



**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..... : 64.280.25.60664.01

Date of issue..... : 2025-12-26

Total number of pages : 44 pages

Name of Testing Laboratory preparing the Report : TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd.

Applicant's name : Shenzhen Kstar New Energy Company Limited

Address..... : The 9th Floor, R&D Building, Kstar Industrial Park, Guangming Hi-tech Industrial Zone, 518107 Shenzhen, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA

Test specification:

Standard : IEC 62619:2022

Test procedure : TÜV SÜD Mark

Non-standard test method : N/A

TRF template used..... : IECEE OD-2020-F1:2022, Ed.1.5

Test Report Form No. : IEC62619B

Test Report Form(s) Originator : UL Solutions (Demko)

Master TRF : Dated 2023-02-24

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General disclaimer:

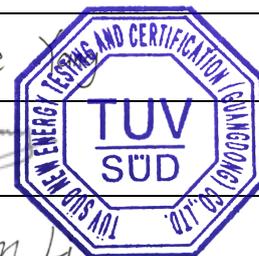
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Test item description :	Rechargeable Li-ion Battery System
Trade Mark(s)	KSTAR
Manufacturer	Same as the applicant
Model/Type reference	BP48100PF1A-G2, BP48100P1A-G2, BP48100PF2A-G2, BP48100P2A-G2, BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF2A-G2-2P, BP48100P2A-G2-2P, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P
Ratings	Nominal voltage: 51.2 Vd.c., Rated Capacity: BP48100PF1A-G2, BP48100P1A-G2, BP48100PF2A-G2, BP48100P2A-G2: 100 Ah, BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 200 Ah, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P: 300 Ah, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P: 400 Ah, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P: 500 Ah, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P: 600 Ah, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P: 700 Ah, BP48100PF1A-G2-8P, BP48100P1A-G2-8P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 800 Ah

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
Testing Laboratory:	TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd.	
Testing location/ address :	North-1/F, 2/F & Unit 301-3/F, TUV SUD Testing Center, D1, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou, Guangdong, China	
Tested by (name, function, signature)	Carville Yang (Project Handler)	<i>Carville</i>
Supervised by (name, function, signature) :	Victor Zeng (Project Handler)	<i>Victor Zeng</i>
Approved by (name, function, signature) :	Liam Li (Designated Reviewer)	<i>Liam Li</i>



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

Attachment No.1: Photo Documentation (25 pages)

Summary of testing:**Tests performed (name of test, test clause and date test performed):**

For Battery 1: In section 7 and section 8, tests of Cl. 7.2.3.3, Cl. 7.3.3, Cl. 8.2.2, Cl. 8.2.3 and Cl. 8.2.4 were performed with battery, model: BP48100PF1A-G2.

Name of test, test clause	Date of test performed
- Cl. 7.2.3.3 Edge or corner drop test (cell or cell block, and battery system)	2025-11-14
- Cl. 7.3.3 Propagation test (battery system)	2025-12-11
- Cl. 8.2.2 Overcharge control of voltage (battery system)	2025-12-03
- Cl. 8.2.3 Overcharge control of current (battery system)	2024-12-10 to 2024-12-11
- Cl. 8.2.4 Overheating control (battery system)	2025-12-04

For Battery 2: In section 7 and section 8, tests of Cl. 7.2.3.3, Cl. 7.3.3, Cl. 8.2.2, Cl. 8.2.3 and Cl. 8.2.4 were performed with battery, model: BP48100PF2A-G2.

Name of test, test clause	Date of test performed
- Cl. 7.2.3.3 Edge or corner drop test (cell or cell block, and battery system)	2025-11-13
- Cl. 7.3.3 Propagation test (battery system)	2025-12-12
- Cl. 8.2.2 Overcharge control of voltage (battery system)	2025-11-17
- Cl. 8.2.3 Overcharge control of current (battery system)	2025-11-05
- Cl. 8.2.4 Overheating control (battery system)	2025-11-18

The samples comply with the above requirements of IEC 62619: 2022.

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

TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd.

Address: North-1/F, 2/F & Unit 301-3/F, TÜV SUD Testing Center, D1, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou, Guangdong, China

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

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:

Below marking plate is pasted on the surface of the battery:

BP48100PF1A-G2:

KSTAR	
Model:BP48100PF1A-G2	
Rechargeable Li-ion Battery System IFpP51/161/120[(8S)2S]M/-10+40/90	
Battery type:	LiFePO4
Rated capacity:	100Ah
Rated energy:	5.12kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	-10°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	80Ad.c.
Maximum discharge power:	4.096kW
Maximum charge current:	80Ad.c.
Maximum charge power:	4.096kW
Protection class:	Class I
	
Production Date:	<input type="text"/>
Serial No.:	<input type="text"/>
Shenzhen Kstar New Energy Company Limited MADE IN CHINA	

BP48100P1A-G2:

KSTAR	
Model:BP48100P1A-G2	
Rechargeable Li-ion Battery System IFpP51/161/120[(8S)2S]M/-10+40/90	
Battery type:	LiFePO4
Rated capacity:	100Ah
Rated energy:	5.12kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	0°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	80Ad.c.
Maximum discharge power:	4.096kW
Maximum charge current:	80Ad.c.
Maximum charge power:	4.096kW
Protection class:	Class I
	
Production Date:	<input type="text"/>
Serial No.:	<input type="text"/>
Shenzhen Kstar New Energy Company Limited MADE IN CHINA	

BP48100PF2A-G2:

KSTAR	
Model:BP48100PF2A-G2	
Rechargeable Li-ion Battery System IFpP51/162/120[(8S)2S]M/-10+40/90	
Battery type:	LiFePO4
Rated capacity:	100Ah
Rated energy:	5.12kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	-10°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	80Ad.c.
Maximum discharge power:	4.096kW
Maximum charge current:	80Ad.c.
Maximum charge power:	4.096kW
Protection class:	Class I
	
Production Date:	<input type="text"/>
Serial No.:	<input type="text"/>
Shenzhen Kstar New Energy Company Limited MADE IN CHINA	

BP48100P2A-G2:

KSTAR	
Model:BP48100P2A-G2	
Rechargeable Li-ion Battery System IFpP51/162/120[(8S)2S]M/-10+40/90	
Battery type:	LiFePO4
Rated capacity:	100Ah
Rated energy:	5.12kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	0°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	80Ad.c.
Maximum discharge power:	4.096kW
Maximum charge current:	80Ad.c.
Maximum charge power:	4.096kW
Protection class:	Class I
	
Production Date:	<input type="text"/>
Serial No.:	<input type="text"/>
Shenzhen Kstar New Energy Company Limited MADE IN CHINA	

BP48100PF1A-G2-2P:

KSTAR

Model:BP48100PF1A-G2-2P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)2P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 200Ah

Rated energy: 10.24kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 160Ad.c.

Maximum discharge power: 8.192kW

Maximum charge current: 160Ad.c.

Maximum charge power: 8.192kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-2P:

KSTAR

Model:BP48100P1A-G2-2P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)2P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 200Ah

Rated energy: 10.24kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 160Ad.c.

Maximum discharge power: 8.192kW

Maximum charge current: 160Ad.c.

Maximum charge power: 8.192kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF2A-G2-2P:

KSTAR

Model:BP48100PF2A-G2-2P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)2P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 200Ah

Rated energy: 10.24kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

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Maximum discharge power: 8.192kW

Maximum charge current: 160Ad.c.

