



## 18650 Li-ion Battery Pack



### Technical Details:

Battery Pack Details	
Chemistry	Li-ion
Model	Orange 2200mah-11.1v (3s1p)
Nominal Voltage	11.1v
Max Charging Voltage	12.6v
Charging Cut-off Voltage	8.25v
Nominal Energy	24.42wh
Nominal Capacity	2200mah
Nominal Charge Current	0.5C A (1100ma) (recommended)
Max Charging Current	1C A (2200ma)
Nominal Discharge Current	1C A (2200ma)
Max Discharge Current	2C A (4400ma)
Cycle Life /80%	≥300
Dimension (LxWxH)mm	72 x 55 x 20mm
Weight	166gm

<b>Cell Details</b>	
<b>Model</b>	<b>Orange ICR18650-22F - 2200 Mah</b>
<b>Nominal Voltage</b>	<b>3.7v</b>
<b>Max Charging Voltage</b>	<b>4.2v</b>
<b>Charging Cut-off Voltage</b>	<b>2.75v</b>
<b>Nominal Energy</b>	<b>8.14wh</b>
<b>Nominal Capacity</b>	<b>2200mah</b>
<b>Nominal Charge Current</b>	<b>0.5C A (1100ma) (recommended)</b>
<b>Max Charging Current</b>	<b>1C A (2200ma)</b>
<b>Nominal Discharge Current</b>	<b>1C A (2200ma)</b>
<b>Max Discharge Current</b>	<b>2C A (4400ma)</b>
<b>Internal Resistance</b>	<b>≤55m Ω</b>
<b>Cycle Life / 80%</b>	<b>≥300</b>
<b>Dimension</b>	<b>Max Height - 65mm Max Dia - 18mm</b>
<b>Weight</b>	<b>≤46g</b>
<b>Charging Temperature</b>	<b>0~45°C</b>
<b>Discharging Temperature</b>	<b>20~60°C</b>

<b>BMS Details</b>	
<b>Charging Voltage</b>	<b>12.6v - 13v</b>
<b>Overcharge Voltage Detection</b>	<b>3.9-4.35V ± 0.05V</b>
<b>Over discharge voltage Detection</b>	<b>2.3-3.0V ± 0.05V.</b>
<b>Maximum operating current</b>	<b>6-8A</b>
<b>Internal resistance</b>	<b>&lt;100mΩ</b>
<b>Working Temperature</b>	<b>40°C ~ +50°C</b>
<b>Protection</b>	<b>Short Circuit Protection Overcharge Protection Over Discharge Protection Overcurrent Protection</b>

## **Danger**

- When charging the battery, use dedicated chargers and follow the specified conditions.
- Use the battery only in the specified equipment.
- Do not connect battery directly to an electric outlet or cigarette lighter charger.
- Do not heat or throw battery into a fire.
- Do not use, leave battery close to fire or inside of a car where temperature may be above 60°C. Also do not charge / discharge in such conditions.
- Do not immerse, throw, and wet battery in water/ seawater.
- Do not put batteries in your pockets or a bag together with metal objects such as necklaces, Hairpins, coins, or screws. Do not store batteries with such objects.
- Do not short circuit the (+) and (-) terminals with other metals.
- Do not place battery in a device with the (+) and (-) in the wrong way around.
- Do not pierce battery with a sharp object such as a needle.
- Do not hit with a hammer, step on or throw or drop to cause strong shock.
- Do not disassemble or modify the battery.
- Do not solder a battery directly.
- Do not use a battery with serious scar or deformation.

## **Warning**

- Do not put battery into a microwave oven, dryer, or high-pressure container.
- Do not use battery with dry cells and other primary batteries, or batteries of a different package, type, or brand.
- Stop charging the battery if charging is not completed within the specified time.
- Stop using the battery if abnormal heat, odour, discoloration, deformation or abnormal condition is detected.
- During use, charge, or storage.
- Keep away from fire immediately when leakage or foul odour is detected.
- If liquid leaks onto your skin or clothes, wash well with fresh water immediately. If liquid leaking from the battery gets into your eyes, do not rub your eyes. Wash them well with clean water and go to see a doctor immediately.

## **Caution**

- Store batteries out of reach of children so that they are not accidentally swallowed.
- If younger children use the battery, their guardians should explain the proper handling.
- Before using the battery, be sure to read the user's manual and cautions on handling thoroughly.
- Thoroughly read the user's manual for the charger before charging the battery.
- For information on installing and removing from equipment, thoroughly read the user's manual for the specific equipment.
- Batteries have life cycles. If the time that the battery powers equipment becomes much shorter than usual, the battery life is at an end. Replace the battery with a new same one.
- Remove a battery whose life cycle has expired from equipment immediately.
- When the battery is thrown away, be sure it is non-conducting by applying vinyl tape to the (+) and (-) terminals.
- While the battery pack is charged, used and stored, keep it away from objects or materials with static electric charges.
- If the terminals of the battery become dirty, wipe with a dry cloth before using the battery.
- The battery can be used within the following temperature ranges. Do not exceed these ranges. Charge temperature range: 0°C to 45°C Discharge temperature range: -20°C to 60°C (When using equipment).

## **Special Notice**

- Keep the pack in 50% charged state during long period storage. We recommend to charge the battery up to 50% of the total capacity every 3 months after receipt of the battery and maintain the voltage of cells 3.7~4.1V. And store the battery in cool and dry place.

## **Warranty**

The warranty period of this product is 06 months starting at the date of delivery from the Warehouse.

The Manufacturer has no obligation under this Limited Warranty for Product subjected to the following conditions (including but not limited to):

- Damage caused due to mishandling of the Product.
- Damage due to improper installation; loose terminal connections, under-sized cabling, incorrect series (cannot be used in series) or parallel connections, reverse polarity connections or insufficient space for airflow
- Environmental damage such as inappropriate storage conditions as defined by the Manufacturer, exposure to extreme hot or cold temperatures, fire or freezing, or water damage, impact or collision
- Damage due to improper operation or maintenance such as under- or over-charging the Product, cold temperature charging, lack of cleaning resulting in corroded terminal connections or build-up of dirt, debris, organic matter, fossil fuels or chemicals on the Product casing or packing.
- Product that has been opened, modified or tampered.
- This Limited Warranty does not cover a Product that has reached its normal end of life due to usage which may occur prior to the Warranty Period. A battery can deliver only a fixed amount of Energy over its life which will occur over different periods of time depending on the application. The Manufacturer reserves the right to deny a warranty claim if the Product is determined, upon inspection, to be at its normal end of life even if within the Warranty Period.