



Heliport Perimeter Light Type MIJ

Document No. 96A0194

Issued: June 19, 1997

Rev. D: February 8, 2005

Manufactured to FAA Specification
AC150/5390-2B and AC 150/5345-46B

Siemens Airfield Solutions, Inc.

P.O. Box 30829
977 Gahanna Parkway
Columbus, OH 43230

Tel: (614) 861-1304
Fax: (614) 864-2069

Copyright © 2005 by Siemens Airfield Solutions, Incorporated. All rights reserved.

Siemens Airfield Solutions

*The innovative
approach*

Table of Contents

Record of Changes	ii
Table of Contents	iii
Warranties	v
1. Safety	1
Safety Symbols	1
Qualified Personnel	2
Intended Use	2
Installation	3
Operation	3
Action in the Event of a System or Component Malfunction	4
Maintenance and Repair	4
2. Description	5
Helicopter Perimeter Light Fixture: Required Equipment	6
Specifications	6
FAA Specification	6
Input	6
Rated Lamp Life	6
Lamps	6
Lens	7
Weather	7
Wire Leads	7
Environmental Operating Conditions	7
Dimensions	7
3. Installation	8
Introduction	8
Unpacking	8
Installation Guidelines	8
Assembly Instructions	8
Junction Box Installation	10
4. Maintenance	11
Maintenance Schedule	11
Replacing Lamps	12
5. Troubleshooting	12
6. Parts	13
Using the Illustrated Parts List	13
Helicopter Perimeter Light Fixture Parts List	14
Recommended Spare Parts	16

List of Figures

Figure 1. Helicopter Perimeter Light Fixture.....	5
Figure 2. Installing Helicopter Perimeter Light Fixture.....	9
Figure 3. Helicopter Perimeter Assembly.....	15

List of Tables

Table 1. Required Equipment Supplied	6
Table 2. Required Equipment Not Supplied	6
Table 3. Heliport Perimeter Light Fixture Maintenance	11

Warranties

Products of Siemens Airfield Solutions manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) for a period of one year from the date of installation or a maximum of two years from the date of shipment and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.

Siemens Airfield Solutions will correct by repair or replacement, 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 Siemens Airfield Solutions written notice of such defects after delivery of the goods to Buyer.

Siemens Airfield Solutions 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. Siemens Airfield Solutions further reserves the right to require the return of such goods to establish any claim.

Siemens Airfield Solutions'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.

Siemens Airfield Solutions'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 Siemens Airfield Solutions, warranty is limited to that extended by the original manufacturer.

This is Siemens Airfield Solutions'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.

Disclaimers

This manual could contain technical inaccuracies or typographical errors. Siemens Airfield Solutions reserves the right to revise this manual from time to time in the contents thereof without obligation of Siemens Airfield Solutions to notify any person of such revision or change.

Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and Siemens Airfield Solutions disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

Heliport Perimeter Light Type MIJ

1. Safety

This section contains general safety instructions for using your Siemens Airfield Solutions 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. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely,

- refer to the FAA Advisory Circular AC 150/5340-26, *Maintenance of Airport Visual Aids Facilities*, for instructions on safety precautions.
- observe all safety regulations. To avoid injuries, always remove power prior to making any wire connections and touching any parts. Refer to FAA Advisory Circular AC 150/5340-26.
- read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- store this manual within easy reach of 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.
- obtain and read Material Safety Data Sheets (MSDS) for all materials used.

Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.



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



WARNING: Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.

Safety Symbols *(contd.)*



WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Wear safety goggles. Failure to observe may result in serious injury.



CAUTION: Failure to observe may result in equipment damage.

Qualified Personnel

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 see that its personnel meet these requirements.

Intended Use



WARNING: Use of 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.

Siemens Airfield Solutions cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking the following actions:

- making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine Siemens Airfield Solutions replacement parts
- failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards
- using materials or auxiliary equipment that are inappropriate or incompatible with your Siemens Airfield Solutions equipment
- allowing unqualified personnel to perform any task

Installation

Read the installation section of all system component manuals before installing your equipment. A thorough understanding of system components and their requirements will help you install the system safely and efficiently.



WARNING: Failure to follow these safety procedures can result in personal injury or death.

- Allow only qualified personnel to install Siemens Airfield Solutions and auxiliary equipment. Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- 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.

