

# ARTS ENERGY

ARTS Energy's VHT high temperature Ni-MH series are perfectly suited to professional applications requiring a battery with an exceptional robustness. It is designed to operate in very demanding environments.

The VHT F 13000 has been designed to offer a very long life duration in a wide range of temperatures.

In ELU the VHT F 13000 will offer more than 4 years life at 40°C permanent temperature (T type cell).

In back up applications, the VHT F 13000 will offer 5 to 10 years life.

In cycling applications (solar, peak shaving), the VHT F 13000 will offer 5 to 10 years life in an environment from -40°C to +85°C. It delivers more than 2000 cycles at 80% DOD (charge 4A, discharge 6A).

To meet customers' requirements, ARTS Energy provides custom-designed and standardised battery packs.

For applications below -20°C and above +60°C, please contact ARTS Energy to confirm the optimum battery design, and to agree on the usage profiles.



## ELECTRICAL CHARACTERISTICS

Nominal voltage (V)	1.2
Typical capacity (mAh)*	13600
IEC minimum capacity (mAh)*	13000
IEC designation	HRMT 33/91
Impedance at 1000 Hz (mΩ)	3

\* Charge 16 h at C/10, discharge at C/5.

## DIMENSIONS

Diameter (mm)	32.15 ± 0.1
Height (mm)	88.8 ± 0.4
Top projection (mm)	1.4 ± 0.4
Top flat area diameter (mm)	5.6
Weight (g)	241

Dimensions are given for bare cells.

## CHARGE CONDITIONS

	Temp. (°C)	Current
ELU applications	0 to +40	Intermittent
Back up applications	-20 to +85	Consult ARTS Energy
Solar applications	-40 to +85	C/3 max

## DISCHARGE CONDITIONS

	Temp. (°C)	Current
	+20 to +85	3C max
	0 to +85	C/2 max
	-20 to +85	C/5 max
	-40 to +85	C/20 max

## CYCLING CONDITIONS

	Cycling	Life duration
ELU applications	1 discharge/month max	4 years
Back up applications	1 discharge/day max	5 to 10 years
Solar applications	1 discharge/day max	5 to 10 years

## APPLICATIONS

- Emergency lighting (ELU)
- Back-up systems
- Peak shaving applications (money saving)
- Professional electronics
- Solar

## MAIN BENEFITS

- Very high cycle life
- Exceptional temperature range
- Superior robustness

## TECHNOLOGY

- Foam positive electrode
- Plastic bonded metal-hydride negative electrode

**NI-MH**

# VHT F 13000

## High Temperature Series

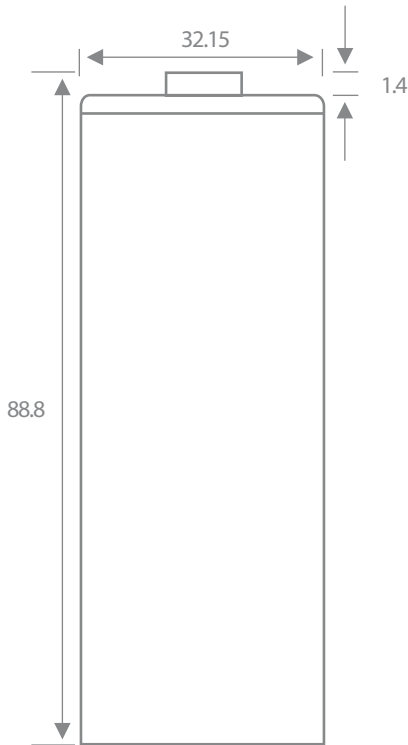
# VHT F 13000

## High Temperature Series

### STORAGE

Recommended: + 5°C to + 25°C  
Relative humidity: 65 ± 5 %

### TYPICAL DIMENSIONS



Typical dimensions (mm). Without tube.

