



60m Runway Edge Light Style 2 LED IREL(L)

Spare Parts

SP_3059, Rev. A, 2020/05/12


**ADB
SAFEGATE**

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 European 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 FAA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

All Products Guarantee

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.

Standard Products 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 two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.



Note

See your sales order contract for a complete warranty description.

FAA Certified product installed in the United States or in US Military installations guarantee

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).

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 from date of installation, per FAA EB67 (applicable edition).

ADB SAFEGATE LED light fixtures (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition).



Note

See your sales order contract for a complete warranty description.

Liability



WARNING

Use of the equipment in ways other than described in the catalog 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

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.

2.0 Introduction



2.1 LED Runway Edge Light

Compliance with Standards

ICAO:	Runway Edge: Annex 14, Vol. I, par. 5.3.9.7 and 5.3.9.10; Fig. A2-10 for 60 m runways.
T/C:	Runway Edge: Transport Canada TP 312 par. 5.3.10.11 and 5.3.10.14 and Appendix B, Fig. B.1.11 for 60 m runways.
Military:	Runway Edge: Photometry complies with UFC 3-535-01 Fig. 4-2.B for runways 60 m (200 feet) or more wide.

Uses

ICAO, T/C and US MIL

- Runway edge on category I, II, and III runways
- Runway edge applications 60 m (200 feet) or more wide

Features

- Average LED life of 56,000 hours under high-intensity conditions and more than 150,000 hours under typical operating conditions, resulting in significant reduction or even elimination of ongoing maintenance costs and periodic re-lamping expenses.
- For white runway edge applications, use of LED light source eliminates color shifts at lower CCR step settings. For red or yellow runway applications, use of LED light source eliminates filter replacement and color shifts when viewed at various angles or CCR step settings.
- Low protrusion above ground of ≤ 12 mm reduces vibrations caused by aircraft landing gear in both light fixture and landing gear, increasing lamp life.
- Can be installed on existing 6.6 A or 20 A series circuits with no modifications to existing CCR or isolation transformer.
- Operates on either 3- or 5-step ferroresonant or thyristor CCRs that are designed in compliance with IEC or FAA requirements
- Very low power rating for LED lights contributes to a lower life cycle cost. Limits cost for supporting equipment, such as CCRs, to strict minimum.
- Full compatibility with existing airfield lighting series circuits. No need to replace CCRs, series transformers, or cables.
- LED photometric performance will be maintained longer due to a cleaner lens. The lower temperature of the lens prevents the "baking effect" that causes contaminants to stick to the surface of the lens.
- Offers longer maintenance intervals and requires fewer spare parts, resulting in lower life cycle cost.
- Smart electronics control current to LED, so light output matches existing incandescent fixtures.
- Low-temperature lights. Temperature rise at center of top cover remains below 320 °F (160 °C).
- Light channel in front of prism windows protects prisms from damage and prevents rubber buildup thereby maintaining optimal light output.

- Rugged lightning protection complies with ANSI/IEEE C62.41-1991 Location Category C2 given in FAA Eng. Brief 67. Category C2 is defined as a 1.2/50µS – 8/20 µS combination wave, with a peak voltage of 10,000 Volts and a peak current of 5,000 Amps.
- Unique double-barrier cord set design eliminates risk for water incursion in case the cord set becomes damaged. Cord set can also be easily replaced without opening fixture.
- Environment-friendly, precision-cast aluminum alloy cover, optical support, and inner cover assembly with stainless steel hardware.

