Test Report issued under the responsibility of:

TÜVNORD

TEST REPORT
IEC 62619
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications

Report Number. .....:	**BL-DG22A1024-301**
Date of issue .....:	**2023-02-27**
Total number of pages.....:	**38**
Name of Testing Laboratory preparing the Report.....:	Dongguan BALUN Testing Technology Co., Ltd.
Applicant's name.....:	Eyacht Energy., LTD.
Address .....:	2nd Floor, Building 1, Yinrui Technology Park, Chuangxin Avenue No. 90, High-tech District, Hefei City, Anhui Province, P.R. China
Test specification:	
Standard .....:	IEC 62619:2022
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC62619B
Test Report Form(s) Originator ....:	UL(Demko)
Master TRF .....:	Dated 2022-06-23

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	Lithium-ion battery
Trade Mark(s) ..... :	N/A
Manufacturer ..... :	Same as applicant.
Model/Type reference ..... :	1) GroundHV-20K, 2) GroundHV-17.5K, 3) GroundHV-15K, 4) GroundHV-12.5K, 5) GroundHV-10K, 6) GroundHV-7.5K
Ratings ..... :	1) 384V, 52Ah, 20.0kWh; 2) 336V, 52Ah, 17.5kWh; 3) 288V, 52Ah, 15.0kWh; 4) 240V, 52Ah, 12.5kWh; 5) 192V, 52Ah, 10.0kWh; 6) 144V, 52Ah, 7.5kWh

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	Dongguan BALUN Testing Technology Co., Ltd.	
Testing location/ address.....:		No. 6 Industrial South Road, Songshan Lake District, Dongguan, Guangdong, China	
Tested by (name, function, signature).....:		Van Xu (Engineer)	Van Xu
Approved by (name, function, signature)...:		Simon Qi (Reviewer)	Simon Qi
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

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

See to ANNEX 1: PHOTOS

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
cl. 7.2.3 Drop test (battery system) cl. 8.2.2 Overcharge control of voltage (battery system) cl. 8.2.3 Overcharge control of current (battery system) cl. 8.2.4 Overheating control (battery system) Cell IFP28148115A-52Ah were CB approved according to IEC 62619: 2022, Certificate No.: SG PSB-BT-03623, Report No.: 085-282260450-000. Battery system GroundHV-20K is the main test model. Number of samples required for testing: 1 batteries (B1 for model GroundHV-2500), 1 battery system (B2 for model GroundHV-20K). Battery system GroundHV-20K consists of 8 battery of model GroundHV-2500 and 1 main control box of model HYS-MBMS-EV-A1 connected in series. The samples comply with the requirement of IEC 62619: 2022.	**Dongguan BALUN Testing Technology Co., Ltd.** No. 6 Industrial South Road, Songshan Lake District, Dongguan, Guangdong, China

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

N/A

☒ **The product fulfils the requirements of IEC62619: 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: N/A (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

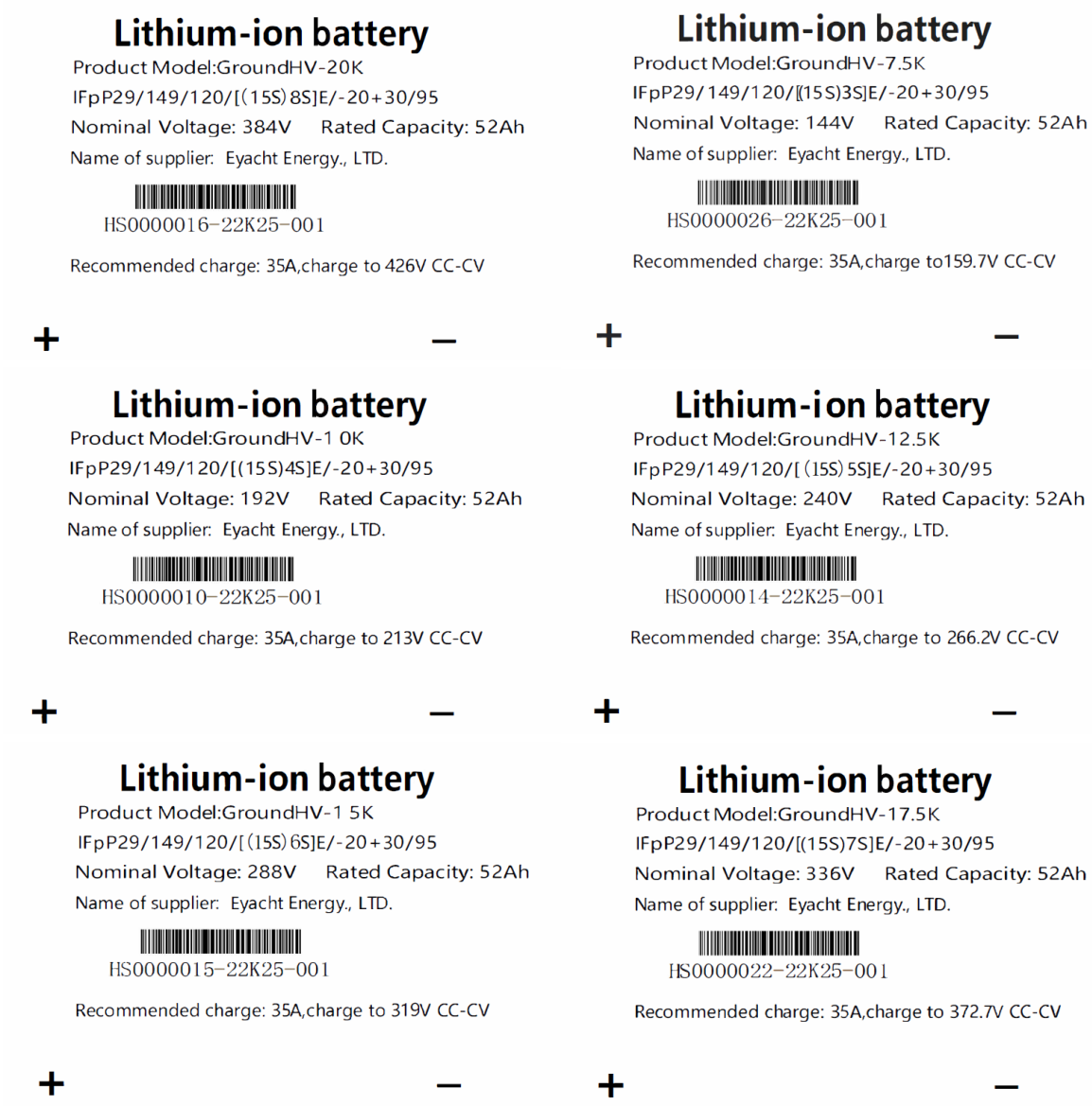
Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

