

fullwat[®]
professional *solutions*

NH650AAJF • Nickel-Metal Hydride Cylindrical cell



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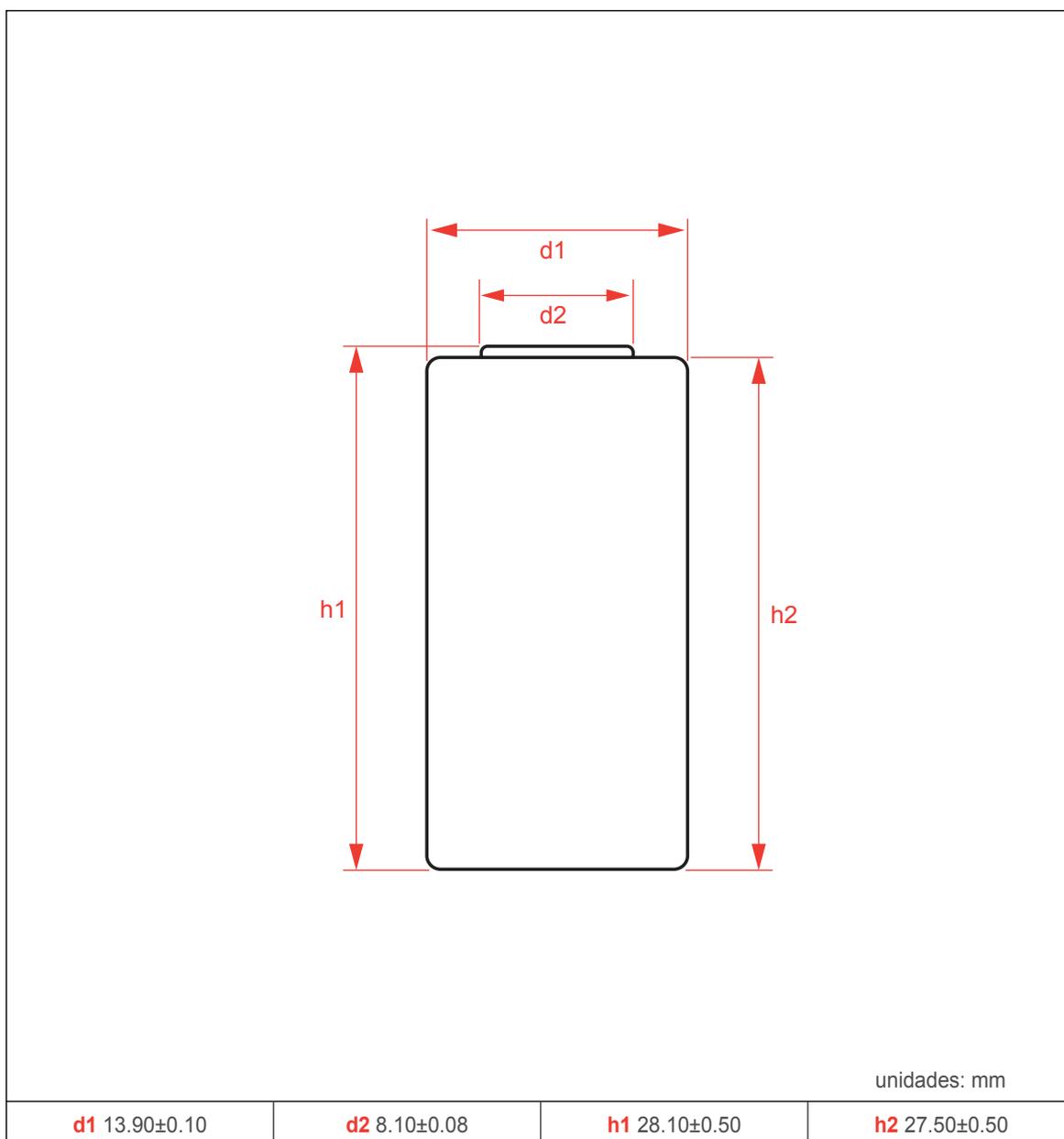
1. Introduction

This specification governs the performance of the following FULLWAT Nickel-Metal Hydride Cylindrical cell (NH650AAJF) and its stack-up batteries.

