

# HIGH ENERGY SERIES

Nickel-Cadmium

## VSE AA

Saft has upgraded its Ni-Cd product offer and has launched the VSE AA cell to meet the needs of increasingly light and compact applications.

Foam electrode technology has especially been developed for the VSE series. The result is an "ultra-high energy" battery, fully recommended for the whole range of portable electronics applications.

To meet customers requirements, Saft provides custom-designed and standardized battery packs.

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



### Applications

- Professional electronics
- Radio control models
- Home appliances
- Hand held terminals

### Main advantages

- Cycling application
- Quick and fast charge
- Super high energy series giving a higher operating time
- Good storage retention

### Technology

- Foam positive electrode
- Plastic bonded negative electrode

### Temperature range in discharge

-20°C to +60°C

### Storage

Recommended: +5°C to +25°C

Relative humidity: 65 ± 5%

**Data are given for single cell.**

**Please consult Saft for utilization of cell outside this specification.**

### Electrical characteristics

|                                   |       |
|-----------------------------------|-------|
| Nominal voltage (V)               | 1.2   |
| IEC typical capacity (mAh) at C/5 | 980   |
| IEC minimum capacity (mAh) at C/5 | 940   |
| IEC designation                   | 15/51 |
| Impedance at 1000 Hz (mΩ)         | 16    |

### Dimensions

|                             |            |
|-----------------------------|------------|
| Diameter (mm)               | 13.9 ± 0.1 |
| Height (mm)                 | 48.9 ± 0.3 |
| Top projection (mm)         | 0.7 ± 0.2  |
| Top flat area diameter (mm) | 5.6        |
| Weight (g)                  | 22         |

Dimensions are given for bare cells

### Charge conditions

| Rate      | Time (h) | Temp. (°C) | Charge current (mA) |
|-----------|----------|------------|---------------------|
| Fast      | ~1       | +10 to +40 | 940                 |
| Quick     | 3 to 4   | +5 to +50  | 313                 |
| Standard  | 16       | 0 to +50   | 94                  |
| Trickle * |          | -20 to +50 | 35                  |

End of charge cut-off is requested: -dV or dT°C/dt

\* Trickle charge follows quick or fast charge

The maximum battery temperature recommended during charge is +45°C

### Maximum discharge current

|                         |     |
|-------------------------|-----|
| Continuous (A) at +20°C | 2.9 |
|-------------------------|-----|

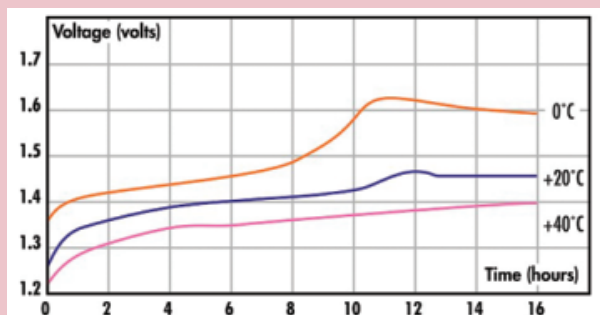


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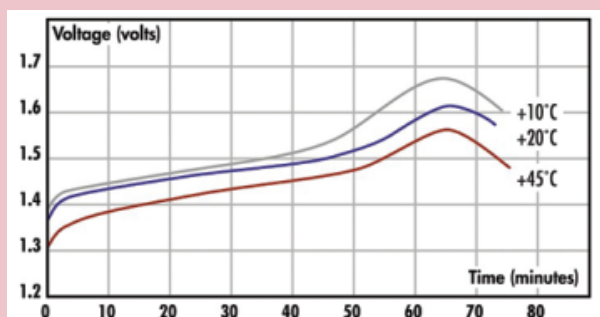
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**VSE AA**

### Voltage in slow charge (current 0.1 C)

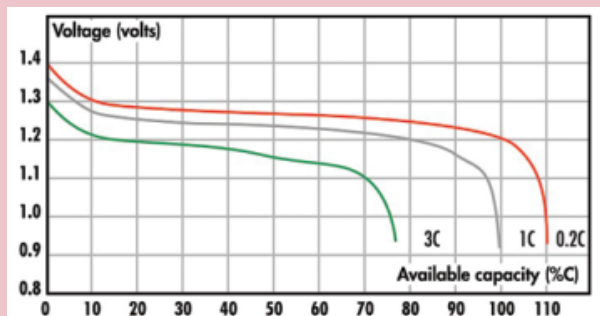


### Voltage in fast charge (current C)



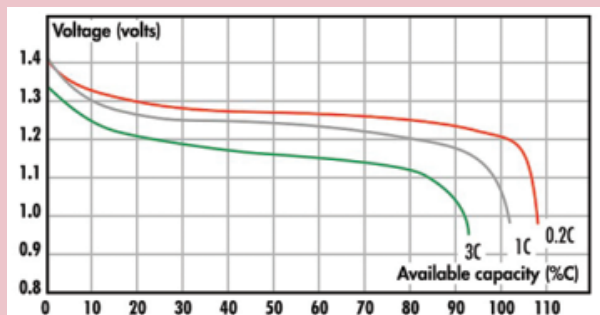
### Voltage in discharge at +20°C

(after slow charge 0.1 C x 16 hours at +20°C)



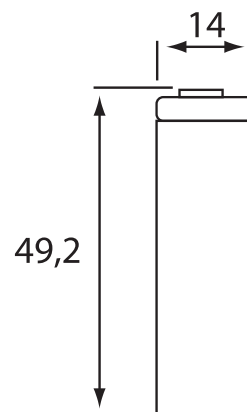
### Voltage in discharge at +20°C

(after fast charge 0.1 C x 1.2 hours at +20°C)



### Typical performances

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



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