Maximum charge power: 8.192kW

Protection class: Class I

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Shenzhen Kstar New Energy Company Limited
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BP48100P2A-G2-2P:

KSTAR

Model:BP48100P2A-G2-2P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)2P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 200Ah

Rated energy: 10.24kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 160Ad.c.

Maximum discharge power: 8.192kW

Maximum charge current: 160Ad.c.

Maximum charge power: 8.192kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF1A-G2-3P:

KSTAR

Model:BP48100PF1A-G2-3P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)3P]E/-10+40/90

Battery type: LiFePO4
Rated capacity: 300Ah
Rated energy: 15.36kWh
Nominal voltage: 51.2Vd.c.
Ingress Protection: IP65
Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)
Operation voltage range: 44.8~57.6Vd.c.
Maximum discharge current: 240Ad.c.
Maximum discharge power: 12.288kW
Maximum charge current: 240Ad.c.
Maximum charge power: 12.288kW
Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-3P:

KSTAR

Model:BP48100PF1A-G2-3P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)3P]E/-10+40/90

Battery type: LiFePO4
Rated capacity: 300Ah
Rated energy: 15.36kWh
Nominal voltage: 51.2Vd.c.
Ingress Protection: IP65
Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)
Operation voltage range: 44.8~57.6Vd.c.
Maximum discharge current: 240Ad.c.
Maximum discharge power: 12.288kW
Maximum charge current: 240Ad.c.
Maximum charge power: 12.288kW
Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF2A-G2-3P:

KSTAR

Model:BP48100PF2A-G2-3P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)3P]E/-10+40/90

Battery type: LiFePO4
Rated capacity: 300Ah
Rated energy: 15.36kWh
Nominal voltage: 51.2Vd.c.
Ingress Protection: IP65
Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)
Operation voltage range: 44.8~57.6Vd.c.
Maximum discharge current: 240Ad.c.
Maximum discharge power: 12.288kW
Maximum charge current: 240Ad.c.
Maximum charge power: 12.288kW
Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P2A-G2-3P:

KSTAR

Model:BP48100P2A-G2-3P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)3P]E/-10+40/90

Battery type: LiFePO4
Rated capacity: 300Ah
Rated energy: 15.36kWh
Nominal voltage: 51.2Vd.c.
Ingress Protection: IP65
Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)
Operation voltage range: 44.8~57.6Vd.c.
Maximum discharge current: 240Ad.c.
Maximum discharge power: 12.288kW
Maximum charge current: 240Ad.c.
Maximum charge power: 12.288kW
Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF1A-G2-4P:

KSTAR

Model:BP48100PF1A-G2-4P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)4P]E/-10+40/90

Battery type:	LiFePO4
Rated capacity:	400Ah
Rated energy:	20.48kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	-10°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	240Ad.c.
Maximum discharge power:	12.288kW
Maximum charge current:	240Ad.c.
Maximum charge power:	12.288kW
Protection class:	Class I









Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-4P:

KSTAR

Model:BP48100P1A-G2-4P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)4P]E/-10+40/90

Battery type:	LiFePO4
Rated capacity:	400Ah
Rated energy:	20.48kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	0°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	240Ad.c.
Maximum discharge power:	12.288kW
Maximum charge current:	240Ad.c.
Maximum charge power:	12.288kW
Protection class:	Class I









Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
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BP48100PF2A-G2-4P:

KSTAR

Model:BP48100PF2A-G2-4P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)4P]E/-10+40/90

Battery type:	LiFePO4
Rated capacity:	400Ah
Rated energy:	20.48kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	-10°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	240Ad.c.
Maximum discharge power:	12.288kW
Maximum charge current:	240Ad.c.
Maximum charge power:	12.288kW
Protection class:	Class I









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Shenzhen Kstar New Energy Company Limited
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BP48100P2A-G2-4P:

KSTAR

Model:BP48100P2A-G2-4P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)4P]E/-10+40/90

Battery type:	LiFePO4
Rated capacity:	400Ah
Rated energy:	20.48kWh
Nominal voltage:	51.2Vd.c.
Ingress Protection:	IP65
Operating ambient Temperature:	0°C~+50°C(Charging)/ -10°C~+50°C(Discharging)
Operation voltage range:	44.8~57.6Vd.c.
Maximum discharge current:	240Ad.c.
Maximum discharge power:	12.288kW
Maximum charge current:	240Ad.c.
Maximum charge power:	12.288kW
Protection class:	Class I









Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA



BP48100PF1A-G2-5P:

KSTAR

Model:BP48100PF1A-G2-5P

Rechargeable Li-ion Battery System
 IFpP51/161/120(((8S)2S)5P)E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 500Ah
 Rated energy: 25.6kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: -10°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-5P:

KSTAR

Model:BP48100P1A-G2-5P

Rechargeable Li-ion Battery System
 IFpP51/161/120(((8S)2S)5P)E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 500Ah
 Rated energy: 25.6kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: 0°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF2A-G2-5P:

KSTAR

Model:BP48100PF2A-G2-5P

Rechargeable Li-ion Battery System
 IFpP51/162/120(((8S)2S)5P)E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 500Ah
 Rated energy: 25.6kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: -10°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I



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BP48100P2A-G2-5P:

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Model:BP48100P2A-G2-5P

Rechargeable Li-ion Battery System
 IFpP51/162/120(((8S)2S)5P)E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 500Ah
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 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
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Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF1A-G2-6P:

KSTAR

Model:BP48100PF1A-G2-6P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)6P]E/-10+40/90

Battery type: LiFePO4

Rated capacity: 600Ah

Rated energy: 30.72kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-6P:

KSTAR

Model:BP48100P1A-G2-6P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)6P]E/-10+40/90

Battery type: LiFePO4

Rated capacity: 600Ah

Rated energy: 30.72kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF2A-G2-6P:

KSTAR

Model:BP48100PF2A-G2-6P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)6P]E/-10+40/90

Battery type: LiFePO4

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Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P2A-G2-6P:

KSTAR

Model:BP48100P2A-G2-6P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)6P]E/-10+40/90

Battery type: LiFePO4

Rated capacity: 600Ah

Rated energy: 30.72kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I

Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF1A-G2-7P:
KSTAR
Model:BP48100PF1A-G2-7P

Rechargeable Li-ion Battery System
 IFpP51/161/120[[(8S)2S)7P]E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 700Ah
 Rated energy: 35.84kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: -10°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I


 Production Date:

 Serial No.:

 Shenzhen Kstar New Energy Company Limited
 MADE IN CHINA

BP48100P1A-G2-7P:
KSTAR
Model:BP48100P1A-G2-7P

Rechargeable Li-ion Battery System
 IFpP51/161/120[[(8S)2S)7P]E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 700Ah
 Rated energy: 35.84kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: 0°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I


 Production Date:

 Serial No.:

 Shenzhen Kstar New Energy Company Limited
 MADE IN CHINA

BP48100PF2A-G2-7P:
KSTAR
Model:BP48100PF2A-G2-7P

Rechargeable Li-ion Battery System
 IFpP51/162/120[[(8S)2S)7P]E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 700Ah
 Rated energy: 35.84kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: -10°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I


 Production Date:

 Serial No.:

