

Airfield Lighting Manual

IDMAN

Elevated Lights – IDM 2982

- Approach, Threshold, Threshold Wing Bar, Runway End Elevated High Intensity Unidirectional Light



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

**ELEVATED LIGHT
IDM 2982
CONTENTS**

Section	Description	Page No.
1.	INTRODUCTION	3
1.1	SAFETY INSTRUCTIONS	3
1.1.1	General safety	3
1.1.2	Product safety	3
1.1.3	Electrical maintenance	3
1.1.4	Mechanical maintenance	4
1.2	DELIVERY AND OVERVIEW OF LIGHTS	4
2.	INSTALLATION.....	5
2.1	BEFORE YOU START.....	6
2.1.1	Tools and materials required.....	6
2.2	INSTALL A LIGHT ON A SUPPORT	6
2.3	ALIGNMENT	7
2.3.1	Horizontal alignment	7
2.3.2	Vertical alignment.....	8
3.	MAINTENANCE	9
3.1	BEFORE YOU START.....	9
3.1.1	Handle with care and clean.....	9
3.2	REPLACE A LIGHT ON A SUPPORT	10
3.3	WORKSHOP MAINTENANCE	11
3.3.1	Replace a lamp in a light.....	11
3.3.2	Replace a front glass.....	12
3.4	TECHNICAL INFORMATION	13
3.4.1	Storage.....	13
3.4.2	Daily function check for installed equipment.....	13
3.4.3	Specification.....	13
3.4.4	Application	13
3.4.5	Technical characteristics	14
3.5	SUPPORT	15
3.5.1	Safegate Group Website	15
3.6	RE-CYCLING	16
3.6.1	Local Authority Re-cycling	16
3.6.2	Safegate Group Re-cycling.....	16
3.7	SPARE PARTS.....	16

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.*

Copyright

© Copyright 2011 by Safegate Group. All rights reserved. This item and the information contained herein are the property of Safegate Group. No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language in any form or by any means otherwise, without the expressed written permission of Safegate Group, Djurhagegatan 19, SE-213 76 Malmö, Sweden.

History

Version	Date	Description
1.0	January 2011	First 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

Airfield elevated high intensity unidirectional light IDM 2982 is light fitting for approach, approach side row, threshold, threshold wing bar, runway end and stop bars.

The fitting has many advantages and special features:

- Fulfills ICAO and FAA standards in categories I, II and III
- 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



FIGURE 1 - ELEVATED LIGHT

1.1 SAFETY INSTRUCTIONS

1.1.1 General safety

Make sure you read this section and are familiar with safety precautions before any work is started. Keep away from live circuits. It is vital to switch off the current securely before any installation or maintenance procedures are carried out. It is also strongly recommended to disconnect the primary circuit from CCR before these activities.

1.1.2 Product safety

Airfield lighting is connected to a constant current circuit with nominal current of 6.6 amperes via an isolating transformer. 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.

1.1.3 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 SO ON SHOULD BE IDENTIFIED. ANY INSTALLATION OR MAINTENANCE WORK SHOULD ONLY BE CARRIED OUT BY TRAINED AND EXPERIENCED PERSONNEL.

1.1.4 Mechanical maintenance

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

1.2 DELIVERY AND OVERVIEW OF LIGHTS

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.

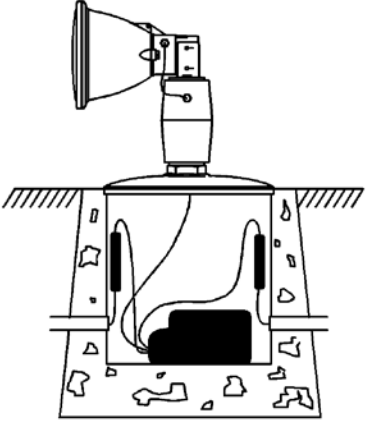
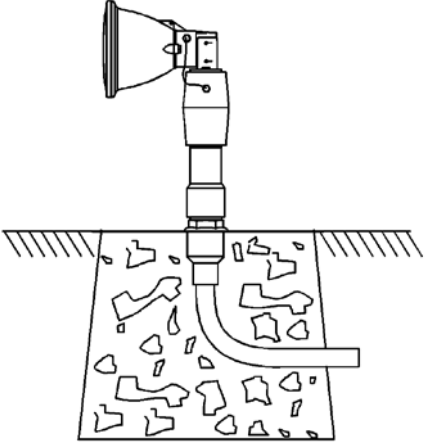
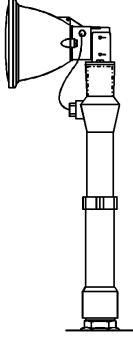
Each unit is individually packed in a durable cardboard box, labelled with its reference name and code.

