

# igtc广州海关技术中心





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01112300004188-1(E) Date: 2023-11-24 of 14

## UN38.3 报告 **UN38.3 Test Report**

样品名称:

Sample Name: **Lithium Ion Battery** 

委托单位: 广州鹏辉储能科技有限公司

**Guangzhou Great Power Energy Storage Applicant:** 

Technology Co., Ltd.



**ULZ05CHNRS** 

**GUANGZHOU** 

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01112300004188-1(E) No: Date: 2023-11-24 Page: 2 of 14

### 检测证书 **TEST REPORT**

	IEST KEI	LOIVI N	a.V	6
样品名称 Sample Name	锂离子电池 Lithium Ion Battery	W. WETHONG	GUANG	0
型号 Model	SIMPO 5000	CANE.	- at cets	TE MOLC
委托单位 Applicant	广州鹏辉储能科技有限公司 Guangzhou Great Power Energy Sto	orage Technology Co.,	, Ltd.	aict Kec.
委托单位地址 Applicant Address	广州市南沙区东涌镇庆沙路 419 - Room 003, 419 Qingsha Road, Don		, Guangzhou	
生产单位 Factory	珠海鹏辉能源有限公司 Zhuhai Great Power Energy Co., Lt	rd.		
生产单位地址 Factory Address	广东省珠海市斗门区井岸镇新青 (BUILDING A, WORKSHOP) M DOUMENDISTRICT, 519100 ZE	NO.2 XINQING FIF	TH ROAD, JIN	IG'AN TOWN,
样品外观与性状 Appearance & Odor	黑色金属外壳 Black metal shell	Lift.	CENTL.	WOLOG,
测试方法和判定标准 Test method and criterion	联合国《关于危险货物运输的建计 38.3 UNITED NATIONS "Recommenda Manual of Tests and Criteria ST/SG	ations on the TRANS	PORT OF DANGE	
接样时间 Accepted date	2023-10-30	测试日期 Test date	2023 10 30	023 11/23
测试项目 Test items	高度模拟、温度试验、振动、冲- Altitude simulation, Thermal test, V Forced discharge.			
结论 Conclusion	经测试,该样品符合联合国 ST/SG/AC.10/11/Rev.7/Amend.1,3 The sample has passed the test TRANSPORT OF DANGERO ST/SG/AC.10/11/Rev.7/Amend.1,3	38.3 标准要求。 items of UNITED N DUS GOODS", M	70	
备注 Remark	1.随附 UN38.3 试验概要(编号: Attached with UN38.3 test summ	10		DW2 WESTIGI

批准

Approver:

审核



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01112300004188-1(E) No: Date: 2023-11-24 3 of 14 Page:

### 电池组信息:

### The batteries information:

The batteries information.			
电池类型 Battery type 额定容量 Rated Capacity	锂离子电池组 Lithium ion batteries 100 Ah	标称电压 Nominal Voltage 总能量 Total Energy	51.2 V 5120Wh
充电限制电压 Limited Charge Voltage	58.08V	标准充电电流 Standard Charge Current	50A CHANGTHOUG
最大充电电流 Maximum Charge Current	100A	充电截止电流 Charge Cut-off Current	5A
标准放电电流 Standard discharge Current	50A	最大放电电流 Maximum Discharge Current	100A
放电截止电压 Discharge Cut-off Voltage	40.8V	尺寸 Overall Dimensions (W×D×H)	长方体 Cuboid 518mm(L)*482mm(W) *134mm(H)
重量 Mass	43.7kg	电芯数量 Cell Quantity	16 PCS
电芯容量 Cell Capacity	100Ah	电芯型号 Cell Model	GSP50160119F
电芯生产单位 Manufacturer of cell	CEP ZE	珠海鹏辉能源有限公司uhai Great Power Energy C	

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01112300004188-1(E) No: Date: 2023-11-24 Page: 4 of 14

