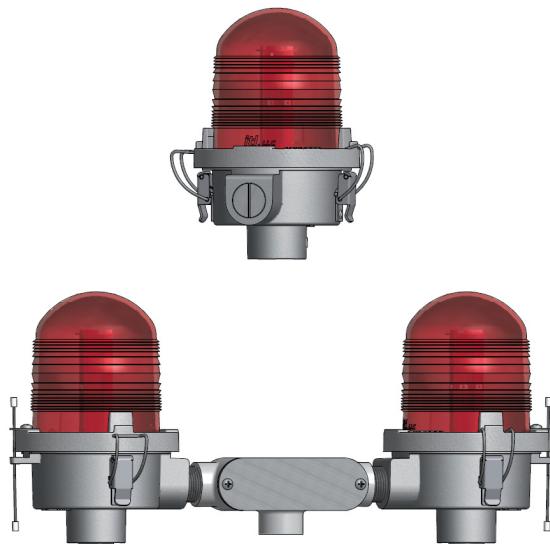


Installation Instruction Manual



MKR-LTE1-000

MKR-LTE2-000

Single & Double
Red LED Obstruction
Lights

and

MKR-LTE1-0IR

MKR-LTE2-0IR

Single & Double
Red / Infrared LED
Obstruction Lights

Toll Free: +1 (866) 624-8309 • www.itl-llc.com

itl International
Tower Lighting, LLC™

Front Matter

Copyright & Trademarks

Copyright © 2008 - 2014 by ITL, LLC. All rights reserved. This document contains proprietary information, photographs, graphics, and other material (collectively, "the Content") protected by copyright, and this manual and all accompanying hardware, software and documentation are copyrighted. No part of this document may be photocopied or reproduced by mechanical, electronic, or other means in any form without written consent of ITL, LLC.

ITL, LLC, MKR-LTE1-000, MKR-LTE2-000, MKR-LTE1-0IR, MKR-LTE2-0IR and the *ITL* logo are trademarks of ITL, LLC. All other trademarks and brand names are the property of their respective proprietors.

Limited Warranty and Disclaimer

ITL, LLC guarantees that *MKR-LTE series* obstruction lights are free from physical defects of material and workmanship under normal use for two (2) year from the date of purchase. If the product proves defective during this warranty period, please contact ITL, LLC in order to obtain a Return Authorization Number, RMA.

In no event shall ITL, LLC's liability exceed the price paid for the product from direct, indirect, special, incidental, or consequential damages resulting from the use of the product, its accompanying software, or its documentation. ITL, LLC makes no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose unless otherwise stated.

The technical documentation is being delivered to you AS-IS. ITL, LLC makes no warranty as to its accuracy or use. Any use of the technical documentation or the information contained therein is at the risk of the user. Documentation may include technical or other inaccuracies or typographical errors. ITL, LLC reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.

Please send any comments regarding the manual to support_doc@itl-llc.com.

Safety Warning

This equipment uses lethal voltages which can cause serious injury and/or death. Do not attempt to service this equipment with line power applied.

The LED lamps used in this equipment produce brilliant light and infrared (IR) radiation. Temporary or permanent eye damage may result from looking directly at the LED obstruction light while it is operating.

Disconnect power at the circuit breaker panel and wait at least 30 seconds before servicing. Do not rely on interlock switches for removing power. Energy storage capacitors can maintain high voltage long after power has been disconnected. Verify that all high voltage warning lights are completely off. Measure all high voltage sources (HV1, HV2) using a DC voltmeter to ensure that power is off and has been completely removed before servicing.

Do not wear any jewelry. Gold and silver are excellent conductors of electricity.



This equipment emits near infrared radiation. Avoid direct eye exposure.



Table of Contents

Front Matter	2
Copyright & Trademarks	2
Limited Warranty and Disclaimer	2
Safety Warning	3
Introduction	5
Product Description	5
Specifications	7
Environment	7
Light Output	7
Mechanical	7
MKR-LTE1-000 and MKR-LTE1-01R (Single)	7
MKR-LTE2-000 and MKR-LTE2-01R (Double)	7
Electrical	7
Installation	8
Unpacking your LED Obstruction Light	8
Tools for Installation	8
Quick Installation	8
Leveling	8
Installation Wiring Diagram	9
Spare Parts	9
Parts Locator (MKR-LTE _x -0xx)	10
Parts Locator (MKR-LTE2-0xx)	11
Maintenance	12
Technical Support and Contact Information	13
Contact Information	13
RMA	13

Introduction

Congratulations, and thank you for choosing an ITL L-810(L) red obstruction light.