 Shenzhen Kstar New Energy Company Limited
 MADE IN CHINA

BP48100P2A-G2-7P:
KSTAR
Model:BP48100P2A-G2-7P

Rechargeable Li-ion Battery System
 IFpP51/162/120[[(8S)2S)7P]E/-10+40/90
 Battery type: LiFePO4
 Rated capacity: 700Ah
 Rated energy: 35.84kWh
 Nominal voltage: 51.2Vd.c.
 Ingress Protection: IP65
 Operating ambient Temperature: 0°C~+50°C(Charging)/
 -10°C~+50°C(Discharging)
 Operation voltage range: 44.8~57.6Vd.c.
 Maximum discharge current: 240Ad.c.
 Maximum discharge power: 12.288kW
 Maximum charge current: 240Ad.c.
 Maximum charge power: 12.288kW
 Protection class: Class I


 Production Date:

 Serial No.:

 Shenzhen Kstar New Energy Company Limited
 MADE IN CHINA

BP48100PF1A-G2-8P:

KSTAR

Model:BP48100PF1A-G2-8P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)8P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 800Ah

Rated energy: 40.96kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P1A-G2-8P:

KSTAR

Model:BP48100P1A-G2-8P

Rechargeable Li-ion Battery System
IFpP51/161/120(((8S)2S)8P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 800Ah

Rated energy: 40.96kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100PF2A-G2-8P:

KSTAR

Model:BP48100PF2A-G2-8P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)8P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 800Ah

Rated energy: 40.96kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: -10°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

BP48100P2A-G2-8P:

KSTAR

Model:BP48100P2A-G2-8P

Rechargeable Li-ion Battery System
IFpP51/162/120(((8S)2S)8P)E/-10+40/90

Battery type: LiFePO4

Rated capacity: 800Ah

Rated energy: 40.96kWh

Nominal voltage: 51.2Vd.c.

Ingress Protection: IP65

Operating ambient Temperature: 0°C~+50°C(Charging)/
-10°C~+50°C(Discharging)

Operation voltage range: 44.8~57.6Vd.c.

Maximum discharge current: 240Ad.c.

Maximum discharge power: 12.288kW

Maximum charge current: 240Ad.c.

Maximum charge power: 12.288kW

Protection class: Class I



Production Date:

Serial No.:

Shenzhen Kstar New Energy Company Limited
MADE IN CHINA

Production Date:

2025-11-16

Serial No.:



6106901800B2084533001

Remark:

1. "2025-11-16" represents the date of manufacture. This is not the manufacture date of the actual sample and only for example.
2. The Serial No. "6106901800B2084533001" can be used to trace the manufacturing information of the battery system. This is not the Serial No. of the actual sample and only for example.
3. Polarity was marked near the internal connector of the battery system. The design of the external connector prevents reverse polarity connections.
4. The disposal instructions are included in user manual.



Test item particulars	Rechargeable Li-ion Battery System
Classification of installation and use	Use in industrial applications
Supply Connection	Supply by battery connectors
.....
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	: 2024-11-22, 2025-10-27, 2025-11-04, 2025-12-10
Date (s) of performance of tests	: 2024-12-10 to 2024-12-11, 2025-10-29 to 2025-12-25
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Remark: For Battery 1, model: BP48100PF1A-G2: test data and records of Cl. 8.2.3 are from test report 085-282560560-000.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
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 <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)	Shenzhen KSTAR Science & Technology Co., Ltd. Guangming Branch Kstar Tech-Industrial Park, 7th Road, Western Area, Hi-Tech Industrial Zone, Tianliao Community, Yutang Street, Guangming District, 518107 Shenzhen City, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA

General product information and other remarks:

1.1. Rechargeable Li-ion Battery Systems, model no.: BP48100PF1A-G2, BP48100P1A-G2, BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P are used in industrial applications.

1.2. BP48100PF1A-G2-2P, BP48100PF1A-G2-3P, BP48100PF1A-G2-4P, BP48100PF1A-G2-5P, BP48100PF1A-G2-6P, BP48100PF1A-G2-7P, BP48100PF1A-G2-8P respectively consist of 2-8pcs battery systems with model no.: BP48100PF1A-G2 connected in parallel.

BP48100P1A-G2-2P, BP48100P1A-G2-3P, BP48100P1A-G2-4P, BP48100P1A-G2-5P, BP48100P1A-G2-6P, BP48100P1A-G2-7P, BP48100P1A-G2-8P respectively consist of 2-8pcs battery systems with model no.: BP48100P1A-G2 connected in parallel.

1.3. Both model no.: BP48100PF1A-G2 and model no.: BP48100P1A-G2 consist of 16 pcs approved cells model no.: LF100LA connected in series, and they are identical except BP48100PF1A-G2 incorporated heating films.

1.4. The external communication model for Rechargeable Li-ion Battery Systems is wired CAN bus. Data is stored in local.

Additionally, details information of the battery and its component cell are shown in following table:

Item	Specification	
Product name	Rechargeable Li-ion Cell	Rechargeable Li-ion Battery System
Type/model	LF100LA	BP48100PF1A-G2, BP48100P1A-G2, BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P
Nominal voltage	3.2 Vd.c.	51.2 Vd.c.
Rated capacity	102 Ah	BP48100PF1A-G2, BP48100P1A-G2: 100 Ah BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 200 Ah BP48100PF1A-G2-3P, BP48100P1A-G2-3P: 300 Ah BP48100PF1A-G2-4P, BP48100P1A-G2-4P: 400 Ah BP48100PF1A-G2-5P, BP48100P1A-G2-5P: 500 Ah BP48100PF1A-G2-6P, BP48100P1A-G2-6P: 600 Ah BP48100PF1A-G2-7P, BP48100P1A-G2-7P: 700 Ah BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 800 Ah
Charging voltage declared by manufacturer	3.65 V	57.6 V
Upper limit charging voltage	3.9 V	-



Charging current declared by manufacturer	50 A	BP48100PF1A-G2, BP48100P1A-G2: 80 A, BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 160 A, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 240 A
Maximum continuous charging current	100 A	BP48100PF1A-G2, BP48100P1A-G2: 80 A, BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 160 A, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 240 A
Discharging current declared by manufacturer	50 A	BP48100PF1A-G2, BP48100P1A-G2: 80 A, BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 160 A, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 240 A
Maximum continuous discharging current	250 A	BP48100PF1A-G2, BP48100P1A-G2: 80 A, BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 160 A, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P,



		BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 240 A
End-of-discharge voltage	2.0 V	44.8 V or any cell reaches 2.80 V
Lower limit discharging voltage	1.9 V	-
Standard temperature range for charging	-20 °C to 65 °C	-
Standard temperature range for discharging	-30 °C to 65 °C	-
Standard charging method by manufacturer	Charge at constant current 50 A until voltage reaches 3.65 V, then charge at 3.65 V till charge current is 0.05 <i>I</i> _A (5.1 A).	BP48100PF1A-G2, BP48100P1A-G2: Charging at the constant current 80 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 5 A or any cell reaches 3.6 V. BP48100PF1A-G2-2P, BP48100P1A-G2-2P: Charging at the constant current 160 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 10 A or any cell reaches 3.6 V. BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: Charging at the constant current 240 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 15 A or any cell reaches 3.6 V.
Charging method for internal short-circuit test	Charge at constant current 100 A until voltage reaches 3.9 V, then charge at 3.9 V till current is 0.05 <i>I</i> _A (5.1 A).	-
Dimension	T*W*H: (49.9±1.0) mm*(160±1.0) mm* (118.5±1.0) mm	W*D*H: BP48100PF1A-G2, BP48100P1A-G2: 725 mm*245 mm*465.5 mm BP48100PF1A-G2-2P, BP48100P1A-G2-2P: 725 mm*245 mm*835.5 mm BP48100PF1A-G2-3P, BP48100P1A-G2-3P: 725 mm*245 mm*1205.5 mm BP48100PF1A-G2-4P, BP48100P1A-G2-4P: 725 mm*245 mm*1575.5 mm BP48100PF1A-G2-5P, BP48100P1A-G2-5P: 1450 mm*245 mm*1357 mm BP48100PF1A-G2-6P, BP48100P1A-G2-6P: 1450 mm*245 mm*1357 mm



