

## Troubleshooting Color Problems with Flexible LED Lighting Arrays (FLLA)

Rev 1.0

Several problems relating to color output can be diagnosed with the following troubleshooting guide. If you are experiencing any of the following problems, proceed sequentially through the troubleshooting sets in the next section to solve potential problems.

- A. No LED light output whatsoever.
- B. Mixed colors are not consistent along entire strip of Flexible LED lighting
- C. Solid colors (red, green, blue) are missing from one or more locations along length of LED strip
- D. Brightness of light radiated along length of Flexible LED Arrays is dimmer as they proceed away from the power supply.
- E. Color output is mixed up, (i.e. RED generates GREEN or BLUE for instance, and all mixed colors are wrong).

Troubleshooting Steps:

- A. **No light output is generated on connected FLLA strips at all.** If you are not seeing any illumination (LED output), go to A(i) below, otherwise proceed to B(i) below.
  - i. The FLLA strips have a four-wire connector. Three of the wires relate to a primary color and the other wire is the DC+ voltage input. Typically, when LED strips are remoted, the pin-outs are not followed and the 12v+ or 24v + marking on the FLLA strip are not connected to the matching 12v+ or 24v+ connector from the ILC-100. Check your wiring and reverse the connector should you have plugged it in incorrectly. If this solves your problem, but you now have other lighting (color) issues, proceed to B(i) below. Otherwise, you have completed your troubleshooting process.
  
- B. **LED strips produce the wrong primary color (i.e. RED produces GREEN). If you notice this symptom proceed through the steps within this Section, otherwise proceed to Section C.**
  - i. Using a keypad or other user control, turn on the solid color of RED and observe if most or all of the LED elements are generating RED. If all LED elements are producing RED, proceed to B(ii) below. If some of the LED elements are missing the RED output, proceed to C. If most or all of the LED elements are producing some other primary color other than RED, proceed to section B(iv) below.
  - ii. Using a keypad or other user control, turn on the solid color of GREEN and observe if most or all of the LED elements are generating GREEN. If all LED elements are producing GREEN, proceed to B(iii) below. If some of the LED elements are missing the GREEN output, proceed to Section C. If

most or all of the LED elements are producing some other primary color other than RED, proceed to section B(iv) below.

- iii. Using a keypad or other user control, turn on the solid color of BLUE and observe if most or all of the LED elements are generating BLUE. If all LED elements are producing BLUE, proceed to Section E. If some of the LED elements are missing the BLUE output, proceed to Section C. If most or all of the LED elements are producing some other primary color other than RED, proceed to section B(iv) below.
- iv. The FLLA strips have a four-wire power connector. Three of these wires relate to a single primary color (Red, Green, and Blue). The fourth wire relates to the positive DC voltage (12v+ or 24v+ depending upon model). Typically, when FLLA strips are remoted, the pin-outs are sometimes not followed and respective markings on the FLLA printed circuit board do not match the similar markings on the ILC-100. Check the markings and if connected to wrong terminals, correct.

**C. Some LED elements are missing a particular primary color (like RED, GREEN, or BLUE). If you notice this symptom, proceed below, otherwise proceed to Section D.**

- i. Are one or more triplets (three adjacent LED elements) are missing a primary color? If so, proceed through section C(i)a below, otherwise proceed to section C(i)b.
  - (a) If there are a set of three adjacent LED elements that are all missing one or more primary colors (Red, Green, or Blue), this is tell tail sign that at least one surfaced-mounted component (resistor) has been damaged on the PCB from bending or folding the flexible strip. If two primary color within the group of three LED elements are missing, this simply means that two surface-mounted components (resistors) have been damaged. Observe the PCB strip around the location of the missing primary color (red, green, or blue) and see if you see any damage. On DRY FLLA strips, this single segment (about 3" in length) can be removed from the circuit and the remainder of the FLLA will work fine. On IP54 (water resistant) FLLA strips, the silicon covering makes any type of repair very difficult because of the silicon material that covers the copper etch on the board. When you call customer support, refer to an error code ***FLLA-Damaged Resistor***. If you wish to try to salvage or repair the FLLA strip, see the separate document relating to FLLA repair (WIP).
- ii. Are one or more LED elements missing one or more primary colors (RED, GREEN, or BLUE)? If so, proceed through section C(ii)a below, otherwise proceed to section D.
  - (a) If the light output problem seems to be with a single LED element, that means that either that particular LED element is defective or its connection has been damaged on the PCB. Examine around the area of the bad LED and see if you can see any PCB damage. When you call customer support, refer to an error code ***FLLA-Damaged Resistor***. If you wish to try to salvage or repair the FLLA strip, see the separate document relating to FLLA repair.

- D. **Color shifts are experienced at the end of the LED strips.** If you notice this symptom, proceed below.
- i. The FLLA strips have a recommended current rating. Typically, if the end of the LED strip is of a different brightness or color than the beginning of the strip, there is insufficient power being provided to the device. Check your power supply and make sure that the leader wire (wire running from power supply to head-end of FLLA is of sufficient gauge to handle the current.