



8" Inset AD-light Type DTS / DTC, low protusion

## User Manual

AM.04.520e, Rev. 1.3, 2022/01/07

  
**ADB  
SAFEGATE**



## A.0 Disclaimer / Standard Warranty

### CE certification

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

### ETL certification

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

### All Products Guarantee

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

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

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

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer. This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

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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 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.

### FAA Certified products manufactured by ADB SAFEGATE

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ADB SAFEGATE LED products (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition). These FAA certified constant current (series) powered LED products must be installed, interfaced and powered with and through products certified under the FAA Airfield Lighting Equipment Program (ALECP) to be included in this 4 (four) year warranty. This includes, but is not limited to, interface with products such as Base Cans, Isolation Transformers, Connectors, Wiring, and Constant Current Regulators.



## 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.

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## Liability

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### 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.

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

Unintended uses, includes the following actions:

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

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# 1.0 Safety

## Introduction to Safety

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

## 1.1 Safety Messages

### HAZARD Icons used in the manual

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

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



WARNING

Failure to observe a warning may result in personal injury, death or equipment damage.



DANGER - Risk of electrical shock or ARC FLASH

Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.



WARNING - Wear personal protective equipment

Failure to observe may result in serious injury.



WARNING - Do not touch

Failure to observe this warning may result in personal injury, death, or equipment damage.



CAUTION

Failure to observe a caution may result in equipment damage.

### Qualified Personnel



Important Information

The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.

Always use required personal protective equipment (PPE) and follow safe electrical work practice.

### 1.1.1 Introduction to Safety



#### CAUTION

##### Unsafe Equipment Use

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

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

**Failure to follow this instruction can result in serious injury or equipment damage**

### Additional Reference Materials



#### Important Information

- IEC - International Standards and Conformity Assessment for all electrical, electronic and related technologies.
- IEC 60364 - Electrical Installations in Buildings.
- FAA Advisory: AC 150/5340-26 (current edition), Maintenance of Airport Visual Aid Facilities.
- Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

### 1.1.2 Intended Use



#### CAUTION

##### Use this equipment as intended by the manufacturer

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

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

**Failure to follow this instruction can result in serious injury or equipment damage**



### 1.1.3 Material Handling Precautions: Storage



#### CAUTION

##### Improper Storage

Store this equipment properly

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

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

### 1.1.4 Material Handling Precautions: Fasteners



#### DANGER

##### Foreign Object Damage - FOD

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

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

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



#### Note

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



#### CAUTION

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

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

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

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

### 1.1.5 Maintenance Safety



#### **DANGER**

##### **Electric Shock Hazard**

This equipment may contain electrostatic devices

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

**Failure to follow these instructions can result in death or equipment damage**

### 1.1.6 Material Handling Precautions, ESD



#### **CAUTION**

##### **Electrostatic Sensitive Devices**

This equipment may contain electrostatic devices

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

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

## 1.1.7 Arc Flash and Electric Shock Hazard



### **DANGER**

#### **Series Circuits have Hazardous Voltages**

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

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

**Failure to follow these instructions can result in death or equipment damage**



## 2.0 About this manual

The manual shows the information necessary to:

- install
- carry out maintenance
- carry out troubleshooting

on the DTS / DTC light, in the manual referred to as the fixture.

### 2.1 How to work with the manual

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

### 2.2 Record of changes

Edition	Editor	Check	Date	Description
1.0	BUG	HVE,MA, AHU,LM, JBU	11/2013	New
1.1	BUG	WGR, MA, AHU, LM, JBU	09/2014	Introduction of the 12" version

### 2.3 Abbreviations and terms

Term or abbreviation	Description
AGL	Airfield Ground Lighting
C/L	Centre Line
DRC	AD-light Runway Centre Line light
DTC	AD-light Taxiway Centre Line light Curved section
DTS	AD-light Taxiway Centre Line light Straight section
DTZ	AD-light Touchdown Zone light
FAA	Federal Aviation Administration
Fastener	Generic term for an item that holds the fixture together or that holds the fixture on its mounting support, e.g. nut, bolt, washer
FOD	Foreign Object Debris
HPI	Commercial name for an ADB type of 8" shallow base
ICAO	International Civil Aviation Organisation
IEC	International Electrical Committee
ISO	International Standardization Organisation
Mounting support	A piece of equipment permanently installed in the ground, on which the fixture is installed. It can be a shallow or deep base, with or without adapter ring.

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Term or abbreviation	Description
PCB	Printed Circuit Board
Toe-in	The toe-in angle is the angle the beam of light makes with the longitudinal axis of the runway or taxiway.
UNC	Unified Thread Standard

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## 2.4 Icons used in the manual

For all WARNING symbols, see § 2.2.



### CAUTION

Can cause damage to the equipment.

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### Note

Gives further information.

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### Tip



Gives information on how to carry out or to understand the instruction or information more easily.

---

## 3.0 Description

### 3.1 Overview

You can find a complete overview of the fixture in all available versions in chapter 7.

### 3.2 Intended use

The ADB taxiway inset light types DTS / DTC are intended for:

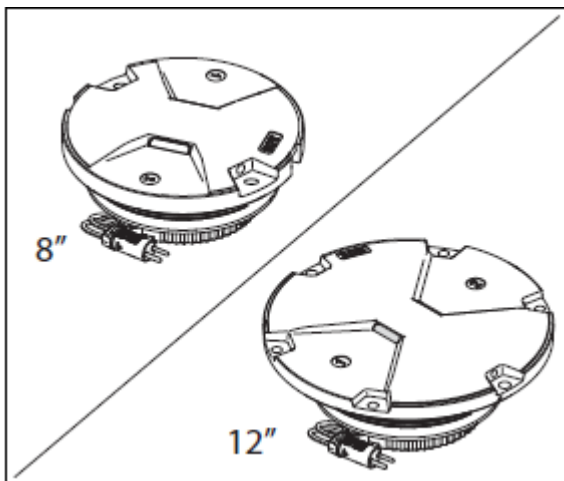
- Centre line lights on straight and curved taxiway sections and on rapid exit taxiways
- Intermediate holding position lights
- De-/anti-icing facility exit lights
- Apron lead-in lights
- Runway guard lights where applicable
- Stop bar lights
- Only in special cases: on runways in low and medium intensity installations

DTS are intended for straight sections. DTC are intended for curved sections.

### 3.3 8"light and 12"light

The ADB taxiway inset light comes in two dimensions.

The illustrations in the manual are valid for the 8" version of the inset light.



### 3.4 Monitoring (option)

The monitoring option is available. You can use the monitoring option with the Lamp Fault Detection of Constant Current Regulators or with Individual Light Control and Monitoring Systems (ILCMS) that check the status of the light by performing a continuity test on the secondary of the ILCMS remote module. The monitoring option does a check on the light. In case of a failure of the light, the failure is detected by the electronics embedded in the light.



