                                                              | OCV at start of test for Cell/Cell Blocks, (V dc)     | Maximum Charging Current, (A) | Max. Charging Voltage, (V dc)             | Max. Voltage of Cell/Cell Blocks, (V dc) | Results |   |
| M1                                                                                                                                                                                                      | 2,947 to 2,972                                        | 157                           | 187,2                                     | 3,636                                    | A, D, F |   |
|                                                                                                                                                                                                         |                                                       |                               | Charge Voltage Applied Battery System: 1) |                                          |         |   |
|                                                                                                                                                                                                         |                                                       |                               | Whole                                     |                                          | Part    |   |
|                                                                                                                                                                                                         |                                                       |                               | 208,78 Vdc                                |                                          | --      |   |
| Supplementary information:                                                                                                                                                                              |                                                       |                               |                                           |                                          |         |   |
| 1) The exceeded voltage can be applied to only a part of the system such as the cell(s) in the battery system per Figure 6 of IEC 62619, if it is difficult to do it in using the whole battery system. |                                                       |                               |                                           |                                          |         |   |
| Results:                                                                                                                                                                                                |                                                       |                               |                                           |                                          |         |   |
| A – No Fire or Explosion                                                                                                                                                                                |                                                       |                               |                                           |                                          |         |   |
| B – Fire                                                                                                                                                                                                |                                                       |                               |                                           |                                          |         |   |
| C – Explosion                                                                                                                                                                                           |                                                       |                               |                                           |                                          |         |   |
| D – The voltage of the measured cells or cell blocks did not exceed the upper limit charging voltage                                                                                                    |                                                       |                               |                                           |                                          |         |   |
| E – The voltage of the measured cells or cell blocks did exceed the upper limit charging voltage                                                                                                        |                                                       |                               |                                           |                                          |         |   |
| F – All function of battery system did operate as intended during the test.                                                                                                                             |                                                       |                               |                                           |                                          |         |   |
| G – All function of battery system did not operate as intended during the test.                                                                                                                         |                                                       |                               |                                           |                                          |         |   |
| H – Other (Please explain): ____                                                                                                                                                                        |                                                       |                               |                                           |                                          |         |   |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| 8.2.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TABLE: Overcharge control of current (battery system) |                            |                               | P       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------|-------------------------------|---------|
| Sample No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | OCV at start of test, (V dc)                          | Max. Charging Current, (A) | Max. Charging Voltage, (V dc) | Results |
| M1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 152,771                                               | 188,4                      | 187,2                         | A, D, F |
| <b>Supplementary information:</b><br>Results:<br>A – No fire or Explosion<br>B – Fire<br>C – Explosion<br>D – Overcurrent sensing function of BMU did operate and then charging stopped<br>E – Overcurrent sensing function of BMU did not operate and then charging stopped<br>F – All function of battery system did operate as intended during the test.<br>G – All function of battery system did not operate as intended during the test.<br>H – Other (Please explain): ____ |                                                       |                            |                               |         |

|                                                                                   |                                             |                                            |                                         |   |
|-----------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------|-----------------------------------------|---|
| 8.2.4                                                                             | TABLE: Overheating control (battery system) |                                            |                                         | P |
| Model No.                                                                         | OCV at start (SOC 50%) of test, V dc        | Maximum Charging Current, A                | Measured Maximum Charging Voltage, V dc |   |
| M1                                                                                | 171,447                                     | 157                                        | 171,654                                 |   |
| Maximum Specified Temperature of Battery System, °C                               |                                             | Maximum Measured Cell Case Temperature, °C | Results                                 |   |
| 55                                                                                |                                             | 60                                         | A, D, F                                 |   |
| Supplementary information:                                                        |                                             |                                            |                                         |   |
| Results:                                                                          |                                             |                                            |                                         |   |
| A – No fire or Explosion                                                          |                                             |                                            |                                         |   |
| B – Fire                                                                          |                                             |                                            |                                         |   |
| C – Explosion                                                                     |                                             |                                            |                                         |   |
| D – Temperature sensing function of BMU did operate and then charging stopped     |                                             |                                            |                                         |   |
| E – Temperature sensing function of BMU did not operate and then charging stopped |                                             |                                            |                                         |   |
| F – All function of battery system did operate as intended during the test.       |                                             |                                            |                                         |   |
| G – All function of battery system did not operate as intended during the test.   |                                             |                                            |                                         |   |
| H – Other (Please explain): _____                                                 |                                             |                                            |                                         |   |

| IEC 62619 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement + Test | Result - Remark | Verdict |

| <b>9</b>                                                         | <b>TABLE: EMC</b> |                   |                            |                     | <b>N/A</b> |
|------------------------------------------------------------------|-------------------|-------------------|----------------------------|---------------------|------------|
| Standard used for EMC test:                                      |                   |                   | --                         |                     |            |
| Sample No.                                                       | EMC Test Item     | Battery Condition | EMC Test Level/ Parameters | Compliance Criteria | Results    |
| --                                                               | --                | --                | --                         | --                  | --         |
| <b>Supplementary information:</b> See EMC report AHM250400037101 |                   |                   |                            |                     |            |

- - - End of Report - - -

**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/418/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/418/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/418/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/365/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/313/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/261/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/209/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/156/D)



**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/104/D)



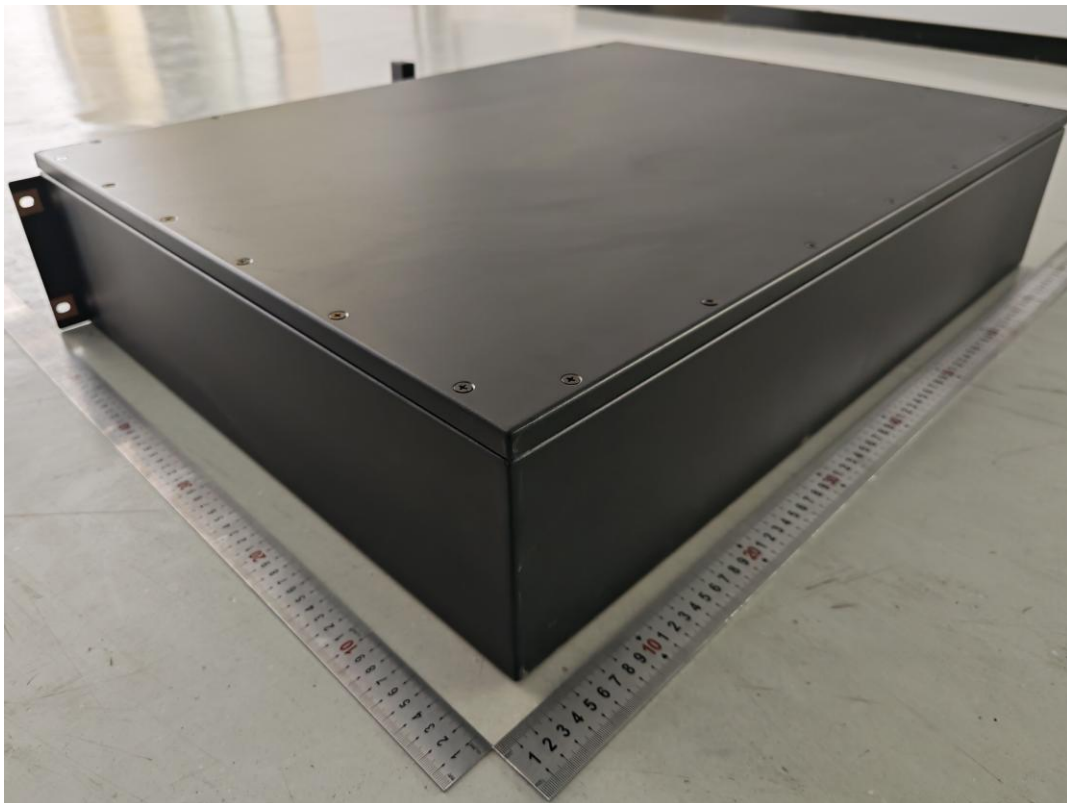
**Attachment 1 Photo documentation**

External view of battery system (Model: XC-CWC314/52/D)



**Attachment 1 Photo documentation**

External view of high voltage control box (Model: XC-PDU-E15-C250-33W)

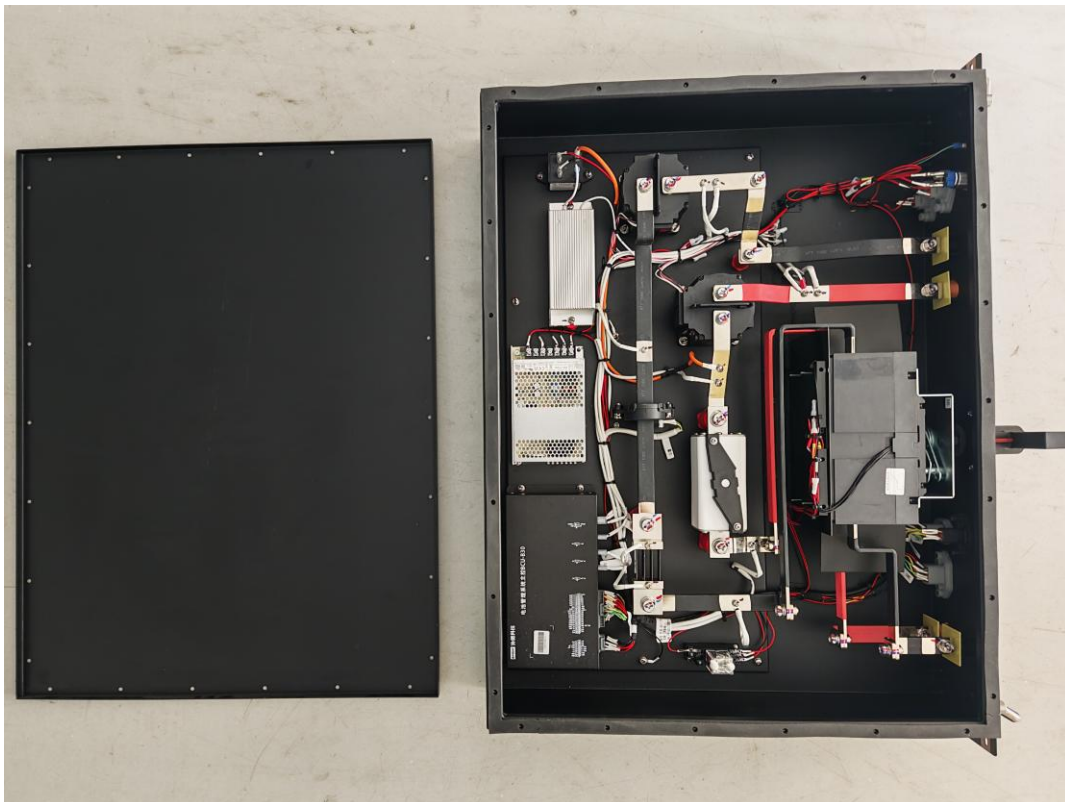


**Attachment 1 Photo documentation**

External view of high voltage control box (Model: XC-PDU-E15-C250-33W)

