



AXON Omni Protected Dome Inset Lights

8-inch and 12-inch Taxiway Edge, L-852T(L) (TE); 8-inch Medium Intensity Runway Edge and Approach (ME), 8-inch Apron Aircraft Maneuvering (AM), 8-inch and 12-inch Low Intensity Taxiway Intersection, L-852E(L) (LE)

User Manual

UM-5091, Rev. 1.9.8, 2025/05/23



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 C22.2 No.180:13 (R2018) regulations. The CSA 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 below, 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.

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Products manufactured by ADB SAFEGATE 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 applicable sales agreement for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

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Note

See your sales order contract for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

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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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 Operation Safety.....	3
1.1.5 Maintenance Safety.....	3
1.1.6 Material Handling Precautions: Fasteners.....	4
1.1.7 Material Handling Precautions, ESD.....	4
2.0 About this Manual	5
2.1 How to work with the Manual.....	5
2.2 Abbreviations and Terms.....	5
3.0 Introduction	7
3.1 Product Information.....	8
3.2 Dimensions and Weight.....	10
4.0 Installation	11
4.1 Safety Considerations.....	11
4.2 Photobiological safety.....	11
4.3 Inspect on delivery.....	12
4.4 Unpack the Unit.....	12
4.5 Verify Input Requirements and Equipment Needed.....	12
4.6 Tools required.....	12
4.7 Installation Overview.....	13
4.7.1 Installation.....	13
4.7.2 Typical L-868 Assembly.....	14
4.7.3 Configuration.....	15
4.7.4 Testing the Light Fixture for Leaks (Water-tightness).....	15
4.7.5 Installation and Removal of the Inset Light Fixture.....	17
5.0 Maintenance	19
5.1 Basic Maintenance Program.....	19
5.2 Recommended Maintenance Program for optimal Service Life.....	20
5.2.1 Recommendation.....	21
5.3 Cleaning Procedure for the Prisms of an Inset Light Fixture.....	22
5.4 Workshop Maintenance.....	24
5.4.1 Exploded View.....	25
5.4.2 Opening a 12-inch Fixture.....	25
5.4.3 Closing a 12-inch Light Fixture.....	27
5.4.4 Opening an 8-inch Fixture.....	29
5.4.5 Closing an 8-inch Light Fixture.....	30
5.4.6 Check the Light Fixture for Water-tightness.....	31
5.4.7 Replace a Light Engine in a 12-inch and an 8-inch Fixture.....	33
5.4.8 Replace the Top Cover of a 12-inch Fixture.....	35
5.4.9 Replacing the Top Cover of an 8-inch Fixture.....	36
5.4.10 Replacing the LED Board.....	37
5.4.11 Replace a Prism and its Gasket in an 8-inch and 12-inch fixture.....	38
5.4.12 Replacing a prism, its gaskets and the blue spacers (prism protection plates) in an 8-inch fixture.....	41
5.4.13 Replace the Bottom Cover and Converter of a 12-inch Fixture.....	45
5.4.14 Replace the Bottom Cover and Converter of a 8-inch Fixture.....	46
5.4.15 Reset the Fail-Open Converter.....	46
6.0 Ordering Codes	49
6.1 L-852T(L) LED Taxiway Edge.....	49
6.2 Protected Runway Edge, Medium Intensity.....	50
6.3 Protected Apron Maneuvering Guidance.....	50
7.0 Spare Parts	51
7.1 Exploded View.....	51
7.2 Taxiway Edge, 12-inch and 8-inch, L-852T(L).....	52

7.3 Protected Runway Edge, Medium Intensity, 8-inch	54
7.4 Protected Apron Maneuvering Guidance, Inset 8"	55
8.0 POWER TABLES	57
9.0 Cable Loss	59
10.0 INTEROPERABILITY	61
11.0 SUPPORT	63
11.1 ADB SAFEGATE Website	63
11.2 Recycling	64
11.2.1 Local Authority Recycling	64
11.2.2 ADB SAFEGATE Recycling	64

List of Figures

Figure 1: Installation on shallow base	13
Figure 2: Fixture Installed in a 1-Piece Base Can	14
Figure 3: Anti-vibration washer example	15
Figure 4: Pressure Release Screw.....	15
Figure 5: Pressure Test Fitting Tool.....	16
Figure 6: Pressure Test Fitting Tool.....	16
Figure 7: 12-inch shallow base, class 1, direct-mounted fixture.....	17
Figure 8: Omnidirectional Light, 4 prisms, 8-inch	25
Figure 9: Fixture upside down	26
Figure 10: Lift up housing.....	26
Figure 11: Remove gasket	26
Figure 12: Converter with 1 connector	27
Figure 13: Fixture facing down	27
Figure 14: Tighten screws.....	27
Figure 15: Converter with 1 connector	28
Figure 16: Fixture facing down	29
Figure 17: Tightening screws	29
Figure 18: Fixture upside down	29
Figure 19: Lifting up housing	29
Figure 20: Removing gasket	29
Figure 21: Converter	30
Figure 22: Fixture facing down	31
Figure 23: Tightening screws	31
Figure 24: Pressure-release screw removal.....	32
Figure 25: Pressure test fitting tool.....	33
Figure 26: Light engine	34
Figure 27: Top cover with bottom cover	36
Figure 28: Top cover with bottom cover	37
Figure 29: LED sub assembly (Optical assembly).....	38
Figure 30: Close the Fixture	38
Figure 31: Remove LED Board Holder	39
Figure 32: Remove Prism and Gasket.....	39
Figure 33: Exploded View	39
Figure 34: New prism into prism gasket	40
Figure 35: Prism holder edge.....	40
Figure 36: Tighten screws in sequence	40
Figure 37: Exploded view - prism replacement.....	41
Figure 38: Remove LED board holder.....	42
Figure 39: New prism into prism gasket	43
Figure 40: Prism holder edge.....	43
Figure 41: Tighten screws in sequence	44
Figure 42: Correct gasket position	44
Figure 43: Replace new gasket with converter.....	45
Figure 44: Converter with 1 connector	45
Figure 45: Converter with 1 connector.....	46
Figure 46: Converter	47
Figure 47: Omnidirectional Light, 4 prisms, 12-inch.....	51
Figure 48: Omnidirectional Light, 4 prisms, 8-inch.....	52

List of Tables

Table 1: Legend Exploded View	25
Table 2: Exploded View Legend — Top Cover Assembly, 12 inch.....	39
Table 3: Exploded View, Omnidirectional Light, 4 prisms, 12-inch	51
Table 4: Exploded View, Omnidirectional Light, 4 prisms, 8-inch.....	52
Table 5: Interoperability matrix – 12-inch	61
Table 6: Interoperability matrix – 8-inch	62

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.

	<p>WARNING Failure to observe a warning may result in personal injury, death or equipment damage.</p>
	<p>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.</p>
	<p>WARNING – Wear personal protective equipment Failure to observe may result in serious injury.</p>
	<p>WARNING – Do not touch Failure to observe this warning may result in personal injury, death, or equipment damage.</p>
	<p>CAUTION Failure to observe a caution may result in equipment damage.</p>
	<p>ELECTROSTATIC SENSITIVE DEVICES This equipment may contain electrostatic devices.</p>

Qualified Personnel

	<p>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.</p>
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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.
- CSA – C22.2 No.180:13 (R2018), series isolating transformers for airport lighting.
- 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 Operation Safety



CAUTION

Improper Operation

Do Not Operate this equipment other than as specified by the manufacturer

- 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 these instructions can result in equipment damage

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: 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.

1.1.7 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

2.0 About this Manual

This document includes AXON omnidirectional runway inset light fixture information with a focus on safety, installation and maintenance procedures.

For more information, see www.adbsafegate.com.



Note

It is very important to read this document before any work is started.

This manual covers the following 12-inch and 8-inch light fixtures:

- ICAO and FAA L-852T(L) Taxiway Edge, 8-inch and 12-inch (TE 4-prism)
- ICAO Protected Runway Edge, Medium Intensity, 8-inch (ME)
- ICAO Protected Apron Maneuvering Guidance, 8-inch (AM)
- FAA L-852E(L) Taxiway Intersection, 8-inch and 12-inch (LE)

2.1 How to work with the Manual

- Familiarize yourself with the structure and content.
- Carry out the actions completely and in the given sequence.

2.2 Abbreviations and Terms

This document may include the abbreviations and terms listed below.

Abbreviation and term	Description
AGL	Airfield Ground Lighting
ANSI	American National Standards Institute
ATM	Air Traffic Movement
CCR	Constant Current Regulator
EASA	European Union Aviation Safety Agency
FAA	Federal Aviation Administration
ICAO	International Civil Aviation Organization
IEC	International Electrotechnical Committee
IEEE	Institute of Electrical and Electronics Engineers
ILCMS	Individual Light Control and Monitoring System
LED	Light Emitting Diode
NATO	North Atlantic Treaty Organization
OFDM	Orthogonal Frequency Division Multiplexing
PWM	Pulse Width Modulation
STAC	Service Technique de l'Aviation Civile (France)
STANAG	Standardization Agreement (NATO)

3.0 Introduction

AXON — The all in one revolution

The 12-inch and 8-inch ranges are bi-, uni- or omnidirectional low protrusion light-emitting diode (LED) inset light fixtures, available in multiple versions:

Non-MON

Basic operation providing power only

MON (Fail-open)

A LED light fixture with integrated fail open technology with CCR monitoring compatibility

EQ

Fixture with integrated ILCMS remote utilizing orthogonal frequency-division multiplexing (OFDM) technology providing superior communication interfacing with LINC 360 System.



NOTICE

All our light fixtures are equipped with failed LED detection monitoring as required by FAA Engineering Brief 67.

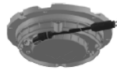
Inset Omni 12 In



Inset Omni 8 In Style 6 Cordset



Inset Omni 12 In Style 1 Jacketed Cordset



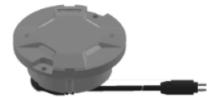
Inset Omni 12 In Style 6 Cordset



Inset Omni 8 In Style 1 Jacketed Cordset



Inset Omni 8 In



Note

EQ light fixtures are not fail-open light fixtures. The monitoring as well as the control functionality is handled by the ILCMS system.

3.1 Product Information

Compliance and Standards

Compliance	Description	Application:	TE	ME	AM	LE
		Reference DS-XXXX:	5024	5102	5103	5104
FAA	AC 150/5345-46 and FAA Engineering Brief No. 67: L-852T(L) ETL certified		X			X
ICAO	Annex 14 Volume 1		X	X	X	
EASA	CS-ADR-DSN		X	X	X	
Australia	MOS 139		X		X	
Canada	TP 312		X		X	
IEC	61827		X	X	X	
NATO	STANAG 3316		X			
STAC	PRO/STAC/SE/VIS					
UK	CAP 168					
US Navy	NAVAIR 5150AAA-2, WP 006-04		X			X
UFC	3-535-01		X			X
CE			X	X	X	X

Uses TE

ICAO

- L-852T(L) Taxiway Edge
- NAVAIR Edge
- UFC Edge
- Intermediate Holding Position (MOS)

Uses ME

ICAO

- Medium intensity runway edge
- Medium intensity approach

Uses AM

ICAO

- Aircraft Stand Maneuvering Guidance

Uses LE

FAA, UFC

- L-852E(L) Taxiway Intersections, ≥ 1200 RVR

NAVAIR

- Taxiway Intersections, Low Intensity

Features and Benefits

Efficiency

- EQ has an integrated ILCMS remote for use with the LINC 360 system providing high data capacity and resisting degradation from various types of radio effects to provide a superior communication platform
- Precision aimed optics enhancing photometric performance and complementing extended LED life
- Reduced bottom pan profile allowing for very shallow base can installation
- LED pulse width modulated (PWM) at 400 Hz optimizing LED performance and eliminating perceptible flicker to a moving human observer throughout the range of brightness steps
- Operates at all steps of constant current regulator technologies designed in compliance with IEC or FAA requirements
- Fully dimmable lights, conforming to the dimming curve of traditional halogen lights
- Low protrusion, high-intensity, Style 3 (≤ 6.35 mm) inset light fixtures
- No negative slope in front of the prisms

Sustainability

- Fully encapsulated all-in-one universal power supplies for Runway, Taxiway, Approach and Omni inset families
- Latest generation LEDs providing a long-lasting light source with high efficiency and low power consumption
- Reinforced top cover substantially exceeding standards to improve durability and longevity
- One single family of fixtures covering all runway, taxiway and approach applications
- IP68 rated enclosure designed for harsh environments; all fastenings are stainless steel
- Reinforced prism available as an option
- Compatible with existing infrastructure allowing for direct replacement of existing LED inset fixtures

Safety

- Improved mechanical design to strengthen and consolidate components, improving the customer maintenance experience
- Fail-open option for compatibility with legacy monitoring systems and optimization of advanced control and monitoring systems
- Failed-LED Detection as required by Engineering Brief 67D
- Robust lightning protection complying with ANSI/IEEE C62.41-1991; Location Category C2 as required by FAA Eng. Brief 67 Category C2 is defined as a 1.2/50 μ S – 8/20 μ S combination wave, with a peak voltage of 10,000 V and a peak current of 5,000 A

Power Supply Options

- Non-Monitored — Power only
- Monitored — Integrated Fail-open technology
- EQ with integrated ILCMS with OFDM technology for use with LINC 360 system

Maintenance and Installation

The light fixture can be installed on an 8-inch or 12-inch base. Gaskets are sold separately. Check what gasket and bolts to order depending on base and installation. Refer to the interoperability section of the user manual for installation on a specific base.

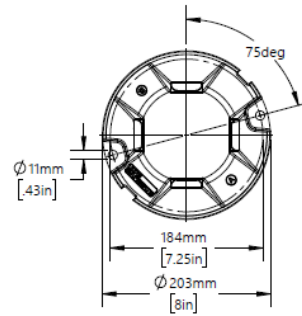
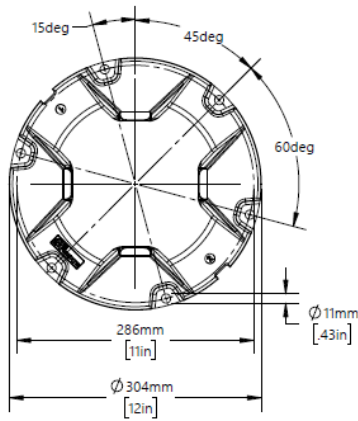
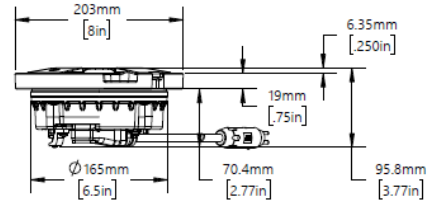
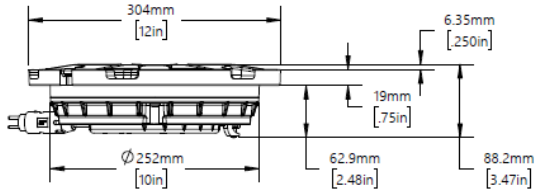
Operating Conditions

Operating temperature	-60 °C to +55 °C / -76 °F to +131 °F
Storage temperature	-60 °C to +80 °C / -76 °F to +176 °F
Humidity	Up to 100%

3.2 Dimensions and Weight

The weight and measurement [A] depends on version of the light fixture.

