

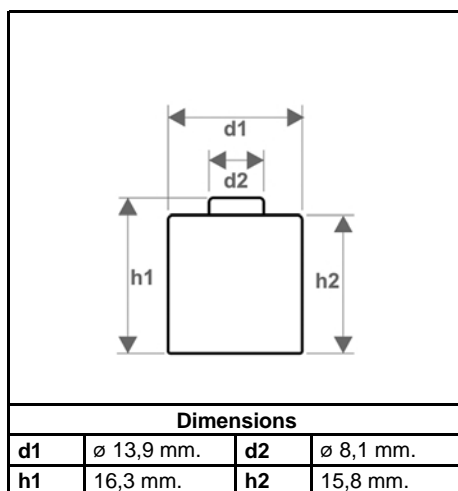
1.- Introduction

This specification governs the performance of the following FULLWAT Nickel-Metal Hydride Cylindrical cell (NH300AAJF) and its stack-up batteries.

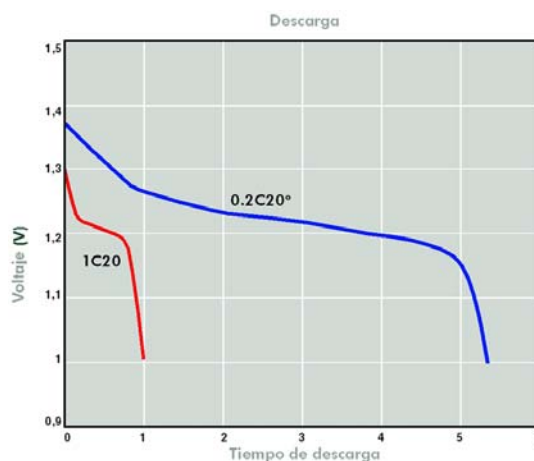
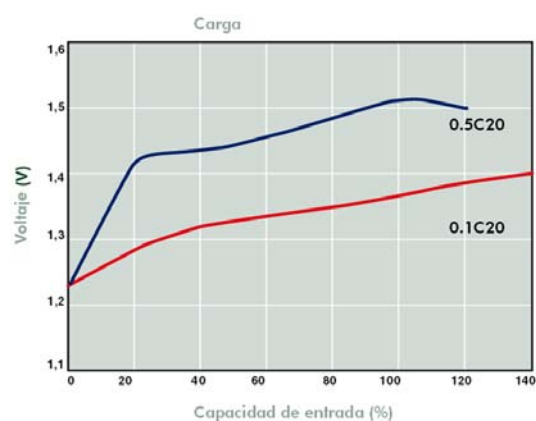
2.- Data of stack up batteries

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.- Ratings



Nominal capacity			300 mAh
Nominal voltage			1,2 V
Charge current		Pulse	< 15 mAh
		Standard	30 mAh
		Medium	90 mAh
		Quick	300 mAh
Charge time		Pulse	No limit
		Standard	14 ~ 16 hrs
		Medium	4 ~ 5 hrs
		Quick	1.2 hrs
Temperature	Charge	Standard	0 ~ 50 °C
		Medium	10 ~ 50 °C
		Quick	10 ~ 50 °C
	Discharge		-30 ~ 60 °C
	Storage		-30 ~ 65 °C
Impedance (mohmios) (After charge)		Medium	40
		Máx.	47
Weight			8 grs.



4.- Configuration and dimensions

See attached graphics.

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	60 ± 20 %
Charge conditions	30 mA (C/10) x 14 hours
Discharge conditions	60 mA (C/5) to 1,0 V/cell

Test	Unit	Value	Conditions	Remarks
Capacity	mAh	> 300	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	Medium < 40 Maximum < 47	Upon fully charge (1KHz)	
High rate discharge (1C)	Minute	> 54	Standard charge, 1 hour rest before discharge by 300 mA (1C) to 1,0 V/cell	Up to 3 cycles are allowed
Overcharge		No leakage nor explosion	30 mA (C/10). Charge 28 days.	
Charge retention	mAh	> 210 (70 %)	Standard charge. Storage: 28 days. Standard discharge.	
Cycle life	Cycle	> 500	IEC285 (1993) 4.4.1	
Accelerated cycle life	Cycle	> 400	Charge 150 mA (C/2). Discharge 300 mA (C) to 1,0 V/cell, End-of 80% nominal capacity.	Cycling charging cut-off condition. V=0~5 mV/cell and timer cut-off 110% nominal capacity input and temp. cut-off 55°C
Leakage		No leakage nor explosion	Fully charge at 150 mA (C/2).	
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 1,5 mm.. 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 = 50 cm. Wooden board (thickness 30mm) Direction not specified, 3 times.	

6.- External appearance

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

7.- Warranty

One year limited warranty against workmanship and material defects.

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.