LUMACURVE®
AIRFIELD SIGNS

Installing: Lumacurve XTL Upgrade kits

Replacing Existing Lighting Systems - Sizes 1, 2, 3, 5

The purpose of this guide is to help contractors and airfield personnel install Lumacurve XTL Upgrade Lighting Kits into existing Lumacurve airfield guidance signs. Work through the steps below, and if you have any problems, don't hesitate to call us for technical support at 800-258-1997.

We recommend reading through the entire instructions first and familiarizing yourself with the procedures before beginning the installation.

NOTE: Using Non-OEM after-market parts will void FAA Certification and void manufacturer warranties.
WARNING: The sign must be de-energized before working on Lumacurve airfield guidance signs unless otherwise instructed. Failure to do so may result in personal injury or damage to internal sign components.

Recommended tools:

Small Standard Screwdriver	Power Drill	
#2 Phillips Screwdriver	Drill Bits: 13/64", 1/4"	
7/16" Combination wrench	3/8" Socket Wrench or Nut Driver	Rubber Mallet

1. Removal of existing lighting system

a) Remove sign tops and all panels.

b) Disconnect and remove the power cord from terminal strip. (Photo #1)

c) Remove power wires from all the other transformers inside the sign. (Photo #2)

d) Remove all the screws from the light bars (Photo #3)
(Tools: 3/8" socket of nutdriver and #2 Phillips screwdriver)

e) Remove the light bars from the sign.

Photo #1

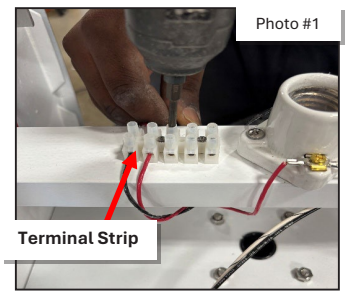


Photo #2

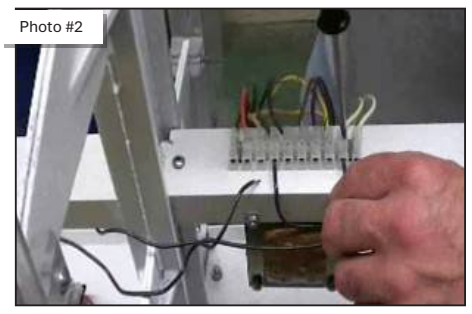


Photo #3

2. Installing the Lightbars

a) Install lightbar with terminal strip and strain relief clamp first. The terminal strip end must be installed closest to the power cord. (Photo #4)

b) For signs with more than one module, the lightbars of the additional modules must pass through the second branch of the trees and installed in order. (Photo #5)

c) Reinstall all the tops and tighten all the turnfasters. This must be done prior to tightening the lightbars into place. Reinstalling the tops prior to tightening the lightbars ensures that the sign frame is aligned and tops will fit properly.

d) After replacing tops and tightening turn fasteners take a rubber mallet and give a firm tap to the top of the end panel closest to the power cord. (Photo #6)

Photo #4

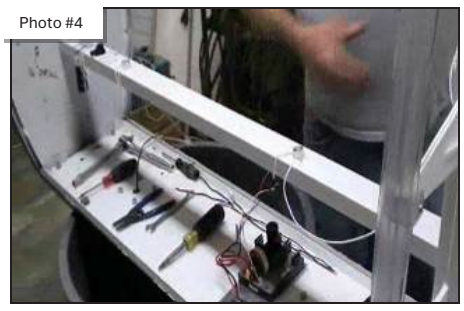


Photo #5

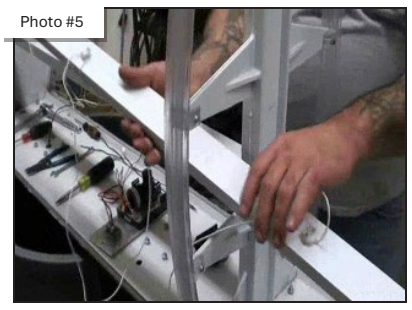
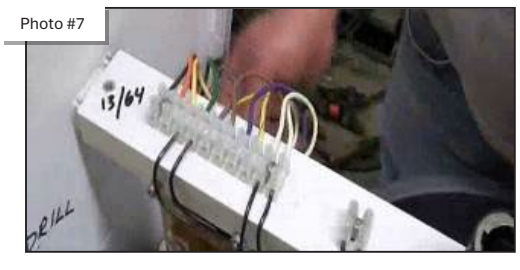


