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Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31

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Технические характеристики на перезаряжаемые литий-ионные аккумуляторы 2 VL, VL,

Rechargeable military lithium-ion battery

2 VL 34570

Extreme performance in demanding military environments

The battery is assembled from two VL 34570 Saft lithium-ion cells connected in series (2s1p configuration) and protected by a specific electronic monitoring circuit.

Benefits

- Extended autonomy and life
- Wide operating temperature range with unrivalled low temperature performance
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Maintenance-free
- Light weight

Key features

- Electronic protection against charger faults
- Very high energy density
- Excellent charge recovery after long storage, even at high temperature
- Long cycle life *(over 70 % initial capacity after 500 cycles 100 % DoD)*
- Restricted for transport *(Class 9)*
- Components cells with built-in circuit breaker, shut-down separator and safety vent
- Recommended Saft chargers $EcMC^2$ 250 and $EcMC^2$ 350
- Compatible with OEM or "Universal" military battery chargers
- Direct replacement for the BA-5800 primary Li-SO_2 battery
- Made in the EU

Main applications

- GPS-PLGR +96
- AN/PSN-10 (small lightweight GPS Receiver)
- CP-1995 Battlefield computer
- NBC Respirators
- Night vision equipment

Electrical characteristics	
Nominal voltage (under 1.1 A at 20°C)	7.4 V
Typical capacity at 20°C (under 1.1 A 5.4 V cut-off)	5.4 Ah
Nominal energy	40 Wh
Mechanical characteristics	
Height (max)	129 mm (5.08 in)
Diameter (max)	35.5 mm (1.40 in)
Typical weight	265 g (9.35 oz)
Volume (max)	128 cm^3 (7.81 cu. in)
Operating conditions	
Charge method	Constant Current/Constant Voltage
Max. recommended charge current	2.7 A at 20°C
Charge temperature range*	-20°C to +60°C (-4°F to +140°F)
Time at 20°C	3 to 4 hours under C/2 (2.7 A) constant
Max. recommended continuous discharge current	4 A at 20°C
Pulse discharge current	up to 10 A
Discharge cut-off voltage	5.4 V
Discharge temperature range	-40°C to +60°C (-40°F to +140°F)
Operating temperature range	-25°C to +60°C (-13°F to +140°F)
NSN	6140 14 559 7056
Part number	08034L

* *For optimised charging below 0°C, +60°C and discharging at -40°C, consult Saft.*

2 VL 34570

Technology

- Graphite-based negative electrode
- Lithium Cobalt oxide-based positive electrode
- Electrolyte: organic solvents
- Built-in redundant safety protections
- Battery assembled from two cylindrical VL 34570 cells in series with an electronic protection circuit

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
- Shrapnel penetration

When handling Saft VL batteries:

- Do not solder directly to battery terminals
- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

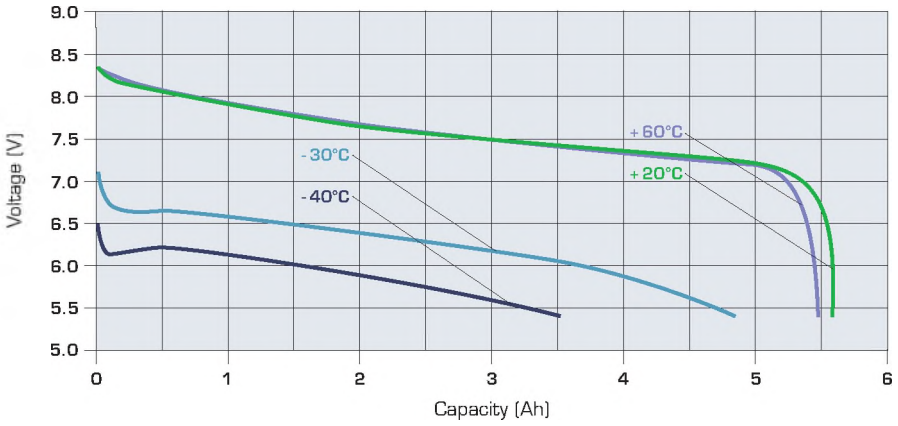
Transportation and storage

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

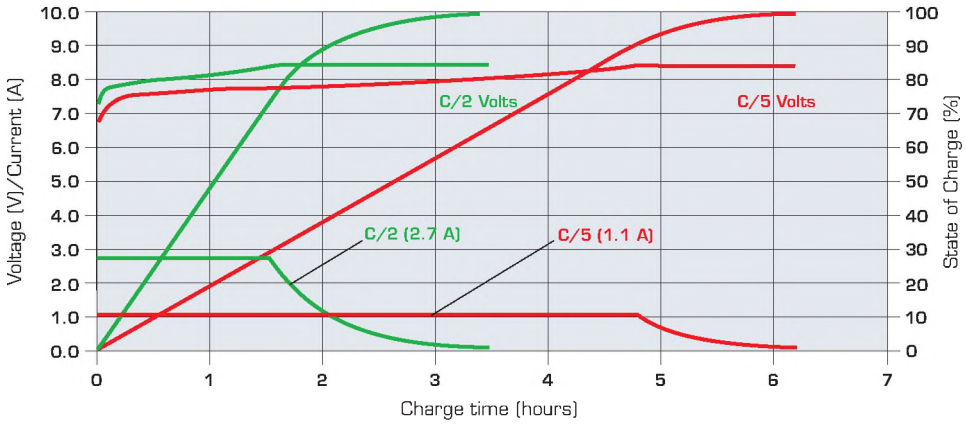
Protection circuit

- Protection against over voltage *(resettable)*
- Protection against under voltage *(resettable)*
- Protection against over current during discharge
- End of discharge equalising
- Internal thermistor for temperature detection