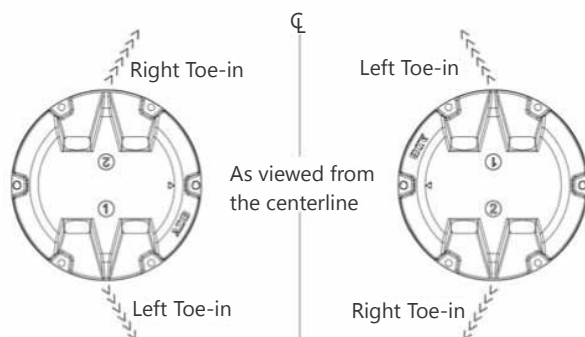
Operating Conditions

Temperature:	-40 °C to +55 °C / -40 °F to +131 °F
Altitude:	Sea level to 10,000 feet / 3000 m
Relative Humidity:	Up to 100%

Optional Snow Plow Ring

Depending on installation method and snow plowing technique used, a snow plow ring may be necessary. Snow plow rings are available for either standard or stainless steel adjustable Size B L-868 cans. Contact ADB SAFEGATE Sales for additional details.

Toe-in Coding



Note

Triangle embossed on the top cover should point toward the centerline to ensure correct toe-in position.

Power Supply

It is recommended that the IREL-L LED fixture be powered from a dedicated CCR and that separate remote controls are available. IREL-L lights have been designed to work with any IEC- or FAA-compliant transformer up to 200 W without affecting the performance or lifetime of the light fixture or transformer.

IREL-L	Fixture Load	Isolation XF	Isol. XF Load	CCR Load
Without Heater				
Unidirectional	21 VA	30/45 W	8 VA	29 VA
Bidirectional ¹	36 VA	65 W	17 VA	53 VA
Bidirectional ²	21 VA/side (42 VA total)	30/45 W per side	8 VA per XF	29 VA/side (58 VA total)
With Heater				

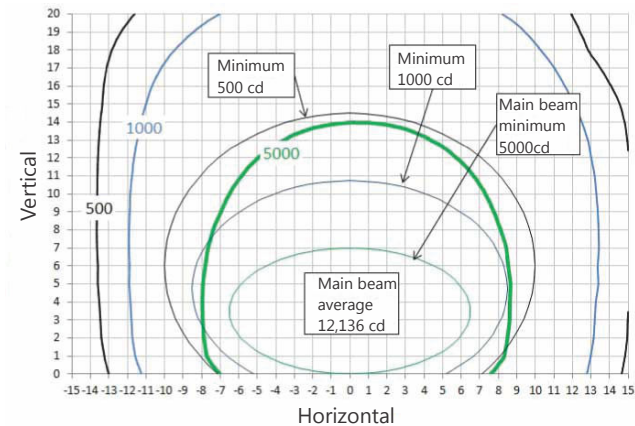
IREL-L	Fixture Load	Isolation XF	Isol. XF Load	CCR Load
Unidirectional	49 VA	65 W	15 VA	64 VA
Bidirectional ¹	64 VA	65 W	13 VA	77 VA
Bidirectional ²	49 VA/side (98 VA total)	65 W per side	15 VA per XF	64 VA/side (128 VA total)

Notes

¹ One cord set

² One cord set per side

Photometric Data: IREL-L 60 m White



Dimensions

Outside Diameter:	11.94 in / 30.33 cm
Bolt Circle Diameter (L-868B):	11.25 in / 28.58 cm
Max. Bottom Cover O.D.: - 9.92 in / 25.20 cm down to depth of 1.63 in / 4.14 cm - 8.69 in / 22.07 cm from depth of 1.63 in / 4.14 cm to 3.88 in / 9.86 cm Compatible with L-868B Top Sections where the overall height of the Top Section is less than 4 in / 10.16 cm.	
Bottom Cover Depth:	3.88 in / 9.9 cm

Packaging

In cardboard box:	7 × 13 × 13 in / 17.8 × 33 × 33 cm
Weight with packing:	18.5 lb / 8.4 kg
Weight without packing:	15.5 lb / 7 kg

3.0 Parts

Ordering Code

IREL - X X X 0 X X X 1

LED Colors - Side 1

- 0 = Obscured
- 3 = White Left Toed
- 6 = Red Left Toed
- 9 = Yellow Left Toed

LED Colors - Side 2

- 0 = Obscured
- 2 = White Right Toed
- 5 = Red Right Toed
- 8 = Yellow Right Toed

