



中国认可
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检测
TESTING
CNAS L4065



Report No.:

报告编号: FLS2F6G03U01-1

UN38.3 TEST REPORT

UN38.3 检测报告

Product Name:

产品名称:

Lithium iron phosphate battery

磷酸铁锂电池

Model and Parameters:

型号参数:

FLA48460-EU, 51.2V, 460Ah, 23.5kWh

Test Classification:

检测类别:

Commission test

委托检测

Issue Date:

签发日期:

2025-09-08

Tested by/测试

Deng Zheng Shui

Test Engineer

Reviewed by/审核

Duan Huang

Audit Engineer

Approved by/批准

Jia Jia Xue

Approval Engineer

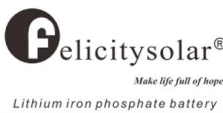
Guangzhou MCM Certification & Testing Co., Ltd.

广州邦禾检测技术有限公司

General Information 基本信息	
Application Information/申请信息:	
Applicant: 申请单位:	Guangzhou Felicity Solar Technology Co., Ltd. 广州菲利斯太阳能科技有限公司
Address: 申请单位地址:	No. 2, Donghua Huaye Road, Renhe Town, Baiyun Area, Guangzhou 广州市白云区人和镇东华业路 2 号
Contact Information: 联系方式:	Tel: 13580621578 E-mail: hailin.wu@felicitysolar.com Website: /
General Information/基本信息:	
Product Name: 产品名称:	Lithium iron phosphate battery 磷酸铁锂电池
Product Classification: 产品分类:	Lithium ion Battery 锂离子电池
Trade Mark: 商标名称:	--
Model and Rating: 型号和额定值:	FLA48460-EU, 51.2V, 460Ah, 23.5kWh
Manufacturer: 制造单位:	Guangzhou Felicity Solar Technology Co., Ltd. 广州菲利斯太阳能科技有限公司
Address: 制造单位地址:	No. 2, Donghua Huaye Road, Renhe Town, Baiyun Area, Guangzhou 广州市白云区人和镇东华业路 2 号
Contact Information: 联系方式:	Tel: 13580621578 E-mail: hailin.wu@felicitysolar.com Website: /
Factory: 生产单位:	Guangzhou Felicity Solar Technology Co., Ltd. 广州菲利斯太阳能科技有限公司
Address: 生产单位地址:	No. 2, Donghua Huaye Road, Renhe Town, Baiyun Area, Guangzhou 广州市白云区人和镇东华业路 2 号
Testing Laboratory/测试实验室:	
Laboratory: 测试单位:	Guangzhou MCM Certification & Testing Co., Ltd. 广州邦禾检测技术有限公司
Address: 测试单位地址:	Building 2 No. 45 Zhong Er Section of Shiguang Road, Zhongcun Street, Panyu District, Guangzhou City, Guangdong Province, China. 中国 广东省广州市番禺区钟村街市广路钟二路段 45 号 2 栋
Testing Location: 测试实验室地址:	As above 同上
Test Standard/测试标准:	
Standard Used: 使用标准:	UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.8, section 38.3 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.8,section 38.3
Deviation Description: 偏差描述:	None

Product Information/产品信息:

1. This battery assembly whose watt-hour rating is more than 6200Wh, is constructed with 8 Lithium ion Battery Modules (Model: FLA-460), and has overcharge, over-discharge, over current and short-circuits proof circuit.
这个电池总成由 8 个锂离子电池模组（型号：FLA-460） 组成，额定瓦时数大于 6200Wh，具有过充、过放、过流和短路保护电路。
2. The assembled batteries inside the battery system is tested according to the requirements of Rev.8 version and met the requirements (Test report shown as below)
电池系统中的组成电池均按照第八版的要求进行测试并满足其要求（测试报告如下）
- | | | |
|--------------|----------|----------------------------|
| TR no. 测试报告号 | Model 型号 | Rating 额定值 |
| FLS2F6G02U01 | FLA-460 | (2P2S) 6.4V, 460Ah, 2944Wh |
3. This battery assembly's mass and size
组装电池质量和尺寸
- | | | | |
|---------|-------|---------|---|
| Mass 质量 | 226kg | Size 尺寸 | / |
|---------|-------|---------|---|

