

Technical Report No.: 5040823021304-00

Date: 2023-11-15

Client: Jiangsu SolarEast Energy Storage Technology Co., Ltd
No. 199, Yingzhou South Road Haizhou District 222243
Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA

Manufacturer: Jiangsu SolarEast Energy Storage Technology Co., Ltd
No. 199, Yingzhou South Road Haizhou District 222243
Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA

Factory: Jiangsu SolarEast Energy Storage Technology Co., Ltd
N No. 199, Yingzhou South Road Haizhou District 222243
Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA

Test object: Product: Rechargeable Li-ion Battery System
Model: PowerCool-LFP-HV-10, PowerCool-LFP-HV-15,
PowerCool-LFP-HV-20, PowerCool-LFP-HV-25,
PowerCool-LFP-HV-30, PowerCool-LFP-HV-35

Test specification: IEC 62619:2022 (Edition 2.0)

Purpose of examination: Testing (visual / partial) for compliance with specified requirements to assess conformity with the German Product Safety Act - ProdSG(latest version)
 Testing (visual / partial) for compliance with specified requirements to assess conformity with the essential safety and health requirements of the following European Directives:
 Testing and evaluation (visual / partial) according to the test specification

Test result: The test results show that the presented product is in compliance with the above listed test specifications.

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1. Description of the test object

1.1 Picture(s)

See Chapter 6 Documentation.

1.2 Function

Manufacturer's specification for intended use: for use in industrial applications.

(According to the user manual)

Manufacturer's specification for intended use: None.

1.3 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment
- Covered by attached risk analysis

1.4 Technical Data

1.The Rechargeable Li-ion Battery System PowerCool-LFP-HV-10, PowerCool-LFP-HV-15, PowerCool-LFP-HV-20, PowerCool-LFP-HV-25, PowerCool-LFP-HV-30, PowerCool-LFP-HV-35 are used in industrial application.

2. Rechargeable Li-ion battery system consists of different number of rechargeable Li-on battery with no. PowerCool-LFP-HV connected in series and one controller box. PowerCool-LFP-HV-10 consists of two rechargeable Li-ion batteries and one controller box. PowerCool-LFP-HV-15 consists of three rechargeable Li-ion batteries and one controller box. PowerCool-LFP-HV-20 consists of four rechargeable Li-ion batteries and one controller box. PowerCool-LFP-HV-25 consists of five rechargeable Li-ion batteries and one controller box. PowerCool-LFP-HV-30 consists of six rechargeable Li-ion batteries and one controller box. PowerCool-LFP-HV-35 consists of seven rechargeable Li-ion batteries and one controller box.

3.The rechargeable Li-ion battery PowerCool-LFP-HV consists of 16 Rechargeable Li-ion Cells with model no. IFP50160116A-102Ah connected in series. Additionally, details information of the battery and the built-in cell are shown in following table.

Table for parameters			
Product name	Rechargeable Li-ion Cell	Rechargeable Li-ion Battery	Rechargeable Li-ion Battery System
Type/model	IFP50160116A-102Ah	PowerCool-LFP-HV	PowerCool-LFP-HV-10 PowerCool-LFP-HV-15 PowerCool-LFP-HV-20 PowerCool-LFP-HV-25

			PowerCool-LFP-HV-30 PowerCool-LFP-HV-35
Nominal voltage	3.2V	51.2V	PowerCool-LFP-HV10: DC 102.4V PowerCool-LFP-HV15: DC 153.6V PowerCool-LFP-HV20: DC 204.8 V PowerCool-LFP-HV25: DC 256.0V PowerCool-LFP-HV30: DC 307.2V PowerCool-LFP-HV35: DC 358.4V
Rated capacity	102Ah	102Ah	102Ah
Charging voltage declared by manufacturer	3.65V	3.6V for cell	3.6V for cell
Upper limit charging voltage	3.9V	3.65V for cell	3.65V for cell
Charging current declared by manufacturer	20.4A	20.4A	20.4A
Maximum continuous charging current	50A	50A	50A
Discharging current declared by manufacturer	20.4A	20.4A	20.4A
Maximum continuous discharging current	125A	50A	50A
Discharge cut-off voltage	2.0V	2.8V for cell	2.8V for cell
Lower limit discharging voltage	2.0V	2.6V for cell	2.6V for cell

