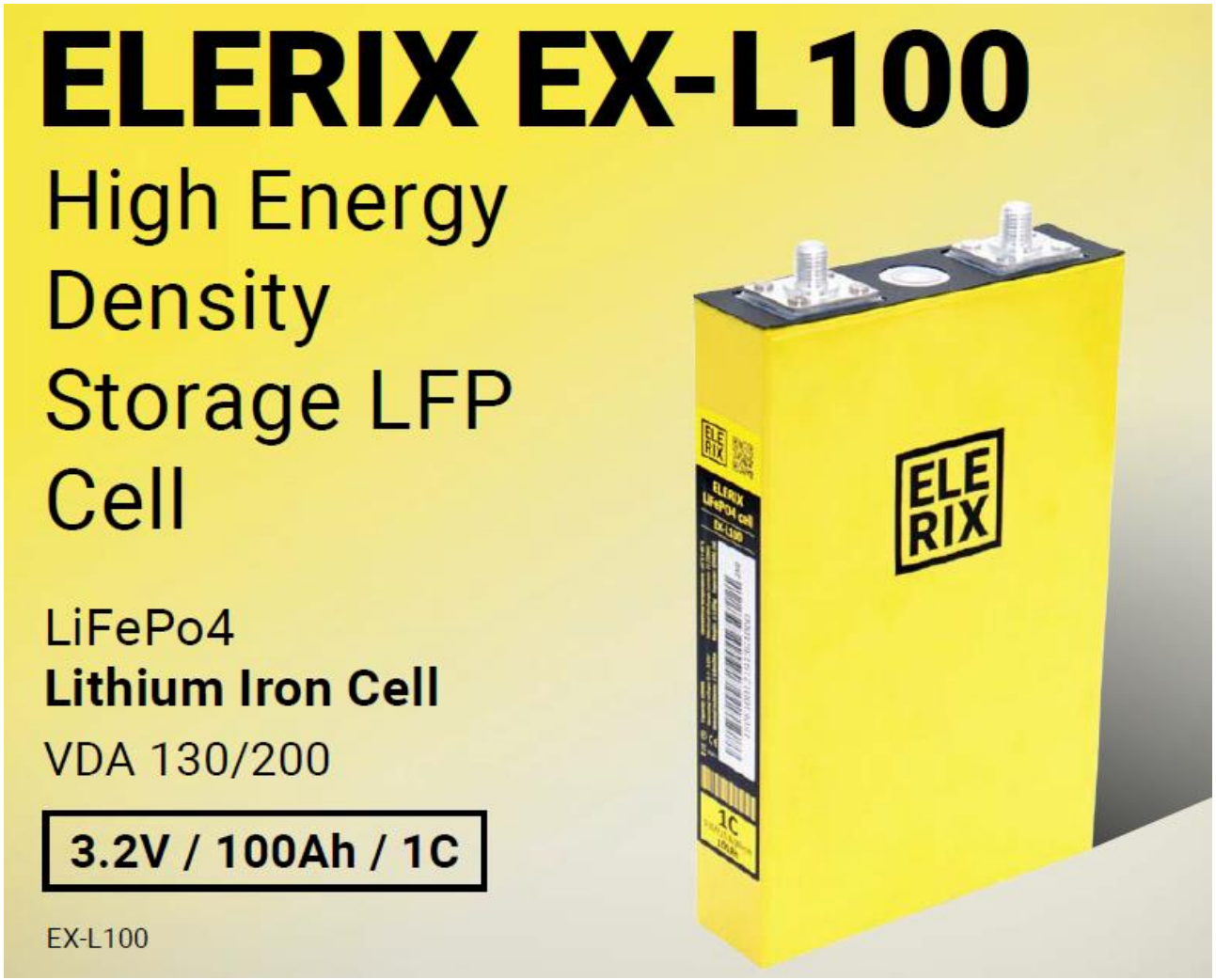
TECHNICAL SPECIFICATION

MANUFACTURER	ELERIX LTD
	Enterprise House 2 Pass Street, Oldham, Manchester, United Kingdom, OL9 6HZ www.elerix.com
BRAND	ELERIX (OEM)
DESCRIPTION / MODEL	**EX-L100**
	☒ Cell ☐ Battery ☐ Product
Chemistry	Li-metal – LFP (Lithium Iron Phosphate)
Nominal Voltage	3.2 V
Nominal Capacity	100 Ah
Nominal Energy – Watthour rating	320 Wh
Nominal Weight – Mass (g)	1936 g (average value)



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TERMINAL TORQUE

The material of the terminals of ELERIX EX-L100

The terminals are made of hardened aluminum. In view of this material - that is softer than steel, it is recommended to deploy lower tightening strength when tightening the terminals.

The terminal torque

The recommended terminal torque is **10 Nm.**

NOTE: the EX-L100 terminals have the M10x1. 25 (fine) thread that has a 1.25mm pitch. You need to use the special nuts supplied with the cells.

