



## ERE-CB

Incandescent Elevated Runway Edge Light

# User Manual

96A0097, Rev. M, 9/7/17

## A.0 Disclaimer / Standard Warranty

### A.1 CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

### A.2 ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and FAA Airfield regulations. The directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

### A.3 LED Product Guarantee

Where applicable, per FAA EB67(applicable edition), ADB SAFEGATE L858(L) Airfield Guidance Signs are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years. ADB SAFEGATE LED light fixtures (with the exception of obstruction lighting) are warranted against mechanical and physical defects in design or manufacture for a period of 12 months from date of installation; and are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years per FAA EB67 (applicable edition).

**NOTE:** See your sales order contract for a complete warranty description. In some specific cases, deviations are (to be) accepted in the contract, which will supersede the standard warranty.

### A.4 Standard Product Guarantee

Products of ADB SAFEGATE manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of one year from the date of installation or 2 years from date of shipment and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made. ADB SAFEGATE L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation per FAA AC 150/5345-44 (applicable edition).

**NOTE:** See your sales order contract for a complete warranty description.

### A.5 All Products

LED Products of ADB SAFEGATE, manufactured and sold by ADB SAFEGATE or its licensed representatives, meets the corresponding requirements of FAA, ICAO and IEC.

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee above, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB SAFEGATE reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB SAFEGATE further reserves the right to require the return of such goods to establish any claim.

ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer.

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## A.6 Liability



### WARNING

Use of the equipment in ways other than described in the catalogue leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

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## 1.0 Safety

This section contains general safety instructions for installing and using ADB Airfield Solutions equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.


### 1.1 HAZARD Icons used in the manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.

	<b>WARNING</b> <ul style="list-style-type: none"><li>Failure to observe a warning may result in personal injury, death or equipment damage.</li></ul>
	<b>DANGER - RISK OF ELECTRICAL SHOCK OR ARC FLASH</b> <ul style="list-style-type: none"><li>Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.</li></ul>
	<b>WARNING - WEAR PERSONAL PROTECTIVE EQUIPMENT</b> <ul style="list-style-type: none"><li>Failure to observe may result in serious injury.</li></ul>
	<b>WARNING - DO NOT TOUCH</b> <ul style="list-style-type: none"><li>Failure to observe this warning may result in personal injury, death, or equipment damage.</li></ul>
	<b>CAUTION</b> <ul style="list-style-type: none"><li>Failure to observe a caution may result in equipment damage.</li></ul>

#### 1.1.1 Qualified Personnel

	<b>IMPORTANT INFORMATION</b> <p>The term <b>qualified personnel</b> is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.</p> <b>ALWAYS USE REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE) AND FOLLOW SAFE ELECTRICAL WORK PRACTICE.</b>
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## 1.2 To use this equipment safely



### WARNING

Read installation instructions in their entirety before starting installation.

- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

**Failure to follow these warnings may result in serious injury or equipment damage.**

### 1.2.1 Additional Reference Materials



### IMPORTANT INFORMATION

- IEC - International Standards and Conformity Assessment for all electrical, electronic and related technologies
- IEC 60364 - Electrical Installations in Buildings
- FAA Advisory: AC 150/5340-26 (current edition) Maintenance of Airport Visual Aid Facilities
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

### 1.2.2 Intended Use



### WARNING

#### IMPROPER USE

Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

**Failure to follow these warnings may result in serious injury or equipment damage.**

### 1.2.3 Fasteners



### WARNING

#### FOREIGN OBJECT DAMAGE - FOD

- Only use fasteners of the same type as the one originally supplied with the equipment.
- Always tighten the fasteners to the recommended torque. Use a calibrated torque wrench and apply the recommended adhesive type.
- Obey the instructions of the adhesives necessary for the fasteners.

**Failure to follow these warnings may cause the fasteners to loosen, damage the equipment, potentially to loosen the equipment. This can lead to a highly dangerous situation of FOD, with potential lethal consequences.**



### 1.2.4 Operation



#### CAUTION

##### IMPROPER OPERATION

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

**Failure to follow this instruction can result in equipment damage.**

### 1.2.5 Storage



#### CAUTION

##### IMPROPER STORAGE

If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

**Failure to follow this instruction can result in equipment damage**

### 1.2.6 Material Handling Precautions



#### CAUTION

##### ELECTROSTATIC SENSITIVE DEVICES

This equipment may contain electrostatic sensitive devices.

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you should bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

**Failure to follow this instruction can result in equipment damage**

### 1.2.7 Action in the Event of a System or Component Malfunction



#### **WARNING**

##### **UNSTABLE LOAD**

- Use extreme care when moving heavy equipment.
- Verify that the moving equipment is rated to handle the weight.
- When removing equipment from a shipping pallet, carefully balance and secure it using a safety strap.



**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

### 1.2.8 Maintenance



#### **WARNING**

##### **ELECTRIC SHOCK HAZARD**

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

**Failure to follow these warnings will result in death or equipment damage.**

### 1.2.9 Maintenance and Repair



#### **DANGER**

##### **ARC FLASH AND ELECTRIC SHOCK HAZARD**

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Airfield Solutions equipment are permitted to service this equipment.
- An open airfield current circuit is capable of generating >5000 Vac and may appear OFF to a meter.
- Never unplug a device from a constant current circuit while it is operating. Arc flash may result.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check the interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with airfield electrical equipment.

**Failure to follow these warnings will result in death or equipment damage.**

## 2.0 L-861 Quartz Elevated Clamp Band Light

L-861 and L-861E (Quartz) Medium Intensity Elevated Runway Edge and Threshold/End Light (clamp band) user's manual.