Version	Weight	Dimension
TE - ME - AM - LE	3 kg / 6.6 lb (8 in)	203 mm / 8 in
TE - LE	6.8 kg / 15 lb (12 in)	305 mm / 12 in



4.0 Installation

Install the inset light fixture in a base provided by ADB SAFEGATE.



Note

If the inset light fixture is to be installed on another type of base or adapter ring not provided by ADB SAFEGATE, contact ADB SAFEGATE.



CAUTION

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

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

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

4.1 Safety Considerations

Read the installation section of all system component manuals before starting these steps. A thorough understanding of system components and their requirements will promote safe and efficient installation. See FAA AC 150/5340-30, Design and Installation Details for Airport Visual Aids, and site plans and specifications for field installation of runway and taxiway in-pavement lights.



DANGER

FAILURE TO FOLLOW THESE SAFETY PROCEDURES CAN RESULT IN PERSONAL INJURY OR DEATH.

- ALLOW ONLY QUALIFIED PERSONNEL TO INSTALL ADB SAFEGATE AND AUXILIARY EQUIPMENT. USE ONLY APPROVED EQUIPMENT. USING UNAPPROVED EQUIPMENT IN AN APPROVED SYSTEM MAY VOID FAA APPROVALS. OBSERVE AND FOLLOW THE SAFETY INSTRUCTIONS IN THIS DOCUMENT AND ALL OTHER RELATED DOCUMENTATION.
- MAKE SURE ALL EQUIPMENT IS RATED AND APPROVED FOR THE ENVIRONMENT WHERE IT IS BEING USED.
- FOLLOW ALL INSTRUCTIONS FOR INSTALLING COMPONENTS AND ACCESSORIES.
- INSTALL ALL ELECTRICAL CONNECTIONS IN COMPLIANCE WITH LOCAL AND NATIONAL CODES AND REGULATIONS.
- USE ONLY ELECTRICAL WIRE OF SUFFICIENT GAUGE AND INSULATION TO HANDLE THE RATED CURRENT DEMAND. ALL WIRING MUST MEET LOCAL AND NATIONAL CODES.
- ROUTE ELECTRICAL WIRING ALONG A PROTECTED PATH. MAKE SURE IT WILL NOT BE DAMAGED BY MOVING EQUIPMENT.
- PROTECT COMPONENTS FROM DAMAGE, WEAR AND HARSH ENVIRONMENTAL CONDITIONS.
- ALLOW AMPLE CLEARANCE 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, REINSTALL THEM IMMEDIATELY AFTER THE WORK IS COMPLETED AND CHECK THEM FOR PROPER FUNCTIONING.
- THE CORD SET MUST BE PROTECTED PRIOR TO INSTALLATION.

4.2 Photobiological safety



CAUTION

Photobiological safety conforming with IEC 62471

RISK GROUP 0 or 1: Optical radiation emitted from LED lights may be harmful to the eyes. Do not stare with at the light source with bare eyes at a fixture operating at high intensity. Use protection goggles or similar protection method.

Goggles with a transmission factor not higher than 5% in the 400-530 nm band have been tested and provide adequate protection.

4.3 Inspect on delivery

1. Inspect all packaging for visible damage.
2. If damage is detected on packaging, open the damaged box and inspect its contents for damage.
3. If containing product is damaged, immediately fill a claim form with the carrier.
4. Store the fixture in its original packing in a protected area.

4.4 Unpack the Unit



CAUTION

Do not unpack the fixture until it is at the installation site to avoid damage due to transportation and handling.

Open the box and verify that the characteristics of the light fixture correspond to the design requirements, such as type, color etc. When installing a light fixture where the control and monitoring function is to be activated at a later stage, make sure to register product information, such as PID/SN and position of the light fixture in, for example, a site documentation table. The information is required for remote activation and administration of control and monitoring functionality from a substation.

4.5 Verify Input Requirements and Equipment Needed

The In-pavement light fixture is designed for connection to a 6.6A or 20A series lighting circuit via an L-830 (60 Hz) or L-831 (50 Hz) isolation transformer.

Make sure you have the necessary tools and materials ready for installation (not supplied). Also consider other tools that might be needed based on site-specific conditions.

4.6 Tools required

The following tools are recommended for installation.

- One Box spanner 16/17 mm.
- One torque wrench with a 16/17 mm socket (Do not use an impact wrench)
- Two large flat head screwdrivers to lift edge of fixture to reposition if necessary.
- One T20 Torx key.
- Air compressor with high pressure nozzle - Optional to assure mounting surface is free of debris.
- One brush or cloth.



Note

Provided that the base intended to receive the light fixture has been properly installed, no other specific tool is required.

4.7 Installation Overview



WARNING

Read the instructions in their entirety before starting installation.

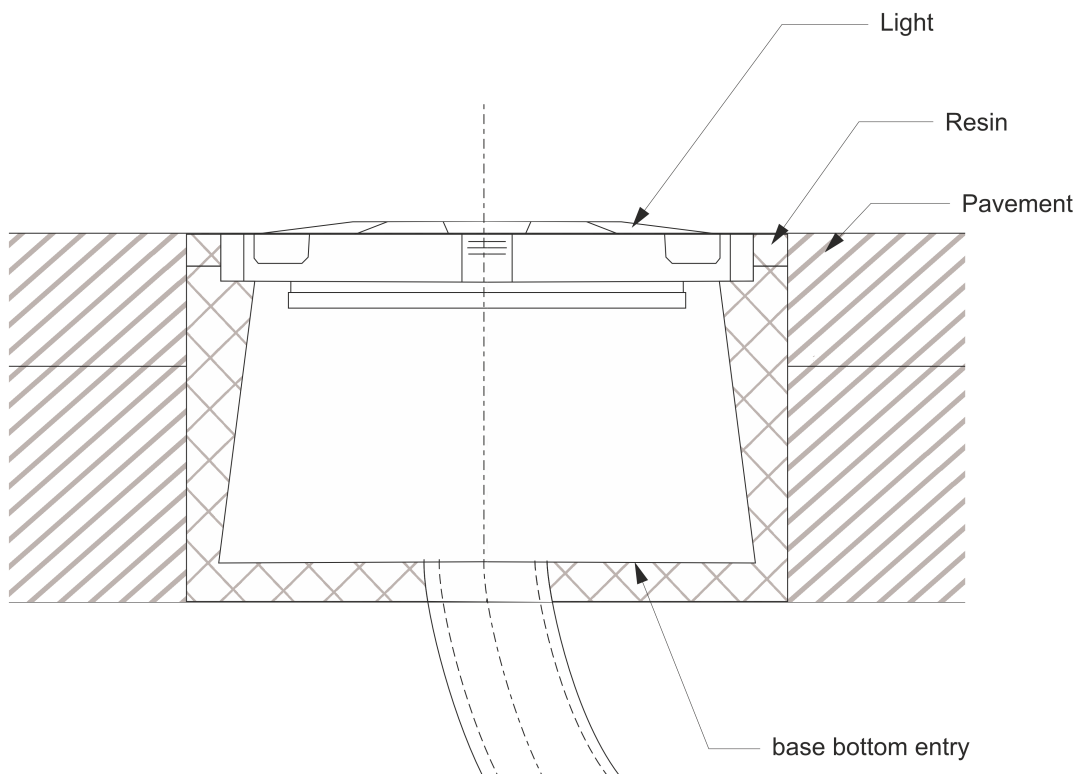
This section provides instructions for installing the in-pavement lights. Refer to airport project plans and specifications for specific installation instructions. The installation must conform to the applicable sections of the National Electric Code and local codes.

4.7.1 Installation

On a shallow base

The 8-inch and 12-inch diameter shallow base is secured in the pavement by means of resin. Correct positioning is obtained with a leveling jig with a sighting telescope. Wires between the light and the series transformer are installed either in saw cuts in the pavement filled with resin or in pipes in the lower concrete layers. Mounting an 8-inch light fixture in a 12-inch diameter base is made possible by means of dedicated adapter rings.

Figure 1: Installation on shallow base



On an FAA L-868B size B steel base

The 12-inch light fixture is installed in a 12-inch base. The 8-inch diameter light can be installed in an 8-inch base or, with the use of a snow ring or an adapter ring, in a 12-inch base. The bases are interconnected by means of conduits protecting the cables. The series transformer is installed under the light or in a separate pit. See data sheet A.05.120 or DS-2012 for more information on base cans.

4.7.2 Typical L-868 Assembly

Figure 2: Fixture Installed in a 1-Piece Base Can

Call-out Numbers)	Description
1)	3/8-16 Hex Cap Screw (per FAA EB-83 (latest revision)
2)	3/8" Anti-vibration Washer (per FAA EB-83 (latest revision)
3)	Fixture Top Edge to be $+0/-1/16$ " Below Grade
4)	0.75"
5)	Ground Wire
6)	Isolation Transformer Size as Required
7)	3/4" Drain Hole (Centered)
8)	Transformer Support (Typ.)
9)	2" PVC Conduit with Bell End
10)	Grommet
11)	L-823 Primary Connector (Typ.) (Heatshrink Optional)
12)	L-823 Secondary Connector
13)	L868B Light Base
14)	1-1/2" (Typ.)
15)	L868B Spacer Ring(s)
	In order to maintain $+0/-1/16$ " below grade, per FAA installation tolerance, a maximum of 3 spacers may be used.
16)	1/4" Wide X 1-1/2" Deep Groove (Typ.)
17)	L868B Flange Ring 12.25" O.D. 3/4" Thick, 5402/12Y With O-Ring Gasket (Typ.)
18)	Semi-Flush Light Fixture Type L-85X (Typ.)



Note

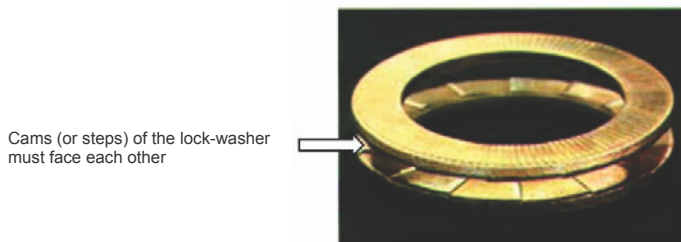
Torque according to: FAA EB-83 (latest revision).



CAUTION

Per FAA AC 150/5340-30, Chapter 10, and FAA Engineering Brief No 83 (latest revision), it is extremely important that other types of washers, such as split washers, not be used. Failure to use properly installed anti-vibration lock washers will cause mounting bolts to become loose. The cams (or steps) of each half of the lock washer must face each other.

Figure 3: Anti-vibration washer example



4.7.3 Configuration

To learn more about updating or configuring our EQ light fixtures equipped with internal ILCMS remote and sensor technology, please refer to our [LINC360 manuals](#). These comprehensive guides cover firmware updates, configuration options and instructions on integrating EQ lights into the ILCMS system.

4.7.4 Testing the Light Fixture for Leaks (Water-tightness)



Note

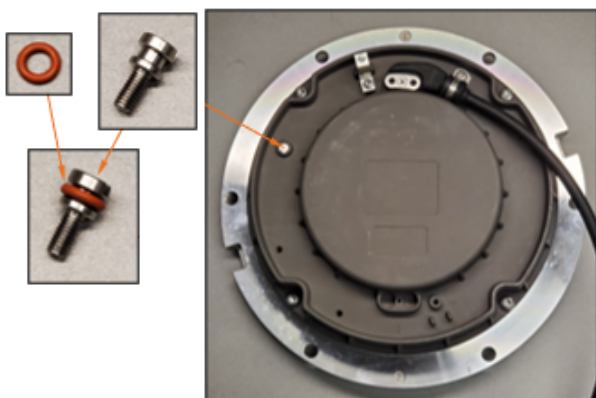
A compressor, or a manual car tire pump, equipped with a manometer is required to check the light fixture for watertightness.

Tools to be used:

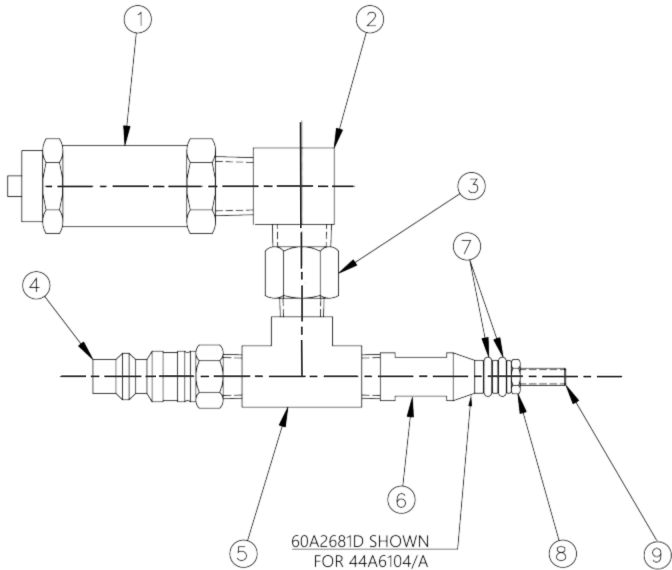

- Flat head screwdriver
- Pressure test fitting tool to be used (pt no.44A6104/A) for watertight testing

1. Remove the pressure release screw and discard.

Figure 4: Pressure Release Screw



- Screw the pressure test fitting tool hand-tight into the pressure-relief port (the opening from where the pressure release screw was removed).