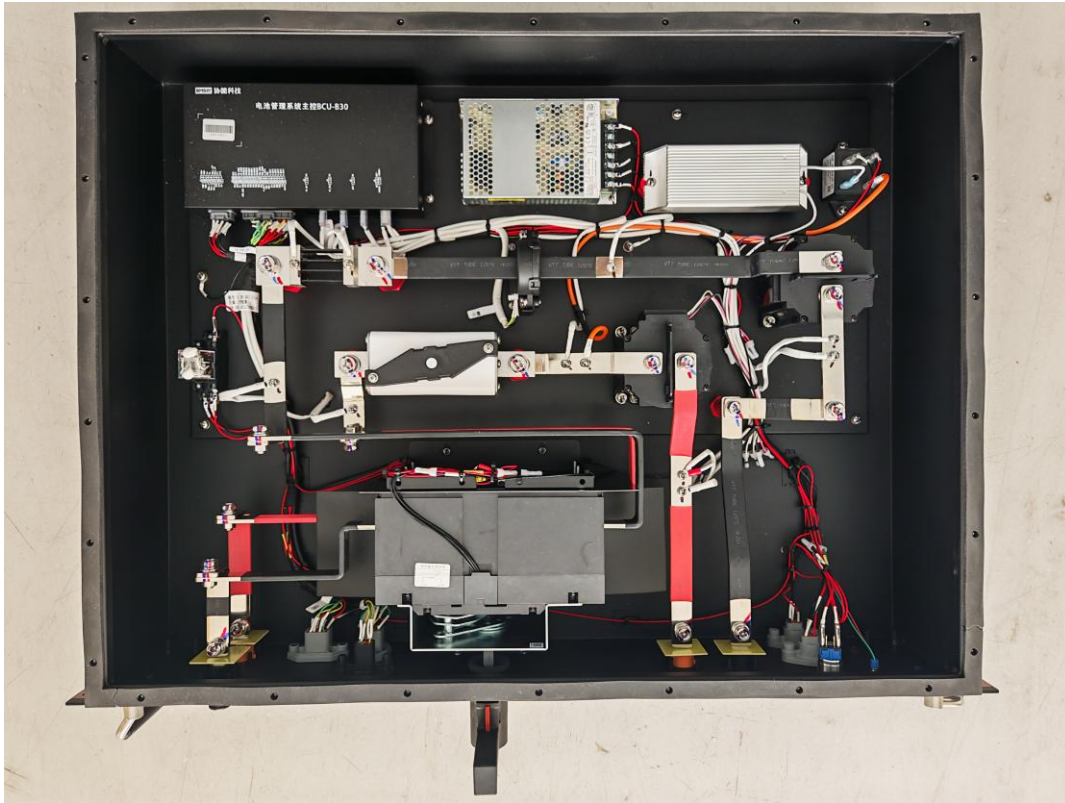


Internal view of high voltage control box (Model: XC-PDU-E15-C250-33W)



**Attachment 1 Photo documentation**

Internal view of high voltage control box (Model: XC-PDU-E15-C250-33W)

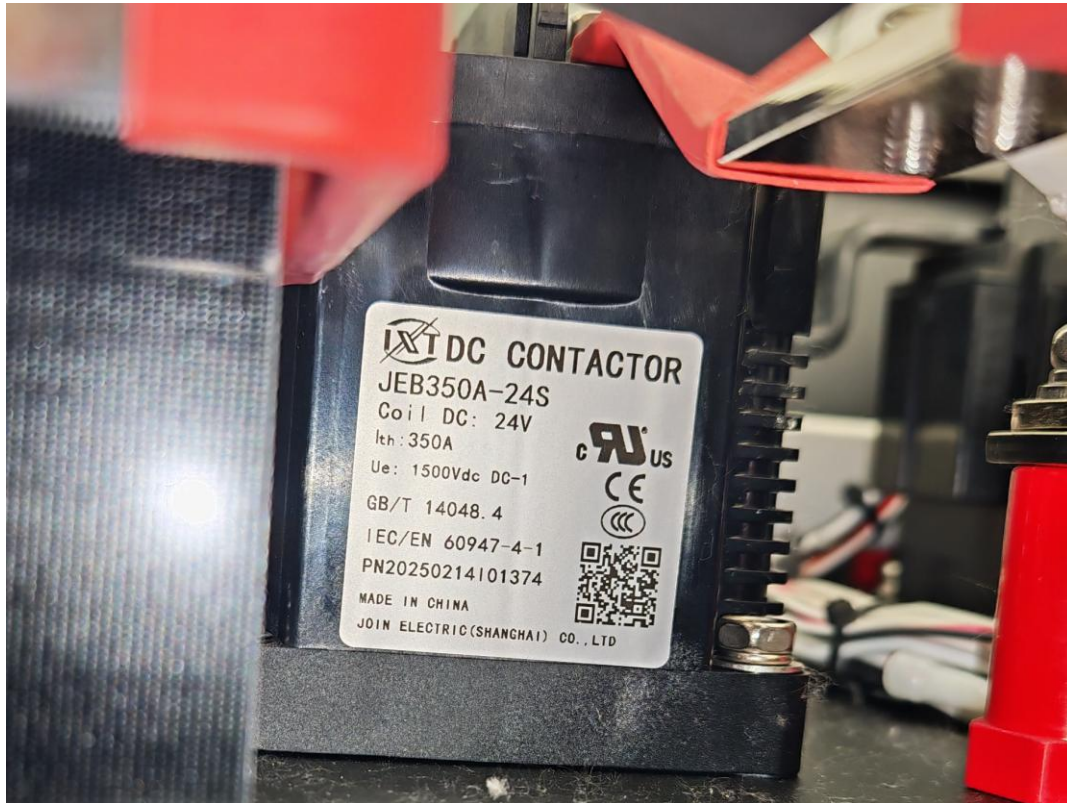


DC moulded case circuit breaker in high voltage control box (Model: NDM3Z-250V)



**Attachment 1 Photo documentation**

Total positive & negative contactor in high voltage control box (Model: JEB350A-24S)



Pre-charge contactor in high voltage control box (Model: HFE82P-20 1500-24-H-Q2J-1)

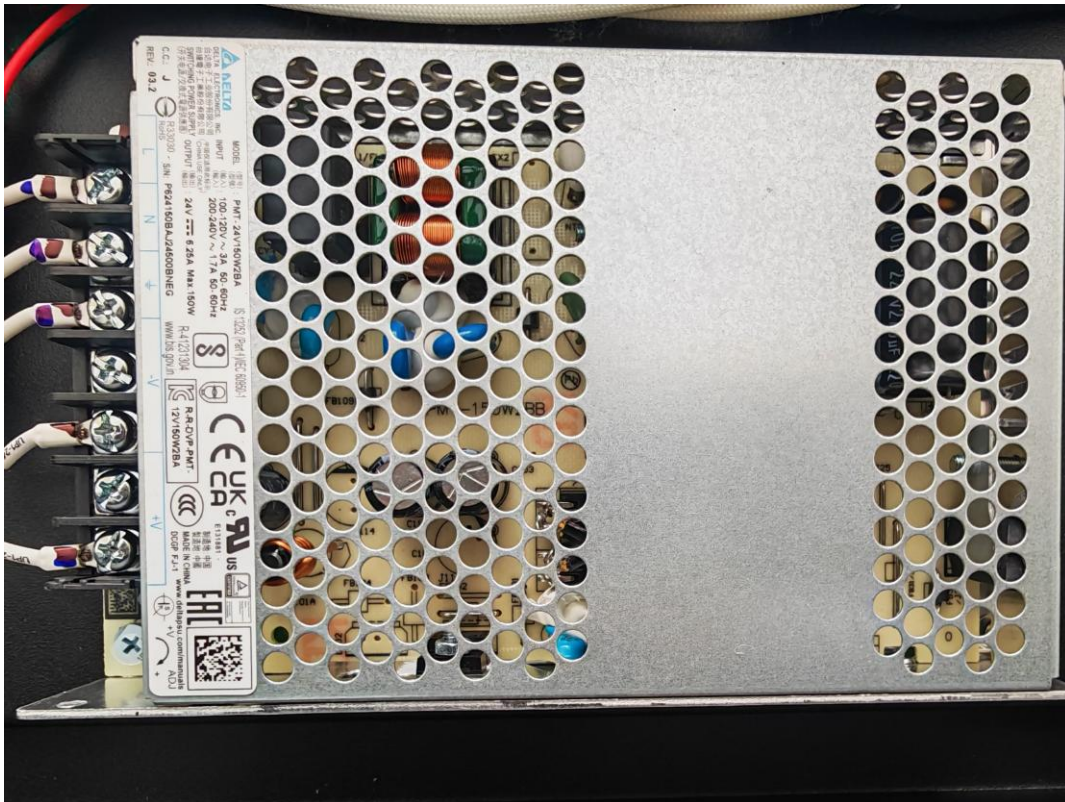


**Attachment 1 Photo documentation**

Pre-charge resistor in high voltage control box (Model: RXLG-H-F-200W 5R0 J)