Standard temperature range for charging	0°C to 60°C	0°C to 57°C	0°C to 57°C
Standard temperature range for discharging	-20°C to 65°C	-3°C to 57°C	-3°C to 57°C
Standard charging method by manufacturer	Charge at constant current 20.4A until voltage reaches 3.65V, then charge at constant voltage 3.65V till current is 5.1A.	Charge at constant current 20.4A until the max cell voltage reaches 3.6V. Then still for 30min followed by charging at constant current 5 A until the max cell voltage reaches 3.6V.	PowerCool-LFP-HV-10: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current 5A until the max cell voltage reaches 3.6V. PowerCool-LFP-HV-15: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current 5A until the max cell voltage reaches 3.6V. PowerCool-LFP-HV-20: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current 5A until the max cell voltage reaches 3.6V. PowerCool-LFP-HV-25: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current 5A until the max cell voltage reaches 3.6V. PowerCool-LFP-HV-30: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current

			5A until the max cell voltage reaches 3.6V. PowerCool-LFP-HV-35: Charge at constant current 20.4A until the max cell voltage reaches 3.6V, then still for 30min followed by charging at constant current 5A until the max cell voltage reaches 3.6V.
Charging method for internal short-circuit test	Charge at constant current 50A until voltage reaches 3.65 V, then charge at constant voltage 3.65 V till current is 0.05It A (5.1 A)	-	-
Dimension	LxWxH: (49.9±0.5)x(118.5±0.5)x(160±0.8) mm	LxWxH: (720±2)x(420±2)x(173.7±2) mm	PowerCool-LFP-HV-10: (720±2)x(420±2)x(616±3) mm PowerCool-LFP-HV-15: (720±2)x(420±2)x(766±5) mm PowerCool-LFP-HV-20: (720±2)x(420±2)x(916±7) mm PowerCool-LFP-HV-25: (720±2)x(420±2)x(1066±9) mm PowerCool-LFP-HV-30: (720±2)x(420±2)x(1216±11) mm PowerCool-LFP-HV-35: (720±2)x(420±2)x(1366±13) mm
Weight	1.947±0.03 kg	47±2 kg	PowerCool-LFP-HV-10: 116.2±3 kg PowerCool-LFP-HV-15: 163.38±5 kg PowerCool-LFP-HV-20: 210.42±7 kg PowerCool-LFP-HV-25: 257.46±9 kg PowerCool-LFP-HV-30: 304.5±11 kg PowerCool-LFP-HV-35:

			351.54±13 kg
Configuration	-	16S	PowerCool-LFP-HV-10: 16S(2S) PowerCool-LFP-HV-15: 16S(3S) PowerCool-LFP-HV-20: 16S(4S) PowerCool-LFP-HV-25: 16S(5S) PowerCool-LFP-HV-30: 16S(6S) PowerCool-LFP-HV-35: 16S(7S)

2. Order

2.1 Date of Purchase Order, Customer’s Reference

2023-08-01

2.2 Test Sample(s)

- Reception date(s): 2023-08-01
- Location(s) of reception: TÜV SÜD New Energy Vehicle Testing (Jiangsu) Co., Ltd.
- Condition of test sample(s): The battery system is stored for not more than six months

2.3 Testing

- Testing date(s): 2023-09-01 to 2023-09-16
- Location(s) of testing: TÜV SÜD New Energy Vehicle Testing (Jiangsu) Co., Ltd.
No.15 Factory Building A, Jintong International Industrial Park, No.8 Xihu Road, Changzhou, Jiangsu, 213164, P. R. China

2.4 Points of Non-Compliance or Exceptions of the Test Procedure

- None
- Procedure:
- Rational:
- Not performed tests:

3. Test Results

Decision rule(s) for reporting statement(s) of conformity

Decision rule according to IEC Guide 115:2023, clause 4.3 was applied.

3.1 Positive Test Results

Test specification(s)	Report no. / Rev. No.	Date	Remark
Electrical safety:	5040823021304-00	2023-11-15	/
Functional safety:	5040823021304-00 FS	2023-11-15	/
EMF / EMC / Radiation:	4861923320500	2023-09-26	/
Vibration:	UNWT(2023)09053	2023-09-19	/

3.2 Points of Non-Compliance according to the test specification

- None

4. Test History

N/A

5. Remarks

5.1 General

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.



5.2 Factory surveillance cycle

Your production facility is currently on the following surveillance cycle.

- Annual (12 month)
Bi-Annual (6 month)
Quarterly (3 month)
Other

5.3 Additional information for routine tests to be performed by the factory(ies)

None.

6. Documentation

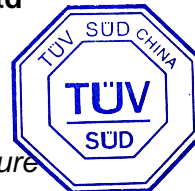
Table with 3 columns: File, File name, Date. Rows include Data form (CDF), Photo documentation, and User manual.

7. Summary

The test specification is met.

TÜV SÜD New Energy Vehicle Testing (Jiangsu) Co., Ltd

Tested by: Jishuai Ban (with signature)
printed name, function & signature



Approved by: Haiyang Liu
printed name, function & signature

--- End of Report ---