



2006 FLTR Led Lighting – stage 1

Scope

Tour Pack: 12” LED array with 100 red LED’s at 1mm spacing. The middle 8.5” is a tail/brake light. The end 1.75” are tail/turn signals. P/N 4000-11

Saddle Bags: 2” LED array with 10 red LED’s at 1mm spacing. Used as Tail/Brake lighting. P/N P/N 4012-11

LED arrays obtained from

http://www.customdynamics.com/flex_led_array.htm

Tour Pack description:

The pic below is from their website. I chose to reproduce this on my bike due to high visibility with minimum clutter.

When the brake is activated these things are very bright. The array is 12” long and can be cut every 5 LED’s. There are solder pads to wire the cut-off segments. The outer D tube is red and 18” long and comes with several end caps. You could make 10 individual LED segments with the kit

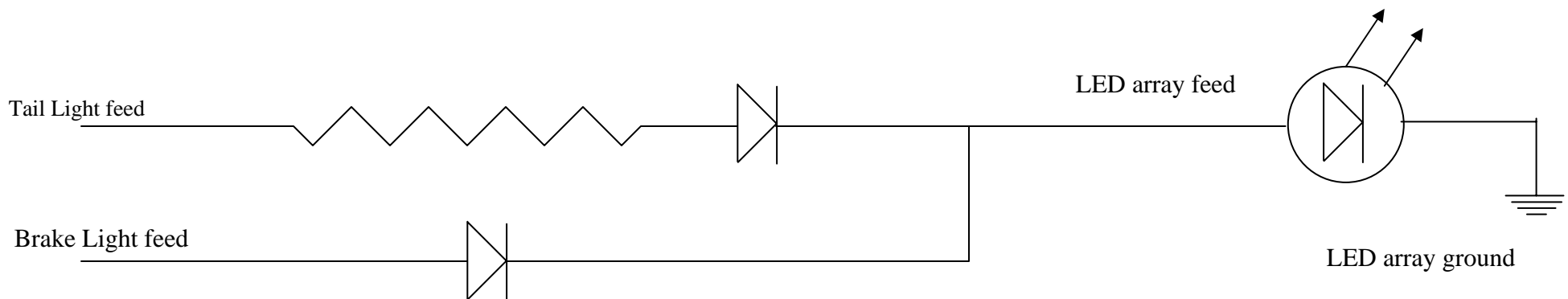




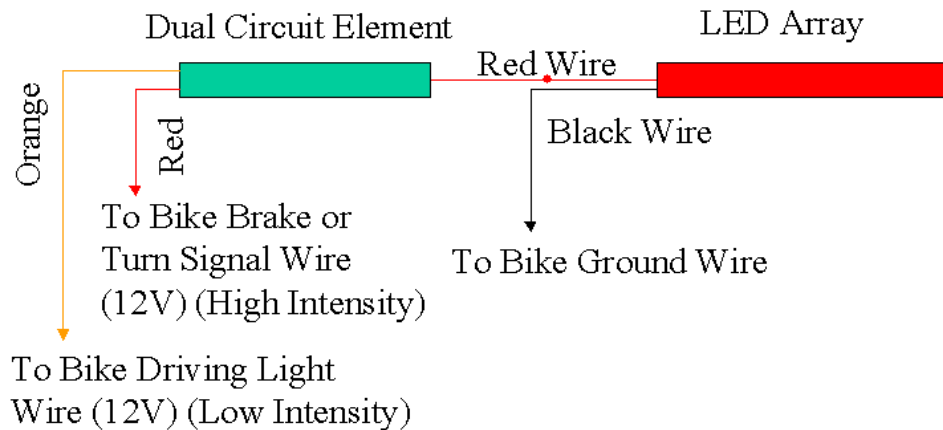
As you can see the segment is very unobtrusive being only 3/8" of an inch tall from the back to the apex of the D. It is held on the Tour Pack by a pre-applied 3M adhesive strip. Once it's on you will destroy the array trying to pry it off so make sure where you want it. I located mine just under the lip where the lid closes. Requires a small hole for the wiring through the TP body.

Brake / Tail circuit: the LED arrays only have two wires, ground and signal (power). Therefore the challenge is how to simulate a tail light and brake light with the same segment. This is done using a resistor in-line with the tail light feed to cut down the voltage to the segment, resulting in reduced brightness of the segment. The brake light feed bypasses the resistor and runs directly to the segment which increases the brightness considerably. Two diodes are in the circuit to eliminate cross-feeding. The diagram below shows the basic layout.

