

# Dual Photon Torpedo Effect Lighting Kit

By Madman Lighting Inc  
Copyright April 2010, all rights reserved.

**WARNING:** This product contains small parts not suitable for children less than 12 years of age. DO NOT SWALLOW! MAY CAUSE CHOKING OR INJURY!

**WARNING:** Madman Lighting products are shipped in good working condition and are not to be modified or changed by the purchaser. Any change or attempt to repair, change, alter, modify or enhance Madman Lighting products in any way will void any warranty, written or implied.

**ESD WARNING:** Madman Lighting products contain sensitive electronic components and may be damaged by electrostatic discharge (ESD). Avoid shock, sparks, and static electricity by working on a grounded surface or by using a wrist-grounding strip.

Thank you for purchasing a Dual Photon Torpedo Effect Lighting Kit from Madman Lighting. This kit will let you quickly and easily generate a Photon Torpedo effect for any starship kits with minimal soldering and easy to use tools.

## What You Get:

1 Delux-Flasher 24 circuit card	18" multi-strand fiber optics cable	60" red and black hookup wire
2 three mm Red LEDs	2 three mm white LEDs	Instructions on CD ROM
1 pre-wired Fire Control push button	4" of 3/8" diameter heat shrink tubing	

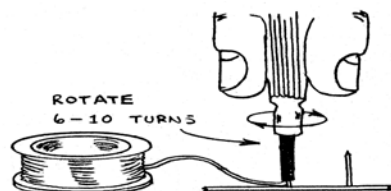
## What you will need:

Tools: Xacto knife, Wire Wrap tool (Radio Shack), small wire cutters.

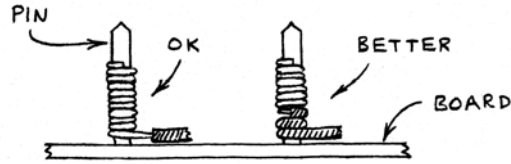
Supplies: 6 to 12VDC battery or power supply. Glue, putty, paint, etc.

No soldering is required when using the Delux-Flasher 24 circuit card. All connections are made with wire wrap wire, which is safer and easier than soldering. It is also easily changed.

Wire wrapping is easy! The wire wrap tool comes with a handy stripper you can use to remove the insulation from the wire. Remove about an inch of insulation, and then insert



the bare end into the guide groove of the wrapping tool. Slip the tool down onto the post and rotate a few turns while letting it gently push itself upwards as the wire wraps around the post. The figure below shows some examples of finished wraps.