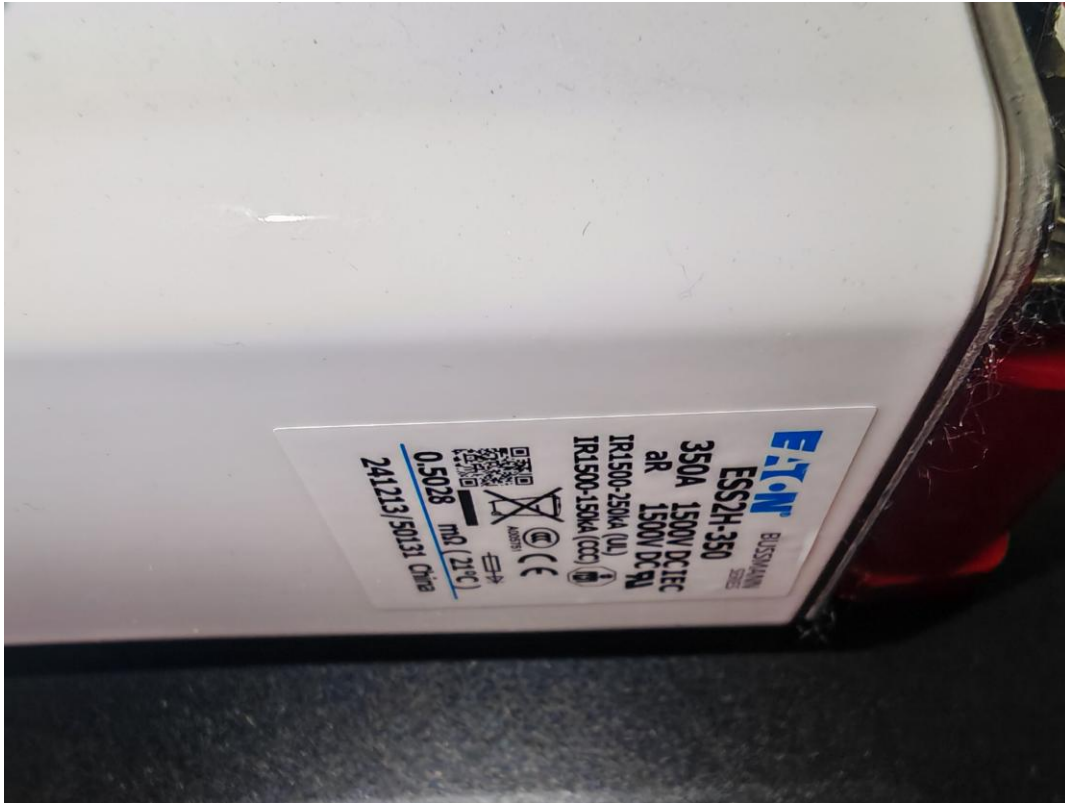


AC-DC power supply in high voltage control box (Model: PMT-24V150W2BA)

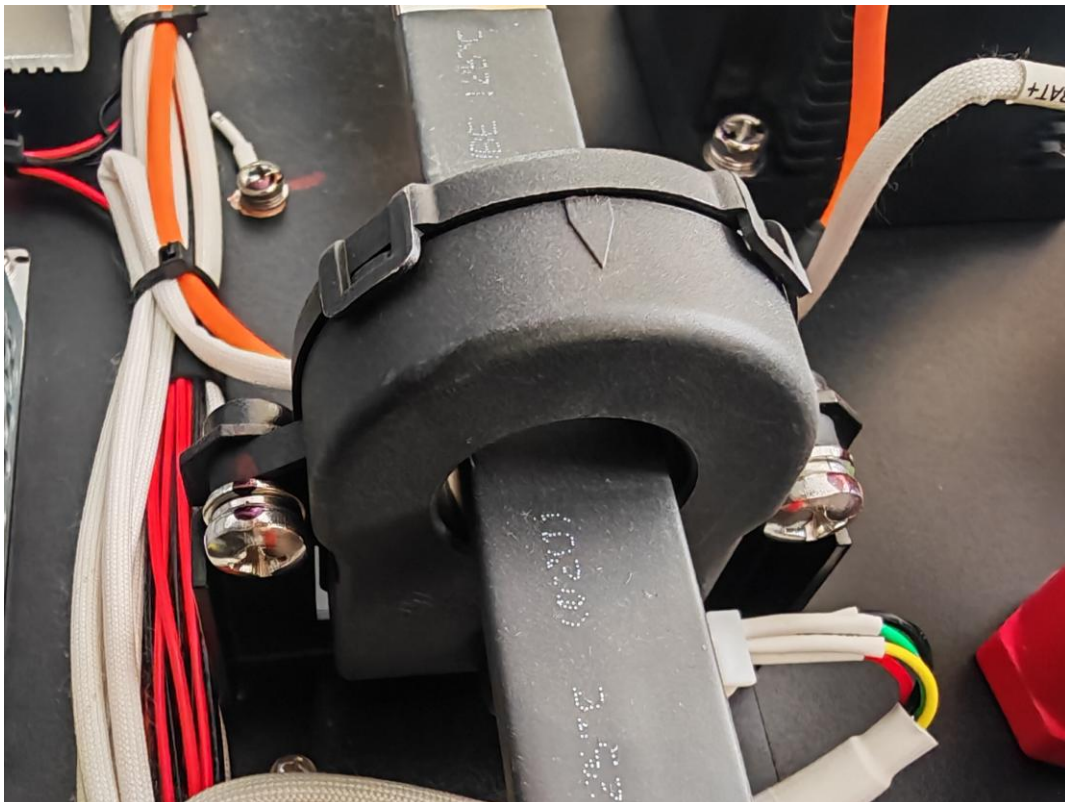


**Attachment 1 Photo documentation**

Fuse in high voltage control box (Model: ESS2H-350)



Hall current sensor in high voltage control box (Model: STB-CAB500M-52)

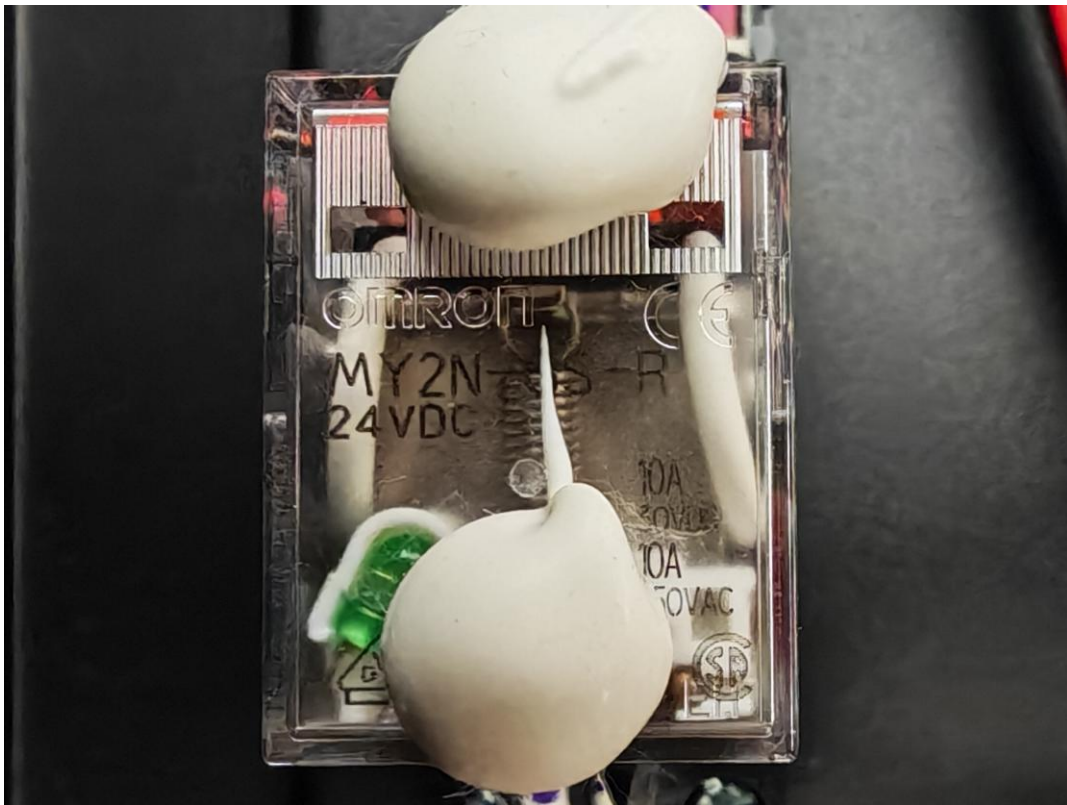


**Attachment 1 Photo documentation**

Shunt in high voltage control box (Model: SH-T)



Relay in high voltage control box (Model: MY2N-GS-R 24VDC)