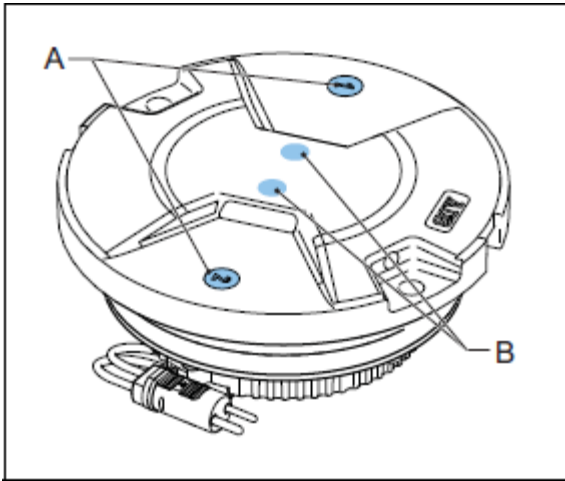
#### **WARNING**

**Ask your local representative for the compatibility of the ILCMS system and the light.**

### 3.5 Identification on the fixture

#### 3.5.1 Top

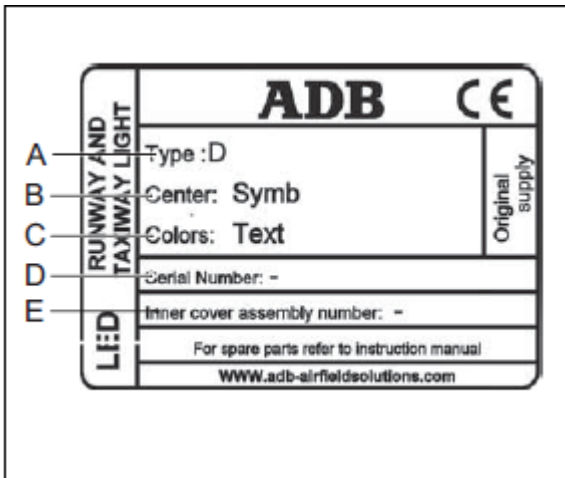
- An embossing (A) 1 and 2 indicates side 1 and 2;
- Coloured dots (B) at delivery give an indication of the colour of the light at that side.



#### 3.5.2 Bottom

A type plate, where:

- **A**: the fixture code.
- **B**: the toe-in:
  - †: points in the direction of the centreline or the centre of the curve.
  - •: no toe-in.
- **C**: the colour of the light at side 1 and 2.
  - E.g. G/Y means green at side 1, Yellow at side 2.
- **D**: Serial number.
- **E**: Article number of the inner cover assy.





**Note**

- For an overview of all fixture colour codes see [§ 7.1](#).
  - If you modify the fixture, it is your responsibility to update the identification. ADB can supply modification stickers: see [Exploded view and components](#).
-



## 4.0 Install and replace the complete fixture

The procedure only gives information on how to replace the complete fixture. For information on how to replace parts of the fixture, see [Maintenance](#).

### 4.1 Inspect on delivery

1. Inspect all packings for visible damage.
2. Open every damaged box and inspect the contents for damage.
3. Immediately fill a claim form with the carrier if any fixture is damaged.
4. Store the fixture in its original packing in a protected area.



#### **WARNING**

Do not damage the cable insulation.



#### **CAUTION**

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

### 4.2 Store

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

Indoor storage:

- Storage temperature: -10°C to +50°C.
- Humidity: <95% non condensing.

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

### 4.3 Install



#### **WARNING**

##### **Fasteners:**

- Only use fasteners of the same type as the one originally supplied with the mounting support.
- Always tighten the fasteners to the recommended torque. Use a calibrated torque wrench and apply the recommended adhesive type. See [Screws](#).
- If this is not the case, this may cause the fasteners to loosen, damage the fixture, potentially to loosen the fixture. This can lead to a highly dangerous situation of FOD, with potential lethal consequences.
- Obey the instructions of the adhesives necessary for the fasteners.

##### **Only install the fixture on mounting supports:**

- That ADB has approved;
- That are installed according to the Instruction Manual of the mounting support.
- Failure to do so can result in a highly dangerous situation of FOD, with potential lethal consequences.

**Make sure the power is OFF when you install or remove any fixture.**



## CAUTION

### Make sure that:

- The fixture is supplied from a 6.6 A series circuit;
- The series circuit is powered by a Constant Current Regulator that complies with IEC 61822;
- The transformer is an AGL series transformer that complies with IEC 61823.
- The power of the series transformer shall not exceed 200 W, for versions with the monitoring option.
- The mounting support is correctly earthed. Failure to do so will void the warranty for all damages that occur as a result of voltage surges.
- Never hold the fixture by the cable leads. This can damage the insulation, break the waterproof seal and cause insulation faults and water leakage.



## Note

See the Instruction Manual of the mounting support for instructions on how to earth the mounting support.

---

### Parts:

- Fasteners of the mounting support

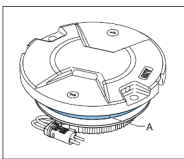
### Tools:

- Adhesive A. See [Standard toolkit](#)
- Cleaning tap for blind holes (preferably a tap with a right spiral groove)
- Compressed air blower with dry, oil-free air

## Prepare

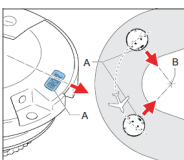
### Prepare

1. Make sure that the fixture is completely assembled.
2. Make sure that the fixture is operationally tested.  
See [Fixture operation test](#).
3. Make sure a new labyrinth gasket (A) is installed.
4. Make sure that the contact surfaces of the fixture with the mounting support and the gaskets are clean and smooth.
5. With the cleaning tap for blind holes, clean all fixation holes of the mounting support.
6. Make sure that all remains of adhesive are removed from the fixation holes.
7. With the compressed air blower, blow out all the fixation holes of the mounting support.



### Curved section only

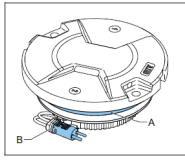
8. Make sure the ADB logo (A) points towards the centre (B) of the curve of the section.



## Install

*Lubricate and connect*

- Lubricate the labyrinth gasket (A) with water.



**Note**

For the 12" version, install an O-ring in the groove of the base.



**Note**

To facilitate the use, add some soap to the water.



**CAUTION**

Do not use silicon or any other type of grease. Avoid the use of soap that contains silicone or glycerine.

- Apply adhesive on the first three threads of the threaded holes in the mounting support.  
*Use adhesive A.*

- Connect the plug (B) to the receptacle.



**Note**

For a fixture with two plugs, INPUT 1 feeds side 1 and INPUT 2 feeds side 2.

