鹏辉能源 GREAT POWER	PRODUCT SPECIFICATION	Version:	C03
		DATE:	2025-08-23
		DOC No:	GP-PS-0199C

Guangzhou Great Power Energy & Technology CO., Ltd
广州鹏辉能源科技股份有限公司
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地址:中国广州市番禺区沙湾镇市良路西村段 912 号

CUSTOMER NO: __________

Product Specification
产品规格书

MODEL/型号: GSP50160119F

（短循环 100Ah 2500Cycle）

Prepared By/Date 编 制/日 期	Checked By/Date 审 核/日 期	Approved By/Date 批 准/日 期
刘泽汉 2025.08.23	周建俊 2025.08.25	李行军 2025.08.25

Customer Approval 客户确认	Signature/签 字	Date/日 期
	Company Name/公司名称	
	Company Stamp/公司印章	

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Amendment Records/修正记录

Revision 版 本	Description/记 述	Prepared by 编 制	Checked by 审 核	Approved by 批 准	Date/日 期
C01	初版发行				2024-03-05
C02	修改加压厚度、 充放电电流参数				2024-08-20
C03	1. 修订电池重量、电芯初始尺寸、绝对充电温度、绝对放电温度、最大持续充电电流、最大脉冲充电电流、过流保护 2. 删除出货 SOC、预紧力要求、热失控测试 3. 增加免责声明				2025-08-23

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1 Scope/适用范围

This specification is applied to describe the related battery product in this specification and the battery/cell supplied by Guangzhou Great Power Energy & Technology Co., Ltd only.

本说明书只适用于描述本规格书中相关的产品以及广州鹏辉能源科技股份有限公司提供的电池。

2 Model/型号：GSP50160119F

3 Cell specification/电池规格

No.	Items/项目	Specifications/规格	Remark/备注
1	Nominal capacity 标称容量	100Ah	0.5C charge /0.5C discharge，25±2℃ 0.5C 充电，0.5C 放电，25±2℃
2	Nominal voltage 标称电压	3.2V	
3	Operation voltage 工作电压	2.5-3.65V 2.0-3.65V	Cell temperature T＞0℃ 电芯温度 T＞0℃ Cell temperature T≤0℃ 电芯温度 T≤0℃
4	Standard charge methods 标准充电方式	0.5C constant current charge to 3.65V, 3.65V continue charging till current decline to 0.05C 0.5C 恒流充电至 3.65V，恒压充至电流为 0.05C	25±2℃ 0.5C=50A
5	Standard discharge method 标准放电方式	0.5C constant current discharge to 2.5V 0.5C 恒流放电至 2.5V	
6	Cell impedance（ACR） 交流内阻	≤0.5mΩ	Fresh cell, internal resistance measured at AC 1KHz 新电池状态，1KHz 交流电阻
7	Cell weight 电池重量	1.90±0.2Kg	N/A
8	Absolute charging temperature （Cell Temperature） 绝对充电温度 （电芯温度）	0~60℃	No matter what charge mode the battery is in, stop charging once the cell temperature exceeds absolute charge temperature range 无论电芯处在何种充电模式，一旦发现电芯温度超过绝对充电温度范围即停止充电
9	Absolute discharge temperature （Cell Temperature） 绝对放电温度 （电芯温度）	-20~60℃	No matter what discharge mode the battery is in, stop discharging once the cell temperature exceeds absolute discharge temperature range 无论电芯处在何种放电模式，一旦发现电芯温度超过绝对放电温度范围即停止放电

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3 Cell specification/电池规格(continuous/续上表)