Overview of lights			
Light	Colours	Power	Description
IDM 2982	R	45W	Stop bar
	R	65W	Runway end
	R	100W	Approach side row
	C	150W	Approach centre line and cross bars
	G	150W	Threshold and threshold wing bar
	C	200W	Approach centre line and cross bars

For more information, see www.safegate.com.

2. INSTALLATION

IDM 2982 can be installed in three different ways:

Description	Image examples
<p>(a) With a frangible coupling IDM 5840 on a base plate IDM 5838 which is mounted on a transformer case IDM 5448.</p>	 <p data-bbox="995 842 1337 891">FIGURE 2 – INSTALLATION ON A TRANSFORMER CASE</p>
<p>(b) With a frangible coupling IDM 5840 on a curve tube IDM 5839. Note: Separated transformers case IDM 5848 with case plate IDM 5841 is needed.</p>	 <p data-bbox="922 1375 1406 1402">FIGURE 3 – INSTALLATION ON A CURVE TUBE</p>
<p>(c) On a safety mast</p>	 <p data-bbox="951 1794 1377 1843">FIGURE 4 – INSTALLATION ON A SAFETY MAST</p>

Note: In methods a and b adapter with cable glands is used. In method c either adapter or mast adapter is used depending on the existence of cable glands in the safety mast. It must be noted that the application of mast adapter requires cable glands in the mast.

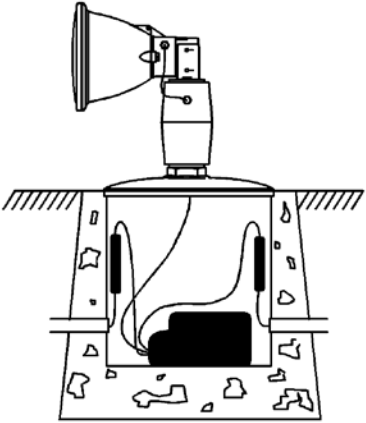
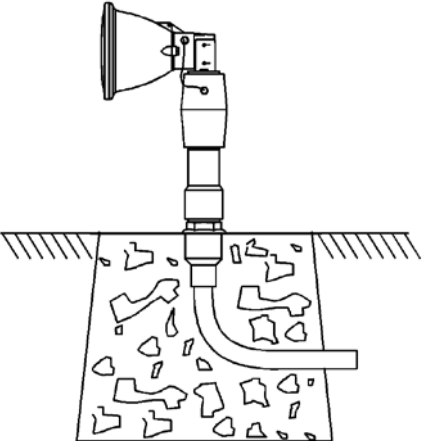
2.1 BEFORE YOU START

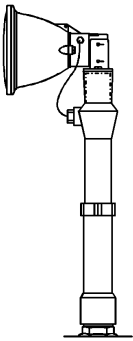
Make sure you have read and understand 1.1 Safety Instructions on page 3.
 Find out the location of the light unit that needs maintenance. If the purpose is to replace an existing light unit with new one, make sure that corresponding unit is available.

2.1.1 Tools and materials required

- Alignment device IDM 5842
- Keys, opening 10, 13 and 52 mm (17 mm for base plate bolts)
- Screw-driver