*Install*

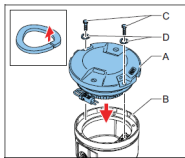
- Carefully move the fixture (A) vertically into the mounting support (B).  
Make sure that you do not pinch the cable leads.

- Check if the fixture fits correctly in the mounting support.

- Make sure the dents of the washers (D) face upwards.

- Gradually tighten the fasteners of the mounting support (C).

See [Screws](#) (torque).



**CAUTION**

**Do not use the fasteners to force the fixture in the mounting support. If it happens at all, the threaded hole in the mounting support will be damaged.**

## 4.4 Remove



**WARNING**

Make sure the power is OFF when you install or remove any fixture.



## CAUTION

Never hold the fixture by the cable leads. This can damage the insulation, break the waterproof seal and cause insulation faults and water leakage.

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## Note

The instructions show only the lifting tool (on wheels).

---

### Parts:

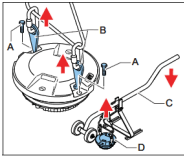
- Complete fixture set. See [Technical data](#).

### Tools:

- Lifting tool (on wheels). See [Additional accessories](#).

### Install the lifting tool

1. Remove the fasteners of the mounting support (A).
2. Dispose of the fasteners of the mounting support.
3. Fit the wigs of the lifting tool (B) in the holes of the cover.
4. Push down the handle (C).



## Note

If you use the basic lifting tool assembly for inset lights (see [Additional accessories](#), tool D), make sure you remove the fixture vertically.

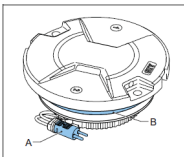
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5. Put the fixture (D) aside the mounting support.

### Remove

6. Disconnect the plug (A).
7. Remove the labyrinth gasket or O-ring (B).
8. Dispose of the labyrinth gasket or O-ring.
9. Install the new fixture.

See [Install](#).



## 5.0 Maintenance

Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9, Airport maintenance practices and in FAA Advisory Circular N° AC150/ 5340-26, chapter 45, section 4.



### WARNING

**Do not carry out any action on the fixture unless you have read and understood all the information in the chapter 2.**



### WARNING

**Make sure that the power to the series circuit is OFF when you carry out maintenance.**

## 5.1 Preventive maintenance schedule

Frequency	Check	Action
Daily	For low light output according to ICAO annex 14	<ul style="list-style-type: none"> <li>• If the prism is dirty, clean the prism.</li> <li>• If the prism is not dirty,               <ul style="list-style-type: none"> <li>• replace the fixture. See <a href="#">Install and replace the complete fixture</a>.</li> <li>• and replace the faulty component in the workshop. See <a href="#">Troubleshooting guide</a>.</li> </ul> </li> </ul>
Monthly	Visually for condensation on inner side of the prisms (presence of moisture or water)	<ul style="list-style-type: none"> <li>• Replace the fixture. See <a href="#">Install and replace the complete fixture</a>.</li> <li>• and replace the faulty component in the workshop. See <a href="#">Troubleshooting</a>.</li> </ul>
	For failed fixture	<ul style="list-style-type: none"> <li>• Replace the fixture. See <a href="#">Install and replace the complete fixture</a>.</li> <li>• and replace the faulty component in the workshop. See <a href="#">Troubleshooting</a>.</li> </ul>
Half-yearly	For presence of water in the mounting support	<ul style="list-style-type: none"> <li>• Remove all water from the mounting support.</li> <li>• Dry all parts of the fixture.</li> <li>• Replace all corroded parts.</li> <li>• Remove the cause of the water ingress.</li> </ul>
After snow removal	For damaged fixture.	<ul style="list-style-type: none"> <li>• Replace the total fixture. See <a href="#">Install and replace the complete fixture</a>.</li> <li>• Use a power broom to remove the snow near the fixture, if practical.</li> <li>• Follow the recommended snow removal techniques described in FAA AC 150/5200-30 to avoid or at least to reduce damage to the fixture.</li> </ul>

## 5.2 Part replacement

---



### WARNING

- Only use fasteners of the same type as the one originally supplied with the fixture.
- Always tighten the fasteners to the recommended torque. Use a calibrated torque wrench.

If this is not the case, this may cause the fasteners to loosen, damage the fixture, potentially to loosen the fixture. This can lead to a highly dangerous situation of FOD, with potential lethal consequences.

---



### CAUTION

Never hold the fixture by the cable leads. This can damage the insulation, break the waterproof seal and cause insulation faults and water leakage.

---



### Note

For the correct replacement parts, see § 7.1 and § 7.3.

---



### Note

For the correct standard tool kit, see [Standard toolkit](#).

---

### 5.2.1 How to replace parts - general procedure

1. Remove the fixture. See [Remove](#).
2. Replace the part.
  - Upper cover assy. See [Replace upper cover assy](#).
  - Prism. See [Replace prism](#).
  - Optical assy. See [Replace optical assy](#).
  - Inner cover assy. See [Replace inner cover assy](#).
  - Repair a faulty light. See [Repair a faulty light \(monitoring option\)](#) (for monitoring option only).
  - Replace the fuse resistor. See [Replace the fuse resistor \(monitoring option\)](#) (for monitoring option only).
  - Cable lead. See [Replace cable lead](#).
  - Labyrinth gasket. See [Replace labyrinth gasket](#).
3. Make sure that a waterproof test is carried out.  
See [Waterproof test](#).
4. Carry out a fixture operation test.  
See [Fixture operation test](#).
5. Install the fixture.  
See [Install](#).

### 5.2.2 Replace upper cover assy

---



### CAUTION

Always dispose of the gaskets and the screws when you disassemble the upper cover assy.

---



### Parts

- Upper cover assy
- Inner cover screws
- Gasket of the pressure release screw


### Tools:

- Lubricant A. See [Standard toolkit](#).

### Disassemble

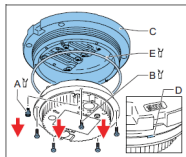
1. Remove the pressure release screw (A).
2. Dispose of the gasket of the pressure release screw.
3. Remove the inner cover screws (B).
4. Dispose of the inner cover screws.
5. Remove the upper cover assy (C).

---

 **Note** Put a screwdriver in the notches (D).

---

6. Remove the gasket (E).
7. Dispose of the gasket.



### Assemble

#### Prepare

8. Make sure that all parts are clean.
9. Pay special attention to the parts where the gasket must fit.

#### Assemble

10. Lubricate the new gaskets. *Use lubricant A.*
  - Gasket (A);
  - Gasket of the pressure release screw (D);
11. Install the new gasket (A).
12. Install the upper cover assy (B).
13. Install the new inner cover screws (C).

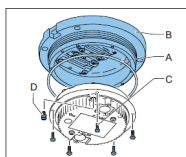
See [Screws](#) (torque).

14. Carry out a waterproof test.

See [Waterproof test](#).