		BP48100PF1A-G2-7P, BP48100P1A-G2-7P: 1450 mm*245 mm*1727 mm BP48100PF1A-G2-8P, BP48100P1A-G2-8P: 1450 mm*245 mm*1727 mm
Weight	(1.98±0.1) kg	BP48100PF1A-G2, BP48100P1A-G2: Approx. (51±2) kg, BP48100PF1A-G2-2P, BP48100P1A-G2-2P: Approx. (102±4) kg, BP48100PF1A-G2-3P, BP48100P1A-G2-3P: Approx. (153±6) kg, BP48100PF1A-G2-4P, BP48100P1A-G2-4P: Approx. (204±8) kg, BP48100PF1A-G2-5P, BP48100P1A-G2-5P: Approx. (255±10) kg, BP48100PF1A-G2-6P, BP48100P1A-G2-6P: Approx. (306±12) kg, BP48100PF1A-G2-7P, BP48100P1A-G2-7P: Approx. (357±14) kg, BP48100PF1A-G2-8P, BP48100P1A-G2-8P: Approx. (408±16) kg
Configuration	-	BP48100PF1A-G2, BP48100P1A-G2: (8S)2S BP48100PF1A-G2-2P, BP48100P1A-G2-2P: ((8S)2S)2P BP48100PF1A-G2-3P, BP48100P1A-G2-3P: ((8S)2S)3P BP48100PF1A-G2-4P, BP48100P1A-G2-4P: ((8S)2S)4P BP48100PF1A-G2-5P, BP48100P1A-G2-5P: ((8S)2S)5P BP48100PF1A-G2-6P, BP48100P1A-G2-6P: ((8S)2S)6P BP48100PF1A-G2-7P, BP48100P1A-G2-7P: ((8S)2S)7P BP48100PF1A-G2-8P, BP48100P1A-G2-8P: ((8S)2S)8P

2.1. Rechargeable Li-ion Battery Systems, model no.: BP48100PF2A-G2, BP48100P2A-G2, BP48100PF2A-G2-2P, BP48100P2A-G2-2P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P are used in industrial applications.

2.2. BP48100PF2A-G2-2P, BP48100PF2A-G2-3P, BP48100PF2A-G2-4P, BP48100PF2A-G2-5P, BP48100PF2A-G2-6P, BP48100PF2A-G2-7P, BP48100PF2A-G2-8P respectively consist of 2-8pcs battery systems with model no.: BP48100PF2A-G2 connected in parallel.

BP48100P2A-G2-2P, BP48100P2A-G2-3P, BP48100P2A-G2-4P, BP48100P2A-G2-5P, BP48100P2A-G2-6P, BP48100P2A-G2-7P, BP48100P2A-G2-8P respectively consist of 2-8pcs battery systems with model no.: BP48100P2A-G2 connected in parallel.

2.3. Both model no.: BP48100PF2A-G2 and model no.: BP48100P2A-G2 consist of 16 pcs approved cells model no.: 001CB0Y0 connected in series, and they are identical except BP48100PF2A-G2 incorporated heating films.

2.4. The external communication model for Rechargeable Li-ion Battery Systems is wired CAN bus. Data is stored in local.

Additionally, details information of the battery and its component cell are shown in following table:

Item	Specification	
Product name	Rechargeable Li-ion Cell	Rechargeable Li-ion Battery System
Type/model	001CB0Y0	BP48100PF2A-G2, BP48100P2A-G2,



		BP48100PF2A-G2-2P, BP48100P2A-G2-2P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P
Nominal voltage	3.2 Vd.c.	51.2 Vd.c.
Rated capacity	100 Ah	BP48100PF2A-G2, BP48100P2A-G2: 100 Ah BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 200 Ah BP48100PF2A-G2-3P, BP48100P2A-G2-3P: 300 Ah BP48100PF2A-G2-4P, BP48100P2A-G2-4P: 400 Ah BP48100PF2A-G2-5P, BP48100P2A-G2-5P: 500 Ah BP48100PF2A-G2-6P, BP48100P2A-G2-6P: 600 Ah BP48100PF2A-G2-7P, BP48100P2A-G2-7P: 700 Ah BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 800 Ah
Charging voltage declared by manufacturer	3.65 V	57.6 V
Upper limit charging voltage	3.65 V	-
Charging current declared by manufacturer	50 A	BP48100PF2A-G2, BP48100P2A-G2: 80 A, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 160 A, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 240 A
Maximum continuous charging current	100 A	BP48100PF2A-G2, BP48100P2A-G2: 80 A, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 160 A, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-



		G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 240 A
Discharging current declared by manufacturer	50 A	BP48100PF2A-G2, BP48100P2A-G2: 80 A, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 160 A, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 240 A
Maximum continuous discharging current	100 A	BP48100PF2A-G2, BP48100P2A-G2: 80 A, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 160 A, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 240 A
End-of-discharge voltage	2.5 V	44.8 V or any cell reaches 2.80 V
Standard temperature range for charging	0 °C to 65 °C	-
Standard temperature range for discharging	-30 °C to 65 °C	-
Standard charging method by manufacturer	Charge at constant current 50 A until voltage reaches 3.65 V, then charge at 3.65 V till charge current is 0.05 <i>t</i> A (5 A).	BP48100PF2A-G2, BP48100P2A-G2: Charging at the constant current 80 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 5 A or any cell reaches 3.6 V. BP48100PF2A-G2-2P, BP48100P2A-G2-2P: Charging at the constant current 160 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 10 A or any cell reaches 3.6 V.



		BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: Charging at the constant current 240 A until voltage to 57.6 V, then constant voltage 57.6 V until charging current reduces to 15 A or any cell reaches 3.6 V.
Charging method for internal short-circuit test	Charge at constant current 100 A until voltage reaches 3.65 V, then charge at 3.65V till charge current is $0.05I_t$ A (5 A).	-
Dimension	T*W*H: (49.91±0.50) mm* (160.8±0.50) mm* (118.8±0.50) mm	W*D*H: BP48100PF2A-G2, BP48100P2A-G2: 725 mm*245 mm*465.5 mm BP48100PF2A-G2-2P, BP48100P2A-G2-2P: 725 mm*245 mm*835.5 mm BP48100PF2A-G2-3P, BP48100P2A-G2-3P: 725 mm*245 mm*1205.5 mm BP48100PF2A-G2-4P, BP48100P2A-G2-4P: 725 mm*245 mm*1575.5 mm BP48100PF2A-G2-5P, BP48100P2A-G2-5P: 1450 mm*245 mm*1357 mm BP48100PF2A-G2-6P, BP48100P2A-G2-6P: 1450 mm*245 mm*1357 mm BP48100PF2A-G2-7P, BP48100P2A-G2-7P: 1450 mm*245 mm*1727 mm BP48100PF2A-G2-8P, BP48100P2A-G2-8P: 1450 mm*245 mm*1727 mm
Weight	(1960±150) g	BP48100PF2A-G2, BP48100P2A-G2: Approx. (51±2) kg, BP48100PF2A-G2-2P, BP48100P2A-G2-2P: Approx. (102±4) kg, BP48100PF2A-G2-3P, BP48100P2A-G2-3P: Approx. (153±6) kg, BP48100PF2A-G2-4P, BP48100P2A-G2-4P: Approx. (204±8) kg, BP48100PF2A-G2-5P, BP48100P2A-G2-5P: Approx. (255±10) kg, BP48100PF2A-G2-6P, BP48100P2A-G2-6P: Approx. (306±12) kg, BP48100PF2A-G2-7P, BP48100P2A-G2-7P: Approx. (357±14) kg, BP48100PF2A-G2-8P, BP48100P2A-G2-8P: Approx. (408±16) kg
Configuration	-	BP48100PF2A-G2, BP48100P2A-G2: (8S)2S BP48100PF2A-G2-2P, BP48100P2A-G2-2P: ((8S)2S)2P BP48100PF2A-G2-3P, BP48100P2A-