This manual describes the L-861 runway edge and L-861E runway threshold/end lights.

The ADB Safegate L-861 runway edge light is used to delineate the edges of non-precision IFR runways.

### 2.1 About this manual

The manual shows the information necessary to:

- Install and maintain the L-862 (Quartz) and L-862E High Intensity Elevated Runway (Pop Top) Light.

**NOTE:** Refer to catalog sheet 1012. for further information.

#### 2.1.1 How to work with the manual

1. Become familiar with the structure and content.
2. Carry out the actions completely and in the given sequence.

#### 2.1.2 Record of changes

Page	Rev	Description	Checked	Approved	Date
	B	Revised Parts List Table 4-1.	EP	ED	
4-2	C	Added stake assembly parts to Table 4-1.	EP	WT	
All	D	Reformatted manual.	JS	VP	9/26/03
5, 9, 10, 11, 28-29, 31,34,36, 38	E	Added red-blue light configuration for Declared Distance applications. Added quantities to parts lists and recommended spare parts.	JS	WT	6/19/00
28	F	Changed Lens Color ordering code (Figure 8) from 10 to A.	JY	WT	7/19/00
All	G	Changed to new title page. Changed ADB to ADB Airfield Solutions.	JY	WT	5/16/01
8, 12, 14, 16- 23, 28, 38	H	Updated Table 4. Updated weight of light fixture. Added note in Assembly Instructions about pre-assembly. Updated Figures 4 and 5. Revised Stake Mounting and Base Mounting procedures. Updated Figures 6 and 7. Updated ordering code in Figure 8. Updated L-867 Base Plate Parts List by deleting part 2935 (16-inch base plate).	JY	WT	9/3/02
9, 14, 28, 29, 38, 39	I	Designated 30 W/6.6 A Quartz lamp as not ETL certified; deleted the L-861E only red-blue lens color from the ordering code and the parts list; deleted the name AMGLO EXM and AMGLO EXL from the parts list.	JY	WT	6/3/03
29	J	Updated order codes and parts, ADB	ER	GM	7/7/09
	K	Warranty update			3/22/13
All	L	All - internal only	RW	ER	9/5/15
	M	All	RW	JC	9/07/17

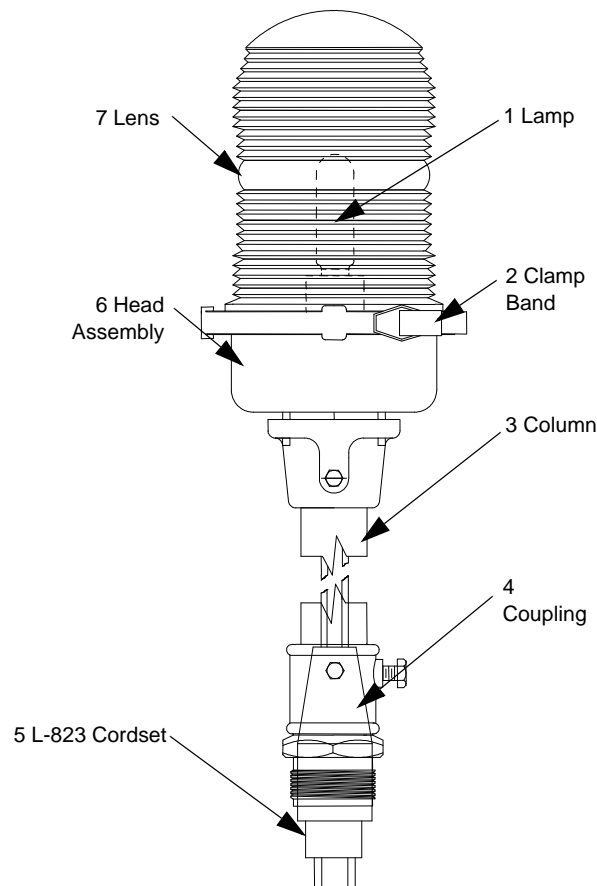
## 2.2 Introduction

See Figure 1. This section describes the medium intensity elevated light fixtures (quartz/incandescent) referred to in Table 1. These fixtures are designed to provide definition to the edges and the end of nonprecision IFR airport runways and taxiways. The light fixtures are available with a mounting column and are protected with aviation yellow gloss alkyd enamel paint.

**Table 1:** Table 1. L-861 Elevated Light Fixtures

Light Fixture	Function
L-861	Runway Edge Light
L-861T	Taxiway Edge Light
L-861E	Runway Threshold/End Light/Declared Distance

**Figure 1:** L-861 Light Fixture



The light fixtures are available in a number of color or color combination lenses and lamp wattages. All L-861 light fixtures have the following physical configuration:

- a cast aluminum head assembly (6)
- a stainless single-latch encircling clamp band (2) to hold the lens cap (7)
- a standard mounting column (3)
- a single gasket between the lens and the head assembly
- four screws in the head assembly to allow a four-degree fixture leveling adjustment after installation

The fixtures can be stake mounted on a 30-inch (762 mm) galvanized steel stake or mounted on a base plate for a 12- or 16-inch- (304.8 or 406.4 mm-) diameter L-867 base. Base mounting is recommended because maintenance is easier to perform and the equipment has added protection. Stake-mounted lights require transformers, cables, and connectors that are designed for direct earth burial.

Refer to Table 2 for mounting heights.

**NOTE:** The measurements in Table 2 are taken from the grade to the top of the light fixture.

**Table 2: Mounting Heights**

Type	Height (in.)	Height (mm)
Standard (FAA minimum)	14	355.6
Standard	24	610
Standard (FAA maximum)	30	762

### 2.2.1 L-861 Elevated Light Fixture: Required Equipment

Refer to Table 3 for required equipment that is supplied. Refer to Table 4 for required equipment that is not supplied. Refer to "ERE-CB Parts" on page 19 for part numbers.