Photo #6

Photo #7



e) Drill new holes in the new lightbars. Reason: Existing holes don't always line up with new lightbars, ensures proper fit of lightbars in the frame. (Photo #7)

f) Replace all screws in lightbars and tighten them with 3/8" socket or nutdriver and #2 Philips screwdriver. **Note: Once lightbar screws are tightened and lightbar is secure, tops may be removed again to allow more light and headroom while installing components.**

3. Installing Components on the End Panel

a) Install controller and bridge rectifier (both are mounted on an aluminum plate) on end panel closest to power cord. (Photos #8 & #9)

i. Bottom of controller/bridge rectifier plate should be 2" up from top of lightbar, and the plate should be centered on the end panel.

ii. Drill 13/64" hole through end panel.

iii. Install, tighten and secure mounting plate (with electronics). Center plate if needed.

Photo #8

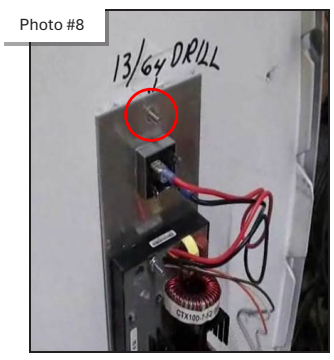
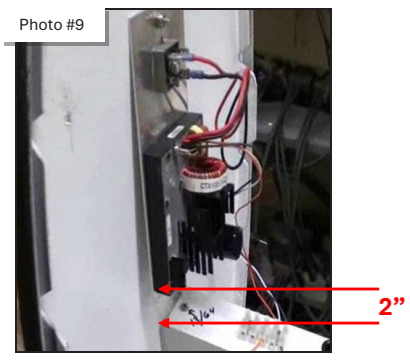


Photo #9



4. Making the Electrical Connections

Note: DC wires from controller shall be connected to the bridge rectifier. Red, (+) DC wire shall be connected to the bridge rectifier's positive (+) terminal (orientation 90° different from remaining three terminals). Black (-) DC wire shall be connected to the bridge rectifier's negative (-) terminal (diagonally opposite (+) terminal.)

a) Reinstall power cord

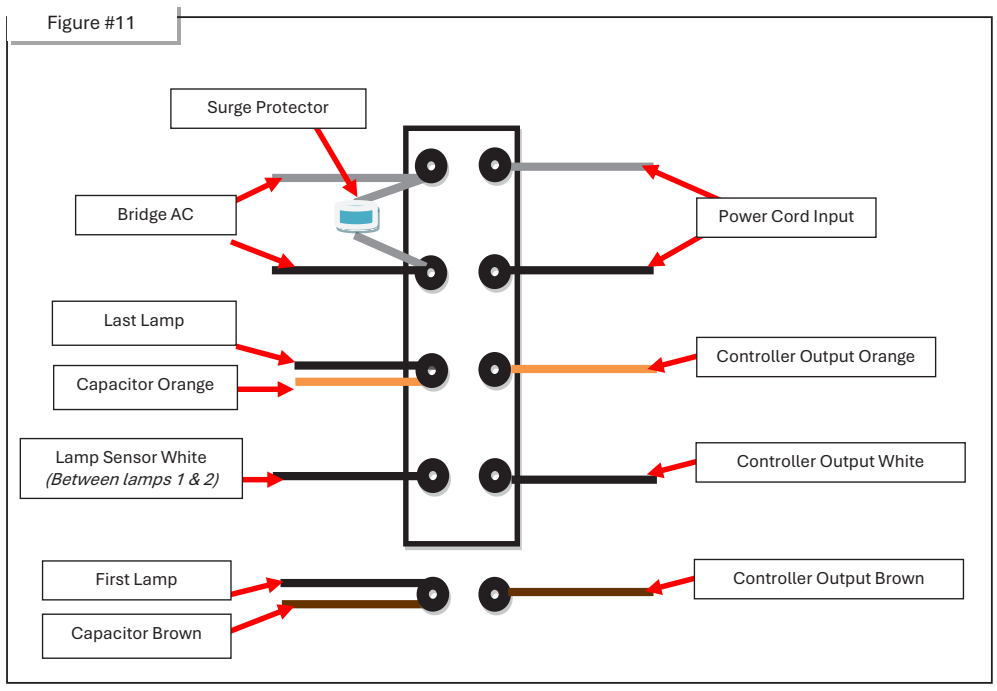
i. Feed the power cord through the cable clamp on lightbar. Pull the power cord so that there is no slack between the sign bottom and cable clamp. This ensures that the power cord will disconnect in the event the sign is knocked over, avoiding potential component damage. (photo #10)