	Call-out) Description									
<p>Figure 5: Pressure Test Fitting Tool</p> 	<p>Figure 6: Pressure Test Fitting Tool</p>  <table border="1"> <tr> <td>1) Pop — safety valve</td> </tr> <tr> <td>2) 90 deg., elbow, female X male, brass, ¼"</td> </tr> <tr> <td>3) Adapter, female — male, ¼ x 1/8, brass</td> </tr> <tr> <td>4) Sleeve — lock hose plug, ¼" coupler</td> </tr> <tr> <td>5) Tee, brass, 1/8</td> </tr> <tr> <td>6) Pressure test fitting, body</td> </tr> <tr> <td>7) O-ring, silicone, size 008, 1/16 W X 3/16</td> </tr> <tr> <td>8) M4 Hex Jam nut, 18-8 SS</td> </tr> <tr> <td>9) Pressure test fitting stud</td> </tr> </table>	1) Pop — safety valve	2) 90 deg., elbow, female X male, brass, ¼"	3) Adapter, female — male, ¼ x 1/8, brass	4) Sleeve — lock hose plug, ¼" coupler	5) Tee, brass, 1/8	6) Pressure test fitting, body	7) O-ring, silicone, size 008, 1/16 W X 3/16	8) M4 Hex Jam nut, 18-8 SS	9) Pressure test fitting stud
1) Pop — safety valve										
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6) Pressure test fitting, body										
7) O-ring, silicone, size 008, 1/16 W X 3/16										
8) M4 Hex Jam nut, 18-8 SS										
9) Pressure test fitting stud										

- Attach the shop airline (4) to the lock hose plug sleeve.
- Pressurize to 20 psi (130 kPa).
- Submerge the pressure test fitting into a water tank.
- Wait 3 minutes and check if air leaks out between:

- the bottom pan and the top cover
- the prism and the top plate
- the watertightness valve and top plate

If air leaks out of the light fixture, it is not watertight and must be repaired:

- release the air from the light
- disassemble the light fixture
- re-check the mating surfaces and gaskets
- re-assemble the light fixture
- return to step 1

- If the fixture is watertight, depressurize and install a new pressure release screw (see [Figure 4](#)) at 26 in-lbs (3 Nm).



DANGER

NEVER EXCEED A PRESSURE OF 22 PSI (150 KPA) INSIDE THE LIGHT FIXTURE. A HIGHER PRESSURE MAY CAUSE INJURIES AND DAMAGE THE LIGHT.

4.7.5 Installation and Removal of the Inset Light Fixture



WARNING

Read the instructions in their entirety before starting installation.



Note

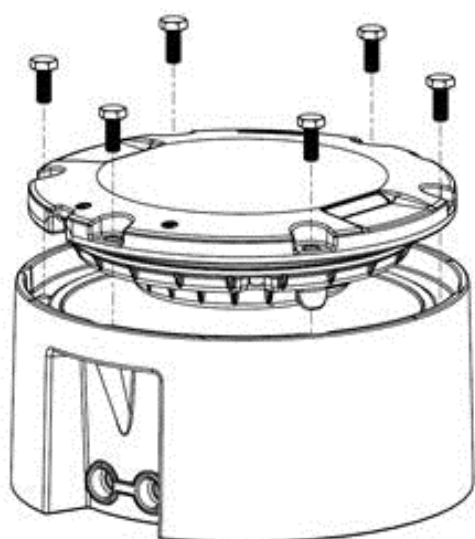
Top cover versions:

please check [interoperability](#) matrix for information on compatibility to different bases and torque values.

This section provides instructions for installing the in-pavement lights. Refer to airport project plans and specifications for specific installation instructions. The installation must conform to the applicable sections of the National Electric Code and local codes.

Install the light fixture in a base, class 1, direct-mounted fixture.

Figure 7: 12-inch shallow base, class 1, direct-mounted fixture



1. Carefully clean all contact surfaces of the light fixture and the base.
2. Put the O-ring gasket in the gasket track on the base. (Not for class 2)
3. Mount light fixture to the base.



Note

Make sure the secondary cables are inside the base and not pressed between the light and the base.

4. For installation on a base, use a torque limiting box spanner of 16/17 mm to install and tighten the fixing bolts or nuts to a torque value according to specification. Make sure the light fixture functions properly before the next step. See [INTEROPERABILITY](#). For other base manufacturers, refer to their specifications.



Note

Do not use high speed for tightening the fixing bolts. The recommended speed is 10 - 40 rpm. Do not use an impact driver/wrench.

5. In order to bond the light fixture to the ground, use a ground lug or grounding screw (torque 2.5 Nm) to attach the braided ground strap or wire to the grounding point on the light fixture. The grounding point is indicated by a grounding symbol that is located on the bottom side.

Remove the fitting from the base



CAUTION

Fall- and trip hazard!

When a light fixture has been removed, the base must be fitted with a cover designed for this purpose or with a spare light fixture.

1. Using two large flat blade screwdrivers carefully remove the light fixture from its base .
 2. Disconnect the secondary supply connector.
 3. Remove and check the gasket (O-ring or labyrinth).
-



Note

It is recommended to change the gasket, lock nuts or bolts each time the light fixture is removed or dismantled from the base. For more information, see INTEROPERABILITY chapter of this manual. .



CAUTION

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

Verify what base the light fixture will be installed in, in order to chose the correct gasket, bolts and nuts.

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

5.0 Maintenance

This section describes different steps for maintenance of the light fixture.

Before you start, make sure you have read and understand the [Safety instructions](#).

Find out the location of the light unit that needs maintenance. If the purpose is to replace an existing light unit with new one, make sure that corresponding unit is available. Find the type information on the identification tag with details of name.

Spare parts are available, if required. For more information, see www.adbsafegate.com and the Spare Parts List document, or contact ADB SAFEGATE for assistance.



CAUTION

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

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. For more information, see [INTEROPERABILITY](#).



CAUTION

When a light fixture has been removed from its base, the base must be either fitted with a cover or a spare light fixture put in its place. It is recommended that only authorized personnel disassemble fittings with prior agreement from ADB SAFEGATE.

5.1 Basic Maintenance Program

It is important to understand that even though a LED fixture requires substantially lower maintenance in regard to the replacement of the light bulbs, some parts of the light fixture remain the same and still require the same level of maintenance (prisms, top cover, bolts).

There are recommended maintenance tasks to ensure that the equipment is in correct operating condition.

Maintenance tasks

Weekly	<ul style="list-style-type: none"> Visual inspection of the light fixture. Removal of dust from external surfaces of the light fixture.
Monthly	<ul style="list-style-type: none"> Check optical window for cleanliness, mechanical damage or moisture/condensation on the inside of the prism Check for improper torque on mounting bolts. Re-torque if needed.
Yearly	<ul style="list-style-type: none"> Detailed inspection of the light fixture Check of the body resistance, check for mechanical damage (for example cracks around the prism windows). Clean optical windows
Bi-yearly	<ul style="list-style-type: none"> Check for presence of water in mounting support by unscrewing and lifting light fixture from base and check for water ingress and corrosion. Replace gasket between light fixture and base.
After snow removal	<ul style="list-style-type: none"> Check for damaged light fixtures. Any damaged light fixtures should be replaced and brought in and properly investigated and repaired.

A daily function check is referred to in the document *ICAO, Airport Services Manual Part 9, Airport Maintenance Practice and FAA AC 150/5340-26A, Maintenance of airport visual aids facilities*.

Any issues found during maintenance tasks should be corrected accordingly and properly documented.

A proper asset management system such as ADB Safegate's ALIS can help to store/document data and can provide valuable information on local presiding conditions for preventive maintenance planning. This can then be used to minimize the need for reactive maintenance.

ALIS, ADB Safegate's new digital asset tracking, inspection and service solution, helps airports easily register airside assets, electronically schedule and track maintenance, and record maintenance and inspection tasks in compliance with ICAO and FAA standards.



Visit alis.adbgs.com.

5.2 Recommended Maintenance Program for optimal Service Life

Service Life and Inspection intervals

All products have an expected service life. Service life is the lifetime of the product and reaching the end means that it is no longer serviceable and should be replaced.

There are several key external factors that influences the service life of a product.

- Aircraft traffic movements
- Location on the airfield
- Maintenance
- Chemical usage

Air Traffic Movements (ATM)

The expected lifetime of a light fixture will be highly impacted by the traffic volume and the number of aircraft that are mechanically putting stress on the light fixtures. Airports with a higher traffic volume will have a light fixture with a shorter expected lifetime than an airport with a lower traffic volume.

The ATM can be divided into three categories for the recommendation of inspections as well as for the expected lifetime of a light fixture. (Based on ADB SAFEGATE's field experience and investigation made in conjunction with an independent airport and consultant.)

- 0-100k movements/ year
- 100k-200k movements/ year
- >200k movements/ year

Location on the airfield

The expected lifetime of a light fixture is highly dependent on the location where it is installed on an airfield. Three different areas have been defined by color categorization that are exposed to different degree of mechanical impact. These three categories are used as a basis for the recommendation of inspections as well as for the expected lifetime of a light fixture.

- **RED** – Touch Down Area defined as 6m either side of the runway centerline for a distance starting 50m before the TDZ markings and extending to 200m beyond the TDZ markings as seen from the landing direction.
- **RED** – Rapid Exit Taxiway centerline lights from the runway centerline to 50m beyond the edge of the runway.
- **Amber** – All runway areas outside of the red areas. Also includes taxiway intersections for which more than 50% of the aircraft traffic turn more than 45 degrees.
- **Green** – Areas outside Red and Amber areas



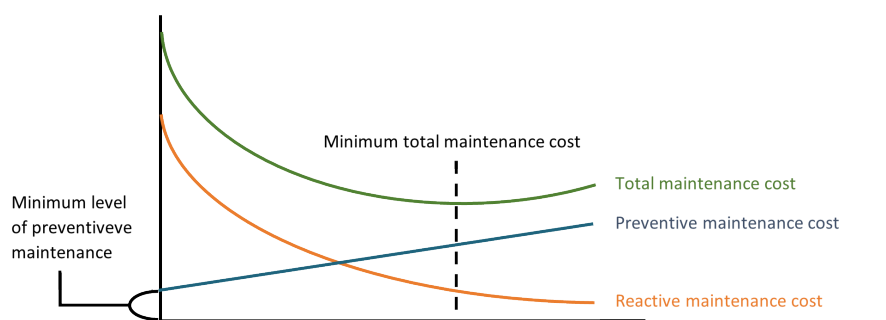
Tip

It is recommended that there is a reliable means of recording the location history of fittings (similar to ADB Safegate ALIS) to ensure that the maximum duration in critical areas (RED) of the runway are not exceeded.

Preventive maintenance

Preventive maintenance and inspections will help to prolong the service life of a light fixture. By finding issues (e. g., bad gaskets or broken prisms) at an early stage you can mitigate and fix issue before they cause more damage and reduce the cost of the repair. You can also increase the service life of a light fixture by rotating the installation location of light fixtures in critical areas.

Regular inspections and well-defined preventive maintenance planning will help to reduce the overall maintenance cost and reduce downtime from reactive maintenance tasks.



5.2.1 Recommendation

Based on the air traffic volume and location on the airfield, a matrix was created for recommended inspection intervals.

Location	RED	Amber	Green
ATM			
0-100k movements	2 Months 1 Year	6 Months 3 Years	1 Year 3 Years
100k-200k movements	2 Months 1 Year	4 Months 2 Years	1 Year 3 Years
Above 200k movements	1 Months 6 Months	2 Months 1 Year	1 Year 3 Years

Inspection interval

Visual inspection: Visually inspect the light fixture and make sure that

- Prism is clean and no cracks are visible
- Gaskets are ok and are not deteriorating
- No moisture or condensation can be seen on the inside of the prism
- Corrosion on top cover, around the prism and bolts.
- Torquing of nuts/bolts are according to specification

Detailed Inspection: Includes visual inspection tasks and additionally the following tasks

- Unbolt the light fixture and lift it from the base for the detailed inspection
- Check for water ingress (watertight installation) and corrosion on light fixture and base (especially around the mating surfaces)
- For deep base installation (L-868) check for water ingress, if more than 6 inches please have it removed.
- Inspect light and base for damage
- Replace gasket between light fixture and base



Tip

We recommend any maintenance work that requires the light fixture to be opened to be done back in the dedicated maintenance area.

- We recommend that inspection intervals are halved for aging units that have reached more than 75 % of their expected lifetime.
- We recommend that AGL in critical areas are rotated.
- To achieve a proper location rotation and individual asset, data needs to be recorded.
- To relax the recommended frequencies of some maintenance tasks i.e. torque management, data is needed for justification.
- Policies have a direct link with the age of the AGL and should also be tracked and recorded.

Below is the recommended service life. With a proper asset management (ALIS or similar) and data capturing strategy, the below guidelines could be extended or shortened as deemed necessary via presiding local conditions.

Expected service life (only critical areas defined)

▪ RED Zone -, ATM < 100k	Service Life 15 years
▪ RED Zone -, ATM > 100k < 200K	Service Life 10 years
▪ RED Zone -, ATM > 200k	Service Life 7 years



Note

Talk to your local sales representative if you have any questions or would require some assistance to go through local conditions and see how we can help establish a well-defined maintenance planning to optimize the expected service life of your investment.

5.3 Cleaning Procedure for the Prisms of an Inset Light Fixture

Safety Precautions

1. Ensure Power is Off: Confirm that the light fixture is turned off at the main power source to eliminate electrical hazards.
2. Wear Protective Gear: Use safety gloves to protect your hands and safety glasses to shield your eyes from dust and debris.

Cleaning Process

Start by gently dusting the prisms with a soft, dry cloth to get rid of any loose dirt or dust.

Cleaning

- To clean the prism and remove any rubber build-up, start with a plastic scraper. For a deeper clean, lukewarm water mixed with a pH-neutral soap can be applied.
- In cases where simple cleaning isn't adequate, you may consider using chemicals to tackle rubber build-up or compacted snow. However, be cautious with the use of chemicals as extensive application may damage the light fixtures and underground electrical components, leading to increased maintenance requirements and costs.
- Use de-icing liquids and cleaning chemicals in moderation to prevent environmental impact and contamination of the light outlet.

Approved Chemicals for Cleaning

The following chemicals are tested for compatibility with ADB Safegate light fixtures:

- Potassium Acetate
 - Potassium Formate
 - Sodium Acetate
 - Sodium Formate
-



NOTICE

Ensure the pH of chemical solutions does not exceed pH11 to avoid corrosion or other damage to the light fixtures.

Protocol for Introducing New Chemical Solutions

- Verify the chemical's intended use on similar materials and products, adhering to ADB Safegate's recommendations.
- Conduct initial tests on a few units to ensure there is no damage to the light fixture or gaskets before applying the chemical to a larger installation.



NOTICE

Special Consideration for Sapphire Prisms: Sapphire prisms, made by bonding a thin sapphire slab to a glass prism, can be sensitive to certain chemicals. Always test cleaning chemicals for compatibility with sapphire prisms to avoid weakening the adhesive bond.



NOTICE

High-pressure water jets may be employed for cleaning, ensuring the minimum distance of 165 mm (6.5 inches) is maintained and the water pressure does not exceed 80 bar (1300 psi) to prevent damage to the gaskets.