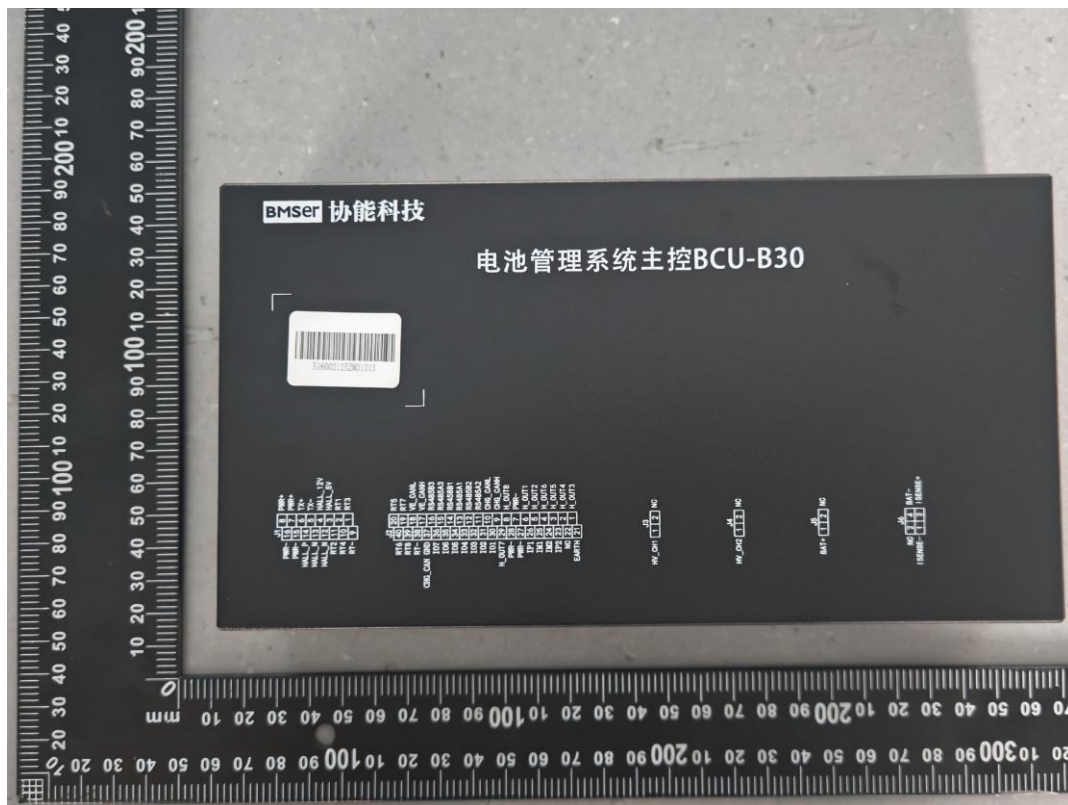


**Attachment 1 Photo documentation**

Relay socket in high voltage control box (Model: PYFZ-08-E)

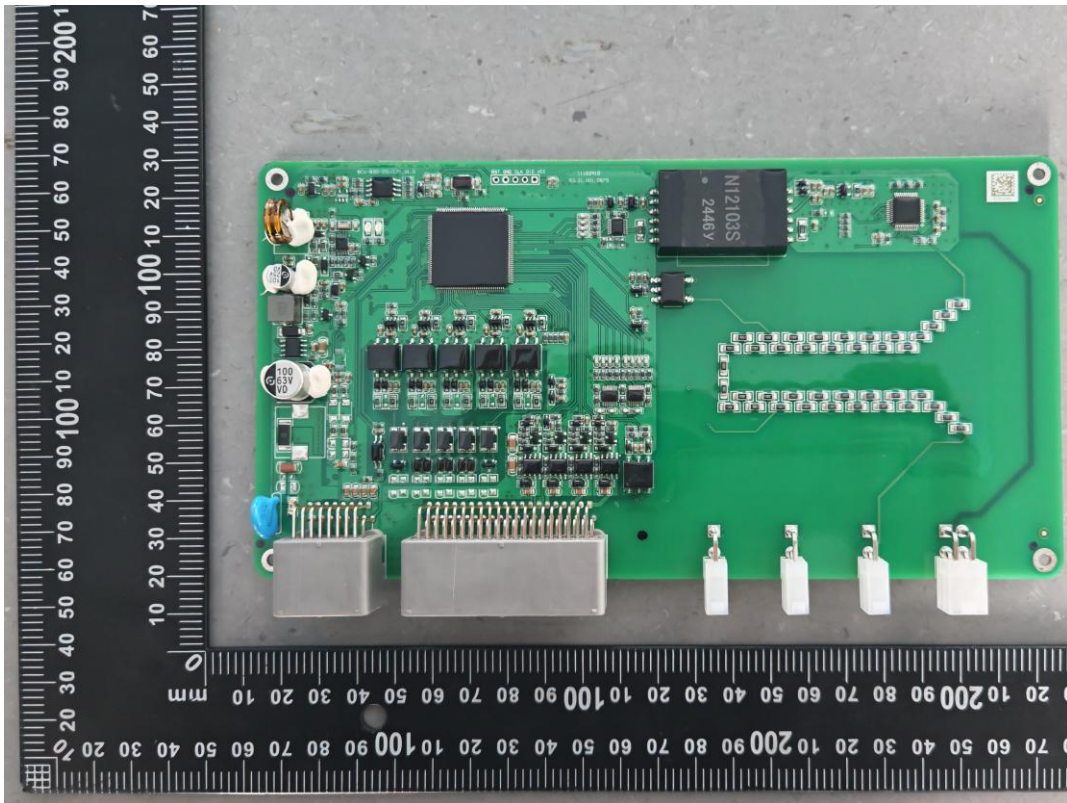
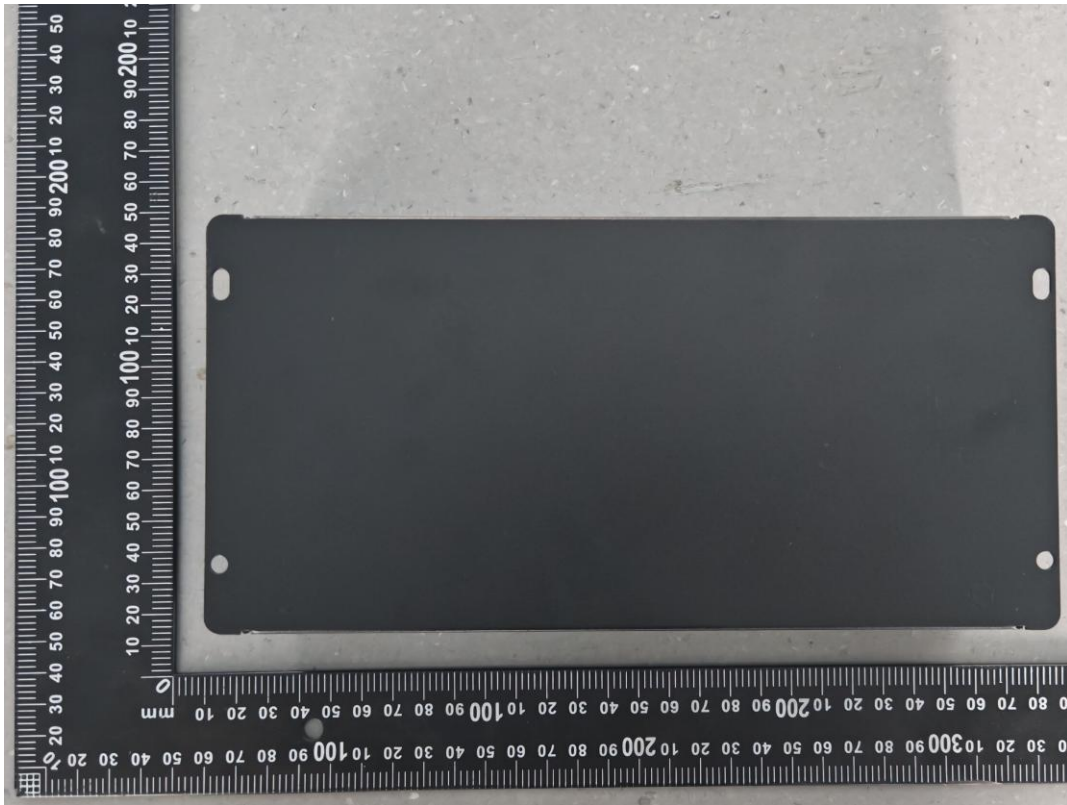


BCU control board (Model: BCU-B30-201-003-001)



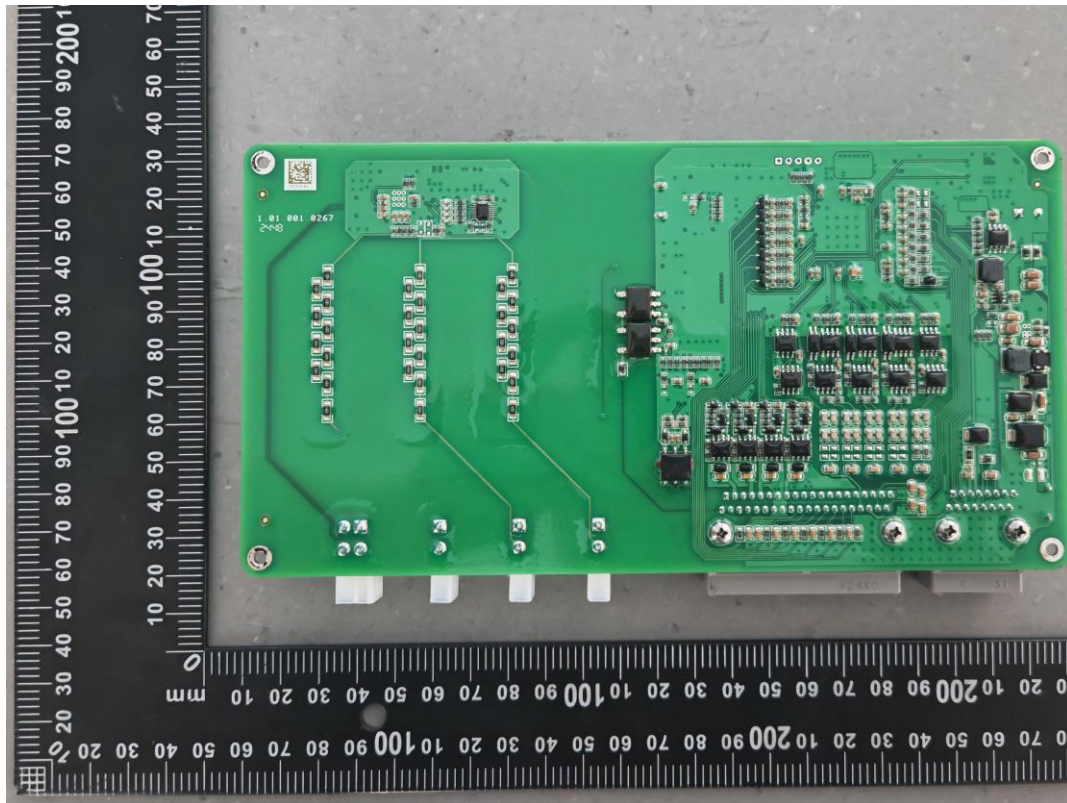
**Attachment 1 Photo documentation**

BCU control board (Model: BCU-B30-201-003-001)



