HUANYU BATTERY SPECIFICATIONS

1. APPLICATIONS

The specifications applies to the following sealed nickel-metal hydride battery made by HUANYU.

TYPE: HYM-AA1100-J APPLICATION: Cordless phones toys camcorders.

2. RATINGS

★ Nominal voltage: 1.2 V.

★ Nominal capacity: 1100 mAh (0.2C_5).

★ Standard charge: 110 mA×14h.

★ Fast charge: 1100 mA×1.2h, (−ΔV= 20 mV).

★ Trickle charge: 37～55 mA.

★ Discharge cut-off voltage: 1.0 V/cell (20℃).

★ Max current of constant discharge: 3300 mA (20℃, unit cell).

★ Operate temperature range. (Max relative humidity: 85%)

Standard charge	-20～+30℃
Trickle charge	10～+45℃
Fast charge	10～+45℃
Discharge	-20～+50℃

★ storage temperature range. (Max relative humidity:85%)

Within two years	−20～+30℃
Within two months	−20～+45℃
Within one month	−20～+55℃
Within one week	−20～+65℃

3. EXTERNAL DIMENSION/WEIGHT

3-1. dimensions: $\Phi 14.0^{\pm 0.5} \times 49.5^{\pm 0.5}$ (mm); Positive terminal diameter: Φ4.8 (mm);

3-2. Gross weight: 28 (g);

4. APPEARANCE PERFORMANCE

4-1. TEST REQUIREMENTS

The following conditions are for new batteries(within one month after delivery under the test method of 4-2-2.)

Environmental Temperature: +15～+25℃; Relative humidity: 45%～85%.

4-2. TEST METHOD AND EXTERNAL PERFORMANCES

4-2-1. APPEARANCE

No conspicuous stretches which influence the value of the battery.

4-2-2. CAPACITY

Charge with 0.1C for 14 hours then discharge with 0.2C to the end-voltage 1.0 V/unit, the capacity shall be more than 1100 mAh.

4-2-3. OPEN-CIRCUIT VOLTAGE

The open-circuit voltage within one hour after full charge shall be more than 1.25V/unit.

4-2-4. INTERNAL IMPEDANCE

Within one hour after full charge, the internal impedance shall be less than 25m Ω /cell.

4-2-5. HIGH RATE DISCHARGE

The capacity shall be more than 990 mAh with the constant discharge current of 1100mA to the end voltage of 1.0V after the battery is fully charged.

4-2-6. SELF-DISCHARGE

The capacity shall be more than 715 mAh after the storage of 28 days for the fully charged battery.

4-2-7. OVER-CHARGE

The battery shall not cause salting, leakage or reformation when charged at 110 mA for 48 hours and the capacity shall be more that 1100 mAh.

4-2-8. OVER DISCHARGE

The battery shall not cause reformation when it is discharged for 24 hours with the external resistance at 5 Ω.

4-2-9. LIFE-SPAN(CUSTOM)

The capacity shall be more than 825 mAh after 500 cycles with the test conditions as follow:

TEST CONDITION

cycle-th	charge	rest	discharge
1	charge at 0.1C_5 f or 16 hours	None	discharge at 0.25C_5 for 2.33 h
2~48	charge at 0.25C_5 for 3.17 hours	None	discharge at 0.25C_5 for 2.33 h
49	charge at 0.25C_5 for 3.17 hours	None	discharge at 0.25C_5 to 1.0V/unit
50	charge at 0.1C_5 for 16 hours	1~4 hours	discharge at 0.2C_5 to 1.0V/unit

4-2-10. LIFE-SPAN(EXPRESS)

The battery shall supply /15 mAh at the 400th cycle under the conditions as follows.

Charge	$1C_5$ for 75 minutes (- Δ V= 20 mV)
discharge	$1C_5$ to 1.0V/unit

4-2-11. STORAGE

Within 14 days, the battery shall not cause leakage at 30-60℃ with the relative humidity at 75%-85%.

4-2-12. VIBRATION

The battery shall not cause damage to it's performances when tested with the amplitude at 4 mm (0.158 inch) and the frequency at 1000Hz.