Tips for Optimal Maintenance

- Regular cleaning of the prisms is crucial for maintaining light quality and fixture efficiency.
- No use of abrasive cleaners or pads that can scratch the prism surfaces.
- Handle the prisms with care to avoid creating chips or cracks.
- After cleaning, thoroughly dry each prism with a soft, lint-free cloth to prevent water spots and ensure clear illumination.

By following these detailed instructions, you can maintain the integrity and performance of the inset light fixtures at the airfield, ensuring safety and visibility are upheld.

5.4 Workshop Maintenance

Before you start, make sure you have read and understand Safety instructions.

The following standard tools and accessories are required for maintenance of the unit:

1. One angled socket spanner¹
2. One Torque limiting spanner¹
3. Torx 10, 20, 25, and 30
4. Two large flat blade screwdrivers
5. One brush or cloth
6. Non-alcohol based cleaner



Note

A compressor, or a manual car tire pump, equipped with a manometer is required to check the light fixture for water-tightness. Design may differ from picture depending on application. Please follow described work flow and torque level specified as they are generic.

The workshop maintenance refers to following:

1. Replace a light fixture
2. Check the light fixture for water-tightness
3. Replace a light engine
4. Replace a prism and its gasket
5. Replace the bottom cover and converter
6. Reset the fail-open converter

¹Depending on type and size of nuts and bolts

5.4.1 Exploded View

Figure 8: Omnidirectional Light, 4 prisms, 8-inch

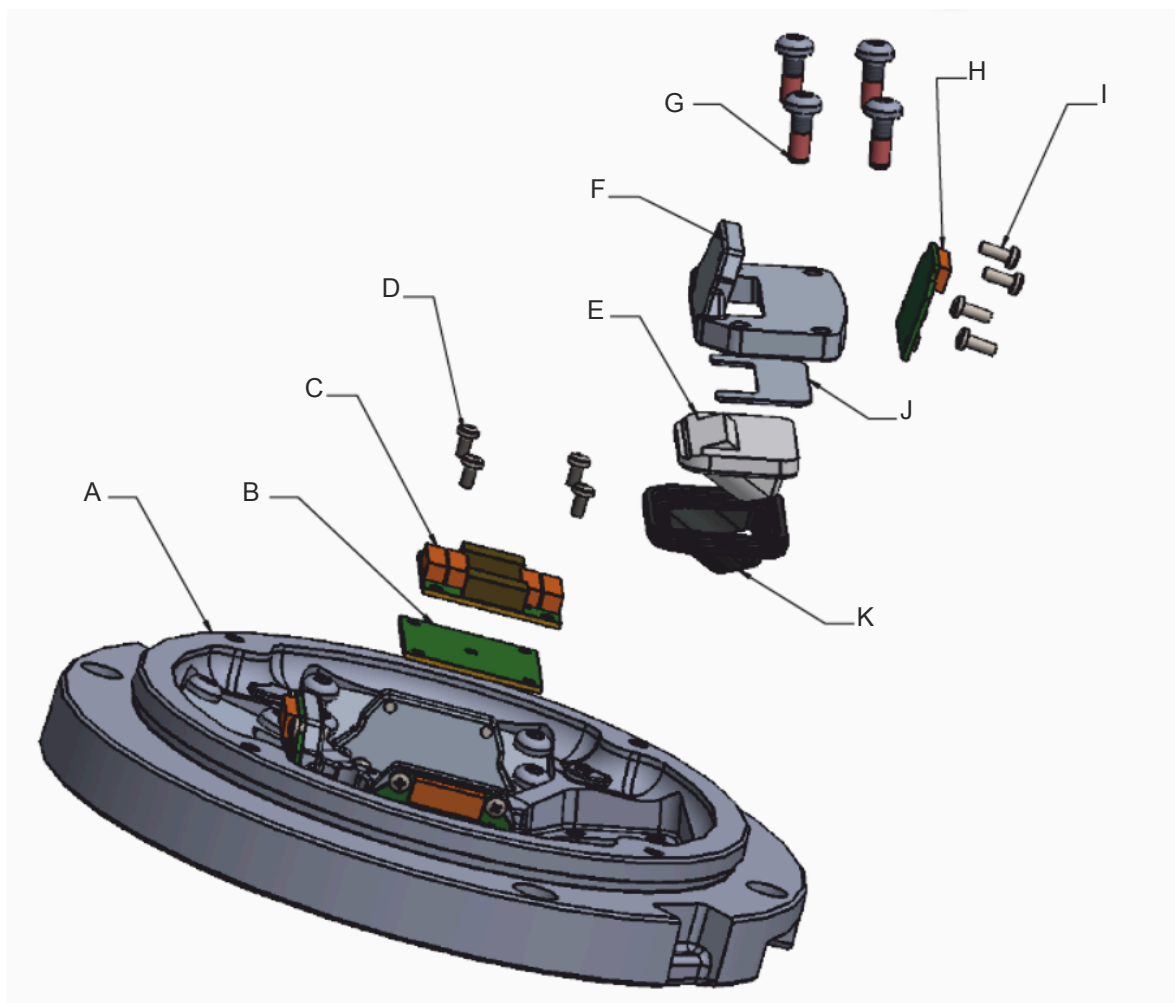


Table 1: Legend Exploded View

Call-out number	Description	Quantity
A	Top cover	1 pc
B	Isolation board	1 pc
C	Connection board	1 pc
D	Screw M3x8 DIN7985-T-A2	4 pcs
E	Prism	4 pcs
F	Holder prism	4 pcs
G	Screw M4 x6	16 pcs
H	LED board	4 pcs
I	Screw M3x8 DIN7985-T-A2	4 pcs
J	Protection prism plate	16 pcs
K	Gasket	4 pc

5.4.2 Opening a 12-inch Fixture

Remove

1. Place the light fixture upside down and remove the four screws from the bottom cover using a T30 Torx fitting See [Figure 9](#).
2. Lift up the housing carefully as to not damage the LED-board cables and disconnect the LED board cable connector from the LED boards in the top cover. See [Figure 10](#).
3. Open the light fixture and by removing the bottom cover from the top cover.
4. Remove the O-ring gasket from the bottom cover, see [Figure 11](#).

Figure 9: Fixture upside down

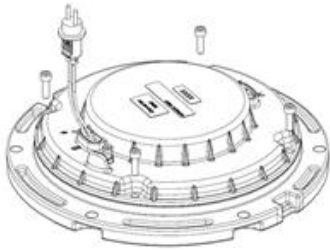


Figure 10: Lift up housing

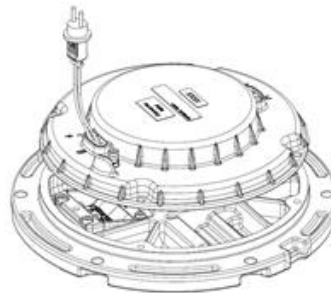
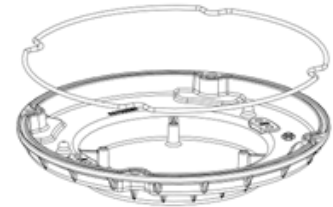


Figure 11: Remove gasket



Replace

1. Carefully clean all the contact surfaces and housing of the light fixture.
2. Install a new O-ring gasket on the bottom cover.



Note

The O-ring gasket must be changed each time the light fixture is disassembled.

3. Connect the LED board cable connector(s) to the Supply Terminal(s) of the converter in the housing. Note the orientation and alignment of the LED board cables.

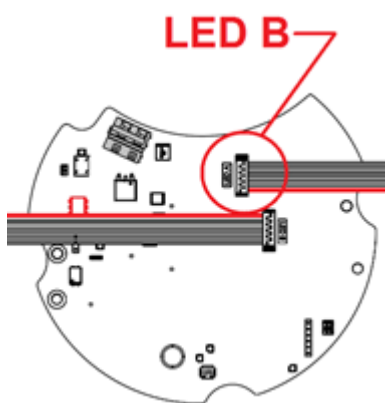
The cables should have colored wires towards each other and crossed.



Note

Before closing the light fixture, it is important to make sure the O-ring is placed correctly in the groove of the bottom cover to prepare the light fixture for water tightness checks and use in the airfield. For more information, see [INTEROPERABILITY](#).

Figure 12: Converter with 1 connector

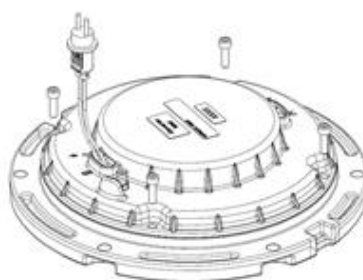


4. Put the light fixture on a surface with the top cover facing down, see [Figure 13](#).
5. Tighten the four screws using a torque limiting spanner with T30 Torx fitting. Follow Bolt Torque Sequence and torque to 53 in-lbs (6 Nm), see [Figure 14](#).

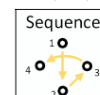
Figure 13: Fixture facing down



Figure 14: Tighten screws



Bolt torque sequence



6. Check the light fixture for water-tightness. For more information, see [Checking the Light Fixture for Water-Tightness](#).

5.4.3 Closing a 12-inch Light Fixture

Replacement

1. Carefully clean all contact surfaces and housing of the light fixture.

2. Install a new inner pan gasket on the bottom cover.



IMPORTANT

The inner pan gasket must be changed each time the light fixture is disassembled.

3. Connect the LED board cable connector(s) to the supply terminal(s) of the converter in the housing. See [Figure 15](#)



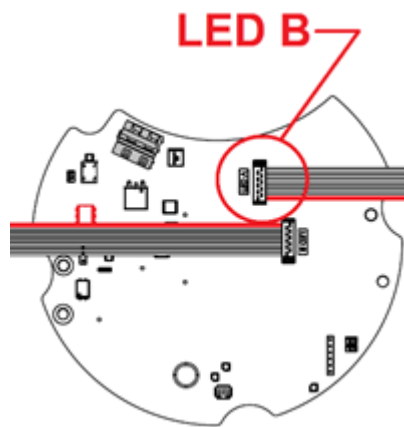
NOTICE

Note the orientation and alignment of the LED board cables.

The cables should have colored wires towards each other and crossed.

4. Place the top cover over the bottom cover, align A and B sides on the top cover with the corresponding sides on the bottom cover.

Figure 15: Converter with 1 connector



IMPORTANT

Before closing the light fixture, it is important to make sure the inner pan gasket is placed correctly in the groove of the bottom cover to prepare the light fixture for water tightness checks and use in the airfield.

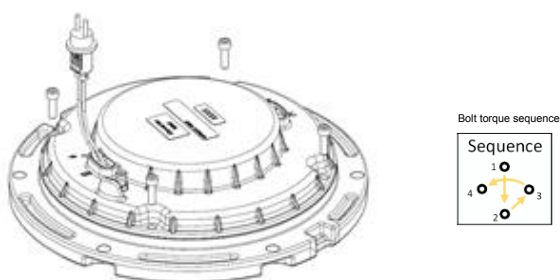
5. Put the light fixture on a surface with the top cover facing down. See [Figure 16](#) figure.

- Tighten the four screws using a torque limiting spanner with T30 Torx fitting. Follow Bolt Torque Sequence and torque to 53 in-lbs (6 Nm). See [Figure 17](#)

Figure 16: Fixture facing down



Figure 17: Tightening screws

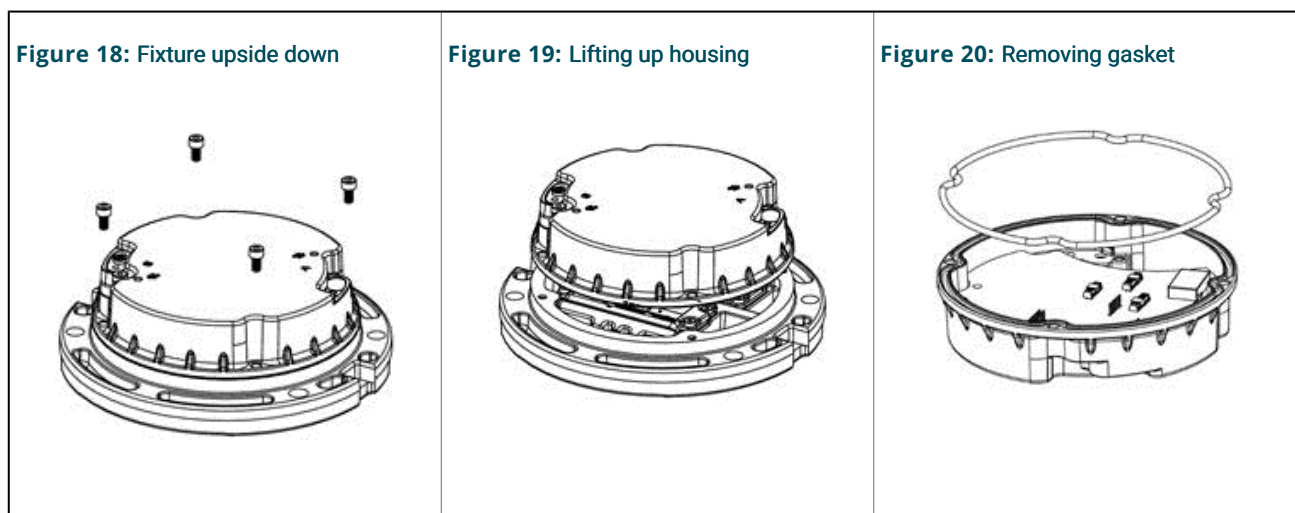


- Check the light fixture for water-tightness. See [Checking the Light Fixture for Water-Tightness](#) for further information.

5.4.4 Opening an 8-inch Fixture

Removal

- Place the light fixture upside down and remove the four screws from the bottom cover using a T25 Torx fitting. See [Figure 18](#)
- Lift up the housing carefully as to not damage the LED-board cables and disconnect the LED board cable connector from the LED boards in the top cover. See [Figure 19](#)
- Open the light fixture by removing the bottom cover from the top cover.
- Remove the O-ring gasket from the bottom cover. See [Figure 20](#)



5.4.5 Closing an 8-inch Light Fixture

Replacement

1. Carefully clean all contact surfaces and housing of the light fixture.
2. Install a new inner pan gasket on the bottom cover.



Note

The inner pan gasket must be changed each time the light fixture is disassembled.

