

深圳市中美通用科技有限公司

General Electronics Technology Co.Ltd

OPS300

产 品 规 格 书

文件编号: FD-03-YF-002	版 本: A/0	发行日期: 2020/11/6
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			File class 文件阶级	secondary data file 三级文件	
File Name 文件名称	Specification Approval 产品规格书		File number 文件编号	GEB-03-YF-002	
Tooling department 制作部门	工程部	Producer 制作人	周浩	Enactment Date 制作日期	2020/11/6

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更改记录

序号	版本	更改内容	修改人	审核	批准	更改日期
1	A/0	新版发行	周浩			2020/11/6
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1、Scope 适用范围

This specification is applied to **Power Station with Model OPS300** manufactured by GEB.
本规格书适用于本公司生产的 **OPS300** 户外储能电源。

2、Compositions 产品组件

2.1 4000mAh 20pcs Li-ion 21700 batteries.

20 个 21700-4000mAh 电芯

2.2 1*AC inverter PCBA,1*DC main control PCBA, 1*LCD Display PCBA, 1*LED lamp PCBA, 1*DC Charging PCBA

1 块 AC 逆变器板+1 块 DC 主控板+1 块液晶显示屏板+1 块 LED 灯板+1 块 DC 充电板

2.3 Plastic case 1 套壳料

2.4 Accessories, User Manual, Package, etc 配件/说明书/包装等

3、Basic performance of the battery pack 电芯基本性能

3.1 Complied with Standards for battery cells 电芯执行标准

Certificate name 文件名称	Versions 受控编号、版本号	Standard type 标准类别
GB/T18287-2000 蜂窝电话用锂离子电池总规范国家标准	GB/T18287-2000	CCC Safety 3C 标准
UL1642	UL1642	UL Safety

3.2 Test conditions 测试条件

Except for other specified, all the test items in this manual are to be done in standard atmospheric conditions:
除非另有规定，本规格书中各项试验应在试验的标准大气压条件下进行：

Temperature 温度：15℃~35℃.

Relative humidity 相对湿度：45%~75%

Atmospheric pressure 大气压力：86 kPa~106 kPa

Requirements for measuring meters and devices 测量仪表与设备要求：

The precision of meters for measuring voltage shall not be lower than 0.5, and the internal resistance shall not be less than 10KΩ/V.

测量电压的仪器精度应不低于 0.5 级，内阻应不小于 10KΩ/V。

The precision of meters for measuring current shall not be lower than 0.5.

测量电流的仪器精度应不低于 0.5 级。

The constant current load within the measured power voltage range shall be adjustable, and the relative error of the current is 0.1%.