Power

- 1 = 50 Hz
- 2 = 60 Hz

0

Number of Cord Sets

- 1 = One
- 2 = Two

Arctic Kit

- 1 = No
- 2 = Yes

Cord Set Style and Length

- 0 = Style 6 (2-pin), 18" long (FAA standard)¹
- 1 = Style 1 SO Jacketed cable, 2 -pin, 18" long (FAA standard)¹
- 2 = Style 6 (2-pin), 10" long²
- 3 = Style 6 (3-pin), 10" long²
- 4 = German Style 1 (2-pin), 10" long²
- 5 = German Style 1 (3-pin) 10" long²
- 6 = French Style (3-pin), 10" long²

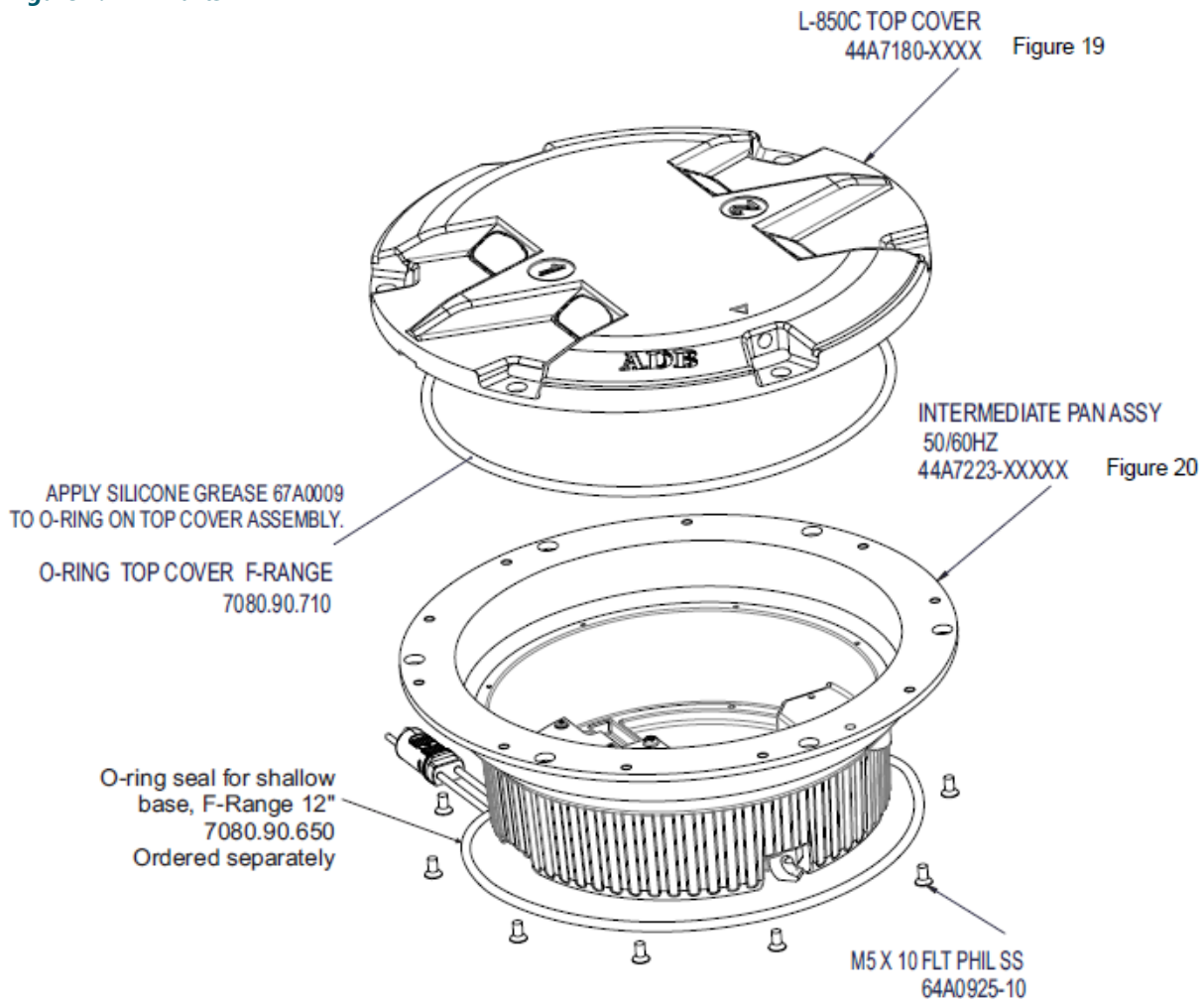
Type

- 1 = ICAO 60 m
- 4 = ICAO 60 m with heavy-duty abrasion-resistant lens coating^{3,4}

Notes

- ¹ Fixtures with 18" cord sets are for installation on deep base cans and therefore are not supplied with an external O-ring gasket.
- ² Fixtures with 10" cord sets are for installation on shallow bases and are supplied with an external O-ring gasket.
- ³ Typically used for intensive winter service where sand is applied to runways and rotating brushes are used.
- ⁴ Not ETL Certified.

Figure 1: IREL Parts



3.1 IREL Parts

Description	Part No.
Cord set, L-823, Style 6, 2-pin, 18" (FAA)	4072.42.351
Cord set, L-823, Style 6, 2-pin, 10" (ICAO)	4072.24.950
LED light engine, L-850C(L), white	48A0450-WHT2
LED light engine, L-850C(L), red	48A0450-RED ¹
LED light engine, L-850C(L), yellow	48A0450-YEL ¹
LED PCB Assembly	44A7228-00201
Lens	4072.18.336
Lens retainer plate	4072.18.350
Lens seal	4072.18.362
Lens retainer seal	4072.18.380
O-Ring, pressure release screw	63B0267-011
O-Ring, top cover	MS00001-376-01
Pressure release screw	60A2602

Description	Part No.
Bar Lifting Tool	1411.19.550
Set of spare anchor hooks for lifting tool 1411.19.550	1411.19.560
O-ring seal between top cover and shallow base, for F-Range 12"	7080.90.650

Notes

- ¹ Must replace both light engines on the same side at the same time. (Quantity. 2 needed)

3.2 Optional Snow Plow Ring

Depending on installation method and snow plowing technique used, a snow plow ring may be necessary. Snow plow rings are available for either standard or stainless steel adjustable Size B L-868 cans. Contact the ADB SAFEGATE Sales Department for additional details.