		G2-3P: ((8S)2S)3P BP48100PF2A-G2-4P, BP48100P2A-G2-4P: ((8S)2S)4P BP48100PF2A-G2-5P, BP48100P2A-G2-5P: ((8S)2S)5P BP48100PF2A-G2-6P, BP48100P2A-G2-6P: ((8S)2S)6P BP48100PF2A-G2-7P, BP48100P2A-G2-7P: ((8S)2S)7P BP48100PF2A-G2-8P, BP48100P2A-G2-8P: ((8S)2S)8P
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The final evaluation of the battery system must be conducted in the end device application for which the battery system will be used.



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

4	PARAMETER MEASUREMENT TOLERANCES		P
	Parameter measurement tolerances		P

5	GENERAL SAFETY CONSIDERATIONS		P
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5.1	General		P
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	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
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	Reduce the risk of injuries from moving parts		N/A
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5.2	Insulation and wiring		P
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	Voltage, current, altitude, and humidity requirements		P
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	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
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	The mechanical integrity of internal connections		P
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5.3	Venting		P
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	Pressure relief function		P
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	Encapsulation used to support cells within an outer casing		P
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5.4	Temperature/voltage/current management		P
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	The design prevents abnormal temperature-rise		P
--	---	--	---

	Voltage, current, and temperature limits of the cells		P
--	---	--	---

	Specifications and charging instructions for equipment manufacturers		P
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5.5	Terminal contacts of the battery pack and/or battery system		P
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	Polarity marking(s)		P
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	Polarity marking not provided for keyed external connector		N/A
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	Capability to carry the maximum anticipated current		P
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	External terminal contact surfaces		P
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	Terminal contacts are arranged to minimize the risk of short circuits		P
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5.6	Assembly of cells, modules, or battery packs into battery systems		P
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5.6.1	General		P
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	Independent control and protection method(s)		P
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IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	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..... :	See page 15-22	P
	Designation of battery system to comply with the cell operating region		P
5.8	System lock (or system lock function)		P
	Non-resettable function to stop battery operation	The battery has a non-resettable protection when cell operating region (voltage, current, or temperature) is exceeded. It is not user resettable and not automatic reset.	P
	Manual with procedure for resetting of battery operation	The function of the battery can be reset by the manufacturer after checking the status of cells/batteries.	P
	Emergency battery final discharge		N/A
5.9	Quality plan		P
	Manufacturing quality plan (for example: ISO9001, etc.) prepared and implemented..... :	ISO 9001 certificate was provided	P
	The process capabilities and the process controls		P

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		P



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
	The cells or batteries charged using the method specified by the manufacturer..... :	See page 15-22	P
7.2	Reasonably foreseeable misuse		P
7.2.1	External short-circuit test (cell or cell block)		N/A
	Short circuit with total resistance of 30 mΩ ± 10 mΩ at 25 °C ± 5 °C		N/A
	Results: no fire, no explosion	See Table 7.2.1.	N/A
7.2.2	Impact test (cell or cell block)		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
	Description of the Test Unit..... :	Rechargeable Li-ion Battery System, model no.: BP48100PF1A-G2 and model no.: BP48100PF2A-G2	—
	Mass of the test unit (kg)..... :	BP48100PF1A-G2: 50.8 kg BP48100PF2A-G2: 50.2 kg	—
	Height of drop (m)..... :	0.05 m	—
	Results: no fire, no explosion		P
7.2.4	Thermal abuse test (cell or cell block)		N/A
	Results: no fire, no explosion		N/A
7.2.5	Overcharge test (cell or cell block)		N/A
	For those battery systems that are provided with only a single protection for the charging voltage control		—



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	Results: no fire, no explosion..... :	See Table 7.2.5.	N/A
7.2.6	Forced discharge test (cell or cell block)		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) x 90 (min.)		N/A
	Results: no fire, no explosion..... :	See Table 7.2.6.	N/A
7.3	Considerations for internal short-circuit – Design evaluation		N/A
7.3.1	General		N/A
7.3.2	Internal short-circuit test (cell)		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..... :	See Table 7.3.2.	N/A
7.3.3	Propagation test (battery system)		P
	Method to create a thermal runaway in one cell ... :	See Annex B and C	P
	Results: No external fire from the battery system, no battery case rupture	See results in Table 7.3.3	P

8	BATTERY SYSTEM SAFETY (CONSIDERING FUNCTIONAL SAFETY)		P
8.1	General requirements		P
	Functional safety analysis for critical controls	Functional safety analysis has been evaluated according to for Annex H of IEC 60730-1:2022 (Class B control) Report No.: 64.280.25.60663.01	P



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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		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
	The cooling system, if provided, was disconnected		N/A
	Elevated temperature for charging, 5 °C above maximum operating temperature..... :	70°C	P
	Results: no fire, no explosion..... :	See Table 9.2.4 8.2.4	P
	The BMS detected the overheat temperature and terminated charging		P
	The battery system operated as designed during test		P

9	EMC		P
	Battery system fulfil EMC requirements of the end-device application..... :	See Table 9 [×] See Report no.: 64.771.25.60667.01 for detailed EMC report [] Intended for to be tested in the end use application [include specific application]	P



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict

10	INFORMATION FOR SAFETY		P
	The cell manufacturer provides information about current, voltage and temperature limits of their products		P
	The battery system manufacturer provides information regarding how to mitigate hazards to equipment manufacturers or end-users.		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.		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		P
A.1	General		P
A.2	Charging conditions for safe use		P
A.3	Consideration on charging voltage		P
A.4	Consideration on temperature		P
A.5	High temperature range		N/A
A.6	Low temperature range		N/A
A.7	Discharging conditions for safe use		P
A.8	Example of operating region		P

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		—



IEC 62619			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
C.1	General		P
C.2	Test conditions:		P
	– The battery fully charged according to the manufacturer recommended conditions	See page 15-22	—
	– Target cell forced into thermal runaway	Cell 4	—
	– A specially prepared sample (e.g. a heater or a hole for nail penetration provided) used for ease of testing.....	A heater provided	—
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.....	1)	—