**Attachment 1 Photo documentation**

BCU control board (Model: BCU-B30-201-003-001)



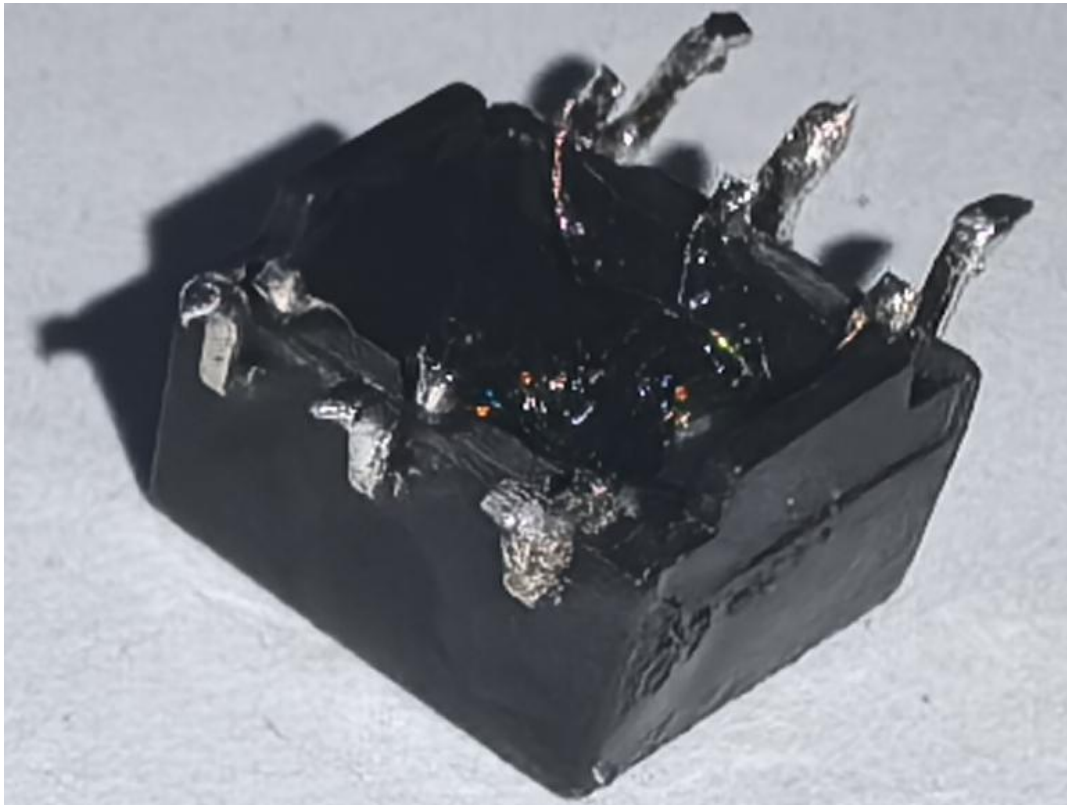
Transformer (Model: FG0505-1)



**Attachment 1 Photo documentation**

Transformer (Model: FG0505-1)

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Transformer (Model: UTA06C06)

---



**Attachment 1 Photo documentation**

Transformer (Model: UTA06C06)

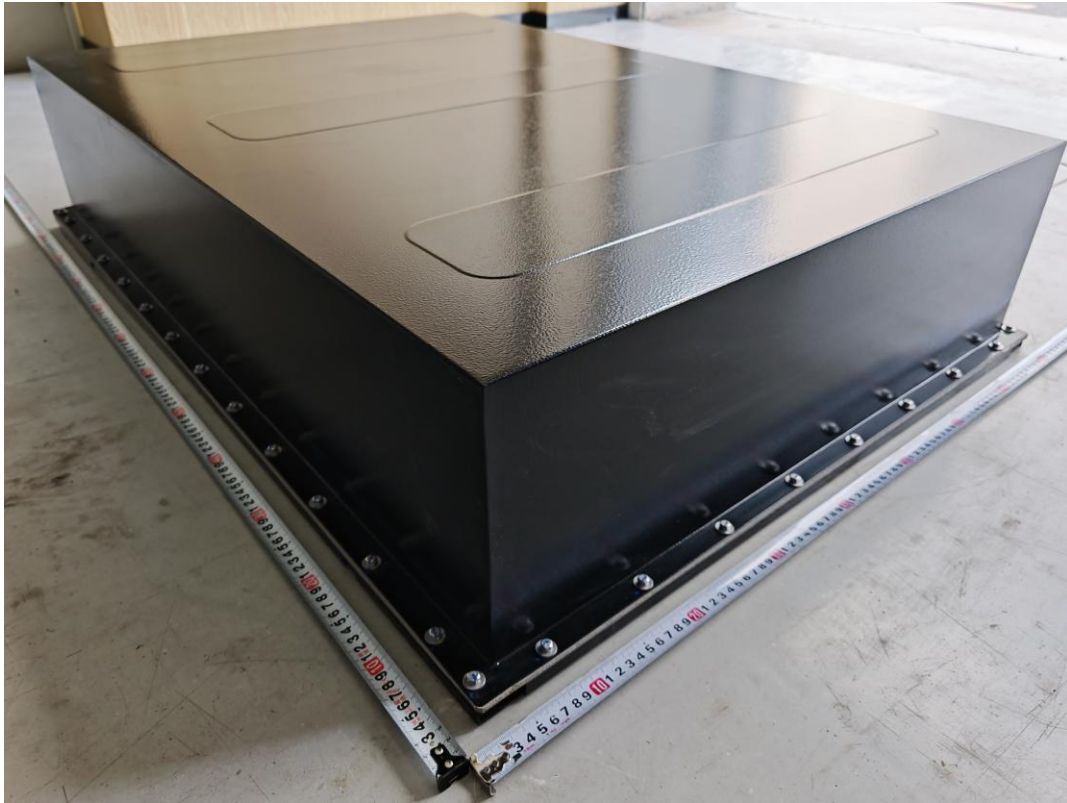


External view of module (Model: 1P52S)



**Attachment 1 Photo documentation**

External view of module (Model: 1P52S)



External view of module (Model: 1P52S)

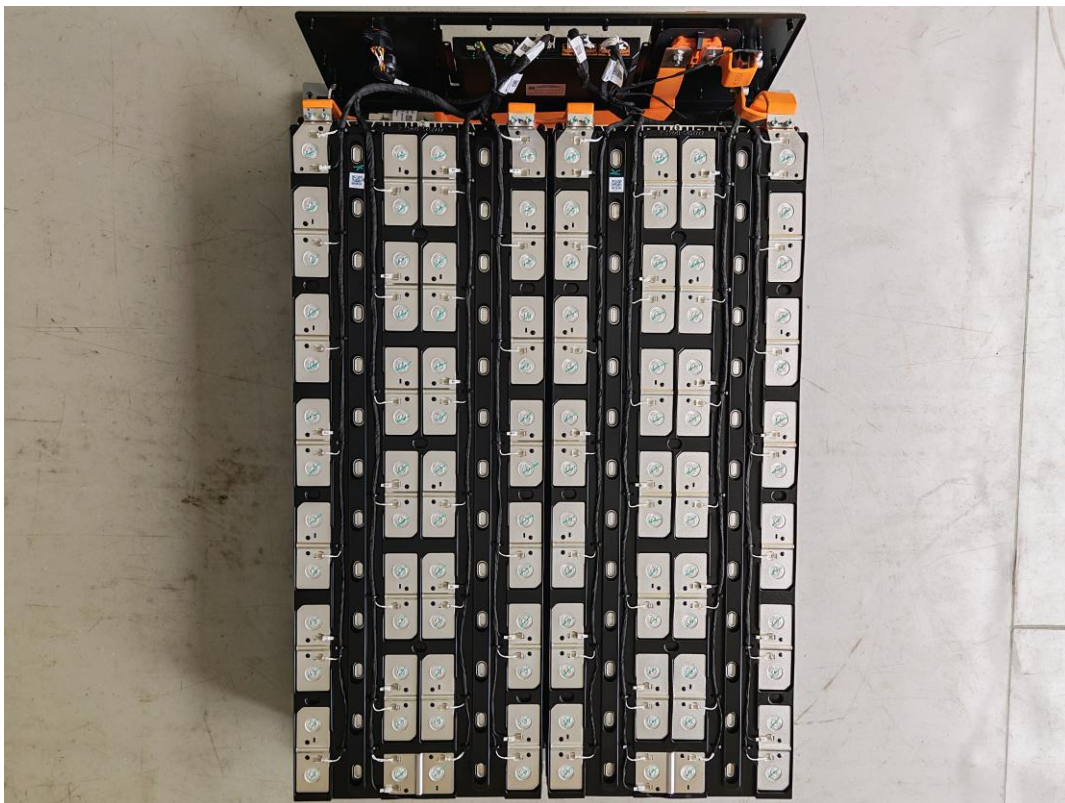


**Attachment 1 Photo documentation**

Internal view of module (Model: 1P52S)



