



# PRODUCT SPECIFICATION

Version:	A
Date:	2018-02-24
Sample Number:	

For Any Detail and question, Please Tel Engineer: +86 0756-6333555

## Rechargeable Ni-MH Battery Product Specification

Product Model: AgfaPhoto Direct-Energy Micro AAA 950mAh

Prepared By/Date 编制/日期	Checked By/Date 审核/日期	Approved By/Date 批准/日期

	Signature/签字	Date/日期
Customer Approval 客户确认		
	Company Name/公司名称	
	Company Stamp/公司印章	



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## Amendment Records:

Revision 版本	Description/记述	Prepared by 编制	Approved by 批准	Date/日期
A	First Publish	黄伟鹏	范自松	2018.02.24



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## 1. Preface:

This specification is suitable for the performance of the AgfaPhoto Ni-MH rechargeable battery.

## 2. Model:

Direct Energy Micro AAA 950mAh

## 3. Appearance:

There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage.

## 4. Nominal specification:

Description(项目)		Specification (规格)	
Model (产品号)		AgfaPhoto Direct-Energy Micro AAA 950mAh	
Size (型号)		AAA	
Dimensions (尺寸)	Diameter/直径(mm)	10.5+0/-0.7	
	Height/高度(mm)	44.5+0/-1.5	
	Weight/重量(g)	Approx. 12.8g	
Nominal Voltage/公称电压(V)		1.2	
Nominal capacity/公称容量(mAh)		950	
Internal Impedance/内阻(充满电后测量)(mΩ)		≤40	
Discharge Cut-off Voltage/放电截止电压		1.0V	
Ambient temperature 环境温度	Charge 充电	Standard/标准	0°C to 40°C
		Fast/快充	10°C to 40°C
	Discharge		-10°C to 50°C
	Storage 贮存	< 1 year/年	-10°C to 30°C
		< 3 months/月	-10°C to 40°C
	The relative humidity should keep with in 相对湿度必须保持在		65±20%

## 5. Characteristics/性能

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Unless otherwise specified, test: should be done within one month of delivery under the following conditions; (除非

特别说明, 测试需在发货后一个月内在下述条件下进行)



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Test item/测试项目		Condition/制度	Specification/指标
1. Charge 充电	Standard/标准	Charge at 0.1C for 16 hours 0.1C 充 16 小时	0°C to 40°C
	Fast/快速	Charge at 0.5C , $-\Delta V=0-5mV$ 、 0.5C 充电, $-\Delta V=0-5mV$	10°C to 40°C
	Trickle/涓流	(0.03C)-(0.05C)	0°C to 40°C
2. Discharge/标准放电		At 0.2C to 1.0V 0.2C 放电至 1.0V	
3. Discharge cut-off voltage 放电截止电压			1.0V
4.Capacity/容量 (mAh)	Minimum 最低	Standard charge/discharge 标准充放电	900
	Typical 典型	Standard charge/discharge 标准充放电	950
5. Internal resistance/内阻		After fully charge, rest 1 hour, measured at 1000Hz 充满电静置 1 小时测试	$\leq 40m\Omega$
6. Self-Discharge/自放电		The charged battery is stored for 360 days at 20°C $\pm$ 5°C. And the discharge time is measured at standard discharge/充满电后电池 于 20 $\pm$ 5°C 贮存 360 天后, 用标准放 电制度测试	Capacity $\geq$ 75% 容量 $\geq$ 75%
7.High Rate Discharge 高倍率放电		Standard charge 1hour rest Before Discharge by 0.5C to 1.0V/标准充 电后搁置一小时, 0.5C 放电至 1.0V	$\geq 108$ minutes ( $\geq 108$ 分钟)
8.Overcharge/过充		0.1C charger 28 days, /0.1C 充电 28 天	No leakage 无漏液



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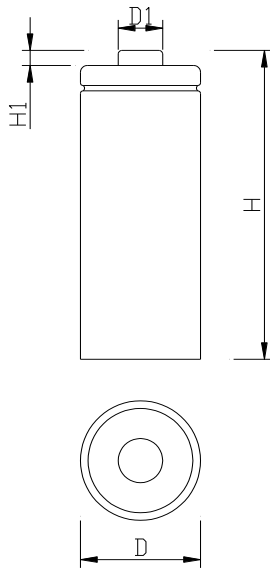
9.循环寿命	按照 IEC61951-2 2003 中 7.4.1.1 项实验方法 Based on clause 7.4.1.1, IEC61951-2 2003			
	Charge 充电	Rest 测试	Discharge 放电	
1	0.1C for 16h 0.1C 充 16 小时	0	0.25C for 2h20min 0.25C 放 2 小时 20 分	循环 300 次后容量 ≥60% Capacity retention≥60% after 300cycles
2~48	0.25C for 3h10min 0.25C 充 3 小时 10 分	0	0.25C for 2h20min 0.25C 放 2 小时 20 分	
49	0.25C for 3h10min 0.25C 充 3 小时 10 分	0	0.2C to 1.0V 0.2C 放至 1.0V	
50	0.1C for 16h 0.1C 充 16 小时	1~4h	0.2C to 1.0V 0.2C 放至 1.0V	

Cycles 1 to 50 shall be repeated until the discharge duration on any 50<sup>th</sup> cycle becomes Less than 3h 循环至任意第 50 次放电时间不足 3 小时为止