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.



Label of battery with series model

Remark:

Date code rule:

HS00000XX-YYMDD-XXX

HS00000XX represent product codes for different models.

YY represent year. For example, 22 is equal to 2022.

M represent month, From A to L. For example, C is equal to Mar.

DD represent day. For example, 01 is 1st.

Test item particulars.....:	
Classification of installation and use.....:	To be defined in final product
Supply Connection.....:	DC connector
.....:	See page 7: General product information and other remarks for details.
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 .....:	2022-11-01
Date (s) of performance of tests.....:	2022-11-01 to 2023-01-07

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... : Same as applicant.

General product information and other remarks:

Lithium-ion battery are used for energy storage applications. The battery system consists of 3 to 8 battery modules GroundHV-2500 and 1 main control box of model HYS-MBMS-EV-A1 connected in series, which corresponds to 6 models of GroundHV-7.5K, GroundHV-10K, GroundHV-12.5K, GroundHV-15K, GroundHV-17.5K, GroundHV-20K. For each model of battery system, the inside cells are all the same.

The battery system has overcharge, over-discharge, over current and short-circuits proof circuit.

The main of the battery system GroundHV-20K of the main test model are shown in the figure below:

Product information	Lithium-ion battery	Cell inside the battery
Model	GroundHV-20K	IFP28148115A-52Ah
Nominal capacity	52Ah	52Ah
Nominal voltage	384V	3.2V
Nominal Charge Current	35A	52A
Maximum Charge Current	35A	52A
Nominal Discharge Current	35A	52A
Maximum Discharge Current	35A	78A
Maximum Charge Voltage	426V	3.65V
Cut-off Voltage	306V	2.0V
Upper charge temperature	55°C	55°C
Lower charge temperature	0°C	-20°C
Upper discharge temperature	55°C	60°C
Lower discharge temperature	-20°C	-30°C
Storage temperature range	-20°C ~ 35°C	-20°C ~ 50°C
Recommend charging method declared by the manufacturer	Charging the battery with 35A constant current until 426V, then constant voltage until charging current reduces to 10A	Charging the cell with 52A constant current until 3.65V, then constant voltage until charging current reduces to 2.6A
Charging procedure for internal short-circuit test	/	Charging the cell with 52A constant current until 3.7V, then constant voltage until charging current reduces to 2.6A
Recommend discharging method declared by the manufacturer	Discharging the battery with 35A constant current to discharge cut-off voltage 306V	Discharging the battery with 52A constant current to discharge cut-off voltage 2.0V
Nominal mass (kg)	199.5kg	(0.966±0.030)kg
External dimensions (mm)	606mm×220mm×1580mm (W*H*D)	(28.2±0.5)mm×(148±0.5)mm×(118.6±0.6)mm

The main features of battery system of model GroundHV-7.5K and GroundHV-10K are shown as below:

Product information	Lithium-ion battery	Lithium-ion battery
Model	GroundHV-7.5K	GroundHV-10K
Nominal capacity	52Ah	52Ah
Nominal voltage	144V	192V
Nominal Charge Current	35A	35A
Maximum Charge Current	35A	35A
Nominal Discharge Current	35A	35A
Maximum Discharge Current	35A	35A
Maximum Charge Voltage	159.7V	213.0V
Cut-off Voltage	114.7V	153.0V
Upper charge temperature	55°C	55°C
Lower charge temperature	0°C	0°C
Upper discharge temperature	55°C	55°C
Lower discharge temperature	-20°C	-20°C
Storage temperature range	-20°C ~ 35°C	-20°C ~ 35°C
Recommend charging method declared by the manufacturer	Charging the battery with 35A constant current until 159.7V, then constant voltage until charging current reduces to 10A.	Charging the battery with 35A constant current until 213.0V, then constant voltage until charging current reduces to 10A.
Recommend discharging method declared by the manufacturer	Discharging the battery with 35A constant current to discharge cut-off voltage 114.7V	Discharging the battery with 35A constant current to discharge cut-off voltage 153.0V
Nominal mass (kg)	80.0kg	105.0kg
External dimensions (mm)	606mm×220mm×730mm (W*H*D)	606mm×220mm×900mm (W*H*D)

The main features of battery system of model GroundHV-12.5K and GroundHV-15K are shown as below:

