



Medium-Intensity Elevated Edge Light

User Manual

96A0487, Rev. B, 2019/10/21



A.0 Disclaimer / Standard Warranty

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.

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.

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.

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.

All Products Guarantee

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.

This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

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.

© ADB SAFEGATE BVBA

This manual or parts thereof may not be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, nor otherwise, without ADB SAFEGATE BVBA's prior written consent.

This manual could contain technical inaccuracies or typographical errors. ADB SAFEGATE BVBA reserves the right to revise this manual from time to time in the contents thereof without obligation of ADB SAFEGATE BVBA to notify any person of such revision or change. Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and ADB SAFEGATE BVBA disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

TABLE OF CONTENTS

1.0 Safety	1
1.1 Safety Messages	1
1.1.1 Introduction to Safety	2
1.1.2 Intended Use	2
1.1.3 Material Handling Precautions: Storage	3
1.1.4 Material Handling Precautions: Fasteners	3
1.1.5 Maintenance Safety	4
1.1.6 Material Handling Precautions, ESD	4
1.1.7 Arc Flash and Electric Shock Hazard	5
2.0 MIRL	7
2.1 About this manual	7
2.1.1 Introduction	7
2.1.2 How to work with the manual	7
3.0 Product Introduction	9
3.1 Elevated Edge Light	9
4.0 Installation	11
4.1 Inspection on Arrival	11
4.2 Storage	11
4.3 Unpacking and Material Inspection	12
4.4 Installation Procedures	12
4.5 Placement	12
4.5.1 Base Mounting	12
4.5.2 Light Base Mounting	13
5.0 Maintenance	15
5.1 Safety for Maintenance and Repair	15
5.1.1 Maintenance Schedule	15
5.1.2 MIRL Lens Replacement	15
5.1.3 Replacing the lamp	16
5.2 Troubleshooting	17
6.0 Parts	19
6.1 Spare Parts	20
A.0 SUPPORT	23
A.1 ADB SAFEGATE website	23
A.2 Recycling	24
A.2.1 Local authority recycling	24
A.2.2 ADB SAFEGATE recycling	24

1.0 Safety

Introduction to Safety

This section contains general safety instructions for installing and using ADB SAFEGATE 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 Safety Messages

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.

	WARNING Failure to observe a warning may result in personal injury, death or equipment damage.
	DANGER - Risk of electrical shock or ARC FLASH 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.
	WARNING - Wear personal protective equipment Failure to observe may result in serious injury.
	WARNING - Do not touch Failure to observe this warning may result in personal injury, death, or equipment damage.
	CAUTION Failure to observe a caution may result in equipment damage.

Qualified Personnel

	Important Information The term qualified personnel 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. Always use required personal protective equipment (PPE) and follow safe electrical work practice.
---	--

1.1.1 Introduction to Safety



CAUTION

Unsafe Equipment Use

This equipment may contain electrostatic devices, hazardous voltages and sharp edges on components

- 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 this instruction can result in serious injury or equipment damage

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.
- Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

1.1.2 Intended Use



CAUTION

Use this equipment as intended by the manufacturer

This equipment is designed to perform a specific function, do not use this equipment for other purposes

- 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 this instruction can result in serious injury or equipment damage

1.1.3 Material Handling Precautions: Storage



CAUTION

Improper Storage

Store this equipment properly

- 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

1.1.4 Material Handling Precautions: Fasteners



DANGER

Foreign Object Damage - FOD

This equipment may contain fasteners that may come loose - torque properly.

- Only use fasteners of the same type as the one originally supplied with the equipment.
- Use of incorrect combination of gaskets, bolts and nuts can create severe damages to the product installation and create safety risk .
- You need to know what base the light fixture will be installed in, in order to chose the correct gasket, bolts and nuts.
- Bolt type, length, and torque value are determined by type of base, height of spacers used, and clamp force required in FAA Engineering Brief No 83 (latest revision).
- Due to the risk of bolts vibrating loose, do not use any type of washer with the fixing bolts (such as split lock washers) other than an anti-vibration washer. Anti-vibration washers as defined in FAA EB 83 (latest edition) must be used. For installations other than FAA, use the base can manufacturer's recommendations.
- 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.