Label/标签:


Model	FLA48460-EU
Nominal Voltage	51.2V
Energy	23.5kWh
Operating Voltage	44.8-57.6V
Max.Continuous Charge/Discharge Current	200A
Max.Charge/Discharge Power	10,000W
Scalability	Up to 15 units in parallel
Communication	RS485 / CAN
Cycle Life	≥6,000@25°C,80%DOD
Charging Temperature Range	0-55°C
Discharging Temperature Range	-20-55°C


Technical Parameters (The following parameters are all provided by the applicant)

技术参数（以下参数均由客户提供）：

Object 测试对象	Battery module 电池模块	Battery system 电池系统
Model 型号	FLA-460	FLA48460-EU
Rated Capacity 额定容量 (Ah)	460	460
Nominal Voltage 标称电压 (V)	6.4	51.2
Standard Charge Current 标准充电电流 (A)	100	100
Standard Discharge Current 标准放电电流 (A)	100	100
Maximum Charge Current 最大充电电流 (A)	200	200
Maximum Discharge Current 最大放电电流 (A)	200	200
Maximum Charge Voltage 最大充电电压 (V)	7.3	57.6
Cut-Off Voltage 放电截止电压 (V)	5.6	44.8

Remark/备注:

Revision: Replaced the original report FLS2F6G03U01, 2025-08-21 issued.

修订：取代原报告 FLS2F6G03U01, 2025-08-21 签发。

Test Conclusion 测试结论				
Clause 条款	Test Item 测试项目	Sample No. 样品编号	Test Result 测试结论	Remark 备注
38.3.3.1(f)	(Small battery assembly to LBs) (小型电池总成, 锂电池)	/	N/A	/
38.3.3.1(g)	(Large battery assembly to LBs) (大型电池总成, 锂电池)	BP1#	P	/
38.3.3.2(d)	(Small battery assembly to SIBs) (小型电池总成, 钠离子电池)	/	N/A	/
38.3.3.2(e)	(Large battery assembly to SIBs) (大型电池总成, 钠离子电池)	/	N/A	/
38.3.4.1	Altitude simulation 高度模拟	/	N/A	Met the clause 38.3.3.1 (g), and no need to perform this part of the test 满足 38.3.3.1 (g), 无需再进行此部分的测试
38.3.4.2	Thermal test 温度循环测试	/	N/A	
38.3.4.3	Vibration 振动	/	N/A	
38.3.4.4	Shock 冲击	/	N/A	
38.3.4.5	External short circuit 外部短路	/	N/A	
38.3.4.6	Impact/Crush 撞击/挤压	/	N/A	
38.3.4.7	Overcharge 过度充电	/	N/A	
38.3.4.8	Forced discharge 强制放电	/	N/A	
Ambient Temperature: 环境温度: 20 ± 5°C				
Receipt Date: 接收日期: 2025-07-17				
Test Date: 测试时间: 2025-07-17 ~ 2025-08-14				
Test Conclusion/测试结论: The samples submitted by Guangzhou Felicity Solar Technology Co., Ltd have passed the test items of UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.8, section 38.3. 由广州菲利斯太阳能科技有限公司送检的样品符合联合国《试验和标准手册》ST/SG/AC.10/11/Rev.8, section 38.3 的要求。 Seal: 检测专用章:				

UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.8, section 38.3 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.8, section 38.3			
Clause 条款	Requirement + Test 要求+测试方法	Result - Remark 结果-备注	Verdict 判断
38.3.2	Scope 范围		P
38.3.3	Number and condition of cells and batteries to be tested 待测电芯/电池的数量与状态		P
38.3.3.1	Testing of lithium cells and batteries 锂电芯和电池的测试		P
38.3.3.1 (a)~(e)	(Number and condition of cells and batteries under T.1~T.8) T.1~T.8 下的电芯/电池的数量与状态	Met the clause 38.3.3.1 (g), no need to perform this part 满足 38.3.3.1 (g), 无需再进行此部分	N/A
38.3.3.1 (f)	(Small battery assembly to LBs) (小型电池总成, 锂电池)	Not small battery assembly 非小型电池总成	N/A
38.3.3.1 (g)	(Large battery assembly to LBs) (大型电池总成, 锂电池)		P
	The assembled battery which the aggregate lithium content of all anodes, when fully charged, is more than 500g; or in the case of a lithium ion battery, with a Watt-hour rating of more than 6200Wh. 电池总成在完全充电时所有正极的合计锂含量超过 500g; 或在锂离子电池组的情况下, 如额定的瓦特小时数超过 6200Wh	Lithium ion battery, The total watt-hour rating is 23.5kWh 锂离子电池, 总瓦时数为 23.5kWh	P
	Batteries that have passed all applicable tests. 电池总成的组成电池通过适用的所有测试	The battery module passes all applicable tests of UN 38.3. And See test report FLS2F6G02U01 电池模块通过 UN 38.3 的适用的所有测试, 见测试报告 FLS2F6G02U01	P
	The assembled battery has been verified as preventing: (i) Overcharge; (ii) Short circuits; and (iii) Over discharge between the batteries. 电池总成如进过验证属于可防止下列状况, 即无需进行试验: (一) 过充电; (二)短路; 和 (三)电池组之间的过度放电。	The protection functions of the battery system have been verified at the battery system level. And See test report FLS2F6G03W01-1 电池系统的保护功能在电池系统层面上已被验证, 见测试报告 FLS2F6G03W01-1	P
	For an assembled battery not equipped with overcharge protection that is designed for use only as a component in another battery, in equipment, or in a vehicle, which affords such protection 用于未配备过充保护装置的集成电池, 该集成电池仅作为提供过充保护的另—电池、设备或车辆的组件使用	The assembled batteries equipped with overcharge protection. 自身配备过度充电保护装置	N/A

UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.8, section 38.3 联合国《试验和标准手册》ST/SG/AC.10/11/Rev.8, section 38.3			
Clause 条款	Requirement + Test 要求+测试方法	Result - Remark 结果-备注	Verdict 判断
	The overcharge protection verification at the battery, equipment or vehicle level 电池组、设备或车辆层面的过度充电保护验证	The batteries equipped with overcharge protection. 自身配备过度充电保护装置	N/A
	A physical system or process controls to prevented overcharging 防止过度充电的物理系统或过程控制	The batteries equipped with overcharge protection. 自身配备过度充电保护装置	N/A
38.3.3.2	Testing of sodium ion cells and batteries 钠离子电芯和电池的测试	NOT Sodium ion Batteries 非钠离子电池	N/A
38.3.3.2 (a)~(c)	(Number and condition of cells and batteries under T.1~T.7) T.1~T.7 下的电芯/电池的数量与状态		N/A
38.3.3.2 (d)	(Small battery assembly to SIBs) (小型电池总成, 钠离子电池)		N/A
38.3.3.2 (e)	(Large battery assembly to SIBs) (大型电池总成, 钠离子电池)		N/A
38.3.4	Procedure 程序		N/A
38.3.4.1	Altitude Simulation 高度模拟	No testing required 无需进行测试	N/A
38.3.4.2	Thermal Test 温度试验	No testing required 无需进行测试	N/A
38.3.4.3	Vibration 振动	No testing required 无需进行测试	N/A
38.3.4.4	Shock 冲击	No testing required 无需进行测试	N/A
38.3.4.5	External Short Circuit 外部短路	No testing required 无需进行测试	N/A
38.3.4.6	Impact, Crush 撞击, 挤压	No testing required 无需进行测试	N/A
38.3.4.7	Overcharge 过度充电	No testing required 无需进行测试	N/A
38.3.4.8	Forced Discharge 强制放电	No testing required 无需进行测试	N/A