Typical discharge profiles (1.1 A - C/5 rate) at various temperatures



Charge characteristics at +20°C (C/2 and C/5 rates)



VL 34570 xlr
Rechargeable Li-ion cell

3.65 V high energy Li-ion cell with robust performance and cycle life

Saft's VL 34570 xlr cell is ideally suited for applications requiring high energy, long operating life, under cycling conditions and offers excellent performance in temperature environments from –35°C to +60°C.

Benefits

- Excellent operating lifetime in cycling with a very stable internal resistance
- Long shelf life with extremely low capacity loss under storage
- Easy connection and assembly into batteries
- Smaller environmental footprint than other technologies

Key features

- High energy density (364 Wh/l and 151 Wh/kg)
- Cycle life more than 800 cycles at 100% DOD at C/2 discharge and C/2 charge rate
- Nickel steel casing
- Hermetically sealed
- Maintenance free
- No memory effect
- Manufactured in EU

Designed to meet all major quality, safety and environmental standards

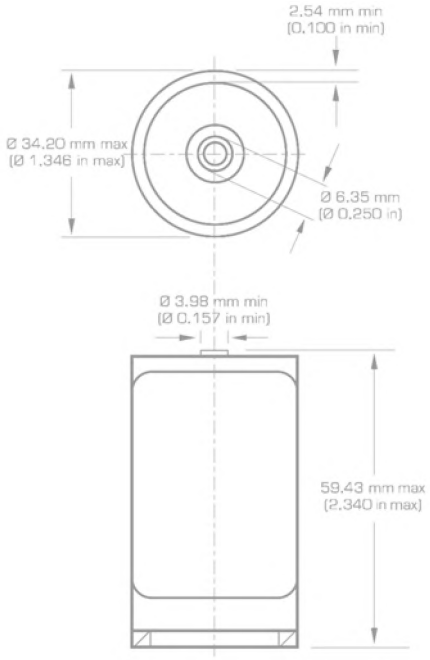
- Safety: UL 1642 and IEC 62133:2017
- Transport: UN 3480, UN 3481
- Quality: ISO 9001, ISO 13485 Saft World Class program
- Environment: ISO 14001, RoHS and REACH compliant