Note

To minimize the risk of errors, the ADB SAFEGATE Sales Representative will have information on which gasket goes with which base. This information is also provided in the product Data sheets, the User Manuals and the Spare Part Lists.



CAUTION

Use of incorrect combination of gaskets, bolts and nuts can create severe damages to the product installation and create multiple safety risks.

To obtain a safe and watertight installation the O-ring and retaining bolt stated in the document must be used.

You need to know what base the light fixture will be installed in, in order to choose the correct gasket, bolts and nuts.

Failure to follow these cautions can result in equipment damage or aircraft FOD.

1.1.5 Maintenance Safety



DANGER

Electric Shock Hazard

This equipment may contain electrostatic devices

- 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 instructions can result in death or equipment damage

1.1.6 Material Handling Precautions, ESD



CAUTION

Electrostatic Sensitive Devices

This equipment may contain electrostatic 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 shall 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

1.1.7 Arc Flash and Electric Shock Hazard



DANGER

Series Circuits have Hazardous Voltages

This equipment produces high voltages to maintain the specified current - Do NOT Disconnect while energized.

- Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.
- Only persons who are properly trained and familiar with ADB SAFEGATE 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 SAFEGATE 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 instructions can result in death or equipment damage

2.0 MIRL

MIRL, Medium-Intensity Elevated Edge Light and Edge Light Marker.



2.1 About this manual

2.1.1 Introduction

Provides the purpose, scope, and applicability of the technical manual.

The manual shows the information necessary to:

- Install and maintain HIRL High-Intensity Elevated Edge Light and Edge Light Marker.

2.1.2 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.

3.0 Product Introduction

The fixture can be used for medium-intensity runway edge and threshold/end lighting. The MIRL fixture also has omnidirectional output for circling guidance. Low maintenance design minimizes quantity of necessary spare parts.

Figure 1: MIRL



3.1 Elevated Edge Light

Compliance with Standards

T/C:	K311, Type MIRL.
ICAO:	Annex 14, Vol. 1 Para. 5.3.5
FAA:	L-860, L-860E, L-861, L-861E, L-861SE, and L-861T, AC 150/5345-46B.

Uses

- Medium- and low-intensity edge lighting for runways, taxiways and heliport applications.
- Fixtures are available in 6.6 A series circuit and 120 VAC parallel circuit configurations. 6.6 A series circuit fixtures are available in standard incandescent T10P and quartz PK30d styles.

Features

- Very robust and durable design. Heavy-duty cast aluminum fixture body helps reduce damage caused by maintenance and snow removal equipment. Durable aviation yellow finish and stainless steel hardware provide for an extended fixture life. Optional Lexan lenses help reduce lens breakage.
- Uses standard medium-intensity lenses, gaskets, sockets and fixture cable assemblies allowing for spares interchangeability with competitor's fixtures.
- 2" Slipfitter provides for mounting on standard 2" frangible couplings for overall height ranges of 350 mm to 760 mm.
- Use of optional PK30d style lamps eliminate the need for lamp sockets and the high maintenance bi-pin type lamps. PK30d lamps provide higher and more constant output than standard incandescent type lamps.
- PK30d lamp life is rated 1500 hrs at full brightness but typically 4000 – 6000 hrs in actual service. Easy re-lamping is accomplished without requirement for tools and involves loosening only one thumbscrew.
- Low maintenance design minimizes spare parts needs. No small clips or lens holders are used so lamp changes can be performed in the field by maintenance personnel wearing gloves.
- Many fixture components are compatible with ADB 5NQ3850CU type fixture to reduce spares requirements.
- Lenses are available in clear, colored or 180 deg. bi-colored. A 180 degree blanking shield is available for special applications.

- Four screws allow for ease of leveling fixture after installation. Optional fixture leveling tool is available.
- Fixture can have side or center cable exit without requiring disassembly of fixture.
- Fixture has provision for mounting of edge light flags or markers with suitable mounting brackets.

Packaging

Assembled fixture c/w lens and lamp	
Weight:	5 lb (2.3 kg) each fixture
Packaging Dimensions:	15 × 15 × 16 in (4 fixtures per box) (38.1 × 38.1 × 40.6 cm)



4.0 Installation



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.

4.1 Inspection on Arrival

Inspect all packings for visible damage.