Internal view of module (Model: 1P52S)



**Attachment 1 Photo documentation**

Internal view of module (Model: 1P52S)

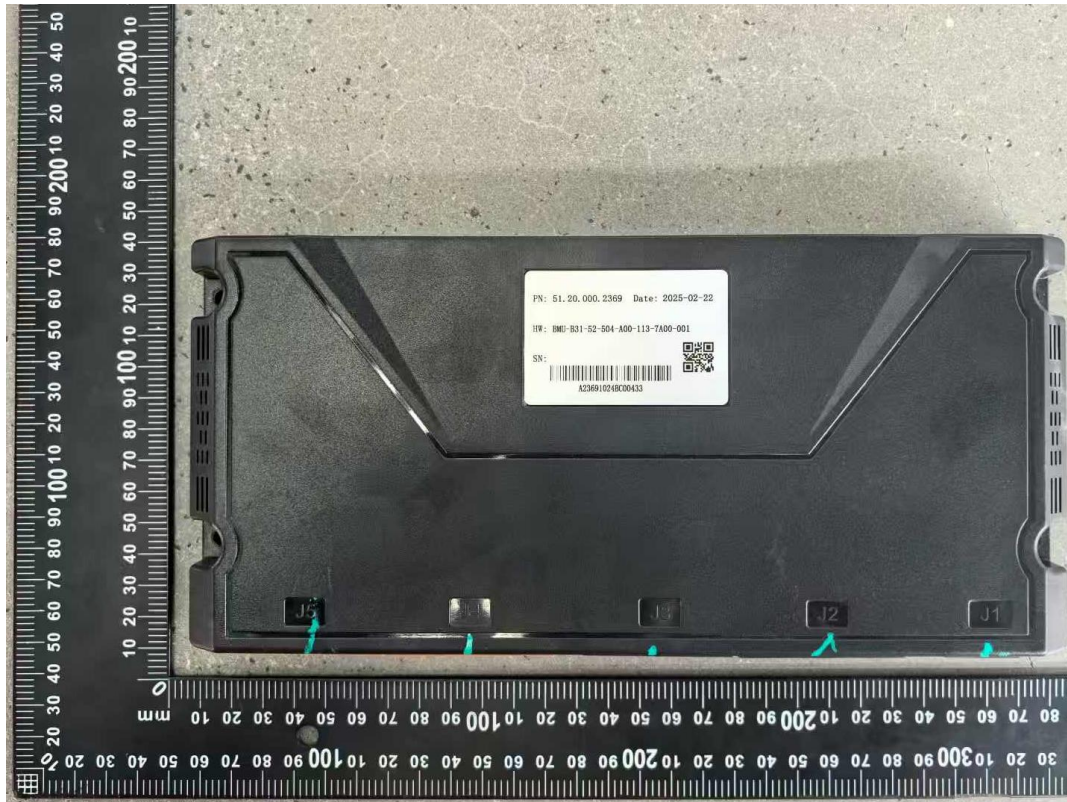


Fuse in battery module (Model: ESP2D-400)



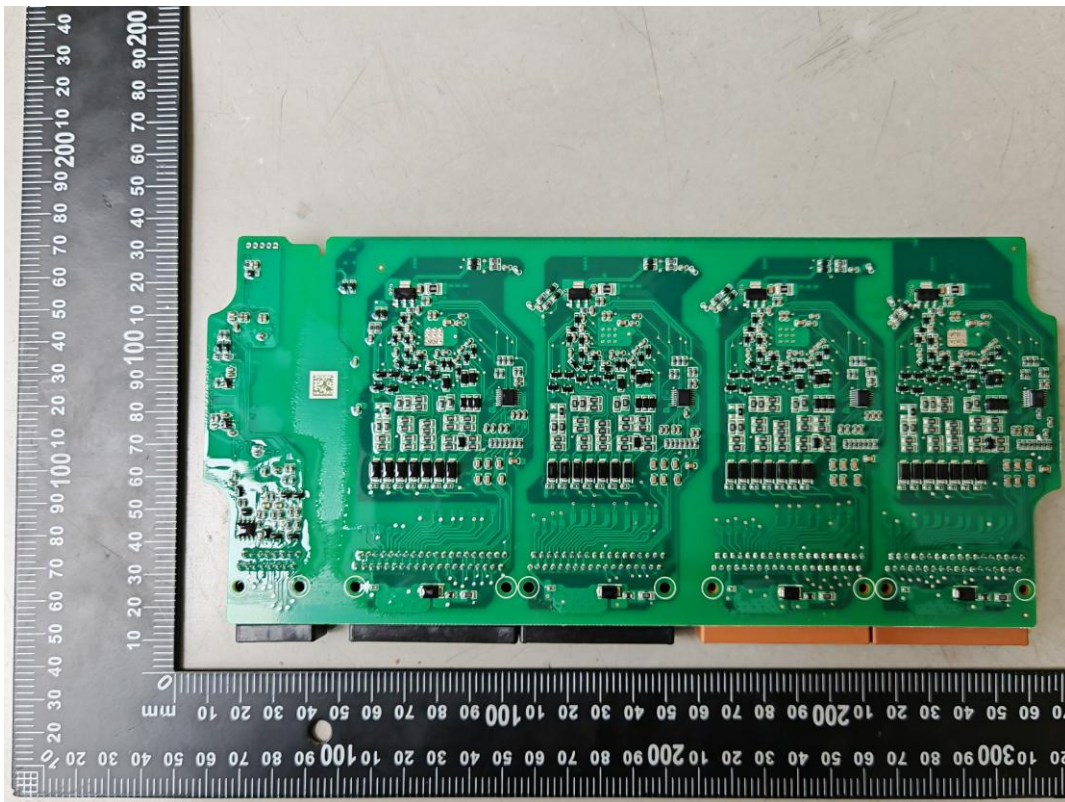
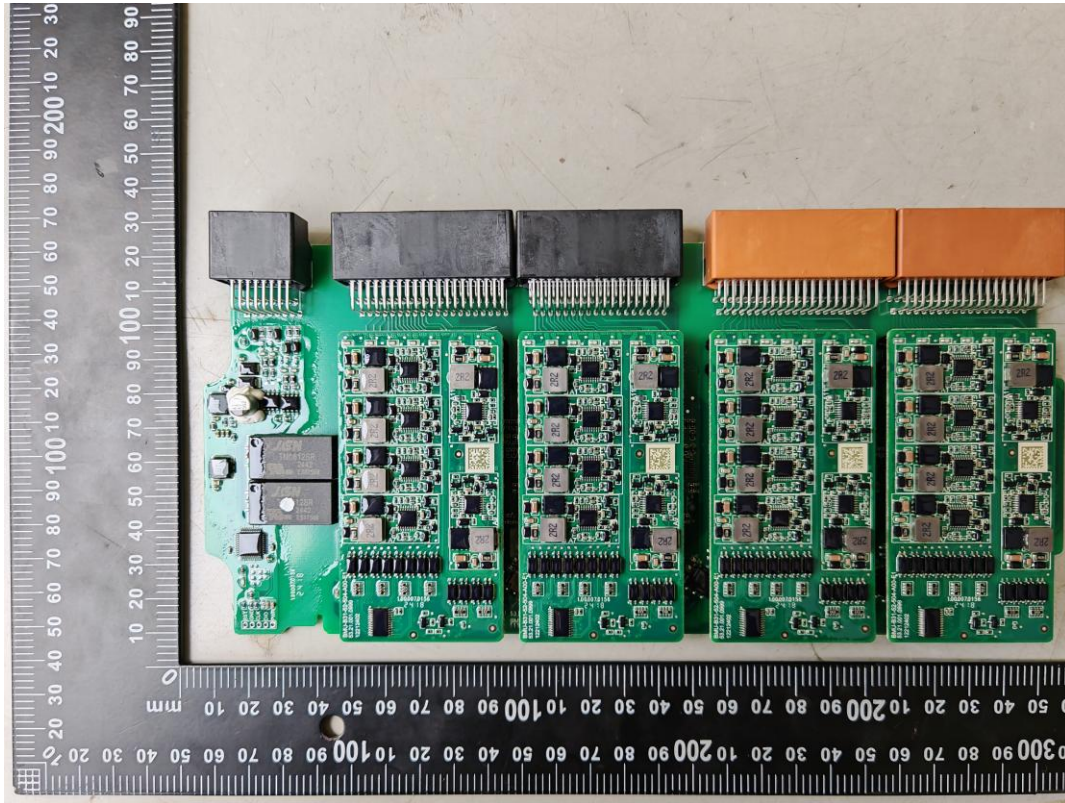
**Attachment 1 Photo documentation**

BMU board (Model: BMU-B31-52-504-A00-113-7A00-001)