15. Install the new gasket of the pressure release screw (D).
16. Install the pressure release screw.

See [Screws](#) (torque).



### 5.2.3 Replace prism

---



#### CAUTION

**Always dispose of the gaskets and the screws when you disassemble the prism.**

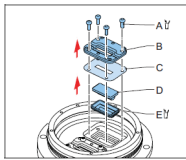
---

#### Parts

- Prism
- Prism gasket
- Prism screws.

#### Disassemble

1. Remove the upper cover assy.  
See [Replace upper cover assy.](#)
2. Remove the prism screws (A).
3. Dispose of the prism screws.
4. Remove the prism bracket (B).
5. Remove the prism protection plate (C).
6. Remove the prism (D).
7. Remove the prism gasket (E)
8. Dispose of the prism gasket.



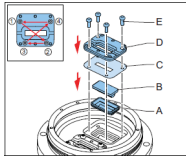
#### Assemble

#### Prepare

9. Make sure that all parts are clean.
10. Pay special attention to the parts where the gasket must fit.

#### Assemble prism

11. Install a new prism gasket (A).
12. Install a new prism (B).  
*Tilt the prism a little and press the prism firmly.*
13. Make sure the prism and the prism gasket are correctly in position.  
If it is not the case re-install the new prism and prism gasket.
14. Make sure you installed the correct prism and prism gasket.
15. Clean the surface of the new prism with a methanol moist cloth.
16. Install the prism protection plate (C).
17. Install the prism bracket (D).
18. Install but do not tighten the new prism screws (E).
19. Tighten the prism screws crosswise.  
See [Screws](#) (torque).
20. Install the upper cover assy.  
See [Replace upper cover assy.](#)



## 5.2.4 Replace optical assy



### CAUTION

Always dispose of the gaskets and the screws when you disassemble the optical assy.

#### Parts

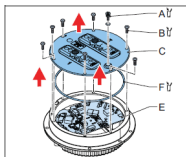
- Optical assy
- Optical assy screws.
- Gasket for optical assy
- Gasket of the pressure release screw

#### Tools

- Lubricant A. See [Standard toolkit](#).

#### Disassemble

1. Remove the upper cover assy. See [Replace upper cover assy](#).
2. Remove the pressure release screw (A).
3. Dispose of the gasket of the pressure release screw.
4. Remove the optical assy screws (B).
5. Dispose of the optical assy screws.
6. Remove the optical assy (C).



### CAUTION

The optical assy is connected to the PCB. If you pull too hard, you can damage the PCB.



### Note

Put a screwdriver in the notches (D).

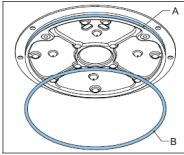
7. Disconnect the wires from the optical assy to the PCB (E). *Pull the wires, not the connector.*
8. Remove the gasket (F).
9. Dispose of the gasket.

#### Assemble

##### Prepare

10. Make sure that all parts are clean.
11. Pay special attention to the part where the gasket must fit (A).
12. Lubricate the new gasket (B). *Use lubricant A.*

13. Install the new gasket.



Connect to PCB

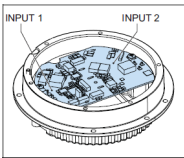
14. Connect the optical assy to input 1 and 2 on the PCB, if applicable.

---



### Note

- INPUT 1 and INPUT 2 are labelled underneath the connector.
  - When you have an unidirectional light, connect the optical assy to connector INPUT1.
- 



Assemble

15. Install the optical assy (A).

---



### Note

Make sure that the locating pin (B) is set to the hole marked '0' of the optical assy.

---

16. Install the new optical assy screws (D).

See [Screws](#) (torque).

17. Lubricate the new gasket of the pressure release screw.

Use *lubricant A*.

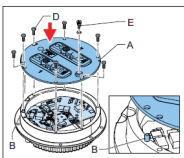
18. Install a new gasket on the pressure release screw (E).

19. Install the pressure release screw.

See [Screws](#) (torque).

20. Install the upper cover assy.

See [Replace upper cover assy](#).



## 5.2.5 Replace inner cover assy

Parts

- Inner cover assy

Disassemble

1. Remove the optical assy.

See [Replace optical assy](#).

---

*Assemble*

2. With a new inner cover assy, assemble the optical assy.  
See [Replace optical assy](#).

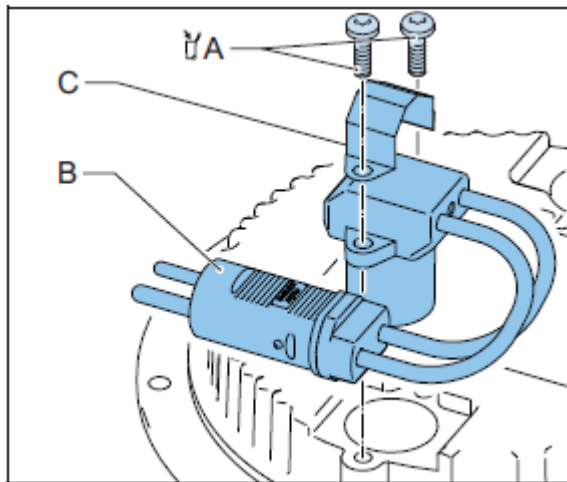
**5.2.6 Replace cable lead**

*Parts*

- Cable lead
- Cable lead screws.
- Plug bracket

*Disassemble*

1. Remove the cable lead screws (A).
2. Dispose of the cable lead screws.
3. Remove the plug bracket (C).
4. Remove the cable lead (B).



*Assemble*

5. Install the new cable lead.
6. Install the plug bracket.
7. Install the new cable lead screws.  
See [Screws](#) (torque).

**5.2.7 Replace labyrinth gasket**



**CAUTION**

**Always dispose of the labyrinth gasket when you remove the fixture from the mounting support.**



**Note**

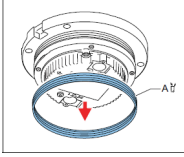
Only valid for 8" version lights.

### Parts

- Labyrinth gasket

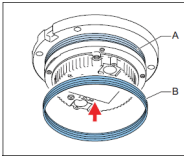
### Disassemble

1. Remove the labyrinth gasket (A).
2. Dispose of the labyrinth gasket.



### Assemble

3. Make sure that all parts are clean.
4. Pay special attention to the part where the labyrinth gasket must fit (A).
5. Install the new labyrinth gasket (B).