Table   T						
1       高度模拟 Altitude simulation       和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.1 Test T.1       分格 Passed         2       温度试验 Thermal test       联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.2 Test T.2       见附表 2 See Appendix 2         3       振动 Vibration       联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.3 Test T.3       见附表 3 See Appendix 3         4       冲击 Shock       联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.4 Test T.4       见附表 4 See Appendix 4         5       外部短路 External short circuit       联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.5 Test T.5       见附表 5 See Appendix 5	备注 Remark	Test		Stand requirement or the clause number of		
2温度试验 Thermal test和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.2 Test T.2光的表 2 	CHMOLC		See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,		1
# 表			See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,		2 2
4冲击 Shock和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.4 Test T.4上門表 4 See Appendix 45外部短路 External short circuit联合国《关于危险货物运输的建议书 试验 和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.5 Test T.5见附表 5 See Appendix 5	THON I		See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,	11 9	3
5 External short circuit 和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.5 Test T.5	34 CEMIE	V	See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,		4 0
	ONSDIS	A 10 TO 10 T	See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,	External short	5
存压联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Crush见附表 6 See Appendix 6CrushCriteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.6 Test T.6Appendix 6	/	2.7	See	Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,	(3)	6
T过度充电 Overcharge联合国《关于危险货物运输的建议书 试验 和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1, 38.3 试验 T.7 Test T.7见附表 7 See Appendix 7	1	The second second	See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,		7
With the process of	est,		See	和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/ Rev.7/Amend.1,	/	8
测试环境 环境温度:20℃-25℃;环境湿度:45%-75% Ambient temperature: 20℃-25℃, Ambient humidity: 45%-75%	GLYO			(A)	A * (A	Test e

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No: 01112300004188-1(E) Date: 2023-11-24 Page: 5 of 14