Product information	Lithium-ion battery	Lithium-ion battery
Model	GroundHV-12.5K	GroundHV-15K
Nominal capacity	52Ah	52Ah
Nominal voltage	240V	288V
Nominal Charge Current	35A	35A
Maximum Charge Current	35A	35A
Nominal Discharge Current	35A	35A
Maximum Discharge Current	35A	35A
Maximum Charge Voltage	266.2V	319.0V
Cut-off Voltage	191.2V	230.0V
Upper charge temperature	55°C	55°C
Lower charge temperature	0°C	0°C
Upper discharge temperature	55°C	55°C
Lower discharge temperature	-20°C	-20°C
Storage temperature range	-20°C ~ 35°C	-20°C ~ 35°C
Recommend charging method declared by the manufacturer	Charging the battery with 35A constant current until 266.2V, then constant voltage until charging current reduces to 10A.	Charging the battery with 35A constant current until 319.0V, then constant voltage until charging current reduces to 10A.
Recommend discharging method declared by the manufacturer	Discharging the battery with 35A constant current to discharge cut-off voltage 191.2V	Discharging the battery with 35A constant current to discharge cut-off voltage 230.0V
Nominal mass (kg)	129.0kg	152.3kg
External dimensions (mm)	606mm×220mm×1070mm (W*H*D)	606mm×220mm×1240mm (W*H*D)

The main features of battery system of model GroundHV-17.5K is shown as below:

Product information	Lithium-ion battery
Model	GroundHV-17.5K
Nominal capacity	52Ah
Nominal voltage	336V
Nominal Charge Current	35A
Maximum Charge Current	35A
Nominal Discharge Current	35A
Maximum Discharge Current	35A
Maximum Charge Voltage	372.7V
Cut-off Voltage	267.7V
Upper charge temperature	55°C
Lower charge temperature	0°C
Upper discharge temperature	55°C
Lower discharge temperature	-20°C
Storage temperature range	-20°C ~ 35°C
Recommend charging method declared by the manufacturer	Charging the battery with 35A constant current until 372.7V, then constant voltage until charging current reduces to 10A.
Recommend discharging method declared by the manufacturer	Discharging the battery with 35A constant current to discharge cut-off voltage 267.7V
Nominal mass (kg)	176.2kg
External dimensions (mm)	606mm×220mm×1410mm (W*H*D)

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
4	**PARAMETER MEASUREMENT TOLERANCES**		**P**
	Parameter measurement tolerances		P
5	**GENERAL SAFETY CONSIDERATIONS**		**P**
5.1	**General**		**P**
	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
5.2	**Insulation and wiring**		**P**
	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	Wires and cables used are certified.	P
5.3	**Venting**		**P**
	Pressure relief function	Explosion-proof safety valve for venting exists.	P
	Encapsulation used to support cells within an outer casing		P
5.4	**Temperature/voltage/current management**		**P**
	The design prevents abnormal temperature-rise	Overcharge, over current and overheating proof circuit used in this battery. See tests of clause 8.	P
	Voltage, current, and temperature limits of the cells	See above.	P
	Specifications and charging instructions for equipment manufacturers	The charging limits specified in the user manual.	P
5.5	**Terminal contacts of the battery pack and/or battery system**		**P**
	Polarity marking(s)	See page 4.	P
	Polarity marking not provided for keyed external connector		N/A
	Capability to carry the maximum anticipated current	DC connector complied with the requirements.	P
	External terminal contact surfaces		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminal contacts are arranged to minimize the risk of short circuits		P
5.6	**Assembly of cells, modules, or battery packs into battery systems**		**P**
5.6.1	General		P
	Independent control and protection method(s)	Battery system has independent control and protective functions, and BMS is integrated into battery system.	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
5.7	**Operating region of lithium cells and battery systems for safe use**		**P**
	The cell operating region..... :	Information mentioned in manufacturer's specifications.	P
	Designation of battery system to comply with the cell operating region	Information mentioned in manufacturer's specifications.	P
5.8	**System lock (or system lock function)**		**P**
	Non-resettable function to stop battery operation	Non-resettable protect function provided in the BMS security mechanism	P
	Manual with procedure for resetting of battery operation	Information mentioned in maintenance manual	P
	Emergency battery final discharge	Not for such application	N/A
5.9	**Quality plan**		**P**
	Manufacturing quality plan (for example: ISO9001, etc.) prepared and implemented..... :	Complied. ISO 9001: 2015 certificate provided. Certificate No. 00122Q33969R0S/3400, issued by CHINA QUALITY CERTIFICATION CENTRE valid until: 2025-06-05.	P
	The process capabilities and the process controls		P

