

Route to: Airport Manager Airfield Maintenance Airfield Operations Electrical Foreman Engineer

Issue: Extending XTL Lamp Life

Models: Lumacurve XTL Airfield Guidance Signs

Summary: Incandescent lamp filaments gradually deteriorate. The expected XTL lamp life ranges between 1,000 and 3,000 hours, or roughly 2 to 9 months. You can maximize XTL lamp life by making sure that lamps are operating in their halogen cycle as well as avoiding any unnecessary electrical shock or trauma to the lamps. For those airfields exhibiting significantly low lamp hours, go to the "Sources of Problems" section.

Recommendations:

1. Use only Lumacurve brand (OEM) lamps.

Using Lumacurve OEM lamps is the best way to ensure the proper value of electrical resistance. A non-OEM lamp may have different power requirements, changing the lamp's resistance. The sensor wire from the E410/E610 controller reacts to the measured resistance and changes the output of power to the lamps. A non-Lumacurve lamp may deviate from the system design and cause premature failure of the lamps.


Warning: Per FAA Advisory Circular 150/5340-26:

"3.6.6 Use of Original Equipment Manufacturer (OEM) Part.

The use of non-OEM parts or lamps in FAA approved equipment is strongly discouraged. The FAA has strict specifications for approval of all airport lighting equipment and use of non-OEM parts or lamps in such equipment or systems can render the equipment to be functionally non-FAA approved. This could possibly lead to serious liability consequences in case of an aircraft incident at an airport following these practices. In the case of runway and taxiway lighting fixtures, the use of a generic, non-approved lamp can render the photometric output of the fixture out of specification with disastrous results in light output and, consequently, safety of low visibility operations."

2. Change lamps with the power off.

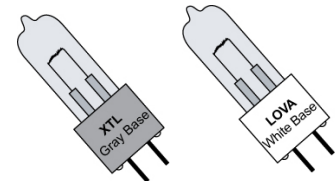
Changing lamps "hot" results in a shock to the filament arm (rated for 30V max). A burned lamp in an energized sign causes the controller to reach maximum power and exceed the lamp's rated voltage. Replacing a lamp while a sign is energized will shock the lamp filament arm with a voltage higher than its 30V rating. Changing a lamp with the power off, then powering up the sign will ensure a "Soft Start". This means the E410/E610 will gradually ramp up power to the lamps and eliminate shock to the filaments.


 **Tip: Use a Lumacurve Lamp Tester.** The tester is an easy and inexpensive tool to determine if a lamp has gone bad or if it still has some useful life. The Lumacurve Lamp Tester is available through Standard Signs, Inc. Call 1-800-258-1997

Need to Know:
XTL Bulb is a GRAY 10V/20W quartz halogen lamp.
LOVA Bulb is a WHITE 12V/20W quartz halogen lamp.

XTL and LOVA lamps are NOT INTERCHANGEABLE!

NOTE: Halogen Lamps should not be handled with bare hands. Alcohol may be used for cleaning lamps if necessary.




 **Helpful Tools:**

- RMS Multi-meter
- Small flathead screw driver
- Lumacurve Lamp tester

3. Change all the sign lamps at the same time.


Installing a new lamp in a sign with older or “used” lamps will cause the new lamp to burn out prematurely. When one lamp has reached the end of its rated life, there is a good chance the rest of the lamps in the sign are also near the end of their rated life. Changing all the lamps in a sign (after one has failed at the end of its rated life) saves both time and money by increasing lamp life and reducing multiple visits to the sign.

 **Tip: Keep good records.** Maintenance records of lamp changes help to document the current and expected lamp life for any sign on a given circuit. An “in-service” date written on the lamp base or lightbar with a sharpie is also a good idea. When a lamp fails, records help determine if the lamp has failed prematurely or reached the end of its expected life. Lamps with some life left can be reassigned to signs in convenient locations such as signs close to maintenance buildings. “Used” bulbs, of roughly the same number of hours burned, should be used in the same sign.

4. Check and adjust controller voltage.

Controllers set too high or too low can cause XTL lamps to fall outside the halogen cycle, which greatly reduces lamp life. Set the CCR (constant Current Regulator) at the low step (4.8A for style 2 circuits, 2.8A for style 3) and using the white adjustment screw, on the top left corner of the controller, set the power to the lamps to 9.5V volts minimum. This applies for all size signs.

How to Measure Voltage: The voltage to the lamps can be measured by doing the following: With the power on, use a true RMS multi-meter set at Volts DC. Identify the brown and white wire coming from the controller and place the meter probes on the terminal strip set screws for these wires.

 **Warning:** Signs that remain powered with a burned out lamp (without replacement) for an extended period of time will burn out controllers and bridge rectifiers!

Sources of Problems

1. Confusing XTL and LOVA Lamps. (*These lamps are NOT INTERCHANGEABLE.*)
2. Bad Circuits. (*Deteriorating cable cause losses to ground which adversely affect sign performance and lamp life*)
3. Bad or incorrectly sized isolation transformers
4. Voltage spikes
5. Bad connections. (*Check for loose wires.*)

Still Having Significant Problems?

Lumacurve Soft Start System

For situations that continue to exhibit lamp life problems, we recommend you inquire about the Lumacurve Soft Start System. We have found occasional situations where the sign lamps are subject to continuous “shock”. In some cases it is a dynamic of the regulator and the airport circuit. In other cases it is a pilot controlled system that is on and off repeatedly throughout the night.

The Soft Start System adds electronics after the controller that slowly ramps up the output voltage to the lamps. The result is a gradual brightening of the lamp until it reaches full brightness.

For further information regarding the topics covered in this service bulletin, feel free to contact customer service or our technical department. *Call 1-800-258-1997 8am to 5pm EST. We're here to help.*

*Print and save this
for future reference.*

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