

# M 56

## Primary Li-MnO<sub>2</sub> cell

3 V lithium manganese dioxide 5/4 C-size spiral cell

Saft's M 56 cell is ideally suited for applications requiring high energy and long operating life, with stable voltage under high discharge in - 40°C / + 72°C environment.

### Benefits

- High drain / high pulse capability
- High voltage response, stable during most of the lifetime of the application even after long dormant periods
- High capacity at high current and low temperature
- Low self-discharge compatible with long operating life (less than 1% after 1 year of storage at + 20°C)
- Superior resistance to corrosion
- Low magnetic signature

### Key features

- Spiral construction
- Hermetic construction with glass-to-metal seal
- Stainless steel container
- Integrated safety vent
- Non-corrosive electrolyte
- Non-pressurized at room temperature
- Restricted for transport (Class 9)
- Made in Germany

### Designed to meet all major quality, safety and environmental standards

- Safety: UL 1642 (File MH 61234), IEC 60086-4
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, Saft World Class Continuous program
- Environment: ISO 14001

### Typical applications

- Radio communications
- Utility metering
- Alarms and security systems
- ELTs, EPIRBs
- Tracking systems
- GSM/GPRS communication



### Electrical characteristics

(Typical values relative to cells stored up to one year at + 30°C max)

Nominal capacity (at 150 mA, + 20°C, 2.0 V cut-off) <sup>(1)</sup>	6.7 Ah
Open circuit voltage (at + 20°C)	3.2 V
Nominal voltage (under 1 mA at + 20°C)	3.0 V
Nominal energy (at 150 mA, + 20°C, 2.0 V cut-off)	19 Wh
Pulse capacity <sup>(2)</sup>	up to 6.0 A
Recommended maximum continuous discharge current <sup>(3)</sup>	2.5 A

### Operating conditions

Operating temperature range <sup>(4)</sup>	- 40°C / + 72°C (- 40°F / + 161°F)
Storage temperatures	Recommended + 30°C (+ 86°F) max
	Allowable <sup>(5)</sup> - 55°C to + 90°C (- 67°F / + 194°F)

### Physical characteristics

Diameter (max)	26.2 mm (1.03 in)
Height for the tabbed version (max)	61.5 mm (2.42 in)
Height for the version with +/- end caps (max)	62.5 mm (2.46 in)
Typical weight	70 g
Li metal content	approx. 1.9 g

<sup>(1)</sup> Dependent upon current drain, temperature and cut-off.

<sup>(2)</sup> Dependent upon pulse characteristics, temperature, cell history and application. Higher rates are available under certain circumstances

<sup>(3)</sup> To maintain cell heating within safe limits. Battery packs may imply lower level of maximum current and may request specific thermal protection. Consult Saft.

<sup>(4)</sup> Operating temperatures up to + 85°C can be achieved. Consult Saft.

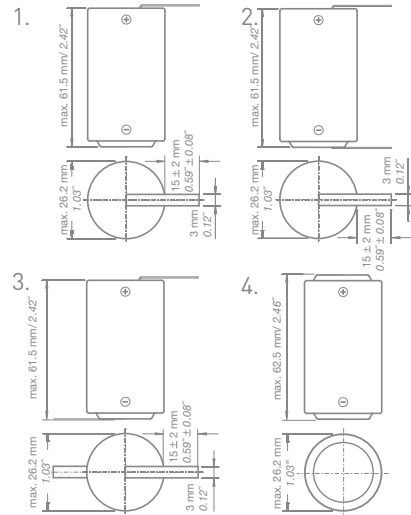
<sup>(5)</sup> Long time storage at high temperature may affect performances. Consult Saft.