The diodes are 14v 1 watt obtained from Radio shack for about .85 cents for two. The resistor size depends on the number of LEDs in the array. The 10 LED segment worked out to 220 Ohms.



Wiring Diagram Flex LED Array & Dual Circuit Element



This diagram from Custom Dynamics' website shows the basic wiring.

Before panic sets in you need to know that Custom Dynamics has these Dual Element Circuits already made up for sale on their site for \$10.00 each. You will need one circuit for each segment. However I would have needed \$60.00 worth of DCE's so I decided to wire my own. I talked to one of the engineer's at DCE and he gave me a starting point with the size of resistor for each segment size. With that knowledge and research on the internet on LED's I was able to build all my circuits with diodes, resistors and wiring for around \$5.00 total.

I have to give Custom Dynamics kudos for telling a customer how to save some good cash. They could have played dumb and forced me to spend much more money buying the pre-made segments. I will definitely be buying my LED lighting from them and telling all to do the same. Good customer service should be rewarded!

Dual Circuit Element from Custom Dynamics





Picture of the 10 LED array used as Tail/Brake light. When the lid is closed the array is just below the lid. The wiring is sheathed in shrink tubing and glued to the lip with a polyurethane adhesive. On the back-side of bag are two zip tie blocks to attach the wiring and provide strain relief for the quick disconnect plugs. The LED array is P/N 4012-11



Tail Lights on.

I'm still learning my digital camera so the pic is darker than actual



I ordered the multilock plugs from the local HD dealer. They come in 2,3,4,6,and 8 pin configuration. I used the 3 pin multilock for the bags. Ground, Tail, Brake.

Zip tie block.



Views of installed European style junction block on the rail aft of the battery. The harness plug feeding all the rear lighting was disconnected and de-pinned. Tap wires were soldered into each pin and the plug re-assembled. These tap wires (green) were fed into one side of the junction block with the wiring (red and black) from the LED segments set in the other. All wires were numbered for reference and the service manual diagrams updated.

The yellow wire is tapped into the always hot plug and used for the LED dome light inside the Tour Pack

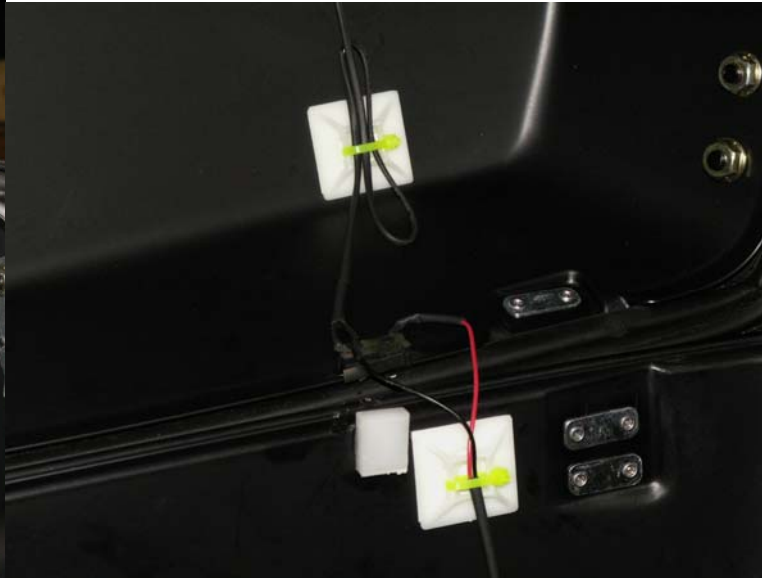


Photo at top left shows the 3 LED light (p/n SIDEFX in Teal) glued to Tour Pack lid. The side firing LEDs shine directly into the box when the lid is open.

Photo at top right shows the lever micro-switch used to activate the LED. It is the black square in the top of the lid. The white square next to the zip tie block is a piece of nylon glued to the side of the box. When the lid is closed the switch ramp contacts the nylon and opens the switch contacts, turning off the light. All of these lower components will be hidden by the inner liner.

Photo at left is from Custom Dynamics website and shows the LED lights