3. Connect the LED board cable connector(s) to the supply terminal(s) of the converter in the housing. See [Figure 21](#)



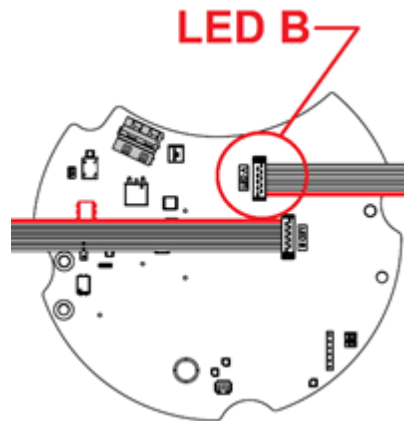
NOTICE

Note the orientation and alignment of the LED board cables.

The cables should have colored wires towards each other and crossed.

4. Place the top cover over the bottom cover, align A and B sides on the top cover with the corresponding sides on the bottom cover.

Figure 21: Converter



Note

Before closing the light fixture, it is important to make sure the inner pan gasket is placed correctly in the groove of the bottom cover to prepare the light fixture for water tightness checks and use in the airfield.

5. Put the light fixture on a surface with the top cover facing down. See [Figure 22](#)

- Tighten the four screws using a torque limiting spanner with T25 Torx fitting. Follow Bolt Torque Sequence and torque to 31 in-lbs (3.5 Nm). See [Figure 23](#)

Figure 22: Fixture facing down

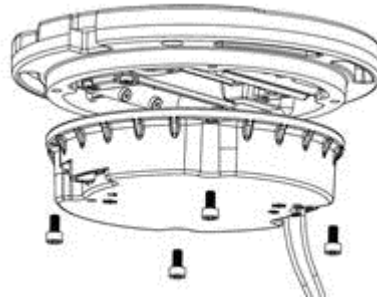
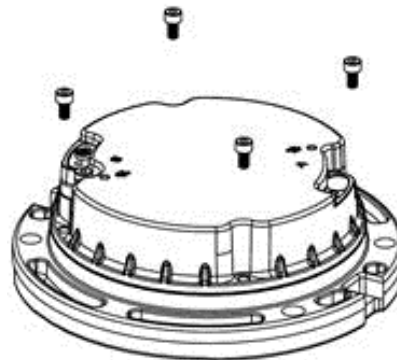
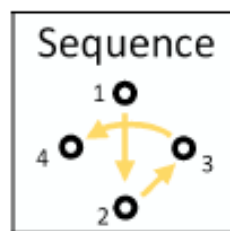


Figure 23: Tightening screws



Bolt torque sequence



- Check the light fixture for water-tightness.
See [Checking the Light Fixture for Water-Tightness](#) section for more information.

5.4.6 Check the Light Fixture for Water-tightness

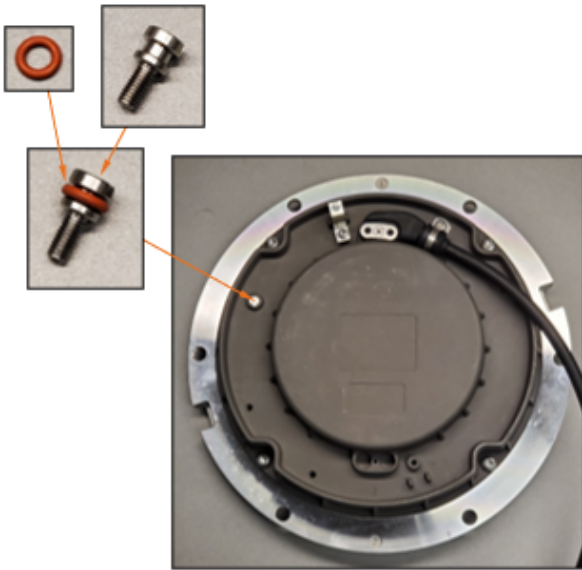
Tools to be used:

- Flat head screwdriver
- For water tight testing, pressure test fitting tool to be used : 44A6104/A

Execute the following procedure to test for leaks:

1. Remove the pressure-release screw and discard.
Refer to the image below.

Figure 24: Pressure-release screw removal



2. Screw the pressure test fitting to the pressure-release Port.

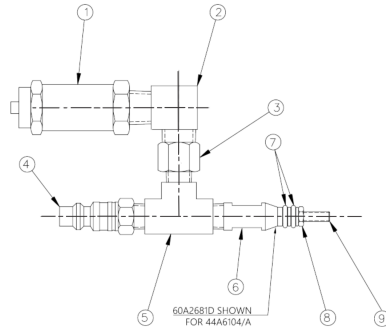


NOTICE

The pressure-release port is the opening from where the pressure release screw was removed.

- Screw the fitting hand-tight.

Figure 25: Pressure test fitting tool



Call-out	Description
1	Pop — safety valve
2	90 deg., elbow, female X male, brass, 1/4"
3	Adapter, female — male, 1/4 x 1/8, brass
4	Sleeve — lock hose plug, 1/4" coupler
5	Tee, brass, 1/8
6	Pressure test fitting, body
7	O-ring, silicone, size 008, 1/16 W X 3/16
8	M4 Hex Jam nut, 18-8 SS
9	Pressure test fitting stud

- Pressurize to 20 psi (130 kPa).
- Submerge the pressure test fitting in a water tank.
- Wait 3 minutes and check if air leaks out of the light.
If air leaks out of the light fixture (between the Bottom Cover and the top plate or between the prism and top plate or watertightness valve and top plate), the light fixture is not watertight and must be repaired. Release the air from the light. Disassemble the light fixture and re-check the mating surfaces and gaskets. Assemble the light fixture and perform the water-tightness test again.
- Depressurize and install a new pressure release screw (1) at 26 in-lbs (3 Nm), if the fixture is watertight.



DANGER

NEVER EXCEED A PRESSURE OF 22 PSI (150 KPA) INSIDE THE LIGHT FIXTURE. A HIGHER PRESSURE MAY CAUSE INJURIES AND DAMAGE THE LIGHT.

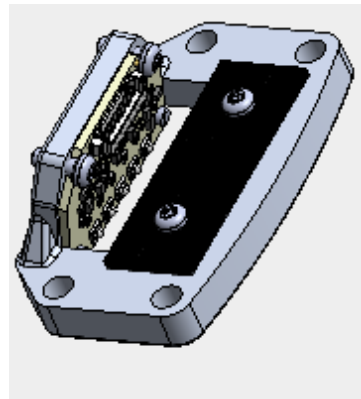
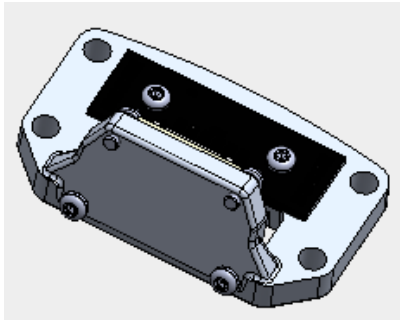
5.4.7 Replace a Light Engine in a 12-inch and an 8-inch Fixture

Remove

- Disassemble the light fixture.

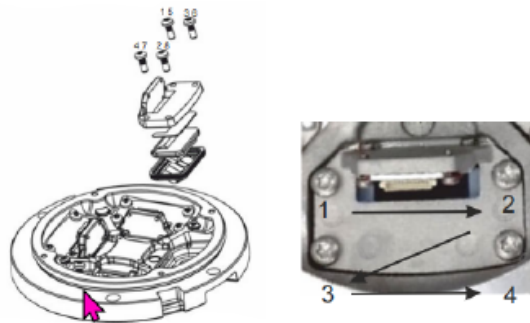
2. Detach and remove the LED board holder, including 4 screws from the body, using T25 Torx fitting.
-

Figure 26: Light engine

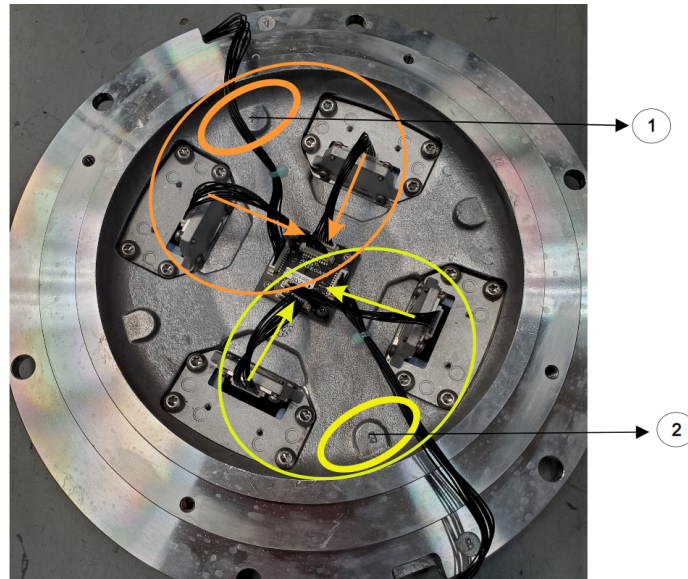


Replace

3. Attach the new LED board holder, including screws. The screws on the LED holder shall be tightened gently in sequence 3-6, see [tighten screws figure](#)
4. Tighten the same screws to a torque of 40 in-lbs. (4.5 Nm), following number 5-8.



5. Connect the LED-cable(s) to the LED-board(s), note the cable orientation. Connect Light Engine Wires from side 1 LEDs to side 1 of the Jumper board and side 2 LEDs to the side 2 of the Jumper Board, as illustrated in the image below.



6. Assemble the light fixture.

5.4.8 Replace the Top Cover of a 12-inch Fixture



NOTICE

Top covers are delivered without the LED boards. LED boards have to be ordered separately.



Note

When a top cover is replaced, new LED boards (which are mounted on the brackets) have to be mounted. For LED board replacement new gaskets and blue spacers are required. They are available separately.

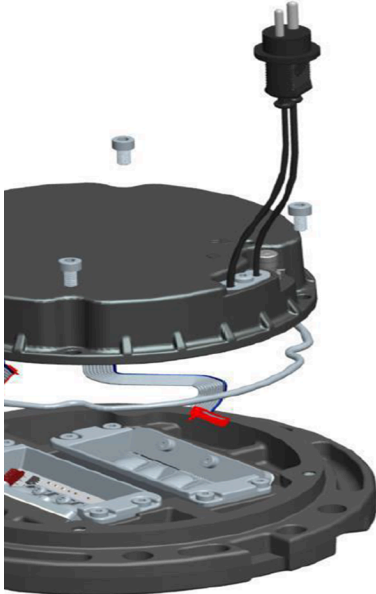
1. Open the light: Disconnect the top cover from the bottom cover.



Note

Refer to the [Figure 27](#) figure.

Figure 27: Top cover with bottom cover



2. Remove the cables from the assembly.
3. Disconnect the inner pan gasket, the prism gasket, the prism protection plate (blue spacer), the prism and the LED kit from the cover. The gaskets and the prisms have to be replaced after delivery. You have to remove the prism holder (bracket) to mount the LED board.



Note

Follow the instruction on mounting a LED board in the [Replacing the LED Board](#) section.

4. Place the components on the bottom cover.
5. Reconnect the parts and the cables.
6. Place the bottom cover on the top cover with component and connect them with the screws and connectors.
7. Close the fixture.

5.4.9 Replacing the Top Cover of an 8-inch Fixture



NOTICE

Top covers are delivered without the LED boards. LED boards have to be ordered separately.



Note

When a top cover is replaced, new LED boards (which are mounted on the brackets) have to be mounted. For LED board replacement new gaskets and blue spacers are required. They are available separately.

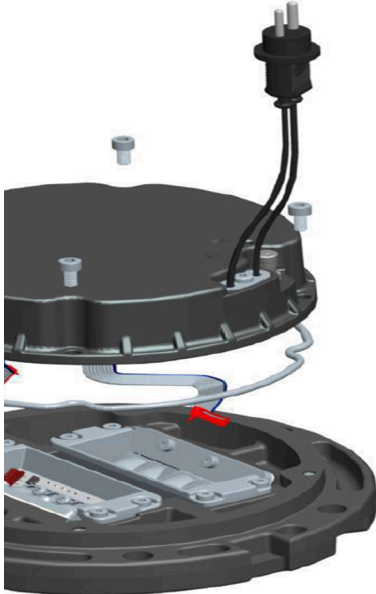
1. Open the light: Disconnect the top cover from the bottom cover.



Note

Refer to the [Figure 28](#) figure.

Figure 28: Top cover with bottom cover



2. Remove the cables from the assembly.
3. Disconnect the inner pan gasket, the prism gasket, the prism protection plate (blue spacer), the prism and the LED kit from the cover. The gaskets and the prisms have to be replaced after delivery. You have to remove the prism holder (bracket) to mount the LED board.



Note

Follow the instruction on mounting a LED board in the [Replacing the LED Board](#) section.

4. Place the components on the bottom cover.
5. Reconnect the parts and the cables.
6. Place the bottom cover on the top cover with component and connect them with the screws and connectors.
7. Close the fixture.

5.4.10 Replacing the LED Board

The LED board is included in the LED kit. LED boards are delivered mounted on the LED prism holders (brackets). You can mount the LED prism holders without disassembling the connection board.

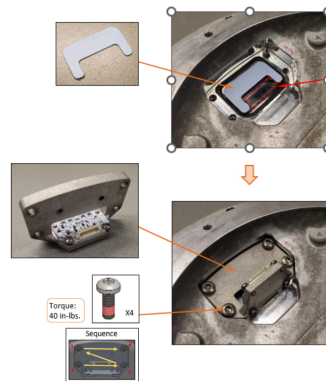


NOTICE

Replace blue spacer and prism gasket to mount the LED board when a new fixture is delivered. The spacers and gasket that are mounted upon receipt are only mounted as a transportation protection. Make sure you throw them away!

1. Remove the brackets from the prisms being in place when they are delivered to mount the LED board.

Figure 29: LED sub assembly (Optical assembly)



2. Connect the cables with the LED board.
3. Set the LED optical assembly with the prism protection plate and the prism on the gasket (prism assembly kit).
4. Put the prism assembly onto the top cover.
5. If there are arctic kits, make sure the arctic kit is mounted and connected. One Arctic Kit contains two heaters.
6. Close the fixture.

Figure 30: Close the Fixture

5.4.11 Replace a Prism and its Gasket in an 8-inch and 12-inch fixture

Remove

1. Disassemble the light fixture.
2. Detach and remove the LED board holder, including 4 screws from the body, using a T25 Torx fitting, see [\[fig 1.x\]](#).
3. Remove the Teflon and steel protective plates from the LED board holder.

- Remove the prism and its gasket, see [fig 1.x].