序号 No.附表 1 Appendix 1测试项目名称 Name of test高度模拟 Altitude simulation标准要求 Requirement of Standard試验电池或电池组在压力等于或低于 11.6kPa 和环境温度 20±5°C 下存放至少 6h。试验电池或电池组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧,并且每个试验电池或电池组除外)。无非气、无解体、无破裂和无燃烧,并且每个试验电池或电池组除外)。样品状态 StandardTest cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hours at ambient temperature 20±5°C. Cells and batteries meet this requirement if there is no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.#日状态 Sample statusb1#-b2#: 第一个循环完全充电的电池: b1#-b2#: 第二十五个循环完全充电的电池: b3#-b4#: after 25 cycles ending in fully charged states.#日状态 Sample No.測试前 Before测试后 AfterMass loss (%)Residual OCV(%)测试结别 Test resummers DCV(%)Test resummers DCV(%)b1#43.77454.57643.77454.5750.00100.00Ob2#43.80254.58343.80254.5830.00100.00Ob3#43.78654.57243.78654.5720.00100.00Ob4#43.79454.58843.79454.5870.00100.00O	( )	V		2 3/				1/
地组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧,并且每个试验电池或电池线 在试验后的开路电压不少于其在进行这一试验前电压的 90%(完全放电状态的试验电池或电池线 程除外)。  Requirement of Standard Test cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hours at ambient temperature 20±5°C. Cells and batteries meet this requirement if there is no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.  ## 品状态 Sample status    b1#~b2#: 第一个循环完全充电的电池; b1#~b2#: 第二十五个循环完全充电的电池。 b3#~b4#: \$43.774 54.576 43.774 54.575 0.00 100.00 0						CUSTO	EAV	
甘油状态 Sample status       b1#~b2#: first cycle in fully charged states; b3#~b4#: 第二十五个循环完全充电的电池。 b3#~b4#: 第二十五个循环完全充电的电池。 b3#~b4#: 第二十五个循环完全充电的电池。 b3#~b4#: 第二十五个循环完全充电的电池。 b3#~b4#: 第二十五个循环完全充电的电池。 b3#~b4#: 第二十五个循环完全充电的电池。 b1# Jahan Before 测试后 After 原量损失 Mass loss (%)       顺量损失 Mass loss (%)       剩余电压 Residual OCV(%)       不够电压 Residual OCV(%)       不够电压 Residual OCV(%)       D00       D00 <th< td=""><td>Requirement</td><td>池组应无重量 在试验后的开 组除外 )。 Test cells and temperature 2 venting, no di battery after to</td><td>量损失、无渗漏、 F路电压不少于与 batteries shall be 0±5℃. Cells and sassembly, no rup esting is not less t</td><td>无排气、无触 其在进行这一i stored at a pre batteries meet pure and no fir han 90% of its</td><td>解体、无破裂式验前电压的 ssure of 11.6kl this requireme e and if the op voltage immed</td><td>和无燃烧,并 90%(完全放 Pa or less for at nt if there is no en circuit volta diately prior to</td><td>且每个试验电电状态的试验 least six hours mass loss, no l ge of each test this procedure.</td><td>池或电池组 电池或电池 at ambient leakage, no cell or The</td></th<>	Requirement	池组应无重量 在试验后的开 组除外 )。 Test cells and temperature 2 venting, no di battery after to	量损失、无渗漏、 F路电压不少于与 batteries shall be 0±5℃. Cells and sassembly, no rup esting is not less t	无排气、无触 其在进行这一i stored at a pre batteries meet pure and no fir han 90% of its	解体、无破裂式验前电压的 ssure of 11.6kl this requireme e and if the op voltage immed	和无燃烧,并 90%(完全放 Pa or less for at nt if there is no en circuit volta diately prior to	且每个试验电电状态的试验 least six hours mass loss, no l ge of each test this procedure.	池或电池组 电池或电池 at ambient leakage, no cell or The
样品编号 Sample No.     电池质量 m <sub>1</sub> (kg)     开路电压 v <sub>1</sub> (V)     电池质量 m <sub>2</sub> (kg)     开路电压 v <sub>2</sub> (V)     质量损失 Mass loss (%)     聚esidual OCV(%)     Test result Test results       b1#     43.774     54.576     43.774     54.575     0.00     100.00     O       b2#     43.802     54.583     43.802     54.583     0.00     100.00     O       b3#     43.786     54.572     43.786     54.572     0.00     100.00     O	Sample	b1#~b2#: fir b3#~b4#: 第	rst cycle in fully c 二十五个循环完	charged states; 全充电的电池				Melh
Sample No.       电池质量 m <sub>1</sub> (kg)       开路电压 v <sub>1</sub> (V)       电池质量 m <sub>2</sub> (kg)       开路电压 v <sub>2</sub> (V)       Mass loss (%)       Residual OCV(%)       Test results and DCV(%)         b1#       43.774       54.576       43.774       54.575       0.00       100.00       O         b2#       43.802       54.583       43.802       54.583       0.00       100.00       O         b3#       43.786       54.572       43.786       54.572       0.00       100.00       O	样只结果	测试前	Before	测试后	After	质量损失	剩余电压	测试结里
b2# 43.802 54.583 43.802 54.583 0.00 100.00 O b3# 43.786 54.572 43.786 54.572 0.00 100.00 O	70				/	CA	1.7/2	Test result
b3# 43.786 54.572 43.786 54.572 0.00 100.00 O	b1#	43.774	54.576	43.774	54.575	0.00	100.00	O
The true of the contract of th	b2#	43.802	54.583	43.802	54.583	0.00	100.00	О
b4# 43.794 54.588 43.794 54.587 0.00 100.00 O	b3#	43.786	54.572	43.786	54.572	0.00	100.00	О
	b4#	43.794	54.588	43.794	54.587	0.00	100.00	0 °

注:L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏、无排气、 无解体、无破裂、无起火。 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

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No: 01112300004188-1(E) Date: 2023-11-24 Page: 6 of 14

