TPV VISION INNOVATOR	**PRODUCT SPECIFICATION**	Version:	A
		Date:	2022

MMD Hong Kong Holding Limited

Add: Units 1006-1007, 10th Floor, C-Bons International Center,
108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Rechargeable Ni-MH Battery Product Specification

Cell Model：NI-MH AAA950mAh 1.2V

TPV VISION INNOVATOR	**PRODUCT SPECIFICATION**	Version:	A
		Date:	2022

1.Preface

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

2.Model: NiMH RTU 1.2V 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）			NiMH AAA RTU 1.2V 950mAh
Size（型号）			AAA
Dimensions（尺寸）	Standard Diameter/标准直径(mm)		10.5+0/-0.7
	Typical Diameter/典型直径(mm)		10.35
	Standard Height/标准高度(mm)		44.5+0/-1.5
	Typical Height/典型高度(mm)		44.2
	Weight/重量(g)		Approx. 12.4
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℃ to 40℃
		Fast/快充	10℃ to 40℃
	Discharge		-10℃ to 50℃
	Storage 贮存	＜1 year/年	-10℃ to 30℃
		＜3 months/月	-10℃ to 40℃
		The relative humidity should keep with in 相对湿度必须保持在	65±20%

5. Characteristics

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

Ambient temperature 20±5℃

Relative humidity 65±20%

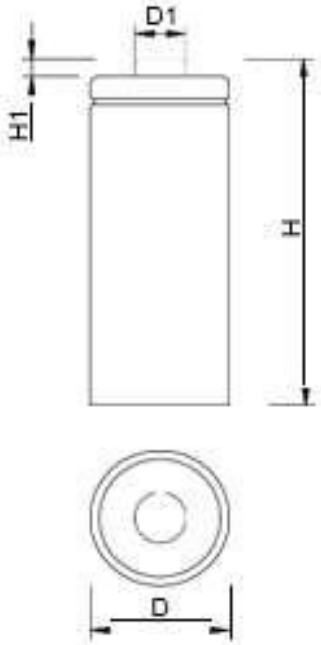
Atmospheric pressure 960±100mbar

TPV VISION INNOVATOR	PRODUCT SPECIFICATION	Version:	A
		Date:	2022

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℃ to 40℃
	Fast/快速	Charge at 0.5C， -△V=0-5mV、0.5C 充电，-△V=0-5mV	10℃ to 40℃
	Trickle/涓流	(0.03C)-(0.05C)	0℃ to 40℃
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 小时候测试	≤40mΩ
6. Self-Discharge/自放电		The charged battery is stored for 360 days at 20℃±5℃. And the discharge time is measured at standard discharge/充满电后电池于 20±5℃贮存 360 天后，用标准放电制度测试	Capacity≥75% 容量≥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	≥108minutes （≥108 分钟）
8.Overcharge/过充		0.1C charger 28 days, /0.1C 充电 28 天	No leakage 无漏液

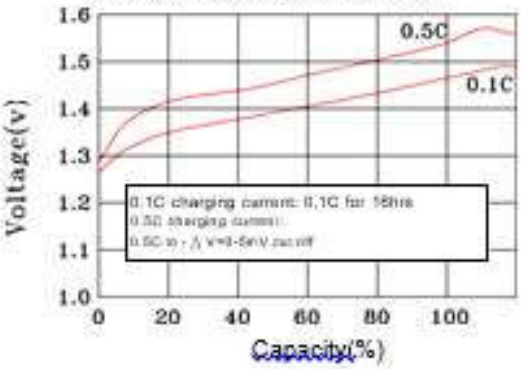
9.Cycle life 循环寿命	按照 IEC61951-2 2003 中 7.4.1.1 项实验方法 Based on clause 7.4.1.1, IEC61951-2 2003			
	Charge 充电	Rest 测试	Discharge 放电	
1	0.1C for 16h 0.1C 充 16 小时	0	0.25C for 2h20min 0.25C 放 2 小时 20 分	循环500 次后容量 ≥60% Capacity retention≥60% after 500cycles
2~48	0.25C for 3h10min 0.25C 充 3 小时 10 分	0	0.25C for 2h20min 0.25C 放 2 小时 20 分	
49	0.25C for 3h10min 0.25C 充 3 小时 10 分	0	0.25C to 1.0V 0.25C 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 50th 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℃、50℃、60℃ for 2 hours then charge/discharge 在 40℃、50℃、60℃的环境下贮存 2 小时后充放电		No leakage 无漏液	
12.Low temperature test 低温测试	Store at 0℃ for 2 hours then charge/discharge 在 0℃ 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	