**Table 3: Required Equipment Supplied**

Description	Quantity
Light fixture (with steel column, frangible fitting, lamp and L-823 cordset)	1
Instruction manual	1 per order

**Table 4: Required Equipment Not Supplied**

Description	Quantity
Torque wrench with 9/16 socket	1
Screw driver (medium blade)	1
Loctite Grade AV or equivalent	As required
Wrench for 1/4 in. hex head cap screw	1
L-867 base plate assembly (for 12- or 16-inch diameter L-867 base) when fixture is base mounted	1
Wrench for 1 13/16 hex screw on frangible coupling	1
L-867 base, 12-or 16-inch- (304.8 or 406.4 mm-) diameter	1
Stake assembly (30-inch galvanized steel) when fixture is stake mounted.	1
Isolation transformer for series circuit. Refer to Table 5 for the correct transformer to use.	1
L-823 single-conductor (primary) connector kit	1

**Table 5: Isolation Transformers**

If you have this circuit...	And this lamp wattage...	Use this isolation transformer...
6.6 A	30 or 45 W	L-830-1 (6.6 A/6.6 A)
20 A	30 or 45 W	L-830-2 (20 A/6.6 A)

## 2.2.2 Specifications

This subsection provides specifications for the L-861 elevated light fixtures.

### 2.2.2.1 Input

6.6 A or 120 Vac

### 2.2.2.2 Weight

Refer below for weight of assembled light fixtures.

14-inch overall height:	5 lb (2.27 kg)
24-inch overall height:	6.25 lb (2.84 kg)
30-inch overall height:	7 lb (3.18 kg)

## 2.2.3 Environmental Operating Conditions

The medium intensity elevated light fixture is designed to operate under the conditions presented below for temperature, wind, altitude, and relative humidity.

### 2.2.3.1 Temperature

-40 to +55 °C (-40 to +131 °F)

### 2.2.3.2 Wind

Velocities up to 300 mph (480 kph)

### 2.2.3.3 Altitude

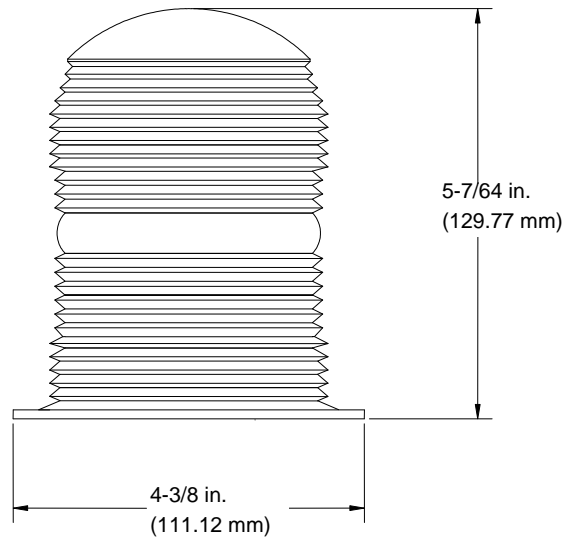
Sea level to 10,000 feet (3000 m)

### 2.2.3.4 Relative Humidity

Up to 100%

### 2.2.3.5 Dimensions

**Figure 2: L-861 Light Fixture Lens Dimensions**



---

## 2.3 Installation



### WARNING

- Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

### 2.3.1 Introduction

This section provides instructions for installing the L-861 medium intensity elevated light fixture. Refer to the airport project plans and specifications for the specific installation instructions.

### 2.3.2 Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.



### WARNING

Do not install lamp and lens assembly until you have mounted the fixture on a stake or base plate for the L-867 base. If you do not mount the fixture first, you may twist the cordset off the socket or break the socket prongs. Refer to Base Mounting and Stake Mounting in this section.

---

### 2.3.3 Assembly Instructions

**NOTE:** Check the packing list with the parts list to verify that all parts are present before proceeding. See the *Parts* section.

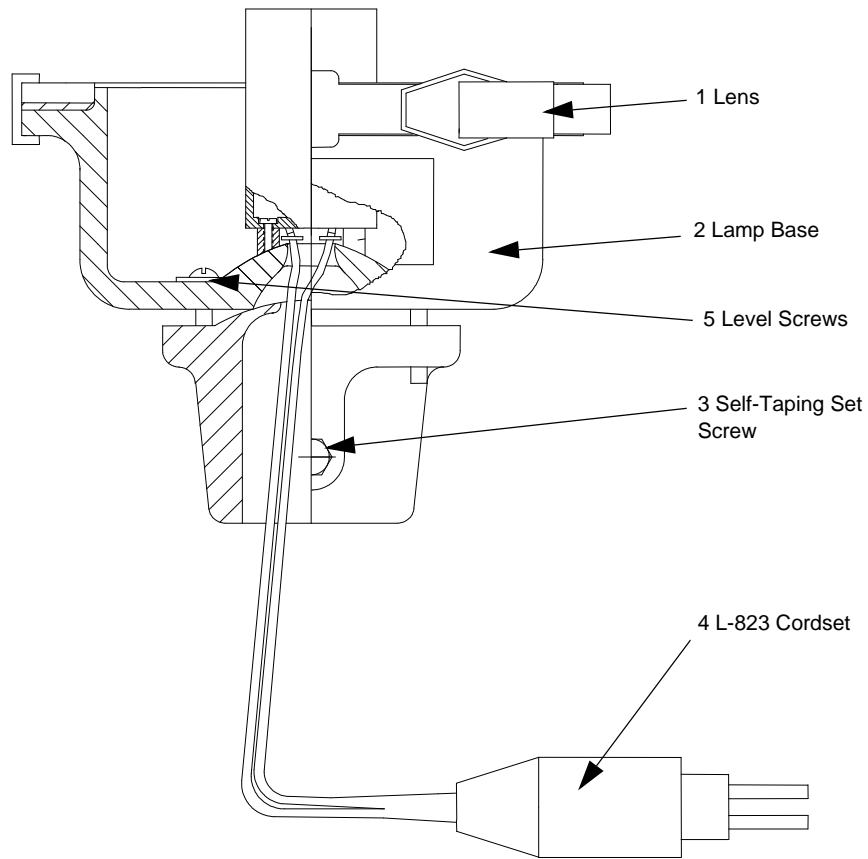
**NOTE:** The elevated light fixtures are completely assembled at the factory. Use the assembly instructions below if assembly for repair or maintenance is necessary.