## 5.2.8 Repair a faulty light (monitoring option)

### Disassemble

1. Remove the upper cover assembly.  
See [Replace upper cover assy.](#)
2. Remove the optical assembly.  
See [Replace optical assy.](#)
3. Replace the fuse resistors.  
See [Replace the fuse resistor \(monitoring option\).](#)

### Connect

4. Take a new optical assy.  
See [Replace optical assy.](#)
5. Connect the PCB.  
See [Replace optical assy.](#)
6. Do a fixture operation test.  
See [Fixture operation test.](#)
7. If the fixture does not turn on:
  - a) Dispose of the used inner cover assy.
  - b) Take a new inner cover assy with new fuse resistors.
  - c) Connect the PCB.  
See [Replace optical assy.](#) *Do not fasten the optical assy.*
  - d) Do a fixture operation test.  
See [Fixture operation test.](#)
  - e) If the fixture does not turn on, contact ADB.

### Assemble

8. Assemble the optical assy.  
See [Replace optical assy.](#)
9. Assemble the upper cover assy.  
See [Replace upper cover assy.](#)
10. Dispose the used optical assembly.

## 5.2.9 Replace the fuse resistor (monitoring option)

### Parts

- Fuse resistor kit. See [Spare parts.](#)

### Tools

- Pliers

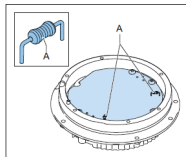


### Note

- Bidirectional lights have two fuse resistors.
- Unidirectional lights have only one fuse resistor.
- Fuse resistors are located on the PCB of the inner cover assy
- Always replace all fuse resistors located on the PCB.

### Disassemble

1. Remove the fuse resistor(s) (A) by pulling the legs of the fuse resistor.
2. Dispose of the old fuse resistor.
3. Take the new fuse resistor from the kit.
4. Place the new fuse resistor in the socket.



### Assemble

5. Insert the legs of the new fuse resistor in the socket.

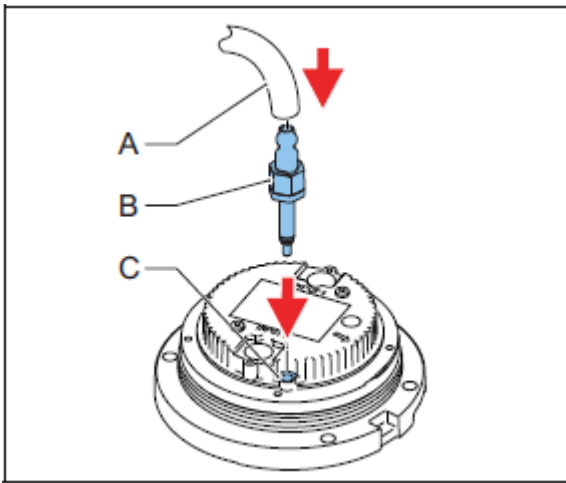
## 5.3 Waterproof test

### Tools

- Air hose with dry air
- Water container with water
- Waterproof test adapter (tool A). See [Additional accessories.](#)

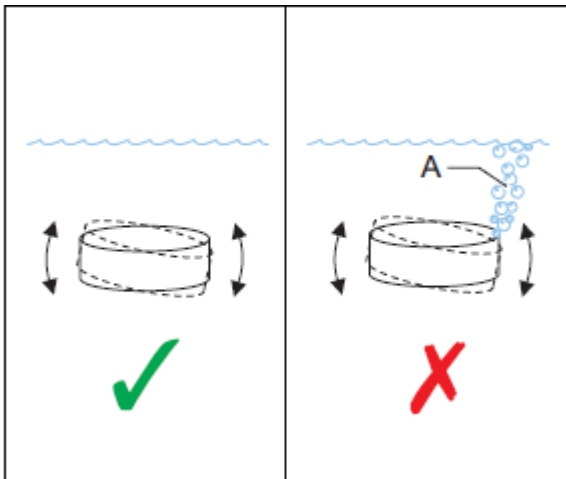
### Connect

1. Connect the air hose (A) to the waterproof test adapter (B).
2. Connect the waterproof test adapter to the hole of the pressure release valve (C).
3. Apply 20 to 30 kPa (0.2 - 0.3 Bar) over pressure on the air hose.



*Test*

4. Submerge the fixture in water and turn regularly.
5. If you still see a stream of bubbles (A) after three minutes of submersion there is a leak.
6. Remove the fixture from the water.
7. Disconnect the waterproof test adapter.
8. Dry the fixture.



*In case of a leak*

9. Locate the leak source.
10. Replace the gasket or part that causes the leak.



**Note**

Also check contact surfaces for any scratches, corrosion or other damage.

---

11. Repeat the waterproof test.



---

## 5.4 Fixture operation test

### Tools

- FAA or IEC series transformer, powered from a FAA or IEC constant current generator



### Note

The power of the series transformer shall not exceed 200 W, for versions with the monitoring option.

---

1. Connect the fixture to the transformer
2. At this moment, do not connect a remote communication unit between the fixture and the transformer.
3. Set the step of the constant current generator to 6.6 A.
4. Check if the light works properly for 10 s.
5. Turn OFF the constant current generator.
6. If the fixture did not work or has switched off before the end of the test time, see [Troubleshooting guide](#).



## 6.0 Troubleshooting

### 6.1 Troubleshooting guide

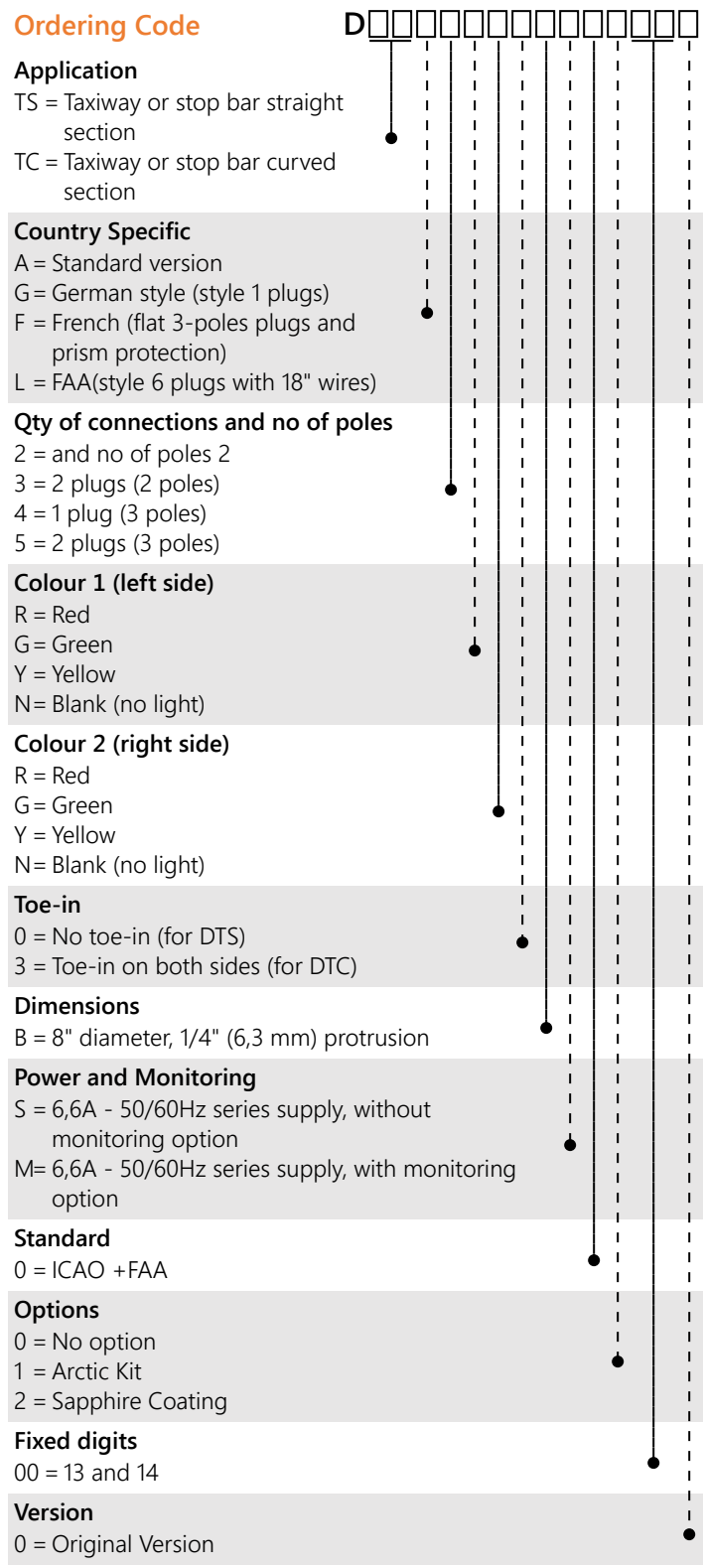
**Table 1: Table: 6.1 Troubleshooting guide**