ELERIX EX-L100 TEMPERATURE CONSIDERATIONS

The optimal temperature range for best discharge / lifespan performance

The optimal discharge performance of the **ELERIX EX-L100** cell is within this temperature range.

+10°C to + 30°C

- For temperatures **below +10°C**, the performance of the cell will decrease.
- For temperatures **above +30°C**, it is necessary to observe the performance and temperature changes to avoid the rise of the temperature and exceeding the limit of safe operation.
- For temperature **above +50°C**, the operation of the cell needs to be stopped until the temperature decreases again.

The temperature should be measured at the terminals or at the top side of the cell.

If there is a flow of air due to the air-cooling, you should cover (protect) the temperature sensor, so that the reading of the temperature is not influenced by the cooling air flow.

The table of the DISCHARGE PERFORMANCE based on the SOC and the temperature range

The ideal discharge rate 0.5C (and less) for the longest life span:

	SOC	0%-10%	10%-20%	30%-80%	80%-90%	90%-100%
Temperature Range	<-20°C	0.05C	0.1C	0.1C	0.1C	0.1C
	-20°C ~ -10°C	0.05C	0.1C	0.1C	0.1C	0.1C
	-10°C ~ 0°C	0.05C	0.1C	0.2C	0.2C	0.2C
	0°C ~ +10°C	0.1C	0.2C	0.5C	0.5C	0.5C
	+10°C ~ +30°C	0.1C	0.2C	0.5C	0.5C	0.5C
	+30°C ~ +50C	0.1C	0.1C	0.2C	0.2C	0.2C
	>+50°C	stop	stop	stop	stop	stop

The table of the CHARGE PERFORMANCE based on the SOC and the temperature range

The ideal **charge rate 0.5C (and less)** for the longest life span

	SOC	0%-10%	10%-20%	30%-80%	80%-90%	90%-100%
Temperature Range	<-20°C	not allowed	not allowed	not allowed	not allowed	not allowed
	-20°C ~ -10°C	not allowed	not allowed	not allowed	not allowed	not allowed
	-10°C ~ 0°C	0.05C	0.05C	0.1C	0.1C	CV mode
	0°C ~ +5°C	0.1C	0.1C	0.3C	0.3C	CV mode
	+5°C ~ +35°C	0.5C	0.5C	0.5C	0.5C	CV mode
	+30°C ~ +50C	0.1C	0.1C	0.3C	0.3C	CV mode
	>+50°C	stop	stop	stop	stop	stop

The CV MODE means the CONSTANT VOLTAGE charging mode, at the 90%+ SOC levels, when the voltage reaches the maximal charge voltage (typically 3.65V), the voltage stays at this level (constant charge voltage) while the charging current is regulated (decreased) according to the energy absorbed by the cell.

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ELERIX EX-L100 NOTES ON THE CYCLE LIFE & DISCHARGE RATES

Standard definition of the Charge and Discharge rating as per datasheet

Current	Charge	Standard (A)	33,3	
		Max. Cont. (A)	100	
	Discharge	Standard (A)	50	
		Max. Cont. (A)	100	Continued, temp ≤ 50°C
		Peak (A)	200	≤ 30 sec, temp ≤ 50°C
Cycle Life at 80% DOD			3000	@0.3C/1C, @25°C, >80% SOH

Charge Rating

Standard charge	33 Amp (0.3C)	
Maximal continuous charge	100 Amp (1C)	
Peak charge	150 Amp (1.5C)	max 30 seconds @ temp < 50°C

Discharge Rating

Standard discharge	50 Amp (0.5C)	
Maximal continuous discharge	100 Amp (1C)	
Peak discharge	200 Amp (2C)	max 30 seconds @ temp < 50°C

Life cycle definition

Cycle life (> 80% SOH)	3000 cycles	0.3 Charge / 1C discharge, @25°C, 80% DOD

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ELERIX EX-L100 OPTIMAL CHARGE VOLTAGE

The standard charge voltage level

Voltage = 3.65V

It is the standard charge voltage level for LFP technology.

The optimal charge voltage level

Voltage = 3.55V

For increased life span, it is suggested that the charge voltage is decreased to 3.55V for regular charging.

Balancing voltage turn-off (passive balancing)

Voltage = 3.45V

It is possible to set the balancing voltage (turn-off) for the resistors of the passive balancing to 3.45V.

SOC 80% voltage levels

Charge Voltage = 3.45V

Discharge Voltage = 3.00V

This is the optimal voltage level operational range for the 80% SOC.