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Clause	Requirement + Test	Result - Remark	Verdict
6	**TYPE TEST CONDITIONS**		**P**
6.1	**General**		**P**
6.2	**Test items**		**P**
	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	Test complied.	P
7	**SPECIFIC REQUIREMENTS AND TESTS**		**P**
7.1	**Charging procedure for test purposes**		**P**
	The battery discharged to a specified final voltage prior to charging	Final voltage: 306V.	P
	The cells or batteries charged using the method specified by the manufacturer..... :	Discharging and charging are carried out in an ambient temperature of 25°C ± 5°C.	P
7.2	**Reasonably foreseeable misuse**		**P**
7.2.1	External short-circuit test (cell or cell block)	CB 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)	CB 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		N/A
7.2.3.2	Whole drop test (cell or cell block, and battery system)	CB approval cell used.	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)	Battery system applied.	P
	Description of the Test Unit..... :	Battery system.	—
	Mass of the test unit (kg)..... :	B1: 24.07kg	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Height of drop (m)..... :	0.1m	—
	Results: no fire, no explosion	B1: No fire, no explosion.	P
7.2.4	Thermal abuse test (cell or cell block)	CB approval cell used.	N/A
	Results: no fire, no explosion		N/A
7.2.5	Overcharge test (cell or cell block)	CB 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)	CB 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, Im..... :		N/A
	Discharge current for forced discharge, 1.0 It ..... :		N/A
	Discharging time, t = (1 It / Im) x 90 (min.) ..... :		N/A
	Results: no fire, no explosion ..... :		N/A
7.3	**Considerations for internal short-circuit – Design evaluation**		**P**
7.3.1	General		N/A
7.3.2	Internal short-circuit test (cell)	CB approval cell used.	N/A
	Samples preparation procedure: 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 °C ± 5 °C.		N/A
	The appearance of the short-circuit location recorded by photograph or other means .....:		—
	The pressing was stopped - 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
7.3.3	Propagation test (battery system)		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

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Clause	Requirement + Test	Result - Remark	Verdict
8	**BATTERY SYSTEM SAFETY (CONSIDERING FUNCTIONAL SAFETY)**		**P**
8.1	**General requirements**		**P**
	Functional safety analysis for critical controls	Functional safety has been analysed according to IEC 61508.	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	FMEA table has been submitted.	P
8.2	**Battery management system (or battery management unit)**		**P**
8.2.1	Requirements for the BMS		P
	The safety integrity level (SIL) target of the BMS	According to IEC 61508 (hardware evaluation only). After the proper calculation, based on the PFDavg and SFF data that the hardware architectural constraints the BMS meet the requirement of SIL2@ HFT = 0.	P
	The charge control evaluated by tests in clauses 8.2.2 to 8.2.4	Relevant tests (8.2.2, 8.2.3 and 8.2.4) have been performed and successfully passed.	P
8.2.2	Overcharge control of voltage (battery system)		P
	The exceeded charging voltage applied to the whole battery system	468.6V.	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	The BMS detected the overheat temperature and terminated charging		P
	The battery system operated as designed during test		P

9	EMC		N/A
	Battery system fulfil EMC requirements of the end-device application ..... :		N/A

10	INFORMATION FOR SAFETY		P
	The cell manufacturer provides information about current, voltage and temperature limits of their products	Included in datasheet.	P
	The battery system manufacturer provides information regarding how to mitigate hazards to equipment manufacturers or end-users.	Written in instruction manual.	P

11	MARKING AND DESIGNATION (REFER TO CLAUSE 5 OF IEC 62620)		P
	The marking items shown in Table 1 in IEC 62620 indicated on the cell, battery system or instruction manual.	The battery is marked in accordance with IEC 62620, also see page 4.	P
	Cell or battery system has clear and durable markings		P
	Cell designation		N/A
	Battery designation		P
	Battery structure formulation		P

12	PACKAGING AND TRANSPORT		P
	Refer to Annex D		P

ANNEX A	OPERATING REGION OF CELLS FOR SAFE USE		N/A
A.1	General	CB approval cell used.	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

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Clause	Requirement + Test	Result - Remark	Verdict
A.6	Low temperature range		N/A
A.7	Discharging conditions for safe use		N/A
A.8	Example of operating region		N/A

ANNEX B	**PROCEDURE OF 7.3.3 PROPAGATION TEST BY LASER IRRADIATION**		**N/A**
B.1	**General**		**N/A**
B.2	**Test conditions**		**N/A**
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		
	Output power of laser irradiation..... :		—
	Tested in an ambient temperature of 25 °C ± 5 °C		N/A

ANNEX C	**PROCEDURE OF 7.3.3 PROPAGATION TEST BY METHODS OTHER THAN LASER**		**N/A**
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 ..... :		—
	– A specially prepared sample (e.g. a heater or a hole for nail penetration provided) used for ease of testing..... :		—

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
C.3	Method used for initiating the thermal runaway. 1) Heater (Heater, Burner, Laser, Inductive heating 2) Overcharge 3) Nail penetration of the cell 4) Combination of above methods 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[1)]**
Key components for Battery box					
Metal enclosure	Hefei Daqi Electronic Technology Co., Ltd	Q235	Minimum 1.5mm thickness, 580L*170w*217.3 mm	IEC 62619:2022	Tested with apparatus
Cell holder	Hefei Daqi Electronic Technology Co., Ltd	Q235	Minimum 1.2mm thickness	IEC 62619:2022	Tested with apparatus
Insulation sheet	SHENZHEN TEESUN TECHNOLOGY CO LTD	CL8811	Minimum 0.25mm, V-0, 80°C	UL 94 UL 746	UL E329660
Lead wire (Module negative)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Module negative) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Series harness 1 with heating)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Series harness 1 with heating) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Series harness 2 with heating)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Series harness 2 with heating) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Key components for High pressure box					
Metal enclosure	Hefei Daqi Electronic Technology Co., Ltd	Q235	Minimum 1.5mm thickness, 580L*170w*217.3 mm	IEC 62619:2022	Tested with apparatus

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

PCB	Shenzhen Jia Li Chuang Technology Development Co LTD	JLC-1	V-0, 130°C	UL 94 UL 746	UL E479892
PCB (Alternative)	Ganzhou Beyond Sci-tech Co Ltd	BY-003	V-0, 130°C	UL 94 UL 746	UL E243002
Lead wire (High-voltage floor BDU acquisition harness)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (High-voltage floor BDU acquisition harness) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Total back to pre-charge JD)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Total back to pre-charge JD) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Pre-charge stop band wire)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Pre-charge stop band wire) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Open+ to B+)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Open+ to B+) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (P-)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