To assemble parts, perform the following procedure:

1. Place the L-823 cordset (Item 4, Figure 3) into the column (Item 4, Figure 4).

**NOTE:** Figure 3 shows a head assembly with a phenolic socket. The L-861 light fixtures with porcelain and quartz sockets are similar.

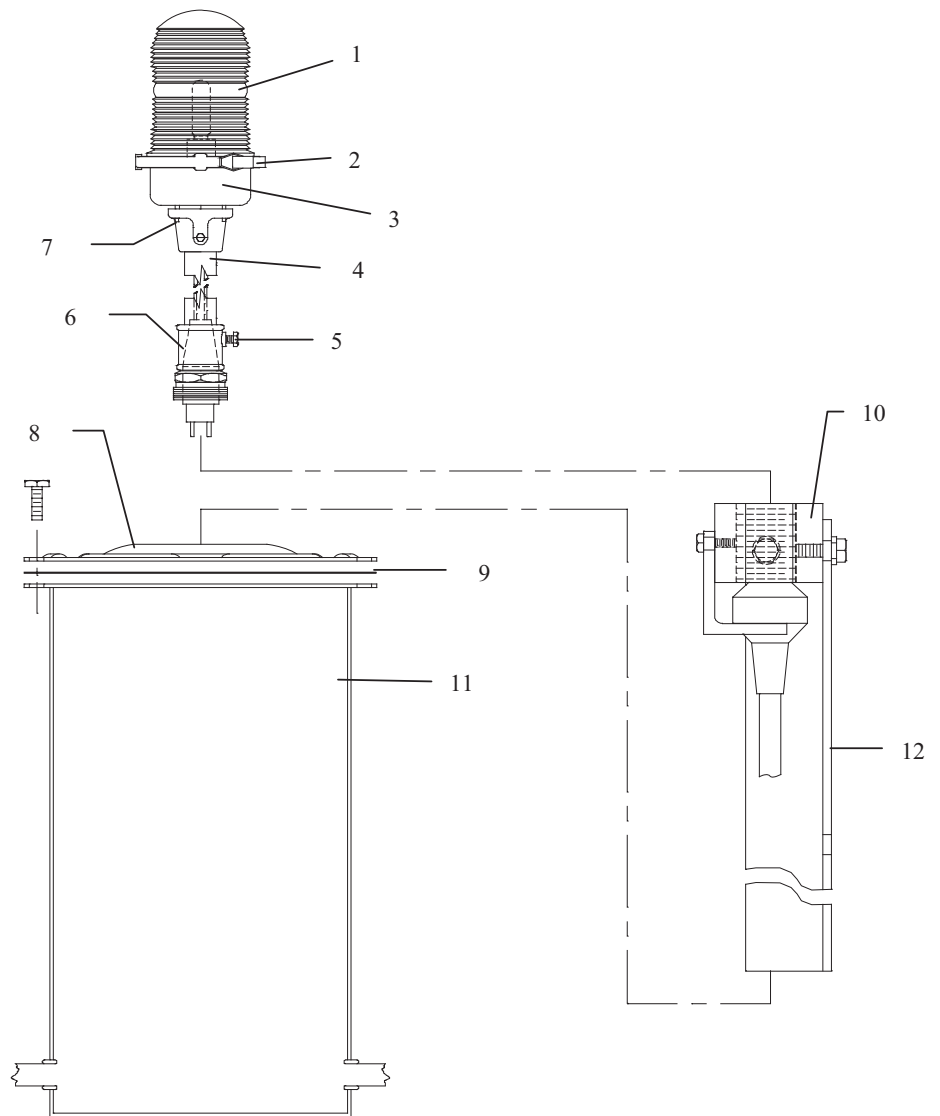
**Figure 3: L-861 Head Assembly with Phenolic Socket**



2. See Figure 4. Insert the column into the base of the head assembly (3).



**Figure 4: L-861 Light Fixture Assembly**



1. Lens	5. Self-Taping Set Screw	9. Gasket
2. Clamp Band	6. Frangible Coupling	10. Stake Hub
3. Head Assembly	7. Leveling Screws	11. L-867 Light Base Transformer Housing
4. Column	8. L-867 Base Plate	12. Optical Stake Assembly

- See Figure 3. Secure the column to the base by tightening the self-taping set screw (3) located on the side of the base.
- Insert the lamp into the socket. Refer to "Repair" on page 18.



**CAUTION**

- Touching quartz lamps with bare fingers may seriously shorten lamp life. If the quartz lamp has been touched, clean the lamp with tissue moistened with isopropyl alcohol.