Problem	Possible cause	Possible solution
No light or light flickers	Connection to the input power has a malfunction.	<ul style="list-style-type: none"> <li>Remove the fixture. See <a href="#">Remove</a>.</li> <li>Check the electrical connection, the cable and the receptacles.</li> </ul>
	The LED has a malfunction	Replace the optical assy. See <a href="#">Replace optical assy</a> .
	Connection of the optical assy to the PCB has a malfunction.	<ul style="list-style-type: none"> <li>Remove the optical assy. See <a href="#">Replace optical assy</a>.</li> <li>Check the electrical connections and the cable.</li> </ul>
	The PCB has a malfunction	Replace the inner cover assy. See <a href="#">Replace inner cover assy</a> .
Light output too low	The prism is dirty.	Clean the prism.
	The LED has a malfunction.	Replace the optical assy. See <a href="#">Replace optical assy</a> .
	The PCB has a malfunction.	Replace the inner cover assy. See <a href="#">Replace inner cover assy</a> .



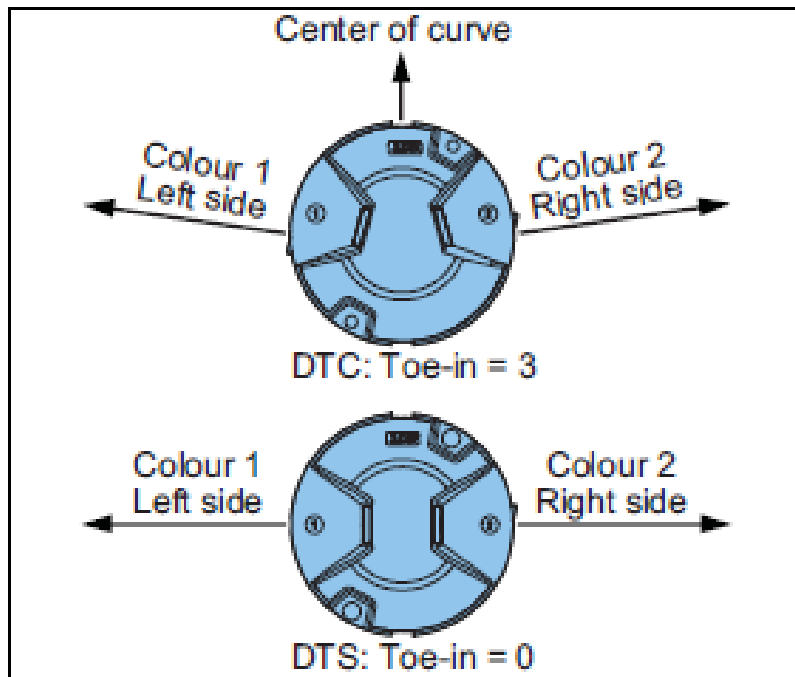
# 7.0 Technical data

## 7.1 Fixture code schema



In the example **DTCG3GY3BM00000**:

- D : AD-light
- TC : Taxiway Curve
- G : German version (style 1 plugs)
- 3 : Two 2-pole plugs
- G : Colour 1 is green
- Y : Colour 2 is yellow
- 3 : Toe-in on both sides (for DTC)
- B : 8" diameter, 1/4" protusion
- M : 6,6A, with monitoring
- 0 : Compliant to ICAO and FAA
- 0 : No option
- 0 : Fixed digit
- 0 : Fixed digit
- 0 : Original version



## 7.2 Hardware kits

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### Note

HPI bases only accept metric fasteners.

---

### Metric fasteners kits (8"lights)

To install 8" inset lights on ADB 8" mounting supports.

Hardware kit		Components					
Description	ADB Part number	7100.08.759 Stainless steel screw M10 X25	7150.53.320 Stainless steel nut M10	7156.53.330 Stainless steel self locking nut M10	7284.10.470 Stainless steel lock washer M10	7284.70.345 Nylon encapsulated washer M10	4071.50.240 Metric anti-rotation pin
Metric screw kit 8" (with anti-rotation pins)	1411.20.400	2			2		2
Metric nut kit 8"	1411.20.420		2		2		
Self-locking metric nut kit 8"	1411.20.430			2			
Metric screw kit 8" (Germany)	1411.20.441	2				2	
Metric screw kit 8" (without anti-rotation pins)	1411.20.522	2			2		

### Metric fasteners kits (12"lights)

To install 12" inset lights on ADB 12" mounting supports.

Hardware kit		Components					
Description	ADB Part number	7100.08.759 Stainless steel screw M10 X25	7150.53.320 Stainless steel nut M10	7156.53.330 Stainless steel self locking nut M10	7284.10.470 Stainless steel lock washer M10	7284.70.345 Nylon encapsulated washer M10	4071.50.240 Metric anti-rotation pin
Metric screw kit (France) 12"	1411.20.482	6			6		
Metric screw kit 12" (Germany)	1411.20.492	6				6	
Self-locking nut kit 12"	1411.20.500			6			

### UNC fasteners kit (8"lights)

To install 8" inset lights on ADB 8" mounting supports.