Lead wire (P-) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (P+)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (P+) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Total positive back to heating JD)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Total positive back to heating JD) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Heat JD to PTC+)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Heat JD to PTC+) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Internal wire BDU heating)	WUXI XINHONGYE WIRE & CABLE CO LTD	3614	7AWG, 1000Vac, 125°C	UL 758	UL E248566
Lead wire (Internal wire BDU heating) (Alternative)	DANYANG WINPOWER WIRE & CABLE MFG CO LTD	10269	6AWG, 1000Vac, 105°C	UL 758	UL E330446
Lead wire (Internal wire BDU)	Suizhou Juxin Technology Co., Ltd	60227IEC02(RV)	22AWG, 750Vac, 70°C	IEC 62619:2022	Tested with apparatus
External power connector	Shanghai Huzheng Electronic Technology Co., Ltd	FSP700836C-1004D	Insulation impedance: DC1000V 500MΩ, Operating temp range: -40 to 125°C	IEC 62619:2022	Tested with apparatus

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

External power connector (Alternative)	Shanghai Huzheng Electronic Technology Co., Ltd	FSP200836C-1004D	Insulation impedance: DC1000V 500MΩ, Operating temp range: -40 to 125°C	IEC 62619:2022	Tested with apparatus
Receptacle	NINGBO DEGSON ELECTRICAL CO LTD	ESS-100A-16-S-OR-00	600V, 100A, Operating temp range: -40 to 125°C	UL 4128	UL E526028
Receptacle (Alternative)	NINGBO DEGSON ELECTRICAL CO LTD	ESS-100A-16-S-BK-00	600V, 100A, Operating temp range: -40 to 125°C	UL 4128	UL E526028
Small DC circuit breaker	YUEQING XINCHI ELECTRIC & SCIENCE TECHNOLOGY CO.,LTD.	SL7-63C63	63A, 550V	IEC 62619:2022	Tested with apparatus
Relays	Zhejiang Yingluohua New Energy Technology Co., Ltd	INVE01-60B_24HTC	100A, 750Vdc	IEC 62619:2022	Tested with apparatus
Fuse	XI'AN SINOFUSE ELECTRIC CO LTD	RS308-HB-4G	750VDC, 100A	UL 248-1	UL E353337
Key components for BMS					
BMS (Slave control system V1.0)	Eyacht Energy., LTD.	HYS-BMU-24S-CW-V1.0	24V, 52Ah, 24S	IEC 62619:2022	Tested with apparatus
- Transformer (T1, T2, T3)	Sumida Trading(Shanghai)Company Limited	CLP67D55/CE	Operating temperature range: -40°C to 125°C, Turns Ratio: 1.0±2%, Inductance (OCL): 150μH~420μH	IEC 62619:2022	Tested with apparatus
- IC (U1, U2)	CHIPWAYS SEMICONDUCTOR CO.,LTD	XL8812	Operating temperature range: -40°C to 125°C, V+ to V-: 75V	IEC 62619:2022	Tested with apparatus
- Insulating plastic	POLYPLASTICS CO LTD	7307(g)	Minimum thickness: 0.77mm, 75°C, HB	UL 746 UL 94	UL E213445

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

- Connector (P1, P2)	Yueqing Langsen Electric Co., Ltd	22011-4AW	12V, 3A, 4PIN, Temperature Range: -40°C to 125°C	IEC 62619:2022	Tested with apparatus
- Connector plastic (P1, P2)	CHANG CHUN CHEMICAL (ZHANGZHOU) CO LTD	3030	Min Thk: 3mm, HB, 140°C	UL 746 UL 94	UL E304813
BMS (Main control system V1.0)	Eyacht Energy., LTD.	HYS-MBMS-BDU	DC24V, 52Ah	IEC 62619:2022	Tested with apparatus
- MOSFET (Q1, Q11, Q13, Q15, Q19)	FuXin Microelectronics Co.,Ltd.	FM010P35GTH	V_{DS}: -100V, V_{GS}: ±20V, I_D: -30A, T_J, T_{STG}: -50°C to 150°C	IEC 62619:2022	Tested with apparatus
- FUSE (F1, F2, F3, F4, F5)	EUGARD CO.,LTD	12.600	72VDC, 3A	UL 248-1	UL E365879
- IC (U7, U8, U26)	Silicon Internet of Things Technology Co., Ltd	SIT1051A	V_{CC}: -0.3V to 7V, T_{vj}: -40°C to 150°C	IEC 62619:2022	Tested with apparatus
- IC (U3, U4, U23)	Suzhou Novosense Microelectronics Co., Ltd.	NSI8221N1-DSPR	Operating temperature range: -40°C to 125°C, Power Supply Voltage: -0.5V to 6.5V	IEC 62619:2022	Tested with apparatus
- IC (U35)	Suzhou Novosense Microelectronics Co., Ltd.	NSI8100NQ	Operating temperature range: -40°C to 125°C, Power Supply Voltage: -0.5V to 6.5V	IEC 62619:2022	Tested with apparatus
- IC (U28, U29, U30, U31, U32)	ROHM Co., Ltd.	MD7218D50UA2	Operating Ambient Temperature: -40°C to 85°C, V_{IN}: -0.3V to 15V	IEC 62619:2022	Tested with apparatus
- IC (U16)	Texas Instruments	LM5022-Q1	Temperature Range: -40°C to 125°C, Supply Voltage: 4.5V to 40V	IEC 62619:2022	Tested with apparatus
- IC (U6)	NXP Semiconductors N.V.	S32K144	Voltage range: 2.7V to 5.5V, Temperature range (T_A): -40°C to 125°C	IEC 62619:2022	Tested with apparatus