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⁾	
For Rechargeable Li-ion Battery System, model no.: BP48100PF1A-G2, BP48100P1A-G2, BP48100PF2A-G2, BP48100P2A-G2						
1.1 Rechargeable Li-ion Cell (for BP48100PF1A-G2, BP48100P1A-G2) (16 pcs)	EVE Power Co., Ltd.	LF100LA	3.2 Vd.c., 102 Ah	IEC 62619: 2022	CB Cert. No.: SG PSB-BT-03455M1 Report No.: 085-282260325-100	
1.2 Rechargeable Li-ion Cell (for BP48100PF2A-G2, BP48100P2A-G2) (16 pcs)	Contemporary Amperex Technology Co., Limited	001CB0Y0	3.2 Vd.c., 100 Ah	IEC 62619: 2022	CB Cert. No.: SG PSB-BT-04501 Report No.: 085-282460048-000	
2. BMS	Shenzhen Kstar New Energy Company Limited	P16S100A-KSD1757-10A Hardware version: For BMS main board: SST21-755-REV1.31, For current-limited board: SST21-511-REV1.21 Software model: 3305-4760, Software version: V000B000D000	Overcharge detection voltage for each cell: 3.6 V, Overdischarge detection voltage for each cell: 2.50 V, Charge overcurrent detection current: 97 A, Discharge overcurrent detection current: 97 A, High temperature charging protection: 57 °C, Low temperature charging protection: 0 °C, High temperature discharge protection: 57 °C, Low temperature discharge protection: -20 °C	-	-	
3. For BMS main board: Blue-pack5.1-U01 board						



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
-PCB material	HUIZHOU TRUSTWIN ELECTRONICS DEVELOPMENT CO LTD	TW-8(ASP1)	130 °C, V-0, CTI: 175 V	UL 94 UL 796	UL E340729
- Alternative	NIPPON (BOLUO) ELECTRONICS CO LTD	D2	130 °C, V-0, CTI> 175 V	UL 94 UL 796	UL E56377
-IC for MCU (UM1)	ST	STM32F072V BT6	Supply voltage: 1.65 V to 3.6 V, -40 °C to 85 °C	-	-
-Watch dog (U20)	EXAR	SP706SEN-L/TR	Supply voltage: 1.0 V to 5.5 V, Reset threshold: 2.93 V, -40 °C to +85 °C	-	-
-IC for AFE (U7)	Nuvoton	KA49503A	Supply voltage: 5 V to 85 V, -40 °C to 105 °C	-	-
-MOSFET for charge (QP2, QP4, QP6, QP8, QP10, QP12, QP14, QP16, QP18, QP20, QP22, QP24)	China Resources Microelectronics Limited	CRSS037N10 N	V _{DS} : 100 V, V _{GS} : ±20 V, I _D : 120 A (T _A = 25 °C), T _J : -55 °C to 150 °C	-	-
-MOSFET for discharge (QP1, QP3, QP5, QP7, QP9, QP11, QP13, QP15, QP17, QP19, QP21, QP23)	China Resources Microelectronics Limited	CRSS043N14 N	V _{DS} : 135 V, V _{GS} : ± 20V, I _D : 160 A (T _A = 25 °C), T _J : -55 °C to 150 °C	-	-
-Insulation Silicone	Shenzhen Anpin Silicone Material Co., LTD	Tc-Pad AP600	0.3mm, V-0, 130°C	UL 94	UL E257078
-Relay (SR1, SR2)	ANHUI MINGGUANG LIFE ELECTRIC CO LTD	BSC-SS-112L	125 VDC, Coil: 12 V, 2 A	UL 508	UL E333244
-Supply source (UP5)	ATAZ Guangzhou Science & Technology Co., Ltd.	DS1-B1205	12 VDC, 125 mA, T _{opr.} : -40 °C to 105 °C	UL 62368-1	UL E541676



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
-Driver transformer (T3)	TIANCHANG FUAN ELECTRONIC CO LTD	EE8.3-9MH	9.0 mH±20%, 500 VAC, Class E	-	-
--Bobbin	CHANG CHUN PLASTICS CO LTD	T375J(G5)(G6)	150 °C, V-0	UL 94 UL 746	UL E59481
--Wire for T3 Copper wire	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEWF	155 °C	UL 1446	UL E85640
--Tape for T3 Duct tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD	CT	130 °C	UL 510A	UL E165111
-Current sampling resistor (RS3-RS8, RS14-RS17)	TA-I TECHNOLOGY CO., LTD	RLP25FER002	2 mΩ±1%, 100 ppm/°C, 3 W, 2512, -55 °C to 170 °C	-	-
-NTC for ambient (RT2)	Joyin Co Ltd	JSNB103F344 FB	R ₂₅ = 10 kΩ±1%, B _{25/85} = 3435 K±1%, T _{opr} : -40 °C to 125 °C	UL 1434	UL E171531
-NTC for MOSFET (RT1)	Nanjing Shiheng Electronics Co.,Ltd.	MF52C103Y3435	R ₂₅ : 10kΩ±1%, B _{25/85} : 3435K±1%, T _{opr} : -55°C to 200°C	UL 1434	UL E240991
- Alternative	SHENZHEN SUNLORD ELECTRONICS CO LTD	SDNT1608X103@3380%TF	R ₂₅ : 10kΩ±1%, B _{25/85} : 3435K±1%, T _{opr} : -40°C to 125°C	UL 1434	UL E352242
-PTC (R308/R468)	CYG Wayon Electronics Co., Ltd	LP-NSM005HF	V _{max} : 60 V, I _h : 50 mA, I _t : 150 mA, I _{max} : 100 A, -40 °C to 85 °C	EN 62319-1:2005 EN 62319-1-1:2005	TUV R50318402
- Alternative	SPSEMI ELECTRONICS CO LTD	NSM005	V _{MAX} : 60 V, I _H : 50 MA, I _T : 150 MA, I _{MAX} : 100 A, -40 °C ~ 85 °C	UL 1434	UL E536814
-Fuse (FU1)	XC ELECTRONICS (SHENZHEN) CORP LTD	24T	7 A, 250 V, -40 °C to 125 °C	UL 248-1	UL E249609



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
- Alternative	SHENZHEN LANSON ELECTRONICS CO., LTD	24E	7 A, 250 V, T _{opr} : -40 °C to 125 °C	UL 1434	UL E221465
4. For current-limited board: Blue-pack5.1-M01 board					
-PCB material	HUIZHOU TRUSTWIN ELECTRONICS DEVELOPMENT CO LTD	TW-8(ASP1)	130 °C, V-0, CTI: 175 V	UL 94 UL 796	UL E340729
- Alternative	NIPPON (BOLUO) ELECTRONICS CO LTD	D2	130 °C, V-0, CTI> 175 V	UL 94 UL 796	UL E56327
-MOSFET for current limiting BUCK (QC1, QC2,)	China Resources Microelectronics Limited	CRSS057N10 N	V _{DS} : 100 V, V _{GS} : ±20 V, I _D : 120 A, T _J : -55 °C to 150 °C	-	-
-MOSFET for anti-back charging (Q70, Q77)	International Rectifier Corporation	IRF5210SPBF	V _{DS} : -100 V, V _{GS} : ±20 V, I _D : -38 A, T _J : -55 °C to 150 °C	-	-
-Film capacitor (CBB6, CBB7)	DONGGUAN HONGFARAD ELECTRONICS CO., LTD	HMPP475J25 0MFAH-Y	4.7 µF, 250 V, 105 °C	-	-
- Alternative	DONGGUAN CHENG XI ELECTRONICS CO., LTD	CBB21	4.7 µF, 250 V, 105 °C	-	-
-Diode (D68)	YANGZHOU YANGJIE ELECTRONIC TECHNOLOGY CO.,LTD	MBRB20100C T	20 A, 100 V, 175 °C	-	-
- Alternative	PFC Device Corporation	PTR20100CT BH	20 A, 100 V, 150 °C	-	-
-Inductor (L4)	TIANCHANG FUAN ELECTRONIC CO LTD	FAMD106-200M-L1	20.4 µH, 130 °C	UL 1446	UL E357090
- Alternative	SHENZHEN JINHAODE TECHNOLOGY CO.,LTD	GCNR6020-101MC	T106060-20.4 µH, 155 °C	-	-