Hardware kit		Components		
Description	ADB Part number	7200.13.806 Stainless steel screw 3/8" - 16 UNC	7284.10.470 Stainless steel lock washer M10	4071.50.120 UNC anti-rotation pin
UNC screw kit 8"	1411.20.411	2	2	2

### UNC fasteners kit (12"lights)

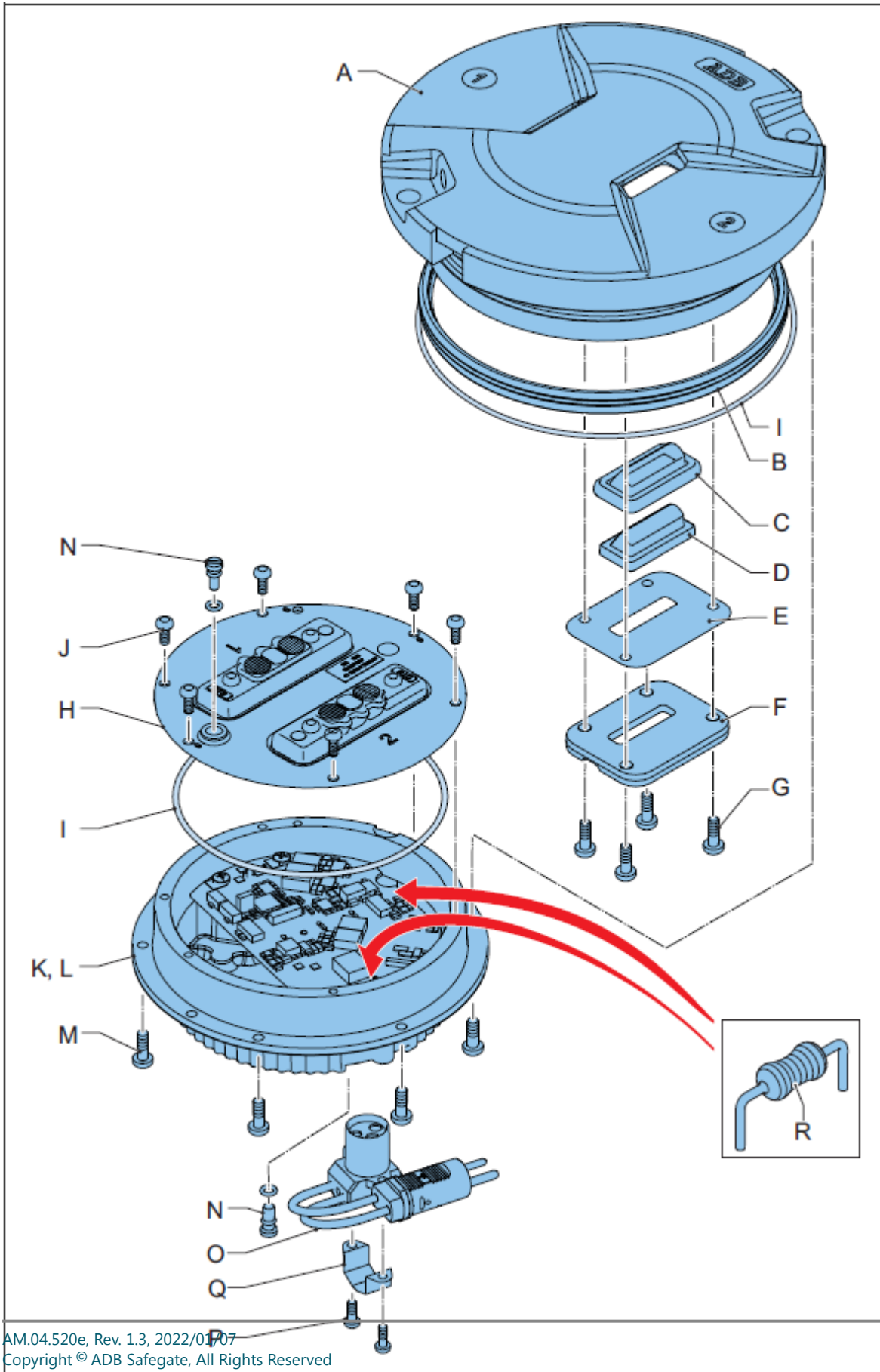
To install 8" inset lights on ADB 12" mounting supports.

Hardware kit		Components		
Description	ADB Part number	7200.13.806 Stainless steel screw 3/8" - 16 UNC	7284.10.470 Stainless steel lock washer M10	4071.50.120 UNC anti-rotation pin
UNC screw kit 8"	1411.20.452	6	6	



## 7.3 Exploded view and components

### 7.3.1 Exploded view



### 7.3.2 Spare parts

	Spare Parts	Versions	DTS	DTC
A	Upper cover assy (includes metal cover, prisms, prism gaskets, prism protection plates, prism screws and prism brackets)	8" Unidirectional, window 1	SP.013118	SP.013119
		8" Unidirectional, window 2	SP.013117	SP.013120
		8" Bidirectional	SP.013116	SP.013121
		12 "Unidirectional, window 1	4072.50.730	4072.50.760
		12" Unidirectional, window 2	-	4072.50.770
		12" Bidirectional	4072.50.720	4072.50.750
B	Labyrinth gasket (for 8"lights) - 10 pcs		4072.76.560	
	Labyrinth gasket (for 8"lights) - 100 pcs		4072.76.570	
	O-ring gasket between cover and base gasket (for 12"lights) - 10pcs		SP.013114	
	O-ring gasket between cover and base gasket (for 12" lights) - 100 pcs		SP.013115	
C	Prism (10 pcs)	For all versions	SP.4072.40.412	
D	Prism gasket (10 pcs)		SP.4072.40.421	
E	Prism protection plate (10 pcs)		SP.4072.40.471	
F	Prism bracket (10 pcs)		SP.4072.40.451	
H	Optical assy	Red / Red	4072.42.410	4072.42.620
		Red / Green	4072.42.420	-
		Red / Blank	4072.42.390	4072.46.600
		Green / Red	4072.42.430	-
		Green / Green	4072.42.440	4072.42.630
		Green / Yellow	4072.42.450	4072.42.640
		Yellow / Green	4072.42.460	4072.42.650
		Yellow / Yellow	4072.42.490	4072.42.680
		Yellow / Blank	4072.42.500	4072.42.690
		Blank / Red	4072.42.400	4072.42.610
		Blank / Green	4072.42.480	4072.42.670
		Blank / Yellow	4072.42.510	4072.42.700
I	O - ring gasket (100 pcs)	For optical assy	SP.7080.90.295	
		For inner cover	SP.7080.90.310	
K	Inner cover assy without monitoring	1 input, for unidirectional light	4072.24.960	
		1 input, for bidirectional light	4072.25.100	
		2 inputs, for bidirectional light	4072.25.200	
L	Inner cover assy with monitoring	1 input, for unidirectional light	4072.25.120	
		1 input, for bidirectional light	4072.25.230	
		2 inputs, for bidirectional light	4072.25.240	