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

- IC (U20)	NXP Semiconductors N.V.	S9KEAZ128AMLH	Voltage range: 2.7V to 5.5V	IEC 62619:2022	Tested with apparatus
- IC (U2)	Texas Instruments	TL431AID	T_J, T_{STG}: -65°C to 150°C, Supply Voltage: 24V	IEC 62619:2022	Tested with apparatus
- IC (U34)	HOLTEK	HT7533-1	Supply Voltage: -0.3V to 33V, Operating Temperature: -40°C to 85°C	IEC 62619:2022	Tested with apparatus
- IC (U24)	Maxim Integrated Products, Inc	MAX487ESA+	V_{CC}: 12V, Operating Temperature Ranges: -40°C to 85°C	IEC 62619:2022	Tested with apparatus
- IC (U36)	Texas Instruments	OPA2348-Q1	Operating temperature range: -40°C to 150°C, I_{IN}: 10mA, V_S: 2.1V to 5.5V	IEC 62619:2022	Tested with apparatus
- IC (U38)	Winbond	W25Q128JVSIQ	V_{CC}: -0.6V to 4.6V, Operating Temperature: -40°C to 105°C	IEC 62619:2022	Tested with apparatus
- IC (U21)	Analog Devices, Inc.	LTC6820HMS	Operating temperature range: -40°C to 105°C, Operating frequency: 1000 kHz	IEC 62619:2022	Tested with apparatus
- IC (U33)	Shanghai Analogy Semiconductor Technology Co., Ltd.	ADX111A	V_{DD}: -0.3V to 7V, operating temperature range: -40°C to 125°C	IEC 62619:2022	Tested with apparatus
- IC (U37)	SG Micro Limited	SGM8544XTS14/TR	Supply Voltage Range: 2.1V to 5.5V, operating temperature range: -40°C to 125°C	IEC 62619:2022	Tested with apparatus
- MOSFET (Q18)	nexperia	BUK7M9R9-60E	V_{DS}: 60V, V_{GS}: ±20V, I_D: -60A, T_J, T_{STG}: -55°C to 175°C	IEC 62619:2022	Tested with apparatus

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

- IC (Y1, Y2)	DAISHINKU CORP.	DSX321G	Operating temperature range: -40°C to 150°C, NOMINAL FREQUENCY: 8000MHZ	IEC 62619:2022	Tested with apparatus
- IC (U1, U5, U9, U10, U11, U12, U13, U14, U15, U17, U18, U19, U22, U25, U27)	LITE-ON Technology Corp.	LTV217	Operating Temperature: -55°C to 110°C, I_F: 50mA , VR: 6V	IEC 62619:2022	Tested with apparatus
- Transformer (T1)	Sumida Trading(Shanghai)Company Limited	CLP67D55/CE	Operating temperature range: -40°C to 125°C, Turns Ratio: 1.0±2%,, Inductance (OCL): 150μH~420μH	IEC 62619:2022	Tested with apparatus
- Transformer (T2, T3, T4)	Sumida Trading(Shanghai)Company Limited	CEE98	Operating temperature range: -40°C to 125°C, Inductance (OCL): 22μH±20%	IEC 62619:2022	Tested with apparatus
- Relays (K1)	XIAMEN HONGFA ELECTROACOUSTIC CO LTD	HF49FD	30VDC, 5A, 30VAC, 3A	UL 508	UL E133481
- Connector (J1, J2, J3, J8, J9)	SHENZHEN CONNECTION ELECTRONIC CO LTD	QCTB25	600V, 115A	UL 486A-486B	UL E304128
- Connector (J5, J6, J7)	SHENZHEN CONNECTION ELECTRONIC CO LTD	QCTB25V	600V, 115A	UL 486A-486B	UL E304128
- Connector (J4)	SHENZHEN CONNECTION ELECTRONIC CO LTD	QCTB25-1	600V, 125A	UL 486A-486B	UL E304128
- Connector (J10)	SHENZHEN CONNECTION ELECTRONIC CO LTD	QCTB25V-1	600V, 125A	UL 486A-486B	UL E304128
- Connector (P1)	SHENZHEN CONNECTION ELECTRONIC CO LTD	DSTB22	600V, 75A	UL 486A-486B	UL E304128