2.2 INSTALL A LIGHT ON A SUPPORT

Installation on a transformer case	Image example
<p>(a) When transformer case is installed, put the isolating transformer with primary connectors connected to the transformer case.</p> <p>(b) Pull the secondary cable of the transformer through the base plate.</p> <p>(c) Attach the cable clamp to the transformer secondary cable just under the female connector.</p> <p>(d) Attach the base plate on the transformer case and tighten the three bolts.</p> <p>(e) Place the cable clamp to the thread of the base plate and screw the mechanical frangible coupling to the base plate.</p> <p>(f) Connect the male connector to the transformer's female connector.</p> <p>(g) Pass the cable through the cable glands in the adapter and in the luminaire.</p> <p>(h) Attach the wire connectors to the plastic holder.</p> <p>(i) Connect the lamp wires.</p> <p>(j) Install the luminaire to the frangible coupling and tighten the fastening screws.</p> <p>(k) Align the luminaire.</p>	 <p style="text-align: center;">FIGURE 5 – INSTALLATION ON A TRANSFORMER CASE</p>
Installation on a curve tube	Image example
<p>(a) When curve tube is cast into the concrete pull the secondary cable of the transformer through the curve tube.</p> <p>(b) Attach the cable clamp to the transformer secondary cable just under the female connector.</p> <p>(c) Attach the base plate on the transformer case and tighten the three bolts.</p> <p>(d) Place the cable clamp to the base plate's thread and screw the mechanical frangible coupling to the base plate.</p> <p>(e) Pass the cable through the cable glands in the adapter and in the luminaire.</p> <p>(f) Attach the wire connectors supplied with the luminaire to the cable and press the wire connectors to the plastic holder.</p> <p>(g) Connect the lamp wires.</p> <p>(h) Install the luminaire to the frangible coupling and tighten the fastening screws.</p> <p>(i) Align the luminaire.</p>	 <p style="text-align: center;">FIGURE 6 – INSTALLATION ON A CURVE TUBE</p>

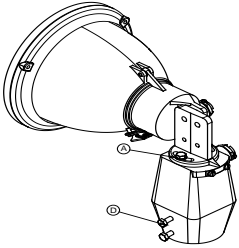
Installation on a safety mast	Image example
<p>(a) Tighten the fastening screws of the adapter and pass the cable through the cable glands in the adapter and in the luminaire.</p> <p>(b) Attach the wire connectors supplied with the luminaire to the supply cable and press the wire connectors to the plastic holder.</p> <p>(c) Connect the lamp wires.</p> <p>(d) Connect the secondary supply cable to the transformer.</p> <p>(e) Align the luminaire.</p>	 <p style="text-align: center;">FIGURE 7 – INSTALLATION ON A SAFETY MAST</p>

2.3 ALIGNMENT

The magnification of the telescope of the alignment device is 4x20. It is not allowed to aim through the telescope to bright light sources because this can cause damages to eye. Check that the telescope is parallel to the body of alignment device. Place the alignment device to the front glass fastening ring of the luminaire. Three balls in the alignment device ring lock it to the luminaire ring when the alignment device is gently pressed against the luminaire. Make sure that the "top" marking rib in the front glass fastening ring settles to the groove in the alignment device.

2.3.1 Horizontal alignment

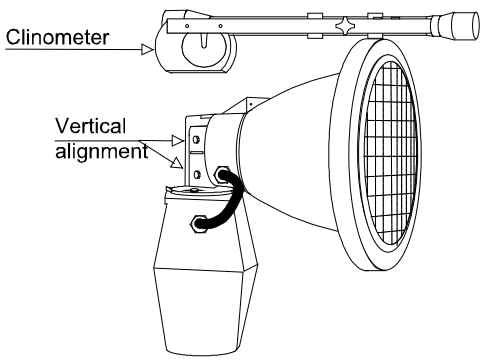
Horizontal alignment will be made by the aid of an alignment point. The point shall locate on the extension of the runway and approach centre line at a distance of several kilometers, preferably more than five kilometers. This arrangement ensures that the same point can be used for every approach, threshold or end light independent from the location because the angular error will be very small. However it is recommended that the error should be evaluated in the worst case situation (the outermost light from the centre line to be aligned).

Horizontal alignment	Image example
<p>(a) Make sure that the horizontal scale is set to zero. If not, loosen the fastening screws and turn the luminaire with respect to the adapter so that the pointer is set to zero angle.</p> <p>(b) Fasten the screws.</p> <p>(c) Attach the alignment device to the luminaire and loosen the two hexagonal screws in the mast (or square) adapter.</p> <p>(d) Align the luminaire by aiming through the telescope to the alignment point.</p> <p>(e) When this zero direction is set, tighten the adapter screws.</p> <p>(f) If toe-in angle is needed loosen the two screws and turn the luminaire to desired angle.</p> <p>(g) Tighten the screws and check the angle from the scale.</p>	 <p style="text-align: center;">FIGURE 8 – HORIZONTAL ALIGNMENT</p>

Toe-in angles according to the application	
Application	Toe-in angle
Approach centre line and cross bar	0°, except in cross bars beyond 22,5m from centre line toe-in 2°
Approach side row	2°
Threshold	3,5°
Threshold wing bar	2°
Runway end	0°

2.3.2 Vertical alignment

The vertical alignment is made by the aid of clinometer which is attached to the alignment device. When looking through the clinometer the pointer line and graduation of scale can be seen. The degree scale is on the left.