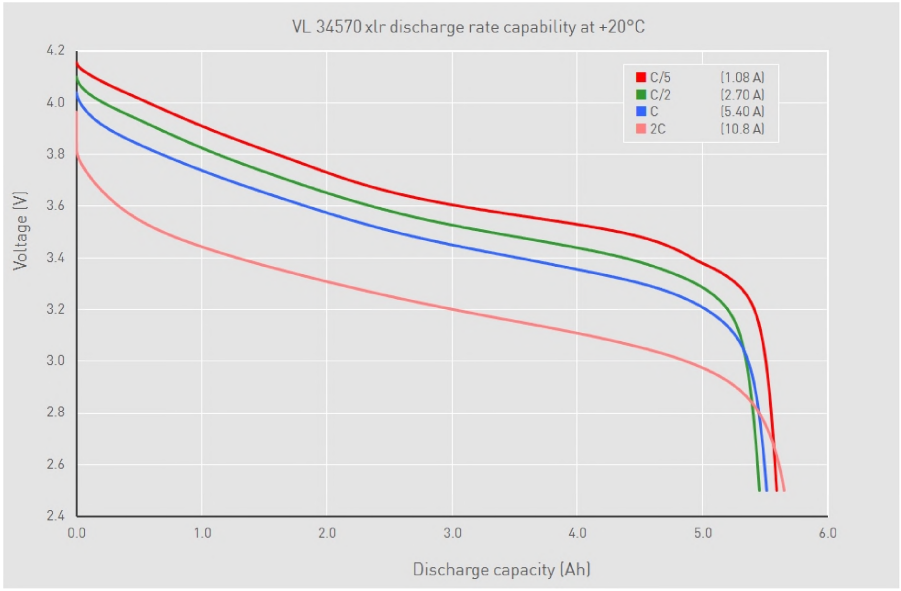
Typical applications

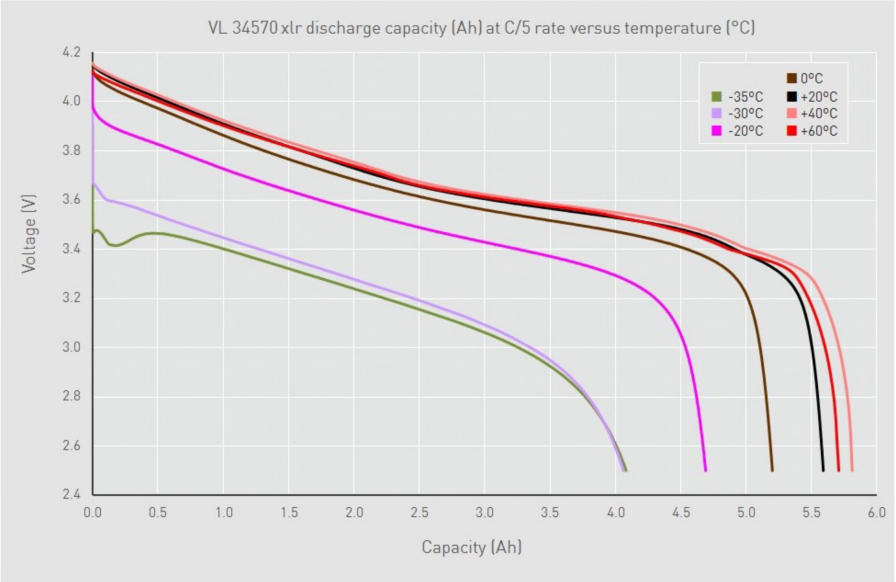
- Industrial equipment
- Medical devices
- Tracking
- Oil & Gas applications
- Internet of Things
- Wireless Sensor Networks
- Lighting & signalling

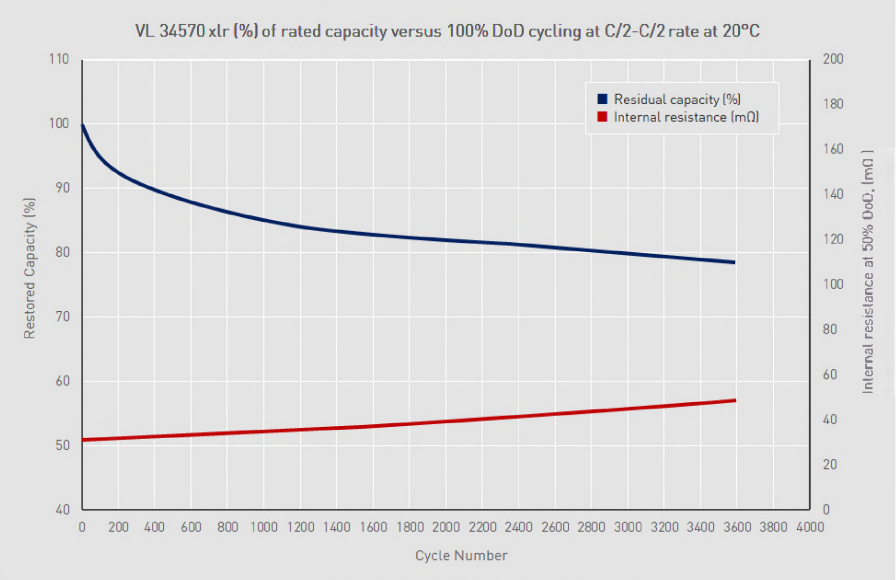
Electrical characteristics		
Typical capacity (at C/5 rate, +25°C, 2.5V cut-off) [1]		5.4 Ah
Nominal voltage		3.65 V
Nominal energy		19.7 Wh
Recommended maximum discharge current [2]	Continuous	11 A (~2C rate)
	Pulse	21 A (~4C rate)
Physical characteristics (sleeved cell)		
Diameter		34.20 mm
Height (including terminals)		59.43 mm
Typical weight		~130 g
Volume (including terminals)		0.054 l
IEC cell designation		INR35/60
Operating conditions		
Typical cut-off voltage		2.5 V
Charging method		Constant current/Constant voltage
Charging voltage		4.2 ± 0.05 V
Maximum continuous charge current [3]		5.4 A (~1C rate)
Operating temperatures [3]	Charge	-30°C to +60°C
	Discharge	-35°C to +60°C
Storage & transportation temperatures [3]	Recommended	+10°C to +30°C
	Allowable	-40°C to +60°C

[1] Can vary depending on temperature and discharge rate
[2] Can vary depending on temperatures. Consult Saft
[3] For optimised charging below 0°C and above 60°C, consult Saft









Battery assembly

Individual lithium-ion cells need to be mechanically and electrically integrated into battery systems to operate properly. The battery system includes electronic devices for performance, thermal and safety management specific to each application. Please contact Saft for your specific applications requirements.

Battery-level features

- Saft provides complete battery system designs
- Incorporating several levels of redundant safety features to prevent abuse conditions such as over-charge, over-discharge, and short circuits
- Incorporating electronics for performance and efficiency:
  - charge/floating/discharge management
  - cell balancing
  - temperature monitoring
- Battery protection controller at system level with communication for State-of-Charge and State-of-Health

Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated

Warning

- Do not crush, short-circuit, incinerate, dismantle, immerse in any liquid, heat above +60°C
- Observe charging conditions

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