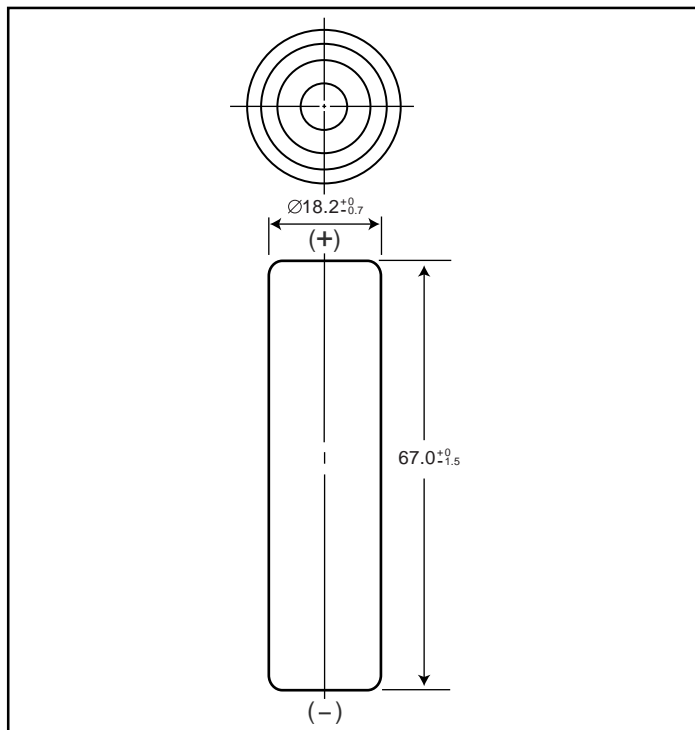


# NICKEL METAL HYDRIDE BATTERIES: INDIVIDUAL DATA SHEET

## HHR330APH Cylindrical L-Fat A size (HR 18/67)

### Dimensions (with Tube) (mm)



### Specifications

	mm	inch
Diameter	18.2+0/-0.7	0.72+0/-0.03
Height	67.0+0/-1.5	2.64+0/-0.06
Approximate Weight	Grams	Ounces
	60	2.12

Nominal Voltage		1.2V	
Discharge Capacity <sup>1</sup>	Average <sup>2</sup>	3300 mAh	
	Rated (Min.)	3200 mAh	
Approx. Internal impedance at 1000Hz at charged state.		5.5mΩ	
Charge	Standard	330mA x 16hrs.	
	Rapid <sup>3</sup>	1650mA x 2.4 hrs. <sup>4</sup>	
	Low Rate	165mA x 32 hrs. 110mA x 48 hrs.	
Ambient Temperature	Charge	Standard	°C °F
		Rapid	-10°C to 45°C 14°F to 113°F
	Discharge	Standard	-10°C to 60°C 14°F to 140°F
		Rapid	-10°C to 60°C 14°F to 140°F
Storage	< 1 year	-20°C to 35°C -4°F to 95°F	
	< 6 months	-20°C to 45°C -4°F to 113°F	
	< 1 month	-20°C to 55°C -4°F to 131°F	
	< 1 week	-20°C to 65°C -4°F to 149°F	

<sup>1</sup> After charging at 0.1It for 16 hours, discharging at 0.2It.

<sup>2</sup> For reference only.

<sup>3</sup> Need specially designed control system

#### Control System:

dT/dt cut-off; 1 to 2°C/min

-ΔV cut-off; -ΔV per cell = 5 to 10 mV

T-control; T=65°C

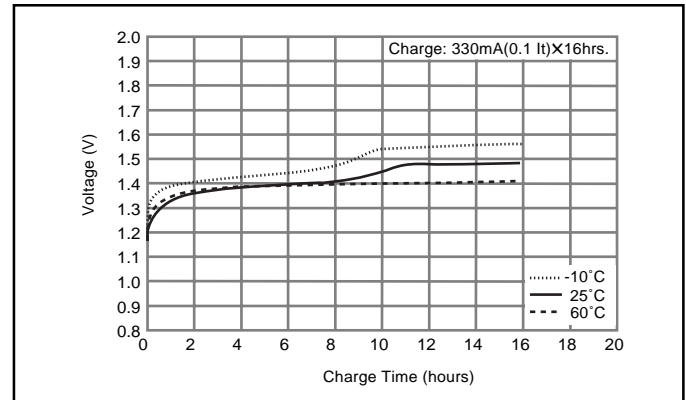
Rapid charger timer; 2.4h (at 1.25a)

Trickle timer; within 2h

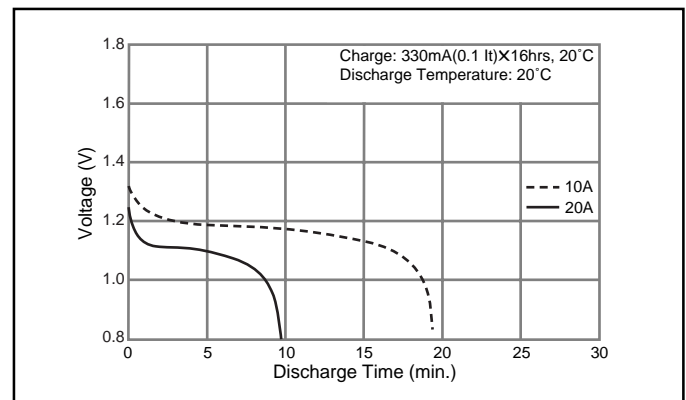
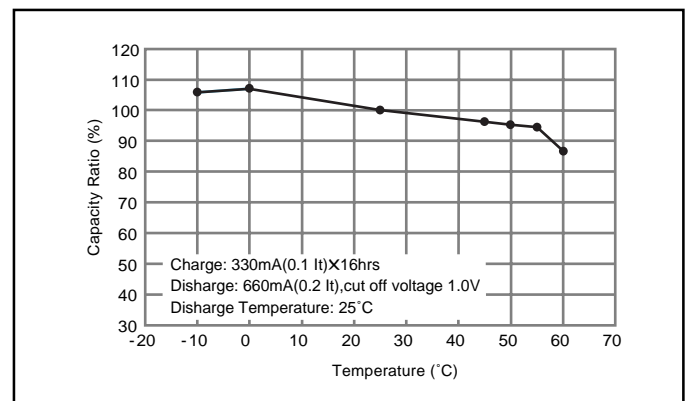
<sup>4</sup> With control system

Battery performance and cycle life are strongly affected by how they are used. In order to maximize battery safety, please consult Panasonic when determining charge / discharge specs, warning label contents and unit design.

### Typical Charge Characteristics



### Typical Discharge Characteristics



**Note:** [It] was previously expressed as [C]. [It] is an IEC standard expression for the amount of charge or discharge current and is expressed as:

$$It(A) = Cn(Ah)/1h.$$

- [It] is the reference test current in amperes
- [Cn] is the rated capacity of the cell or battery in Ampere-hours.  
n = the time base [hours] for which the rated capacity is declared