- See Figure 4. Place the lens (1) on the upper base of the head assembly. Attach with clamp band (2).
- Secure the lens to the head assembly (3) by tightening the clamp band.
- Insert the end of the column into the frangible coupling (6) and secure by tightening the self-taping set screw (5).

### 2.3.4 Stake Mounting Installation

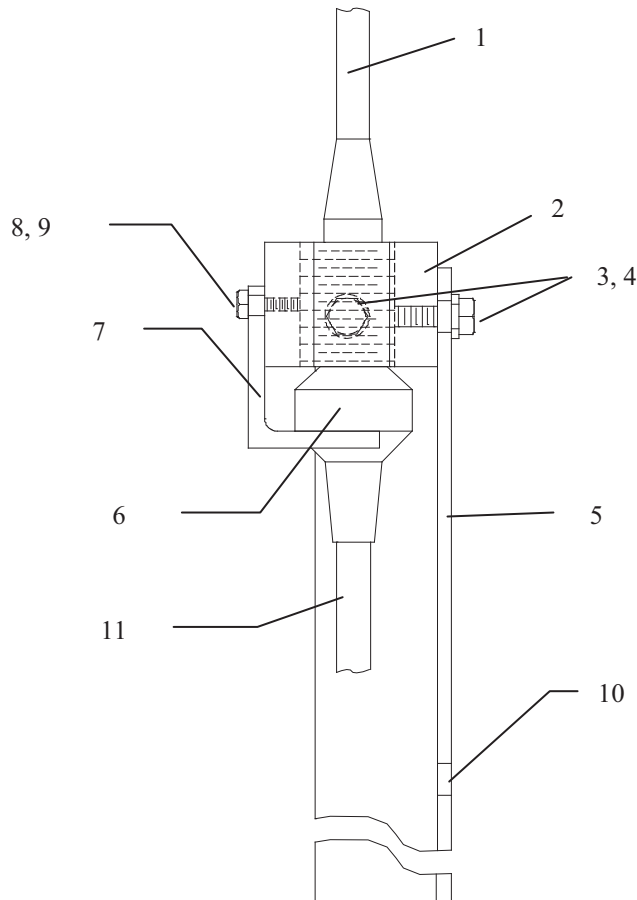
This subsection provides installation instructions for L-861 medium intensity elevated light fixtures. Light fixtures can be mounted on a stake or a base.

When you use 120 Vac parallel-powered lighting systems, mount the column light fixtures on 30-inch (762-mm) galvanized steel stakes with a fitting attached to the top of each stake to receive the male thread of the frangible coupling. Stake mounting requires cables and connections that are designed for direct earth burial. Install according to appropriate FAA and local contractor specifications.

To install the light fixture on the stake, perform the following procedure:

1. See Figure 5. Attach the stake hub (2) to the metal stake (5) using two 3/8–16 x 3/4-in. hex head screws (3) and 3/8-in. lockwashers (4).

**Figure 5: Stake Assembly**



- |                                       |                                |
|---------------------------------------|--------------------------------|
| 1. L-823 Male Plug                    | 2. Cable Connector Support     |
| 3. Stake Hub                          | 4. Hex Head Screw              |
| 5. Hex Head Screw                     | 6. Lockwasher                  |
| 7. Lockwasher                         | 8. Grounding Screw Hole        |
| 9. Metal Stake                        | 10. Transformer Secondary Lead |
| 11. Transformer Secondary Female Plug |                                |

- See Figure 6. Install the stake (4) in 6-inch- (152.4-mm-) diameter holes in the ground at a depth of 30 inches (762 mm) so that the mounting hub (8) of the stake is level.

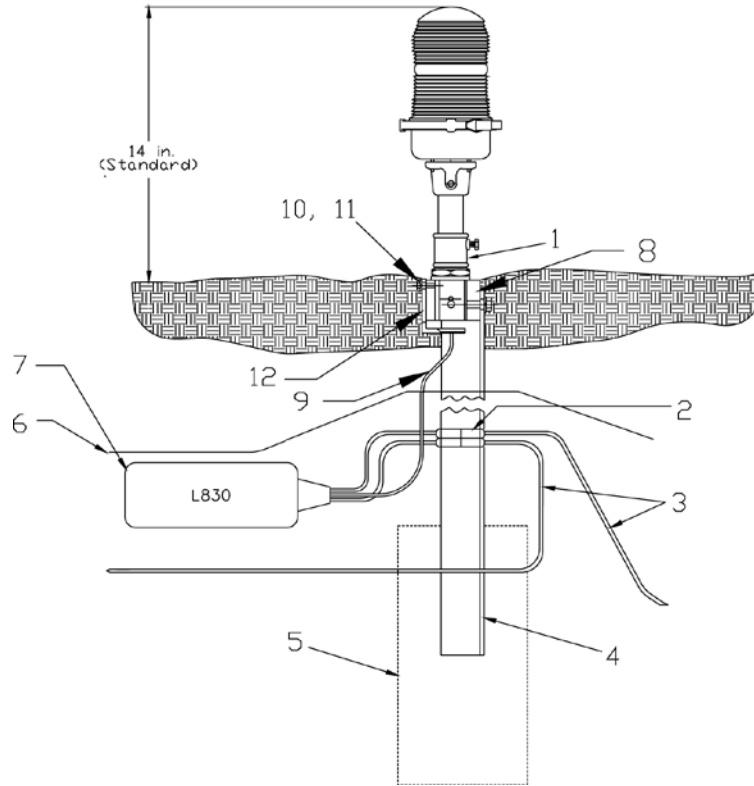
**NOTE:** The top of the stake should be even with the ground within one degree of the vertical. In areas where frost may cause heaving, anchor the stake with concrete and use a permeable backfill material such as sand around the buried electrical components. Cover the top surface with an impervious material to reduce moisture penetration.