TPV VISION INNOVATOR	PRODUCT SPECIFICATION	Version:	A
		Date:	2022

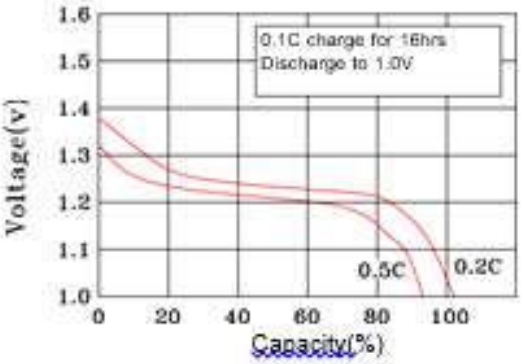


Project 项目	Description 类别	Dimension 尺寸(mm)
D1	Diameter 直径1	Max 4.0
D	Diameter 直径	10.5
H1	Height 高度1	≥1.2
H	Height 高度	44.5

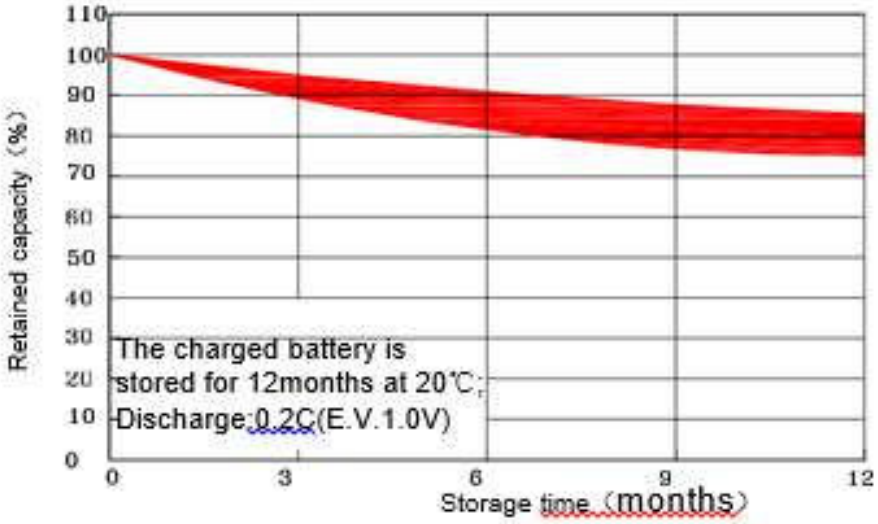
CHARGE CHARACTERISTICS



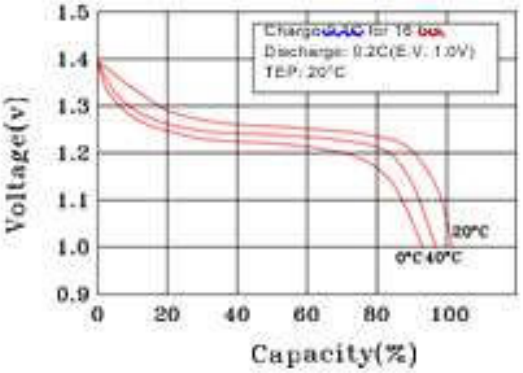
DISCHARGE CHARACTERISTICS



SELF-DISCHARGE



DISCHARGE CHARACTERISTICS
AT DIFFERENT TEMPERATURE



6. Cautions in use

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

Handling

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

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

Avoid shorting the battery.

Avoid excessive physical shock or vibration.

Do not disassemble or deform the battery.

Do not immerse in water.

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

Keep out of the reach of children.

Storage

Cycle (charge and discharge) the battery every 6 month to maintain cell/battery performance,

When being stored for an extended period of time

Store the battery in a cool, dry and well-ventilated area.

Disposal/

Regulations vary for different countries.

Dispose of in accordance with local regulations.

7. Note

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

8. Period of Warranty

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