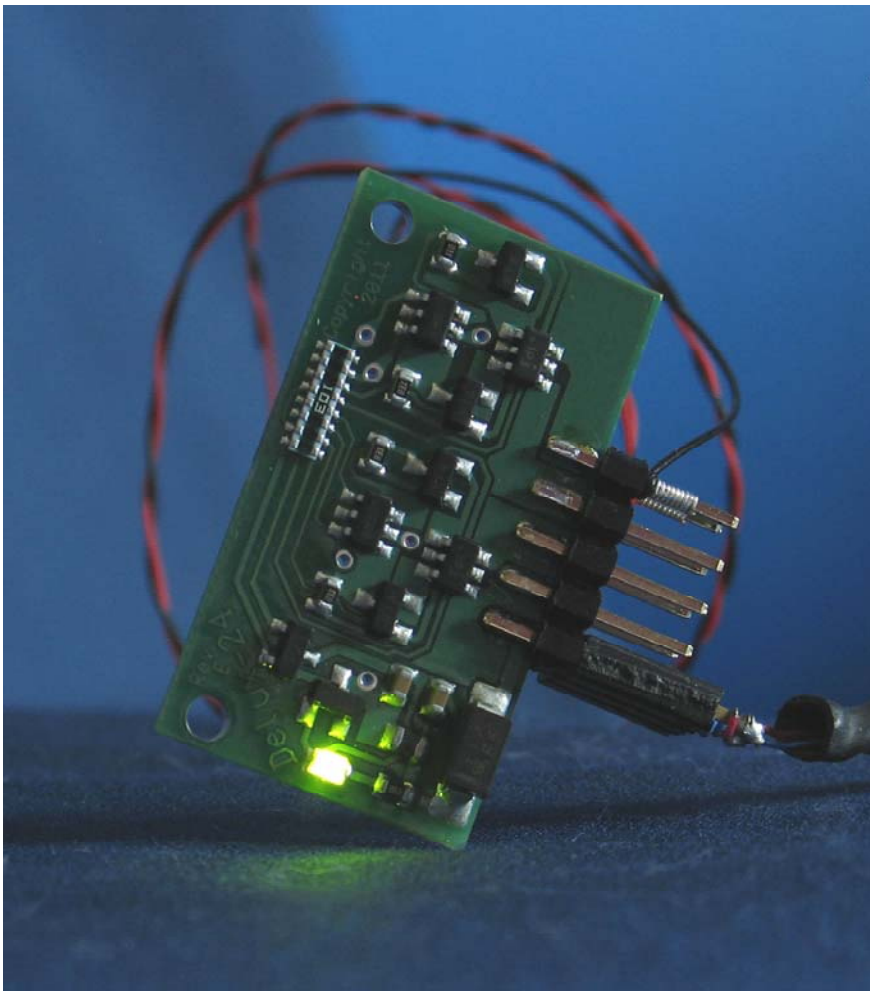


Power wires are provided as part of the kit. One length of twisted red and black wire is available for wiring your Delux Flasher to its LEDs and battery.

Black is for the Negative (-) connection, always the SHORT lead on the LEDs.  
RED is for the Positive (+) connection, always the LONG lead on LEDs.

### **Connecting Power to the Delux-Flasher 24 circuit card**

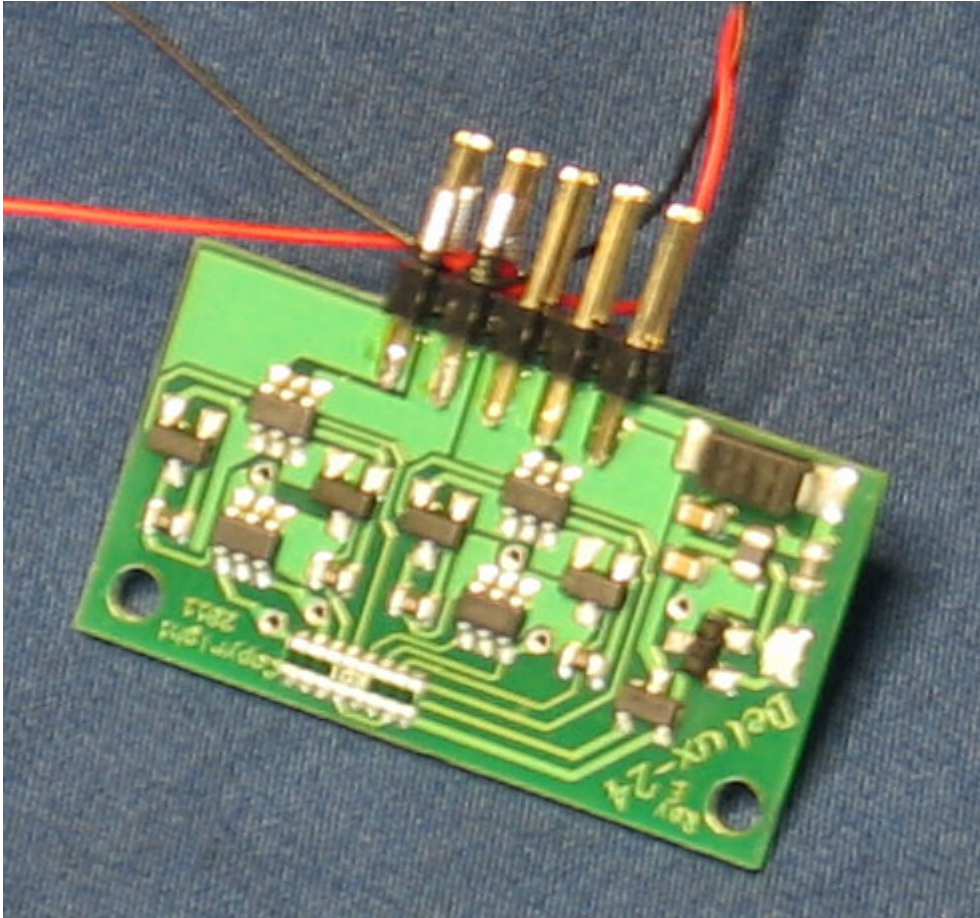
Use any 6VDC to 12VDC battery or power supply that can supply at least 50mA of current to power your kit. Connect power to the power pins of the Delux-Flasher 24 card as shown below. (wire-wrap hookup shown)