, 0	,0,	7		9	70,	20	60		
序号 No.		表 2 endix 2		试项目名称 ame of test	55 <sup>1</sup>	温度试验 Thermal te			
标准要求 Requirement of Standard	下存放至少 12 验电池或电池 无排气、无解 其在进行这一 Test large cells 72±2℃, follow maximum time repeated 10 tim temperature (20 no venting, no obattery after tes	或电池组在试验 th。两个极端说 组在环境温度2 体、无破裂和分 试验前电压的9 and batteries ar ed by storage for interval between es, after which and disassembly, no ting is not less tating to voltage	太验温度之间的 20±5℃下存放 无燃烧,并且每 90%(完全放 e to be stored for at least 12 ho n test temperate all test cells and d batteries mee rupture and no han 90% of its	可最大时间间隔 24h。试验电》 每个试验电池或 电状态的试验 or at least 12 hours at a test ten ure extremes is d batteries are to this requirement of fire and if the voltage immed	B为 30min。 重 也或电池组在试 电池或电池组 ours at a test te perature equa 30 minutes. To be stored for ent if there is ropen circuit vo iately prior to	重复 10 次,再 无重量损失、 验后的开路电 除外)。 emperature equal to -40±2℃.7 This procedure 24 hours at ar no mass loss, no litage of each of this procedure	将所有试 无渗漏、 压不少于 all to The is to be nbient o leakage, test cell or . The		
样品状态 Sample status			charged states; 全充电的电池		CUANO.	. L <sup>O</sup>	OCTCENTE		
IV or the STACK	测试前	Before	测试后	式后 After 质量		测试后 After		剩余电压	w me
样品编号 Sample No.	电池质量 m <sub>l</sub> (kg)	开路电压 Vı(V)	电池质量 m <sub>2</sub> (kg)	开路电压 V2(V)	Mass loss (%)	Residual OCV(%)	测试结果 Test result		
b1#	43.774	54.575	43.768	54.568	0.01	99.99	O &		
b2#	43.802	54.583	43.792	54.572	0.02	99.98	0		
b3#	43.786	54.572	43.778	54.566	0.02	99.99	О		
b4#	43.794	54.587	43.786	54.570	0.02	99.97	O C		

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏、无排气、 无解体、无破裂、无起火。 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

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01112300004188-1(E) No: Date: 2023-11-24 7 of 14 Page:

序号 No.		大表 3 endix 3		则试项目名称 Name of test	Sierio	振动 Vibratio	on
标准要求 Requirement of Standard	1gn 的最大加强速度达到 2gn(的电池或电池损失、无渗漏电压不少于其The large Cells distorting the cisinusoidal wavuntil 18Hz is refrequency increof 2gn is then retimes for a tota of the direction requirement if if the open circimmediately processing the second se	电池组直接安装速度,直到 18Hz。 频率约为 25Hz) 组安装方向的每 、无排气、无解。 在进行这一试验 eached. The ample eached. The ample eased until a peal an	然后将振幅 .将最大加速是 手个方向重复的 体、无破裂和 全前电压的 90 e firmly secure nner as to faith arithmic swee litude is then rak acceleration he frequency in each of three moust be perpend loss, no leakage the test cell or later. The requirements	保持在 0.8mm( 度保持在 2gn 直 进行 12 次,一 可无燃烧,并且 %(完全放电》 d to the platform fully transmit to p from 7Hz to a maintained at 0.3 of 2gn occurs (a s increased to 2 nutually perpendicular to the term ge, no venting, restatery after test	总偏移 1.6mi 到频率增加。 共振动 3h。 i 每个试验电测 状态的试验电 m of the vibration. peak accelera 8mm (1.6mm pproximately 00Hz. This cy licular mounti minal face. Co no disassembly ing is not less	m),并增加频率到 200Hz。对三式验电池或电池或电池组在设地或电池组在设地或电池组除 tion machine w The vibration of 1g <sub>n</sub> is n total excursion 25Hz). A peak well shall be repung positions of ells and batteries than 90% of it	直到最大加 三个互相垂重 出组应无重量 式验后的开路 外)。 without hall be a naintained ) and the acceleration peated 12 the cell. One s meet this id no fire and s voltage
样品状态 Sample status	b1#~b2#: fir b3#~b4#: 第二	一个循环完全充 st cycle in fully c 二十五个循环完 er 25 cycles endi	harged states; 全充电的电池		ECHMOTOC.	DISTRICT FECH	STONEDISTRI
<b>孙</b> 口 你 口	测试前	Before	测试后	f After	质量损失	剩余电压	加以及用
样品编号 Sample No.	电池质量 m <sub>l</sub> (kg)	开路电压 V <sub>1</sub> (V)	电池质量 m <sub>2</sub> (kg)	开路电压 V <sub>2</sub> (V)	Mass loss (%)	Residual OCV(%)	测试结果 Test result
b1#	43.768	54.568	43.764	54.566	0.01	100.00	0
b2#	43.792	54.572	43.790	54.570	0.00	100.00	O CHIM
b3#	43.778	54.566	43.776	54.565	0.00	100.00	STRICO
b4#	43.786	54.570	43.784	54.570	0.00	100.00	0
		ls.	Long		0)	.61	

注:L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏、无排气、 无解体、无破裂、无起火。 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

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序号

No.