Open every damaged box and inspect the contents for damage.

Immediately fill a claim form with the carrier if any equipment is damaged.

Store the equipment in its original packing in a protected area.

4.2 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

Store the fixture in its original packing in a protected area.

Indoor storage:

Storage temperature: -55°C to +55°C (-67°F to +131°F)

Humidity: <95% non condensing.

For long storage periods (longer than one year), we recommend to energize the lights once a year at nominal intensity (6.6Amps) for 20 minutes.

4.3 Unpacking and Material Inspection



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



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.

Provides any supplemental information regarding the proper unpacking procedures, including any pertinent environmental conditions affecting storage, required to prevent damage to the products. ie. all solar powered equipment must be unpacked and charged after shipment.

4.4 Installation Procedures

4.5 Placement

This subsection describes the placement of the MIREL light fixtures.

MIREL Light Fixture Placement

Follow the guidelines below when placing the MIREL light fixture.

- The Runway Edge Light shall be medium intensity, installed elevated, in full compliance with Transport Canada Specifications K311 and meet the requirements of the FAA L-860 or L-861 specifications (AC 150/5345-46) and with ICAO Annex 14, Vol. I, para. 5.3.5. for use on a non-precision instrument runway.
- The PK30d prefocus halogen lamp shall be 45 W, 6.6 A. The lamp is retained by a positioning device. Lamp changes may be accomplished without the use of hand tools and without disassembly of the optical lenses.
- Overall height of the light when installed, shall not exceed 350 mm. The light consist of heavy-duty aluminum alloy castings for the body components, heat-resistant glass optical parts and plain stainless hardware. Gaskets and electrical wiring are high temperature resistant.

4.5.1 Base Mounting

MIREL light fixtures can be mounted on an L-867 base plate with a diameter and bolt-hole corresponding to either a 12-inch (304.8 mm) diameter L-867B base or a 16-inch (406.4 mm) diameter L-867D base plate per FAA AC 150/5345-46. The base plate is designed to receive a frangible coupling using a female thread. The standard coupling thread is 1-1/2 -12 UNF, optional thread is 2-11.5 NPT, and 2-11 TPI (ICAO application). A gasket is supplied with the base plate to form a watertight seal between the base plate and the L-867 light base per FAA AC 150/5345-46.



Note

Install the base according to FAA Advisory Circular AC 150/5340-30 and site plans.

