



## Installation Instructions

for Taxiway & Runway Signs

Size 1, Size 2, Size 3 & Size 5

### DO NOT DISCARD

Important information for AIRPORT MAINTENANCE DEPT

#### To install:

1. Locate the frangible couplings (item #1 see **Electrical Connection Detail**) and floor flanges (#2) that are provided with the sign. (For small sign orders, they may be packaged in the box with the sign. Larger order will have a separate carton containing this hardware.) Coat the threads of the frangible couplings with an anti-seize compound or petroleum jelly, then screw them hand tight into the floor flanges .

*Note: It is also important that the correct couplings be used with the sign. The coupling size and mode are etched on the outside of the coupling. Incorrectly sized couplings will not meet FAA frangibility requirements.*

2. Locate the power cord (#4). It will be visible protruding from the power leg slipfitter (#3).

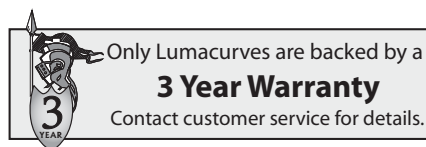
*Note: the power cord and electrical components are located in the module nearest the nameplate on the end of the sign.*

3. Slip the coupling/floor flange assemblies into each slipfitter (#3) on the bottom of the sign. Tighten the set screws (#5) just enough to hold them in place. Floor flanges must be oriented with mounting holes perpendicular to the sign base. For the power cord leg, pull enough power cord slack from the sign to allow a connection with the isolation transformer secondary extension cord (#6).

*Note: The power cord that is provided is extra long to allow exiting the sign through any leg desired.*

***Note: in a typical remote L867 base can installation, the sign leg is connected to the remote can with 2" rigid galvanized steel (RGS) conduit. An isolation transformer secondary extension cord (#6) is fed through the conduit and connects the sign power cord plug to the isolation transformer secondary plug.***

4. Locate the cable clamp (#7, provided with the sign for most new sign installations). Tighten the cable clamp (#7) onto the isolation transformer secondary extension cord female plug at grade level. Ensure the cable clamp side labeled "TOP" is facing up. The cable clamp should nest on the under side of the floor flange (#2) and on top of the conduit (#8) that is flush with the surface of the concrete mounting pad. Insert the power cord plug (male) into the isolating transformer secondary extension cord plug (female). *Note: As required by the FAA, this step in conjunction with step 6 ensures that the power cord will be disconnected/unplugged in the event that the sign is knocked over.*



Only Lumacurves are backed by a

**3 Year Warranty**

Contact customer service for details.

### STANDARD SIGNS, INC.

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### To install (continued):

**5.** Lift the sign upright into place on the cement pad. Use the sign as a template to locate and mark mounting holes. Place sign off to one side and install anchor bolts. *Recommended anchor bolts: 3/8" x 5" for mode 2 signs, 1/2" x 5" for mode 3 signs.* Position sign over the anchor bolts and fasten the floor flanges to the cement pad with lockwashers and nuts. Temporarily loosen the slipfitter set screws (#5). With a pipe wrench, tighten the frangible couplings 1/4 - 1/2 turn into the Floor Flanges. (*Warning: Do not use the wrench above the shear groove.*) Ensure that the sign is level and the modules are aligned by sighting down the length of the tops. Tighten the slipfitter set screws using a socket wrench.