Vertical alignment	Image example
<p>(a) Attach the alignment device to the luminaire.</p> <p>(b) Ensure that the "top" rib in the front glass fastening ring settles into the groove in the alignment device ring.</p> <p>(c) Loosen the vertical alignment screws and turn the luminaire to the desired elevation angle.</p> <p>(d) Tighten first the adjustment screws and check the vertical angle once more.</p>	 <p>FIGURE 9 – VERTICAL ALIGNMENT</p>

Vertical setting angles according to the application and location		
Application	Main beam coverage	Vertical setting angle
Approach centre line and cross bar (threshold to 315m)	0° - 11°	5,5°
Approach centre line and cross bar (316-475m)	0,5° - 11,5°	6°
Approach centre line and cross bar (476-40m)	1,5° - 12,5°	7°
Approach centre line and cross bar (641m and beyond)	2,5° - 13,5°	8°
Approach side row (threshold to 115 m)	0,5° - 10,5°	5,5°
Approach side row (116 m to 215 m)	1° - 11°	6°
Approach side row (216 m and beyond)	1,5° - 11,5°	6,5°
Threshold	1° - 10°	5,5°
Threshold wing bar	0,5° - 10,5°	5,5°
Runway end	0,25° - 4,75°	2,5°

3. MAINTENANCE

3.1 BEFORE YOU START



WARNING! MAKE SURE YOU HAVE READ AND UNDERSTOOD SAFETY INSTRUCTIONS ON PAGE 3.

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.

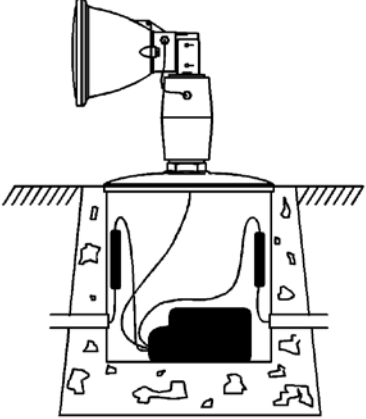
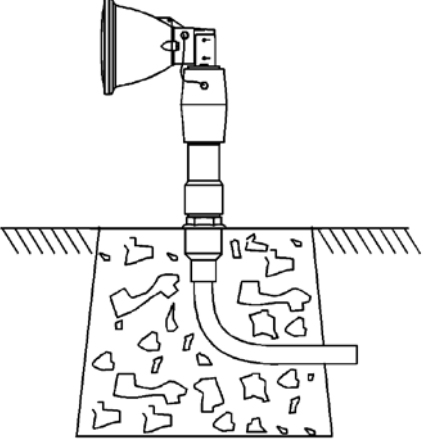
3.1.1 Handle with care and clean

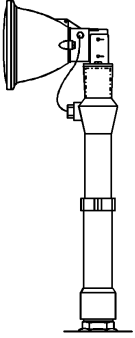
It is important to handle with care and clean to maximize the light and component lifetime and minimize maintenance.

The following are recommended maintenance tasks to ensure equipment is in correct operating condition.

- Visual inspection of the fitting.
- Remove dust from exposed surfaces of the fitting.
- Checking the proper fixing of the fitting on its support.
- Detailed inspection of the fitting.
- Checking of the glass ware and housing for damage.

