

# ARTS ENERGY

ARTS Energy's VRE standard Ni-Cd series are perfectly suited to cycling applications. It is designed for a wide range of applications requiring a high level of robustness.

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

- Professional electronics
- Professional lighting equipment
- Military equipment

## MAIN BENEFITS

- Excellent cycling performance
- High power
- Superior robustness
- Extreme low temperatures (-40°C)

## TECHNOLOGY

- Sintered positive electrode
- Plastic bonded negative electrode



### ELECTRICAL CHARACTERISTICS

Nominal voltage (V)	1.2
Typical capacity (mAh)*	5100
IEC minimum capacity (mAh)*	4500
IEC designation	KRHR 33/62
Impedance at 1000 Hz (mΩ)	< 4

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

### DIMENSIONS

Diameter (mm)	32.15 ± 0.10
Height (mm)	58.2 ± 0.4
Top projection (mm)	1.4 ± 0.4
Top flat area diameter (mm)	5.6 ± 0.1
Weight (g)	138

Dimensions are given for bare cells.

CHARGE CONDITIONS	Temp. (°C)	Current
Fast	0 to +40	4,5A 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 is requested: -dV or dT°C/dt

DISCHARGE CONDITIONS	Temp. (°C)	Current
	10 to +60	40A max
	-30 to +60	1C max
	-40 to +60	C/2 max

CYCLING CONDITIONS	Cycling	Life duration
	Full cycles (100% DOD)	> 1000 cycles

**NI-CD**

VRE D  
Standard Series

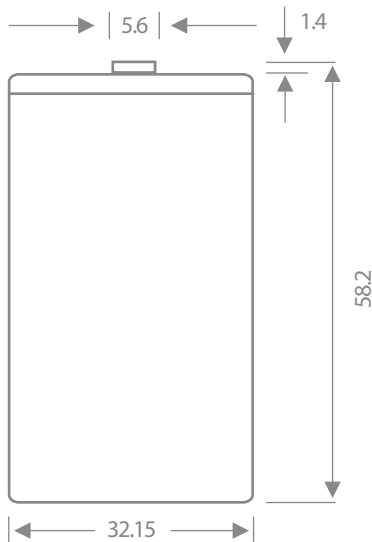
# VRE D

## Standard Series

### STORAGE

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

### TYPICAL DIMENSIONS



Typical dimensions (mm). Without tube.

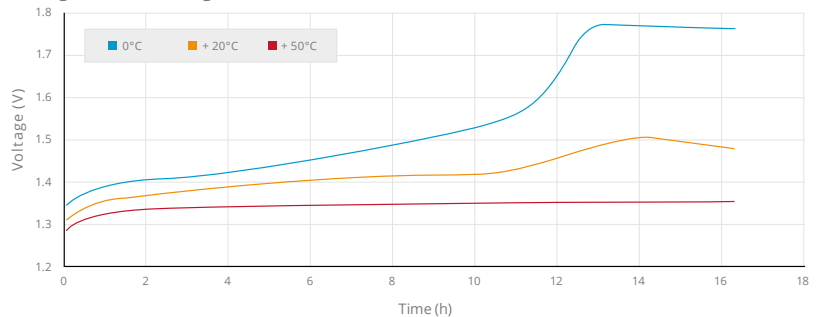
The operation of the battery must strictly be in accordance with ARTS Energy technical recommendations, to obtain the performances stated by ARTS Energy.

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

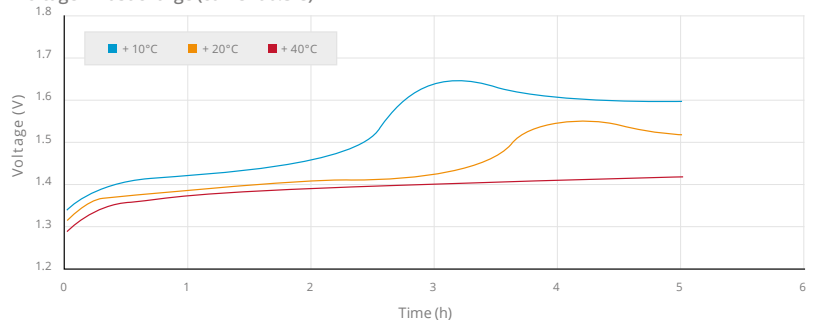
Data in this document is subject to change without notice and become contractual only after written confirmation by ARTS Energy.

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

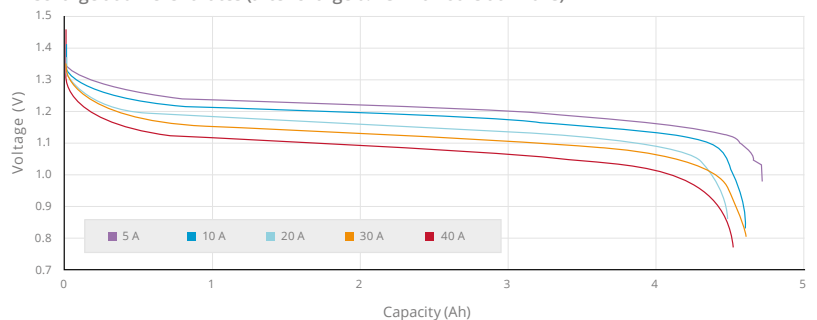
Voltage in normal charge (current 0.1 C)



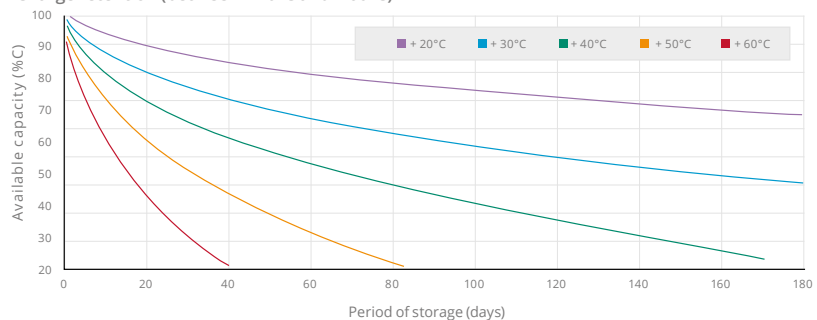
Voltage in fast charge (current 0.3 C)



Discharge at different rates (after charge 0.1 C x 16 hours at + 20°C)



Charge retention (between + 20°C and + 60°C)



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