Operation

Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.

Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.

Operation *(contd.)*

- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

Action in the Event of a System or Component Malfunction

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.

Maintenance and Repair

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks. Only persons who are properly trained and familiar with Siemens Airfield Solutions equipment are permitted to service this equipment.

- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in your equipment 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 Siemens Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.

Maintenance and Repair

(contd.)

- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Do not service electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

2. Description

See Figure 1. This section describes the Siemens Airfield Solutions helicopter perimeter elevated light fixture, type MIJ. The yellow helicopter perimeter omnidirectional lights are used to define the perimeter of the area the helicopter requires for landing and takeoff.

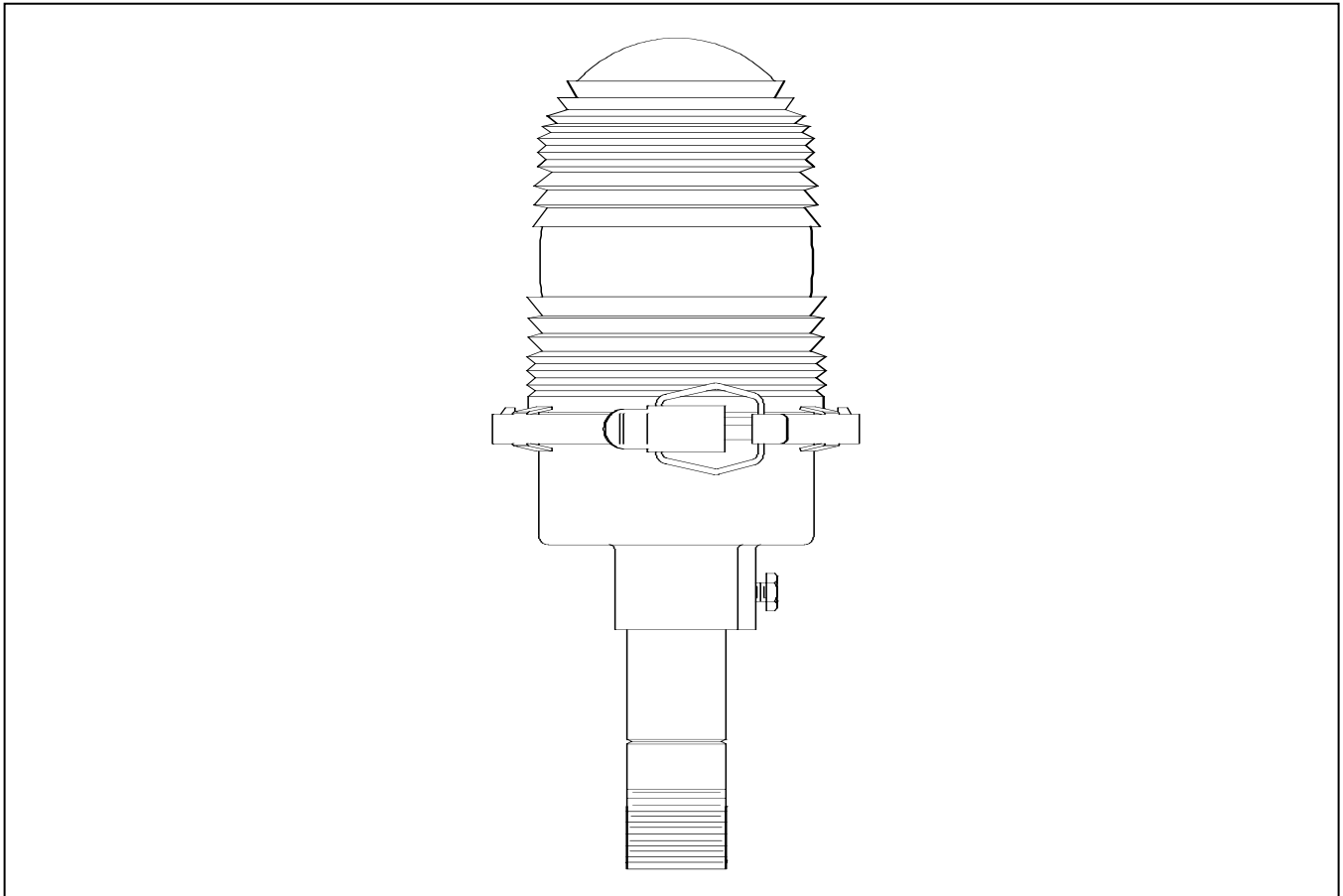


Figure 1. Helicopter Perimeter Elevated Light Fixture

2. Description *(contd.)*

These lights are placed at each corner of the helipad, with three more lights spaced equally along each side between the corner lights. An odd number of fixtures, for example, 3, 5, and 7, are used on each side of a square or rectangular perimeter and at least 8 equally spaced lights for a circular area.

