



## Flicker Fluorescent Kit

Thank you for purchasing the Flicker Fluorescent Kit from HauntLabs! This kit will allow you to convert any old florescent light fixture into a visually stunning prop that uses LED's to recreate a nearly impossible Hollywood effect using standard fixtures. Be sure to check out the product and assembly videos at the Flicker Fluorescent Kit page at <https://www.hauntlabs.com/> before you begin assembly on your own.

**Assembly Video Link:** <https://www.youtube.com/watch?v=NMbfTH3gVXs>

## Included Parts

QTY	Part
1	3/8" Trade Cable Connector
3	Yellow or Orange Wire Nuts
5	Blue Wire Nuts
4	6-32 x 3/4" Machine Screws
2	6-32 x 1.5" Machine Screws
6	6-32 Nuts
2	6-32 Nylon Lock Nuts
1	Tube Super Glue
4	End Cap Inserts (with wire holes and "FF" markings)
4	Clear Plastic washers
2	~4 Foot White LED Strips
1	Pre-Programmed Effects Controller
1	12vdc Power Supply
1	Power Cord Assembly
1	~12" Grounding Wire
8	Zip Ties
1	Paper Drilling Template
1	Quick Start Guide

## What You Need

You will need the following to successfully assemble your kit:

QTY	Item
1	old florescent light fixture (2 lamp configuration)
2	Fluorescent Tube Guards (T12 size)
1	Can of spray paint (must bond to plastic)
1	#2 Phillips screw driver
1	Flat-blade screw driver
1	Needle nose pliers with wire cutter
1	5 foot length of string or wire
1	8mm open end wrench or 8mm socket and driver
1	Drill or drill press
1	¼" drill bit for metal
1	9/64" drill bit for metal
1	Scotch, duct, or masking tape
1	Broom handle or stick that fits inside the T12 tubes (for pressing down the LED strip)

## Assembly

### Step 1 – The Messy Work

Let's make a mess! There are two parts that require some dry-time, so let's get that started first. You may wish to do this step a day or so before you plan on assembling the rest of the kit!

#### Prepare tube guards

1. Remove the black end caps from your tube guards and set aside, you'll need them in a bit.
2. Hang your tube guards in an environment where you can safely spray paint them. We like to use a stiff wire, such as an old wire hangar, which runs down the length of the tube and makes an L shape at the bottom, allowing the entire outside of the tube guard to be exposed for painting.
3. Use the spray paint as directed to apply a layer or two directly to the outside of the tube(s). Be aware of overspray onto nearby objects and cover them if necessary!
4. Let dry. Apply a second coat if desired. Let dry completely.

#### Prepare tube guard end caps

Included with your kit are end cap inserts designed to easily allow you to mount your LED tubes to the existing light mounts – without the pins. These inserts have a center hole tapped for the included 6-32 ¼" machine screws. It is **CRITICAL** that these inserts be installed in a way where the "FF" marking on the front **READS CORRECTLY WHEN THE CAPS**

**ARE INSTALLED ON THE ENDS OF THE TUBE.** This will ensure that the threads are going the right way!

1. Glue the end cap inserts into the black end caps provided with the fixtures using the super glue included with your kit. **BE CAREFUL NOT TO BLOCK THE WIRE HOLE!**
2. Wait for the super glue to dry **COMPLETELY** before proceeding as you do not want to glue the caps to the end of the tubes in case you need to get in there for any reason in the future.

### Step 2 – Old fixture preparation

1. Remove and properly dispose of old light tubes (see your local dump website for information)
2. Open the fixture to reveal existing ballast and electronics
  - a. Clip wires and remove existing ballast (recycle the ballast, too!)
  - b. Clip wires at the plastic clip ends that hold the light bulb(s), you won't need these wires (but keep the clips!)

