

Airfield Lighting

Manual

Omnidirectional Low-Intensity Elevated Light
(IDM 5013)

- Taxiway Edge



Note: *This page is blank for convenient double-sided printing.*

MANUAL
OMNIDIRECTIONAL LOW-INTENSITY OBSTRUCTION LIGHT
(IDM 5013)
CONTENTS

| Section | Description | Page No. |
|-----------|--|-----------|
| 1. | INTRODUCTION | 3 |
| 1.1 | SAFETY INSTRUCTIONS | 3 |
| 1.1.1 | Product Safety | 3 |
| 1.1.2 | Electrical Maintenance | 3 |
| 1.1.3 | Mechanical Maintenance | 3 |
| 1.2 | DESCRIPTION OF THE FITTING | 4 |
| 1.1 | DELIVERY OF THE FITTING | 4 |
| 2. | INSTALLATION..... | 5 |
| 2.1 | INSTALLING THE FITTING ON A TRANSFORMER CASE | 6 |
| 2.2 | INSTALLING THE FITTING ON A CURVE TUBE..... | 6 |
| 2.1 | ALIGNING THE FITTING..... | 6 |
| 2.1.1 | Horizontal alignment | 6 |
| 2.1.2 | Vertical alignment | 6 |
| 3. | MAINTENANCE | 7 |
| 3.1 | BASIC MAINTENANCE PROGRAMME | 7 |
| 3.2 | WORKSHOP MAINTENANCE | 7 |
| 3.2.1 | Replace a Light on its Support | 8 |
| 3.2.1 | Replacing a Lamp | 8 |
| 3.2.2 | Replace a bowl | 9 |
| 4. | SUPPORT..... | 10 |
| 4.1 | SAFEGATE GROUP WEBSITE | 10 |
| 4.2 | RE-CYCLING | 11 |
| 4.2.1 | Local Authority Re-cycling | 11 |
| 4.2.1 | Safegate Group Re-cycling | 11 |
| 4.3 | SPARE PARTS..... | 11 |

Documentation

This document includes Elevated Lights information with a focus on safety, installation and maintenance procedures.

For more information, see www.safegate.com.

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

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History

| Version | Date | Description |
|---------|--------------|----------------|
| 1.0 | January 2011 | First Release |
| 1.1 | March 2014 | Second Release |

Note: *This page is to be updated with every authorised change to the document.*

Abbreviations and Terms

This document may include abbreviations and terms.

| Abbreviation | Term |
|--------------|---|
| CAA | Civil Aviation Authority |
| CCR | Constant Current Regulator |
| CU | Concentrator Unit |
| FAA | Federal Aviation Administration |
| ICAO | International Civil Aviation Organization |
| IEC | International Electrotechnical Committee |
| LED | Light Emitting Diode |
| LMS | Light Monitor and Switch unit |
| NATO | North Atlantic Treaty Organization |
| STAC | Service Technique de l'Aviation Civile (France) |
| STANAG | Standardization Agreement (NATO) |

1. INTRODUCTION

In this section you can find a general description and safety instructions related to the installation and usage of the fitting.

IDM 5013 is an omnidirectional low-intensity obstruction light.

The fitting has many advantages and special features:

- Effective and accurate light distribution
- Corrosion resistant materials
- Light weight
- Modularity reduces spare parts stocking needs and costs
- Simple construction reliable and easy to maintain

1.1 SAFETY INSTRUCTIONS

Make sure you read this section and are familiar with safety precautions before any work is started.

1.1.1 Product Safety

Airfield lighting fixtures in a constant current circuits are connected in a circuit via isolating transformers with currents between 2.0 – 6.6A in the primary circuits.. The primary voltages, depending on the circuitry, are usually several kilovolts and therefore lethal. Although the open circuit voltages of the isolating transformers are much lower, the peak voltage while opening the secondary circuit under current is also hazardous. So it is vitally important to follow all the safety regulations with adequate circumspection.

In the design of this equipment all the practical safety aspects have been taken into account. It is also important to strictly follow existing international or national regulations, the instructions established by civil aviation authority or airport operator and the following instructions.

1.1.2 Electrical Maintenance

Valid safety regulations must always be followed. Never carry out any maintenance or maintenance measures before the current is confirmed as safely disconnected. Use extreme caution when disconnecting or connecting high voltage primary connectors.