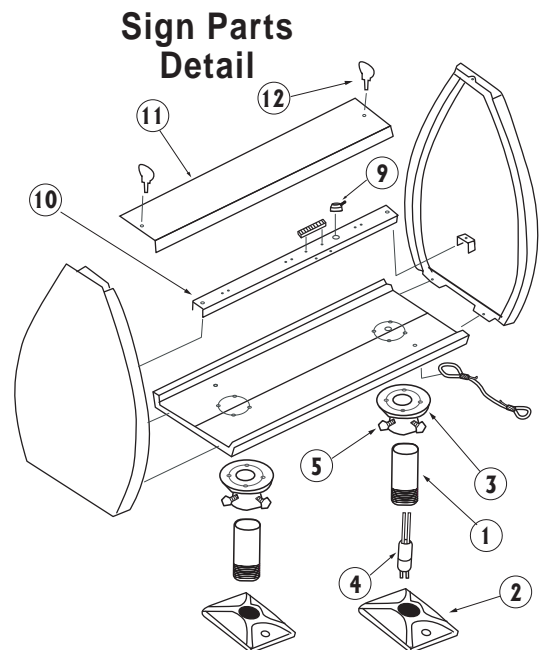
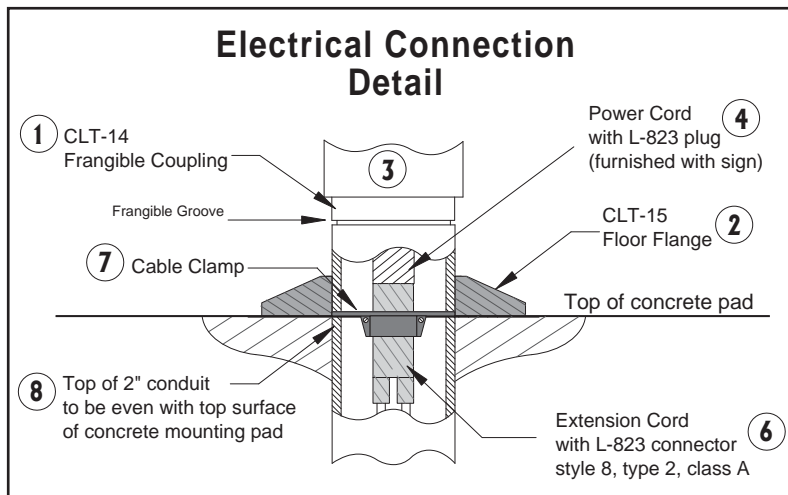
**6.** Locate the strain relief clamp (#9) on the inside of the sign. It can be found on the light bar (#10) on which the lamps are mounted. Remove the sign cover (#11) nearest to the nameplate on the end of the sign by unscrewing the two turn fasteners (#12) and then slide out the legend panels. Remove all slack in the power cord between the plug and the strain relief clamp, then tighten the set screw on the strain relief clamp. Extra cord can be coiled & placed in the bottom of the sign. (*As required by the FAA, this step in conjunction with Step 4 ensures that the power cord will be disconnected/unplugged in the event that the sign is knocked over.*)

**7.** Electrical adjustments are now required. Power supply settings have been factory set but must be rechecked with an RMS meter once installed in the airfield environment. Please refer to the "Parts & Electrical Information" sheet for the lighting system being installed. Follow the "Installation" portion of those directions to ensure that the electrical settings are correct.

**8.** Replace any covers removed.

**Note: sometimes legend panels seem to obstruct the re-installation of the top covers.**

*If panels are not engaging on the underside of the top cover into the gasketed channel, please try the following: Engage the turn fasteners loosely. With the palms of your hands, slap or "pop" the centers of the opposing panels inward simultaneously. The internal pressure should apply a force that allows the top to drop in to place. Apply pressure downward on the top. If the technique worked and the panels are engaged properly, the resistance (or obstruction) to tightening the turn fasteners should be eliminated.*