**SAFT**

## Termination & part numbers

- 1. + tab (radial tab on positive terminal): 4142078403
- 2. C tab (radial tabs on positive & negative terminals): 4142078203
- 3. Z tab (radial tabs on positive & negative terminals): 4142078703
- 4. +/- end caps (incl. PTC): 4142078113
- Other configuration available on request



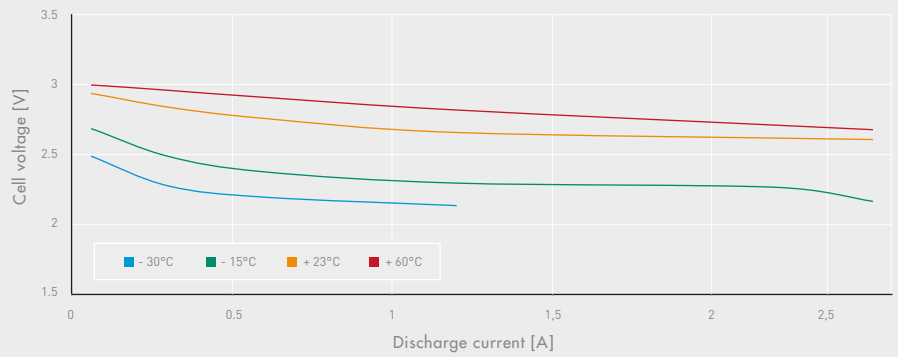
## Storage

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

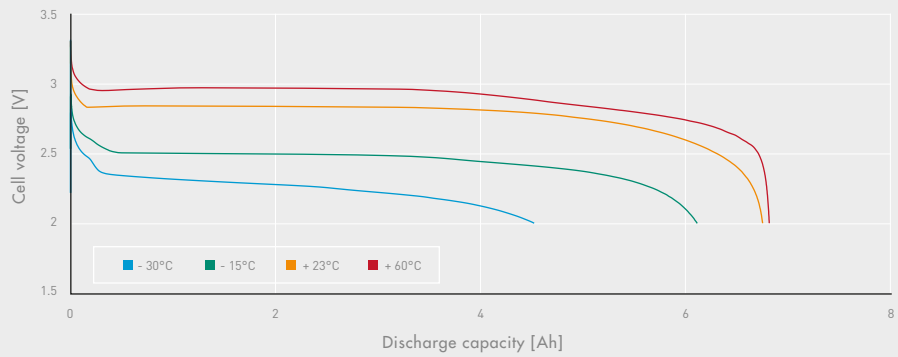
## Warning

- Fire, explosion and burn hazard.
- Do not recharge, short circuit, crush, disassemble, heat above + 100°C (+ 212°F), incinerate, or expose contents to water.
- Do not solder directly to the cell (use tabbed cell versions instead).
- Do not obstruct venting mechanism.

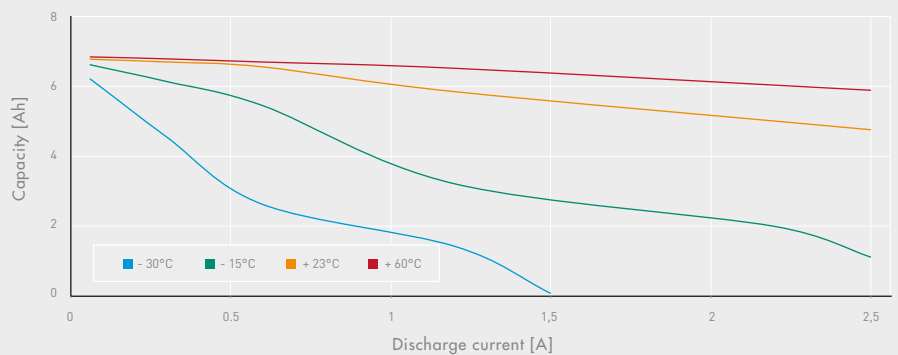
Mid-discharge voltage vs. current at various temperatures



Discharge curves at 0.3 A at various temperatures



Capacity vs. current at various temperatures



**Saft**

26 quai Charles Pasqua  
92300 Levallois-Perret France  
Tel: +33 1 58 63 16 00  
Fax : +33 1 58 63 16 18  
www.saftbatteries.com

**Friemann & Wolf  
Batterietechnik GmbH**

Industriestr. 22,  
63654 Büdingen - Germany  
Tel. : +49 (0) 6042 954 0  
Fax. : +49 (0) 6042 954 190

Doc N°: 31120-2-0518

Edition: May 2018

Information in this document is subject to change without notice and becomes contractual only after written confirmation by Saft.

Published by the Communications Department

Photo credit: Saft

Produced in FR by Soyouzgraphic / Cap Interactif-cap 851