WARNING! PRIOR TO THE COMMENCEMENT OF WORK ALL ELECTRICAL SERVICES MUST BE ISOLATED FROM THE SUPPLY AND CONNECTED TO EARTH. FULL DETAILS OF THE WORK INVOLVED MUST BE GIVEN TO THE AUTHORISED PERSON RESPONSIBLE FOR THE ELECTRICAL ENGINEERING SERVICES AT THE AIRPORT WITH REGARD TO THE DURATION OF THE WORK AND SO ON. IT IS RECOMMENDED THAT PRIOR TO STARTING ANY CUTTING WORK, THE NATURE AND LOCATION OF SERVICES SUCH AS CABLE DUCTS AND THE LIKE SHOULD BE IDENTIFIED. ANY INSTALLATION OR MAINTENANCE WORK SHOULD ONLY BE CARRIED OUT BY TRAINED AND EXPERIENCED PERSONNEL. ALSO, WHEN WORKING ON CIRCUITS USING AIRFIELD SMART POWER SYSTEM (ASP) THE SCM MUST BE TUNED OFF.

1.1.3 Mechanical Maintenance

When maintaining mechanical components, it is important to follow the instructions for electrical maintenance.

1.2 DESCRIPTION OF THE FITTING

IDM 5013 is an omnidirectional low-intensity obstruction light.

| Overview of lights | | | |
|--------------------|---------|-------|-------------------------------|
| Light | Colours | Power | Description |
| IDM 5013 | B | 45W | Omni-directional taxiway edge |

1.1 DELIVERY OF THE FITTING

Each unit is supplied completely assembled, tested and sealed, ready for installation.

The electrical connection is made via one cable assembly; the cable is equipped with an FAA L-823 style 5 plug.

Each unit is individually packed in a durable cardboard box, labelled with its reference name and code.

For more information, see www.safegate.com.

2. INSTALLATION

In this section you can find a description of the different steps for successful installation of the fitting. Before you start, make sure you have read and understand §1.1 Safety Instructions.

When removing the fitting from its packaging box, check that nothing is broken.

The screw tapping of the frangible support can be either 2 in. NPS (American standard - 11.5 threads per inch) or 2 in. BPS (British standard - 11 threads per inch). Check support and base tapings fit.

The following tools and accessories are required for installation and removal of the unit:

Standard tools and accessories:

- Wrenches 52 mm (17 mm for base plate bolts)
- Screw-driver

The installation steps refer to:

1. Installing the fitting on a transformer case
2. Installing the fitting on a curve tube
3. Aligning the fitting

2.1 INSTALLING THE FITTING ON A TRANSFORMER CASE

- (a) When the transformer case is installed, put the isolating transformer with primary connectors connected to the transformer case.
- (b) Pull the secondary cable of the transformer through the base plate.
- (c) Attach the cable clamp (option) to the transformer secondary cable just under the female connector.
- (d) Attach the base plate on the transformer case and tighten the three bolts.
- (e) Place the cable clamp (option) to the thread of the base plate.
- (f) Connect the male connector to the transformer's female connector.

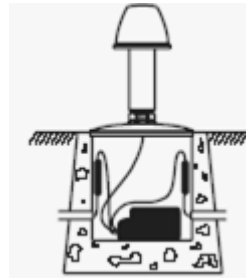


FIGURE 1 – INSTALLATION ON A TRANSFORMER CASE

2.2 INSTALLING THE FITTING ON A CURVE TUBE

- (a) Pull the secondary cable of the transformer through the curve tube. If the cable is not long enough make an extension cable with male and female secondary connectors.
- (a) Attach the cable clamp (option) to the transformer secondary cable or alternatively to the extension cable just under the female connector.
- (b) Place the cable clamp (option) to the thread of the curve tube.
- (c) Connect the male connector to the transformer's female connector.

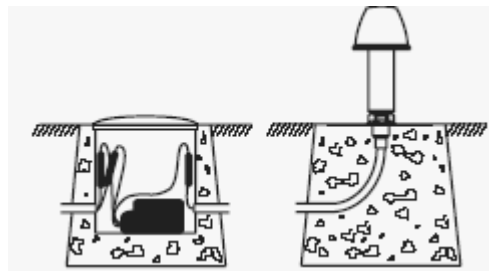


FIGURE 2 – INSTALLATION ON A CURVE TUBE

2.1 ALIGNING THE FITTING

No special alignment tool is needed. Check that the luminaire is properly tightened and that it is vertically levelled.