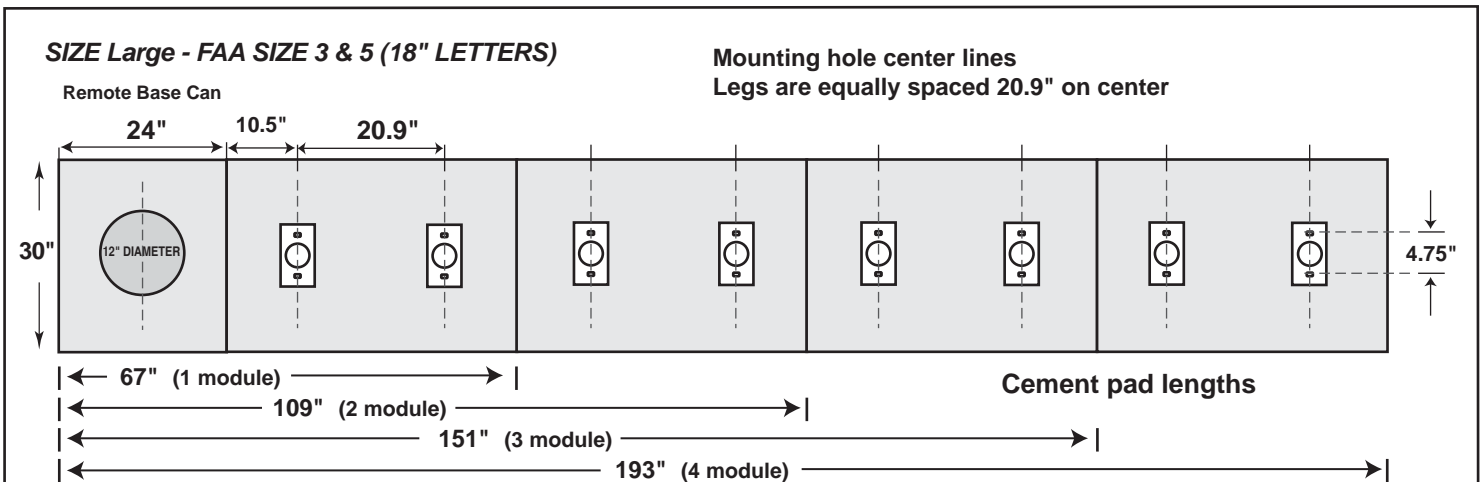
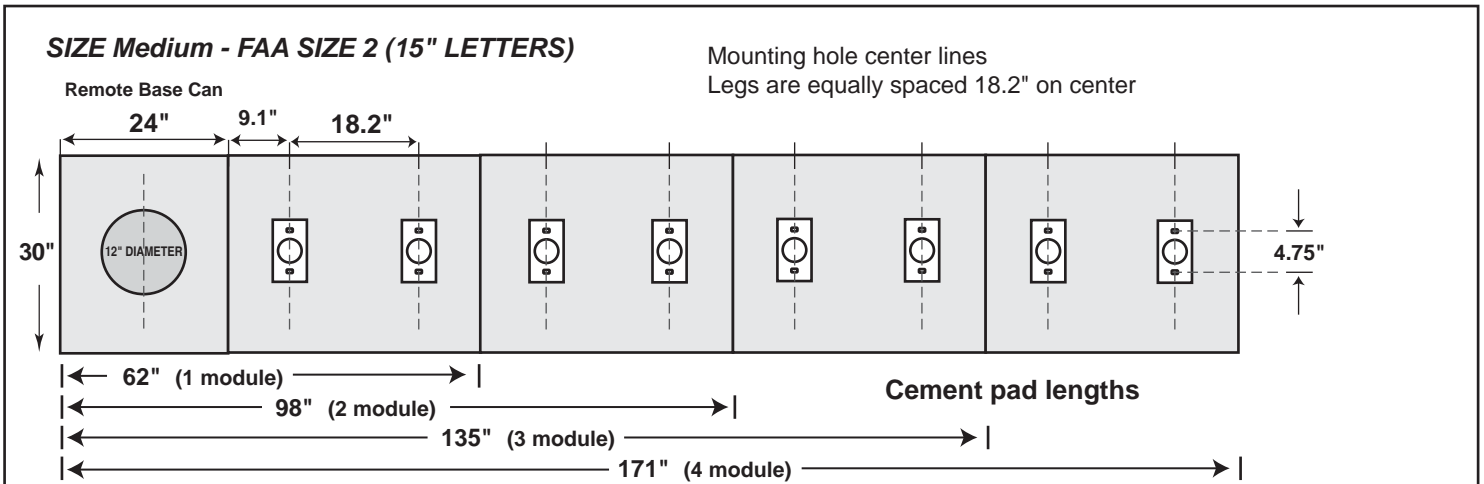
