

# AY UP LIGHTING SYSTEMS

## BATTERY SAFETY INFORMATION

[WWW.AYUP-LIGHTS.COM](http://WWW.AYUP-LIGHTS.COM)

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### INTRODUCTION

Lithium Polymer (Li-Po) batteries are as safe and as dangerous as any other type of rechargeable battery. Use them correctly and they will perform safely and well.

When using rechargeable batteries, it is very important to design the complete system taking into consideration the cells specifications, the charging system and the application. A correctly designed system will ensure maximum performance as well as safety. This is exactly what we have done with the Ay Up power system.

### SAFETY

Our Lithium Polymer batteries have been design specifically for our Ay Up Lighting System with safety as the main criteria. Not only are we using high quality Li-Po cells for this application, but each battery has an integrated circuit (IC) on board to protect the battery from many abuses. We have addressed the following:

#### **Discharge current:**

The Li-Po cell type is fully compatible with the power requirements of the Ay Up Lighting System. In addition, the on-board IC will cut off power when the discharge current runs above 2.0 Amps.

#### **Over-charging:**

Both the IC on the battery and the charger will cut off power when the voltage reaches 8.4V. This presents two layers of protection against over-charging. In addition, the charging current is a low 500mAh, well within the safety limits for the cells.

#### **Under-voltage:**

The on-board IC will cut off power when the voltage drops to 5V. This will prevent the cells from permanent under-voltage damage.

#### **Short-circuit:**

There is a solid-state short circuit protection on the IC. In a situation where the battery is exposed to a short circuit, for example if the battery cable is damaged, power from the battery is immediately cut off. This protects, the user, the light and the battery. To reset the battery after a short simply plug the battery back into the charger. If the charger circuit does not detect a fault it will reset the battery circuit and begin charging.

#### **Water-resistance:**

Each battery is protected by a rugged water-resistant plastic case. The battery is designed to function when completely submerged in fresh water. Maximum depth of 0.5 metre

#### **Impact damage:**

The robust battery casing is capable of withstanding a 5 metre drop to concrete without breaking or cracking.

**Caution:**

Keep the batteries in a dry place when not in use. Never leave a charging battery unattended and always charge on a concrete, stone or non flammable surface. If charging in your home, workshop or office always fit a smoke alarm and check the functionality of the alarm regularly. If charging from your car, caravan or boat, never leave a charging battery unattended.

It is imperative to use the exclusively designed chargers, models - SLBC 07A, SLBC 08A, DLBC 07A, DLBC 08A & 6LBC 08A to charge all Ay Up batteries. This is because the charger and battery specifications have been designed to be completely compatible.

You can charge your batteries at any discharge state be it from 5 minutes use or 5 hours. Lithium batteries have no memory. When not using your batteries please store in a dry cool place. It is recommended that you charge, discharge then fully recharge at least every 3 months to prevent cell damage. You will enjoy a minimum 500 recharges with all our batteries.

**NOTE: Never store a discharged battery. Doing so could harm the battery and make it difficult to charge again. This is not covered under warranty.**

The battery and charger circuits have been designed to operate together. Do not attempt to use any other charger than the supplied Ay Up chargers to charge Ay Up batteries. Doing so could damage the battery circuit. Our batteries have been designed for low current draw so are unlike any other battery you will come across. They have internal circuitry to monitor; short circuit, overload, reverse polarity and cell balance charging. All these smarts are auto reset once the fault is removed or rectified. If your batteries behave oddly do not use and notify us by email at [warranty@ayup-lights.com](mailto:warranty@ayup-lights.com)

**Warranty:**

Ay Up warranty on batteries and chargers is valid for 3 months from time of purchase. This is a no quibble replacement guarantee. Depending where you are in the world it could take from 1 to 5 days to replace your goods. Any warranty issues should be emailed into us at [warranty@ayup-lights.com](mailto:warranty@ayup-lights.com)

**SAFETY PRECAUTIONS:**

1. Do not use the battery if the casing or cable is damaged
2. Do not use if the charger is damaged
3. Charge battery in dry conditions only
4. No not use any other charger to charge models ML-07A, LU-07A, LL-07A, BU-07A, 3HR-08AS1, 6HR-08AS1, ½ EPIC & EPIC batteries
5. Do not modify the charger, power adaptor, battery or the battery cable
6. The maximum charging time for the small batteries, models ML-07A, LU-07A, 3HR-08AS1 & ½ EPIC is 3 hours and the large batteries, models LL-07A, BU-07A, 6HR-08AS1 & EPIC is 7 hours. If the charger does not fully charge the battery within these times (indicated by the green LED on the charger), disconnect the battery and check for damage
7. If the charger feels hot when charging, disconnect the battery from the charger and the charger from the power supply. Check for damage
8. If the battery feels hot when charging, disconnect the battery from the charger and the charger from the power supply. Check for damage
9. Do not use if the ambient temperature is above 60°C
10. If in doubt, do not use and contact [warranty@ayup-lights.com](mailto:warranty@ayup-lights.com) for advice

## **CHARGING YOUR BATTERY**

We have specifically designed our chargers, models SLBC 07A, SLBC 08A, DLBC 07A, DLBC 08A & 6LBC 08A to charge all our battery types. The charger takes into consideration the parameters of the circuitry on-board the batteries and the cell specifications. It is very important to use only this charger to charge the batteries for safety, to prevent damage to the batteries and to ensure the batteries are properly charged.

### **Charging instructions: 08 Models onwards**

Plug either the 12v car adaptor or the supplied 110 - 240v ac adaptor into the input socket.

Then plug the battery(s) into the charge ports. The light will blink red for charging then when charged will turn to steady green. Charge one, two or six batteries at a time, each port operates independently from each other.

NOTE - Always store your batteries with at least 2 blinks on the fuel gauge. If a battery is left discharged for more than a few weeks it may be unable to hold its charge to capacity. Warranty will become void if left uncharged.

Ay Up batteries have a minimum 500 recharges.

**Caution** - Keep the batteries in a dry place when not in use. Never leave a charging battery unattended and always charge on a concrete, stone or non flammable surface. If charging in your home, workshop or office always fit a smoke alarm and check the functionality of the alarm regularly. If charging from your car, caravan or boat, never leave a charging battery unattended. Do not leave batteries, charged or discharged in a hot car. A good idea is to store batteries in a cool box or esky.

When flying remember to discharge your battery to low (1 flash on the fuel gauge) or discharge the battery so only low power mode operates.