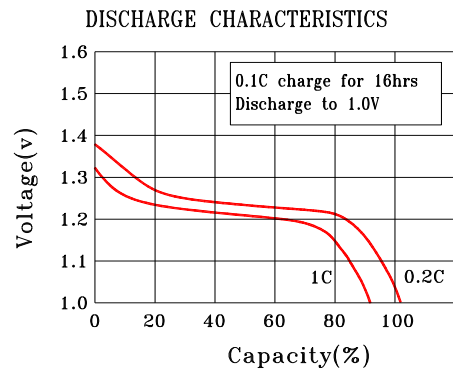
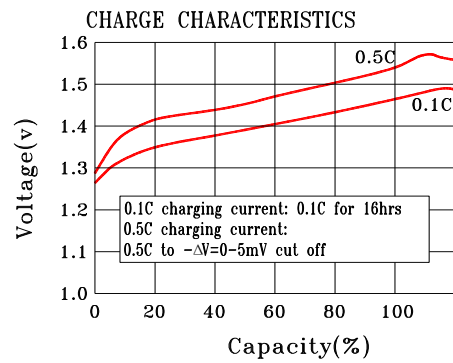
10. Leakage Test 泄漏测试	Standard charge stand for 14days 标准充电后存放 14 天检查	No leakage 无漏液
11. High temperature test 高温测试	Store at 40°C、50°C、60°C for 2 hours then charge/discharge 在 40°C、50°C、60°C 环境下贮存 2 小时后充放电	No leakage 无漏液
12.Low temperature test 低温测试	Store at 0°C for 2 hours then charge/discharge 在 0°C 的环境温度下贮存 2 小时后充电, 放电	No leakage 无漏液
13.Short circuit test 短路测试	Short circuit after fully charge 充满后进行短路测试	No explode 无爆炸
14. Drop test 跌落测试	Free fall on the concrete from 1 meters after fully charged 充满电后于 1 米高处自由跌落 3 次	No leakage No short-circuit 电池不泄漏/不短路

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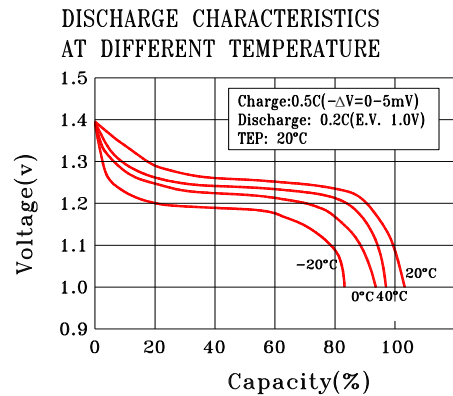
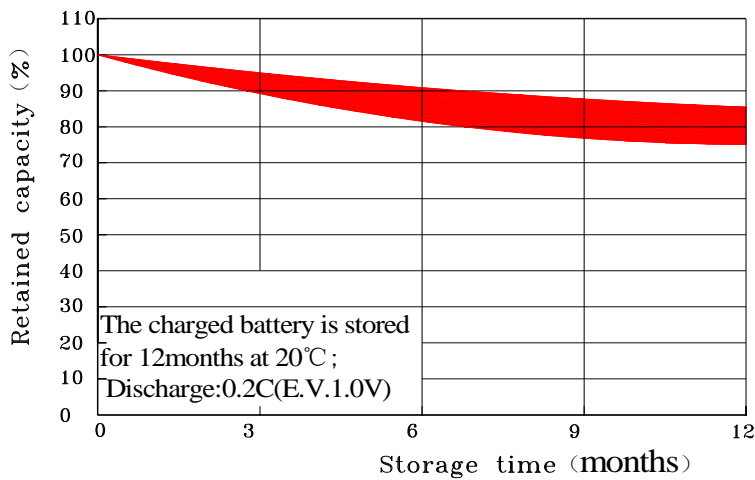
## 6. Drawing/图形



Project 项目	Description 类型	Dimension 尺寸(mm)
D1	Diameter 直径1	Max 4.0
D	Diameter 直径	10.5 <sup>+0</sup> <sub>-0.7</sub>
H1	Height 高度1	≥ 1.2
H	Height 高度	44.5 <sup>+0</sup> <sub>-1.5</sub>



### SELF-DISCHARGE





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## 7. Cautions in use:

To ensure proper use of the battery please read the manual carefully before using it.

为保证正确使用电池，请在使用前详细阅读以下使用指南

### Handling:

Do not expose to, dispose of the battery in fire.

/请勿将电池投入火中；

Do not put the battery in a charger or equipment with wrong terminals connected.

/请勿将电池反极放入充电器或设备中

Avoid shorting the battery./避免将电池短路

Avoid excessive physical shock or vibration./避免剧烈的振动与冲击

Do not disassemble or deform the battery./请勿解剖或破坏电池

Do not immerse in water./请勿将电池投入水中

Do not use the battery mixed with other different make, type, or model batteries.

/请勿将不同生产商、不同规格、不同型号的电池混合使用

Keep out of the reach of children./请将电池远离儿童

### Storage/贮存

Store the battery in a cool, dry and well-ventilated area./请将电池存放在低温、干燥、通风处

### Disposal/处置

Regulations vary for different countries. /电池处理法规因国家不同而不同

Dispose of in accordance with local regulations./电池因按当地的法规进行处理

## 8. Note:

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

/此规格书上未涉及的项目，双方可共同协商达成一致

## 9. Period of Warranty:

The period of warranty is one year from the date of shipment. The factory guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customer abuse and misuse.

