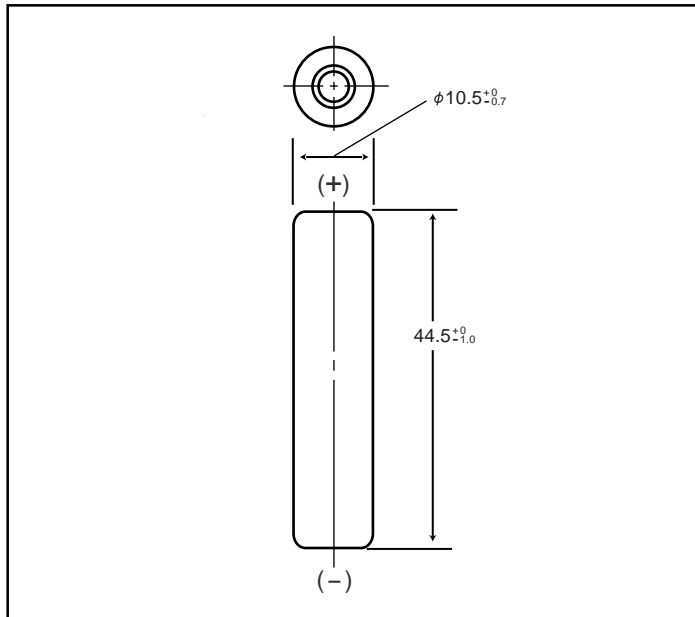


# NICKEL METAL HYDRIDE BATTERIES: INDIVIDUAL DATA SHEET

## HHR60AAAH Cylindrical AAA size (HR 11/45)

### Dimensions (with Tube) (mm)



### Specifications

	mm	inch
Diameter	10.5 +0/-0.7	0.41 +0/-0.03
Height	44.5 +0/-1.0	1.75 +0/-0.04
Approximate Weight	Grams	Ounces
	13	0.46

Nominal Voltage		1.2V	
Discharge Capacity <sup>1</sup>	Average <sup>2</sup>	550 mAh	
	Rated (Min.)	500 mAh	
Approx. Internal impedance at 1000Hz at charged state.		35mΩ	
Charge	Standard	50mA x 16hrs.	
	Rapid <sup>3</sup>	250mA x 2.4 hrs. <sup>4</sup>	
	Low Rate	25mA x 32 hrs. 17mA x 48 hrs.	
Ambient Temperature	Charge	Standard	°C: -10°C to 60°C °F: 14°F to 140°F
		Rapid	°C: -10°C to 45°C °F: 14°F to 113°F
Storage	Discharge		°C: -10°C to 60°C °F: 14°F to 140°F
	< 1 year	< 1 year	°C: -20°C to 35°C °F: -4°F to 95°F
		< 6 months	°C: -20°C to 45°C °F: -4°F to 113°F
		< 1 month	°C: -20°C to 55°C °F: -4°F to 131°F
		< 1 week	°C: -20°C to 65°C °F: -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

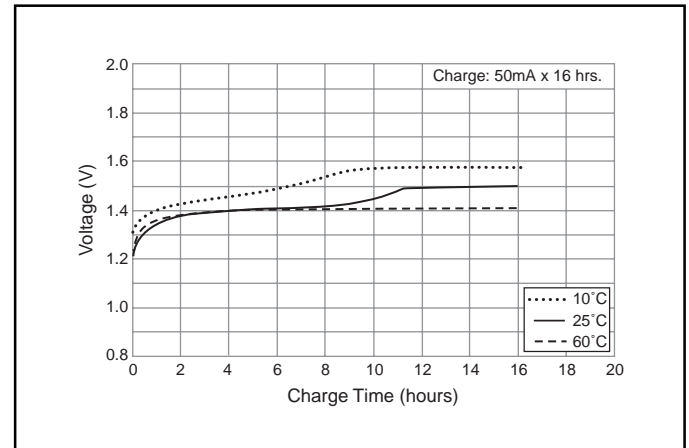
Rapid charger timer; 2.4h (at 1.25a)

Trickle timer; within 2h

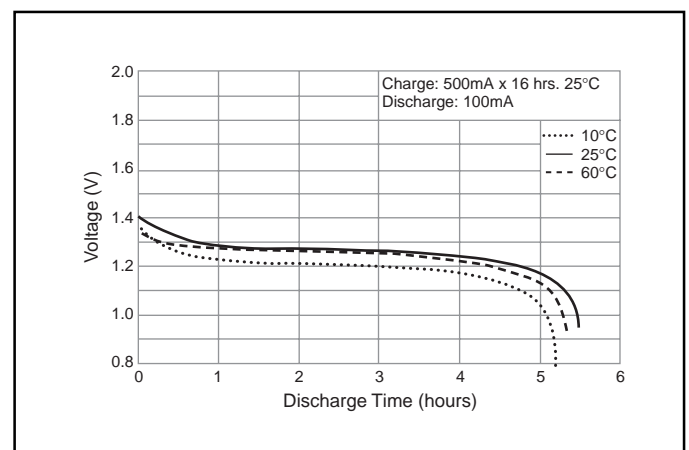
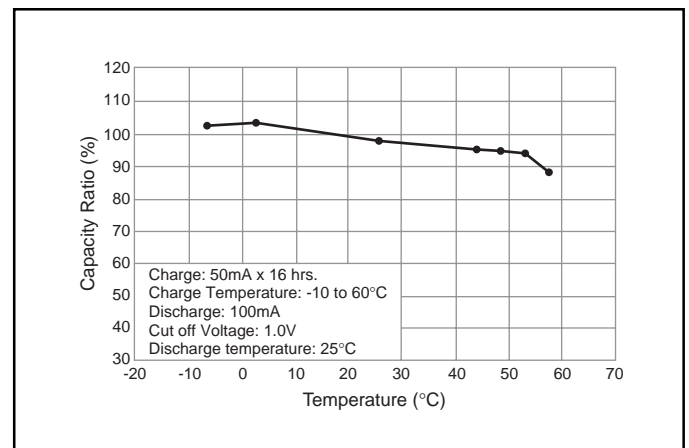
<sup>4</sup> With control system

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