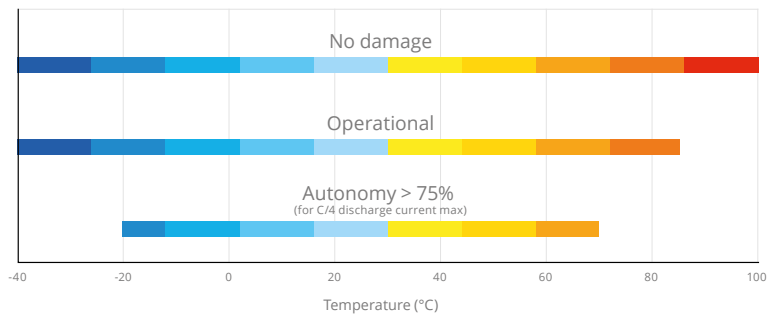
The operation of the battery must strictly be in accordance with ARTS Energy technical recommendations, to obtain the performances stated by ARTS Energy.

Data is given for single cells. Please consult ARTS Energy for utilisation of cells outside the specification.

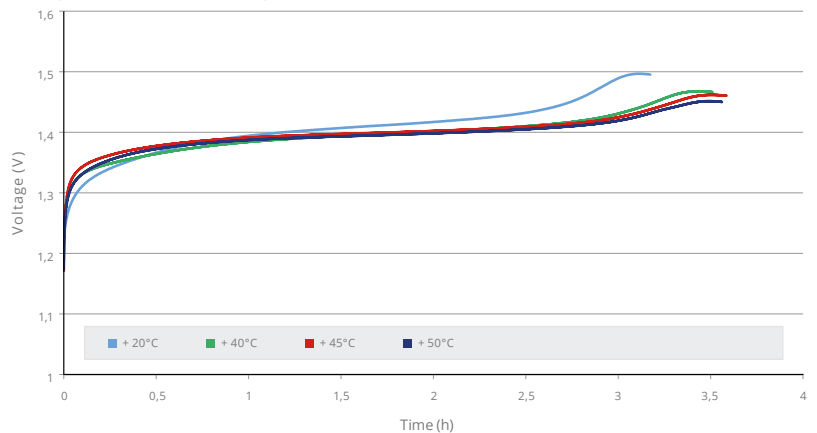
Data in this document is subject to change without notice and become contractual only after written confirmation by ARTS Energy.

For graphs shown, C is the IEC<sub>5</sub> capacity.

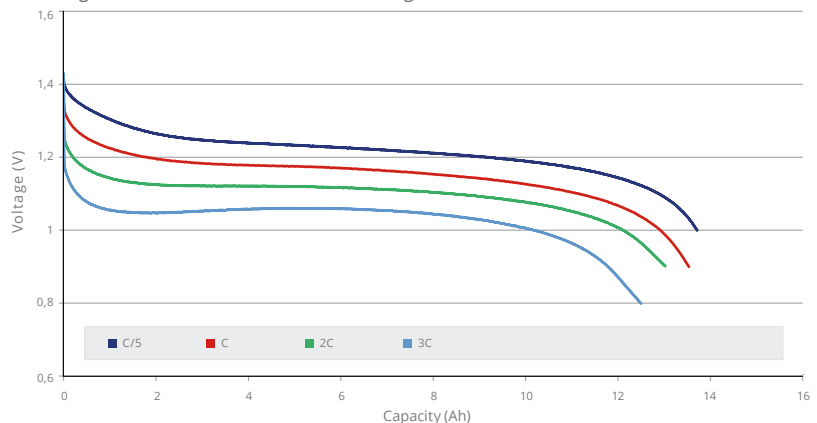
#### Electrical performances at different temperatures



#### Charge at C/3 at different temperatures



#### Discharge at different currents at RT after Charge 16h at C/10 + rest 1h



10, rue Ampère  
Zone Industrielle - 16440 Nersac, France  
Tél. +33(0)5 45 90 35 52 /35 53  
contact@arts-energy.com

Doc No.: 064-A-0618 - Edition: June 2018  
ARTS Energy SAS. Stock capital 971.002  
RCS Angoulême 792 635 013  
Conception in FR by Alain Bruneaud Création



www.arts-energy.com