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Clause	Requirement + Test		Result - Remark		Verdict
--Core (L4)	ZHEJIANG NBTM KEDA MAGNETOELECTRICITY CL., LTD	KS106-060A	130 °C, 600 VDC	-	-
- Alternative	DONGGUAN YINGCHONG ELECTRICAL INDUSTRIAL CO LTD	WS106060A	130 °C, 600 Vd.c.	-	-
--Wiring (L4)	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEWB	130 °C, 600 Vd.c.	UL 1446	UL E85640
- Alternative	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	2UEW/155	155 °C, 600 Vd.c.	UL 1446	UL E239508
5. For signal transform board: 3U-Pack 5.1-X01 board (Rev. 002)					
-PCB material	HUIZHOU TRUSTWIN ELECTRONICS DEVELOPMENT CO LTD	TW-8(ASP1)	130 °C, V-0, CTI: 175 V	UL 94 UL 796	UL E340729
- Alternative	NIPPON (BOLUO) ELECTRONICS CO LTD	D2	130°C, V-0, CTI> 175 V	UL 94 UL 796	UL E56377
6. NTC for cell (T1-T4) (4pcs)	Shenzhen Kemin Sensor Co., Ltd	KM10K3380 3435	R ₂₅ : 10 kΩ±1%, B _{25/50} : 3435 K±1%, T _{opr} : -40 °C to 125 °C	UL 1434	UL E356449
7. Circuit breaker	Shanghai Liangxin Electrical Co., Ltd.	NDB1-125	80 Vd.c., 125 A, I _{cu} = 10 kA, 70 °C, U _{imp} = 4 kV	EN 60947-2:2017+A1	TUV R50522424
- Shunt trip unit	Shanghai Liangxin Electrical Co., Ltd.	MX+OF	48 Vd.c., 1NO+1NC	-	-
- Alternative	NOARK Electrics (Shanghai) Co., Ltd	B1E	80 Vd.c., 125 A, I _{cu} = 20 kA, U _{imp} = 4 kV	EN IEC 60947-2:2025	ITS 2506B0989S HA-V1
- Shunt trip unit	NOARK Electrics (Shanghai) Co., Ltd	SHT3111LB	48 VAC/DC , 1NO+1NC	-	-



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
- Alternative	Zhejiang Chint Electrics Co., Ltd.	NXB-125E	80 Vd.c., 125 A, I _{cu} = 20 kA, U _{imp} = 4 kV	EN 60947- 2:2017+A1	TUV R 50620684
- Shunt trip unit	Zhejiang Chint Electrics Co., Ltd.	SHT-X3	48 VAC/DC, I _e = 3 A	-	-
8. Connector	Suzhou Anlian Electronics Co., Ltd	AP15400A- FEMALE AP15400A- MALE	DC 1000 V, 150 A T _{opr} : -40 °C to 125 °C	UL 4128 EN 61984 2PFG 2740/04.20	UL E537967 TUV R50609154 R50609157
9. Battery Lead wiring (internal)	3Q WIRE & CABLE CO LTD	10269	6 AWG, 1000 V, 105 °C	UL 758	UL E341104
Alternative	Guangdong Biadi Electronics Co Ltd	10269	6 AWG, 1000 V, 105 °C	UL 758	UL E351618
10. Earth lead wiring	Shenzhen Hongya Electronics CO.,LTD	1015	10 AWG, 600 Vac, 105 °C	UL 758	UL E346933
Alternative	Dongguan Hichain Electronics CO.,LTD	1015	10 AWG, 600 Vac, 105 °C	UL 758	UL E304337
11. Thermal shrink tube for battery wiring	DONGGUAN SALIPT CO LTD	S-901-DWT	600 V, 125 °C, VW-1	UL 224	UL E209436
12. Lead wiring for BMS	3Q WIRE & CABLE CO.,LTD	10269	6 AWG, 1000 Vac, 105 °C	UL758 UL1581 CSA22.2	UL E341104
Alternative	Dongguan Biadi Electronics CO.,LTD	10269	6 AWG, 1000 Vac, 105 °C	UL 758	UL E351618
13. Wiring for voltage sampling	LINOYA ELECTRONIC TECHNOLOGY CO LTD	1430	24 AWG, 105 °C, 300 V	UL 758	UL E315619
- Alternative	WUXI SWELL ELECTRIC CO LTD	1430	24 AWG, 105 °C, 300 V	UL 758	UL E484530
- Alternative	DONGGUAN ZHONGZHENG WIRE&CABLE TECH CO LTD	1430	24 AWG, 105 °C, 300 V	UL 758	UL E336285
- Alternative	ZHEJIANG CHENGBAO WIRE & CABLE CO LTD	10588 22AWG	22 AWG, 300 V, 125°C	UL 758	UL E315651



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
14. Wiring for temperature sampling	DONGGUAN BOLI ELECTRONIC CO LTD	2651	24 AWG, 300 V, 105 °C	UL 758	UL E305164
Alternative	DONGGUAN ZHIHE ELECTRICAL CABLE TECH CO LTD	2651	24 AWG, 300 V, 105°C	UL 758	UL E258239
Alternative	DONGGUAN NISTAR TRANSMITTING TECHNOLOGY CO INC	2651	24 AWG, 300 V, 105 °C	UL 758	UL E214184
15. Case	Shenzhen Kstar New Energy Company Limited	-	Galvanized plate, Min. Thickness: Top: 2.0 mm, Front, Bottom, Side: 1.2 mm	-	-
16. Aerosol Fire Extinguisher (optional)	Hubei Jiandun Fire protection Technology Co. Ltd	QRR0.04G/S-MC- U	40 g, -30 °C to 70 °C, 134.1 mm* 12 mm*20.7 mm	-	-
Alternative	Shenzhen HONGJIALI FIRE Technology Co. LTD	QRR0.06G/S/H600	60 g, -50 °C to 95 °C, 131.6 mm* 94 mm*14 mm	-	-
17. Button	Yijia Industrial Electric Co.Ltd	YJ-GQ16BF-11SE	Ui: 250 V I _{th} : 5 A, -30 °C to 70 °C	EN 60947	TUV B121522000 6 Rev.00
18. Thermal heater (only for BP48100PF1A-G2 and BP48100PF2A-G2)	Kuchi (Shenzhen) New Energy Technology Co., Ltd.	75W	50 V, 75 W, 33.3 Ω, -40 °C to 125 °C	-	-
Alternative	GUANGDONG JONYOHTO ELECTROTHERMAL TECHNOLOGY CO.,LTD	75W	50 V, 75 W, 33.3 Ω, -40 °C to 125 °C	-	-
19. Insulation Bar	ZHEJIANG YUEQING RESIN FACTORY	DMC-1	V-0, 105 °C	UL 94 UL 746	UL E252110
20. Insulation tube for Aluminium bus	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT	600 V, 125 °C, VW-1	UL 224	UL E180908