### Step 3 – Install the power supply and controller

1. Locate the electrical access hole in the existing fixture. These are typically on the back or sides of the fixture and may already be knocked out. You may already have a cable clamp installed! If so, feel free to use it as long as it's in good shape. If a hole does not exist, carefully make one using a ½" hole saw.
  - a. Install the provided electrical cable clamp (see installation video).
  - b. Pass the cut end of the power cord with the wall plug through the clamp, leaving approximately 18-24" of the cord inside of the fixture. Make sure the green (ground) wire will be able to reach the fixture grounding screw using the wire provided.
  - c. Tighten the screws securing the cable in place.
2. Using the paper drill template, mark where the two controller mounting studs will go. Ensure that the controller will be within 12 inches of the end of the tubes allowing the electrical connections to the LED's to be made.
3. Roughly lay out where the power supply can be mounted, and using a marker, make marks on each corner of the power supply approximately 1" in from each end. You will mark 4 holes total.
4. Install the controller studs (see installation video).
5. Install the power supply using the holes you just drilled and some zip ties.
6. Install the effects controller on the studs.
7. Connect the power supply electrical connection to the controller power terminal.
8. Wire the power cable to the power supply, remembering to ground it to the light fixture using the included grounding wire if your fixture has a ground stud. Secure all connections with included wire nuts.

### Step 4 – Install LED's and tubes

Complete the following steps for EACH tube in your fixture

#### Install LED Strips

1. Attach a small weight to the end of the LED strip using tape and feed the LED strip through the tube, letting gravity pull the weight and the strip through the tube. Send your pull wire or string through the tube in the same fashion.
2. Choose an end to start with, and peel back enough of the paper backer from the LED strip. Attach the paper backer to the pull wire or string with tape. Be careful not to pull off too much tape, and don't get the sticky part dirty!
3. Using your fingers, press down the exposed LED strip to the inside of the tube to secure it.
4. Moving to the other end of the tube, look down the tube and ensure the LED strip is lying flat. Manipulate the strip until it is lying flat.
5. Holding the tube at a slight angle, use your pull wire/string to pull off the remaining backer. Using your fingers, secure the LED strip to the inside of the tube on this end, as well.
6. Take your broom handle or stick, send it down the tube, and use it to apply gentle pressure to the LED strip along the entire length of the tube. This will secure the sticky back of the strip to the tube.
7. Repeat the process for the second tube.

### **Prepare Light Mount Posts & Tubes**

Remove the backing of the light mount posts and remove any wiring or electrical left in the posts.

CAREFULLY remove the material center of each lamp mounting post to allow the machine screw to pass through. These posts are often very brittle and can easily break so take it slow! The needle nose pliers are great for this.

Finally, clear a path for your wires in the light mount posts. The installation video shows this process in detail.

Install the end caps on the tube, carefully feeding the wires from the LED strip through the wire hole. If you really need to secure this end cap, we recommend using electrical tape so you can still access it in the future.

Plan a route for your LED wires! Most fixtures have enough gap/play around the bulb mounting posts where you'll easily be able to get the wires down to the controller. IF NOT, feel free to drill a hole. File the edges of the hole or use a grommet to protect the wires if you do.

### **Step 5 – Hook up tubes to controller & mount**

Now that all the pieces are ready, all that is left is to hook up the LED wires to the controller, and re-assemble the light fixture.

1. Attach the LED wires as shown in the installation video, ensuring the plan for routing your LED wires is followed!
2. The white wire from each tube will connect to the white wire coming off the controller, and the tube wires are color coded. Simply match all the colors and secure with a wire nut.

3. Use the left over zip ties to clean up your wiring, if necessary. This is handy to hold back wires that may interfere with the assembly of the light fixture.
4. Carefully re-assemble the light fixture and ensure that no wires are being pinched or otherwise damaged by the fixture.
5. Secure the tubes to the mounting posts by threading the short machine screws through the plastic washers, through the light mounting post, and into the threaded hole on the end of the light tubes. Tighten carefully.
6. You're done! Plug it in and enjoy!

### Additional Notes

1. For you techies out there – the code on the PIC is NOT protected in any way. You can read the firmware off of it and modify it to suit your desire. Source is also provided on the website.
2. Have a suggestion for a different program? Send it our way using the contact form at [hauntlabs.com](http://hauntlabs.com)!
3. Show us your creation in action! Send us small videos or photos!