Figure 2: Top Cover Assembly

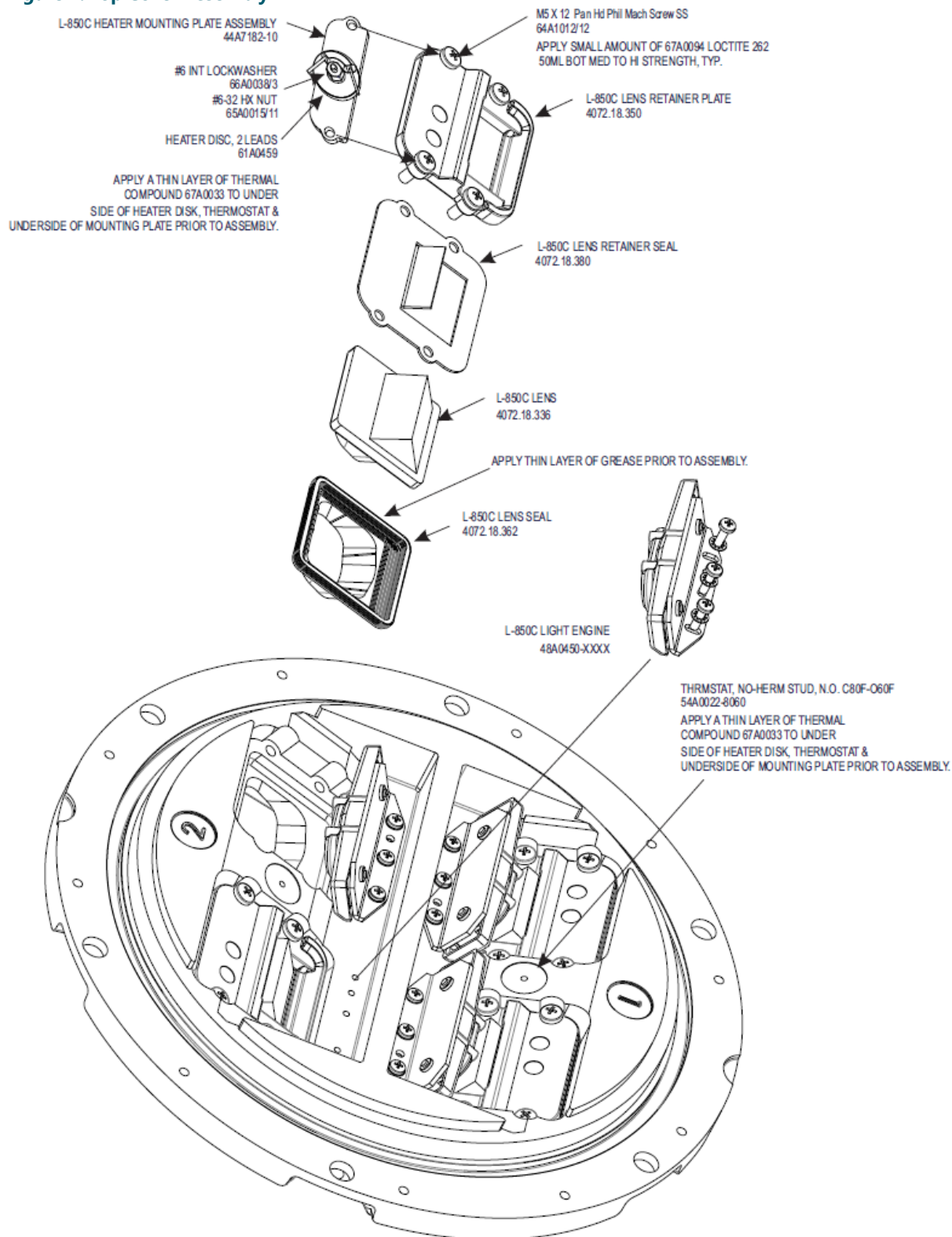