No.	Items/项目	Specifications/规格	Remark 备注
10	Max continuous charge current 最大连续充电电流	70A（0.7C）	25±2℃
11	Max continuous discharge current 最大连续放电电流	100A（1C）	
12	Max pulse charge current 最大脉冲充电电流	100A（1C 50%SOC，30s）	
13	Max pulse discharge current 最大脉冲放电电流	200A（2C 50%SOC，30s）	
14	High temperature discharge capacity 高温放电容量	≥100%	55±2℃，1C，2.5V
15	Low temperature discharge capacity 低温放电容量	≥70%	-20±2℃，1C，2.0V
16	Operation humidity range 湿度范围	10%~ 95% R.H.	No condensation 无凝露
17	Long time storage temperature 长时间储存温度	-20~45℃≤1 个月（20%-50% SOC） -20~45℃≤One month（20%-50% SOC） -20~35℃≤6 个月（20%-50% SOC） -20~35℃≤Six months（20%-50% SOC）	Suggest maintaining the battery when stored more than six months，or the life expectancy may be shortened. 电池存储超过 6 个月建议充放电维护，否则可能会缩短电池的使用寿命
18	Welding parameters of pole & Bus-bar 极柱与 Bus-bar 焊接参数	Max welding depth≤1.8mm 极柱焊接熔深≤1.8mm	No leakage 不漏液
		Max pressure≤1000N 极柱承受最大压力≤1000N	No deformation 不变形
		Max torque≤6N.m 极柱承受最大扭矩≤6N.m	No loose 不松动
		Max temperature≤150℃ 极柱承受最高温度≤150℃	No deformation 不变形

4 Battery/Cell performance test criteria/电池测试性能标准

4.1 Appearance inspection by visual/外观目测

There shall be no such defect as flaw, crack, rust, stain, leakage, which may adversely affect commercial value of battery.

电池外观应没有裂纹、爆裂、锈渍、污渍、漏液等影响商业价值的缺陷存在。

4.2 Environmental test condition/外界环境条件

Unless otherwise specified, all test stated in this product specification are conducted at below test condition

所有测试应按以下环境条件进行，除非特殊指定外。

Temperature: 25±2℃

Ambient pressure：86KPa~106KPa

4.3 Test equipment accuracy/测试设备精度

Voltage measurement accuracy≥0.5 grade

电压测量精度: ≥0.5 级.

Current measurement accuracy≥0.5 grade

电流测量精度: ≥0.5 级.

Temperature measurement accuracy：±0.5℃

温度测量精度: ±0.5℃.

Time measurement accuracy：±0.1%

时间测量精度: ±0.1%.

Size measurement accuracy：±0.1%

尺寸测量精度: ±0.1%.

4.4 Cell characteristic/电池特性

No.	Items/项目	Test method and condition/测试方法及条件	Criteria/标准
1	RT Capacity/Energy 室温放电容量/能量	25±2℃, 0.5C charge to 3.65V, rest 30min; 0.5C discharge to 2.5V 25±2℃，0.5C 充电至 3.65V；静置 30min；0.5C 放电至 2.5V；	≥100Ah ≥320Wh
2	RT Cycle life 室温循环寿命	25±2°C, cycle test by 0.5C / 0.5C charge-discharge method and pre-tensioning force 电池带有初始预紧力，0.5C / 0.5C 充放电	≥80% of nominal capacity@2500 ≥80%标称容量@2500 次
3	RT storage & recovery 室温存储和恢复	25±2°C，storage for 28 days，0.5C charge and 0.5C discharge method 25±2℃，28 天，0.5C/0.5C 充放电	Capacity retention rate≥95% 容量保持率≥95% Capacity recovery rate≥97% 容量恢复率≥97%
4	HT storage & recovery 高温存储和恢复	55±2°C，storage for 7 days ，25℃ stand for 5h ，0.5C charge and 0.5C discharge method 55±2℃，存储 7 天，25℃存放 5h，0.5C/0.5C 充放电	Capacity retention rate≥94% 容量保持率≥94% Capacity recovery rate≥95% 容量恢复率≥95%
5	Residual capacity loss 月自放电	Fresh cell after 3 months, 20%-50%SOC, 25±2°C storage 出货三个月以后的电芯，20%-50%SOC，25±2℃储存	Per month ≤3% ≤3%/月