4-2-13. DROP TEST

The battery shall keep normal when dropped from a height of 450 mm(17.716 inch) to the wooden board.

4-2-14. SHORT CIRCUIT

The fully charged battery shall not explode when shorted directly by wires.

4-2-15. INCORRECT POLARITY CHARGE

Discharge at $02C_5$ to the end voltage 0V, then discharge by force at $1C_5$ rate for 60 minutes, the battery should not explode or break.

5. *SUGGESTION & ADVICE*

A. The end-voltage are recommended at 1.0±0.1V/cell.

B. The battery may go fail when shorted, over-charged or charged with incorrect polarity.

C. Avoiding soldering directly to the battery.

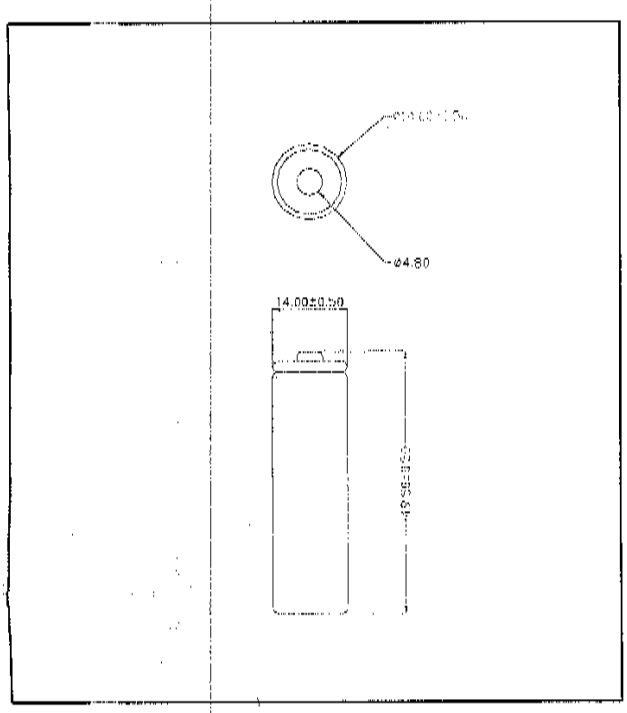
D. Do not dispose of in fire and keep away from damage.

Specifications

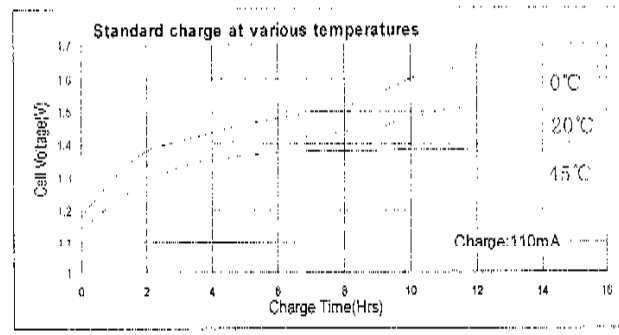
Nominal voltage			1.2V	
Capacity (mAh)			C/5	C
	Nominal		1100	990
	Typical		1155	1100
Diameter			0.55±0.02 in 14.0±0.5 mm	
Height			1.95±0.02 in 49.5±0.5 mm	
Weight			28g	
Internal impedance at 1000Hz.			25mΩ (After charge)	
Charge	Standard		110mA×14hrs.	
	Quick		1100mA×1.2hrs.	
	Trickle	Max.	55mA	
		Min.	37mA	
Ambient temperature	Charge	Standard	-20℃~30℃	
		Quick	10℃~45℃	
	Discharge		-20℃~50℃	
	Storage		-20℃~35℃	

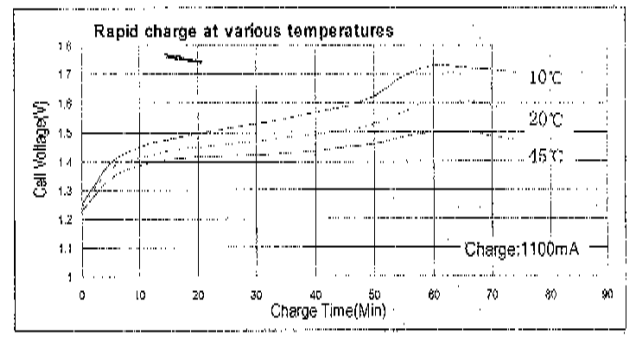
Note:

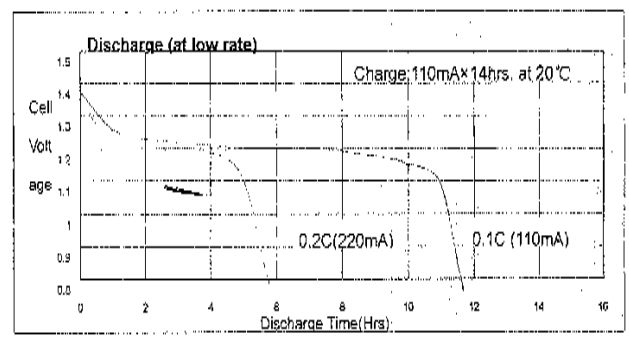
1. Nominal capacity, rated at C/5,20℃.
2. Other capacities are for reference.
3. Weight and internal impedance are for reference.

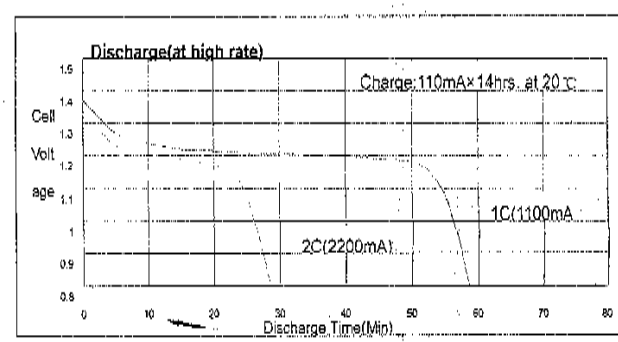


Typical characteristics

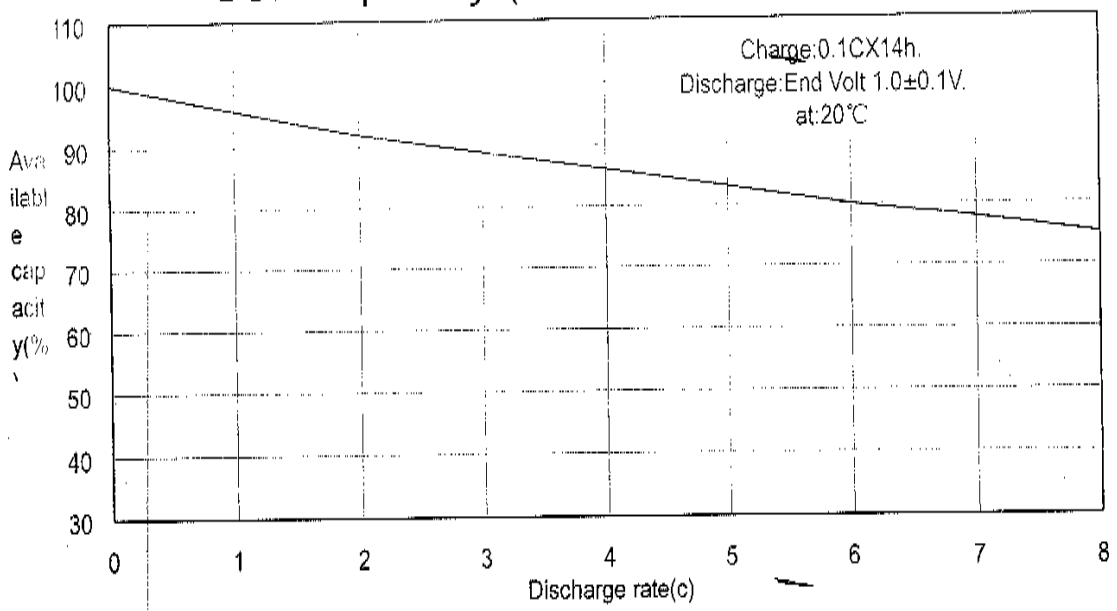








Cell capacity (at various discharge rate)



Cycle Characterictice