2. Data of stack up batteries

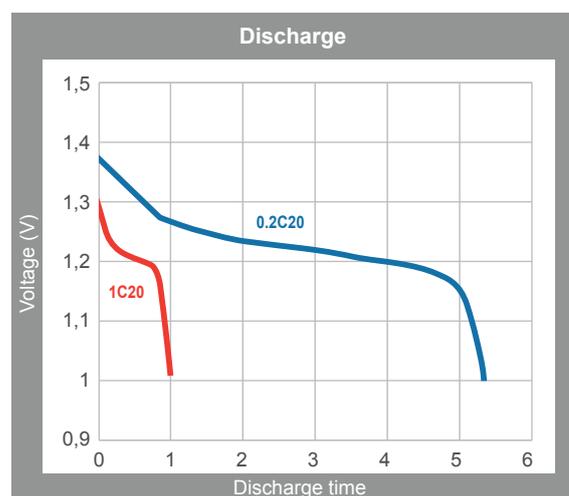
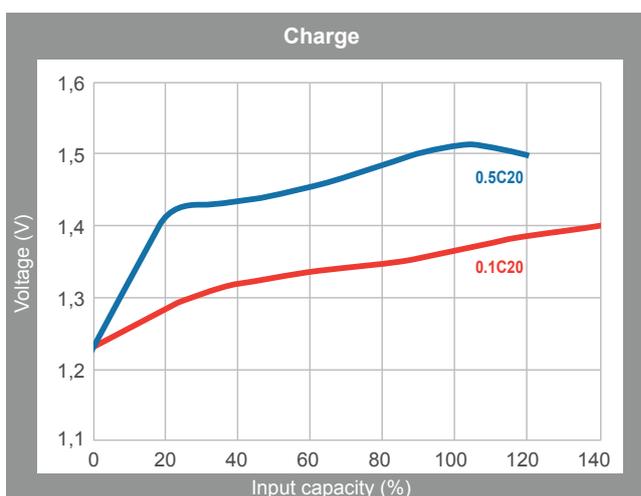
All data involves and weight to stack-up battery are equal to the value of unit cell time the number of unit cell which consisted in the stack batteries.

3. Dimensions



4. Ratings and configurations

4.1	Nominal capacity		Rated	650mAh
			Minimum	600mAh
4.2	Nominal voltage		1.2V	
4.3	Charge current		Standard	60mAh
			Quick	600mAh
4.4	Charge time		Standard	14~ 16hrs
			Quick	1.2hrs
4.5	Temperature	Charge	Standard	0~45°C
			Quick	10~45°C
		Discharge	-20~50°C	
		Storage	-20~55°C	
4.6	Impedance (mohmios) (after charge)		≤35	
4.7	Weight		13gr	



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5. Performance

Unless otherwise stated, tests should be done within one month of delivery under the following conditions:

Ambient temperature (T1):	20 ± 5°C
Relative humidity	65 ± 20%
Charge conditions	60mA (C/10) x 16 hours
Discharge conditions	120mA (C/5) to 1.0V/cell

Test	Unit	Value	Conditions	Remarks
Capacity	mAh	≥600	Standard charge discharge	Up to 3 cycles are allowed
Open circuit voltage (VOC)	V/cell	≥1,25	Within 1 hour after standard charge	
Internal impedance	mohms/cell	≤35	Upon fully charge (1KHz)	
High rate discharge (1C)	Minute	>51	Standard charge, 1 hour rest before discharge by 600mA (1C) to 1,0 V/cell	Up to 3 cycles are allowed
Overcharge		No leakage nor explosion	60mA (C/10) Charge 28 days	
Charge retention	mAh	>360 (60%)	Standard charge. Storage: 28 days Standard discharge	T ₁ =20±5°C
Cycle life	Cycle	>500	IEC61951-2(2003) 7.4.4.1	
Leakage		No leakage nor explosion	Fully charge at 60mA for 48hrs	
Vibration resistance		Change of voltage should be under 0.02V/cell, change of impedance should be under 5 mohms/cell.	Charge the battery at C/10 for 14 hours, then leave for 24 hrs, check battery before/after vibration. Amplitude 1.5mm. Vibration 3000 CPM. Any direction for 60 min.	
Impact resistance		Change of voltage should be under 0.02V/cell, change of impedance should be under 5 mohms/cell.	Charge the battery at C/10 for 14 hours, then leave for 24 hrs, check battery before/after dropped. Height=50cm. Wooden board (thickness 30mm) Direction not specified 3 times.	

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6. External appearance

The cell/battery shall be free from cracks, scars, breakage, rust, discoloration, leakage nor deformation.

7. Warranty

The warranty is specified in our warranties section of *Terms of Sales*. If the product is to be stored for more than three months it is necessary to perform the appropriate maintenance to ensure the good condition of the batteries. Consult our annex to the *Terms of Sales* on the recommended maintenance.

8. Caution

- Reverse charging is not acceptable.
- Charge before use. The cells/batteries are delivered in an uncharged state.
- Do not charge/discharge with more than our specified current.
- Do not short circuit the cell/battery. Permanent damage to the cell/battery may result.
- Do not incinerate or mutilate the cell/battery.
- Do not solder directly to the cell/battery.
- The life expectancy may be reduced if the cell/battery is subjected adverse conditions like: extreme temperature, deep cycling , excessive overcharge/ over-discharge.
- Store the cell/battery uncharged in a cool dry place. Always discharge batteries before bulk storage or shipment.