3.2 REPLACE A LIGHT ON A SUPPORT

Installation on a transformer case	Image example
<ul style="list-style-type: none"> (a) When 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 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 to the thread of the base plate and screw the mechanical frangible coupling to the base plate. (f) Connect the male connector to the transformer's female connector. (g) Pass the cable through the cable glands in the adapter and in the luminaire. (h) Attach the wire connectors to the plastic holder. (i) Connect the lamp wires. (j) Install the luminaire to the frangible coupling and tighten the fastening screws. (k) Align the luminaire. 	 <p style="text-align: center;">FIGURE 10 – INSTALLATION ON A TRANSFORMER CASE</p>
Installation on a curve tube	Image example
<ul style="list-style-type: none"> (a) When curve tube is cast into the concrete pull the secondary cable of the transformer through the curve tube. (b) Attach the cable clamp to the transformer secondary cable just under the female connector. (c) Attach the base plate on the transformer case and tighten the three bolts. (d) Place the cable clamp to the base plate's thread and screw the mechanical frangible coupling to the base plate. (e) Pass the cable through the cable glands in the adapter and in the luminaire. (f) Attach the wire connectors supplied with the luminaire to the cable and press the wire connectors to the plastic holder. (g) Connect the lamp wires. (h) Install the luminaire to the frangible coupling and tighten the fastening screws. (i) Align the luminaire. 	 <p style="text-align: center;">FIGURE 11 – INSTALLATION ON A CURVE TUBE</p>

Installation on a safety mast	Image example
<p>(a) Tighten the fastening screws of the adapter and pass the cable through the cable glands in the adapter and in the luminaire.</p> <p>(b) Attach the wire connectors supplied with the luminaire to the supply cable and press the wire connectors to the plastic holder.</p> <p>(c) Connect the lamp wires.</p> <p>(d) Connect the secondary supply cable to the transformer.</p> <p>(e) Align the luminaire.</p>	 <p>FIGURE 12 – INSTALLATION ON A SAFETY MAST</p>

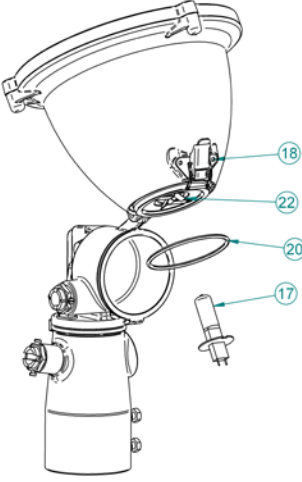
3.3 WORKSHOP MAINTENANCE

It is important to always make sure that the light is depressurized before disassembly for maintenance work.

Note: Make sure you have read and understood 1.1 Safety Instructions on page 3.

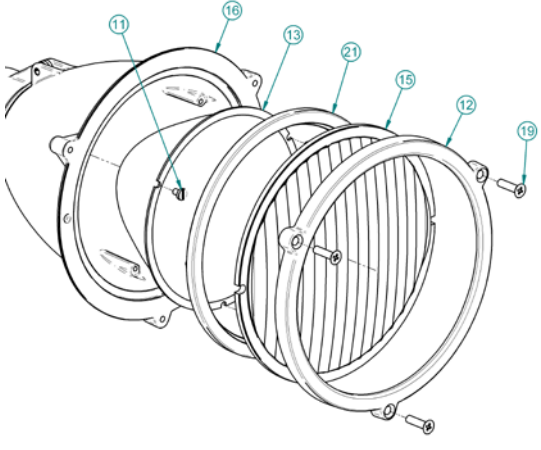
Note: Only the most common maintenance procedures are instructed in following paragraphs. Construction of the luminaire allows that it can be fully disassembled and all the parts can be replaced if needed.

3.3.1 Replace a lamp in a light

Replace a lamp	Image example
<p>(a) Open the latch (18) of the housing and turn the housing upwards.</p> <p>(b) Disconnect the lamp wires from the plastic holder.</p> <p>(c) Turn the lamp holder springs aside and remove the lamp.</p> <p>(d) Remove the possible lamp glass protection cap and attach the new lamp to the housing. Note: Take care that the placement pin is correctly positioned and fasten the lamp by holder springs.</p> <p>(e) Connect the lamp wires to the plastic holder. While closing the housing secure that the wires will correctly settle into the housing and the o-ring gasket (20) seats well.</p>	 <p>FIGURE 13 – LAMP REPLACEMENT</p>

3.3.2 Replace a front glass

Notice that no separate colour filter cassette exists any more but the colour is achieved by using through-coloured front glass. The fixing method is the same between coloured and clear front glass. Please make reference to spare part list for correct replacements