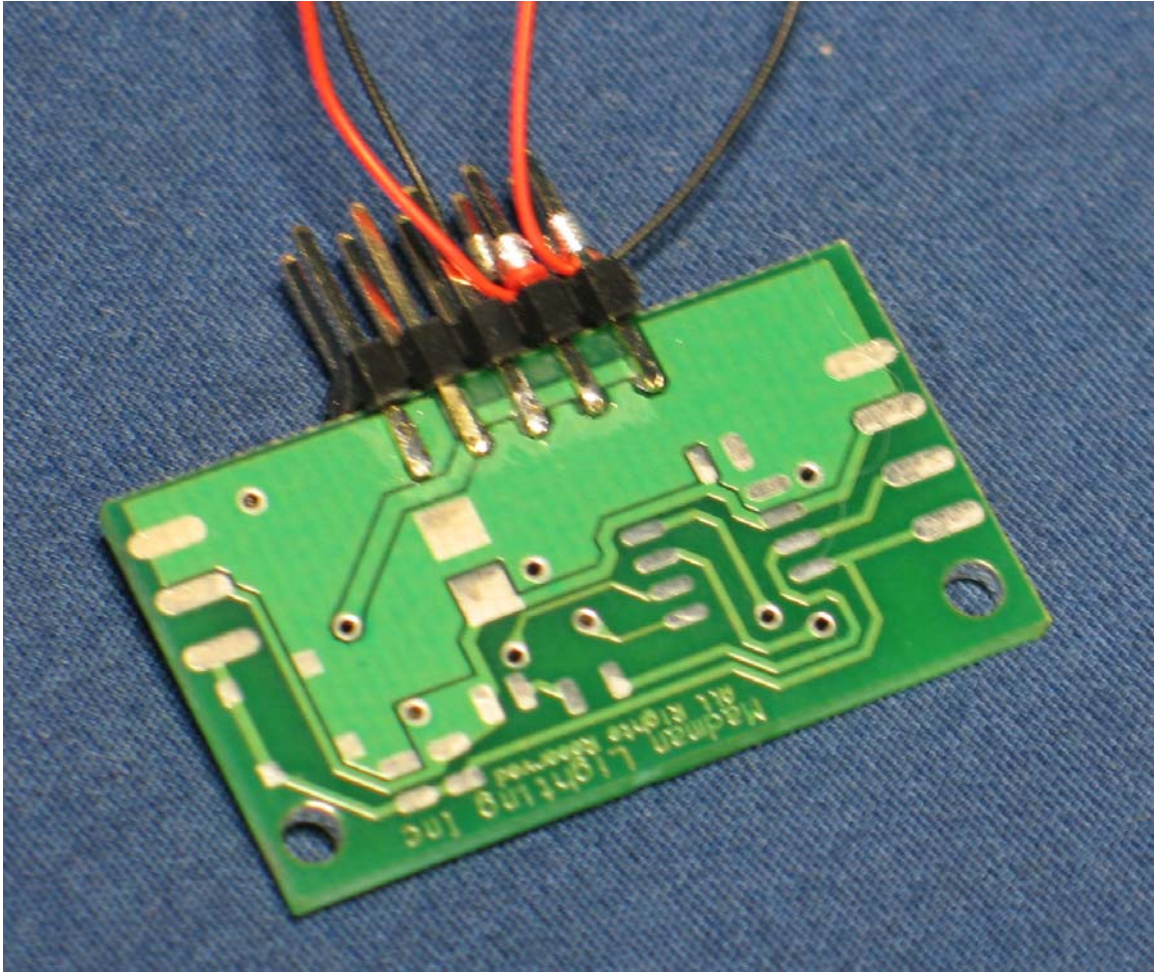
**Power and Ground hookups, Red wire is battery positive (+) , Black is battery negative (-), ie ground**

## Connecting LEDs to the Delux-Flasher 24

The following pictures show how to hook up wire-wrap wire to the Delux Flasher board.



