

Rechargeable lithium-ion battery

SOPHIE

Extreme performance



The battery consists of three MP 174865 Saft lithium-ion cells in series and connected by a specifically designed electronic protection circuit.

Benefits

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

Key features

- Electronic protection against charger faults
- Very high energy density
- Built-in LED independent fuel gauge
- Compatible with Saft and other military chargers
- Made and designed in the EU
- 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)*

Main applications

- SOPHIE thermal imager
- Military thermal camera

Electrical characteristics

Nominal voltage (1.2 A rate at 20°C)	11.25 V
Typical capacity 20°C (under 1.2 A at 20°C 8.1 V cut-off)	5.3 Ah

Mechanical characteristics

Length max	145 mm
Width max	62.6 mm
Height max (including contacts)	55.5 mm
Typical weight	530 g

Operating conditions

Charge method	Constant Current/Constant Voltage
Max. recommended charge current	5 A at 20°C
Charge temperature range*	-20°C to +60°C
Max. recommended continuous discharge current*	5 A at 20°C
Pulse discharge current (< 7 ms)	up to 21 A (~4C rate)
Discharge cut-off voltage	8.1 V
Discharge temperature range	-50°C to +60°C

References

High Temperature	MIL-STD 810E, 501.3 (+60°C)
Low Temperature	MIL-STD 810E, 502.3 (-20°C)
Vibration	MIL-STD 810C, 514.2 H
Shock	MIL-STD 810E, 516.4
Salt Fog	MIL-STD 810E, 509.3 I
Immersion	MIL-STD 810E, 512.3
Saft's Part Number	08314C

Compliance with military specification

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* Consult Saft for optimized charging below 0°C

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Technology

- Graphite-based anode
- Lithium Cobalt oxide-based cathode
- Electrolyte: organic solvents
- Built-in redundant safety protections
- Battery comprises three MP 174865 cells in series and features an electronic protection circuit

Independent 5 segment fuel gauge

- Assess the battery state of charge while in storage
- Check your spare battery during or prior to use
- Make full use of available battery



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 MP 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 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
- Equalising cell voltages during discharge

Saft

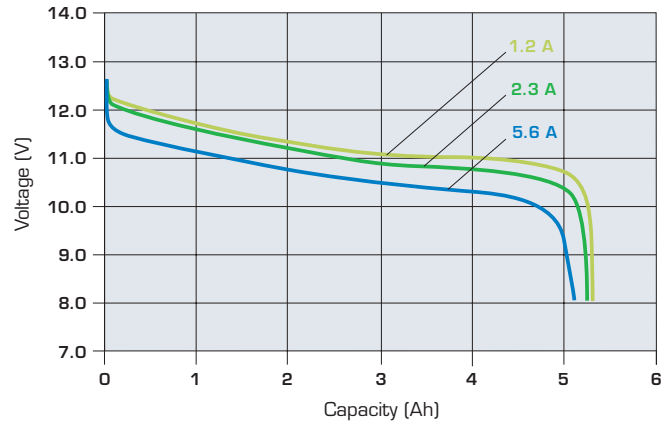
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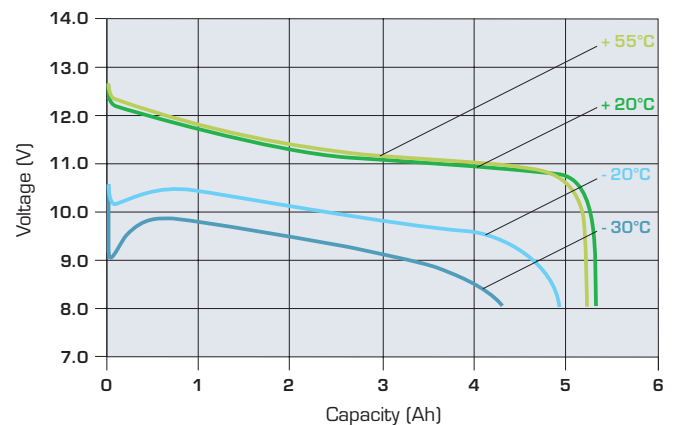
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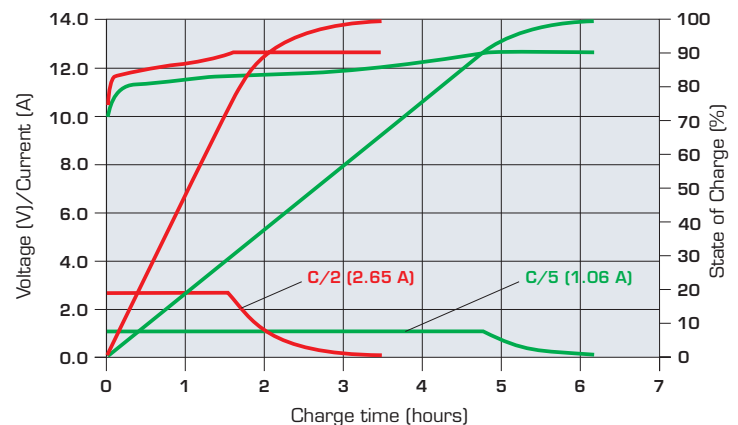
Capacity versus current at +20°C



Capacity versus temperature under 1.2 A constant discharge



Charge characteristics 12.6 V at +20°C at C/5 and C/2 rates



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