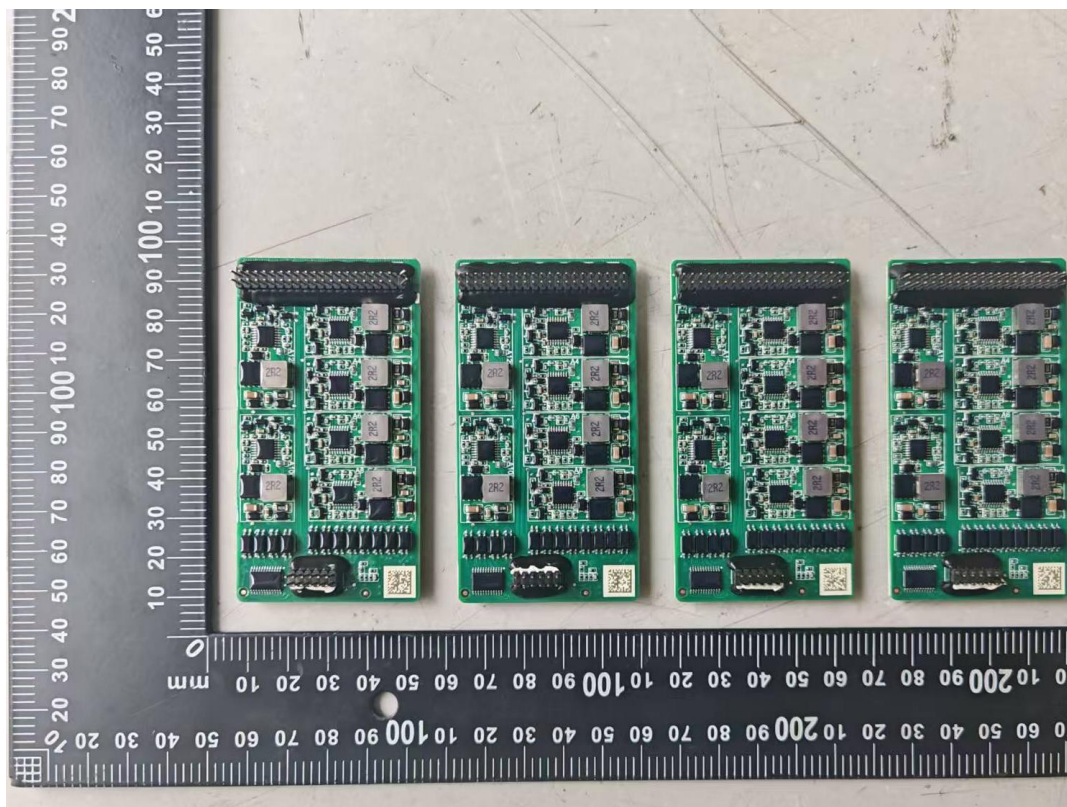
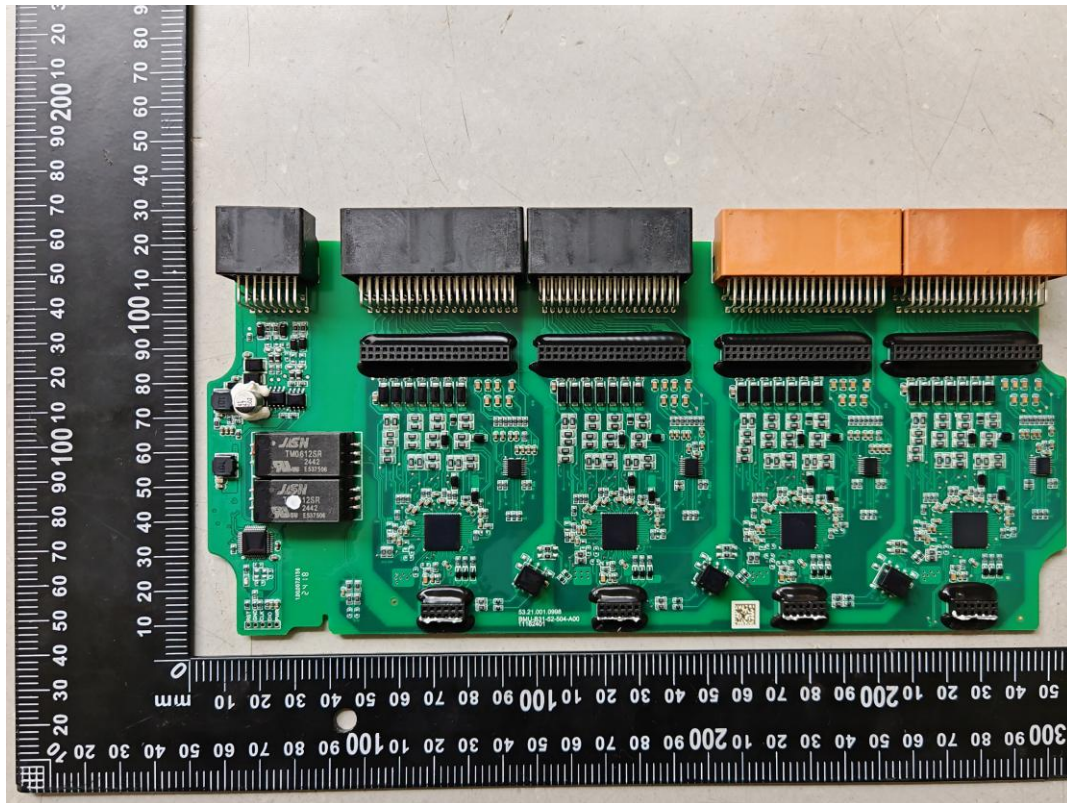
**Attachment 1 Photo documentation**

BMU board (Model: BMU-B31-52-504-A00-113-7A00-001)



**Attachment 1 Photo documentation**

BMU board (Model: BMU-B31-52-504-A00-113-7A00-001)



--- End of Attachment 1 ---

## Attachment 2 Information for safety

### Warning instructions for safe use

#### danger

- Before installing the product, make sure that there are no electrical connections.
- During the installation process, it is necessary to wear protective equipment that complies with safety regulations.

#### warn

- The tools used during installation must have an insulating protective layer.

#### take care

- Poor ventilation conditions during installation will affect system performance!
- Ensure good ventilation during the operation of the equipment. The inlet and outlet of the equipment fan should be uncovered to ensure sufficient cooling inside the device.

#### pay attention to

- This product can only be used for the purposes specified in the manual. Unauthorized modification or use of spare parts not sold or recommended by our company may result in fire, electric shock, and other injuries.

### Repair and Replacement

#### warning

- The maintenance of this product can only be carried out by our company's qualified professional technicians.
- Users must not perform maintenance, module replacement, or circuit board replacement work on their own, as it may cause serious personal injury or significant property damage!

#### 

- Professional technicians must wear protective equipment that complies with safety regulations when maintaining and replacing equipment.

#### 

- The tools used during the maintenance process must have an insulation protective layer.

#### take care

- Avoid unrelated personnel entering the maintenance site!
- Temporary warning signs or barriers must be posted during electrical connection and maintenance work to prevent unrelated personnel from entering the electrical connection or maintenance area.

#### pay attention to

- If replacement of relevant components is required during the maintenance process, please use the devices and parts recommended and approved by our company. Otherwise, the user shall bear the losses caused by it themselves!

Waste lithium batteries should be recycled and disposed in accordance with local laws.

- - - End of Attachment 2 - - -

### **Attachment 3 Packaging**

#### **Packing Schematic Diagram**



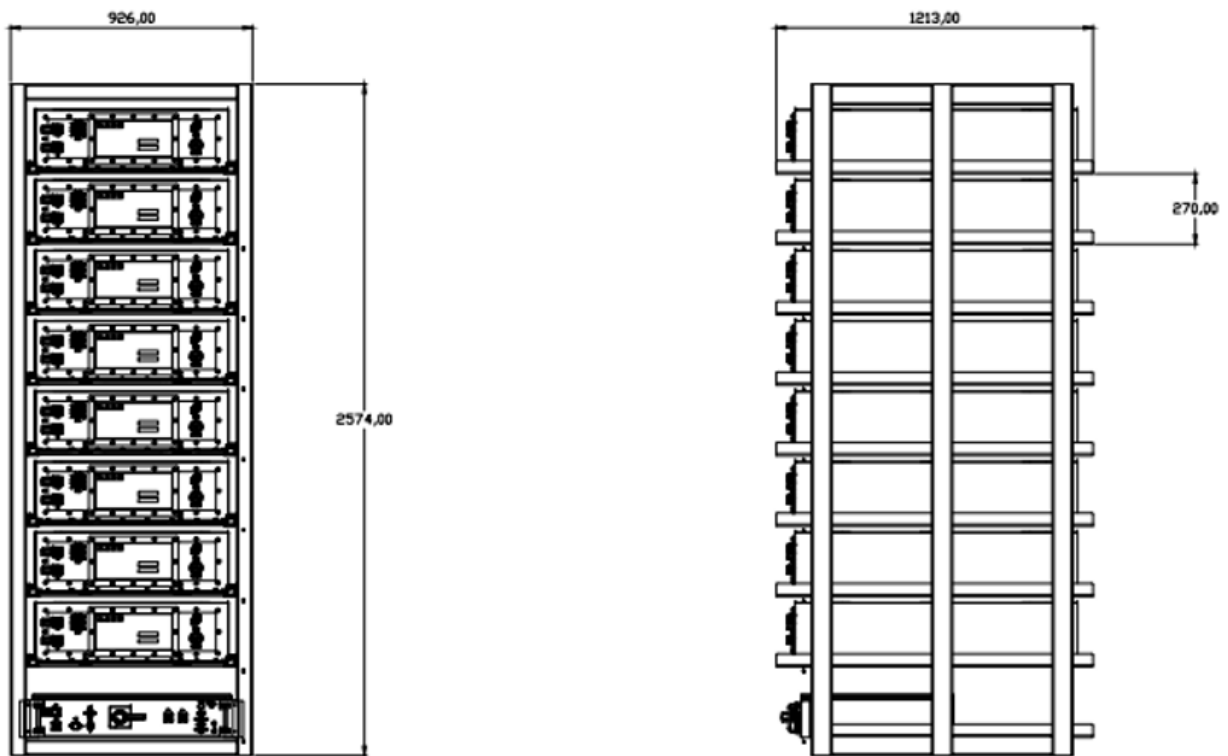
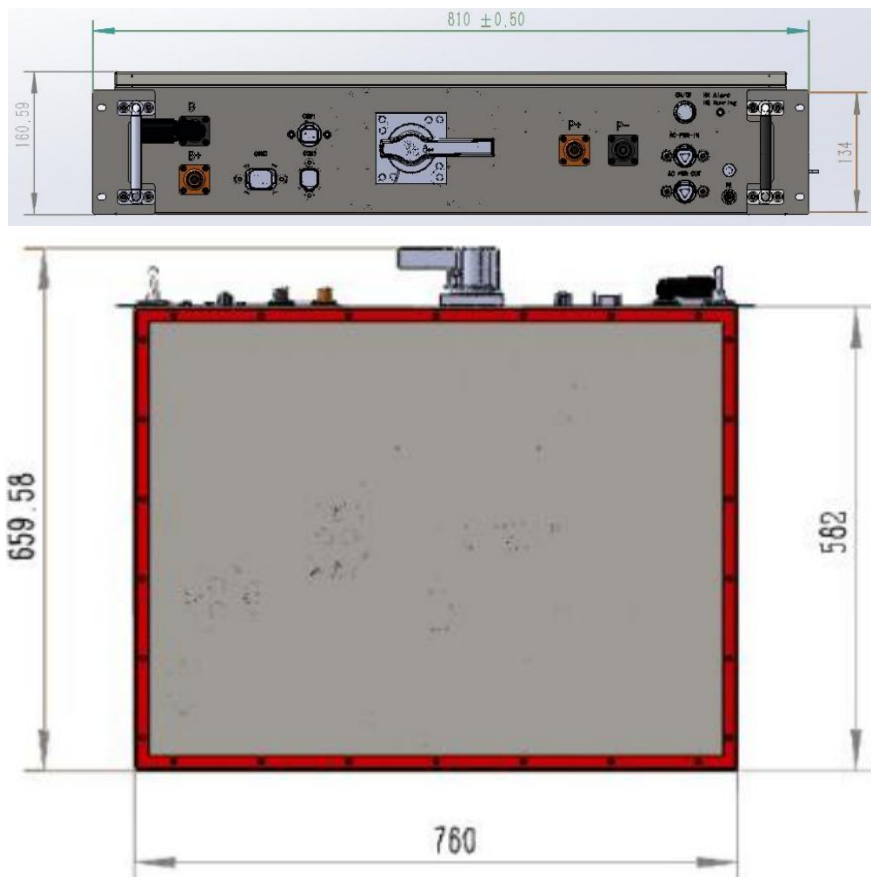
- - - End of Attachment 3 - - -