We trust that ITL's reputation for technical excellence, experience in product development, commitment to our customers and testing will ensure your complete satisfaction.

You have chosen one of the most technologically innovative LED obstruction lights available on the market today. This product is the result of many years of engineering with extensive input from field service personnel.

This manual covers the MKR-LTE1-000 Single and MKR-LTE2-000 Double red LED Obstruction Lights as well as the MKR-LTE1-0IR Single and MKR-LTE2-0IR Double red/infrared LED Obstruction Lights.

Please take the time to read and familiarize yourself with this manual. It contains the information necessary to install, test and troubleshoot the MKR-LTE LED Obstruction Light.

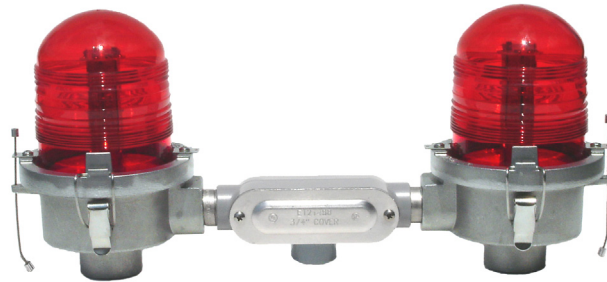
Product Description

The MKR-LTE1-000 Single Obstruction Light and MKR-LTE2-000 Double Obstruction Lights utilize LED technology and Fresnel Optics to provide a reliable low power lighting solution. The MKR-LTE1-0IR Single Obstruction Light and MKR-LTE2-0IR Double Obstruction Lights, in addition to visible red LEDs, include infrared (IR) emitters to enhance conspicuity for personnel using Night Visions Systems (NVS) and Night Vision Goggles (NVG).

The ITL, LLC L-810(L) red obstruction light has been tested for compliance with applicable FAA specifications for marking hazards to air navigation such as towers, smoke stacks or similar structures. It is intended for installations which require FAA L-810(L) red lights.



*MKR-LTE1-000
Single LED Obstruction Light*



*MKR-LTE2-000
Double LED Obstruction Light*



*MKR-LTE1-0IR
Single LED Obstruction Light
with infrared emitters*



*MKR-LTE2-000
Double LED Obstruction Light
with infrared emitters*

Specifications

ETL Certified to AC150/5345-43, Type L-810 (L) and Engineering Brief 67

Environment

Temperature	-40°C to +55°C
Humidity	less than 95% relative humidity (non-condensing)

Light Output

Effective Candela	32.5 (min)
-------------------	------------

Mechanical

MKR-LTE1-000 and MKR-LTE1-0IR (Single)

Dimension	Height:	7.5"	(19.1 cm)
	Width:	5.4"	(13.7cm)
Weight	2 lbs	(0.9 Kg) max	

MKR-LTE2-000 and MKR-LTE2-0IR (Double)

Dimension	Height:	7.9"	(20 cm)
	Width:	5.4"	(13.7cm)
	Length:	17"	(43.2cm)
Weight	5 lbs	(2.3Kg) max	

Electrical

Input Power	100 to 240VAC at 50/60 Hz
Power Consumption (max.)	7W, MKR-LTE1-000 (single)
	14W, MKR-LTE2-000 (double)
	11W, MKR-LTE1-0IR (single w/IR)
	22W, MKR-LTE2-0IR (double w/IR)

Installation

LED obstruction lights of different models and/or manufacturers may draw differing amounts of power. This may make monitoring by measuring operating current difficult especially when multiple obstruction lights are operated on a single circuit as is common practice. It is recommended that models/manufacturers not be mixed on a single installation. The following section describes how to install the LED obstruction light.

Unpacking your LED Obstruction Light

Please examine the shipping containers and their content thoroughly upon receipt and report any potential shipping damage to the carrier.

Tools for Installation

The following tools are suggested for mounting of the MKR-LTE obstruction lights.

