

TECHNICAL DATA SHEET FOR

phenoptix ULTRABRIGHT LEDS

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PRODUCT SPECIFICATIONS

The specifications for your LEDs are as in the auction or advertisement from which they were purchased.

IMPORTANT NOTES

LEDs only allow current to travel in a single direction and therefore must be positioned correctly for the circuit to work. The larger leg of the LED must be connected to the positive (red) side from the battery.

If to be used on power supplies that are not rated at the working voltage a current limiting resistor is recommended. These are to be wired into the positive "feed" to each individual LED. This is the best practice and unfortunately a little time consuming. It is possible not to use a resistor by wiring LEDs in series, however power fluctuations are more likely to damage this kind of circuit and irreparably damage your LEDs. Be careful not to overheat your LED, this too can cause irreparable damage.

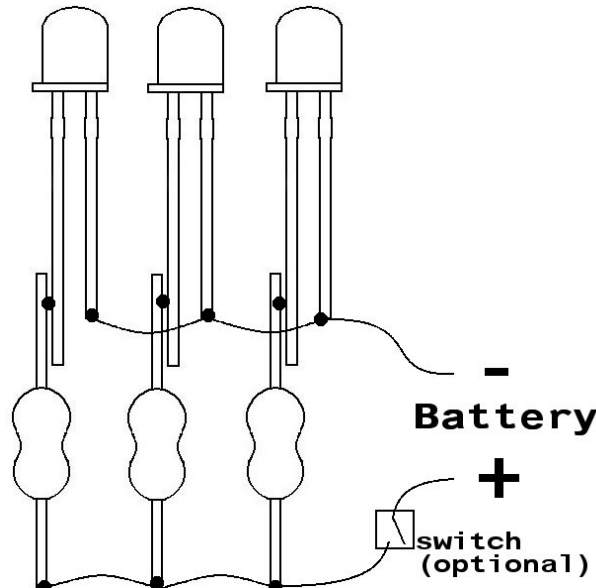
WIRING

The most common use of LEDs requires wiring multiple LEDs in a circuit to be controlled by a single switch. If desired, a fuse can be inserted into the positive feed before the switch. Finding fuses for currents as low as those on which LEDs run is difficult.

This circuit can be used to control any number of LEDs from 1 upwards. The draw on the battery does increase (as expected).

WARNING

HIGH POWER BATTERIES, SUCH AS CAR BATTERIES, ARE EXTREMELY DANGEROUS. NEVER TOUCH BOTH TERMINALS.
DO NOT STARE INTO THE BEAM OF THE LED, THIS COULD CAUSE EYE DAMAGE



RESISTORS

Resistors are a means of reducing current in a circuit. By using these as shown in the previous diagram you can use these LEDs for any DC voltage higher than the working voltage. Finding the correct resistor for your circuit can be done quickly (and approximately) using Ohms Law.

$$\text{Resistance} = \text{Voltage} / \text{Current}$$

For example:

The resistance needed for running an LED at its mid working current 25mA (0.025Amps) on a 12V battery supply.

$12\text{V} / 0.025\text{A} = 480 \text{ Ohms}$. The closest available resistor to this is 470 Ohms.

To save you time a table is supplied

Supply Voltage	Resistor Required		
	20mA	25mA	30mA
4.5	225	180	150
6	300	240	200
7.5	375	300	250
9	450	360	300
10.5	525	420	350
12	600	480	400
24	1200	960	800

The grey column contains the value needed for mid brightness range (Recommended).

Resistors are also rated for Wattage, the amount of energy they dissipate. ¼ Watt resistors are fine up to 12V, after this 0.6Watt and higher resistors are recommended.

If you have any further questions or comments on this sheet contact service@phenoptix.com