**Helicopter Perimeter
Elevated Light Fixture:
Required Equipment**

Refer to Table 1 for required equipment that is supplied. Refer to Table 2 for required equipment that is not supplied. Refer to the *Parts* section for part numbers.

Table 1. Required Equipment Supplied

Description	Quantity
Light fixture (with column, lamp, junction box, and two 36-in. (914-mm) of wire leads	1
Instruction manual	1

Table 2. Required Equipment Not Supplied

Description	Quantity
Screw driver (medium blade and Phillips #2)	1
Wrench, 7/16	1
Lead anchors	4
1/2-in. conduit	As required

Specifications

This subsection provides specifications for the L-861 elevated light fixtures. Refer to the *Parts* section for ordering information.

FAA Specification

Manufactured to FAA specification AC 150/5390-2B and AC 150/5345-46B

Input

120 Vac

Rated Lamp Life

1000 hours (minimum)

Lamps

54/60 W (60 A/CL), 120 V

Lens

Glass lens
FAA Color is Green

Weather

The helicopter perimeter light fixture is designed for exposure to rain, snow, ice, and standing water

Wire Leads

Two AWG 16, 600 V wire leads, 36-in.- (914-mm-) long for each fixture

Environmental Operating Conditions

The light fixture is designed to operate under the conditions presented below for temperature, wind, altitude, and relative humidity.

Temperature

-55 to +55 °C (-67 °F to +131 °F)

Wind

Velocities up to 350 mph (560 kph)

Altitude

Sea level to 10,000 feet (3000 m)

Relative Humidity

Up to 100 %

Dimensions

See Figure 2 in the *Installation* section.

3. Installation



WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

Introduction

This section provides instructions for installing the L-861 medium intensity elevated light fixture. Refer to the airport project plans and specifications for the specific installation instructions.

Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.

Installation Guidelines

Refer to the current edition of AC 150/5390-2 for FAA guidelines, recommendations, and design standards for heliports.

Assembly Instructions

NOTE: Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section for ordering information.

To assemble parts, perform the following procedure:

1. See Figure 2. Place wire leads into the column (4), and insert the column into the base of the head assembly (12). Secure the column to the base by tightening the locking screw (3) located on the side of the base.

Assembly Instructions (contd.)