Figure 31: Remove LED Board Holder

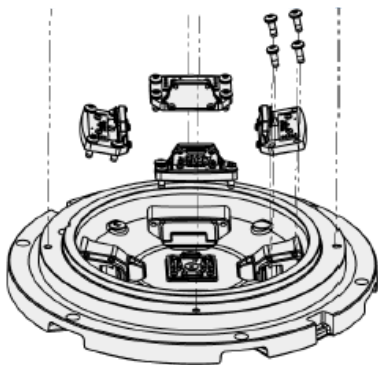


Figure 32: Remove Prism and Gasket

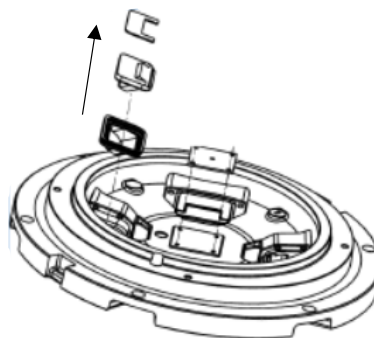


Figure 33: Exploded View

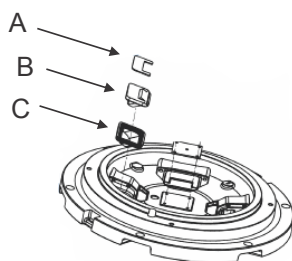


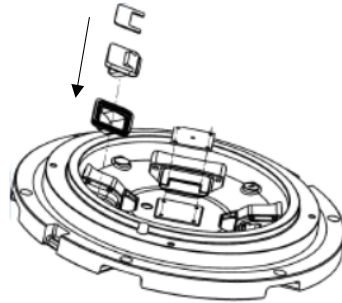
Table 2: Exploded View Legend — Top Cover Assembly, 12 inch

Call-out	Description	Part Number
A	Prism Protection Plate	4072.78.040
B	Prism	4072.78.021
C	Prism Gasket	4072.78.030

Replace

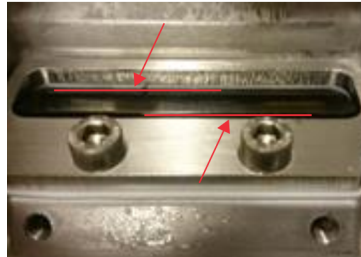
1. Place the prism gasket in the prism opening in the top cover.
2. Put the new prism into the new prism gasket, then push it all the way into the opening. See [Figure 34](#).

Figure 34: New prism into prism gasket



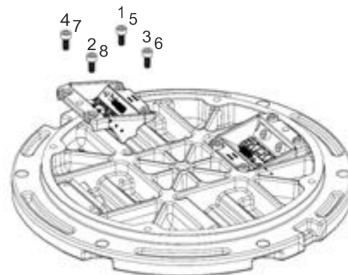
3. Check that the O-ring of the prism gasket is even in the chambered area.
4. Place the new Teflon protective plate and steel plate over the prism and prism gasket and tighten the two M5x12 screws to a torque of 4.5 Nm.
5. Looking from above, make sure the prism edge is parallel with the prism holder, see [Figure 35](#).

Figure 35: Prism holder edge



6. Use alcohol based cleaner to remove any grease or dust from the prism.
7. Attach the LED board holder, including screws, and gently tighten the screws on the LED holder in sequence following number 1-4, see .
8. Tighten the same screws to a torque of 4.5 Nm following number 5-8, and re-tighten the two screws on the steel plate to 4.5 Nm. See .

Figure 36: Tighten screws in sequence



9. Assemble the light fixture.
10. Cut off any protruding prism gasket on the outside of the top cover.

5.4.12 Replacing a prism, its gaskets and the blue spacers (prism protection plates) in an 8-inch fixture

Removal



IMPORTANT

You must replace all four prisms when a prism is cracked or water has leaked into the fixture.

1. Disassemble the light fixture:

a. Disassemble the prism holder (bracket) from the top cover.



NOTICE

Every time the prism holders are replaced, the prism protection plates (blue spacers) require replacement too.

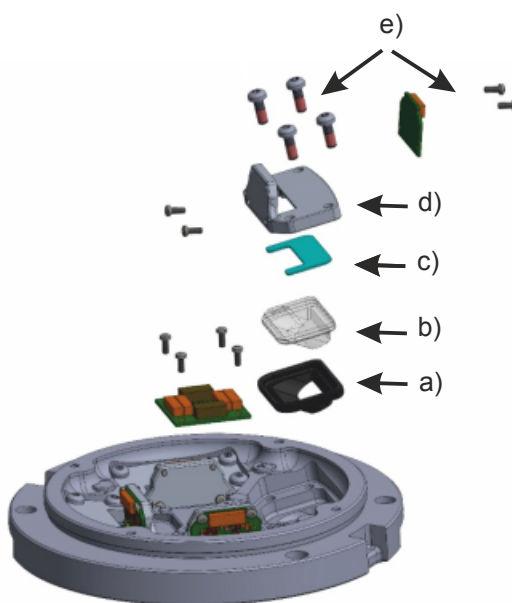
b. Remove bracket number d) and replace parts a), b) and c). Refer to [Figure 37](#) figure.



RESTRICTION

As soon as part d) is replaced, part a) and c) must be replaced, too. If this action is not executed, the fixture will not be watertight any more!

Figure 37: Exploded view - prism replacement



2. Detach and remove the LED board holder, including 4 screws from the body, using a 3 mm Allen key. See [Figure 38](#).



REMEMBER

Never reuse the screws! The screws number e) are included in the kit (not as spare parts).

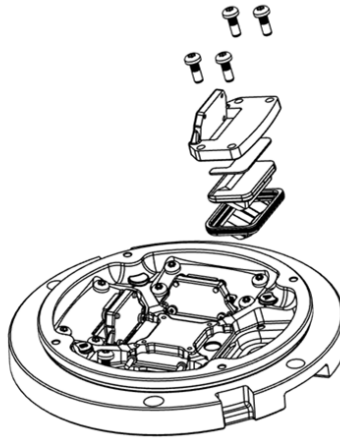


Note

Refer to [Figure 37](#) figure.

3. Remove the Teflon and steel protective plates from the LED board holder.
 4. Remove the prism and its gasket.
-

Figure 38: Remove LED board holder



Replacement

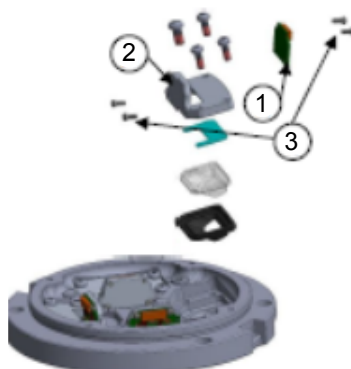


NOTICE

The prism gaskets and the protection prism plate require replacement every time a prism is replaced. That means that when 4 prisms have to be replaced, 4 gaskets and prism protection plates require replacement, too.

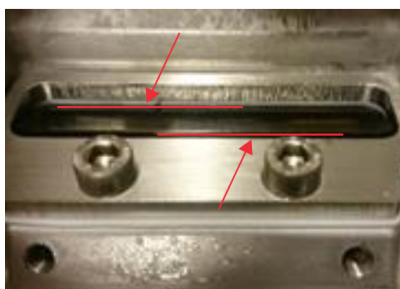
1. Lubricate the new prism gasket with CC Patron grease.
2. Place the prism gasket in the prism opening in the top cover.
3. Put the new prism into the new prism gasket, then push it all the way into the opening and hold for about a minute. See [Figure 39](#).

Figure 39: New prism into prism gasket



4. Check that the O-ring of the prism gasket is even in the chambered area.
5. Place the new Teflon protective plate and steel plate over the prism and prism gasket and tighten the two M4 screws to a torque of 4.5 Nm.
6. Looking from above, make sure the prism edge is parallel with the prism holder, see [Figure 40](#).

Figure 40: Prism holder edge



7. Use alcohol based cleaner to remove any grease or dust from the prism.

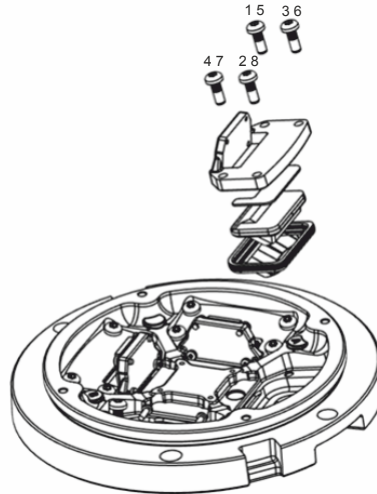
- Attach the LED board holder, including screws. The screws on the LED holder shall be tightened to a torque of 4.5 Nm, in sequence 1-4. Tighten the same screws again to a torque of 4.5 Nm, in sequence 5-8. See [Figure 41](#).



Note

The torquing sequence must be respected as it ensures correct positioning of the prism.

Figure 41: Tighten screws in sequence



- Re-tighten the two screws on the steel plate to 4.5 Nm. See [Figure 41](#).
- Assemble the light fixture.
Make sure the gasket is fitted in correctly.

Figure 42: Correct gasket position



Note

Make sure you check the fixture for watertightness every time you have to replace a spare part!

5.4.13 Replace the Bottom Cover and Converter of a 12-inch Fixture

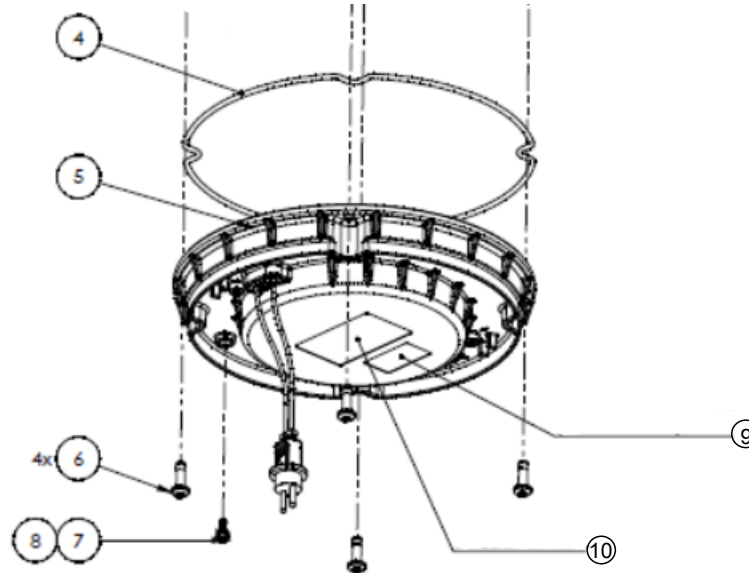
Remove

1. Disassemble the light fixture.
2. From inside the housing, disconnect all cables from the LED board.

Replace

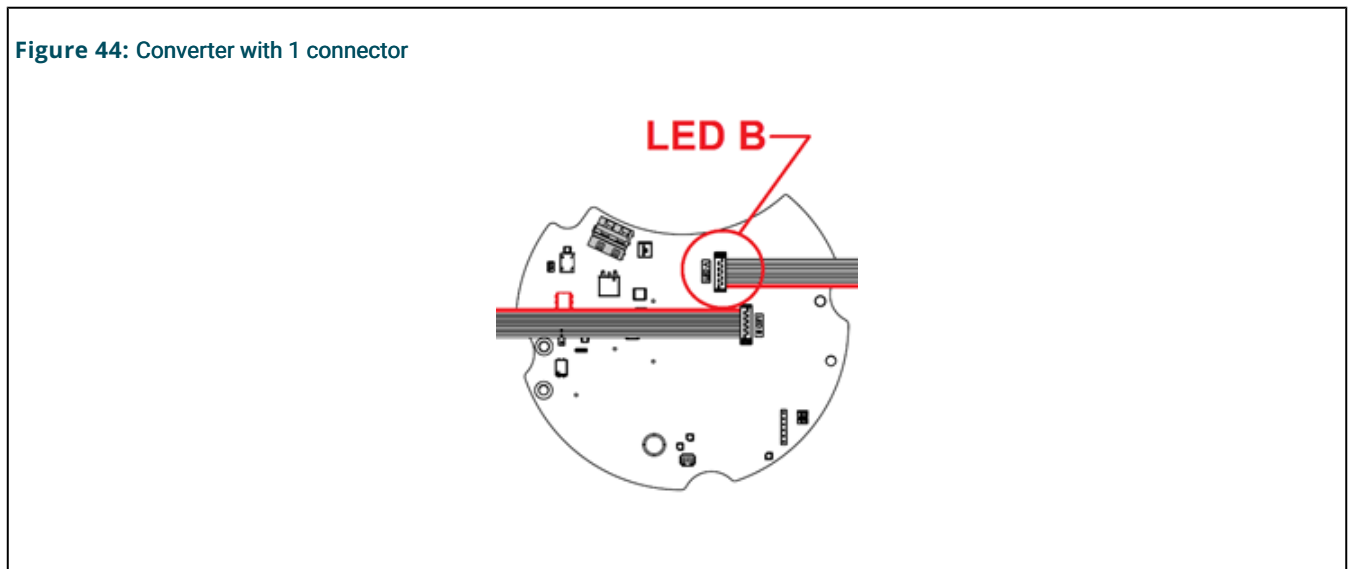
1. Place the new gasket on the new bottom cover with converter.

Figure 43: Replace new gasket with converter



- | | |
|--|---|
| <p>4
5
6
7
8
9</p> | <p>O-ring, Reliance Inset 12 In
Bottom Pan Assembly, Reliance 12 In Inset
M6 x 1 x 20 PAN A2 6 LOBE LP DIN 7985
D-Range Pressure Release Screw
O-ring, Silicone, size 008, 1/6W x 3/16ID
Safeled TWY RWSL Wire Assembly PS T0 LE, 150mm</p> |
|--|---|

2. Connect the LED board cable(s). Note the orientation and alignment of the cables in the images below.



3. Assemble the light fixture.

5.4.14 Replace the Bottom Cover and Converter of a 8-inch Fixture

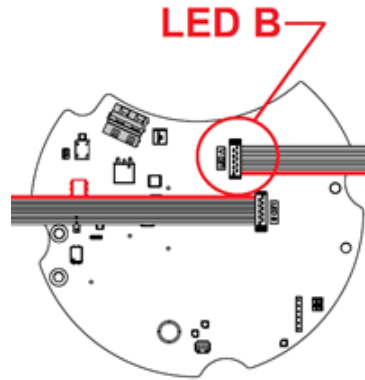
Removal

1. Disassemble the light fixture.
2. From inside the housing, disconnect all cables from the LED board.

Replacement

1. Place the new gasket on the new bottom cover with the converter.
2. Connect the LED board cable(s). Note the orientation and alignment of the cables in the images below.

