

## LumaFilm® Light Emitter Installation Instructions

### RGBW LS1006 & LS0006

These instructions are intended to be used as an installation guide to be completed by, or under the direction of, a qualified electrician in accordance with all national and local electrical codes, as well as construction standards.

### **IMPORTANT – Review these instructions prior to installation**

#### **Safety Notes:**

- Ensure the power is off prior to and during installation.
- LumaFilm Light Emitters (referred to as “LumaFilm”, light sheets, or “LumaFilm sheets”) must be powered by a UL Listed or Recognized Class 2, constant current, LED driver.
- LumaFilm is Dry/Damp rated by UL. Do not operate under wet conditions.
- LumaFilm Light Emitters run on low voltage DC current. **Do not plug directly into an AC wall outlet. Damage will occur to the LumaFilm sheets and LEDs will be destroyed.**

#### **Care and Handling:**

- Do not scrape or use excessive rubbing force on LumaFilm sheets.
- Avoid bending, folding, creasing, or repeated flexing of LumaFilm sheets.
- LumaFilm is a flexible light emitter. Do not bend the light sheets to less than a 3” diameter.
- LumaFilm sheets can be damaged by electrostatic discharge, observe precautions for handling electrostatic sensitive devices.
- LumaFilm may be cleaned, with the power off, by gently wiping with a soft damp cloth, using care not to snag or dislodge components.

## Section 1: Attachment Instructions for LumaFilm Light Emitters

LumaFilm can be attached to a wide range of surfaces using mechanical fasteners, adhesive products, or a combination of both. Due to its unique low heat generation, no heat sink is required.

Mechanical fastening can be used on any surface, including drywall, rough surfaces, metal, plastic and smooth surfaces. Mechanical fasteners are recommended for surfaces that are rough, unpainted or dirty.

- Use the factory supplied holes in the LumaFilm sheet.
- Use at least four No. 6 fasteners and nylon washers appropriate for the mounting surface.
  - Nylon washers are to be placed between the head of the fastener and the LumaFilm sheet.
  - Avoid spinning the washer against the LumaFilm sheet when tightening the fastener.
- For bolts and blind rivets, place a washer (of similar metal) between the nut or the expanded shaft of the rivet and the back of the support substrate.
- Additional fasteners may be inserted through carefully drilled holes made in non-electrically active areas of the LumaFilm sheet. Non-electrically active areas are the cross-hatched areas of the LumaFilm sheet.

Adhesive transfer tape 3M 467MP and adhesive foam tape 3M VHB 5952 are approved for use with LumaFilm. Ensure that the surface to which the adhesive tape will be applied is clean and dry.

- Use 3M 467MP on metal, plastic and painted smooth surfaces.
- Use 3M VHB 5952 adhesive foam tape on rough surfaces.
- Follow the tape manufacturer’s instruction for tape application procedures and conditions.
- Apply a strip to each long edge of each LumaFilm sheet.
- Pull back a short length of the adhesive tape liner from each of the two strips of adhesive tape.
- Position the LumaFilm sheet in the desired position and use the exposed adhesive tape to tack the LumaFilm sheet in place.
- Holding the free end of the LumaFilm with one hand, carefully lower the LumaFilm onto the support material. At the same time pull the liner from the adhesive tape strips.
- Use a clean foam paint roller or a finger to apply firm pressure to the LumaFilm sheet over the adhesive tape without exerting shear force on the LEDs.

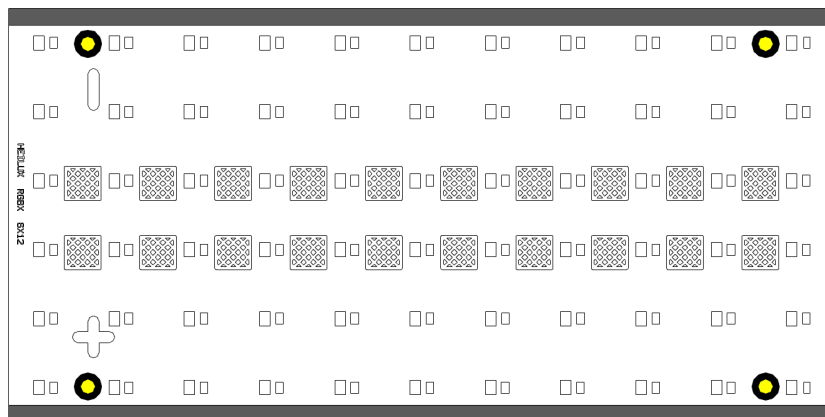


Figure 1 – RGBW Sheet Layout – Holes, Tape, and Additional Mounting Areas

## Section 2: Wire Installation into IDC Connectors

Items required for ease of installation:

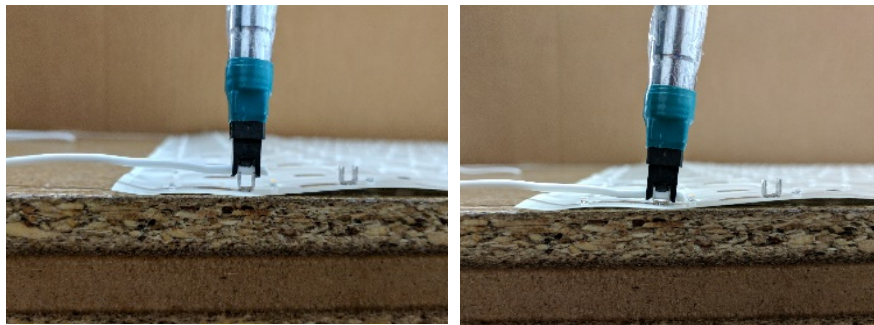
1. One AVX IDC insertion tool bit P/N 9176 (see Figure 2).
2. 18AWG, 7 to 19 stranded wire.
3. Lightweight hammer.



Figure 2 - IDC Tool Bit

Insert wire:

1. Place the LumaFilm sheet on a smooth, hard surface.
2. Place the 18AWG wire over the IDC connector
3. Align the AVX IDC insertion tool bit over the wire and connector. The wire will fit into the notches on the tool.
4. Firmly press the tool, or tap lightly with a hammer, until it bottoms out on the substrate. The connector will pierce through the wire insulation and complete the connection. See Figures 3 and 4.
5. Remove AVX IDC insertion tool bit by lifting straight up from the wire and IDC connector.
6. Trim off excess wire with a standard wire cutter.



Figures 3 and 4 – Insertion of wire using IDC tool bit

Remove wire:

Should a situation arise where removal of a wire is necessary, place the tip of a small flathead screwdriver in the middle of the IDC connector (as shown in Figure 5), to hold down the connector. Slowly pull the wire vertically up until it is released from the connector. Be sure to trim off the pierced portion of the wire before re-inserting.

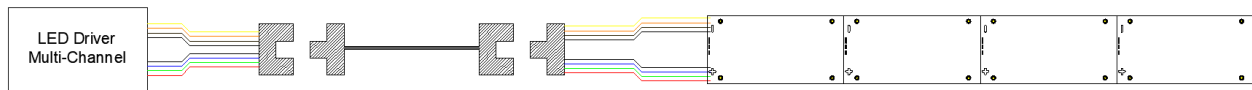


Figure 5 – Removing a wire from an IDC connector

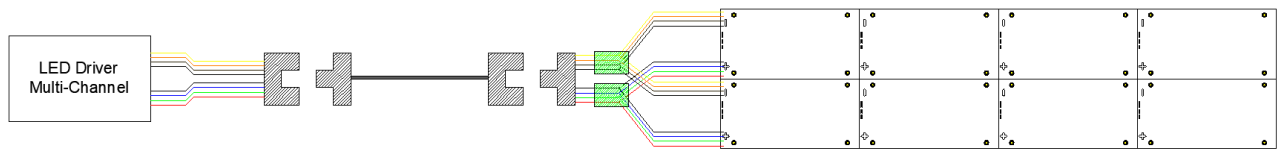
### Section 3: Wiring Instructions for LumaFilm RGBW Light Emitters

LumaFilm’s unique circuit design allows for a range of wiring options. An assembled panel of LumaFilm sheets with a multi-channel LED driver and multiple assembled panels of LumaFilm sheets with a multi-channel LED driver are illustrated in Schematics 1 and 2.

- Always follow the manufacturer’s instructions for wiring of LED drivers and dimmers.
- LumaFilm may be wired together if the total power is at or below Class 2 voltage, current, and power limitations.
- For larger lit areas, use multiple LED drivers driving separate panels of tiled LumaFilm sheets.



Schematic 1 - Single Panel LumaFilm RGBW Light Emitters with LED Driver



Schematic 2 - Two Panels of LumaFilm RGBW Light Emitters with LED Driver

Wires connecting LumaFilm sheets to additional sheets or to the low voltage side of the Class 2 LED driver that are intended to be concealed or routed through building members, or not concealed but with a total exposed length not exceeding 3m (10ft), must be type CL2X, 18 AWG (as listed in Article 725 of the NEC). Class 2 wiring that is not concealed and has a total length exceeding 3m (10ft) must be type SPT2 or better, 18 AWG. Insulation on the low voltage conductors must be rated at, or higher than, the AC supply voltage. DC output conductors and AC input conductors must be physically separated. Connection to the AC input must be made in a junction box. The low voltage output wires from the LED driver and the wires connected to the light sheets may be made without a junction box.

LED drivers may be remotely mounted from the actual location of the LumaFilm sheets. To determine the maximum distance, please contact the LED driver manufacturer for recommendations.

For the mounting and connection of the LED driver, refer to the LED driver manufacturer’s installation instructions. Heilux does not accept responsibility for the incorrect mounting and/or connection to the LED driver. Incorrect mounting and/or connecting of the LED driver may void the LumaFilm warranty.