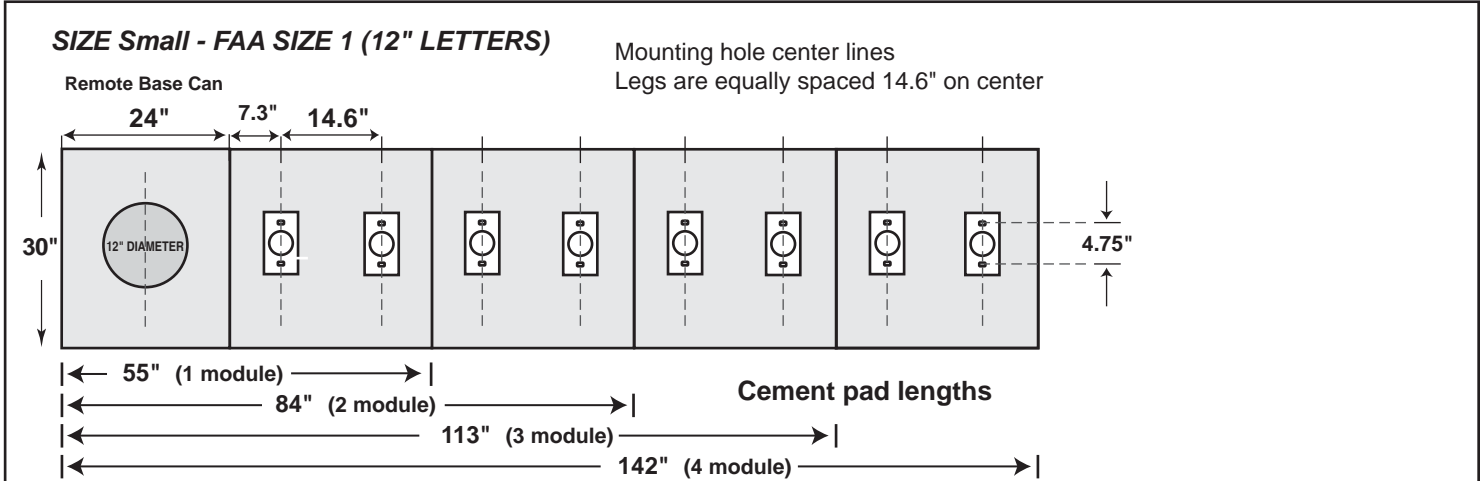