恒流负载在被测电源电压范围内恒定电流可调，其电流相对误差为 0.1%。

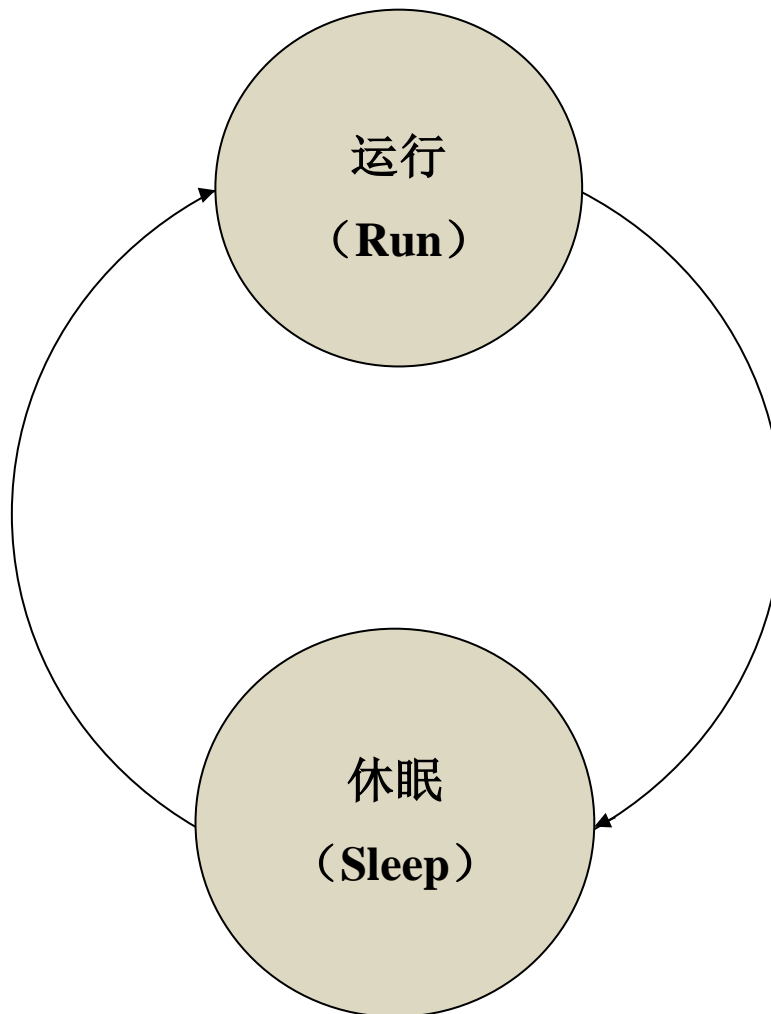
3.3 Battery State 电芯工作状态

There are 2 status of the battery: Sleep and Run. When the battery receives the following actions, different operation modes can be switched: press the button, charge the battery, and output.

Please refer to the illustration as below:

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电池有两种工作模式：睡眠，运行。
具体状态切换方式可参考如下图表：



Sleep: No output, no charging, no Led display. MCU in halt mode.

Run: Charging or output with load mode.

NO Action: No pressing the button, no load, no charge within T_{sleep} seconds. I_{min} is minimum output current. T_{sleep} and I_{min} value is listed below in the Ratings table.

休眠：指在休眠等待时间内不按按键，没有负载，没有充电。电池会自动休眠以节省自耗电，以达到更长的待机时间。

I_{min} ：最小持续放电电流， $I_o > I_{min}$ 充电宝判断为带载， $I_o < I_{min}$ 判断为无负载连接。

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4、电气性能参数

4.1 测试仪器：万用表、电子负载、计时器、放电柜。

性能如附表：

Item 项目	Rating 标准	Remark 备注
Cell Brand 品牌	Panasonic	松下
Category 类别	Li-ion 21700Battery	21700 动力锂离子电芯
Rated Capacity 标称容量 (mAh)	288Wh	2C Discharge 2C 放电。
Nominal Voltage 标称电压 (V)	3.6V	放电平均电压。
Cut Down Voltage 放电截止电压	3.0V	4.2V 放电至 2.5V 截止，放电电流 0.2C。
Maximum charge voltage 充电最高电压	4.2V±0.05V	
Charging method 充电方式	CC/CV 恒流/恒压	charge with constant current 0.2C to 4.2V,then charge with constant voltage 4.2V till charge current is less than 0.01C 以 0.2C 电流恒流充电至 4.2V,然后 4.2V 恒压充电 至电流小于 0.01C
Initial internal resistance 内阻 (mΩ)	≤ 25mΩ	
Cell Dimension 尺寸 (mm)	155*70*75 mm	Battery Pack Size 电池组尺寸
Weight 重量 (g)	1.58kg	Battery Pack Weight/ 电池组重量
Operating Temp for charging 充电环境温度(°C)	-0°C~45°C	以 0.2C 电流充电。
Operating Temp for discharging 放电环境温度(°C)		以 0.2C 电流放电。
Storage Temp	-20°C~55°C	Less than 1 month 小于 1 个月时间。