Most LED drivers cannot be connected to standard dimmers. Refer to the driver manufacturer’s instruction sheet or contact the dimmer manufacturer for the appropriate dimmer, connection instructions, and recommendations for use.

## Section 4: Modifying the Size of LumaFilm RGBW Light Emitters

### *Consult LumaFilm Technical Support before field cutting*

LumaFilm RGBW sheets may be trimmed by the installer to the appropriate length in the field. The sheets can be cut with ordinary scissors. If a pre-programmed driver is being used, please note that the current to the remaining LEDs will increase.

- Keep at least ¼" away from any LED when trimming LumaFilm
- The 12" length of an RGBW sheet is trimmable every 1.1" between the pairs of LEDs.
- The 6" width is not trimmable. See Figure 6.

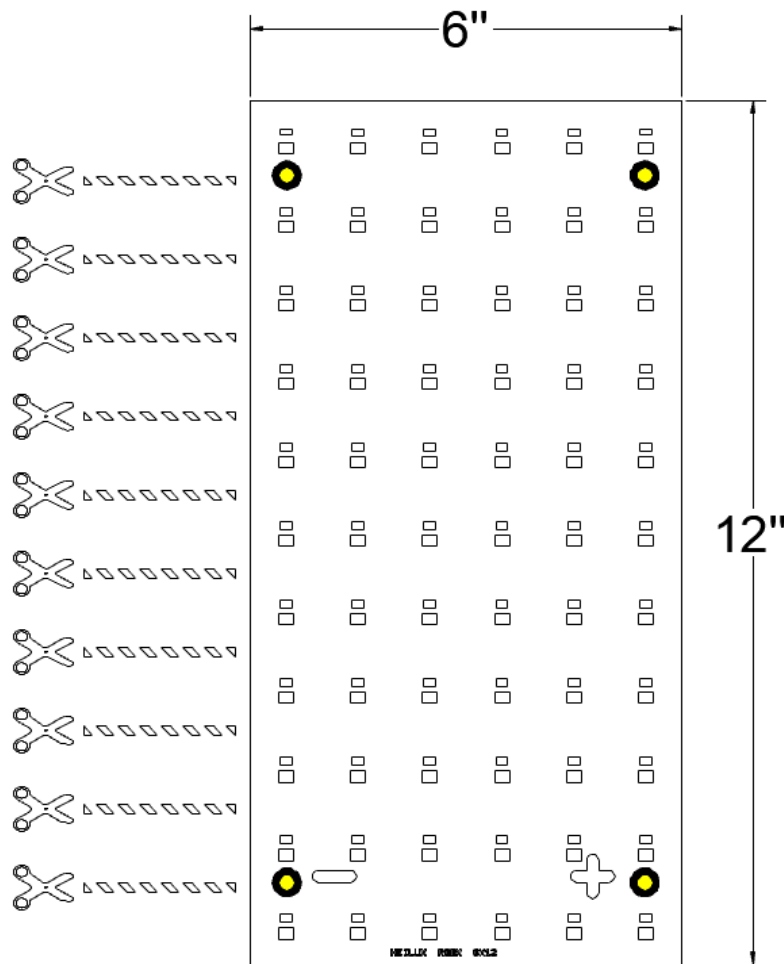


Figure 6 – LumaFilm RGBW Trimming Locations

## **Section 5: Control System & Driver Output**

LumaFilm light sheets should be powered by a UL Listed or Recognized Class 2, constant current, LED driver. A Class 2 LED driver has a maximum voltage output of 60 Vac, and a maximum power output of 100W. It is recommended that a call be made to Technical Support if there is any question about the appropriate LED driver to use.

LumaFilm RGBW is best utilized with a DMX-controllable LED driver. Refer to driver manufacturer's instructions for control modes and individual addressing.

- If Heilux is providing a DMX LED driver, it will be factory programmed to a networked operation DMX mode, the specified output current, logarithmic dimming (if available), and a single DMX address.
- The last driver in a DMX control group must have the DMX signal terminated.

## **Section 6: General Troubleshooting**

If a LumaFilm sheet does not illuminate when the power is turned on:

- 1) Ensure all electrical connections have been made and are intact.
- 2) Check to ensure that the wires from the LumaFilm sheet to the LED driver are correctly connected by polarity.
- 3) DMX-controllable LED drivers must be wired to a DMX controller

The overall light output of the system will not be affected if a single LED on a LumaFilm sheet does not illuminate when the power is turned on. If one section of LEDs on a LumaFilm sheet does not illuminate when the power is turned on, it is likely that the circuit to that section of LEDs is damaged. The LumaFilm sheet should be replaced.

### **Contact for LumaFilm Technical Support:**

952-944-9859

[techsupport@lumifilmled.com](mailto:techsupport@lumifilmled.com)

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