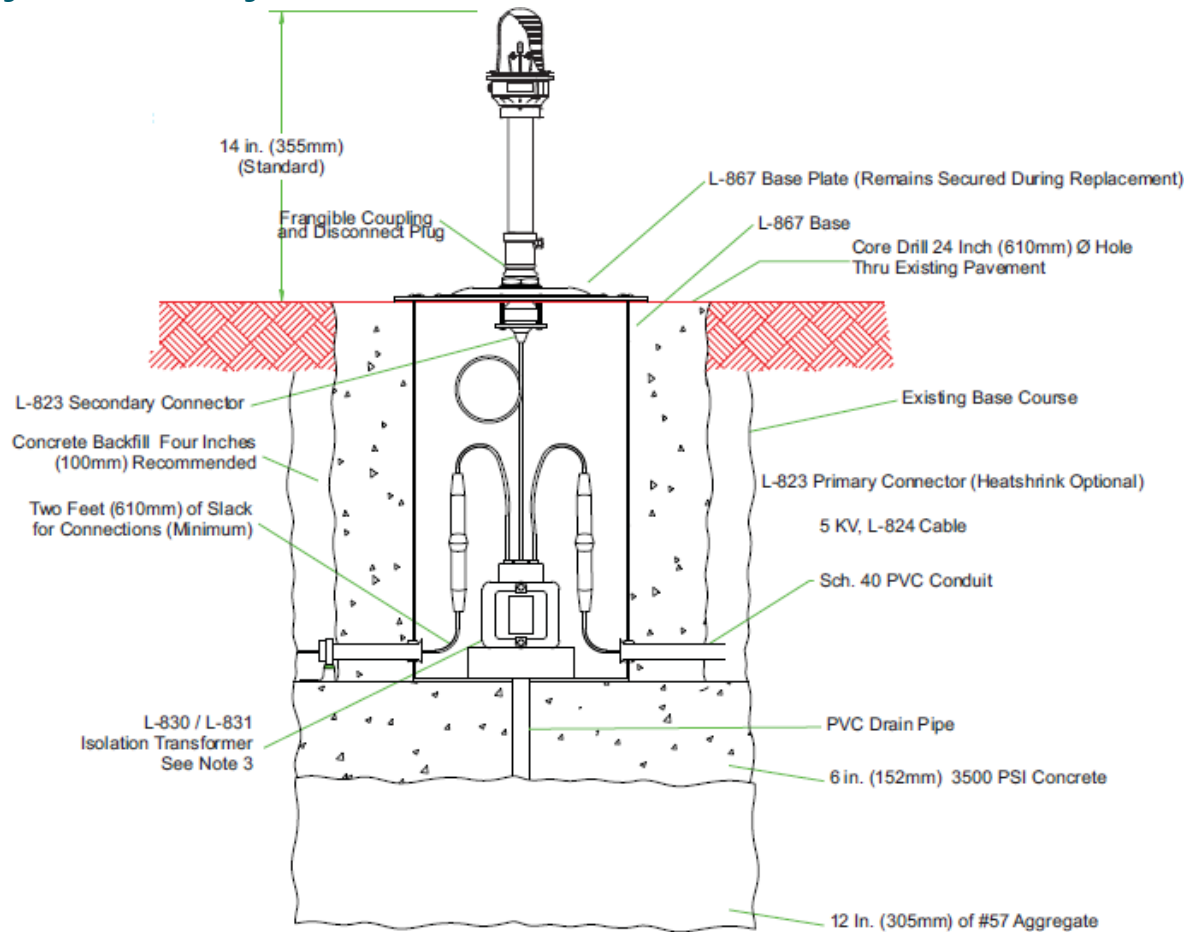
See Figure 2. The MIRL light fixtures can be mounted on an L-867 base mated with a base plate with a diameter and bolt-hole corresponding to either a 12-inch- or 16-inch (304.8 or 406.4 mm) diameter L-867 base. The base plate is designed to receive a frangible coupling using a female thread.



Note

1. The MIRL is available with couplings to fit new design or existing baseplate with various thread designations:
2. Apply anti-seize compound to threads of frangible coupling when installing new or replacing existing MIRL
3. Existing L-830 / L-831 100W/150W transformer can be used.

Figure 2: Base Mounting



4.5.2 Light Base Mounting

To install the base, perform the following procedure:

1. 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 light base in the proper direction according to site plans.
 3. Level the light base so that the mounting flange surface is level in all directions.
 4. With the base at the proper orientation and held at proper elevation, place approximately 4 inches (101.6 mm) of concrete backfill 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. Hand screw the entire HIRL fixture onto the base plate.
Finish tightening the fixture by using a wrench on the flat areas of the frangible coupling.
7. Place the assembled base plate/fixture close to the base can.
8. Connect the fixture leads to the isolation transformer.
9. Bolt the base plate with the base plate gasket to the L-867 base using six 3/8–16 stainless steel bolts.
Apply a drop of Loctite number 243 to each bolt thread, and use a torque wrench to torque bolts down to 100/110 inch-pounds (11.3 N•m).

5.0 Maintenance

5.1 Safety for 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 Safegate 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 Safegate 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.

5.1.1 Maintenance Schedule

To keep the HIRL light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to [Table 1](#). Refer to FAA AC150/5340-26 for additional recommendations.

Table 1: MIRL Light Fixture Maintenance

Interval	Maintenance Task	Action
Daily	Inspect for outages Check cleanliness of lenses	Repair as necessary Clean as necessary
Weekly	Check for vegetation.	Remove vegetation. Use weed killer.
Monthly	Check for misaligned fixture.	Straighten, level, and align.
Annually	Check for improper ground elevation. Check for improper light elevation. Check for corrosion present or paint loose or chipped. Check gaskets/seal for leakage	Grade so frangible point is approximately 1 inch (25.4 mm) above ground elevation. Maintain same elevation for all light fixtures. Scrape and repaint. Touch up paint as necessary. Replace gasket/seal if torn or damaged
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. Refer to the optional snow flag kit in <i>Optional Parts</i> in the <i>catalog sheet</i> .