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	储存环境温度(°C)	-20°C~45°C	Less than 3 months 小于 6 个月时间。
		-20°C~25°C	Less than 1 year 小于 1 年时间。
	Cycle life 循环寿命	≥500 Times 次	Charging: 0.2C Constant Current and constant voltage charged to 4.2V, current less than or equal to 0.02C will be cut off. Discharging: 0.2C discharge to 3.0V will be cut-off. When the discharge capacity drops to 80% of the standard capacity, the test is stopped. 充电: 0.2C 恒流恒压充电到 4.2V, 电流≤0.02C 截止。 放电: 0.2C 放电至 3.0V 截止。 当放电容量降至标准容量的 80%时, 为停止测试。
Charging Performance 输入特性	Charging method 输入模式	CV/DC 恒压/恒流	Mode of Input Voltage 输入电压模式。
	Input Voltage 输入电压 (V)	DC:5V~24V Type-c: PD 100W (5V/9V/12V/15V/20V)	Rated Input Voltage 产品实际输入电压。
	Input current 输入电流 (A)	DC:5A Type-c: 2.4A 3A 3A 3A 5A	Rated Input Current 产品实际输入电流。
	Quiescent current 静态电流(uA)	≤300uA	Standby Current less than 300uA 当产品在待机状态时, 自耗电流小于 300uA。
	Input Protection Voltage 输入保护电压	25V	
Output performance 输出特性	Output voltage 输出电压(V)	Type-c:PD 100W 5V/9V/12V/15V/20V USB1/USB2: 5V USBQC3.0:PD18W 5V/9V/12V DC1/DC2:12V~16.8V	Rated Output Voltage 产品实际的输出电压值。
	Output current 输出电流(A)	Type-c: 2.4A/3A/3A/3A/5A USB1/USB2: 2.1A USBQC3.0: 3A/2A/1.5A DC1/DC2:8A~12A	
	AC 交流输出	220V 50Hz/110V 60Hz	
	Over Discharging	2.7±0.25V	When the voltage is below 3.0v, the output



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Protection Voltage 过放保护 (V)		12V		voltage is disconnected by the system. 当电芯电压低于 3.0V 时, 输出电压就会被系统断开。	
Over current protection current 过流保护 (A)		40~50A		When the output current is too large, the output voltage will be disconnected. 当输出电流过大时, 输出电压就会被系统断开。	
Short Circuit Protection 短路保护		有 恢复模式: 自动恢复		When the positive and negative terminals of the output short-circuit, the output voltage will be disconnected by the system. 当输出的正负极短路时, 输出电压就会被系统断开。	
Output Waveform 输出波形		纯正弦波		Pure Sine Wave	
Total output power 总输出功率(W)		300W(峰值 600W)			
Output Ripple Voltage 纹波 (mV)		≤300mV			
Charging time 充电时间 (h)		5.5h~7h		Theoretical Charge Time 理论充满电时间	
太阳能板充电		18V/100W		Affected by sunlight intensity 受光照强度影响	
LED Power 照明		7W		42h(Approx.)/2000Lums (Approx.) 照明时间约为 42 小时, 亮度约为 2000 流明	
使用寿命 500 次 (容量 ≥ 80%)		500 次 (容量 ≥ 80%)			
Highest temperature inside 满载时内部最高温度				When the output is full, the output is turned off at over temperature. 满载输出时, 过温时会关闭输出。	
Highest temperature outside surface 满载时外壳最高温度				When the output is full, the output is turned off at over temperature. 满载输出时, 过温时会关闭输出。	
Start when pressing the 按键启动				Start when pressing the button or inserting. 按键或者插入负载后启动输出。	
Power OFF 关闭电源				If the load cannot be detected within 30 seconds after starting the output, it will be automatically Closed. Low power, short	

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			<p>circuit, overload, overheating will shut down the output. 启动输出之后 30S 内, 检测不到负载, 将会自动关闭, 低电量, 短路, 过载, 过热都会关闭输出。</p>
	Minimum output current Imin 负载判断电流	60±20mA	Minimum output current without load. 无负载时最小输出电流。
	Delay time to Power off 休眠等待时间	30S	After button be pressed. 按键唤醒。
		35S	If there was a load lower than 50mA and keeps for about 40 seconds, output will be closed then device will sleep at once. 带负载低于 50mA, 持续 40 秒内, 立即关闭输出进入休眠。
LED Display 电量指示	Display After press the button or insert loading 按键后或者插入负载	LCD 显示屏, 显示当前放电信息 LCD Display Screen to indicate the current discharging details.	
		There are tolerance for remaining capacity estimate.以上电量比例为估算值。	
	Display when charging 充电时	LCD 显示屏, 显示当前充电信息 LCD Display Screen to indicate the current charging details.	
		There are tolerance for remaining capacity estimate.以上电量比例为估算值。	

Notes:

备注:

1、Charging and Discharging under the condition of 25°C.