# Installation Instructions

Pad dimensions & mounting locations  
Sign Sizes: 1, 2, 3 & 5

## Standard Installation - "Inner Mount" (For Mode 3 or "Outer Mount" see separate instructions)

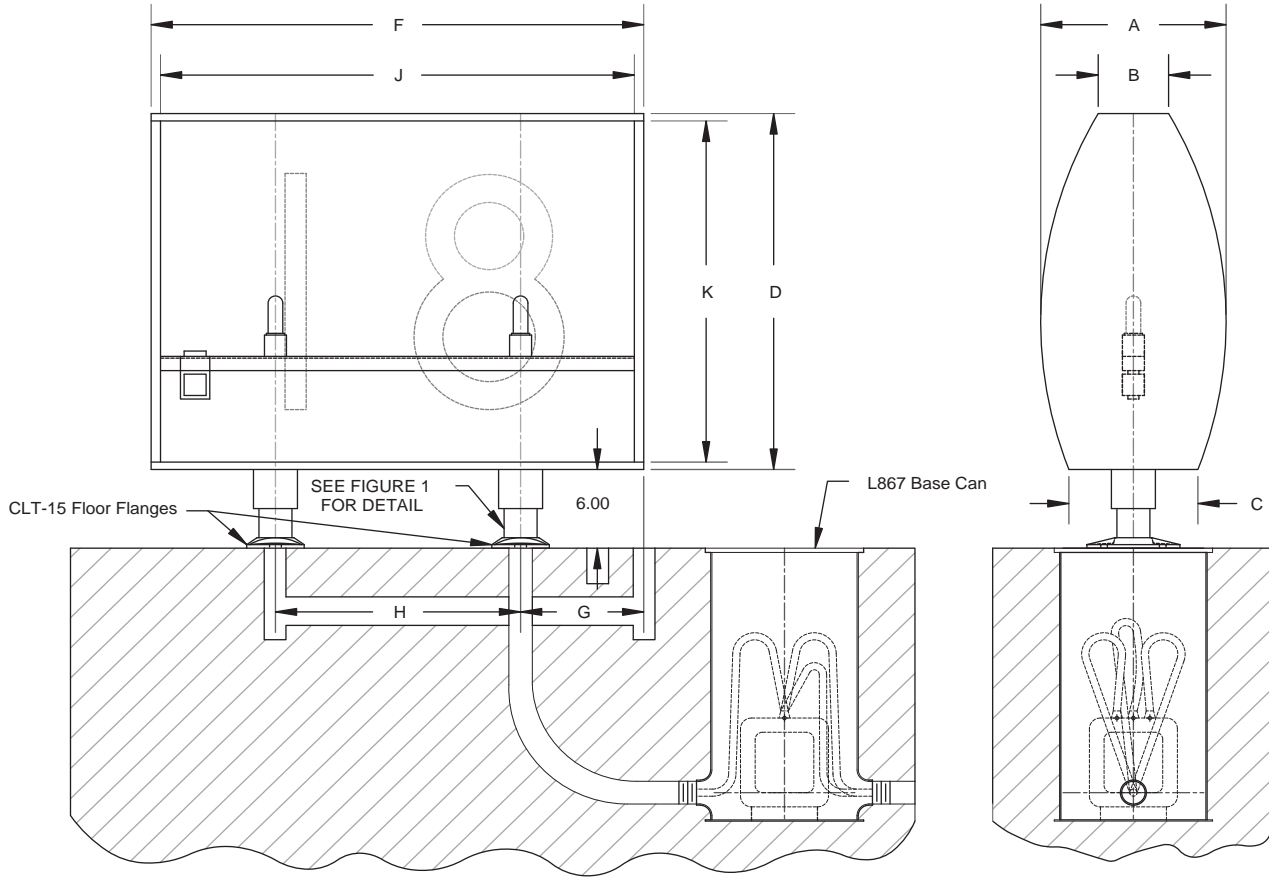


Above references recommended cement pad dimensions and mounting bolt locations for Lumacurve signs

\*Recommended concrete thickness : 6" - 8"

\*Recommended anchor bolts: 3/8" diameter (minimum) with LOCK washers.

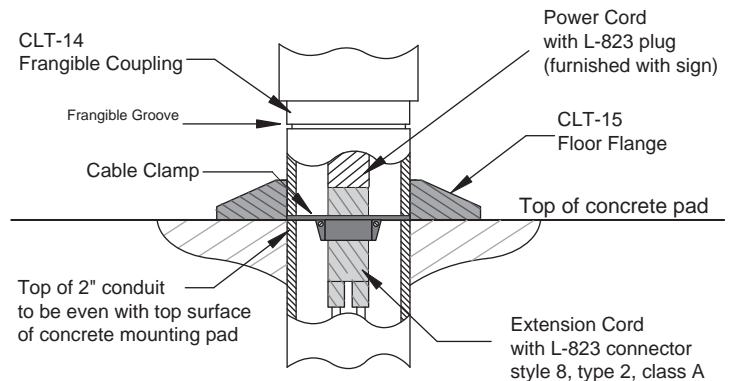
For Mode 3 signs see supplemental Mode 3 "Outer Mount" instructions.



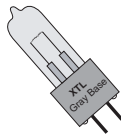
Size	1	2	3
Letter Ht.	12.0 (305)	15.0 (381)	18.0 (457)
Lamps	1	2	2*
A	13.2 (335)	14.4 (366)	15.8 (401)
B	6.0 (152)	6.0 (152)	6.0 (152)
C	11.0 (280)	11.0 (280)	11.0 (280)
D	19.3 (490)	25.3 (643)	31.3 (795)
F	29.4 (747)	36.6 (930)	42.0 (1067)
G	7.4 (188)	9.2 (234)	10.6 (269)
H	14.6 (371)	18.2 (462)	20.9 (531)
J	27.8 (706)	35.0 (889)	40.4 (1026)
K	18.0 (457)	24.0 (610)	30.0 (762)

Note: Dimensions are in English with metric equivalents in parenthesis

\*Note: Older size 3 lighting systems had 3 lamps per module prior to 2009.