4.5 Safety performance/安全性能

No.	Items/项目	Test method and condition/测试方法及条件	Criteria/标准
1	Over charge test 过充电试验	After standard charging, the battery shall be charged in the constant current until 1.5 times of the termination voltage or the time reaches 1h, and then observe for 1h. The charging current shall be the smaller value between 1C and the maximum continuous charging current of the product. 电池初始化充电后，以恒流方式充电至终止电压的 1.5 倍或时间达到 1h 时停止充电，充电电流取 1C 与产品最大持续充电电流中的较小值，观察 1h。	No explosion, no fire 不起火，不爆炸
2	Over discharge test 过放电试验	After standard charging，the battery shall be discharged until the time reaches 90min or the voltage reaches 0V, and then observe for 1h. The discharge current is the smaller value between 1C and the maximum continuous discharge current of the product. 电池单体初始化充电：电池单体以恒流方式放电至时间达到 90min 或电压达到 0V 时停止放电，放电电流取 1C 与产品的最大持续放电电流中的较小值，观察 1h。	No explosion, no fire 不起火，不爆炸
3	Short circuit test 短路试验	After standard charging, the cell is short circuit for 10 min by connecting the positive and negative terminals with a total external resistance less than 5mΩ, and observe 1h. 电池单体初始化充电，将电池单体正、负极经外部短路 10min，外部线路电阻应小于 5mΩ；观察 1h。	No explosion, no fire 不起火，不爆炸
4	Crush test 挤压测试	After standard charging, The battery shall be placed on a semi-cylinder bar with a diameter of 75mm. The battery is pressed at a rate of (5±1)mm/s, until the voltage reaches 0V or the deformation amount reaches 30% or the extrusion force reaches 13±0.78 kN. Holding for 10min , and then stop the test after observing for 1h. 电池初始化充电，放置在直径75mm的半圆柱体下，以（5±1）mm/s的速度垂直于电池方向施压，直到电压达到0V 或者变形量达到30%或挤压力达到13±0.78kN，保持10min后停止挤压，观察1h。	No explosion, no fire 不起火，不爆炸

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No	Items/项目	Test method and condition/测试方法及条件	Criteria/标准
5	Drop test 跌落试验	After standard charging, the battery which is turned the positive or negative terminal down, is dropped from a height of 1.5m to the cement floor once and observe for 1h. 电池单体初始化充电，将电池单体的正极或负极端子朝下从1.5m高度处自由跌落到水泥地面上1次，观察1h	No explosion, no fire 不起火，不爆炸
6	Low pressure 低气压试验	After standard charging, the battery is putted into a low-pressure box, and then adjust the air pressure to 11.6kPa and the temperature is to 25±5℃. Rest for 6h and observe for 1h. 电池单体初始化充电，将电池单体放入低气压箱中，将气压调节至11.6kPa，温度为（25±5）℃，静置6h，观察1h。	No explosion, no fire, no leakage 不起火，不爆炸，不漏液
7	Heating test 加热试验	After standard charging, the cell is placed in the heating test chamber, which was increased from the ambient temperature to 130 ± 2 ℃ at a rate of 5 ℃ /min. After maintaining the temperature for 30min, stop heat and observe for 1h. 电池单体初始化充电，将电池放入加热试验箱，以5℃/min 的速率由环境温度升至（130±2）℃，并保持此温度30min后停止加热，观察1h。	No explosion, no fire 不起火，不爆炸
8	Vibration Test 振动测试	The vibration shall be a sinusoidal wave form with a logarithmic sweep between 7 Hz and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the directions of vibration must be perpendicular to the terminal face. From 7 Hertz a peak acceleration of 1 g_n is maintained until 18 Hz reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 8 g_n occurs (approximately 50 Hz). A peak acceleration of 8 g_n is then maintained until the frequency is increased to 200 Hz. 以正弦波形式，15min 内以 7Hz 增加至 200Hz，减少回到 7Hz 为一个循环，一个循环持续 15min 的对数扫频，样品从三个互相垂直的方向循环 12 次，每个方向 3h，共 12h。 从 7 赫兹开始，保持 1g_n 的最大加速度，直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米(总偏移 1.6 毫米)，并增加频率直到最大加速度达到 8 g_n (频率约为 50 赫兹)。将最大加速度保持在 8 g_n 直到频率增加到 200 赫兹	Open circuit voltage＜ 90%before test Weight loss≤ 0.2% before test No leakage, no venting, no disassembly, no rupture and no fire 开路电压应＞测试前的 90% 重量损失应≤测试前的 0.2% 无泄露、泄气、解体、破裂、着火