**CAUTION**

- Do not drive stakes. Driving stakes may damage the stake and cause light fixture misalignment.

**Figure 6: Stake Mounting**



1. Frangible Coupling and Disconnect Plug	7. L-830 Transformer
2. Connectors	8. Stake Hub
3. 5 KV, L-824 Cable	9. Transformer Secondary Plug
4. Metal Stake (30 in.)	10. Hex Head Screw
5. Concrete Anchor (Recommended 6 x 6 x 12-in.)	11. Lockwasher
6. Optional Bare Copper Counterpoise Wire	12. Cable Connector Support

- Backfill around the stake with compacted earth passing a 1-inch (25.4 mm) sieve.

**NOTE:** Use a bubble level or carpenter's level to ensure the stake is vertical before backfilling around stake. Backfill with concrete (5) in case of unstable soil conditions.

4. Make electrical connections by installing the transformer primary cables (3) to the field circuit. Then insert the transformer secondary plug (9) in the cable connector support's forked tine and attach the cable connector support (12) to the stake hub (8) using 1/4–20 x 3/4-in. hex head screw (10) and 1/4-in. split lockwasher (11).

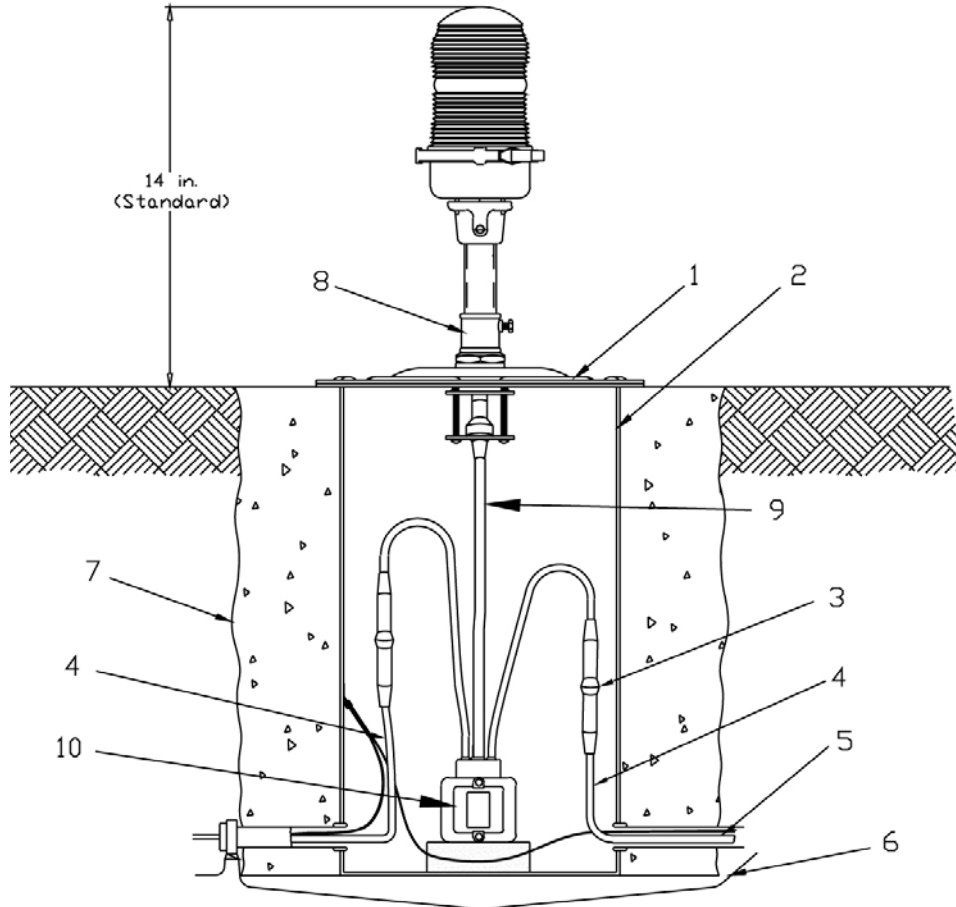
**NOTE:** The small hole at the lower end of the stake is provided for counterpoise wire connection (6).

5. Install the light fixture on the stake.

### 2.3.5 Base Mounting

See Figure 7. The L-861 light fixtures can be mounted on an L-867 base (2) mated with a base plate (1) with a diameter and bolt-hole corresponding to either a 12-inch- or 16-inch- (304.8 or 406.4 mm-) diameter L-867 base. The base plate is designed to receive a frangible coupling (8) using a female thread.

**Figure 7: Base Mounting**



- |   |  |
|---|--|
| 1. Base Plate                               | 2. Optional Bare Copper Counterpoise Wire  |
| 3. L-867 Base                               | 4. Four-Inch Concrete Backfill Recommended |
| 5. L-823 Primary Connector                  | 6. Frangible Coupling and Disconnect Plug  |
| 7. Two-foot Slack for Connections (Minimum) | 8. L-823 Secondary Connector               |
| 9. 5 KV, L-824 Cable                        | 10. L-830 Isolation Transformer            |

**NOTE:** See Figure 4. A gasket (9) is used with the base plate to form a watertight seal between the base plate and the L-867 base.

**NOTE:** Install the light fixture on the base according to appropriate FAA and local contractor specifications.

---

To install the light fixture on the base, perform the following procedure:

1. See Figure 7. Install the L-867 base on undisturbed soil. If the soil is unsuitable, remove soil to an adequate depth and replace with compacted acceptable material.