**FIGURE 1**



**Certified to current FAA Advisory Circular 150/5345-44**  
Specification for Runway and Taxiway Signs

#### LUMACURVE XTL System

The LUMACURVE XTL system maintains a constant sign brightness in accordance with FAA A/C 150-5345-44 with appreciably higher efficiency relative to traditional lighting systems, and is available in new signs or in kit form for retrofit. This system ensures delivery of a constant voltage to the 10V/20W halogen lamps at all constant current regulator (CCR) current steps without internal modification (true for both high (2.8A - 6.6A) and medium (4.8A - 6.6A) intensity circuits.) The lamps authorized for use in this system are Standard Signs, Inc. P/N #"XTL Quartz" with 10V/20W Bipin quartz halogen lamp & custom ceramic adapter base. They are available directly from Standard Signs, Inc.

**Important:** *The LUMACURVE XTL lighting system is designed exclusively for FAA styles 2 & 3 operation on a series circuit together with non-sign fixtures, such as edge lights, where the sign brightness control components are necessary to maintain constant sign brightness regardless of CCR step. Non-sign resistive load must be present on the circuit for proper CCR operation. Design consideration should be given to CCR loading at all current steps. XTL Signs should NOT be installed on a circuit that powers only signs. For circuits dedicated to signs, please request LUMACURVE lighting systems designed for FAA style 5 operation.*

**DO NOT CHANGE LAMPS WITH SIGN ENERGIZED.** A burned out lamp causes an E610 controller to reach max power and exceed the lamps' rated voltage. Inserting a replacement lamp in an energized sign will shock the lamps and damage filaments.

#### Installation:

System lamp voltage is factory set but we recommend that one sign per CCR be spot checked with a DC voltmeter after installation. Lamp voltage is read across the white and brown leads at the sign terminal strip on the light bar (P/N #CLT 8A). If voltage varies from recommended settings (9.5V at lowest CCR step for all size signs), all signs on that circuit should be checked and adjusted. To adjust, turn the small screw in the upper left corner of the printed circuit board (E610) controller mounted on the inside of the end panel (P/N #CLT-4).