4.6 Battery protection/电池保护

No	Items/项目	Parameters/参数	Protective action/保护动作
1	Secondary overcharge protection 第二级过充电保护	≥3.80V	Forced terminate charge 强制终止充电
2	Primary overcharge protection 第一级过充电保护	≥3.70V	Charge current limit to zero 充电电流限制为零
3	Secondary over discharge protection 第二级过放电保护	≤2.20V（>0℃） ≤1.70V（≤0℃）	Forced terminate discharge 强制终止放电
4	Primary over discharge protection 第一级过放电保护	≤2.40V（>0℃） ≤1.90V（≤0℃）	Current reduce to minimum permitted 电流降至最小
5	Over current protection 过流保护	≤210A	N/A
6	Over heating protection 过热保护	Battery temperature≤60℃ 电芯温度≤60℃	Charge/discharge shall be terminated when the temperature exceeds the stipulation in this specification 电芯温度超过本规格书规定时，终止充/放电
7	Short circuit protection 短路保护	No permission 不允许短路	N/A

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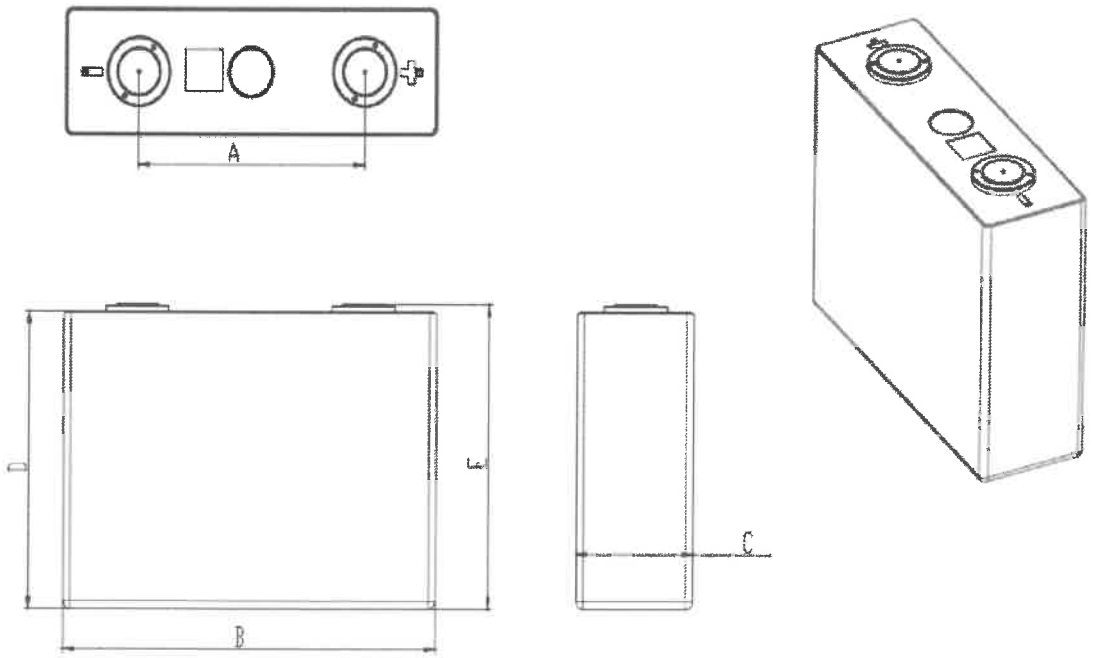
5 Cell initial Dimensions/电芯初始尺寸

NO	Items	图示编号 Number	Units: mm	备注 Remark
1	极柱中心距	A	97.0±0.8	参考值，实际为准
2	宽度	B	159.7±1.0	参考值，实际为准
3	加压厚度	C	50.0±0.8	参考值，实际为准
4	高度（不含极柱）	D	115.4±1.0	参考值，实际为准
5	高度（含极柱）	E	118.3±1.0	参考值，实际为准



6 Notice for assembling battery pack 电池装配注意事项

Shocks, high temperature, or contacts of sharp edge components should not be allowed in battery pack assembling process.

在电池装配过程中不允许撞击、高温或接触尖锐部分。

6.1 Prevention of short circuit within a battery pack/电池内部的短路预防

Enough insulation layers between wiring and the cells shall be used to maintain extra safety protection. the battery pack shall be structured with no short circuit within the battery pack, which may cause generation of smoke or firing.

在电池和引线之间应该有足够的绝缘层用于安全保护。电池的包装构成应没有导致起烟起火的短路情况。

6.2 Prohibition of disassembly/禁止拆卸

1) Never disassemble the cells.