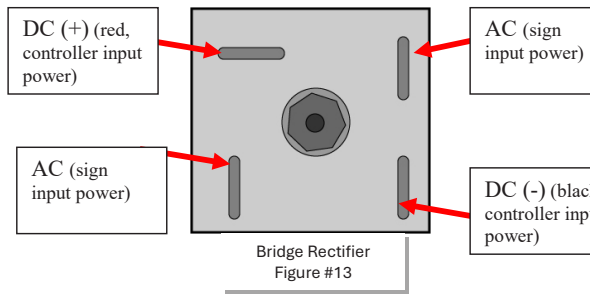
ii. Tighten clamp around wires but do not over tighten. (Photo #10)

a) Reinstall the power cord leads on the two terminals on the power strip opposite the surge protector (Figure #11). Excess slack in power cord should be zip-tied to the light bar using provided zip-tie. This will eliminate any potential shadowing from excess wire onto the panel faces.

Photo #10

Figure #11





Bridge Rectifier
Figure #13

b) Connect the bridge rectifier. Install black power AC power leads on the terminal strip opposite the input power cord, and in parallel with the surge protector. These leads are not polarity sensitive. Bridge rectifiers DC power (red (+) and black (-)) should provide controller input power (figure #13).

c) Connect the controller electronics. Install controller output leads to three available terminals on the lamp-side of the terminal strip. Install controller output orange opposite capacitor orange. Install controller output white opposite lamp sensor white. Install controller output brown opposite capacitor brown (Figure #11).

d) Install XTL lamps.

Note: Do not touch the lamp's globe. Dirt and oils from your fingers deposited on the globe will greatly reduce lamp life. New lamps come in individual plastic bags. Leave the bag over the globe portion of the lamp during installation to ensure you don't directly touch the glass. Just remember to remove the bag before powering up the sign. Dirt and oils can be cleaned from the globe using rubbing alcohol.

WARNING: the use of non-OEM replacement lamps may damage electrical components as well as cause premature lamp failure. Only OEM Lumacurve lamps will maintain FAA photometric requirement and factory warranties.

5. Adjusting the newly installed XTL system

Recommended tools:

- True RMS Multimeter
- Slot head screwdriver (small)

a) Set the meter's dial to volts and then go to DC (you will only adjust DC volts on the sign).

b) Connect the meter's leads into the brown and white wires on the terminal strip. (Figure #14)

c) The adjustment screw is on the upper left hand corner of the controller. Using a tap screwdriver adjust to voltage to 9.5 volts DC. Important, the Constant Current Regulator (CCR) should be set to the lowest current step Counterclockwise decreases voltage; Clockwise increases voltage. (Photo #15)

Figure #14

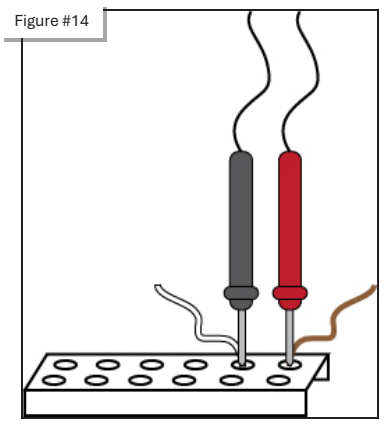
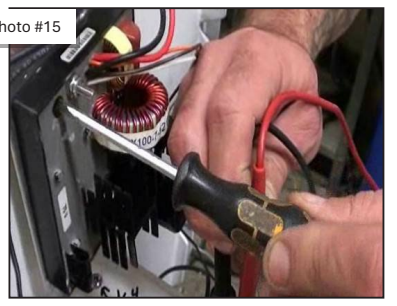


Photo #15



9. Installing the OEM Electrical Upgrade Nameplate

Each Lumacurve XTL Upgrade kit comes with an OEM upgrade nameplate (Photo #16) & (2) 1/8" pop-rivets. It is essential that the correct nameplate be installed after the electrical installation is completed. This is critical information for the future maintenance of the sign. With the exception of size one (small) LOVA & XTL signs, the nameplate should be mounted just below the original factory nameplate.

a) Identify the correct nameplate with the accurate sign number & catalog number for the power kit installed.

b) Identify a location to mount the nameplate on the end panel (power leg end). Be sure it is clear of any electrical components that may be mounted on the inside of the end panel. In most situations, just below the original factory nameplate is recommended.

c) While holding the nameplate in place, drill through the holes with a 1/8" or 9/64" drill bit.

d) Install the 1/8" pop-rivets securing the nameplate in place.