- Digital multi-meter capable of reading 600VAC/DC (Fluke 177 or 179)
- Nut Drivers and Sockets
- #2 Phillips Screwdriver
- 5/16 Flat Head screwdriver
- Crimp Tool
- Needle Nose Pliers

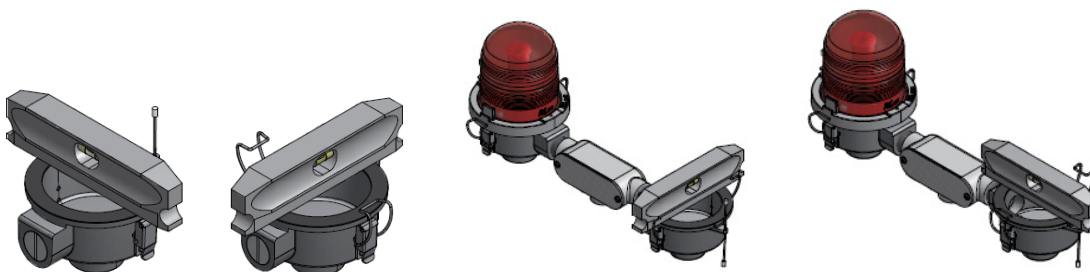
Quick Installation

The MKR-LTE1-0xx L-810(L) LED Single Obstruction Light has $\frac{3}{4}$ " NPT side and bottom hubs available for mounting. The MKR-LTE1-0xx LED Double Obstruction Light has a $\frac{3}{4}$ " NPT bottom hub available for mounting.

All fixtures, enclosures and junction boxes must be mounted in the upright position.

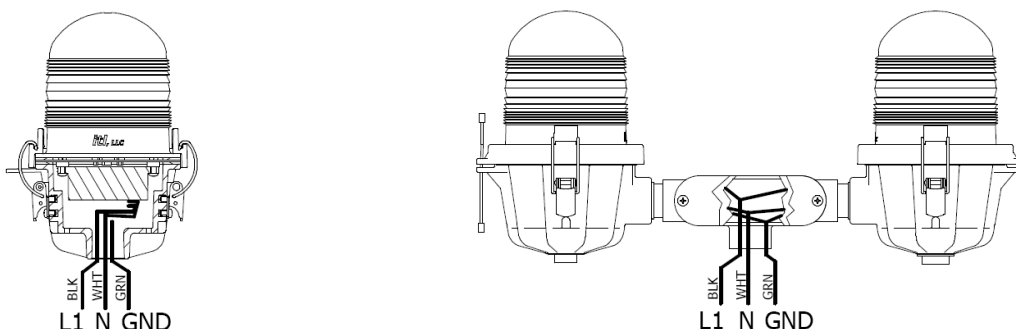
Leveling

The L-810(L) must be leveled during installation for correct vertical beam alignment. The following diagrams detail how to use a compact “torpedo” level on two axes to ensure that the obstruction light is level mounted level. Remove the globe and power supply and place the level across the base as shown. Adjust fixture as necessary for level installation.



Installation Wiring Diagram

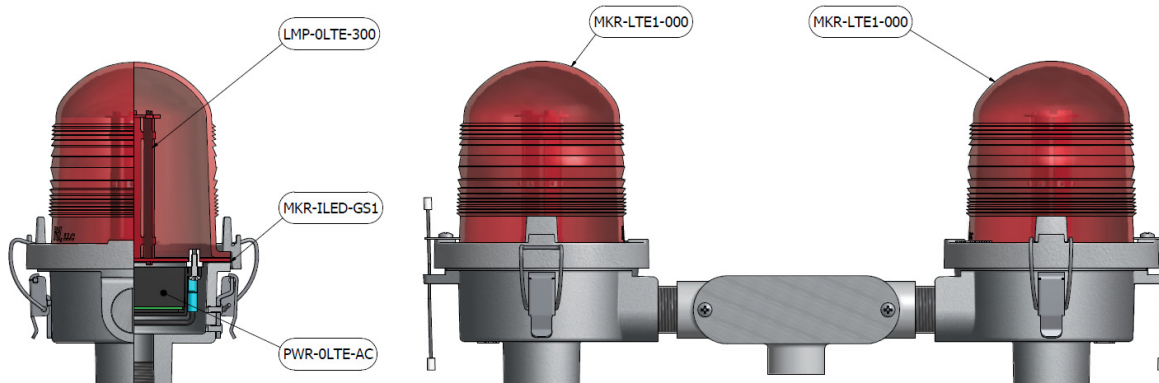
Sample connections for typical LED obstruction lights are shown in the diagrams below.



MKR-LTE1-0xx Single and MKR-LTE2-0xx Double Obstruction Wiring Diagram

It is the responsibility of the installer to comply with all applicable local, state, and federal regulations for installation and operation of this device.