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

- Connector (P2)	SHENZHEN CONNECTION ELECTRONIC CO LTD	DSTB38	600V, 100A	UL 486A-486B	UL E304128
- DC power supply (U1)	mornsun	PV50-25B24	Operating temperature range: -40°C to 70°C, Input voltage range: 80V to 750VDC	IEC 62619:2022	Tested with apparatus
Cells	Hefei Gotion High-tech Power Energy Co., Ltd.	IFP28148115 A52Ah	3.2Vd.c., 52Ah	IEC 62619: 2022	TUV SÜD CB: SG PSB-BT-03623
- Electrolyte	Guangzhou Tinci Materials Technology Co., Ltd.	EGX21	$LiPF_6$, DMC, EMC, EC	--	--
- Separator	Shenzhen Xingyuan Material Technology Co., Ltd	12+2μm*109mm PE	PE+Al_2O_3, 10677mm×109mm ×14μm for a core, total two cell cores	--	--
- Positive electrode	Nanjing Gotion New Energy Co.,Ltd.	GX003	$LiFePO_4$, Conductive Additive PVDF, Aluminum Foil 4644mm×99.5mm ×102μm for a core, total two cell cores	--	--
- Negative electrode	Nanjing Gotion New Energy Co.,Ltd.	ST-2G	Carbon, Conductive Additive, Copper Foil, 4940mm×103.5mm×64μm for a core, total two cell cores	--	--
- Positive electrode tab	Hefei Gotion Precision Coating Material Co., Ltd.	(12+2)μm×711mm-197mm	Aluminum belt, 14μm×(30±0.5)mm	--	--
- Negative electrode tab	Jiujiang Defu Technology Co., Ltd	6μm×720mm	Cu belt, 6μm×(30±0.5)mm	--	--
- Insulation tap	Shenzhen Yanyi New Materials Co., Ltd	PI	PP, 0.5 mm×(30±10)μm	--	--

IEC 62619					
Clause	Requirement + Test		Result - Remark		Verdict
- Can	Hefei Lixiang Battery Technology Co., Ltd	28148115-B2.01	Material: Al Wide side thickness: 0.4mm, Narrow side thickness: 0.5mm, Bottom side thickness: 1mm	--	--
- Vent	Hefei Lixiang Battery Technology Co., Ltd	28148115-B2.01	Material: Steel Venting pressure: 0.9MPa R=6mm	--	--
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**

Supplementary information:

A – No fire or Explosion
B – Fire
C – Explosion
D – The test was completed after 6 h
E – The test was completed after the cell casing cooled to 20% of the maximum temperature rise
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**

Supplementary information:

Results:
A – No fire or Explosion
B – Fire
C – Explosion
D – Test concluded when temperature reached a steady state condition
E – Test concluded when temperature returned to ambient
F – Other (Please explain): _____

IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

7.2.6	TABLE: Forced discharge test (cell or cell block)				N/A
Sample No.	**OCV before applying reverse charge, (V dc)**	**Target Voltage (V dc)**	**Measured Reverse Charge Current It, (A)**	**Total Time for Reversed Charge Application (min)**	**Results**

Supplementary information:

Results:
A – No fire or Explosion
B – Fire
C – Explosion
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 [1)]**	**Maximum applied pressure, (N)**	**Results**

Supplementary information:

8)..... 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 [1)]	Location of target cell	Area for fire protection (m^2)

Supplementary information:

1) 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

2) 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**
B2	3.248	35	425.7	3.699	A, D, F

	Charge Voltage Applied Battery System: 1)	
	Whole	**Part**
	468.6V	/

Supplementary information:

8. 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): ___

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**
B2	382.1	42	395.9	A, D, F

Supplementary information:

Results:
A – No fire or Explosion
B – Fire
C – Explosion
D – Overcurrent sensing function of BMU did operate and then charging stopped
E – Overcurrent 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

8.2.4	TABLE: Overheating control (battery system)		P
Model No.	**OCV at start(SOC 50%) of test, V dc**	**Maximum Charging Current, A**	**Maximum Charging Voltage, V dc**
B2	387.1	35	426
Maximum Specified Temperature of Battery System, °C		**Maximum Measured Cell Case Temperature, °C**	**Results**
55.0		56.0	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

9	TABLE: EMC				N/A
Standard used for EMC test:					
Sample No.	**EMC Test Item**	**Battery Condition**	**EMC Test Level/ Parameters**	**Compliance Criteria**	**Results**

Supplementary information:

Battery Condition During EMC test

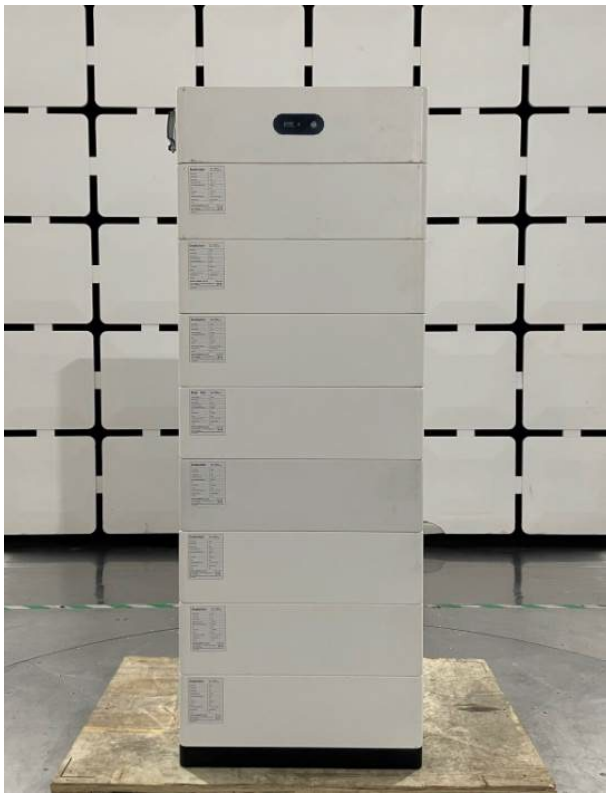
1 – In Operation Mode, [ ] Supplied at ____, [ ] Load at____

2 – In non-operation Mode, Battery state of charge (SOC) before test at around____

Compliance Criteria and Test Results:
A – No fire or Explosion
B – Fire
C – Explosion
D – Battery system did operate as intended during the test.
E - All function of battery system did operate as intended after the test.
F - All function of battery system did not operate as intended during the test, (Please explain): ____
G - Other (Please explain): ____

