

# VHT F

## High Temperature Series

ARTS Energy's VHT High Temperature Ni-MH series have been designed for professional applications requiring a battery with an exceptional robustness.

The VHT F benefits from the latest technical improvements of ARTS Energy's Ni-MH technology, and is designed to operate in very demanding environments (from - 40°C to + 85°C).

The VHT F can be fast charged with a maximum current of C/3, and offers an exceptional life duration. The VHT F delivers a huge number of full or partial cycles: 2000 full cycles and even 5000 cycles with 50% DOD (Depth Of Discharge).

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

For your battery design and system needs, please contact ARTS Energy's engineers.



### Applications

- Photovoltaic systems
- Renewable energy storage
- Tracking
- Underwater applications
- Robotics
- Professional electronics

### Main advantages

- Very large temperature range (- 40°C to + 85°C)
- Excellent charge and discharge efficiency at very low and very high temperature
- Fast charge (3h)
- Very high cycle life
- Superior robustness

### Technology

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

#### Electrical characteristics

Nominal voltage (V)	1.2
Typical capacity (mAh)*	11000
IEC minimum capacity (mAh)*	10000
IEC designation	HRMT 33/91
Impedance at 1000 Hz (mΩ)	5

\* 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)	215

Dimensions are given for bare cells.

Charge conditions Rate	Time (h)	Temp. (°C)	Charge current (mA)
Fast*	3	- 30 to + 60	3000
Permanent		- 30 to + 60	100 to 500

\* Charge termination required.

#### Maximum discharge current

Continuous (A) at + 20°C	30
Peak (A) at + 20°C*	130

\* Peak duration: 0.3 second - final discharge voltage 0.65 volt/cell.



Advanced Rechargeable Technology and Solutions



## Temperature range in discharge

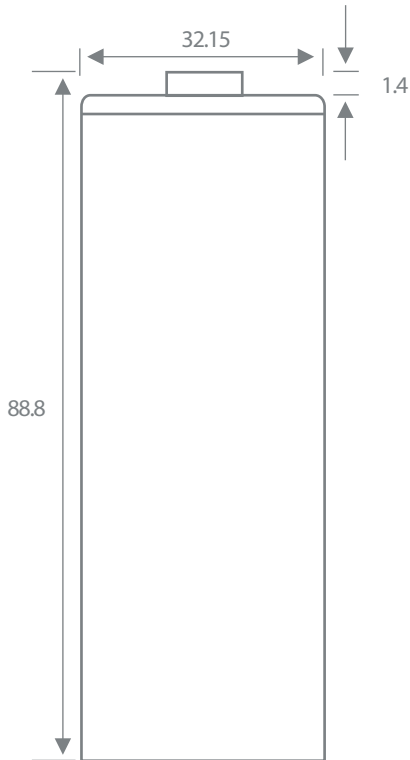
- 40°C to + 85°C (C/10 discharge current)
- 20°C to + 85°C (C/4 discharge current)

## Storage

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

## Typical performances

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

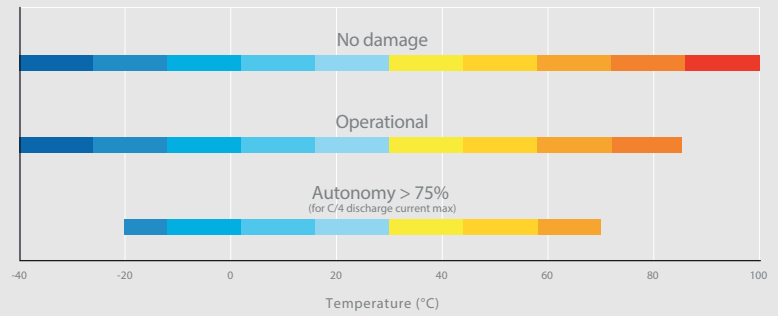


Dimensions are in mm.

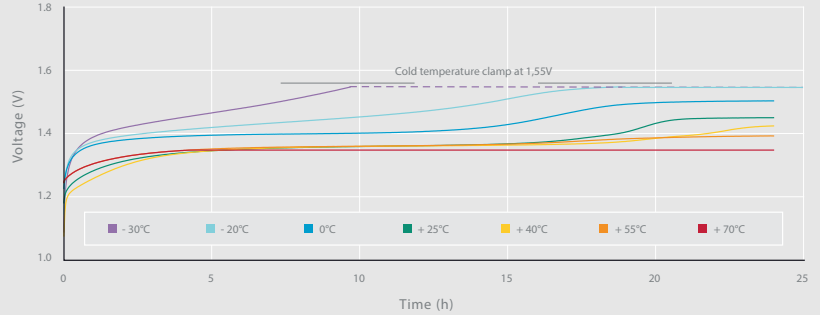
Data are given for single cells. Please consult ARTS Energy for utilization of cell outside this specification.

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

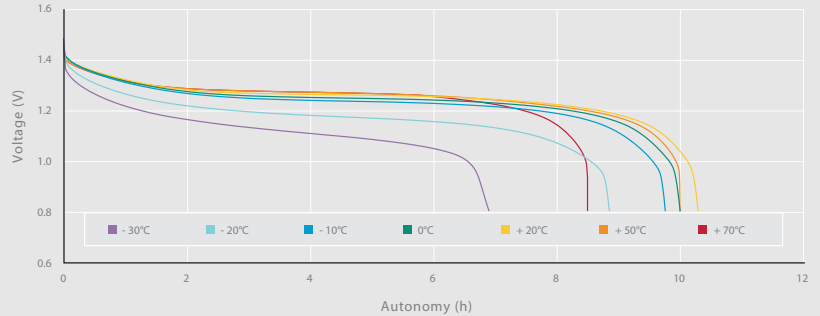
Electrical performances at different temperatures



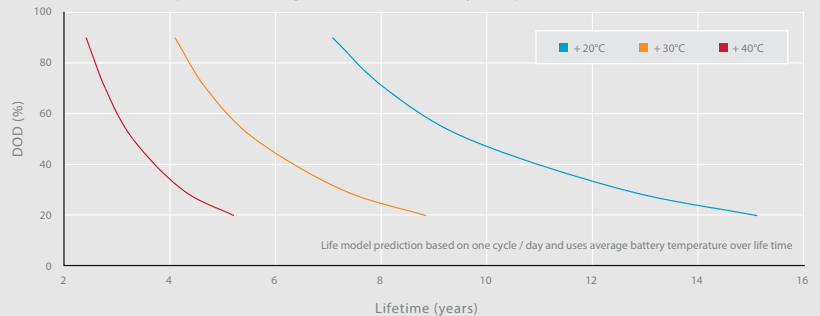
Charge 24h at C/20 at different temperatures



Discharge at C/10 at different temperatures after charge at C/10 at different temperatures



Life duration vs. depth of discharge at different battery temperatures



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