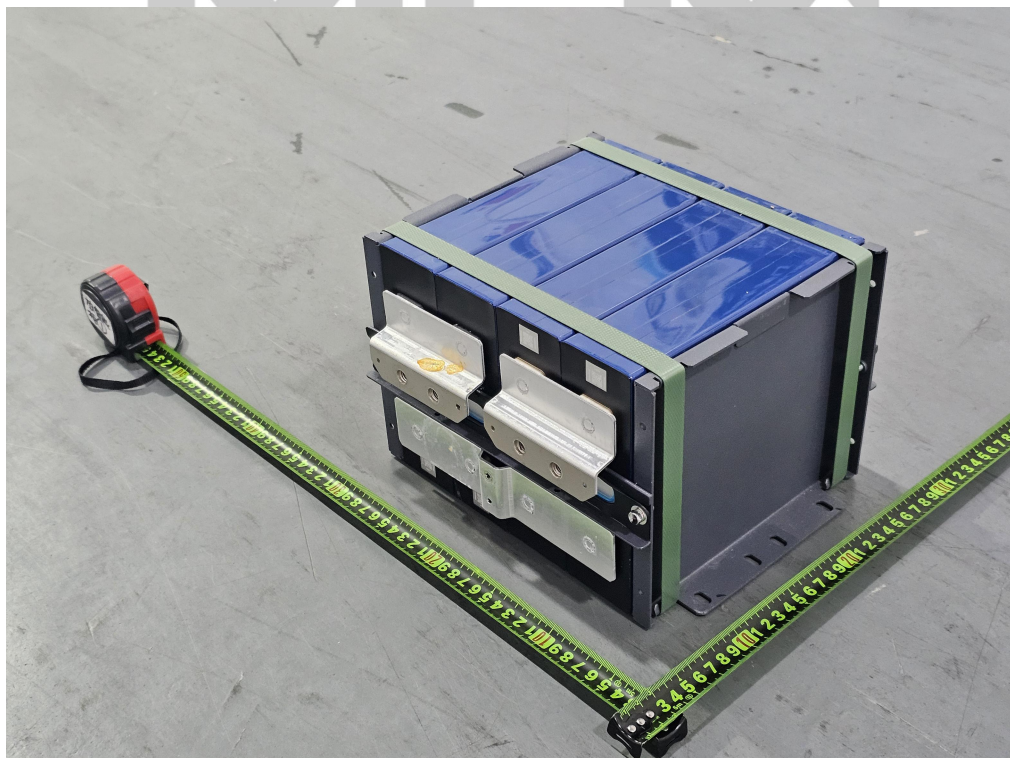
Photos of the Battery 电池照片

Battery System: FLA48460-EU, 51.2V, 460Ah, 23.5kWh



Photos of the Battery 电池照片

Battery Module: FLA-460, 6.4V, 460Ah, 2944Wh



-- End of Report --

Important Note
注意事项

1. This test report is invalid without the special testing seal and cross-page seal of Guangzhou MCM Certification & Testing Co., Ltd.
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本检测报告无批准人、审核人及检测员签名无效。
4. This test report is invalid if altered.
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5. Objection to this test report must be submitted to Guangzhou MCM Certification & Testing Co., Ltd. within 15 days after the publication of the report.
若对此检测报告有异议，必须在报告发布之日起十五天内向广州邦禾检测技术有限公司提出。
6. This test report is only responsible for the received samples.
本检测报告仅对收到的样品负责。
7. We are not responsible for the authenticity of information (including sample information) provided by customers.
客户提供的信息（包括样品信息），本公司不对其真实性负责。
8. As for the test results, "N/A" means "Not applicable", "P" means "Pass" and "F" means "Fail".
本检测结果判定中"N/A"表示“不适用”，"P"表示“通过”，"F"表示“不通过”。

Testing Lab.:	Guangzhou MCM Certification & Testing Co., Ltd.
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