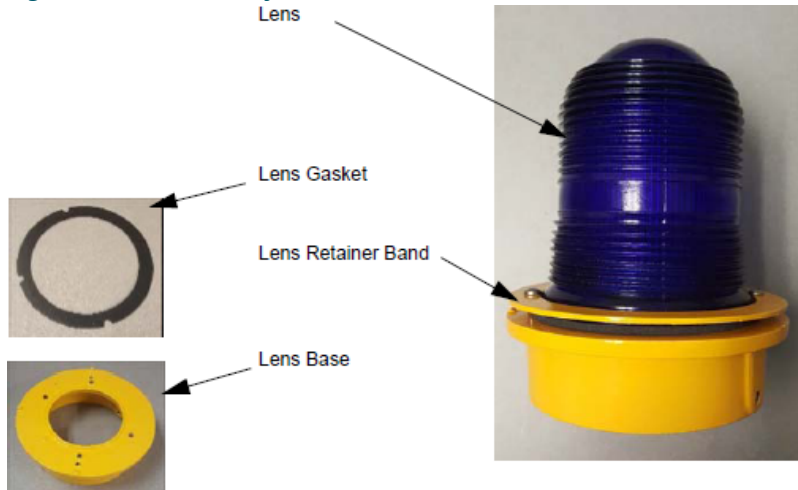
5.1.2 MIRL Lens Replacement

Replace the Lens Assembly

1. Set Lens to Lens Base.

- Align the cutouts in the Lens to the markings on the Lens Base.
- Install Lens Holder over Lens.
- Install Lens Gasket over Inner Lens Holder.
- Install the Lens to Lens Base with Lens Retainer Band
- Align Lens Base to Fixture Base and fasten with Thumb Screw (TS-2009).
Use pliers to tighten.
- Install two (2) $\frac{1}{4}$ -20 X 1" Screws (64A0173/16) and $\frac{1}{4}$ -20 Nuts (65A0015/24) to Slip Fitter.
- Power up the fixture and check function at all five (5) power levels.
Ensure correct light color is emitting from the proper side of the fixture according to the part number.

Figure 3: Lens Assembly



5.1.3 Replacing the lamp

- Disconnect the lamp wires
- Remove the lamp from the spring clip
- Replace it with a new lamp, using gloves or a dry cloth.
- Connect the wires to the cord set.

Figure 4: Lamp Assembly

Be careful not to touch the glass of the Lamp.

Use a dry cloth or gloves when handling the lamp.

Spring clip



5.2 Troubleshooting

This section contains troubleshooting information for the MIRL light fixtures. 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.

Refer below for troubleshooting procedures for the MIRL.

Table 2: Troubleshooting Process

Problem	Possible Cause	Corrective Action
1. Lamp will not turn on.	Defective lamp	Replace lamp
	Loose connection(s)	Tighten wires.
	Transformer on series circuit bad	Replace the transformer.
2. Moisture present in fixture.	Broken lens or faulty gasket.	Open up and dry light fixture. Inspect lens for cracks. Replace gasket. Replace the optical assembly and any damaged parts.

6.0 Parts

Ordering Code

L861U - X - XX - XXX - XXX

Lamp Type¹

B = 6.6 A, T10P, Pre-focus

Q = 6.6 A, PK30d Quartz Halogen

S = 120 VAC, Med. Screw Base

Lamp Rating

25 = 25 W (Type S only)

30 = 30 W (Type B only)

40 = 40 W (Type S only)

45 = 45 W (Types B & Q only)

69 = 69 W (Type S only)

10 = 100 W (All types)

Lens Type

BBA = Blue Asymmetrical

CC = Clear Symmetrical

BB = Blue Symmetrical

YY = Yellow Symmetrical

RR = Red Symmetrical

GG = Green Symmetrical

GR = Red/Green Symmetrical

CB = Clear/Blue Symmetrical

CY = Clear/Yellow Symmetrical

CR = Clear/Red Symmetrical

Special Options

FAA = Supplied with 1" FAA Style Hub

LL = Long Leads for up to 760mm mounting hgt.