充电和放电在 25°C 的条件下进行。

2、Static Current Test: under the condition of 20°C±5°C, Amperemeter is series connection with battery cell (mA position) To activate the Power Bank (remove after charging); Remove the load, Battery Voltage Vbat=3.7V, Power off (screen off), The value of amperemeter.

静态电流测试: 在 20°C±5°C 条件下, 电芯端串联电流表 (mA 档), 激活移动电源 (充电接入后移除); 移除负载,

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电芯电压 Vbat=3.7V，关机时（屏灭），电流表的电流值。

- 3、The Output Voltage Ripple the oscilloscope chooses 20MHz bandwidth, Parallel connection a 10uF electrolytic capacitor and a 0.1uf ceramic capacito in output to measure.

测试输出电压纹波时，示波器选择 20MHz 带宽，在电源输出并联一 10uF 的电解电容和一 0.1uF 的陶瓷电容，进行测量。

- 4、Charging/Discharging Capacity test after the 5th cycles, because only after 5 cycles, the performance of battery Cell will be best.

充/放电容量测试要在第 5 个循环后记录测试数据，因为 5 个循环后电芯才能正常的工作。

5、Structure Performance 结构性能

Dimension 尺寸：225*120*215 mm

Weigh 重量: 2.86Kg

Appearance techs 表面工艺：喷油

Materials 材质：PC (Top and Bottom)+ABS(Middle Frame)

6、Dimension diagram 产品外观图片



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9、Basic functions and usage 操作说明

7.1 Charging a power bank 充电功能和使用方法

It have pre-charging, constant current, constant voltage functions.

本产品为恒流恒压充电。

1、Charged the portable power station with Adapter by USB Cable or DC Cable or Solar Panel; The Battery

Digital Number will be started to flash one by one.

通过 USB 线（或者 DC 连接线，或者太阳能板）将储能产品连接到 AC 适配器(电量数字/指示灯)根据剩余电 量逐次闪烁表明开始充电。

2、When charging completely , 100% is charged full.

充满电后，数字显示 100%。

3、Different Charging mode may lead to different fully-charged time.

不同的充电方式，对本产品的充满时间会有不同。

7.2 Discharging: 放电功能和使用方法

1、press the button to start the USB output ,then connect the device ,the device will be charged.

按键启动 USB 输出，将自动对设备充电.或者连接用电设备自动输出。

2、When the output current is lower than Imin(20--160mA) , last about several minutes later(defined by Tsleep

In Ratings table), output port will shut off 5V discharging and enter into sleep state.

当输出电流低于最小输出电流并持续一段时间，5V 输出会自动停止并进入睡眠模式以节省自耗电，(最小输出电流和睡眠延时时间参考电气性能表格定义)。

7.3 Capacity indicator 电量指示

When discharging, digital number will show the capacity status.

输出时，产品会根据不同的时刻显示不同的电量。

7.4 Low voltage alarm function 低压显示

If the power bank is lacking of power, the digital number will be flashed , means Power Bank need to charged.

输出状态下，产品电压小于约 3.3V 电压时电量指示灯会闪烁表示电量低，提示充电。

8、Reliability and Safety Performance 可靠性、安全性测试

Items 项目	Test methods 测试方法	Performance Requirements 判定
Fall-off 跌落	At a height of 1m, if one surface falls to an 18~20mm hard wood plate, the falling times is 6. 将产品从 1.0 米高度跌落至硬木上，共 6 次(每个面 1 次)。	No smoke, explosion, fire, odor, functional or structural problems. 产品不能有冒烟、爆炸、起火、异味，功能和结构问题。
Vibration 振动	When frequency is 10~55~10HZ, amplitude is 0.35mm, and frequency scanning rate ≤ 1 OCT/min, circular frequency scanning will vibrate for 3 times, which is carried out on three axles perpendicular to each other accordingly.将产品固定在振动台上，沿 X、Y、Z 三个方向各振动 30 分钟，振幅 1.6mm，振动频率为 10Hz~55Hz~10Hz，每分钟变化 1Hz。	No smoke, explosion, fire, odor, functional or structural problems. 产品不能有冒烟、爆炸、起火、异味，功能和结构问题。