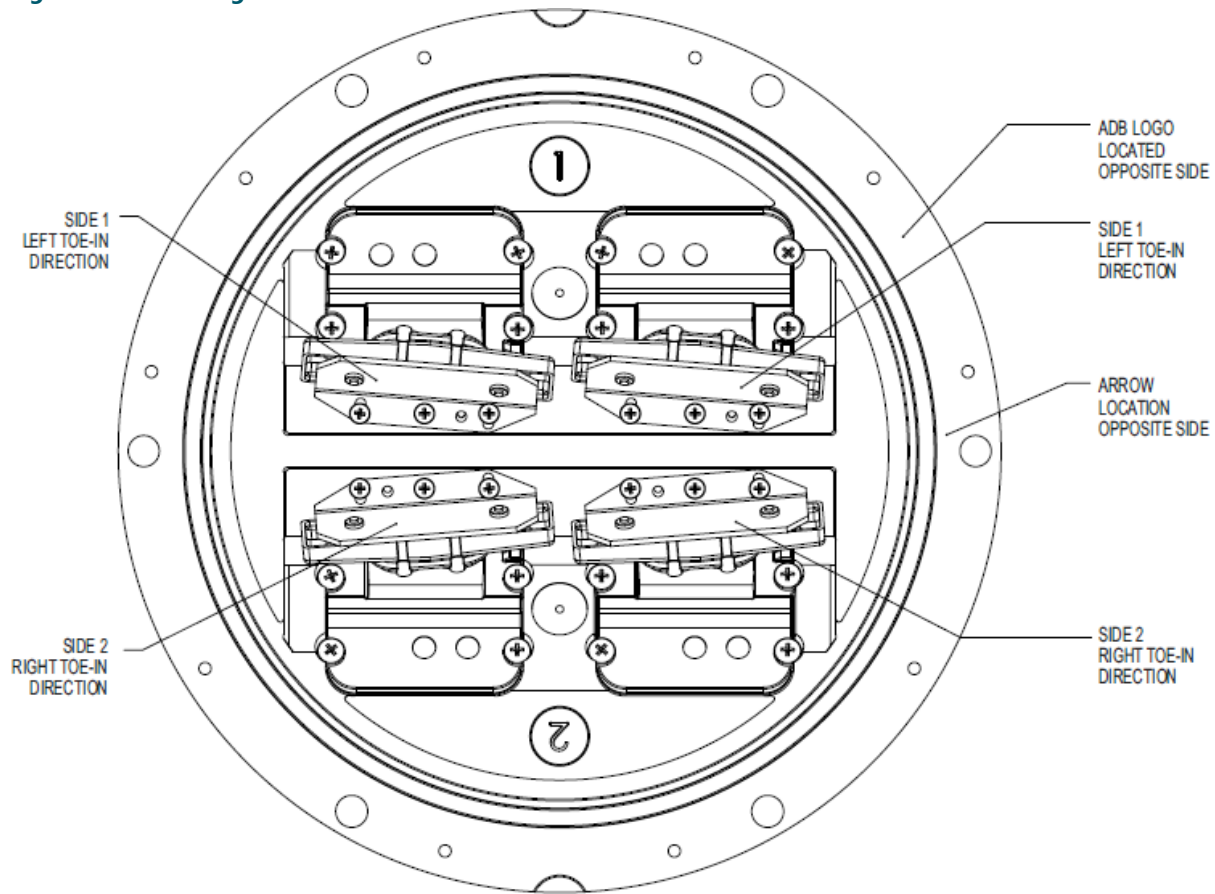