**NOTE:** In closed duct systems, install in soil conditions with good drainage. Use light bases having a drain hole to prevent water accumulation.

2. Orient the cable entrance hubs of the base in the proper directions.
3. Level the light base so that the mounting flange surface is level with finished grade.
4. With the base at the proper orientation and held at proper elevation, place approximately 4 inches (101.6 mm) of concrete backfill (7) around the outside base.

**NOTE:** If the concrete backfill is omitted, the earth backfill must be compacted to maintain proper elevation and orientation of the base.

5. Slope the top of the concrete away from the flange portion of the base so the sloped outer edges of the concrete are at surface grade.
6. To install the light fixture on the base, connect the 6.6/20 A series circuit to the primary of the appropriate isolation transformer. Use an L-830-1 transformer for 6.6 A series circuits and L-830-2 for 20 A series circuits.

**NOTE:** Use a brick or other device to raise the transformer about 3 inches (76.2 mm) above the bottom surface of the L-867 base (2) to avoid the possibility of the transformer being partially immersed in water in case water accumulates under the level of the ducts or pipes.

7. After you have connected the transformer, check the continuity of the series loop.
8. Wrap the connector joints in the primary circuit with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape one-half lapped, extending at least one and a half inches on each side of the joint.
9. Clamp the female secondary plug from the L-830 transformer to the L-867 base plate fitting.
10. Bolt the base plate (1) with the base plate gasket to the L-867 base using six 3/8–16 stainless steel bolts. Apply a drop of Loctite Grade AV to each bolt thread, and use a torque wrench to torque bolts down to 100 in-lb.
11. Connect a male L-823 plug (3) from the light fixture to the female plug on the secondary lead of the L-830 transformer.
12. Loosen the frangible coupling screw holding the coupling (8) to the light fixture column. Screw the coupling into the female thread on the base plate.

**NOTE:** Apply anti-seize compound to the coupling threads to improve coupling removal and prevent thread corrosion.

## 2.4 Maintenance

To keep the L-861 light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to Table 6. Refer to FAA AC 150/5340-26 for more detailed information.

**Table 6: L-861 Light Fixture Maintenance**

Interval	Maintenance Task	Action
Daily	Check for burned out lamp.	After turning off power, replace burned-out lamps. Refer to the <i>Repair</i> section.
	Check for dim lamp.	After turning off power, replace burned-out lamps. Refer to the <i>Repair</i> section.  After turning off power, check isolation transformer on series circuit.
	Check for broken lens.	Replace lens.
Weekly	Check for vegetation.	Remove vegetation. Use weed killer.
	Check for dirty lens.	Clean with glass cleaner.
Monthly	Check for misaligned fixture.	Straighten, level, and align light fixture.
	Check for dirty lamp socket.	After turning off power, clean the lamp socket.
	Check for dirty frangible coupling weep holes (for stake-mounted fixtures only).	Clean weep holes.
	Check for dirt on fixture drain holes.	Clean drain holes.
Semi-Annually	Check for improper ground elevation.	Grade so frangible point is level with ground elevation.
	Check for improper light elevation.	Maintain same elevation for all light fixtures.
	Check for moisture present in light housing or base.	Check drain holes and clamps. Check lens for cracks. If damaged, replace. Use water pump to remove water from base.
	Check for corrosion present or paint loose or chipped.	Scrape and repaint light fixture.
Annually	Check for cracks, corrosion, and shorts.	Repair or replace light fixture.
	Check for dirty contacts.	Clean contacts after turning off power.
	Check for loose wire connections.	Tighten wire connections.
Unscheduled	Make prediction of heavy snowfall, if necessary.	Use red flags or sticks to mark the location of fixtures to facilitate snow removal and lessen the chance of damage to fixtures by snow removal equipment.

---

## 2.5 Troubleshooting



### WARNING

- Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.
- De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

This section contains troubleshooting information. This information covers only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local ADB Safegate representative for help.

Problem	Possible Cause	Corrective Action
Lamps will not turn on.	Defective lamp	Replace lamp. Refer to "Repair" on page 18.
	Loose connection(s)	Tighten wires.
	Transformer on series circuit bad	Replace transformer.
	Moisture present in fixture	Open up and dry light fixture. Inspect lens for cracks. Replace lamp and any damaged parts. Refer to "Repair" on page 18.

## 2.6 Repair



### WARNING

- Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.
- De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

This section provides instructions for replacing lamps for the L-861 medium intensity elevated light fixture.

### 2.6.1 Lamp Replacement

To replace a lamp, perform the following procedure:

1. De-energize the circuit and lock out the circuit.



### WARNING

- Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.

2. Remove the lens from the fixture by loosening the lens clamp band on the lamp base.
3. Remove the lamp from the socket by performing one of the following:
  - a. For quartz socket lamps, remove the lamp by pulling the lamp out of the socket.



### CAUTION

- Touching quartz lamps with bare fingers may seriously shorten lamp life. If the quartz lamp has been touched, clean the lamp with tissue moistened with isopropyl alcohol.

- b. For porcelain socket lamps, remove the lamp by unscrewing the lamp from the socket.
  - c. For phenolic socket lamps, remove the lamp from the socket by pressing the lamp down and turning the lamp counterclockwise a quarter of a turn.
4. Install the new lamp by reversing the removal procedure.



### 3.0 ERE-CB Parts

To order parts, call ADB Safegate Customer Service or your local representative. Use the accompanying illustration, to describe and locate parts correctly.

To order parts, call ADB Airfield Solutions Customer Service or your local representative.

