

# VH F XP

## Super High Energy series

Saft's VH super high energy Ni-MH series are perfectly suited to personal electric vehicles to professional appliances ie for any applications where power and long autonomy are required. The "XP" stands for eXtended Power and illustrates the higher power capability of the series.

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

- Electric bicycles, scooters & wheelchairs
- Professional lighting
- Audio equipments
- Vacuum cleaners

### Main advantages

- Super high capacity
- Fast charge ability
- Good storage ability
- Excellent cycling performance

### Technology

- Foam positive electrode
- Metal-hydride negative electrode

### Temperature range in discharge

- 10°C to + 40°C

### Storage

Recommended: + 5°C to + 25°C

Relative humidity: 65 ± 5 %



#### Electrical characteristics

Nominal voltage (V)	1.2
Typical capacity (mAh)*	15300
IEC minimum capacity (mAh)*	14500
IEC designation	HRH 33/91
Impedance at 1000 Hz (mΩ)	2.5

\* 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)	252

Dimensions are given for bare cells.

Charge conditions	Rate	Time (h)	Temp. (°C)	Charge current (mA)
Fast		3-4	0 to + 35	up to 5000
Standard		16	0 to + 40	1500
Trickle	(after a topping)			300 to 400
Topping	(after a main charge)			500 to 1500

End of charge cut-off is requested: dT°C/dt recommended.

#### Maximum discharge current

Continuous (A) at + 20°C	50
Peak (A) at + 20°C*	180

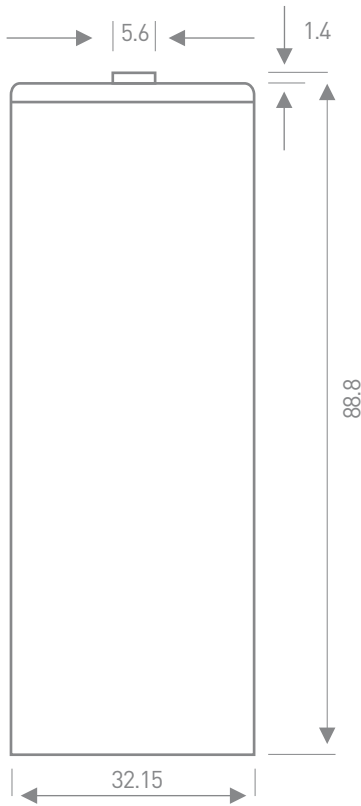
\* Peak duration: 0.3 second - final discharge voltage 0.6 volt/cell.



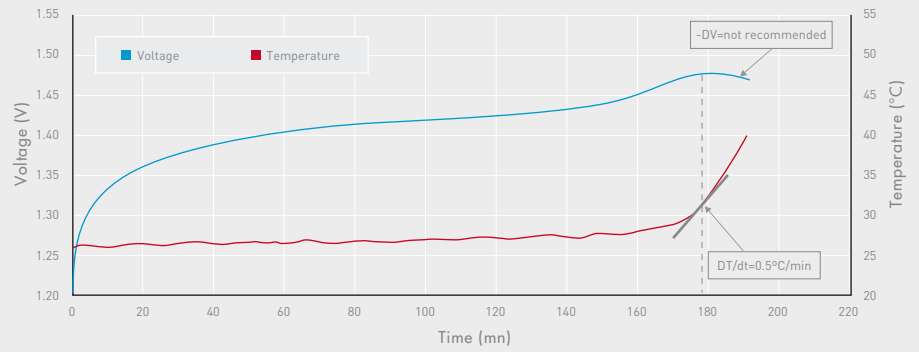
## Typical performances

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

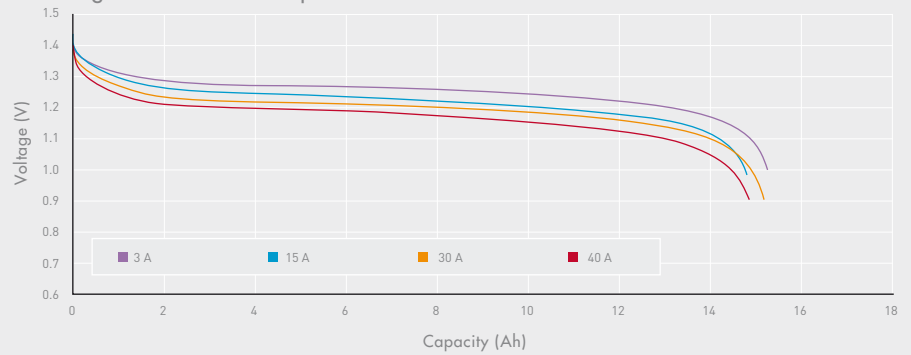
Dimensions are in mm.



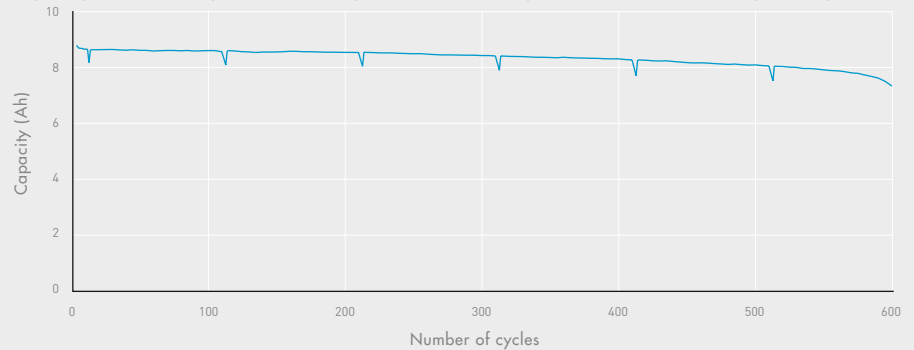
### Voltage and temperature at 5 A charge



### Discharge curves at room temperature at different current rates



### Cycling at room temperature. Charge at 5 A, discharge at 12 A rest 24h every 100 cycles



Data are given for single cells. Please consult Saft 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 Saft.



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