Hookup for two LEDs, showing the red and black wires for the LEDs. Notice that the wires for the LEDs have the **BLACK** wire on **TOP** side and **RED** wire on **BOTTOM** side.



**Hookup for two LEDs on the BACK side of the card. LED RED wires connect on the BACK side of the card.**

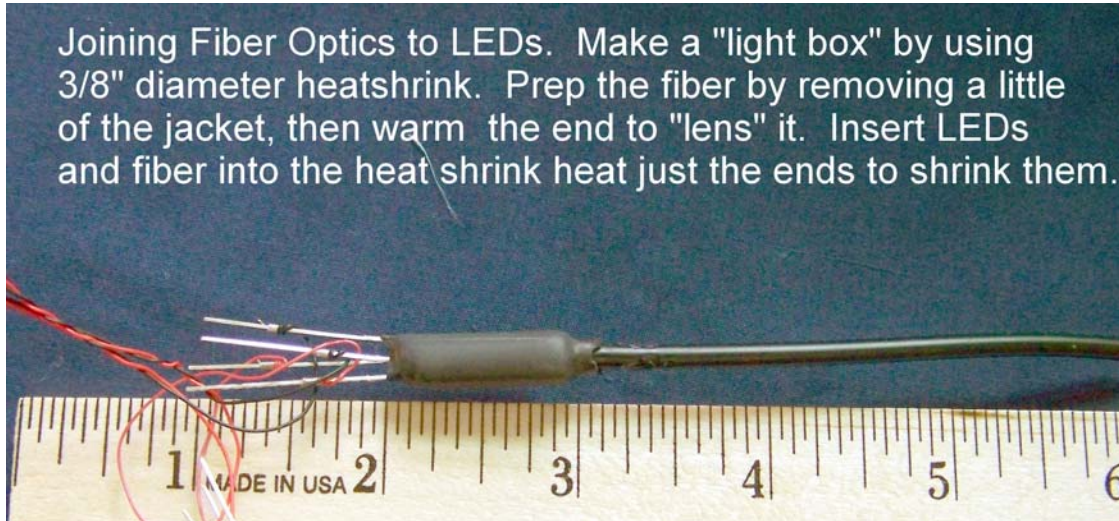
### **Wiring up the LEDs for the Kit**

LED hookup is shown in the diagram at the end of these instructions. Connect wires to the pins as shown above for all the LEDs. The unused pins at the right are for power connections. The pair of wires in back is the fire button connection.

### **Joining LEDs to Fiber Optics (optional)**

You can optionally join the LEDs to the fiber optics to “pipe” the light where you want it. The idea is to create a “Light Box” where the LEDs are at one end, and the fiber optics is at the other. Use the 3/8” diameter heat shrink to make the “box”, actually a tube in this case. Cut about 1” of tubing, insert one white and one red LED into one end and shrink the end, around the LEDs ONLY. Leave the rest untouched. Prepare the fiber by removing about 1/8” of jacket from the bundle at one end. Warm the exposed fibers GENTLY to melt them just a little bit. They will “lens” out and form a smooth rounded

end on each fiber. This will greatly improve light transmission. Insert the “lensed” end into the other end of the heatshrink and shrink the end only to capture the fiber. Now the fiber will transmit the light from both LEDs. Be careful to keep the LED leads separate and avoid shorts! See photo below.