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
21. Insulating paper	CHENGDU KANGLONGXIN PLASTICS CO LTD	FRPC-1880B	T=0.43 mm, V-0, 125 °C	UL 94 UL 746	UL E315185
22. Harness isolation board	Shenzhen Pengjinhong Industrial Co., Ltd	ABS+PC30	UL 94, V-0	UL 94	UL E162823
23. Electrical window cover	CHI MEI CORPORATION	PC_6600(Y) (f1)(a)	Min. Thickness: 1.5 mm, V-0, (f1), 120 °C	UL 94 UL 746C	UL E56070
- Alternative	CHI MEI CORPORATION	PC-6715VT(f1)(a)	Min. Thickness: 3 mm, 5VA, (f1), 120 °C	UL 94 UL 746C	UL E56070
- Alternative	ZHEN JIANG CHI MEI CHEMICAL CO LTD	PC-681U(f1)(a)	Min. Thickness: 3mm, 5VA, (f1), 120 °C	UL 94 UL 746C	UL E194560
24. Top cover	Shenzhen Kstar New Energy Company Limited	-	Size: 725 mm*50 mm* 245 mm, Materials: AL5052-H32, Thickness: 1.5 mm	-	-
For Rechargeable Li-ion Battery System model no.: BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF2A-G2-2P, BP48100P2A-G2-2P, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P, BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P					
1. Battery Parallel line	Guangzhou PanYu CABLE Group CO..LTD	10269	1/0 AWG, 1000 V, 105 °C	UL 758	UL E216775
- Alternative	Guangdong Biadi Electronics CO LTD	10269	1/0 AWG, 1000 V, 105 °C	UL 758	UL E351618
2. Corrugated pipe	BASF SE	B40	V-0	UL 94	UL E41871
3. Label system	Shenzhen lianxingda Printing Co., Ltd	3M7815(UV16 1S)/MZ0043B	Outdoor label	-	-
- Alternative	Shenzhen lianxingda Printing Co., Ltd	MZ03333 PET	Outdoor label	-	-
-3.1 Overlamination component	Avery Dennison (THAILAND) LTD	MZ0043B	Matte clear PET	UL 969	UL MH20581
-- Alternative	Avery Dennison	MZ0333	Matte clear PET	UL 969	UL MH20558



IEC 62619					
Clause	Requirement + Test			Result - Remark	Verdict
-3.2 Printing process and Ink	Hangzhou Toka Ink chemical Co., Ltd	UV161S	Black, yellow, blue, red color	-	-
-- Alternative	Hangzhou Toka Ink chemical Co., Ltd	UV 161-NT	Black, yellow, blue, red color	-	-
-3.3 Face stock and adhesive	3M	7815	face stock:2.3mil Adhesive:0.8mil	ASTM D 3330	UL MH16411
4. Top cover	Shenzhen Kstar New Energy Company Limited	-	Size: 725 mm*50 mm* 245 mm, Materials: AL5052-H32, Thickness: 1.5 mm	-	-
For Rechargeable Li-ion Battery System model no.: BP48100PF1A-G2, BP48100P1A-G2, BP48100PF2A-G2, BP48100P2A-G2, BP48100PF1A-G2-2P, BP48100P1A-G2-2P, BP48100PF2A-G2-2P, BP48100P2A-G2-2P, BP48100PF1A-G2-3P, BP48100P1A-G2-3P, BP48100PF2A-G2-3P, BP48100P2A-G2-3P, BP48100PF1A-G2-4P, BP48100P1A-G2-4P, BP48100PF2A-G2-4P, BP48100P2A-G2-4P					
Floor stand	Shenzhen Kstar New Energy Company Limited	-	Size: 725 mm*45.5 mm* 245 mm Materials: SGCC Thickness: 1.5 mm, Outer side thickness: 2 mm	-	-
For Rechargeable Li-ion Battery System model no.: BP48100PF1A-G2-5P, BP48100P1A-G2-5P, BP48100PF2A-G2-5P, BP48100P2A-G2-5P, BP48100PF1A-G2-6P, BP48100P1A-G2-6P, BP48100PF2A-G2-6P, BP48100P2A-G2-6P, BP48100PF1A-G2-7P, BP48100P1A-G2-7P, BP48100PF2A-G2-7P, BP48100P2A-G2-7P, BP48100PF1A-G2-8P, BP48100P1A-G2-8P, BP48100PF2A-G2-8P, BP48100P2A-G2-8P					
1. Floor stand	Shenzhen Kstar New Energy Company Limited	-	Size: 725 mm*197 mm* 245 mm Materials: SGCC, Thickness: 1.5 mm	-	-
2. Connector for Battery Parallel	Shenzhen GU Precision Industry Co., Ltd	RF080MM06O RBB-07 RF080MM06B KAA-07 PA080C070O RB PA080C070B KA	1500 V, 250 A, 125 °C	UL 4128	UL E527779-20230111
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 I _t , (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): ____

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:
¹⁾ 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)					P
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	
Battery 1	53.413	3.338	575.0	101.3	A	
Battery 2	53.424	3.339	415.8	76.8	A	
Method of cell failure ¹⁾		Location of target cell		Area for fire protection (m ²)		
Heater film		Cell 4		-		
Heater film		Cell 4		-		

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:

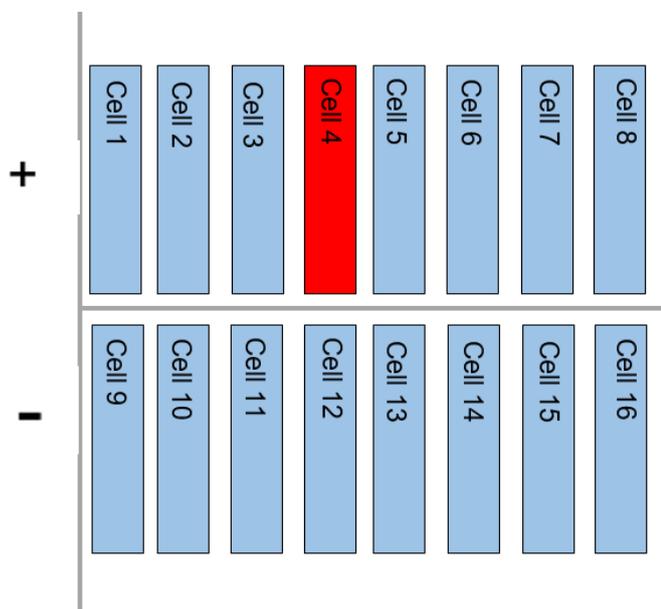
A – No fire external to DUT enclosure or area for fire protection or no battery case rupture

B – Fire external to DUT enclosure or area for fire protection

C – Explosion

D – Battery case rupture

E – Other (Please explain): __



Remark: Cell 4 is the initiating cell.

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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
Battery 1	2.959	80.1	57.273	3.554	A, D, F
Battery 2	2.887	80.0	58.242	3.594	A, D, F
			Charge Voltage Applied Battery System: 1)		
			Whole	Part	
			Battery 1: 68.654 V dc	-	
			Battery 2: 64.294 V dc	-	

Supplementary information:

- 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
Battery 1	45.668	120.0	50.290	A, D, F
Battery 2	47.353	120.5	51.188	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	
Battery 1	52.885	80.0	54.854	
Battery 2	52.857	80.0	58.386	
Maximum Specified Temperature of Battery System, °C		Maximum Measured Cell Case Temperature, °C	Results	
Battery 1: 50.0		Battery 1: 59.4	A, D, F	
Battery 2: 50.0		Battery 2: 61.1	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): ____						

--- End ---