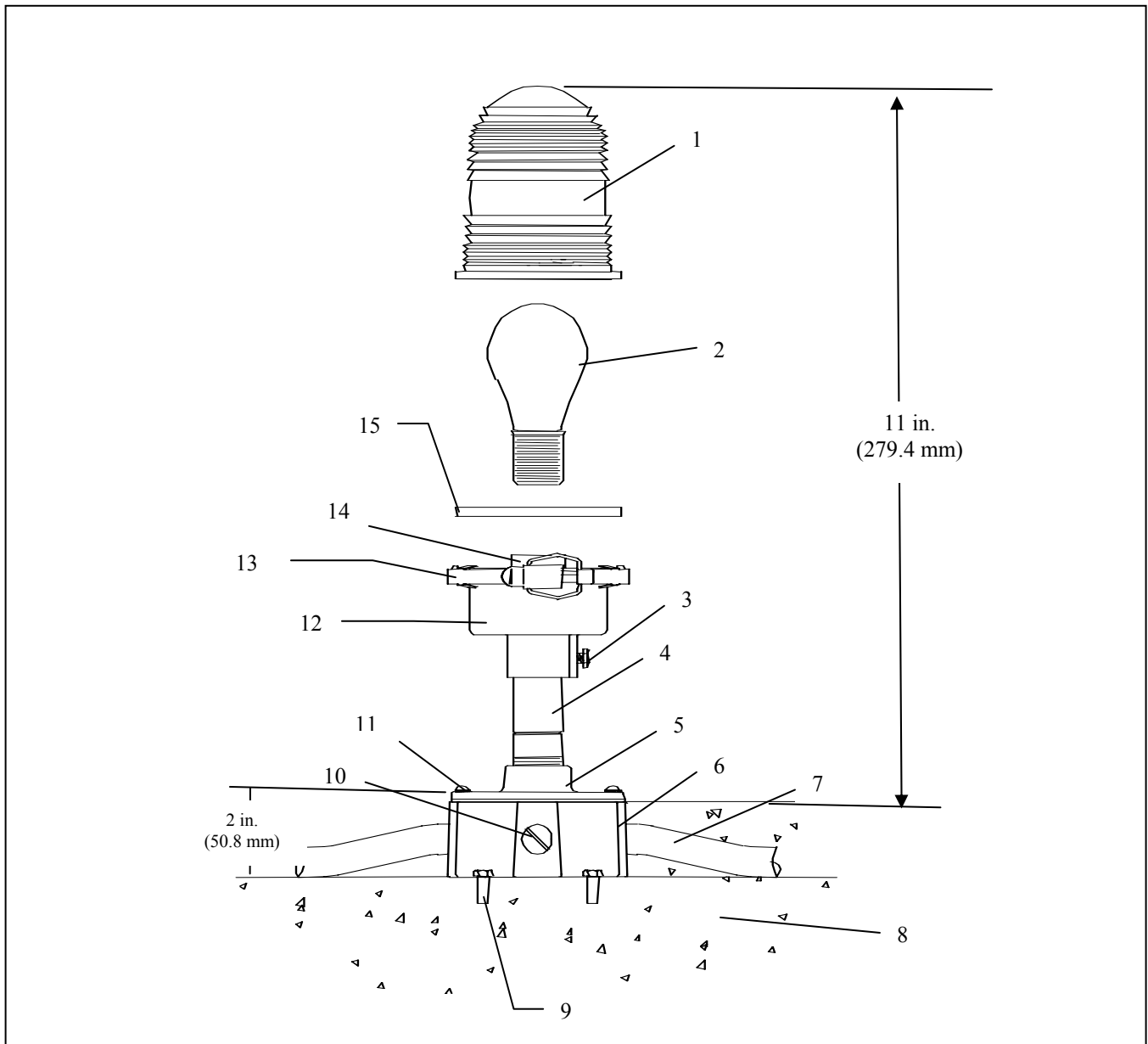


Figure 2. Installing Heliport Perimeter Light Fixture

- | | | |
|---------------------|--------------------------------------|--------------------|
| 1. Lens | 6. Junction Box | 11. Pan Head Screw |
| 2. Lamp | 7. Conduit (Supplied by Others) | 12. Head Assembly |
| 3. Locking Screw | 8. Concrete (Supplied by Others) | 13. Clamp Band |
| 4. Column | 9. Lead Anchors (Supplied by Others) | 14. Socket |
| 5. Junction Box Lid | 10. Pipe Plug | 15. Gasket |

Assembly Instructions (*contd.*)

2. Screw the lamp (2) into the socket (14).
3. Unlatch the lens clamp band and place the lens (1) on the upper base of the head assembly and secure to the head assembly by relatching the lens clamp band.
4. Screw the end of the column into the junction box lid (5).

Junction Box Installation

This subsection provides installation instructions for the junction box (MIJ). The junction box is used for roof-top or pier installation. Refer to the *Parts* section for ordering information.

Install junction boxes according to the guidelines below.

- See Figure 2. Install the junction box (6) in the heliport pavement using lead anchors (9) supplied by others.
- Place junction boxes at each corner of the helipad, with 3 or more, for example, 3, 5, and 7, spaced equally along each side of a square or rectangular perimeter and at least 8 equally spaced junction boxes for a circular area.
- Do not exceed 30 feet (9 m) between junction boxes.
- Place junction boxes on the perimeter of the helipad. Do not place boxes more than 7.5 feet (2.25 m) away from the edge of the pad.
- Route 120 Vac power supply wire through 1/2-in. (12.7-mm) conduit between junction boxes and make connection with leads of the light assembly.