Rupture & No Fire.

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附表 4

Appendix 4

Add.: Tower B, No.66 Huacheng Avenue, Zhujiang Xincheng, Tianhe District, Guangzhou, Guangdong, P.R.C.

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No: 01112300004188-1(E) Date: 2023-11-24 Page: 8 of 14

冲击

Shock

标准要求 Requirement of Standard	解体、无破裂验前电压的 9 Test cells and support all moshock of peak milliseconds. I by three shock or battery for a leakage, no vecell or battery requirement restates.(NOTE	和无燃烧,并且 0%(完全放电 batteries shall be unting surfaces acceleration of S Each cell or batte is in the negative total of 18 shoot nting, no disasse after testing is no lating to voltage Mass is express 一个循环完全充	三电的电池;	或电池组在试池或电池组除处testing machine ery. Each Large tion $(g_n) = \sqrt{30}$ jected to three see mutually peatteries meet this re and no fire and of its voltage	验后的开路电外)。(注意 by means of a be batteries shall 000 / mass) a shocks in the porpendicular mois requirement and if the open cimmediately principle.	压不少于其在 : 质量为千克 a rigid mount w be subjected to nd pulse duration ositive direction ounting position if there is no me circuit voltage of cior to this proc	进行这一试 ) which will to a half-sine on of 11 in followed as of the cell ass loss, no of each test edure. The
Sample status	b3#~b4#: 第二		charged states; E全充电的电池 ling in fully cha				
样品编号	测试前	Before	测试后	After	质量损失	剩余电压	测试结果
Sample No.	电池质量 m <sub>l</sub> (kg)	开路电压 V <sub>1</sub> (V)	电池质量 m <sub>2</sub> (kg)	开路电压 v <sub>2</sub> (V)	Mass loss (%)	Residual OCV(%)	Test result
b1#	43.764	54.566	43.764	54.566	0.00	100.00	0
b2#	43.790	54.570	43.790	54.570	0.00	100.00	0
b3#	43.776	54.565	43.774	54.564	0.00	100.00	O CHI
	" Dr.		78		1	16	(2)

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No

测试项目名称

Name of test

 $g_n = \sqrt{(30000 / mass)}$ 中较小者的正弦波冲击,脉冲持续时间 11ms,按三个相互垂直的轴向分别对

将电池或电池组用坚硬支架紧固在试验装置上,对于大型电池组,以加速度为 50gn或

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01112300004188-1(E) No: Date: 2023-11-24 9 of 14 Page:

	~~	-1, all.	
序号 No.	附表 5 Appendix 5	测试项目名称 Name of test	外部短路 External short circuit
标准要求	小于 0.1Ω 的短路条件,当电池 再观察电池或电池组 6h 才结束 6h 内应无解体、无破裂和无燃烧 The cell or battery to be tested sha	all be temperature stabilized so that	5继续至少 1h,然后短路断开,应不超过 170℃,并且试验后tits external case temperature
Standard	least one hour after the cell or batt battery must be observed for a fur	ohm at 57±4°C. This short circuit tery external case temperature has a ther six hours for the test to be con emperature does not exceed 170°C	condition is continued for at returned to $57\pm4^{\circ}\text{C}$ . The cell or included. Cells and batteries meet
样品状态 Sample status	b1#~b2#:第一个循环完全充电b1#~b2#:第一个循环完全充电b3#~b4#:第二十五个循环完全b3#~b4#: after 25 cycles ending	rged states;	STHO GOT CENTE
样品编号 Sample No.	样品表面最高温度 Max External Temperatur	测试结果 e(℃)    Test result	□ ☆¼ Remark
b1#	57.4	INDIO TITE	DISTRIC /STOMS
b2#	57.2	THE DETER O	THOUS!
b3#	56.9	JETO THE O'C	Elimer /
b4#	57.6	O O	A.E.