ML = Lexan Lenses in place of standard glass
(Types CC, BB, YY, RR, GG, GR only)

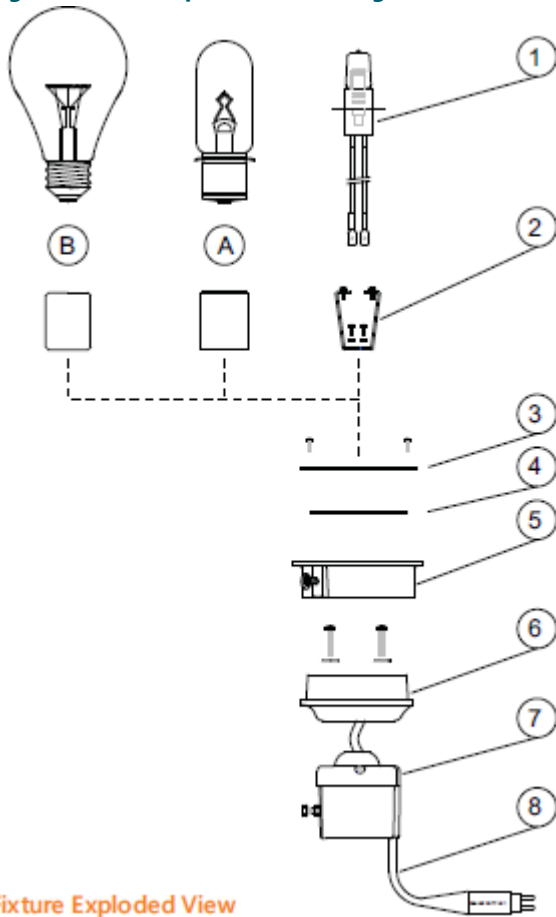
Notes

Example: L861U-B-45BB is a taxiway edge light with a 45W, T10P pre-focus base lamp and a blue symmetrical glass lens.

¹ Fixtures are also available with 30W or 45W Bi-pin quartz halogen lamps and sockets on special order.

6.1 Spare Parts

Figure 5: MIRL Exploded Parts Diagram



Fixture Exploded View

Table 3: Spares

Description	Part No.	See Figure 5
Blue Asymmetrical Lens	SAT0061-00BBA	NS
Clear Symmetrical Lens	SAT-0061-00CC	NS
Blue Symmetrical Lens	SAT-0061-00BB	NS
Yellow Symmetrical Lens	SAT-0061-00YY	NS
Red Symmetrical Lens	SAT-0061-00RR	NS
Green Symmetrical Lens	SAT-0061-00GG	NS
Green/Red Symmetrical Lens	SAT-0061-00GR	NS
Clear/Blue Symmetrical Lens	SAT-0061-00CB	NS
Clear/Yellow Lens Symmetrical	63A0142	NS
Clear/Red Lens Symmetrical	63A0144	NS
Clear Symmetrical Lexan™ Lens	N-400C	NS
Blue Symmetrical Lexan™ Lens	N-400B	NS
Yellow Symmetrical Lexan™ Lens	N-400A	NS
Red Symmetrical Lexan™ Lens	N-400R	NS
Green Symmetrical Lexan™ Lens	N-400G	NS

Table 3: Spares (continued)

Description	Part No.	See Figure 5
Green/Red Sym. Lexan™ Lens	N-400RG	NS
Lamp, 45W 6.6A PK30d (1)	64317	1
Lamp, 100W 6.6A PK30d (1)	64342	1
Lamp, 30W 6.6A T10P (1A)	SAT-861-30	1
Lamp, 45W 6.6A T10P (1A)	48A0007	1
Lamp, 100W 6.6A T10P (1A)	SAT-861-100	1
Lamp, 25W 120VAC (1B)	25A/CL	1
Lamp, 40W 120VAC (1B)	40AT/S	1
Lamp, 69W 120VAC (1B)	69A21/TS	1
Lamp, 100W 120VAC (1B)	100A21/TS	1
Halogen Lamp Support (2)	951016	2
Socket, Prefocus for T10P lamps (2A)	49A0002	2
Socket, Med. Screw Base 120VAC (2B)	49A0014	2
Lens Retainer Ring (3)	930407-3	2
Gasket, Neoprene (4)	63B0015	3
Fixture Optic Carrier, Universal (5)	930407-1	4
Fixture Base, Universal (6)	930407-2	5, 6
Slipfitter Base, Universal (7)	940112	7
Cable Assembly (Q/B Sockets)	91 MPC-.46-H / M	8

Appendix A: SUPPORT

Our experienced engineers are available for support and service at all times, 24 hour/7 days a week. They are part of a dynamic organization making sure the entire ADB SAFEGATE is committed to minimal disturbance for airport operations.