Replace a front glass	Image example
<p>(a) Remove the front glass fastening ring (12) by loosening the screws (19).</p> <p>(b) Check the reflector and if necessary clean with compressed air.</p> <p>(c) Check the front glass gasket (21) and change if necessary.</p> <p>(d) Replace a broken front glass (15). Note: <i>When assembling new front glass place it first to the gasket taking care that the slots in the glass position well to the studs in the gasket.</i></p> <p>(e) Likewise when placing the gasket-glass subassembly to the housing (16) pay attention that the studs in the gasket rear face settle well to the guide holes in the housing.</p> <p>(f) Fasten the front glass fastening ring with screws.</p>	 <p>The diagram shows an exploded view of the front glass assembly. It includes a housing (16), a reflector (11), a front glass gasket (21), a front glass (15), a front glass fastening ring (12), and screws (19). The housing (16) has a central opening with a grid pattern. The reflector (11) is positioned behind the housing. The front glass gasket (21) is a ring with studs that fits into the housing. The front glass (15) is a circular piece with a grid pattern that fits into the gasket. The front glass fastening ring (12) is a ring that fits around the front glass and is secured by screws (19).</p> <p>FIGURE 14 – FRONT GLASS REPLACEMENT</p>

3.4 TECHNICAL INFORMATION

3.4.1 Storage

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 (warm or cool). Proper storage ensures trouble free replacement procedures. It is strongly recommended not to store any electrical equipment outside.

3.4.2 Daily function check for installed equipment

If the equipment is installed, but not in operation or intended to be used for a longer period of time (more than one week), it is recommended to perform a daily function check to ensure system availability in case of urgent need.

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.

3.4.3 Specification

- ICAO Annex 14 Volume I 5th edition 2009
- Aerodrome Design Manual Part 4 Visual Aids, 4rd edition 2004.

3.4.4 Application

- High intensity unidirectional elevated light for centre line and cross bars, precision approach Cat. I, II and III lighting systems.
- Threshold and threshold wing bar lighting Cat. I, II and III.
- Runway end and stopway lighting Cat. I, II and III.
- Stop bar

3.4.5 Technical characteristics

Characteristic	Description
Light dimensions	
Weight	2 kg
Ingression Protection	IP44
Materials	AlSi12 Silicone rubber gaskets Acid-proof steel hardware
Surface treatment	Chromate treatment and powder painting
Cables and connectors	Plugs: FAA L-823 Style 5 Receptacles: FAA L-823 Style 12 Secondary cable: FAA 150/5345-70
Light sources	Approach centre line and cross bar: 200W, 6,6A, Pk30d base pre-focused halogen lamp. Average lifetime 1500 hours at rated current. Approach centre line and cross bar, threshold, threshold wing bar: 150W, 6,6A, Pk30d base pre-focused halogen lamp. Average lifetime 1500 hours at rated current. Approach side row: 100W, 6,6A, Pk30d base pre-focused halogen lamp. Average lifetime 1500 hours at rated current. Runway end: 65W, 6,6A, Pk30d base pre-focused halogen lamp. Average lifetime 1500 hours at rated current. Stop bar: 45W, 6,6A, Pk30d base pre-focused halogen lamp. Average lifetime 1500 hours at rated current.
Packing	Dimensions: 340x200x220 mm Weight: 2.4 kg
Accessories	Mechanical frangible coupling IDM 5840 Base plate IDM 5838 Transformer case IDM 5448 Curve tube IDM 5839 Safety masts Extension tube 2-core cable with plug KD501

3.5 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

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.

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.

✉ support@safegate.com

☎ +46 40 699 1740



3.5.1 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.

3.6 RE-CYCLING

3.6.1 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.

3.6.2 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.

3.7 SPARE PARTS

Spare parts are available for SafeLED Elevated Light fittings. For more information see the Spare Parts List document.

