



# Rechargeable Lithium-Ion battery pack specification

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Type: CL18650-29E4S1P-LL

Date of issue	Date of change	Change number	Remarks
27.07.2019	-	-	-

The information contained in this specification is subject to change without notice.

### 1. SCOPE

This specification describes the technical parameters and requirements of the rechargeable Li-Ion battery pack powered by Cellevia Batteries.

### 2. BATTERY PACK BASIC SPECIFICATION

NO	ITEM	SPECIFICATION	REMARK
1	Type	CL18650-29E4S1P-LL	
2	Nominal Voltage	14.6 V	
3	Rated Capacity	2750 mAh	0.55 A to 12.0 V discharge
4	Rated Energy	40 Wh	
5	Internal Resistance	< 150 mΩ	at 1kHz, typical
6	Cell type	INR18650-29E	4 pcs
7	Cell configuration	4S1P	
8	Dimension	Drawing (see point no. 5)	
9	Weight	198 g ± 2 g	
10	Thermistor NTC	---	
11	Balancing function	YES	See point no. 4.2
12	Leads	Wires, 22AWG UL1007/1569	Length: 100 ± 5 mm with plug
13	Plug	Molex 43025-0200	

### 3. BATTERY PACK STANDARD TESTING CONDITIONS

NO	ITEM	SPECIFICATION		REMARK
1	Charging Voltage	16.8 V ± 0.1 V		
2	Discharge Cut-off Voltage	12.0 V ± 0.1 V		
3	Charging Current	Standard	1375 mA to 16.8 V, end current 55 mA	CC/CV method
		Fast	2750 mA to 16.8 V, end current 55 mA	not for cyclelife
4	Charging Time	Standard charge	3 hours	or 0.02C end curr.
		Fast charge	2.5 hours	or 0.02C end curr.
5	Discharging Current	Continuous	2750 mA	Limited by cell
		Non continuous	5000 mA	Limited by BSU see point no. 4.2
6	Temperature Range (pack surface temp.)	Charge	0 ~ +45°C	
		Discharge	-20 ~ +60°C	
		Storage	-10 ~ +25°C	1 year

#### 4. BATTERY SAFETY UNIT SPECIFICATION

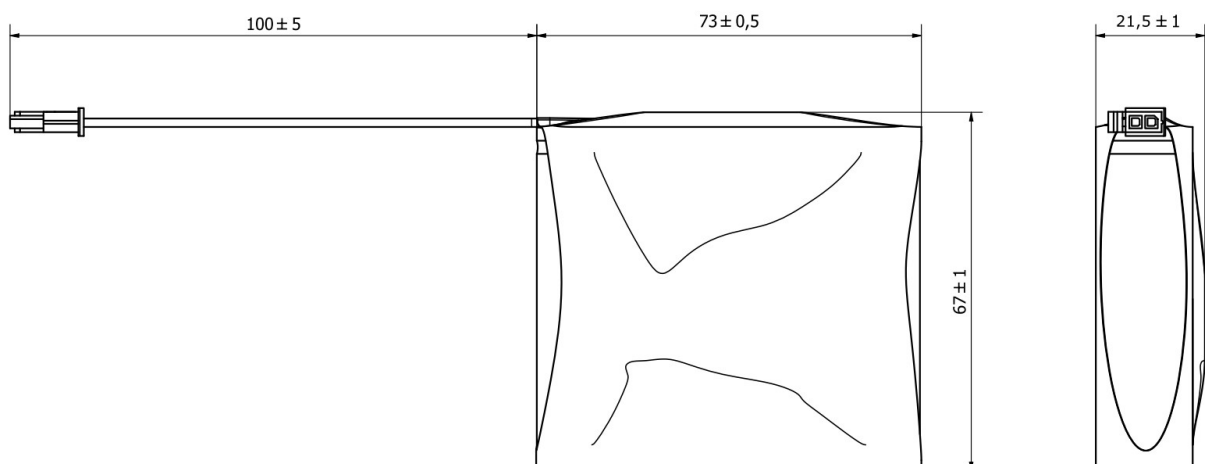
##### 4.1. BASIC PARAMETERS

NO	ITEM		MIN	TYPICAL	MAX	UNIT	REMARKS
1	Over charge detection voltage	Cut off	4.225	4.25	4.275	V/cell	0.5 – 1.5 s
		Release	4.0	4.05	4.1	V/cell	
2	Over discharge detection voltage	Cut off	2.9	3.0	3.1	V/cell	0.5 – 1.5 s
		Release	3.1	3.2	3.3	V/cell	
3	Discharge Over current detection current	Cut-off	8.0	9.0	10.0	A	5 – 50 ms
		Release		---		-	Cut load, Auto recovery or charging activation
4	Short-circuit protection	Delay time	200	300	500	us	
		Release		---		-	Cut load or charging activation
5	Temperature range	Operating	-40		85	°C	
		Storage	-40		125	°C	
6	Resistance		20	40	60	mΩ	
7	Consumption current				50	uA	

##### 4.2. ADDITIONAL PARAMETERS

NO	ITEM	PARAMETER	REMARK
1	Balance voltage	$4.2 \pm 0.025$ mV	For single cell
2	Balance current	$42 \pm 5$ mA	For single cell
3	Max continuous current	4 A	Charge/discharge
4	Current limit	5 A	$t < 5$ s

#### 5. OUTLINE DRAWING



6. PICTURE



Lithium-Ion Battery  
**CL18650-29E4S1P-LL**

Nominal voltage	14.60 V	Max charge voltage	16.80 V
Rated capacity	2750 mAh	Max charge current	2.75 A
Rated energy	40 Wh	Max discharge current	2.75 A
Charge temp.	0 to 40°C	Discharge temperature	-20 to 60 °C

**SAFETY NOTES**

Do not throw. Do not hit. Do not disassemble. Do not immerse in liquid.  
 Do not short-circuit. Do not heat and burn. Observe the conditions of use.  
 Production date:19W29



## 7. CAUTION IN USE

To ensure proper use of the battery please read the manual carefully before using it.

### 7.1. HAZARD WARNINGS

- Do not expose to, dispose of the battery in fire,
- Do not put the battery in a charger or equipment with wrong terminals connected,
- Avoid shorting the battery,
- Avoid excessive physical shock or vibration,
- Do not disassemble or deform the battery,
- Do not immerse in water.
- Do not use the battery mixed with other different make, type or model batteries
- Keep out of the reach of children

### 7.2. CHARGE AND DISCHARGE

- Battery must be charged in appropriate charger only,
- Never use a modified or damaged charger,
- Do not leave battery in charger over 24 hours

### 7.3. STORAGE

- Store the battery in a cool, dry and well-ventilated area,
- Store the battery in a 30% - 50% SOC,
- The batteries shall be charged every 6 months during storage

### 7.4. DISPOSAL

Regulations vary for different countries. Dispose of in accordance with local Regulation.

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