Table 4: ADB SAFEGATE Support

Live Technical Support - Americas

If at any time you have a question or concern about your product, just contact ADB SAFEGATE's technical service department. Trained in all areas of system issues, troubleshooting, quality control and technical assistance, our highly experienced Technical support specialists are available 24 hours a day, seven days a week to provide assistance over the phone.

ADB SAFEGATE Americas Technical Service & Support (US & Canada): +1-800-545-4157

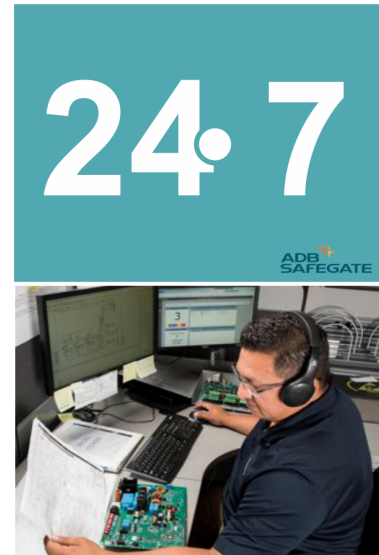
ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304

During regular business hours, you can also Chat with a Service Technician. We look forward to working with you!

Before You Call

When you have an airfield lighting or system control system problem it is our goal to support airfield maintenance staff as quickly as possible. To support this effort we ask that you have the following information ready before calling.

- The airport code
- If not with an airport, then company name (prefer customer id number)
- Contact phone number and email address
- Product with part number preferable or product number
- Have you reviewed the product's manual and troubleshooting guide
- Do you have a True RMS meter available (and any other necessary tools)
- Be located with the product ready to troubleshoot



Note

For more information, see www.adbsafegate.com, or contact ADB SAFEGATE Support via email at support@adbsafegate.com or

Brussels: +32 2 722 17 11

Rest of Europe: +46 (0) 40 699 17 40

Americas: +1 614 861 1304. Press 3 for technical service or press 4 for sales support.

China: +86 (10) 8476 0106

A.1 ADB SAFEGATE website

The ADB SAFEGATE website, www.adbsafegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

A.2 Recycling

A.2.1 Local authority recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

A.2.2 ADB SAFEGATE recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the EU.

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labelled as follows:

- For ROHS/WEEE Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for EU directives as and when EU member states implement new regulations and or amendments. It is our aim to maintain our compliance plan and assist our customers.

Company Addresses

ADB SAFEGATE	ADB SAFEGATE, Belgium: Leuvensesteenweg 585, B-1930 Zaventem Belgium
Contact: Tel.: +32 2 722 17 11, Fax: +32 2 722 17 64	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Americas LLC	ADB SAFEGATE, Americas: 977 Gahanna Parkway, Columbus, OH 43230 USA
Contact: Tel.: +1 (614) 861 1304, Fax: +1 (614) 864 2069	Email: sales.us@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Sweden AB	ADB SAFEGATE, Sweden: Djurhagegatan 19 SE-213 76 Malmö Sweden
Contact: Tel.: +46 (0)40 699 17 00, Fax: +46 (0)40 699 17 30	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Airfield Technologies Ltd. China	ADB SAFEGATE, China: Unit 603, D Block, CAMIC International Convention Center, No 3, Hua Jia Di East road, ChaoYang district, Beijing 100102 P.R. China
Contact: Tel.: +86 (10) 8476 0106, Fax: +86 (10) 8476 0090	Email: china@safegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Germany GmbH	ADB SAFEGATE Germany GmbH, Mannheim: Konrad-Zuse-Ring 6, D-68163 Mannheim Germany
Contact: Tel.: +49 (621) 87 55 76-0, Fax: +49 (621) 87 55 76-55	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com



**Powering Your Airport Performance
from Approach to Departure**

adbsafegate.com

Copyright © ADB SAFEGATE, all rights reserved