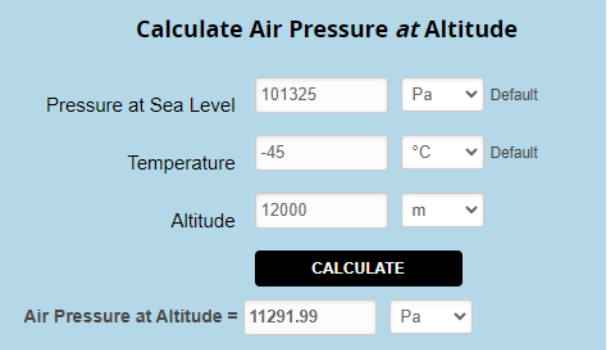
ELERIX EX-L100 HIGH ALTITUDE LEVEL OPERATION

The typical pressure of air is 101 kPa at sea level.

The high altitude simulation is given at 11 kPa,
this corresponds to **the altitude of 12000 m and -45°C.**

This is the part of the UN 38.3 test.

The cells are able to withstand the high altitude operation



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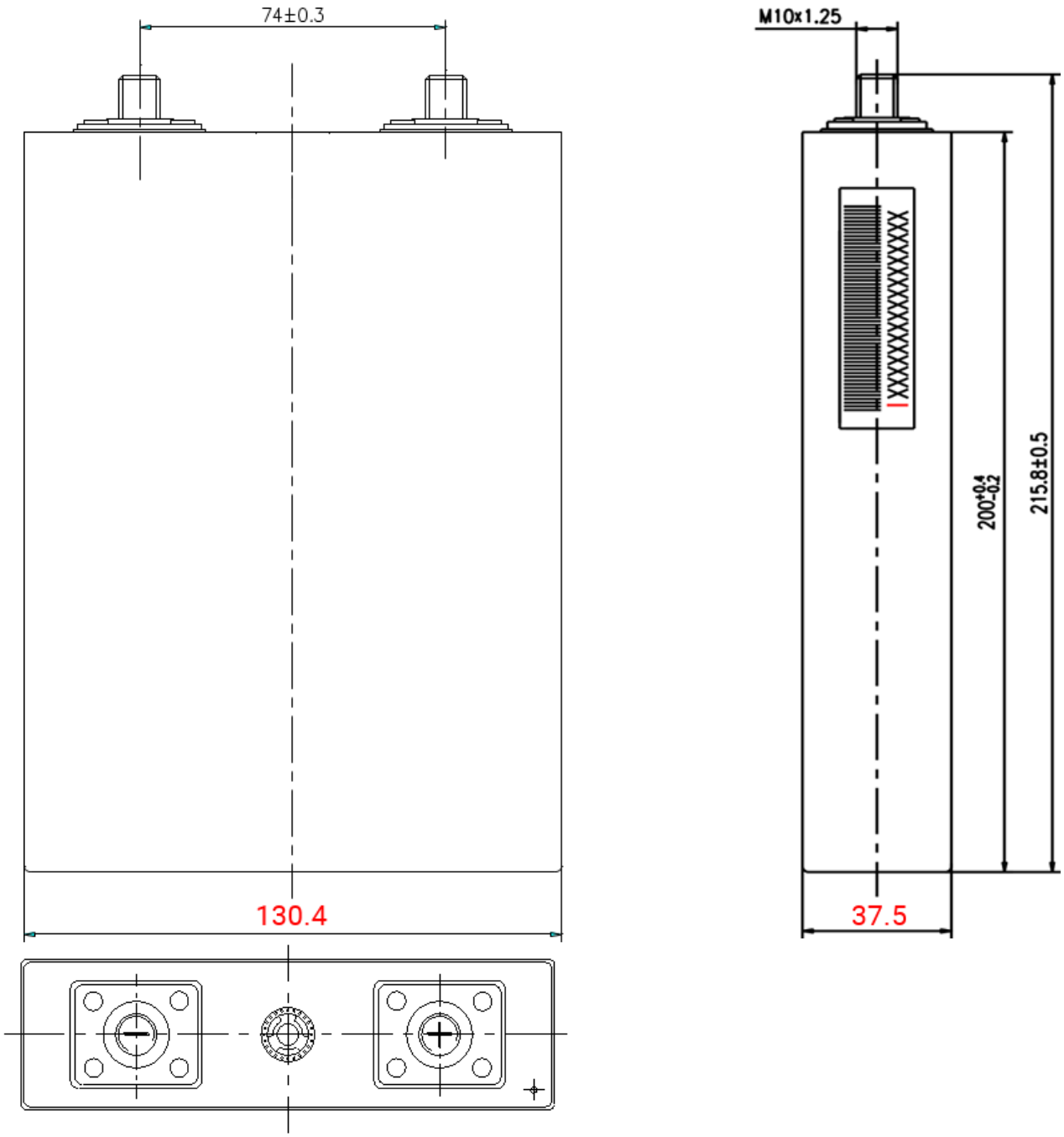
ELERIX EX-L100 TECHNICAL DRAWING



The red values include the maximal positive tolerance.

All dimensions in [mm]

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