

ARTS

ENERGY

ARTS Energy's VH super high energy Ni-MH series are perfectly suited for applications requiring high power, high energy density and robustness. Additionally, the VH series can be fast charged (1C).

The VH Cs 3200 XL contains aqueous electrolyte, an important safety feature as it is non-flammable.

This is key reason why the VH Cs 3200 XL are not considered as a dangerous goods and can be transported by air without any transportation constraints (no homologation tests for transportations, no restrictions for packaging and transportation).

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

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

APPLICATIONS

- Robots / Unmanned Vehicles
- Medical
- Devices used or carried inside planes
- Professional electronics

MAIN BENEFITS

- High energy density
- High power
- Superior robustness
- Safe, no transportation constraints

TECHNOLOGY

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



ELECTRICAL CHARACTERISTICS

| | |
|-----------------------------|-----------|
| Nominal voltage (V) | 1.2 |
| Typical capacity (mAh)* | 3200 |
| IEC minimum capacity (mAh)* | 3000 |
| IEC designation | HRX 23/43 |
| Impedance at 1000 Hz (mΩ) | < 4 |

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

DIMENSIONS

| | |
|-----------------------------|-------------|
| Diameter (mm) | 22.0 ± 0.05 |
| Height (mm) | 42.7 ± 0.2 |
| Top projection (mm) | 0.8 ± 0.2 |
| Top flat area diameter (mm) | 9.0 |
| Weight (g) | 55 |

Dimensions are given for bare cells.

CHARGE CONDITIONS

| | Temp. (°C) | Current |
|-----------------------------|------------|---------------------|
| Fast | 0 to +40 | 1C max |
| Topping (after fast charge) | 0 to +40 | Consult ARTS Energy |
| Trickle (after topping) | 0 to +40 | Consult ARTS Energy |
| Charge below 0°C | -40 to 0 | Consult ARTS Energy |

End of Fast charge cut-off: dT°C/dt recommended / -dV acceptable: consult ARTS Energy for optimisation

DISCHARGE CONDITIONS

| | Temp. (°C) | Current |
|--|------------|----------|
| | 10 to +40 | 30A max |
| | 0 to +40 | 3C max |
| | -10 to +40 | 1C max |
| | -20 to +40 | C/4 max |
| | -40 to +40 | C/20 max |

CYCLING CONDITIONS

| | Cycling | Life duration |
|------------------------|---------|---------------|
| Full cycles (100% DOD) | | > 500 cycles |

NI-MH

VH Cs 3200 XL

Super High Energy series

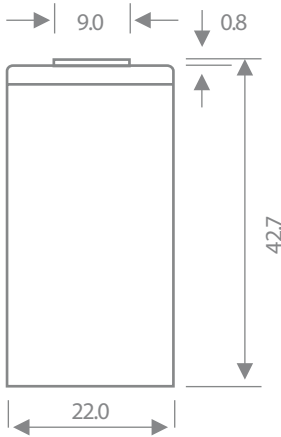
VH Cs 3200 XL

Super High Energy series

STORAGE

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

TYPICAL DIMENSIONS



Typical dimensions (mm). Without tube.

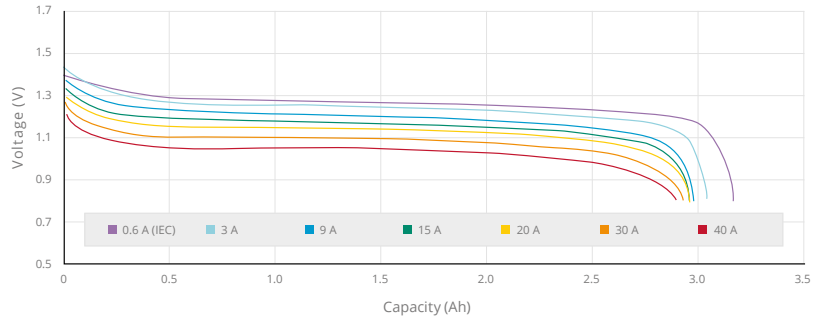
The operation of the battery must strictly be in accordance with ARTS Energy technical recommendations, to obtain the performances stated by ARTS Energy.

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

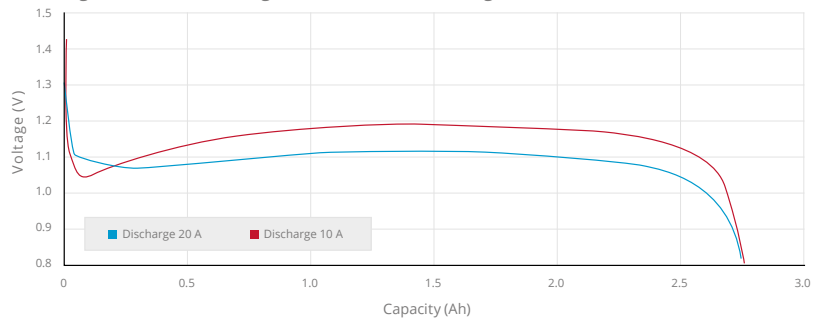
Data in this document is subject to change without notice and become contractual only after written confirmation by ARTS Energy.

For graphs shown, C is the IEC₅ capacity.

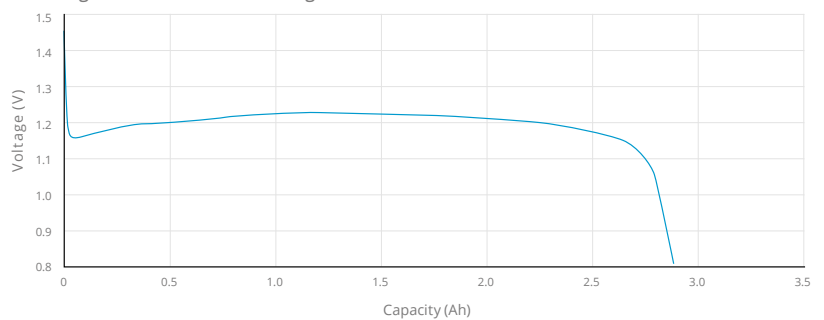
Discharge at different discharge rates at room temperature after charge 2h24 at C/2



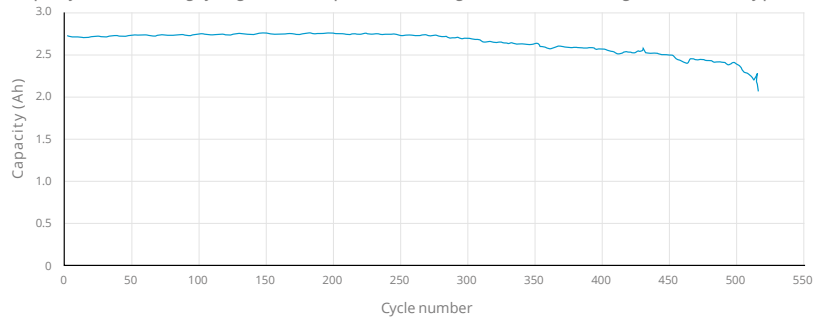
Discharge at different discharge rates at -10°C after charge at 1C



Discharge at 5 A at -20°C after charge at 1C



Capacity evolution during cycling at room temperature (Discharge at 10 A after fast charge for a 18 V battery pack)



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Doc No.: 027-A-0417 - Edition: April 2017
ARTS Energy SAS. Stock capital 971.002
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Conception in FR by Alain Bruneaud Création



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