ANNEX 1: PHOTOS

Model type: GroundHV-20K



Front overview of battery system GroundHV-20K

Side overview of battery GroundHV-20K

Side overview of battery GroundHV-20K

Model type: HYS-MBMS-EV-A1

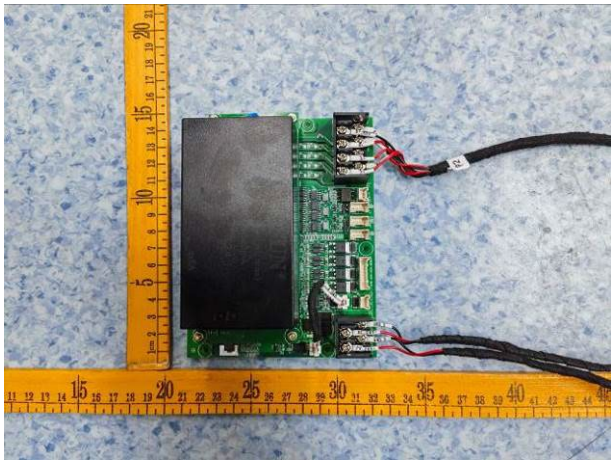
Side overview of control box HYS-MBMS-EV-A1

Back overview of control box HYS-MBMS-EV-A1

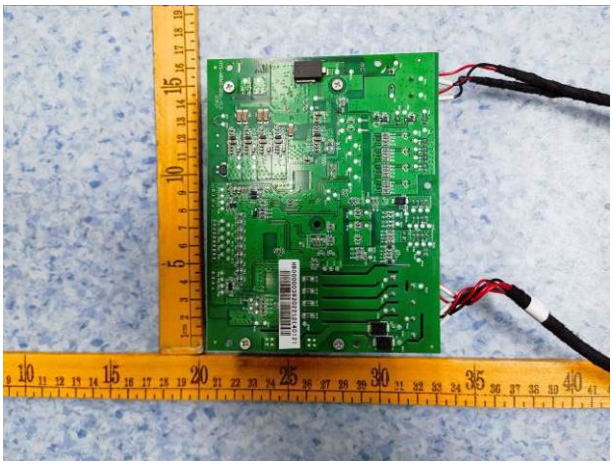
Control box switch surface

Control box communication port

Inside view of the EUT



BMS main board of the EUT

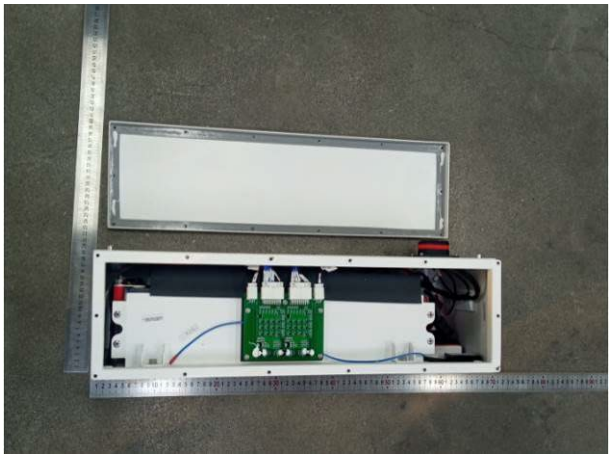


BMS main board of the EUT

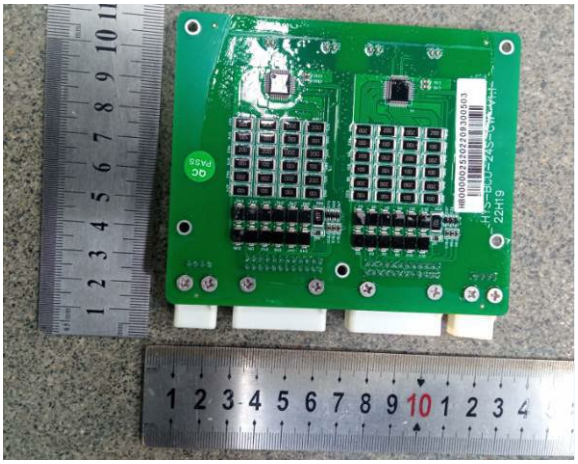
Model type: GroundHV-2500

Side overview of battery GroundHV-2500

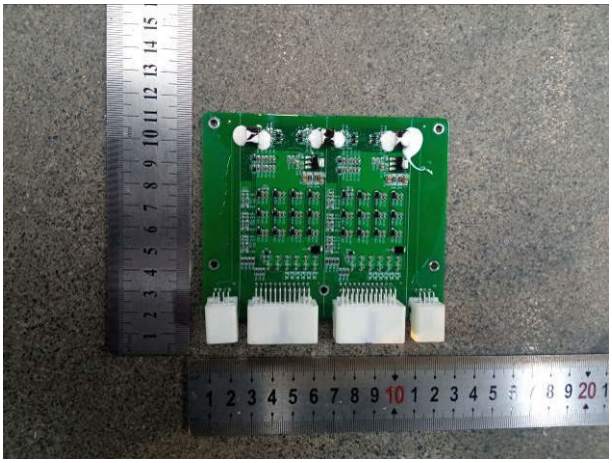
Side overview of battery GroundHV-2500



Inside view of the EUT



BMS main board of the EUT



BMS main board of the EUT

Front overview of cell IFP28148115A-52Ah