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Low Temperature Performance 低温性能	After placing the product under a low temperature of 0°C for 2 hours, charge the battery pack with a DC 5V power supply. When battery pack is fully charged, discharge with a 1000mA current, till output terminates. Record charge/discharge time. 将产品置于 0°C 低温下 2 小时后, 用 5V 对产品进行充电。充满后以 1A 电流放电到截止。并记录充电放电时间。	No smoke, explosion, fire, odor, functional or structural problems. 产品不能有冒烟、爆炸、起火、异味, 功能和结构问题。
High Temperature Performance 高温性能	After placing the product under a high temperature of 45°C for 2 hours, place it into a thermostat, and Charge the battery pack with a DC 5V power supply. When the battery pack is fully charged, discharge with a 1000mA current, till output terminates. Record charge/discharge time. 将产品放置在高温 45°C 的恒温箱中放置 2 小时后, 用 5V 对产品进行充电。充满后以 1A 电流放电到截止。并记录充电放电时间。	No smoke, explosion, fire, odor, functional or structural problems. 产品不能有冒烟、爆炸、起火、异味, 功能和结构问题。
Plugging test (REQ83) 插拔测试	Insert/extract 1200 cycles at maximum rate of 200 cycles per hour. 在每小时 200 个周期的频率下插入/拔出 1200 个周期。	The mechanical structure shall be free of damage after the plug and pull. The minimum force required to fully pull the plug from the socket shall be no less than 8N, and the electrical performance shall conform to the basic input and output characteristics. 插拔结束后机械结构应无损坏, 将连接插头从连接插座中完全拔出所需的力量最小应不得小于 8N, 电气性能要符合基本输入输出特性。
Spraying layer alcohol tolerance test (REQ84) 酒精耐磨测试	Dip cotton cloth into alcohol, wrap it on a 500g weight head, and wipe at a speed of 30~40 times/second (one round trip) for 100times. 用浸酒精棉布, 加 500g 重力, 以 30/40 次/分钟的速度摩擦 100 次。	No substrate exposure / paint removing shall be allowed. 不脱落, 掉漆。
RCA tape abrasion resistance test (REQ84) 纸带耐磨测试	Add a 175g weight onto an RCA tape abrasion resistance tester, carry out abrasion test for 15 times. 加 175g 力度到 RCA 纸带, 摩擦 30 个循环。	No substrate exposure shall be allowed. 不脱落, 掉漆。