2.1.1 Horizontal alignment

The intensity distribution of the luminaire is omnidirectional and therefore no horizontal alignment is required.

2.1.2 Vertical alignment

No special vertical alignment is required. It is sufficient to visually check that the luminaire is vertically levelled.

3. MAINTENANCE

In this section you can find a description of the different steps for the maintenance of the fitting.

Before you start, make sure you have read and understand §1.1 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.



WARNING! WHEN A FITTING HAS BEEN REMOVED FROM ITS BASE, THE BASE MUST BE EITHER FITTED WITH A COVER OR A RESERVE FITTING PUT IN ITS PLACE.

IT IS RECOMMENDED THAT ONLY AUTHORIZED PERSONNEL DISASSEMBLE FITTINGS WITH PRIOR AGREEMENT FROM SAFEGATE.

3.1 BASIC MAINTENANCE PROGRAMME

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 fitting.• Removal of dust from external surfaces of the fitting. |
| Monthly | <ul style="list-style-type: none">• Check of the optical window, check for mechanical damage.• Check for proper fixing of the fitting in its base. |
| Yearly | <ul style="list-style-type: none">• Detailed inspection of the fitting.• Check of the body resistance, check for mechanical damage (for example cracks around prism windows).• Clean of the optical windows. |

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.

The light is designed for outdoor operation, however storing the light outside without using it is a risk for damage to light components. For a longer storage time (more than a week), it is recommended to store the light indoors in a dry and dust free environment and at room temperature. Proper storage ensures trouble free replacement procedures. It is strongly recommended not to store any electrical equipment outside.

Note: Only the most common maintenance procedures are instructed in following paragraphs. Construction of the luminaire allows that it can be fully disassembled and all the parts can be replaced if needed.

3.2 WORKSHOP MAINTENANCE

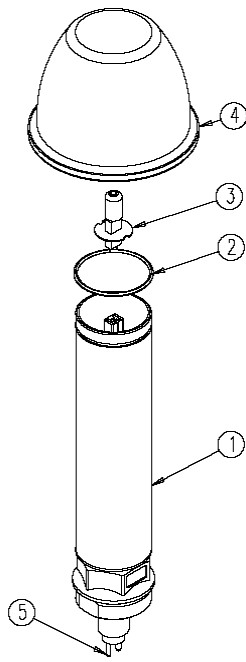
Before you start, make sure you have read and understand §1.1 Safety Instructions. The workshop maintenance refers to following:

1. Replacing the fitting on its support
2. Replacing the lamp
3. Replacing a bowl

3.2.1 Replace a Light on its Support

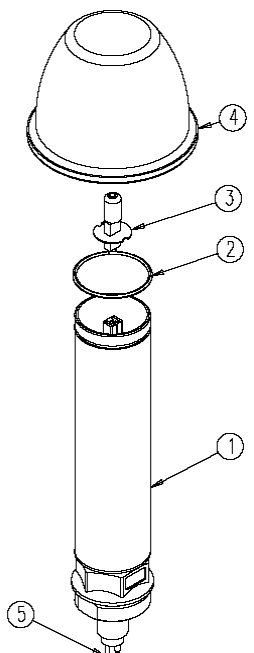
For instructions, see § 2.1 Installing the fitting on a transformer case or § 2.2 Installing the fitting on a curve tube.

3.2.1 Replacing a Lamp

| Remove | |
|--|--|
| <p>(a) Open the housing by lifting up the bowl assembly (4).</p> <p>Note: <i>If the bowl assembly sits tight on the body (1), turn it carefully back and forth while lifting. Never use excessive force or lift from only one side of the bowl assembly to remove it from the body, because it can break the assembly plate where the glass bowl is glued.</i></p> <p>(b) Disconnect the lamp wires and rotate the lamp (3) to remove it. Lift a little while rotating the lamp to clear the lamp position guides.</p> <p>(c) Remove the possible bulb protection cap before installing the new lamp.</p> |  <p>The diagram shows a vertical lamp assembly. At the top is a glass bowl assembly (4) which is lifted off a small assembly plate (2). Below the plate is a lamp (3) with two wires extending from it. The lamp is positioned within a long cylindrical body (1). At the bottom of the body is a bulb protection cap (5). Arrows point from the numbers to their respective parts.</p> <p>FIGURE 3 – LAMP REPLACEMENT</p> |
| Replace | |
| <p>(a) Fit a new lamp and connect the wires.</p> <p>(b) Check that the lamp is properly positioned to the guides and close the housing.</p> <p>Note: <i>The location of the plastic connector holder must be such that when the luminaire is closed, plastic holder cannot touch the lamp.</i></p> | |