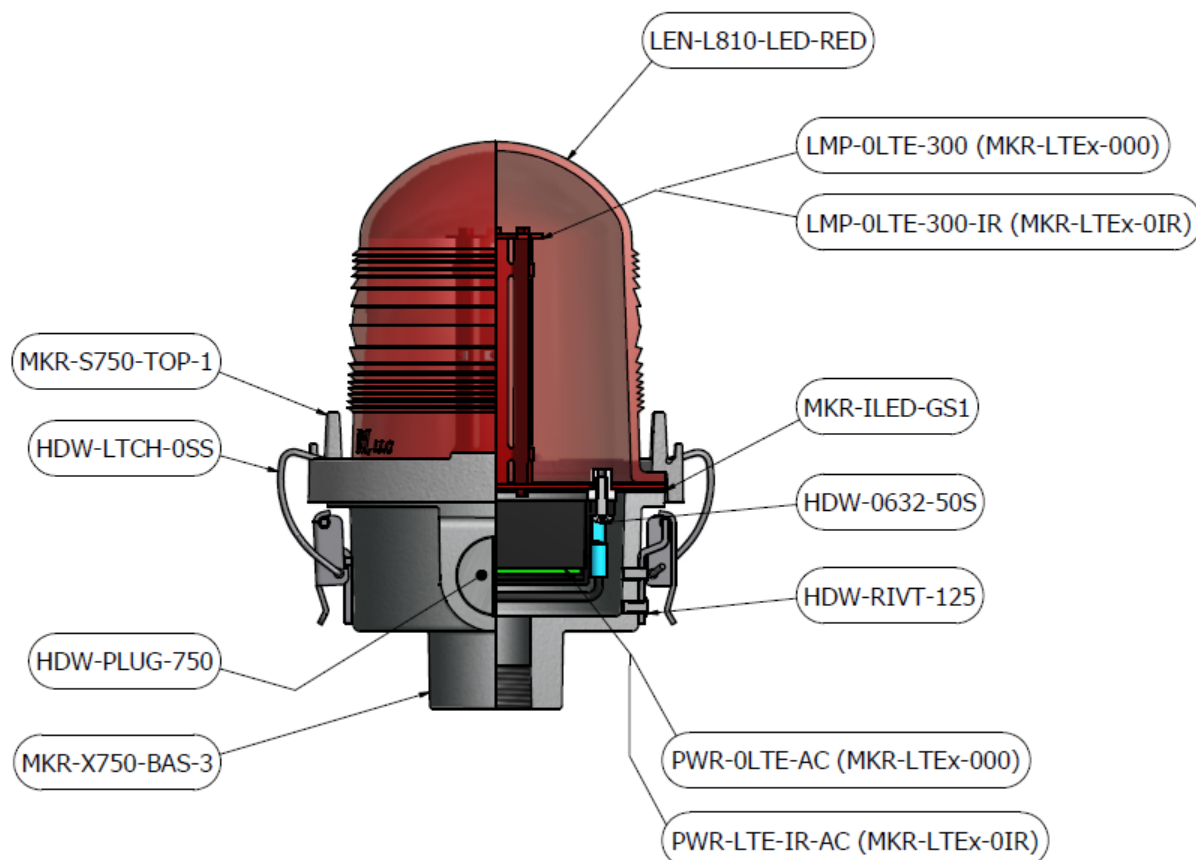
Spare Parts



MKR-LTE Spare Parts

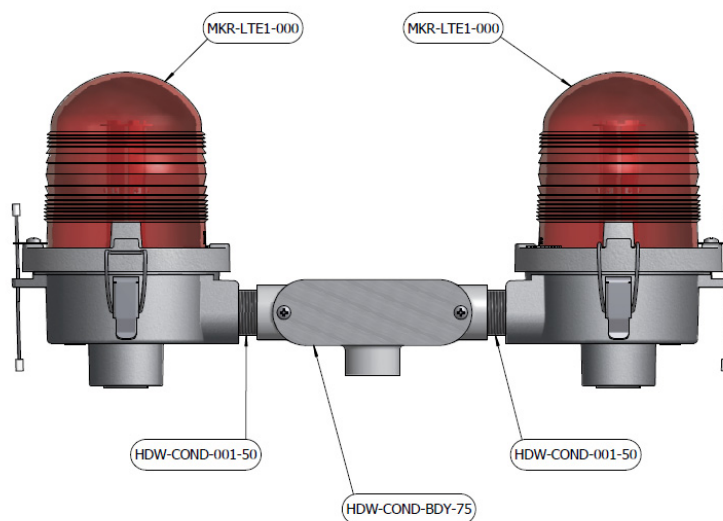
ITL Order P/N	Description
LMP-0LTE-300	LED Red Lamp (MKR-LTEEx-000 Series)
LMP-0LTE-300-IR	LED Red/Infrared Lamp (MKR-LTEEx-0IR Series)
MKR-ILED-GS1	Gasket
PWR-0LTE-AC	Power Supply (MKR-LTEEx-000 Series)
PWR-LTE-IR-AC	Power Supply (MKR-LTEEx-0IR Series)