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V8 data cable bending test (test quantity 3PCS)(REQ8) V8 数据线摇摆测试	Hoist uses a 100g weight, with swing angle of $\pm 90^\circ$, and frequency of 3000 times. 加 100g 配重, 摇摆 $\pm 90^\circ$ 度, 3000 次。	Conductivity shall be sound, and no poor contact shall be allowed. 电气性能连接良好, 不能有接触不良现象。
High/Low Temperature Cycle Test (REQ81) 冷热冲击测试	Put a fully charged power bank into a 45°C thermostat-box for 2 hours, then drop the temperature from 45°C to 0°C in about half an hour and keep for 2 hours, and rise from low temperature of 0°C to 45°C in about half an hour, this is a cycle, and 6 cycles in all will be carried out. 将充满电的产品, 放置在 45°C 恒温箱中 2 小时, 恒温箱再从 45°C 约半小时降至低温 0°C 放置 2 小时, 恒温再从 0°C 低温约半小时升至到 45°C 高温为一个循环, 共做 6 个循环。	Fuming, explosion, burning or smell of battery pack shall be allowed, and battery pack shall be normal in both function and structure. 产品不能有冒烟、爆炸、起火、异味, 功能和结构问题。
Durability test of signage 标牌耐久性试验	First wipe 15s with a cotton cloth dipped in water, and then with a cotton cloth dipped in gasoline. 首先用一块蘸有酒精的棉布擦拭 15s, 然后用蘸有汽油的棉布擦拭。	Requirement: after testing, the sign should be clear, should not be easily removed, should not appear crimping. 要求: 测试后标牌应清晰, 不应轻易被揭掉, 不应出现卷边。
Salt spray test 盐雾试验	Salt fog concentration of 5% NaCl solution, in 35°C condition for spray 8 hours, and then move out to 16 hours to dry, wash with water directly, must not wipe with a cloth. 盐雾浓度为 5% 的 NaCl 溶液, 在 35°C 条件连续喷雾 8 小时, 然后移出进行 16 小时晾干, 直接用水清洗, 不得用布擦。	Samples of oneself completely normal, no mechanical bonding moving parts, important decorative materials cannot be affected by corrosion, such as a depressed, blister, discoloration, salt fog on the invasion of the product can't affect the use of the product at present and in the future, all of the analysis must be corrosion phenomena, which have potential influence on the performance of product. 产品的电气性能完全正常, 移动部件没有机械粘合, 重要的装饰材料不能受到腐蚀物质的影响, 如出现凹陷、起泡、变色等, 盐雾对产品的侵入不能影响产品目前和将来的使用。
Insulation resistance 绝缘电阻	The insulation resistance of the joint. 连接接口的绝缘电阻。	More than 1000 m Ω . 大于 1000M Ω 。

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Key life test 按键寿命测试	When the battery is fully charged to press the button, the LED indicator light is enough to light up. Press the button lightly on the battery pack for an interval of 1 time /S, and repeat for 3,000 times. 将产品上的按键按压到 LED 指示灯足以点亮时, 以 1 次/秒的间隔时间持续按压, 重复 3000 次, 监测按压测试期间 LED 灯点亮状态。	After the key test, the function is normal and the handle is good. 按键测试结束后, 功能正常, 手感良好。
Battery case mechanical reliability 产品外壳机械可靠性	Bear external force of 250N. 承受 250N 外力。	Not damaged, can work normally. 不损坏, 可正常使用。。

9、Accessories 配件

标配: 适配器+AC 电源线

Others can be defined by customer. 客户可自定义。

10、Product Marking 产品标识

10.1 Below contents should be indicated on packed battery clearly.

以下内容应注明在包装后的产品上。

10.1.1 Please use qualified charger.

请使用合格的充电器。

10.1.2 DO NOT drop the battery in fire or heat it.

不要将产品投入火中或加热。

10.1.3 DO NOT short circuiting the negative and positive poles of the battery.

不要将产品正负极短路。

10.1.4 DO NOT disassemble the Power Bank in any way.

不要将移动电源以任何方式分解。

10.2 Power Bank marking should be made according to customer's requirements and all markings should be clear.

移动电源标识依客户提供的图样要求进行制作内容清晰。

11、Package And Transportation 产品的包装及运输

The Power Bank shall be packed in accordance with the drawings or packing requirements provided by the customer, and the mode of transportation shall be in accordance with the relevant provisions of the purchase and sales contract between the parties.

产品包装方法依客户提供的图样或包装要求进行包装, 运输方式依双方购销合同的有关规定。

12、Storage Conditions 产品的储存

To store the Power Bank for over three months, it is necessary to maintain the battery at 50% of the rated capacity (to charge once three months), and keep it in a dry and cool place, with a temperature range of 0°C~40 °C, free from contact with corrosive matters, and keep it away from fire and heating sources.

产品长期保存(3 个月以上), 需将产品保持在 50%的额定容量(须 3 个月充电一次), 存放在干燥凉爽的场所,

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温度范围在 0℃~40℃之间，并避免与腐蚀性物质接触，远离火源及热源。

13、Warranty And Liabilities 产品的保质期限及责任

The warranty period lasts for 12 months from the date of delivery.