NOTE: The overall above ground installation height of the fixture is normally 10 inches (254 mm). Refer to the Heliport Project Plans and Specifications for specific installation instructions.

4. Maintenance

To keep the helicopter perimeter light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to FAA AC 150/5340-26 for more detailed information.

Maintenance Schedule

Refer to Table 3 for the heliport perimeter maintenance schedule.

Table 3. Heliport Perimeter Light Fixture Maintenance

Interval	Maintenance Task	Action
Daily	Lamp burned out	Replace when input power is deactivated. Refer to <i>Replacing Lamps</i> in this section.
	Broken lens	Replace lens.
Weekly	Obscuration by vegetation	Use weed killer to remove.
	Dirty lens	Clean with glass cleaner.
Monthly	Misaligned fixture	Straighten, level, and align fixture.
	Dirty lamp socket	Clean when input power activated.
Semi-monthly	Improper ground elevation	Grade so frangible point is approximately one inch (25.4 mm) above ground elevation.
	Improper light elevation	Maintain same elevation for all light fixtures.
	Moisture present in light housing	Check drain holes and clamps. Check lens for cracks. If damaged, replace.
	Corrosion present or paint loose or chipped	Scrape light fixture and repaint.
Annual	Cracks, corrosion, shorts	Repair or replace fixture.
	Dirty contacts	Clean contacts when system is deactivated.
	Loose connections	Tighten connections.
Unscheduled	Prediction of heavy snowfall	Use red flags or sticks to mark location of fixtures to facilitate snow removal and lessen the change of damage to fixtures by snow removal equipment.

Replacing Lamps



WARNING: De-energize and lock out the circuit so that the circuit cannot be energized by remote means before attempting to service the fixture.

To replace lamps, perform the following procedure:

1. Remove lens from the fixture by loosening the lens clamp band on the lamp base.
2. Unscrew the lamp from the socket and install the new lamp in the socket.
3. Replace the lens and make sure the lens clamp band is tight.
4. Re-energize the circuit.

5. Troubleshooting



WARNING: Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.



WARNING: De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

This section contains troubleshooting information. This information covers only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Siemens Airfield Solutions representative for help.

Problem	Possible Cause	Corrective Action
Lamps will not turn on.	Defective lamp	Replace lamp. Refer to <i>Replacing Lamps</i> in the <i>Maintenance</i> section.
	Loose connection(s)	Tighten wires.
	Moisture present in fixture	Open up and dry. Inspect lens for cracks. Replace lamp and any damaged parts. Refer to <i>Replacing Lamps</i> in the <i>Maintenance</i> section.

6. Parts

To order parts, call Siemens Airfield Solutions Customer Service or your local representative. Use this four-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Using the Illustrated Parts List

The Item column numbers correspond to the numbers that identify parts in illustrations following each parts list. NS (not shown) indicates that a listed part is not illustrated.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

The Part Number column gives the Siemens Airfield Solutions part number.

Item	Description	Part Number	Note
NS	Assembly	XXXXXXXX	A
T1	Assembly Part Part	XXXXXXXX XXXXXXXX	

The Note column contains letters that refer to notes at the end of each parts list. Notes contain special ordering information.

**Heliport Perimeter Light
Fixture Parts List**

See Figure 3.

Item	Description	Part Number	Note
Not Shown	Final Assembly w/Yellow Lens and 54/60W Lamp	44B0855	
	Final Assembly w/Yellow Lens and 40W Pre-focused Lamp	44B0855-1	
	Final Assembly w/Green Lens and 54/60W Lamp	44B0855-2	
A1	Head assembly	44C0375-2	
	Lens – Green (FAA Color)	63A0150	
H1	Lens – Yellow	63A0143	
	Lens – Clear (White)	63A0141	
L1	Lamp, 54/60 W (60 A/CL), 120 Vac	48A0347	
M3	Junction box	62C0290	
M2	Junction box lid	62B0207	
M4	Gasket, junction box	63A0102	
M1	Column, 4-inch	62A0192-4	
A1-M1	Lamp base	62C0270-2	
A1-A1	Lens clamp assembly	44B0023	
A1-M2	Gasket	63B0015	
A1-H1	Lamp socket, porcelain, 660 W, 250 V	49A0014	