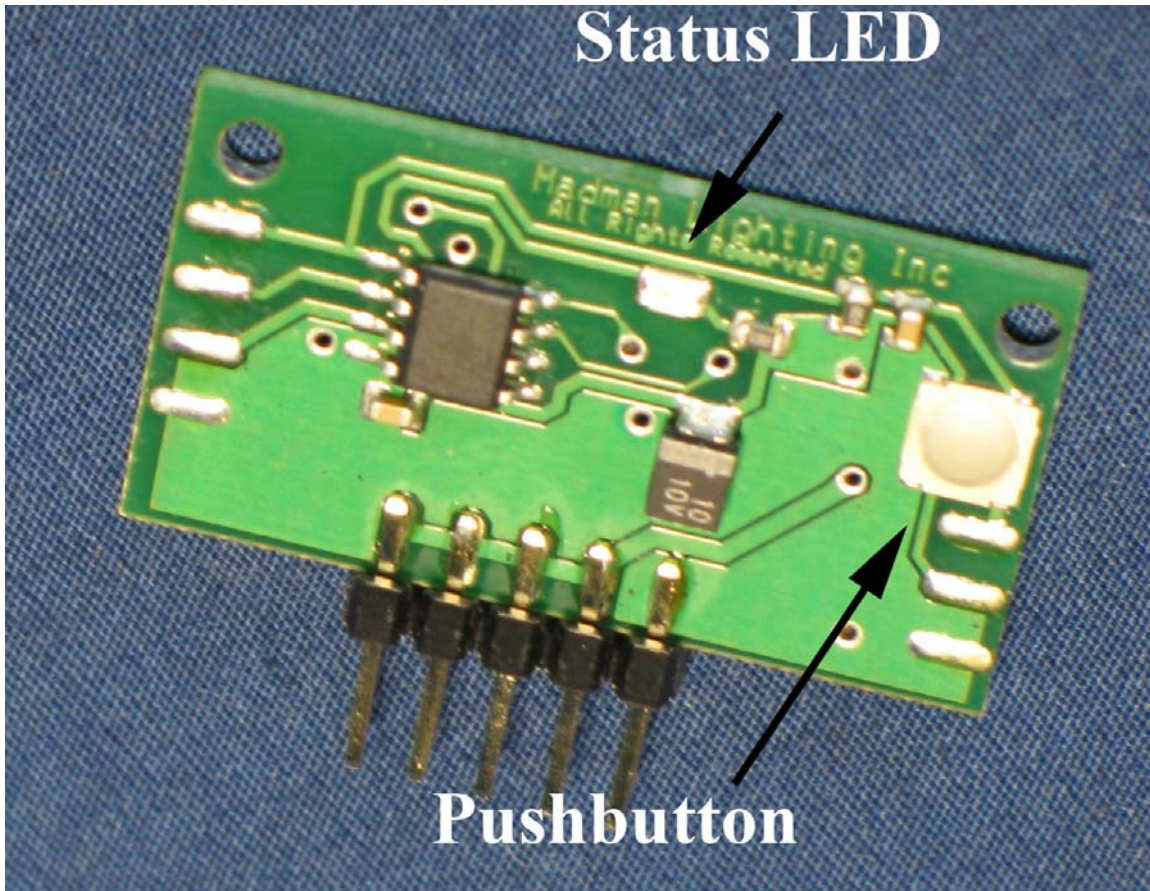
### **Firing the Torpedo Effect and Controlling the Effect Speed**

To fire the Torpedo effect, simply push the fire button. The red LEDs will light dimly at first, and then ramp up in brightness and as they reach full brightness, the white LEDs will flash briefly to simulate launch of the torpedo. After the white flash, the red LEDs will dim rapidly. There will be a brief pause, followed by a repeat of the effect, on the second set of red and white LEDs.

To adjust the speed of the effect, PRESS AND HOLD the fire button. The longer the button is held down, the slower the effect will go. If you hold the button down long enough, the speed will return to full speed again. This is a simple loop: Start at full speed, press and HOLD to slow, keep holding until its very slow, then it will return to full speed.

When you press the fire button, the Status LED on board will light, indicating a “good press”.

Speed settings are saved after each firing and stay set even if power is lost.



Closeup of backside of Delux Flasher board, Speed control button in upper right corner.

Delux-Flasher LED Hookup for Dual Photon Torpedo Launcher Effect.  
Unit requires 6 to 12VDC at 50mA or more.