	Spare Parts	Versions	DTS	DTC
O	Cable lead (10 pcs)	With Style 6 2-pole plug	SP4072.24.951	
		With Style 1 2-pole plug (German version)	SP4072.24.731	
		With flat 3-pole plug (French version)	SP4072.40.370	
		18" long, with Style 6 2-pole plug	SP4072.42.350	
Q	Plug bracket (10 pcs)		SP4072.42.380	
R	Fuse resistor (available as a kit containing 20 resistors)	Monitoring option	6132.00.250	
	Modification sticker (10 pcs)		SP4072.27.810	

### 7.3.3 Screws

Screw type	Name	Details	Article Number	Torque (nM)	Adhesive type <sup>1</sup>
G	Prism screws (100 pcs)	SCREW M5x14 DIN 7985-T- A2-LOCK 2045	SP.7100.10.211	4.0	Not required
J	Optical assy screws (40 pcs)	SCREW M4x10 DIN 7985-T- A2-LOCK 2045	SP.7100.10.101	2.5	Not required
M	Inner cover screws (100 pcs)	SCREW M5x14 DIN 7985-T- A2-LOCK 2045	SP.7100.10.211	3.5	Not required
N	Pressure release screw assy (10 pcs)	Assy (screw + gasket)	SP.4072.24.940	2.5	Not required
	Pressure release gasket (10 pcs)	Gasket only	SP.7080.90.012		
P	Cable lead screws (40 pcs)	SCREW M4x10 DIN 7985-T- A2-LOCK 2045	SP.7100.10.101	2.5	Not required
	Fasteners of the mounting support (not supplied with the fixture)	Screw FT.HEX M10x25, SST, Hex Head or Screw FT.HEX 3/8" - 16UNCx7/8"		21-23	Not required

### 7.4 Standard toolkit

	Details	Article number
	Complete tool kit. <i>The toolkit consists of the components listed below .</i>	1411.19.421
	Tool case	6169.01.007
Adhesive A <sup>1</sup>	Loctite 2701	7870.05.130
Adhesive B <sup>1</sup>	Loctite 222	7870.05.140
Adhesive C <sup>1</sup>	Loctite 638	7870.05.097
Adhesive D <sup>1</sup>	Loctite 243	7870.05.160

<sup>1</sup> 1) See [Standard toolkit](#).

	<b>Details</b>	<b>Article number</b>
Lubricant A	Vacuum silicone grease (50 g) to install O-ring gaskets	7850.42.220
Lubricant B	Molykote HP870 Inerta (100 g) to replace prism	7850.05.061
Tool A	Torque wrench	8961.06.203
Tool B	Socket, hex 3/8", screw 3/8", J9/16LA	8961.06.008
Tool C	Socket, hex 3/8", screw M10, J 17LA	8961.06.000
Tool D	Socket, 1/4", 1.6x8 Flat, RS.8E	8961.05.050
Tool E	Socket, 1/4", Pozidriv2, RD.2	8961.05.060
Tool F	Extension, 1/4", R.210	8961.06.220
Tool G	Adaptation, 1/4"-3/8", R.232	8961.06.010
Tool H	Hinged handle - sort	8961.06.110
Tool I	Pliers	8981.10.110
Tool J	Opening tool	4071.53.220
Tool K	Screwdriver, flat blade AG. 8x150	8961.05.250
Tool L	Screwdriver, pozidriv AD.2x125	8961.05.220
Tool M	Torque screwdriver	8961.06.250
Tool N	Screwdriver, Torx ANX20x100	8961.05.300
Tool O	Screwdriver, Torx ANX25x100	8961.05.290
Tool P	Attack driver	8961.04.100
Tool Q	Hammer 212A50s	8961.04.110
Tool R	Bit holder	8961.04.120
Tool S	Bits END202, Pozidriv2	8961.04.130
Tool T	Bit, Torx TX20 EX.620	8961.06.020
Tool U	Bit, Torx TX25 EX.625	8961.06.025

**Notes**

<sup>1</sup> 1) Obey the instructions of the manufacturer of the adhesive.

## 7.5 Additional accessories

You can buy these accessories separately.

<b>Tool</b>	<b>Details</b>	<b>Article number</b>
A	Waterproof test adapter inset 8" AD-light	1411.17.150
B	Set of spare anchor hooks for lifting tool 1411.19.550	1411.19.560
C	Lifting tool (on wheels)	1420.55.600
D	Basic lifting tool assembly for inset lights	1411.19.550

## 7.6 Specifications

Item	Description
Lamp rating	9 W per side 11W (Bidirectional light with one plug)
Nominal supply current	6.6 A +/- 3%
Rated frequencies	50 / 60 Hz (+/- 7.5%)
Protection class	IP67
Dimensions (diameter height)	203 mm x 97 mm (8" lights) 305 mm x 97 mm (12" lights)
Weight	4.0 kg (8" lights) 7.1 kg (12"lights)

## 7.7 Ambient conditions

Item	Description
Temperature	-55 to +55 °C
Altitude	From sea level to 3000 m
Relative humidity	Up to 100%, condensing



## Appendix A: SUPPORT

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

### ADB SAFEGATE Support

#### Live Technical Support - Americas

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

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

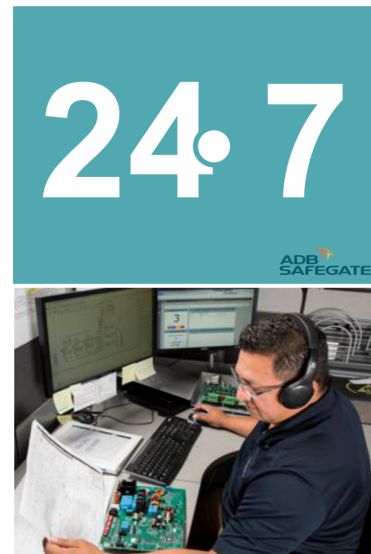
**ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304**

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

#### Before You Call

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

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



#### Note

For more information, see [www.adbsafegate.com](http://www.adbsafegate.com), or contact ADB SAFEGATE Support via email at [support@adbsafegate.com](mailto:support@adbsafegate.com) or

Brussels: +32 2 722 17 11

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

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

China: +86 (10) 8476 0106

### A.1 ADB SAFEGATE Website

The ADB SAFEGATE website, [www.adbsafegate.com](http://www.adbsafegate.com), offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

## A.2 Recycling

### A.2.1 Local Authority Recycling

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

### A.2.2 ADB SAFEGATE Recycling

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

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

All items returned must be clearly 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.



## Company Addresses

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## Powering Your Airport Performance from Approach to Departure

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