



# Rechargeable Lithium-Ion battery pack specification

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Type: CL18650-29E1S4P-HD

| 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                | CL18650-29E1S4P-HD        |                              |
| 2  | Nominal Voltage     | 3.65 V                    |                              |
| 3  | Rated Capacity      | 11000 mAh                 | 2.2 A to 2.5 V discharge     |
| 4  | Rated Energy        | 40 Wh                     |                              |
| 5  | Internal Resistance | < 60 mΩ                   | at 1kHz, typical             |
| 6  | Cell type           | INR18650-29E              | 4 pcs                        |
| 7  | Cell configuration  | 1S4P                      |                              |
| 8  | Dimension           | Drawing (see point no. 5) |                              |
| 9  | Weight              | 191 g ± 2 g               |                              |
| 10 | Thermistor NTC      | ---                       |                              |
| 11 | Leads               | Wires, 20AWG UL1007/1569  | Length: 100 ± 5 mm with plug |
| 12 | Plug                | Cvilux CP-01102010        |                              |

### 3. BATTERY PACK STANDARD TESTING CONDITIONS

| NO | ITEM                                   | SPECIFICATION   |                                       | REMARK                              |
|----|--|-----------------|---------------------------------------|-------------------------------------|
| 1  | Charging Voltage                       | 4.2 V ± 0.1 V   |                                       |                                     |
| 2  | Discharge Cut-off Voltage              | 2.5 V ± 0.1 V   |                                       |                                     |
| 3  | Charging Current                       | Standard        | 5500 mA to 4.2 V, end current 220 mA  | CC/CV method                        |
|    |  | Fast            | 10000 mA to 4.2 V, end current 220 mA | not for cycle life                  |
| 4  | Charging Time                          | Standard charge | 3 hours                               | or 0.02C end curr.                  |
|    |  | Fast charge     | 2.6 hours                             | or 0.02C end curr.                  |
| 5  | Discharging Current                    | Continuous      | 10 A                                  | Limited by BSU                      |
|    |  | Non continuous  | 20 A                                  | Limited by BSU<br>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

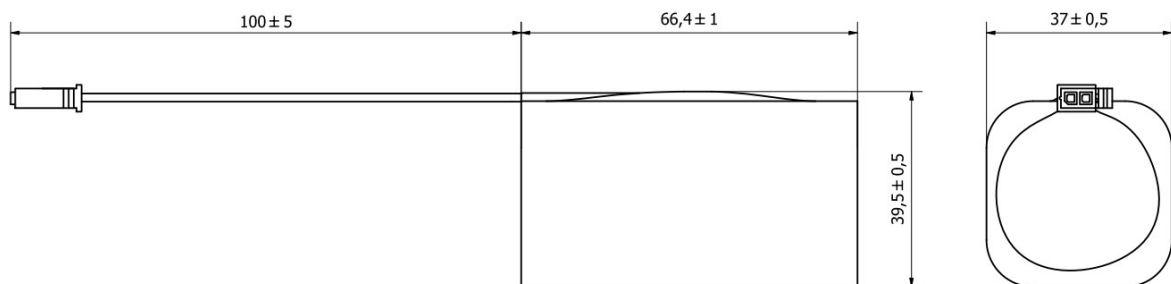
4.1. BASIC PARAMETERS

| NO | ITEM                                     |            | MIN   | TYPICAL | MAX   | UNIT   | REMARKS                 |
|----|--|------------|-------|---------|-------|--------|-------------------------|
| 1  | Over charge detection voltage            | Cut off    | 4.225 | 4.25    | 4.275 | V/cell | 0.5 – 2.0 s             |
|    |  | Release    | 4.0   | 4.05    | 4.1   | V/cell |                         |
| 2  | Over discharge detection voltage         | Cut off    | 2.40  | 2.5     | 2.6   | V/cell | 5 - 200ms               |
|    |  | Release    | 2.9   | 3.0     | 3.1   | V/cell |                         |
| 3  | Discharge Over current detection current | Cut-off    | 20    | 24      | 26    | A      | 5 – 20 ms               |
|    |  | Release    | ---   |         |       | -      | Cut load, Auto recovery |
| 4  | Short-circuit protection                 | Delay time | 150   | 300     | 600   | us     |                         |
|    |  | Release    | ---   |         |       | -      | Cut load                |
| 5  | Temperature range                        | Operating  | -40   |         | 85    | °C     |                         |
|    |  | Storage    | -40   |         | 125   | °C     |                         |
| 6  | Resistance                               |            | 20    | 40      | 50    | mΩ     |                         |
| 7  | Consumption current                      |            |       |         | 10    | uA     |                         |

4.2. ADDITIONAL PARAMETERS

| NO | ITEM                   | PARAMETER | REMARK               |
|----|------------------------|-----------|----------------------|
| 1  | Max continuous current | 10 A      | Charging/discharging |
| 2  | Current limit          | 20 A      | t < 1s               |

5. OUTLINE DRAWING



6. PICTURE



Lithium-Ion Battery  
**CL18650-29E1S4P-HD**

|                 |           |                       |              |
|-----------------|-----------|-----------------------|--------------|
| Nominal voltage | 3.65 V    | Max charge voltage    | 4.20 V       |
| Rated capacity  | 11000 mAh | Max charge current    | 10.0 A       |
| Rated energy    | 40 Wh     | Max discharge current | 10.0 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.