**Figure 8: Ordering Codes**

**Ordering Code** 44C1081 - X X XX

**Lamp**

- 1 = 30 W/6.6 A Incandescent<sup>3</sup>
- 2 = 45 W/6.6 A Incandescent (ETL Certified)
- 3 = 25 W/120 VAC, Incandescent<sup>3</sup>
- 5 = 30 W/6.6 A Quartz<sup>3</sup>
- 6 = 45 W/6.6 A Quartz (ETL Certified)
- 7 = No Lamp, Incandescent Socket
- 8 = No Lamp, Quartz Socket

**Lens Color**

- 0 = No Lens<sup>1</sup>
- 1 = Omnidirectional White (ETL Certified)<sup>4,5</sup>
- 2 = Bidirectional White/Yellow (ETL Certified)<sup>4,5</sup>
- 3 = Bidirectional White/Red (ETL Certified)<sup>5</sup>
- 4 = Bidirectional White/Green<sup>2</sup>
- 6 = Bidirectional Red/Green (ETL Certified)<sup>5</sup>
- 7 = Bidirectional Red/Red (ETL Certified)<sup>5</sup>
- 8 = Omnidirectional Green<sup>2</sup>
- 9 = Omnidirectional Yellow (ETL Certified)<sup>4,5</sup>
- B = Unidirectional Green/Obscure (ETL Certified)<sup>5</sup>
- C = Bidirectional Green/Yellow (ETL Certified)<sup>5</sup>
- D = Bidirectional Red/Yellow (ETL Certified)<sup>5</sup>
- E = Unidirectional Red/Obscure (ETL Certified)<sup>5</sup>

**Fixture Height**

- 11 = 14 in (35.6 cm) with 1.5" coupling, 12 TPI
- 22 = 24 in (61.0 cm) with 1.5" coupling, 12 TPI
- 33 = 30 in (76.2 cm) with 1.5" coupling, 12 TPI
- 44 = 20 in (50.8 cm) with 1.5" coupling, 12 TPI
- 1A = 4 in (35.6 cm) with 2" coupling, 11 TPI<sup>6</sup>

**Notes**

1. No lens option normally used as spare part. Specify and order lens separately.
2. Color and/or color configuration not recognized by the FAA
3. Lamp not certified
4. 45 W Incandescent
5. 45 W Quartz
6. Normally used in metric applications

### 3.1 Spare Components

Description	Part No.
Column, (steel) 6" (15.24 cm) for 14" OAH	62A0007-6
Column, (steel) 12" (15.24 cm) for 20" OAH	62A0007-12
Column, (steel) 16" (40.64 cm) for 24" OAH	62A0007-16
Column, (steel) 22" (55.88 cm) for 30" OAH	62A0007-22
Cord set, quartz	44A1701
Cord set, quartz, includes terminal	44A2387
Cord set, incandescent	44A1707
Frangible coupling, 1.5 inch, 12 TPI	62B0073
Frangible coupling, 1.5 inch, 12 TPI, with slot <sup>1</sup>	62B0461
Frangible reducer coupling, 2-1 inch, 11.5 TPI	61A0281
Frangible reducer coupling, 2-1 inch, 11 TPI <sup>2</sup>	61A0350
Stake Hub	62B0268-1
Stake	62B0284
Lamp Base	62C0005
Leveling Hub	62B0006
Gasket	63B0015
Head assembly with phenolic socket	44B1079-1X
Head assembly with quartz socket	44B1484-1X
Lamp, 25 W/120 VAC	48A0008
Lamp, prefocus, 30 W/6.6 A	48A0006
Lamp, prefocus, 45 W/6.6 A (ETL Certified)	48A0007
Lamp, quartz, 30 W/6.6 A	48A0085
Lamp, quartz, 45 W/6.6 A (ETL Certified)	48A0083
Lamp socket, phenolic for incandescent	49A0002
Lamp socket, Porcelain for incandescent	49A0014
Lamp socket, quartz	49A0032
Lamp Bracket for Quartz Lamp Socket	60C1169
Lamp base	62A2150
Lamp bracket (quartz lamp socket)	60C1169
Lens, white	63A0141
Lens, white/yellow	63A0142
Lens, white/red	63A0144
Lens, white/green	63A0146
Lens, red/green	63A0148
Lens, red	63A0149
Lens, red/obscure	63A0145
Lens, red/yellow	63A0156
Lens, omnidirectional green	63A0150
Lens, green/obscure	63A0147
Lens, green/yellow	63A0152
Lens, yellow	63A0143
Lens clamp assembly	44B0023

<sup>1</sup> Slot across threaded end allows easy replacement of broken frangible coupling

<sup>2</sup> Normally used in metric applications

### 3.1.1 Lens Colors and Lamp Wattages

Direction	Color	Wattage <sup>1</sup>	ETL Certification
L-861			
Omni	White	45 W - I; 45 W - Q	Yes
Omni	Yellow	45 W - I; 45 W - Q	Yes
Bi	White/Yellow	45 W - I; 45 W - Q	Yes
Bi	White/Red	45 W - Q	Yes
Bi	Red/Yellow	45 W - Q	Yes
Bi	Green/Yellow	45 W - Q	Yes
L-861E			
Bi	Red/Green	45 W - Q	Yes
Bi	Red/Red	45 W - Q	Yes
Uni	Green	45 W - Q	Yes
Uni	Red	45 W - Q	Yes

<sup>1</sup> Wattage: I stands for incandescent and Q stands for quartz.



#### **WARNING**

Do not install lamp and lens assembly until you have mounted the fixture on a stake or base plate for the L-867 base. If you do not mount the fixture first, you may twist the cordset off the socket or break the socket prongs. Refer to Base Mounting and Stake Mounting in this section.





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