注: D-解体; R-破裂; F-起火; O-无解体、无破裂、无起火。 Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

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No: 01112300004188-1(E) Date: 2023-11-24 Page: 10 of 14

4-4							
序号 No.	附表 6 Appendix		,OT	测试项目名称 Name of test	C C C C C C C C C C C C C C C C C C C	挤压 Crush	
ECH.	适用于棱柱形、袋将电池或元件电池为 1.5cm/s。挤压持(a)施加的力量达到(b)电池的电压下降	放在两个平 续进行,直 13kN±0.78 至少 100m√	面之间挤压 正到出现以 kN; V; 或	玉,挤压力度:	逐渐加大,在	E第一个接触点。	上的速度大
标准要求	(c)电池变形达原始 棱柱形或袋装电池, 与纵轴垂直的方向; 试验电池或元件电; 无破裂、无起火。	应从最宽的 施压。每个	一面施压。 电池或元(	牛电池只做一	次挤压试验。		
Requirement of Standard	Crush(applicable to diameter): A cell or ogradual with a spee continued until the 13kN±0.78kN; (b)The voltage of the (c)The cell is deform	component of d of approx first of the e cell drops	cell is to be imately 1.3 to the three of the by at least	e crushed betw 5cm/s at the fi ptions below 100mV;or	een two flat irst point of is reached.	surfaces. The cru contact. The cru	ushing is to shing is to
GUANG	A prismatic or pouch shall be crushed by be applied perpendic one crush only. Cells and componen	applying the cular to the le t cells meet	e force on i ongitudinal this require	its flat surfaces axis. Each tes ement if their e	s. For cylindr t cell or comp external tempo	ical cells, the cru conent cell is to b	ush force shoe subjected
	and there is no disas	semony and	no me dun	ng the test and	within six ho	ours after this test	
样品状态 Sample status	C1#~C5#: 第一个 C1#~C5#: 第二十 C6#~C10#: 第二十 C6#~C10#: after 2	盾环 50%的 cle at 50% o 五个循环 5	额定容量的 f the design 0%的额定	p电芯。 n rated capacity 容量的电芯。	of cell.	ENANGIHO.	
	C1#~C5#: 第一个行 C1#~C5#: first cyc C6#~C10#: 第二十	盾环 50%的 cle at 50% o 五个循环 5	额定容量的 f the design 60%的额定 60% of the 备注	p电芯。 n rated capacity 容量的电芯。	of cell.	高温度 ernal 测试结	t. 果 备注
Sample status 样品编号	C1#~C5#: 第一个6 C1#~C5#: first cyc C6#~C10#: 第二十 C6#~C10#: after 2 样品表面最高温度 Max External	盾环 50%的 cle at 50% of 五个循环 5 5 cycles at 5 测试结果	额定容量的 f the design 60%的额定 60% of the 备注	n e 芯。 n rated capacity 容量的电芯。 design rated ca 样品编号	y of cell. pacity of cell 样品表面最 Max Exte	高温度 ernal re(℃)	t. 果 备注
Kample status 样品编号 Sample No.	C1#~C5#: 第一个在C1#~C5#: 第一个在C1#~C5#: first cyc C6#~C10#: 第二十 C6#~C10#: after 2 样品表面最高温度 Max External Temperature(℃)	盾环 50%的 cle at 50% o 五个循环 5 5 cycles at 5 测试结果 Test result	额定容量的 f the design 0%的额定 50% of the 备注 Remark	n rated capacity 容量的电芯。 design rated ca 样品编号 Sample No.	y of cell.  pacity of cell  样品表面最  Max Extended  Temperatu	高温度 ernal re(℃) 测试结 Test res	t. 果 备注
样品编号 Sample No. C1#	C1#~C5#: 第一个6 C1#~C5#: first cyc C6#~C10#: 第二十 C6#~C10#: after 2 样品表面最高温度 Max External Temperature(℃)	盾环 50%的 cle at 50% o 五个循环 5 5 cycles at 5 测试结果 Test result	额定容量的 f the design 0%的额定 50% of the 备注 Remark	n rated capacity 容量的电芯。 design rated ca 样品编号 Sample No.	pacity of cell. 样品表面最 Max Exto Temperatu 23.2	高温度 ernal re(℃)	t. 果 备注
样品编号 Sample No. C1# C2#	C1#~C5#: 第一个在C1#~C5#: 第二个在C1#~C5#: first cyc C6#~C10#: 第二十 C6#~C10#: after 2 样品表面最高温度 Max External Temperature(°C) 23.1	盾环 50%的 cle at 50% of 五个循环 5 5 cycles at 5 测试结果 Test result O	额定容量的 the design to the design to the second to the secon	内电芯。 n rated capacity 容量的电芯。 design rated ca 样品编号 Sample No. C6#	y of cell.  pacity of cell  样品表面最  Max Exter  Temperatu  23.2	高温度 ernal re(℃)	t. 果 备注