The disassembling may generate internal short circuit in the cell, which may cause gassing, firing, explosion, or other problems.

2) Electrolyte is harmful

Battery should not have liquid from electrolyte flowing, but in case the electrolyte come into contact with the skin or eyes, immediately rinse with clean water and seek medical attention.

1) 不要拆卸电池。

拆卸电池可能导致电池短路，引起起火、爆炸、有害气体或者其它问题。禁止任何人或动物吞食电池的任何部件或电池所含物质。

2) 电解液是有害的

万一电解液沾到皮肤或者进入眼睛，应立即用清水冲洗以及求助医生。

6.3 Prohibition of dumping of cells into fire/不要把电池倾倒于火中

Never incinerate nor dispose the cells in fire. these may cause explosion of the cells, which is very dangerous and is prohibited.

不要焚毁或者将电池置于火中，否则会致电池爆炸。

6.4 Prohibition of cells immersion into liquid such as water/禁止浸泡电池

The cells shall never be soaked with liquids such as water, seawater, juices, coffee or others.

请不要把电池浸泡在液体当中，像清水、海水、果汁、咖啡或者其它的饮料。

6.5 Cells replacement/更换电池

The cells replacement shall be done only by either cells supplier or device supplier and never be done by the user.

更换电池应由电池生产商或设备供应商完成，用户不要自行更换。

6.6 Prohibition of use of damaged cells/禁止使用损坏的电池

The cells might be damaged during shipping by shock. If any abnormal features of the cells are found such as damages in a plastic envelop of the cell, deformation of the cell package, smelling of an electrolyte, an electrolyte leakage and others, the cells shall never be used any more.The cells with a smell of the electrolyte or a leakage shall be placed away from fire to avoid firing or explosion.

电池可能在出货途中碰撞而受损。如果发现电池有异常，例如包装损坏、电池包裹变形，有电解液的味道、发现漏液等等，不要再使用这些电池。电池如果有电解液的味道或者出现漏液，电池放置应该远离火源避免起火及爆炸。

7 Period of Warranty/保质期

The period of warranty is subject to the commercial contract. Great Power guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customer abuse and misuse.

电池的保质期以商务合同为准。如果电池的缺陷是在制造过程中形成的而不是由于用户滥用及错误使用造成，本公司负责退换电池。

8 Storage of the Batteries/电池存放

The batteries should be stored at room temperature, charged to 20% to 50% of capacity. If needs to be stored for a long time, the recommend period to recharge is 6 months at -10~30 ℃; the recommend period to recharge is 3 months at 30~45 ℃; the recommend period to recharge is 1 months at 45~60 ℃. The SOC cannot be less than 3%. The storage considers the self-discharge of cells only. If not regularly charged and discharged for maintenance, it may lead to issues with battery feeding and voltage difference.

电池应当在室温下存放，应充到 20%~50%的电量。如果需要长时间储存，-10~30℃建议补电周期为 6 个月，30~45℃建议补电周期 为 3 个月，45℃~60℃建议补电周期为 1 个月；存储 SOC 不得低于 3%。存储周期不考虑 BMS 或其他除单体电池以外的自耗电影响。 如果不定期充放电维护，可能导致电池馈电和压差问题。

9 Other Chemical Reactions/其它化学反应

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

由于电池是化学反应装置，随时间增加性能会降低，即使不进行充放使用。如果使用条件如充放电及周围环境温度等情形不在指定范围内，会缩短电池的使用寿命，或者会产生漏液导致设备损坏。如果电池长时间不做充电维护，可能导致电芯无法正常使用。

10 Disclaimer/免责声明

If the product user does not use the product according to the provisions of this specification, causing social impact and affecting the reputation of Great Power, we will investigate the responsibility of the user. According to the degree of impact, the user should provide compensation to Great Power. Great Power reserves the right to modify the specifications of the product. Before ordering , the buyer needs to confirm the latest status of the products in advance.

如果使用方不按本说明书使用电池造成社会影响或我司声誉影响的，我司将根据影响程度追究使用方责任。产品使用方需向我司提供 赔偿，我司保留对产品规格参数修改的权利。买方在订购产品前，需与我司提前确认产品最新状态。

11 Note/注释

Any other items which are not covered in this specification shall be agreed by both parties.

本说明书未包括事项应由双方协议确定。