Parts Locator (MKR-LTE_x-0xx)



Part Number	Qty	Description
MKR-X750-BAS-3	1	Marker Base, Bottom Hub, AL, No Bosses
MKR-S759-TOP-1	1	Marker Top Ring, AL
LEN-L810-LED-RED	1	Red Lens for single LED side light
LMP-0LTE-300	1	LED Lamp Assembly, Red (MKR-LTE _x -000 Series)
LMP-0LTE-300-IR	1	LED Lamp Assembly, Red/Infrared (MKR-LTE _x -0IR Series)
PWR-0LTE-AC	1	Power Supply, 7W, 100-240Va Input (MKR-LTE _x -000 Series)
PWR-LTE-IR-AC	1	Power Supply, 7W, 100-250Vac Input (MKR-LTE _x -0IR Series)
MKR-ILED-GS1	1	Gasket for LED side light, Neoprene, 1/8" thickness
HDW-LTCH-0SS	2	Draw Latch, Stainless Steel
MKR-S750-CBL	1	Wire rope cable assembly
MKR-S750-CLP	1	Lens fastening clip, Stainless Steel
HDW-0832-25S	1	Screw, Pan Head, 8-32 x 1/4, SS
HDW-RIVT-125	4	Rivet, 1/8", AL
HDW-PLUG-750	1	Closure Plug, 3/4", AL
Hdw-0632-50S	2	Screw, Pan Head, 6-32 x 1/2, SS

Parts Locator (MKR-LTE2-0xx)



Part Number	Qty	Description
MKR-LTE1-000	2	Red LED Obstruction Light, (MKR-LTE2-000)
MKR-LTE1-0IR	2	Red/Infrared LED Obstruction Light, (MKR-LTE2-0IR)
HDW-COND-BDY-75	1	Conduit Body Access Port, 3/4" NPT, AL
HDW-COND-001-50	2	Conduit 3/4" x 1 1/2", Galvanized Steel

Maintenance

The maintenance outlined below should be performed at least once annually.

- Verify that the fixture is functional in all operating modes with no indication of an alarm condition on alarm indicator lights, alarm dry contacts, or digital monitoring interfaces.
- Verify that the photoelectric control operates the system in the correction operating mode (day/night), light color (white/red) and intensity (day/night intensity) when exposed to light and dark ambient lighting conditions.
- Inspect the fixture for any type of obstruction that could block light output at any point along the 360 degree horizontal output of the fixture. Note that multiple fixtures may be used to achieve 360 degree coverage.
- Inspect lenses and transparent covers for damage.
- Clean the fixture lens or transparent cover using a mild detergent and soft nonabrasive cloth.
- Inspect all electrical wiring connections for corrosion, arcing, damage, insulation degradation or loosening of the connection. Correct, replace or secure as needed.
- Inspect all interconnecting cables and power supply cables and conduits for damage.
- Verify the all cables are fastened securely at appropriate intervals to prevent damage.
- Inspect all electrical components for evidence of damage caused by lightning or power line induced electrical surges. Replace any components showing evidence of damage.
- Inspect fixtures and enclosures for water infiltration and insect infiltration. Replace any damaged gaskets or seals. Install plugs to close any unused conduit ports that may allow insect infiltration.
- Verify that all breathers and drain holes are clear of blockages.

Technical Support and Contact Information

Contact Information

For information on the MKR-LTE LED obstruction lights' basic functions, refer to this manual and the accompanying drawings. For additional help with the installation or operation of any ITL products, please contact ITL, LLC at one of the following below.

Web and Internet Sites

Corporate home page: <http://www.itl-llc.com>



Customer Support Technicians
(8:00 AM - 5:00 PM Central Time)

US and Canada call: +1-615-256-6030

Toll Free: +1-866-624-8309

Email: support@itl-llc.com

RMA

Please contact ITL, LLC before returning equipment for repair and obtain a Return Material Authorization (RMA) number.

Revision	Description of Change	Date	Preparer / Approval
0	Initial Release	5/20/2013	Prepared By: Elke Hinson Approved By: Andy Rudolph
1	Revised to include MKR-LTEEx-0IR units.	8/15/2014	Prepared By: Elke Hinson Approved By: Andy Rudolph
2	Revised power consumption data	8/28/2014	Prepared By: Elke Hinson Approved By: Andy Rudolph
2a	Added "ETL Certified to AC150/5345-43, Type L-810"	12/15/2014	Prepared By: Elke Hinson Approved By: Andy Rudolph