Figure 45: Converter with 1 connector



3. Assemble the light fixture.

5.4.15 Reset the Fail-Open Converter

Parts

- Fuse resistor spare part kit: 6132.00.250 (20pcs)

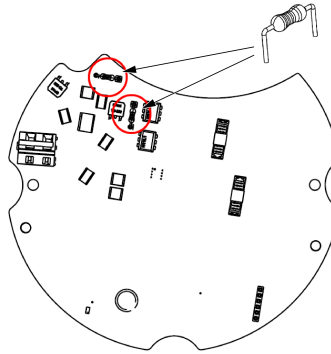
Info

- Converter has 2 fuse resistors

Reset / replace the fuse resistors

1. Disconnect and disassemble the light fixture.
2. Locate the fuse resistors.

Figure 46: Converter

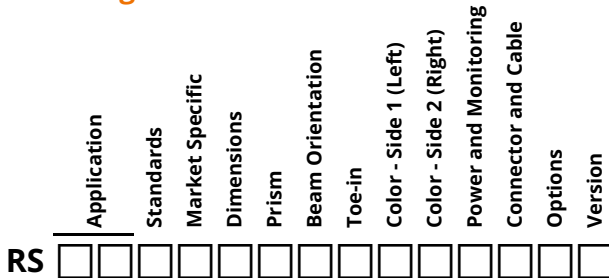


3. Remove the fuse resistors by pulling away from the converter.
 - a. Always replace both fuse resistors at the same time.
4. Dispose the old fuse resistors.
5. Place the legs of the new fuse resistors in the sockets.
6. Assemble the light fixture and perform a functional test.

6.0 Ordering Codes

6.1 L-852T(L) LED Taxiway Edge

Ordering Code



Application

TE = Taxiway Edge

Standards

1 = FAA / ICAO¹

Market Specific

0 = None

1 = Buy American Preference (BAP)²

Dimensions

1 = 8 inch (203 mm) diameter

2 = 12 inch (305 mm) diameter, 11.25 inch BC (285 mm; L-868B mount)³

4 = 12 inch (305 mm) diameter, 10.25 inch BC (260 mm; L-867B mount)³

Prism

P = 4 protected prisms

Beam Orientation

3 = Omnidirectional

Toe-in

N = Not applicable

Color - Side 1 (Left)

B = Blue

Y = Yellow⁴

1 = Infrared Blue⁴

2 = Infrared Yellow⁴

Color - Side 2 (Right)

N = Not applicable

Power and Monitoring

S = 2.8 - 6.6 A, non-monitored — power only

M = 2.8 - 6.6 A, Fail-open monitoring

R = 2.8 - 6.6 A, EQ integrated LINC 360⁵

Connector and Cable

1 = 1 x Style 6 2-pole plug, 2 individual wires⁶

2 = 1 x Style 1 2-pole plug, 2-core cable⁶

5 = 1 x Flat 3-pole plug, 3 individual wires⁴

Options

0 = None

1 = Arctic Kit

Version

2 = Version 2

Ordering Code Notes

1. If a 2-cord set fixture is required meeting BAP, digit 13, "Power and Monitoring", must be M.
2. Required for FAA when funded by AIP.
3. L-867B base can mounting — Existing L-867B base must have a top flange with a 9.25 inch ID. L-867B bases made prior to 2007 will have a top flange with a 8-inch ID. Use AA132820X adapter ring with 8-inch fixture for these applications.
4. Not ETL submitted or not applicable to FAA market.
5. EQ light fixtures are only available as a one connector option.
6. All Style 1 corded fixtures will include a ground lug. All Style 6 or 3-pole corded fixtures will be provided with grounding screw(s).

6.2 Protected Runway Edge, Medium Intensity

Ordering Code

	Application	Primary Standard	Market-Specific	Dimensions	Prism	Beam Orientation	Toe-in	Color - Side 1 (Left)	Color - Side 2 (Right)	Power and Monitoring	Connector and Cable	Options	Version
RS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Application

ME = Medium intensity RWY/APP

Primary Standard

3 = ICAO

Market Specific

0 = None

Dimensions

1 = 8 inch (203 mm) diameter

Prism

P = 4 protected prisms

Beam Orientation

3 = Omnidirectional

Toe-in

N = Not applicable

Color - Side 1 (Left)

W = White

Color - Side 2 (Right)

N = Not applicable

Power and Monitoring

S = 2.8 - 6.6 A, non-monitored — power only

M = 2.8 - 6.6 A, with monitoring

R = 2.8 - 6.6 A, ILCMS OFDM integrated

Connector and Cable

1 = 1 x Style 6 2-pole plug, 2 individual wires

Options

0 = None

Version

2 = AXON

6.3 Protected Apron Maneuvering Guidance

Ordering Code

	Application	Standard	Market-Specific	Dimensions	Prism	Beam Orientation	Toe-in	Color - Side 1 (Left)	Color - Side 2 (Right)	Power and Monitoring	Connector and Cable	Options	Version
RS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Application

AM = Apron Stand Maneuvering Guidance

Standard

3 = ICAO

Market-Specific

0 = None

Dimensions

1 = 8 inch

Prism

P = 4 protected prisms

Beam Orientation

3 = Omnidirectional

Toe-in

N = Not applicable

Color - Side 1 (Left)

R = Red

Y = Yellow

Color - Side 2 (Right)

N = Not applicable

Power and Monitoring

S = 2.8 - 6.6 A, non-Monitored - power only

M = 2.8 - 6.6 A, Fail-Open monitoring

R = 2.8 A - 6.6 A, ILCMS integrated OFDM EQ

Connector and Cable

1 = 1 x Style 6 2-pin plug, 2 individual wires

5 = 1 x flat 3-pin plug, 3 individual wires ¹

Options

0 = None

Version

2 = Second edition

Ordering Code Notes

1. French 3-pin plug (1F).

7.0 Spare Parts

For more information, see www.adbsafegate.com and the spare part lists, or contact ADB SAFEGATE for assistance.

7.1 Exploded View

Table 3: Exploded View, Omnidirectional Light, 4 prisms, 12-inch

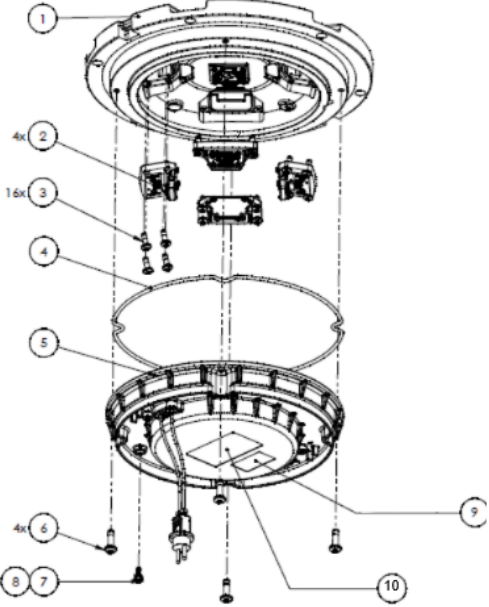
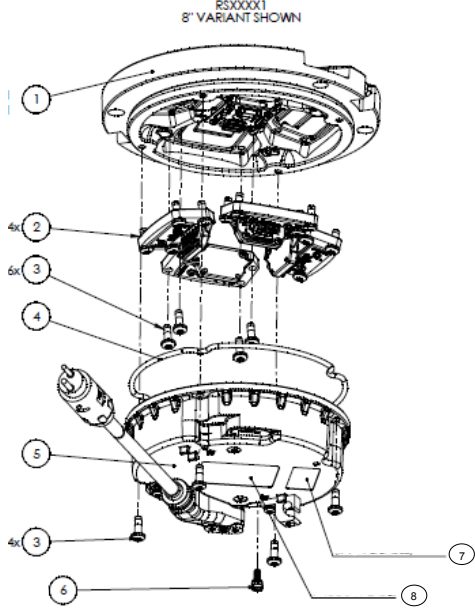
	Call-out number)	Description	Part Number (Quantity)
<p>Figure 47: Omnidirectional Light, 4 prisms, 12-inch</p> 	1)	Top Cover Assembly, 12-Inch Omni	SP.AS00188-00S (1 pc)
	2)	Light Engine Assembly, Omni 12-Inch / 8-Inch (4 p)	SP.AS00143-XXXX (4 pcs)
	3)	M5 x 8 x 14 PAN A2 6 LOBE LP DIN 7985	MFP M 5PT-714-01 (16 pcs)
	4)	Bottom Pan Gasket, O-ring, 12-Inch	MS00006-000-01 (1 pc)
	5)	Bottom Pan Assembly, 12-Inch	SP.AS00024-XXX (1 pc)
	6)	M6 x 1 x 20 PAN A2 6 LOBE LP DIN 7985	MFP M 6PT-720-01 (4 pcs)
	7)	D-Range Pressure Release Screw	MF00090-000-01 (1 pc)
	8)	O-ring, Silicone, size 008, 1/6W x 3/16ID	MS00001-008-01 (1 pc)
	9)	Power supply label (if applicable)	
	10)	Product label	

Table 4: Exploded View, Omnidirectional Light, 4 prisms, 8-inch

	Call-out number)	Description	Part Number (Quantity)
 <p>Figure 48: Omnidirectional Light, 4 prisms, 8-inch</p>	1) Top Cover Assembly, 8-Inch Omni	SP.AS00187-00S (1 pc)	
	2) Light Engine Assembly, Omni 12-Inch / 8-Inch (4 p)	SP.AS00143-XXXX (4 pcs)	
	3) M5 x 8 x 14 PAN A2 6 LOBE LP DIN 7985	MFP M 5PT-714-01 (16 pcs)	
	4) Bottom Pan Gasket, O-ring, 8-Inch	MS00005-000-01 (1 pc)	
	5) Bottom Pan Assembly, 8-Inch	SP.AS00021-XXX (1 pc)	
	6) M5 x 8 x 14 PAN A2 6 LOBE LP DIN 7985	MFP M 5PT-714-01 (4 pcs)	
	7) Power supply label (if applicable)		
	8) Product label		

7.2 Taxiway Edge, 12-inch and 8-inch, L-852T(L)

Top cover assembly (including gasket and screws for bottom pan)	Quantity per		spare part code
	fitting	spare part	
8-inch	1	1	SP.AS00187-00S
12-inch	1	1	SP.AS00188-00S

Light engine assembly without heater (including mounting screws)	Quantity per		spare part code
	fitting	spare part	
Blue, TE/L-852T(L)	4	4	SP.AS00143-01BN
Yellow, TE App.	4	4	SP.AS00143-01YN
InfraRed and Blue, TE/L-852T(L)	4	4	SP.AS00143-11BN
InfraRed and Yellow, TE App.	4	4	SP.AS00143-11YN

Light engine assembly with heater (including mounting screws)	Quantity per		spare part code
	fitting	spare part	
Blue, EQ (R), TE/L-852T(L)	4	4	SP.AS00143-01B0
Blue, non-Monitored (S) or Monitored (M), TE/L-852T(L)	4	4	SP.AS00143-01B1
Yellow, EQ (R), TE App.	4	4	SP.AS00143-01Y0
Yellow, non-Monitored (S) or Monitored (M), TE App.	4	4	SP.AS00143-01Y1
InfraRed and Blue, EQ (R), TE/L-852T(L)	4	4	SP.AS00143-11B0
InfraRed and Blue, non-Monitored (S) or Monitored (M), TE/L-852T(L)	4	4	SP.AS00143-11B1
InfraRed and Yellow, EQ (R), TE App.	4	4	SP.AS00143-11Y0
InfraRed and Yellow, non-Monitored (S) or Monitored (M), TE App.	4	4	SP.AS00143-11Y1

Bottom pan assembly, 8-inch and 12-inch, Taxiway and Runway (including gasket and screws for bottom pan)	Quantity per		spare part code
	fitting	spare part	
non-monitored converter, 1-connector style 6 cord set	1	1	SP.AS00021-L13
non-monitored converter, 1-connector 3-pole cord set	1	1	SP.AS00021-L1F
non-monitored converter, 1-connector style 1 SJO jacketed cord set	1	1	SP.AS00021-L1J
monitored converter, 1-connector style 6 cord set	1	1	SP.AS00021-M13
monitored converter, 1-connector 3-pole cord set	1	1	SP.AS00021-M1F
monitored converter, 1-connector style 1 SJO jacketed cord set	1	1	SP.AS00021-M1J
EQ converter, 1-connector style 6 cord set	1	1	SP.AS00021-R13
EQ converter, 1-connector 3-pole cord set	1	1	SP.AS00021-R1F
EQ converter, 1-connector style 1 SJO jacketed cord set	1	1	SP.AS00021-R1J
Buy American Preference non-monitored converter, 1-connector style 6 cord set	1	1	SP.AS00021-S13
Buy American Preference non-monitored converter, 1-connector style 1 SJO jacketed cord set	1	1	SP.AS00021-S1J

Cordsets	Quantity per		spare part code
	fitting	spare part	
Cord Set Kit, L-823 Style 1, 8-inch Bottom Pan	1 or 2	5	SP.73A0193/1
Cord Set Kit, L-823 Style 1, 12-inch Bottom Pan	1 or 2	5	SP.73A0194/1
Cord set, L-823 style 6, 8-inch and 12-inch bottom pan	1 or 2	5	SP.73A0136/18
Cord set, 3-pole, 8-inch and 12-inch bottom pan	1 or 2	5	SP.SGEFR500160
Cable retaining clamp, for use with style 1 cord set	1 or 2	5	SP.MB00003-013-01

Prism kit	Quantity per		spare part code
	fitting	spare part	
Prism Kit (including prism, prism gasket, protection plate and mounting screws)	4	4	SP.4072.78.021

Prism gasket	Quantity per		spare part code
	fitting	spare part	
Prism Gasket	4	10	SP.4072.78.030

Wire harness	Quantity per		spare part code
	fitting	spare part	
Wire Harness, power supply to Junction Board for 8-inch fixtures	1	4	SP.EW00070-150-01
Wire Harness, power supply to Junction Board for 12-inch fixtures	1	4	SP.EW00070-300-01
Wire Harness, light engine to Junction Board	4	8	SP.6100.50.300

Heater kit (including mounting screws)	Quantity per		spare part code
	fitting	spare part	
Heater Kit for power supply BAP (non-monitoring) and power supply EQ	2	2	SP.EP00077-P00-01
Heater Kit for power supply non-monitoring and power supply with monitoring	2	2	SP.EP00077-P01-01

