ECTOLABS

Wrist Thrower Light and Sound Kit

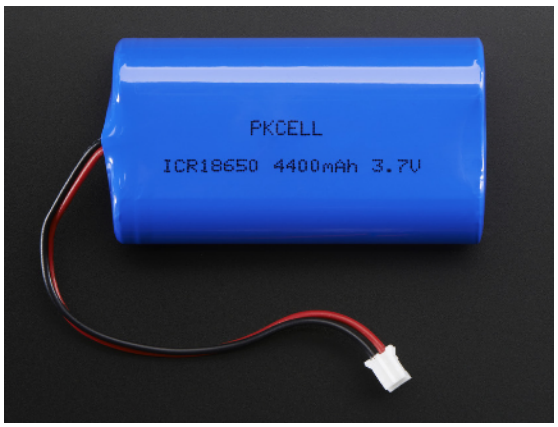
BATTERY GUIDE (v1.2)

Our Wrist Thrower electronics kit contains everything you need to add amazing light and sound to your prop build. However, you will need to purchase a suitable battery in order to power the system. Thankfully, these are readily available from many online retailers.

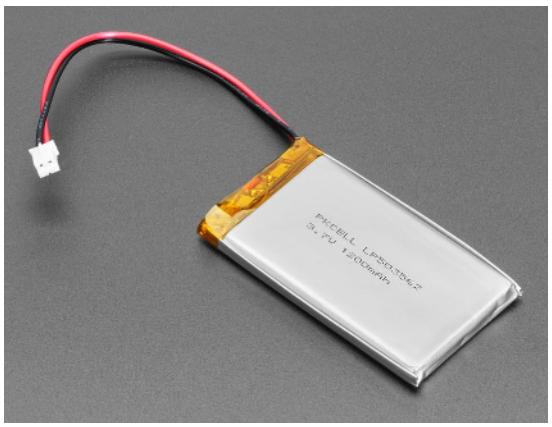
You will need one **Lithium Ion** (Lilon) or **Lithium Polymer** (LiPoly) battery with a voltage of **3.7V**. It must also have **built-in protection** to prevent over-charging. You should be able to find this info in the battery's specification information or datasheet.

These are available in a large number of different sizes and capacities. The capacity is indicated by a number such as 1000mAh, 2000mAh, 3000mAh, etc. The greater this number, the longer the battery will last before you will need to recharge it. The physical size of the battery will also increase as the capacity gets larger, so it is important to choose one that will sit comfortably inside the body of the thrower (please check the dimensions of the battery before purchasing to make sure it will fit).

We recommend a battery of at least **2000mAh** in order to keep your kit running for a good amount of time. It should also have a **2-pin JST-PH** connector (at the end of the red and black wires) in order for it to plug directly into your kit.



A typical Lithium Ion battery. These usually consist of 1-2 cylindrical cells with pink and blue wrapping.



A typical Lithium Polymer battery. These tend to be flatter with silver wrapping.

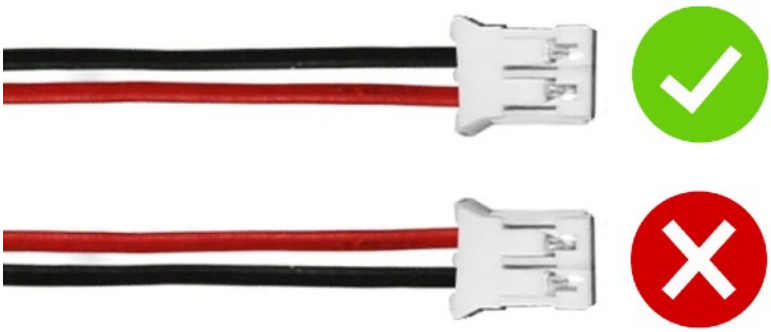
It is important to only use a battery rated at 3.7V - higher voltages will damage your kit.

Connector Polarity

The final thing to check is the 'polarity' of your battery's red and black wires. Put simply, this refers to which way round the wires are inserted into the white connector. Annoyingly, there doesn't seem to be an industry standard for this so you will find some batteries have the red wire on the left and black wire on the right, and others with the black wire on the left and red wire on the right.

However, it is essential that these are correct before plugging the battery into your kit, otherwise you may cause damage to the circuit and your battery.

With the **silver contacts facing you**, look at the white connector and make sure that the red and black wires are arranged as seen in the first image below indicated by the green tick:



If your wires match the bottom image (indicated by the red cross), don't worry - it is relatively simple task to switch them using just a needle or small flat screwdriver to unhook the wires and swap them around.

Please see your Light and Sound Kit's User Guide for a full tutorial on how to do this.

Can I use a battery pack with standard AA batteries?

While we had hoped to provide support for regular AA batteries, we found in tests that standard alkaline cells struggled to provide enough current to the kit - especially at higher sound volumes which causes the entire system to misbehave and reset. AA batteries (or similar) should also never be connected to the supplied USB charger as attempts to recharge them can potentially be very dangerous. Therefore, we only recommend using a suitable LiIon or LiPoly battery as detailed in this guide.

Battery Purchase Links

Compatible Lithium Ion and Lithium Polymer batteries can be purchased from a number of electronics / maker stores online. Below are a list of recommended batteries you can use with your kit. We have provided purchase links for the UK and USA, but you should be able to find similar products worldwide.

Lithium Ion Batteries

These are larger in size and slightly trickier to fit inside the thrower, but the higher capacities will last longer between charges and tend to cope better with the power requirements of the kit - especially when the sound effect volume is set to a higher level:

PIMORONI (UK):
6700mAh
4400mAh
3350mAh
2200mAh

ADAFRUIT (US):
4400mAh
2200mAh

Lithium Polymer Batteries

These will be easier to fit inside your thrower due to their flat shape, but be aware that they may need charging more frequently, especially when using your kit at higher sound volumes which may drain the battery very quickly. We would recommend opting for the highest capacity possible:

PIMORONI (UK):
2000mAh

THE PIHUT (UK):
2000mAh

AMAZON (UK):
3700mAh
2000mAh

ADAFRUIT (US):
2500mAh
2000mAh

AMAZON (US):
3700mAh
2000mAh