3.2.2

Replace a bowl

| Remove | |
|--|--|
| <p>(a) Open the housing by lifting up the bowl assembly (4).</p> |  <p>FIGURE 4 – BOWL REPLACEMENT</p> |
| Replace | |
| <p>(a) Fit a new bowl assembly back to the body (1) by pushing it evenly downwards.</p> <p>Note: If the bowl is tight, apply a little water to the O-ring (2) to ease up the gliding.</p> <p>(b) Check that the bowl assembly is seated properly and that it is not loose with respect to the body.</p> | |

4. 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 Safegate Group is committed to minimal disturbance for airport operations.

| Safegate Group Support | |
|---|--|
| <p>Safegate Group knows that our equipment is used in one of the busiest industries in the world, where down-time costs money and creates delays for airlines and their passengers. As one of the world's leading suppliers of airport systems, Safegate Group is committed to ensuring that our customers are able to get the most out of your equipment, regardless of the location or the time of day. For this reason, Safegate Group has established the Safegate Group Support service.</p> <p>Safegate Group Support is a unique service provided by Safegate Group to our customers, free of charge during the warranty period or as a service contract. Any time of day, any day of the year, a Safegate Group engineer is on standby to answer questions and assist with any problems that may arise. Qualified technical assistance is just a phone call or an e-mail away, 24-7 worldwide.</p> <p>✉ support@safegate.com</p> <p>☎ +46 40 699 1740</p> |   |

4.1 SAFEGATE GROUP WEBSITE

The Safegate Group Website, www.safegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

Note: There is also a **Client/Partner login** area for the latest information and updates, if available.

4.2 RE-CYCLING

4.2.1 Local Authority Re-cycling

The disposal of Safegate Group 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.

4.2.1 Safegate Group Re-cycling

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

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

All items returned must be clearly labelled as follows:

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

Safegate Group 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.

Note: For more information, see www.safegate.com, or contact Safegate Group Support via email at support@safegate.com or phone +46 40 699 1740.

4.3 SPARE PARTS

Spare parts are available for Airfield Lighting fittings. For more information see the Spare Parts List document.

Note: Contact Safegate Group for assistance with ordering spare parts.

Check in to the future

How many aircraft can your airport handle today? Can this number be increased without adverse effects on the airport's safety level? It is a known fact that traffic volume will rise in the foreseeable future. More movements will demand monitoring of the entire airport. Requirements will be sharpened and the development of an integrated system

controlling not only ground movements but also air traffic close to the airport is of the highest interest. The International Civil Aviation Organization (ICAO) already describes A-SMGCS, Advanced Surface Movement Guidance and Control System, as the answer to the future modern airport need to control the entire airport space in one superior system.

To a larger extent than today's systems, A-SMGCS will rely on automated processes to give both pilots and traffic controllers exact information about positions and directions. Safegate Group delivers complete A-SMGCS solutions already, as well as all vital parts relating to it. Safegate Group can check your airport into the future – today!



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THORN
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AIR TRAFFIC SOLUTIONS

SAFEGATE
GROUP



Safegate Group offers solutions for increased safety, efficiency and environmental benefits to airports worldwide. The company was founded in 1973 and has its headquarters in Malmö, Sweden. Safegate Group has more than 70 partners around the globe in order to be close to its customers. Earlier members of Safegate Group include Thorn AFL and Idman, who both have over 40 years of experience in airfield lighting solutions for airports and heliports. The latest member of Safegate Group is Avibit, a leading provider of next generation software applications and integration of efficient air traffic control systems. Safegate Group's complete range of products and services, a "one-stop shop", provides solutions to customers and airborne travellers around the globe.

www.safegate.com