保质期是从出厂日期开始起 12 个月。

Shenzhen General Electronics technology Co., LTD is not responsible for any accident caused by not operating in accordance with this specification.

深圳市中美通用科技有限公司对因没有按本规格书规定操作而导致的意外不负责任。

14、Tips & Warnings 产品使用时的警告和注意事项

To prevent leakage, heat and explosion, please take the following precautions:

为防止产品可能发生漏液、发热、爆炸，请注意以下预防措施：

DO NOT drop the Power Bank into water or damping it.

勿将移动电源投入水中或将其弄湿。

DO NOT use or store the Power Bank nearby heating source (e.g. fire or heater).

勿在热源（如火或加热器）附近使用或贮存移动电源。

Please use qualified charger.

请使用合格的充电器。

DO NOT put the Power Bank into the fire or heat the product.

勿将移动电源投入火中或给产品加热。

It is forbidden to short circuit the positive and negative poles of the product with wires or other metal objects. It is forbidden to transport or store the product together with necklaces, hairpins or other metal objects.

禁止用导线或其它金属物体将产品正负极短路，禁止将产品与项链、发夹或其它金属物体一起运输或贮存。

DO NOT impact, throw or shock the Power Bank.

禁止撞击、投掷或者使移动电源受到机械震动。

DO NOT Pierce the product shell with nails or other sharp objects. Do not hammer or pedal the Power Bank.

禁止用钉子或其它尖锐物体刺穿产品壳体，禁止锤击或脚踏移动电源。

DO NOT weld the battery terminals directly .

禁止直接焊接产品端子。

Do NOT disassemble the product in any way.

禁止以任何方式分解产品。

DO NOT charge the Power Bank in fire or extreme hot conditions.

禁止在火源或极热条件下给移动电源充电充电。

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Warning 警告!

Do not place the Power Bank in a microwave oven or pressure vessel.

禁止将移动电源置入微波炉或压力容器中。

Stop using the Power Bank when there is any foreign smells, heating, distortion, disclosing or other abnormal phenomena; if the Power Bank is being used when charging, please remove it from the electrical appliance or the charger, and stop using it.

如果产品发出异味、发热、变形、变色或出现其它任何异常现象时不得使用；如果产品正在使用或充电，应立即从用电器中或充电器上取出并停止使用。

Keep the Power Bank out of the reach of children.

产品应放在小孩接触不到的地方。

Leaked electrolyte may lead to fire or explosion.

漏液的电解液可能引起火灾或爆炸。

If the electrolyte enters the eye after the product leaks, do not wipe, apply water rinse, immediately seek medical assistance, if not timely treatment, eyes will be hurt.

如果产品漏液后电解液进入眼睛，不要擦，应用水冲洗，立即寻求医疗救助，如不及时处理，眼睛将会受到伤害。

Notes 注意!

This Power Bank can only be used under the following conditions, otherwise it will reduce the performance of the product or shorten the service life of the product. Use of the product outside the specified temperature range may cause overheating, explosion or fire.

只能在下述条件下使用本产品，否则将会降低产品的性能或缩短产品的使用寿命。在规定的温度范围外使用产品可能引起过热、爆炸或起火。

Do not use products in extremely hot environment, such as direct sunlight or hot days in the car. Otherwise, the product may overheat and catch fire (ignite), which will affect the performance of the product and shorten its service life.

不要在极热环境中使用本产品，如阳光直射或热天的车内。否则，产品会过热，可能着火（点燃），这样也会影响产品的性能、缩短产品的使用寿命。

When children are supposed to use the battery, teach them according to the manual's instructions, and keep a close eye on them.

当小孩使用产品时，需要按说明书的内容教他们，并密切注意他们确保正确使用产品。

Read the manual carefully and DO NOT disassembly the Power Bank.

阅读用产品的使用说明书，不要私自拆解本产品。

If the USB Port of Power Bank becomes dirty, please clean them first. Otherwise, May result to poor contact or inability to charge.

如果产品的接口变脏，使用前用干布擦干净。否则可能会导致产品会接触不良或无法充电。