Figure 3: IREL Toeing



44A7180/ X X X X

- 0 = FAA
- 1 = FAA & ICAO (SEE SHEET 4)
- ARCTIC KIT:
 - 1 = NO
 - 2 = YES
- SIDE - 2 COLOR & TOE-IN:
 - 0 = OBS.
 - 1 = WHT / STRAIGHT
 - 2 = WHT / RIGHT
 - 3 = N/A
 - 4 = RED / STRAIGHT
 - 5 = RED / RIGHT
 - 6 = N/A
 - 7 = YEL / STRAIGHT
 - 8 = YEL / RIGHT
 - 9 = N/A
 - A = GRN / STRAIGHT
 - B = GRN / RIGHT
 - C = N/A
- SIDE - 1 COLOR & TOE-IN:
 - 0 = OBS.
 - 1 = WHT / STRAIGHT
 - 2 = N/A
 - 3 = WHT / LEFT
 - 4 = RED / STRAIGHT
 - 5 = N/A
 - 6 = RED / LEFT
 - 7 = YEL / STRAIGHT
 - 8 = N/A
 - 9 = YEL / LEFT
 - A = GRN / STRAIGHT
 - B = N/A
 - C = GRN / LEFT

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.

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

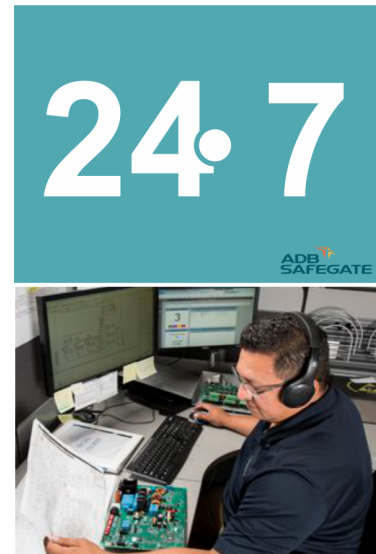
ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304

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

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