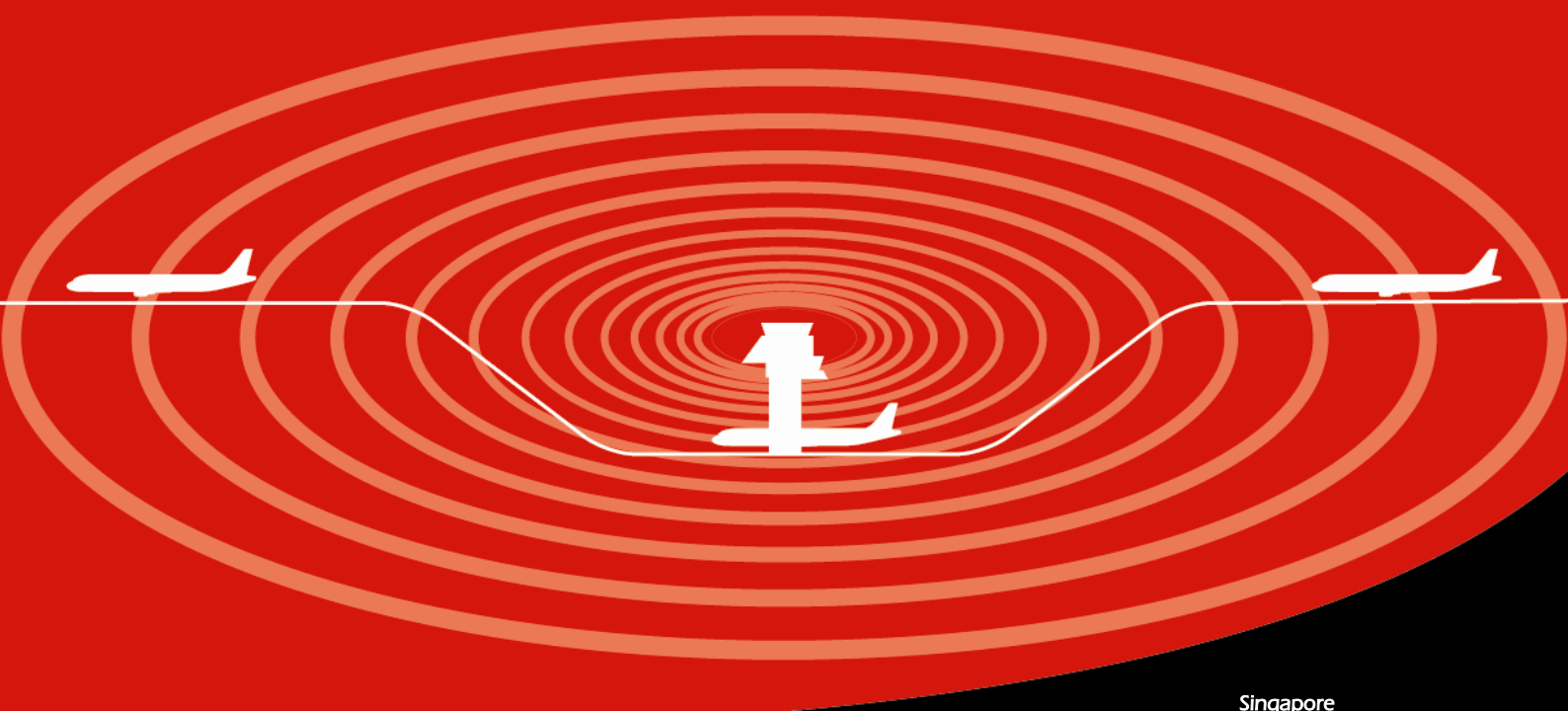
Note: Contact Safegate Group for assistance with ordering spare parts.

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!



Safegate Group HQ
Djurhagegatan 19
SE-213 76 Malmö, Sweden
Phone: +46 (0)40 699 17 00
Fax: +46 (0)40 699 17 30
E-mail: market@safegate.com

Australia
australia@safegate.com
+61 (0)3 9720-3233

China
china@safegate.com
+8610-85275297

Dubai
dubai@safegate.com
+971 4 332 30 07

Finland
finland@safegate.com
+358 (0)20754 7700

France
france@safegate.com
+33 (0)1 49 53 62 62

Germany
germany@safegate.com
+49 (0)231 9776754

India
india@safegate.com

Qatar
qatar@safegate.com
+974 436 9628

Russia
russia@safegate.com
+7 495 917 4614

Singapore
singapore@safegate.com
+65 6289 6893

Spain
spain@safegate.com
+34 917 157 598

UK
uk@safegate.com
+44 (0)20 8594 2747

USA
usa@safegate.com
+1 763 535 92 99

THORN **IDMAN**
Airfield Lighting

SAFEGATE
GROUP 

Safegate Group offers solutions for increased safety, efficiency and environmental benefits to airports around the world. The company was founded in 1973 and has its headquarters in Malmö, Sweden. Safegate Group has over 70 partners around the globe in order to be close to its customers. The latest members of Safegate Group, Thorn AFL and Idman, have both over 40 years of experience in airfield lighting solutions for airports and heliports worldwide. Safegate Group's complete range of products and services, a "one-stop shop", provides solutions to customers and airborne travellers around the globe.

For more contact information and details:
www.safegate.com