注: D-解体; R-破裂; F-起火; O-无解体、无破裂、无起火。

Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

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01112300004188-1(E) Date: 2023-11-24 Page: 11 of 14

C.74	~~			
序号 No.	附表 7 Appendix 7	测试项目名称 Name of test	过度充电 Overcharge	GUAR
标准要求 Requirement of Standard	(a) 制造商建议的充电电压不倍或 22V 两者中的较少者。 (b) 制造商建议的充电电压大可再充电电池组在环境温度 The charge current shall be twice current. The minimum voltage of (a) When the manufacturer's recovoltage of the test shall be 1.2 times the rests are to be conducted at a	ommended charge voltage is not make the maximum charge woltage is more	是最大充电电压的 1.2 内应无解体和无燃烧。 I maximum continuous cl nore than 18V, the minimarge voltage of the batter than 18V, the minimum n of the test shall be 2	倍。 narge um y or voltage 4 hours.
样品状态 Sample status	b1#~b2#:第一个循环完全充电 b1#~b2#: first cycle in fully ch b3#~b4#:第二十五个循环完全 b3#~b4#: after 25 cycles endin	arged states;	ocy cellyle. Technolo	ot st
样品编号 Sample No.	测试结果 Test result	INOLOGY ST TECHNE	备注 Remark	KOM2 D.
b1#	CELT HADO O	THE DISTRICT	stons / HOUCO	
b2#	Qs <sup>ft</sup>	Elons Hold	JANG L	6
b3#	EDETE ISTONIO	THOTES	1	?-
b4#	AHOU'S O WE		g 1 oct con	, ch
.0	10"	CY		7.

注: D-解体; R-破裂; F-起火; O-无解体、无破裂、无起火。

Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly. No Rupture & No Fire.

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01112300004188-1(E) Date: 2023-11-24 12 of 14 Page:

議验原电池或可再充电电池在环境温度下与 12V 的直流电源串联,在起始电流等于制造商等	序号 No.	附表 8 Appendix 8	8 strict	测试项目名 Name of tes		强制放电 Forced discharge
Pin No.   C21#~C20#: first cycle in fully discharged states;	Requirement	定的最大放电电流的算得出给定的放电的 有得出给定的放电的 初始试验电流(安培 Each cell shall be fo D.C. power supply a manufacturer. The sp appropriate size and interval (in hours) eq or rechargeable cells	的条件下强。对每 )。原电池或 rced dischar at an initial pecified disc rating in seri qual to its rat	制放电。将适当大小 个电池进行强制放电 或可再充电电池在试验 ged at ambient temper current equal to the n harge current is to be c ies with the test cell. E ted capacity divided by	和额定值的电阻负荷,放电时间(小时)应 会后7天内应无解体 rature by connecting naximum discharge obtained by connecting ach cell shall be force y the initial test curre	有与试验电池串联,计 位等于其额定容量除以 和无燃烧。 it in series with a 12 V current specified by the ng a resistive load of the ed discharged for a time ent (in Ampere).Primary
Sample No.         Test result         Remark         Sample No.         Test result         Remark           C11#         O         /         C21#         O         /           C12#         O         /         C22#         O         /           C13#         O         /         C23#         O         /           C14#         O         /         C24#         O         /           C15#         O         /         C25#         O         /           C16#         O         /         C26#         O         /           C17#         O         /         C27#         O         /           C18#         O         /         C28#         O         /           C19#         O         /         C29#         O         /	Sample	C11#~C20#: first cyc C21#~C30#: 第二一	cle in fully d 十五个循环:	ischarged states; 完全放电的电芯。	Charle Thonce	CANAGE
C12#       O       /       C22#       O       /         C13#       O       /       C23#       O       /         C14#       O       /       C24#       O       /         C15#       O       /       C25#       O       /         C16#       O       /       C26#       O       /         C17#       O       /       C27#       O       /         C18#       O       /       C28#       O       /         C19#       O       /       C29#       O       /	6			68	The state of the s	
C13#       O       /       C23#       O       /         C14#       O       /       C24#       O       /         C15#       O       /       C25#       O       /         C16#       O       /       C26#       O       /         C17#       O       /       C27#       O       /         C18#       O       /       C28#       O       /         C19#       O       /       C29#       O       /	C11#	O Grille	1	C21#	000	THESHIN 1
C14#         O         /         C24#         O         /           C15#         O         /         C25#         O         /           C16#         O         /         C26#         O         /           C17#         O         /         C27#         O         /           C18#         O         /         C28#         O         /           C19#         O         /         C29#         O         /	C12#	0	SENTE/	C22#	ZECHII O	1 Me 1
C15#       O       /       C25#       O       /         C16#       O       /       C26#       O       /         C17#       O       /       C27#       O       /         C18#       O       /       C28#       O       /         C19#       O       /       C29#       O       /	C13#	0 0	7	C23#	O MEDI	J. J.S.
C16#       O       /       C26#       O       /         C17#       O       /       C27#       O       /         C18#       O       /       C28#       O       /         C19#       O       /       C29#       O       /	C14#	0	Jes Committee of the Co	C24#	O	ichio /
C17# O / C27# O / C18# O / C28# O / C19# O / C29# O /	C15#	0	Me Die	C25#	CTHO O	355
C18# O / C28# O / C19# O / C29# O /	C16#	0 J	/	C26#	0	
C19# O / C29# O /	C17#	OTHO	(VIP	C27#	0	Joet 1 rect
	C18#	0/0	/	C28#	0 TO	/ RICT
C20# O / C30# O /	C19#	0	/	C29#	Opto	1501
	C20#	0	Z CY NO	C30#	1500	custo / czho

注: D-解体; R-破裂; F-起火; O-无解体、无破裂、无起火。

Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

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01112300004188-1(E) Date: 2023-11-24 13 of 14

### 样品图片

### Photo of the sample

电池正面外观



### 电池侧面外观 Battery side appearance



### 电池铭牌(含 Wh) Battery nameplate (With Wh)

Model: SIMPO 5000 Chemistry: LiFePO4 Nominal Voltage: 51.2v Usable Energy: 5.12kWh Max. Continuous Current: 100A Operating Voltage: 40.8v~58.08v Operating Temperature: -10°C~+55°C

IP Class: IP20 Protective Class: I Website: www.zyc.energy Email: service@zyc.energy













MADE IN CHINA

### 电芯

### Cell



### 电芯 Cell



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## 海关技术







地址:中国广东省广州市天河区珠江新城花城大道66号B座 邮编Postcode: 510623

Add.: Tower B, No.66 Huacheng Avenue, Zhujiang Xincheng, Tianhe District, Guangzhou, Guangdong, P.R.C.

电话Tel: 020-22131000 邮箱Email: ppdc@iqtcnet.cn 网址Website: https://www.iqtcnet.cn

01112300004188-1(E) 2023-11-24 Date: Page: 14 of

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Test Address: Room C102, No.1 Nanxiangzhi Road, Science City, Guangzhou, Guangdong, China (Institute of Automobile and Equipment Testing in Science City)

电话(Tel): 020-38669019-811

电子邮箱(E-mail): battery@iqtcnet.cn

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