

Rechargeable lithium-ion battery

VL 34480

High performance
4/5 D-size cylindrical cell

Saft always supplies VL cells in assemblies or as customized battery system constructions



Benefits

- Extended autonomy and life for mobile systems
- Wide operating temperature range
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Very high energy density (380 Wh/l, 160 Wh/kg)
- Unrivalled low temperature performance

Key features

- High power
- High voltage
- Excellent charge recovery after long storage, even at high temperature
- Maintenance-free
- Long cycle life (over 70 % initial capacity after 500 cycles 100 % DoD)
- Built-in safety vent and circuit breaker
- Non-restricted for transport/ Non-assigned to Class 9 according to the UN Recommendations on the transport of dangerous goods - Model Regulations
- Underwriters Laboratories (UL) Component Recognition (File Number MH15076)

Main applications

- Mobile asset tracking
- Rack-mount telecom batteries
- Small UPS
- Soldier of the future equipment
- Portable radios
- Professional portable lighting
- Portable gas analysers
- Professional video

Cell size references

4/5 R20 - 4/5 D

Electrical characteristics

Nominal voltage (under 0.9 A at 20°C)	3.7 V
Typical capacity (under 0.9 A at 20°C 2.5 V cut-off)	4.4 Ah

Mechanical characteristics (sleeved, without tabs)

Diameter (max)	33.9 mm (1.335 in)
Height (max)	50.8 mm (2.000 in)
Typical weight	103 g (3.63 oz)
Lithium equivalent content	1.32 g
Nominal energy	16.3 Wh

Operating conditions

Charge method	Constant Current/Constant Voltage
Maximum charge voltage	4.20 +/- 0.05 V
Maximum recommended charge current**	4.4 A (~C rate)
Charge temperature range*	- 20°C to +60°C (- 4°F to +140°F)
Charge time at 20°C	To be set as a function of the charge current: C rate ➔ 2 to 3 h C/2 rate ➔ 3 to 4 h C/5 rate ➔ 6 to 7 h
Maximum continuous discharge current***	8.8 A (~2C rate)
Pulse discharge current	up to 17 A (~4C rate)
Discharge cut-off voltage	2.5 V
Discharge temperature range*	- 50°C to +60°C (- 58°F to +140°F)

* For optimized charging below 0°C, 60°C and discharging at -50°C, consult Saft.

** Electronic protection circuits within battery packs may limit the maximum charge/discharge current allowable. Consult Saft.

*** At rates >1C self-heating may limit runtime

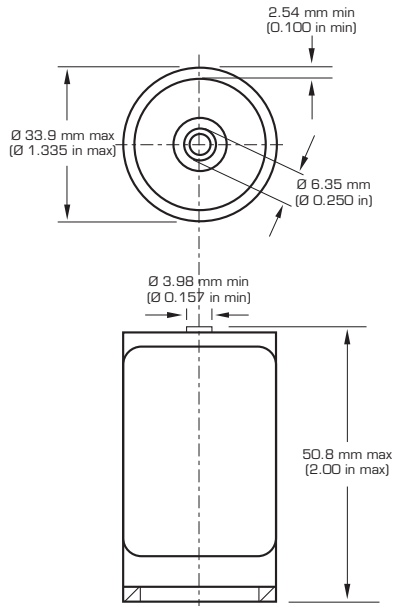


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Battery assembly

In order to operate properly, individual Li-ion cells are mechanically and electrically integrated in battery assemblies specific to each application. The battery assembly incorporates electronics for performance, thermal and safety management.



Built-in protection devices ensure safety in case of:

- Exposure to heat
- Exposure to direct sunlight for extended periods of time
- Short circuit
- Overcharge
- Overdischarge

When handling Saft VL batteries:

- Do not solder directly to cell terminal (use tabbed versions instead)
- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

Transportation and storage:

- Store in a dry place at a temperature preferably not exceeding 30°C (86°F)
- For long-term storage, keep the battery preferably within a (30 ± 15) % state of charge

Saft

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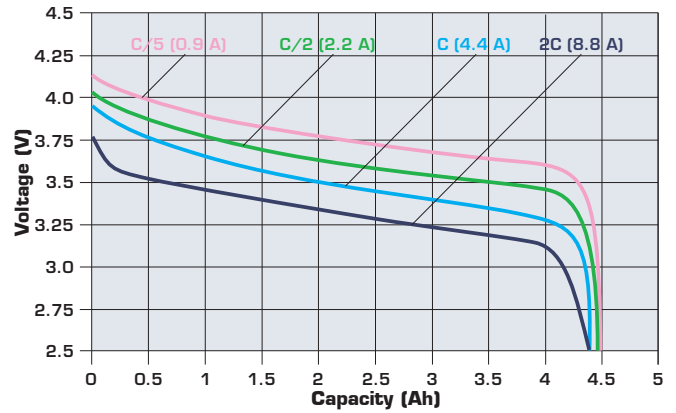
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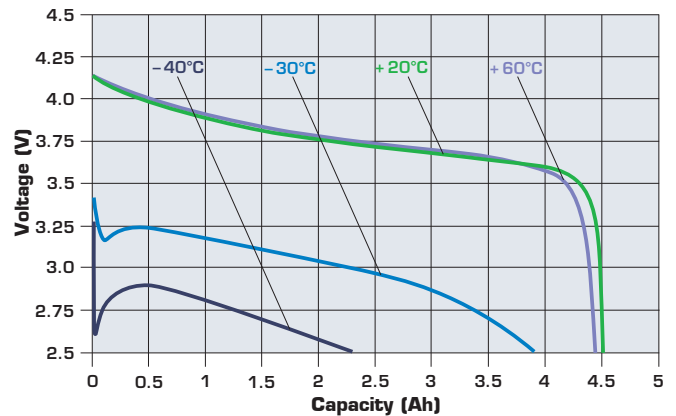
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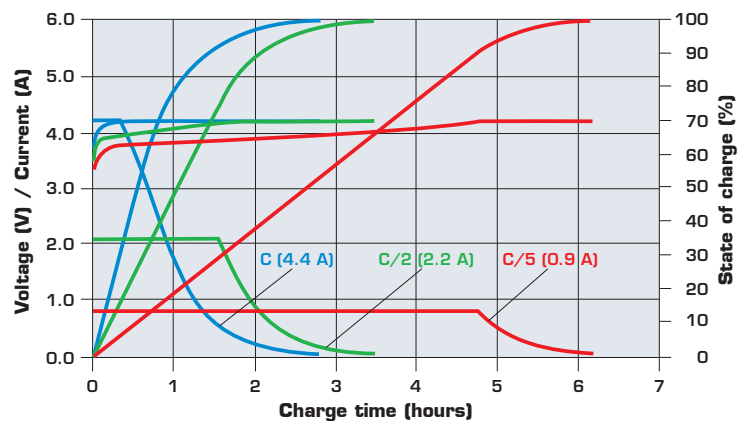
Typical discharge profiles at +20°C



Discharge profiles (0.9 A - C/5 rate)



Charge characteristics to 4.2 V at +20°C



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