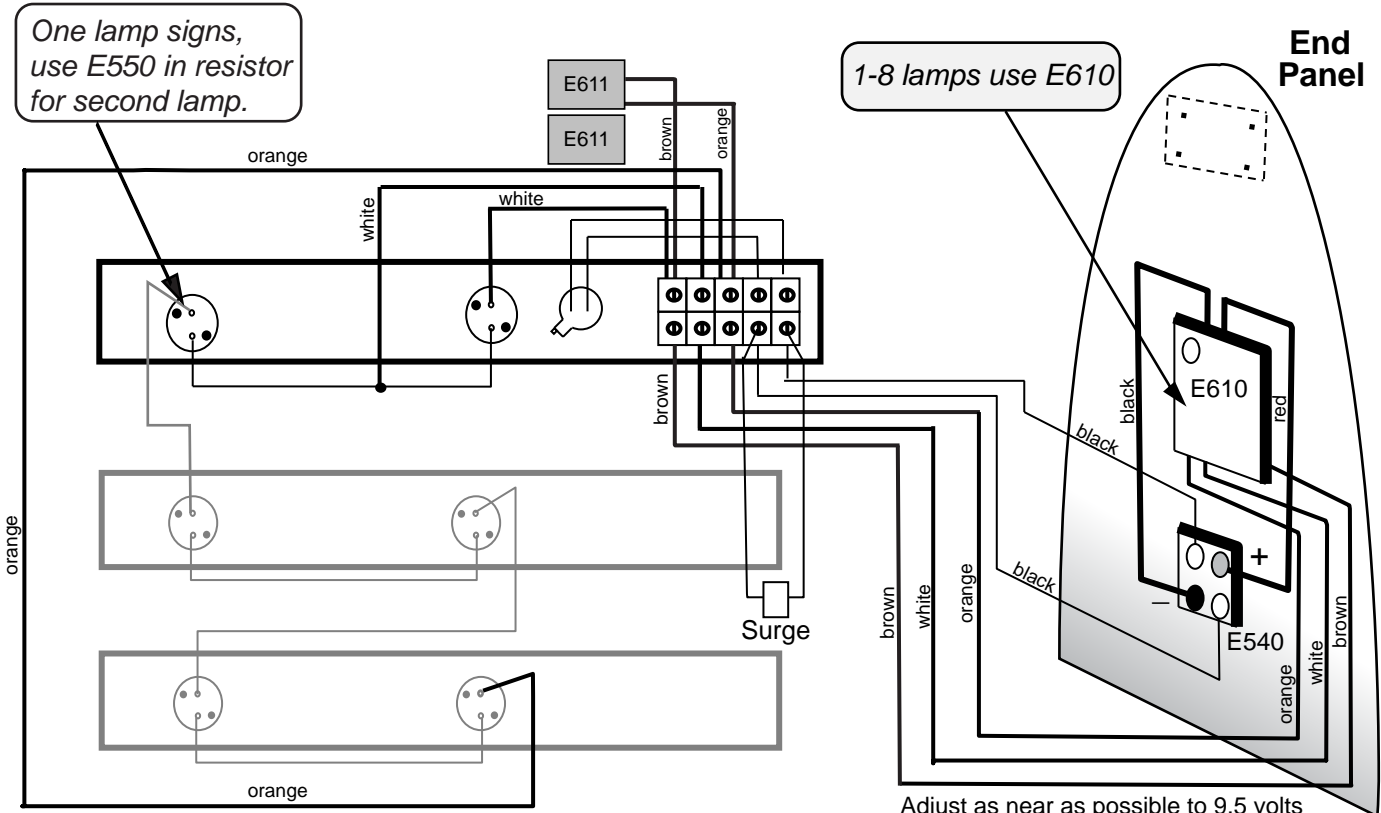
**Note:** *The adjustment screw is designed only for fine-tuning and does not function as a dimmer. Signs must not be operated at less than 9.5 volts.*

There is a 10-minute warm-up period for lamps to come to set voltage but sign brightness meets FAA specifications even at cold voltages.

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\*Additional modules shown in gray are daisy chained to the power leg module.

Adjust as near as possible to 9.5 volts across White and Brown at Terminal Strip.  
 NOTE: Adjustments must be done at the lowest step of the Constant Current Regulator powering the circuit.

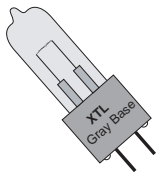
### XTL VA Loads, Power Factors and Isolation Transformers

Sign Size & Module Length		XTL Lighting Systems						
		FAA Style 2 (4.8A-6.6A)			FAA Style 3 (2.8A-6.6A)			
		Lamps	XTL 20W Quartz		XTL 20W Quartz			
		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.