Photo #16

10. Checking system & restoring the sign to service

The electrical components should now be mounted and wired properly.

a) Insert all lamps into the sockets.
Warning: the use of non-OEM replacement lamps may damage electrical components and cause premature lamp failure. Only OEM Lumacurve lamps will maintain FAA photometric requirements and factory warranties.

b) Check that the adequately sized isolation transformer is being used. See chart.

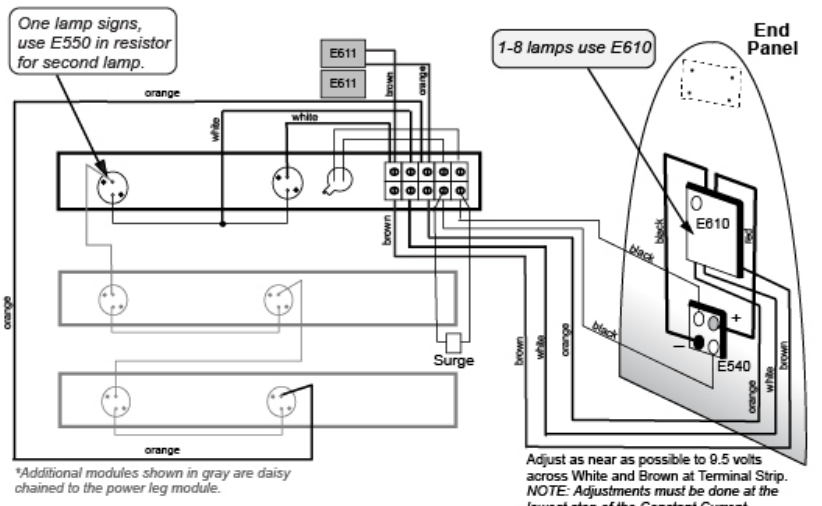
c) Power up sign and check that all lamps are functioning properly.
Note: If sign is not functioning, revisit the above steps once again to ensure the sign is wired correctly. If there are still problems, contact us for technical support at 800-258-1997 or visit our Help Yourself Center and for videos and troubleshooting documents.

d) Reinstall all the legend panels. Replace and secure all sign tops.

LUMACURVE AIRFIELD SIGNS

Parts & Electrical Information

XTL Wiring Diagram (Style 2 & 3)



XTL VA Loads, Power Factors and Isolation Transformers

		XTL Lighting Systems					
		FAA Style 2 (4.8A-6.6A)			FAA Style 3 (2.8A-6.6A)		
Sign Size &		XTL 20W Quartz			XTL 20W Quartz		
Module Length	Lamps	Isol Xfmr	Max VA*	Pwr Factr*	Isol Xfmr	Max VA*	Pwr Factr*
Size 1, 1-mod	1	100W	71	0.89	100W	71	0.89
2-mod	2	100W	79	0.93	100W	78	0.92
3-mod	3	200W	102	0.93	300W	107	0.91
4-mod	4	200W	127	0.93	300W	131	0.92
Size 2, 1-mod	2	100W	79	0.93	200W	78	0.92
2-mod	4	200W	127	0.93	300W	131	0.92
3-mod	6	300W	167	0.93	500W	174	0.92
4-mod	8	300W	214	0.94	600W+	222	0.93
Size 3, 1-mod	2	100W	79	0.93	200W	78	0.92
2-mod	4	200W	127	0.93	300W	131	0.92
3-mod	6	300W	167	0.93	500W	174	0.92
4-mod	8	300W	214	0.94	600W+	222	0.93
Size 5, 1-mod	2	100W	79	0.93	200W	78	0.92
Size 4, 1-mod	4	200W	127	0.93	300W	131	0.92

* Two certified isolation transformers and one siamese pigtail required to satisfy 600W requirement.
* Measured at 6.6A.

8/16
c33.Wiring_XTL