Interface top cover - bottom pan	Quantity per		spare part code
	fitting	spare part	
Gasket between Bottom Pan and Top Cover, 8-inch	1	10	SP.MS00005-000-01
Screws to fix Bottom Pan to top cover 8-inch and to fix Light Engine	4	100	SP.MFPM5PT-714-01
Gasket between Bottom Pan and Top Cover, 12-inch	1	10	SP.MS00006-000-01
Screws to fix Bottom Pan to Top Cover 12-inch	4	100	SP.MFPM6PT-720-01
Ground lug kit	Quantity per		spare part code
	fitting	spare part	
Ground Lug Kit	1	5	SP.72A0401
Pressure release screw	Quantity per		spare part code
	fitting	spare part	
Pressure release screw with O-ring	1	5	SP.MF00090-000-01
Fuse	Quantity per		spare part code
	fitting	spare part	
Fuse Resistors (only for fixtures with monitoring (M))	1 or 2	20	6132.00.250

7.3 Protected Runway Edge, Medium Intensity, 8-inch

A - Top cover assemblies, 8-inch	Quantity per		spare part code
	fitting	spare part	
8-inch		1	SP.AS00187-00S
B - Light engine assemblies without heater	Quantity per		spare part code
	fitting	spare part	
OMNI 4P LED kit ME-White	4	4	SP00014-WHT-01
C - Bottom pan assemblies, 8-inch	Quantity per		spare part code
	fitting	spare part	
non-monitored converter, 1-connector style 6 cord set	1	1	SP.AS00021-L13
monitored converter, 1-connector style 6 cord set	1	1	SP.AS00021-M13
EQ converter, 1-connector style 6 cord set	1	1	SP.AS00021-R13
Cordsets	Quantity per		spare part code
	fitting	spare part	
Cord set, L-823 style 6, 8" & 12" bottom pan	1 or 2	5	SP.73A0136/18
Cable retaining clamp, for use with style 1 cord set	1 or 2	5	SP.MB00003-013-01
Prism spares	Quantity per		spare part code
	fitting	spare part	
Prism Kit (including prism, prism gasket, protection plate and mounting screws)	4	4	SP.4072.78.021
Prism Gasket	4	10	SP.4072.78.030

Wire harnesses	Quantity per		spare part code
	fitting	spare part	
Wire Harness, power supply to Junction Board for 8" fixtures	1	4	SP.EW00070-150-01
Wire Harness, light engine to Junction Board	4	8	SP.6100.50.300

Screws and gaskets	Quantity per		spare part code
	fitting	spare part	
Gasket between Bottom Pan and Top Cover, 8"	1	10	SP.MS00005-000-01
Screws to fix Bottom Pan to top cover 8" & to fix Light Engine	4	100	SP. MFPM5PT-714-01
Pressure release screw with O-ring	1	5	SP.MF00090-000-01

Fuse	Quantity per		spare part code
	fitting	spare part	
Fuse Resistors (only for fixtures with monitoring (M))	1 or 2	20	SP.6132.00.250

7.4 Protected Apron Maneuvering Guidance, Inset 8"

	Components	Versions	Article number	Packing ¹
A	OMNI 4P	Full inner pan assembly for Non-MON lights	SP.013105	Per 1
		Full Inner Pan assembly for IQ lights	SP.017117B	Per 1
		Full Inner Pan assembly for FO lights	SP.018059B	Per 1
		Full top cover (including prisms, gaskets, screws, connection board but without LED engine kit, without converter cables)	SP.013043	Per 1
B	OMNI 4P prism kit	Prism kit (including prism gasket & blue spacer & set of screws for support)	SP.013031	Per 4
C	OMNI 4P LED kit	LED strip bracket assembly - red - APRON (including 4 assemblies with screws and with LED cables)	SP.013046	Per 4
		LED strip bracket assembly - yellow - APRON (including 4 assemblies with screws and with LED cables)	SP.013047	Per 4
D	OMNI 4P LED cables 4P	Set of LED cables	SP.6100.50.200	Per 20
E	OMNI 4P Bottom cover gasket	Set of bottom cover gaskets	SP.MS00005-000-01	Per 10
F	OMNI 4P prism gaskets	Set of prism gaskets (no prisms)	SP.4072.78.030	Per 20
G	OMNI 4P blue spacers	Set of blue prism spacers (no prisms)	SP.4072.78.040	Per 20

Screw type	Name	Quantity on a fixture	Torque (Nm)
M3x8 DIN7985-T-A2	LED optical (sub) assembly screws	16	1-1.2 Nm + Loctite 2045
M3x6	Pan head cross recess screw	4	
M5x14		16	8 Nm
M6x1	Inner pan lock nut (mounted by manufacturer)		1.5 Nm + Loctite 577
M4x12	PCB screw for inner pan (mounted by manufacturer)		1.5 Nm - no Loctite
M4x6	Ground fixation screw for inner pan (mounted by manufacturer)		1.5 Nm - no Loctite
M4x10	Cable disc screw		2.5 Nm - no Loctite

¹ Example: If you order 1 × article number SP.6100.50.200, you will receive 20 cables.

8.0 POWER TABLES

LED L-852T(L) Taxiway Edge

8- and 12-inch light fixtures without Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
Taxiway Edge, L-852(T), omnidirectional	9.6 VA	15 W	5.1 VA	14.7 VA

8- and 12-inch light fixtures with Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
Taxiway Edge, L-852(T), omnidirectional	75.5 VA	65 W	11.5 VA	87 VA

¹Values provided are for the "S" option non-monitored power only.

LED ICAO Medium intensity Runway Edge & Approach

8-inch light fixtures without Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
Runway edge & approach, medium intensity, omnidirectional	9.6 VA	15 W	5.1 VA	14.7 VA

¹Values provided are for the "S" option non-monitored power only.



Note

- EQ fixtures:
 - The isolation transformer must have an additional 8 VA available above the fixture load for communication bandwidth. Size transformer to next size up to assure additional 8 VA coverage
 - Legacy BRITE II or AGLAS 2 systems — Order "M" power supply
- Fail-open fixtures:
 - The maximum rating for the isolation transformer is 150 W
- Additional voltage loss not included in the above table which must be factored into the circuit load calculation:
 - Primary cables will result in a higher CCR load
 - Longer secondary cables may result in a larger size isolation transformer requirement
- Efficiency of the isolation transformer depends on the manufacturer of the transformer

LED Apron Maneuvering Guidance

8-inch and 12-inch light fixtures without Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
RS - AM (omnidirectional, inset)	35 VA	45 W	9 VA	44 VA

¹Values provided are for the "S" option non-monitored power only.

L-852E(L) Low Intensity LED Taxiway Intersection

8-inch and 12-inch light fixtures without Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
L-852E(L) Taxiway Intersections, Omnidirectional	35 VA	45 W	9 VA	44 VA
Taxiway Intersections, Low Intensity, Omnidirectional	35 VA	45 W	9 VA	44 VA

8-inch and 12-inch light fixtures with Arctic Kit (heater)

Fixture type - 1 cord set ¹	Fixture load	Isolation transformer		CCR load
		Wattage	Load	
L-852E(L) Taxiway Intersections, Omnidirectional	65 VA	65 W	10 VA	75 VA
Taxiway Intersections, Low Intensity, Omnidirectional	65 VA	65 W	10 VA	75 VA

¹Values provided are for the "S" option non-monitored power only.



Note

- EQ fixtures:
 - The isolation transformer must have an additional 8 VA available above the fixture load for communication bandwidth. Size transformer to next size up to assure additional 8 VA coverage
 - Legacy BRITE II or AGLAS 2 systems — Order "M" power supply
- Fail-open fixtures:
 - The maximum rating for the isolation transformer is 150 W
- Additional voltage loss not included in the above table which must be factored into the circuit load calculation:
 - Primary cables will result in a higher CCR load
 - Longer secondary cables may result in a larger size isolation transformer requirement
- Efficiency of the isolation transformer depends on the manufacturer of the transformer

9.0 Cable Loss

The cable resistance R (ohms) for 1 conductor is calculated with following formula:

- $R \text{ (ohms)} = \text{resistivity of material (ohm m)} \times \text{length (m)} / \text{cross sectional area (m}^2\text{)}$
- For copper conductors the resistivity is $1.72 \times 10^{-8} \text{ (m}^2\text{)}$

Example; for 1 km 2.5 mm^2 copper conductor, the resistance R is calculated as follows:

$$1.72 \times 10^{-8} \times 1000 / 2.5 \times 10^{-6} \text{ m}^2 = 6.88 \text{ ohms}$$

The loss (Watt) is then $R \times I^2$ or $6.88 \text{ ohms} \times 6.6^2 \text{ A}^2 = 299.69 \text{ W/km}$ or 0.299 W/m .

The loss (Watt) for a secondary cable with 2 conductors is thus $2 \times 0.299 = 0.599$ or 0.6 W/m .

As such we can calculate:

- Secondary cable for a 2.5 mm^2 Cu-wire (2 conductors): 0.6 W/m
- Secondary cable for a 4 mm^2 Cu-wire (2 conductors): 0.4 W/m
- Primary cable for a 6 mm^2 Cu-wire (1 conductor): 0.12 W/m

The cable between the isolation transformer and the lamp adds losses that cannot be ignored when dimensioning the circuits and selecting rating for secondary transformers and regulators.



WARNING

Cable lengths should not exceed 100 meters.

For a secondary cable of e.g., 20 m of 2.5 mm^2 CU-wire, $20 \text{ m} \times 0.6 \text{ W/m} = 12 \text{ W}$ equals the additional loss to be taken into account.

For a primary cable of e.g., 100 m of 6 mm^2 CU-wire, $100 \text{ m} \times 0.12 \text{ W/m} = 12 \text{ W}$ equals the additional loss to be taken into account.

10.0 INTEROPERABILITY

Base installation – O-ring selection and retaining bolts 12-inch

The O-ring is required for 12-inch light fixtures. For corresponding 12-inch base, refer to the ordering code of the data sheet.



CAUTION

Use of incorrect combination of gaskets, bolts and nuts can cause multiple safety risks and severe damage to product.

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

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

Failure to follow these precautions can result in equipment damage and/or aircraft FOD.

Table 5: Interoperability matrix – 12-inch

Base type	Required O-ring	Bolt installation		Stud installation	
		Required dimension	Recommended torque ¹	Required nut	Recommended torque ¹
RELIANCE 12" 150 mm Safegate 12" 150 mm ERNI 12" ED12-190	O-ring D259, 3x5, 7 SP.013114/10pc SP.013115/100pc	1411.20.482	40 Nm+locking washer ²	1411.20.500	35 Nm
Thorn 12" 150 mm Thorn 12" 100mm		Metric screw kit 12" M10x25 mm	40 Nm+locking washer ^{2 4}	Self-locking nut kit 12" M10xH=100	35 Nm ⁴
ADB 12" Eurobase			21 Nm + Loctite 2701 or 638		21 Nm ³
L-868 deep can with flange		1411.20.452 UNC screw kit	reference EB83	NA	NA

1. Do not use SO jacketed cord style 1
2. Max height 2 mm
3. Do not use Loctite or washer with self-locking nut
4. Only with non-roll over lights

Base installation – O-ring selection and retaining bolts 8-inch



CAUTION

Use of incorrect combination of gaskets, bolts and nuts can cause multiple safety risks and severe damage to product. To obtain a safe and watertight installation, the O-ring and retaining bolt stated in the document must be used.

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

Failure to follow these precautions can result in equipment damage and/or aircraft FOD.

Table 6: Interoperability matrix – 8-inch

Base type	Required O-ring	Bolt installation		Stud installation	
		Required dimension	Recommended torque ¹	Required nut	Recommended torque ¹
RELIANCE 8" 135 mm Thorn 8" 100 mm Thorn 8" 133 mm IDM 6494 120 mm Adapter ring SG/Thorn/ID 8"-12"	Red O-Ring SGE.SP24523/10 pc SGE.SP24526/100 pc	1411.20.522 Metric screw kit 8" M10x25mm	40 Nm+locking washer ²	1411.20.430 Self-locking nut kit 8" M10xH100	35 Nm
ERNI 8" EE08 150 mm ERNI 8" ED08 133 mm	Blue O-Ring SGE.SP24521/10 pc SGE.SP24524/100 pc				
ADB 8" Eurobase Adapter ring ADB 8"-12"	Grey O-Ring SGE.SP24522/10 pc SGE.SP24525/100 pc				

1. Do not use SO jacketed cord style 1
2. Max height 2 mm
3. Do not use Loctite or washer with self-locking nut



11.0 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

Technical Support – Global

Customers in Europe, the Middle East, Africa or Asia Pacific are more than welcome to our portal for technical support. 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. In the Americas, we also offer live technical support.

Live Technical Support – Americas

If at any time you have a question or concern about your product, contact ADB SAFEGATE's US-based technical support specialists, available 24 hours a day, seven days a week, to assist you via phone.

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

ADB SAFEGATE Americas Technical Service & Support (Canada): **+1-905-631-1597**

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

We can also be reached via email during regular business hours:

Airfield and Gate: **techservice.us@adbsafegate.com**

Gate: **gateservice.us@adbsafegate.com**

We look forward to working with you!

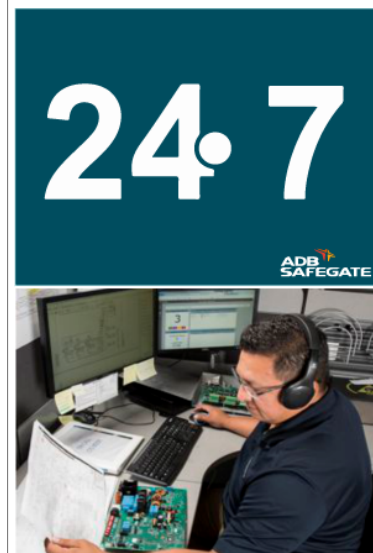
Before You Call

When you have an airfield lighting or system control system problem, prior to calling, please ensure the following:

- Review the product's manual and troubleshooting guide.
- Be located with the product ready to troubleshoot.
- Have all necessary information available: airport code/company name, customer id number, contact phone number/email address, product/part number.
- Have a True RMS meter available and any other necessary tools.

When calling about an issue with Safedock A-VDGS, we can serve you better if you collect the following information before you call:

- Relevant information regarding the issue you are calling about, such as gate number, flight number, aircraft type and time of the event.
- What, if any, actions have been taken to resolve the issue prior to the call.
- If available, provide a CCTV recording of the incident to aid in aligning the information from the Safedock log file.



Note

For more information, see www.adbsafegate.com, contact ADB SAFEGATE Support via email at support@adbsafegate.com or Europe: +32 2 722 17 11

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

China: +86 (10) 8476 0106

Middle East and Africa: +971 4 452 7575

11.1 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.

11.2 Recycling

11.2.1 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.

11.2.2 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 labeled 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.