# LUMACURVE PARTS LIST



## XTL Lighting Systems

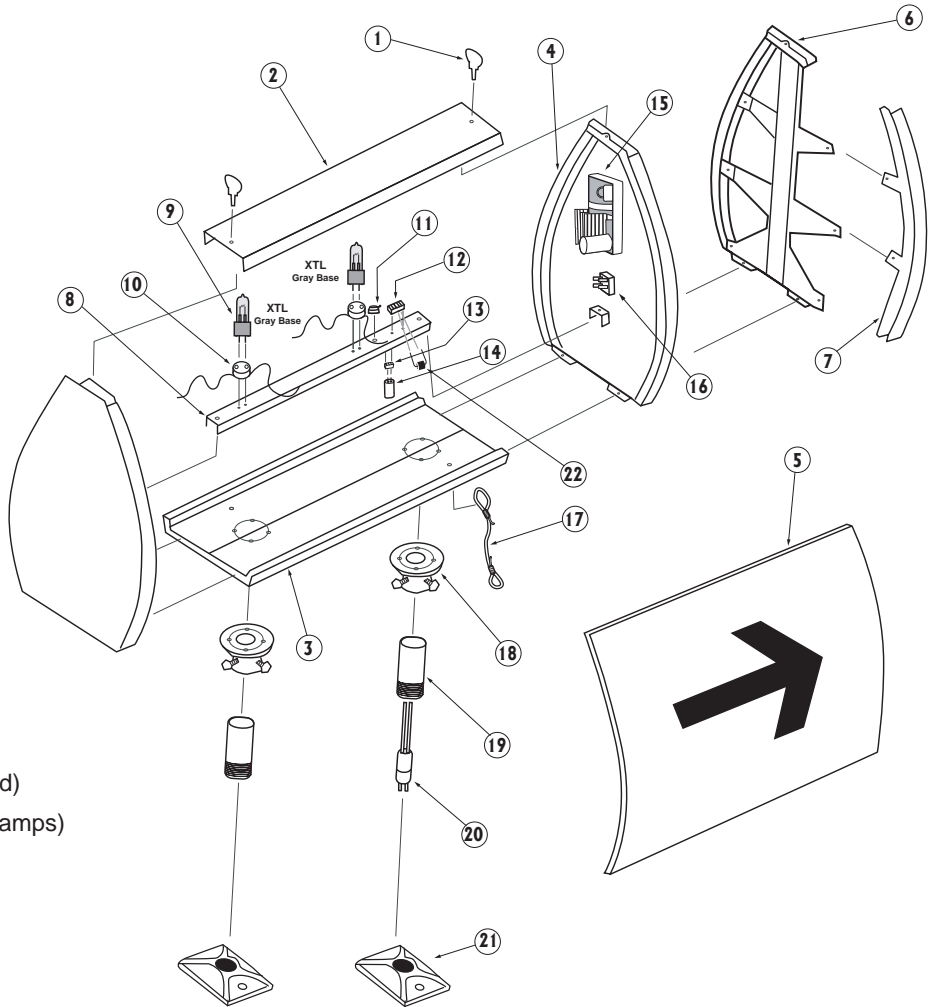
(Gray Base 10V/20W quartz halogen lamps)

**Certified to current FAA Advisory Circular 150/5345-44**

Specification for Runway and Taxiway Signs

View our FAA Certificate of Conformance

Item	Description
1.	340/345 Turn Fastener
2.	*CLT-2 Cover
3.	*CLT-3 Base
4.	*CLT-4 End Panel
5.	*CLT-5 Legend Panel <sup>1</sup>
6.	*CLT-6 Multi-Module Insert (Tree)
7.	*7-B Face Insert Channel <sup>2</sup> (Track)
8.	*8-A Light Bar
9.	XTL Quartz XTL 10V/20W Quartz Lamp
10.	E400A Lampholder
11.	480 Cable Clamp
12.	420 Terminal Strip
13.	420 Terminal Strip (section)
14B.	E611 Capacitor for E610 (2 required)
15B.	E610 PCB Controller, 75 Volt (1-8 lamps)
16.	E540 Bridge Rectifier 35A/1000V
17.	CLT-19 Tether
18.	130 Slipfitter
19.	*140 6" Frangible Coupling
20.	430 Cord & Plug
21.	15 Floor Flange
22.	E416 Surge Protector



One lamp systems only require:

E550 Resistor 3 OHM 25w (and mounting brackets)

**22** Enlarged View  
E416 Surge



### To help in placing your order:

\*Prefix part number with one of the following sign sizes: "S" (small/ size 1), "M" (medium/ size 2), "L" (large/ size 3 & 5)

<sup>1</sup> Specify one of the following sign types: L-858Y ("Y"ellow), L-858R ("R"ed), L-858L ("L"ocation), or Blank/ Black

<sup>2</sup> Specify one of the following track colors: (B) Black, (Y) Yellow or (R) Red