**Heliport Perimeter Light
Fixture Parts List** (contd.)

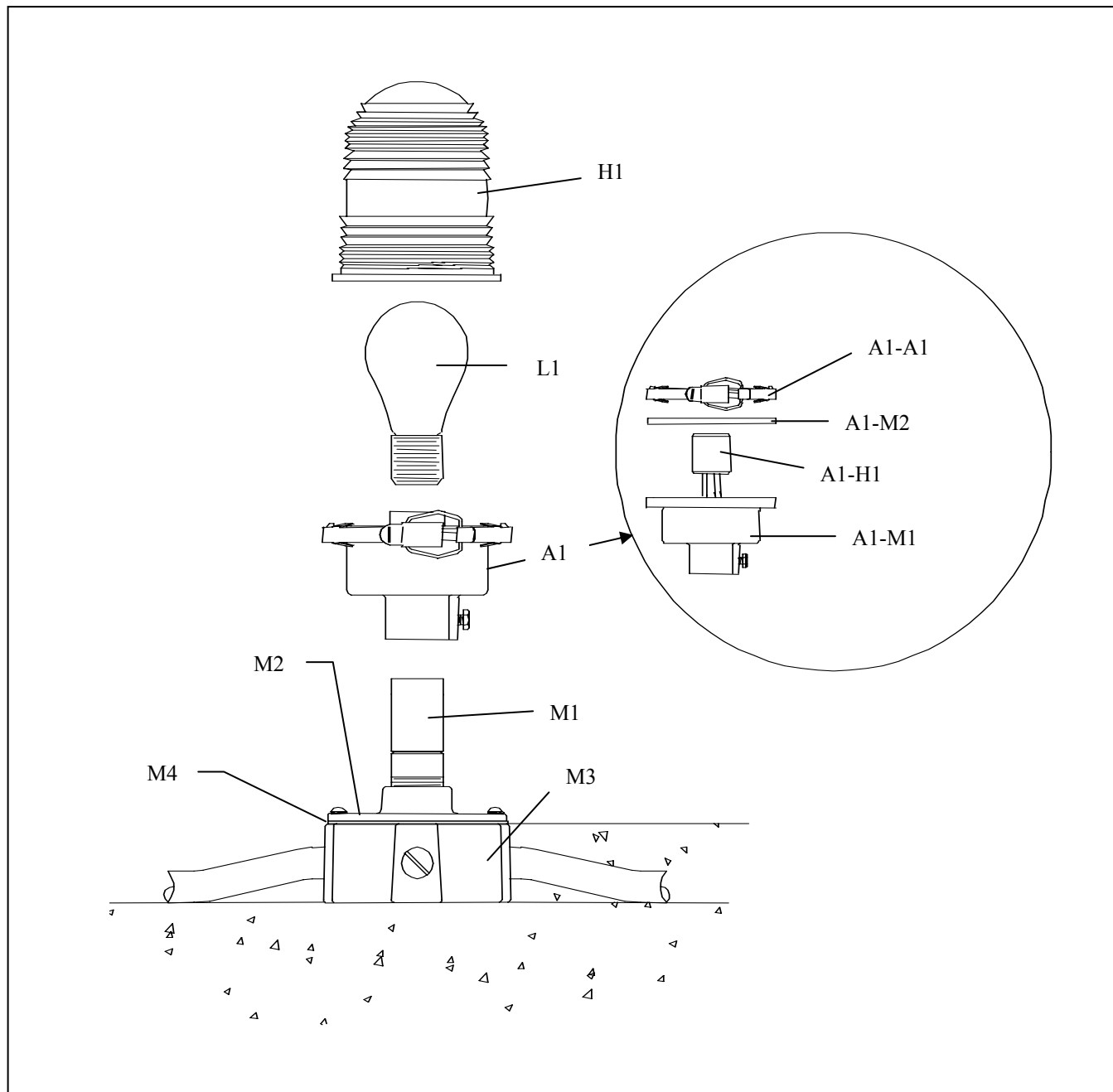


Figure 3. Heliport Perimeter Assembly

Recommended Spare Parts

See Figure 3.

Item	Description	Part Number	Note
H1	Lens, Yellow	63A0143	
	Lens, Green	63A0150	
	Lens, White	63A0141	
L1	Lamp, 54/60 W (60 A/CL), 120 Vac	48A0347	
A1-M2	Gasket	63B0015	