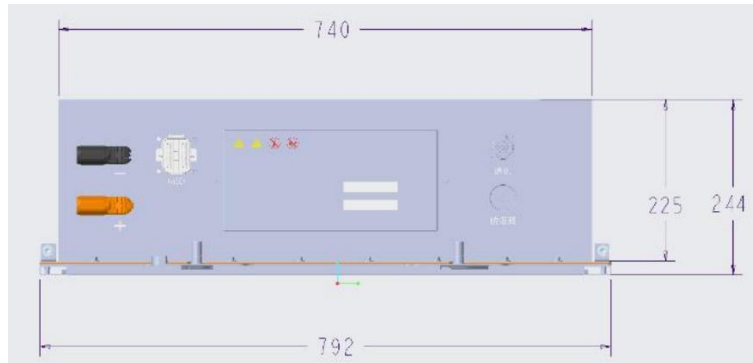
**Attachment 4 Product specification****Specification of battery system**

| Specification of battery system                |                                                                                                                                       |             |                            |                                        |                     |                   |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|----------------------------------------|---------------------|-------------------|
| Model series                                   | XC-CWC314/52/D, XC-CWC314/104/D, XC-CWC314/156/D, XC-CWC314/209/D, XC-CWC314/261/D, XC-CWC314/313/D, XC-CWC314/365/D, XC-CWC314/418/D |             |                            |                                        |                     |                   |
| Model                                          | Dimensi on (mm)                                                                                                                       | Weight (kg) | Number of module in series | Designation                            | Nominal voltage (V) | Voltage range (V) |
| XC-CWC314/52/D                                 | 1213 *<br>926 *<br>2574                                                                                                               | 560 ± 50    | 1                          | IFpP74/176/209[(26S)2S]E/-20+50/90     | 166,4               | 145,6 -187,2      |
| XC-CWC314/104/D                                |                                                                                                                                       | 885 ± 50    | 2                          | IFpP74/176/209[((26S)2S)2S]E/-20+50/90 | 332,8               | 291,2 -374,4      |
| XC-CWC314/156/D                                |                                                                                                                                       | 1210 ± 50   | 3                          | IFpP74/176/209[((26S)2S)3S]E/-20+50/90 | 499,2               | 436,8 - 561,6     |
| XC-CWC314/209/D                                |                                                                                                                                       | 1535 ± 50   | 4                          | IFpP74/176/209[((26S)2S)4S]E/-20+50/90 | 665,6               | 582,4 - 748,8     |
| XC-CWC314/261/D                                |                                                                                                                                       | 1860 ± 50   | 5                          | IFpP74/176/209[((26S)2S)5S]E/-20+50/90 | 832                 | 728 - 936         |
| XC-CWC314/313/D                                |                                                                                                                                       | 2185 ± 50   | 6                          | IFpP74/176/209[((26S)2S)6S]E/-20+50/90 | 998,4               | 873,6 -1123,2     |
| XC-CWC314/365/D                                |                                                                                                                                       | 2510 ± 50   | 7                          | IFpP74/176/209[((26S)2S)7S]E/-20+50/90 | 1164,8              | 1019,2 -1310,4    |
| XC-CWC314/418/D                                |                                                                                                                                       | 2835 ± 50   | 8                          | IFpP74/176/209[((26S)2S)8S]E/-20+50/90 | 1331,2              | 1164,8 -1497,6    |
| Specification for all models of battery system |                                                                                                                                       |             |                            |                                        |                     |                   |
| Production description:                        |                                                                                                                                       |             |                            | Rechargeable Li-ion Battery System     |                     |                   |
| Rated capacity:                                |                                                                                                                                       |             |                            | 314 Ah                                 |                     |                   |
| Standard charge current:                       |                                                                                                                                       |             |                            | 157 A                                  |                     |                   |
| Maximum charge current:                        |                                                                                                                                       |             |                            | 157 A                                  |                     |                   |
| Standard discharge current:                    |                                                                                                                                       |             |                            | 157 A                                  |                     |                   |
| Maximum discharge current:                     |                                                                                                                                       |             |                            | 157 A                                  |                     |                   |
| Charge temperature range:                      |                                                                                                                                       |             |                            | 0 °C - 55 °C                           |                     |                   |
| Discharge temperature range:                   |                                                                                                                                       |             |                            | -20 °C - 55 °C                         |                     |                   |

**Specification of battery module**

| Specification of battery module |                                    |
|---------------------------------|------------------------------------|
| Production description:         | Rechargeable Li-ion Battery Module |
| Model:                          | 1P52S                              |
| Rated capacity:                 | 314 Ah                             |
| Nominal voltage                 | 166,4 V                            |
| Maximum charge voltage          | 187,2 V                            |
| End of discharging voltage      | 145,6 V                            |
| Standard charge current:        | 157 A                              |
| Maximum charge current:         | 157 A                              |
| Standard discharge current:     | 157 A                              |
| Maximum discharge current:      | 157 A                              |
| Weight:                         | 325 kg ± 10 kg                     |
| Charge temperature range:       | 0 °C - 55 °C                       |
| Discharge temperature range:    | -20 °C - 55 °C                     |

**Attachment 4 Product specification****Dimensions of rack (unit: mm)****Dimensions of high voltage control box (unit: mm)**

**Attachment 4 Product specification****Dimensions of battery module (unit: mm)**

- - - End of Attachment 4 - - -

**Attachment 5 ISO9001 Certificate**

**Huanwei certification (Shanghai) Co., Ltd.**

## Quality Management System Certificate

This is to certify that

**Shandong Pomepower Technology Co., Ltd.**

Organization Code: 91370400MADKRJN39D

**Quality Management Systems**

has been awarded this certificate for compliance with the standard

**GB/T 19001-2016 idt ISO9001:2015**

The Quality Management System

Applies in the following area:

**Manufacturing of Battery Energy Storage Cabinets**

\*\*\*The above certification scope does not involve administrative licensing requirements\*\*\*

Registered address: Building 2, Zhidong Industrial Park, Zhangfan Subdistrict, High-tech Zone, Zaozhuang City, Shandong Province

Audit address: Building 2, Zhidong Industrial Park, Zhangfan Subdistrict, High-tech Zone, Zaozhuang City, Shandong Province, China

Certificate No: 250018Q1408R0S

Date of initial certificate: July 09,2025

Date of this certificate: July 09,2025

Date of Expiry: July 08,2028



**HUANWEI**  
**恒为认证**



Issued:



- Please scan the QR code for certificate information. Query on the official website of the Certification and Accreditation Administration ([www.cnca.gov.cn](http://www.cnca.gov.cn)) or the official website of the National Certification and Accreditation Information Public Service Platform ([cx.cnca.cn](http://cx.cnca.cn)).
- When the scope of this certificate involves the requirements of qualification license, it is effective within the scope of administrative license.
- Within the validity period of the certificate, the certified organization shall conduct supervision and certification every year on schedule. After passing the examination, the certificate shall be used together with the Notice of Maintaining the Qualification of Certification and Registration.

Huan Wei Certification (Shanghai) Co., LTD  
Room 622, No.9 Lane 5088, Hangnan Road, Fengxian District, Shanghai [www.hwcert.cn](http://www.hwcert.cn)

- - - End of Attachment 5 - - -