

LED Elevated Runway Guard Light

EUL-RG-LED

Operation Manual



Please read this manual carefully before construction, installation and operation of the product.

Please keep this manual properly for further reference.

This manual is subject to change without prior notice.

Airsafe Airport Equipment Co., Ltd.

Revision Description

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1.0 Foreword

ICAO Airport Service Manual Part 9 “Airport Maintenance Practices” and FAA AC150/5345-26 Maintenance of Airport Visual Aid Facilities are the highest criterions for site installation and maintenance of such lighting fixtures. This manual was compiled with considerable reference to these two criterions.

The content stated in this manual is absolutely important, so construction personnel must read it carefully before construction. After properly understanding the entire content of this manual, construction personnel should carry out the construction in strict accordance with the methods specified herein, to ensure that the product is safely and properly installed in place.

Routine airport maintenance personnel should carry out the routine maintenance in strict accordance with the methods specified by relevant provisions, to ensure that the lighting fixtures are in the best operation condition.

Related personnel must strictly follow safety criterion. Any personnel without specialized training is strictly forbidden to touch the lighting fixtures and devices. Live line work should be avoided under any circumstances. Construction or maintenance personnel should get acquainted with first-aid knowledge, in case of any unexpected events.

1.1 Illustrations and Meanings

- Following illustrations will appear in this manual where necessary to remind or warn construction or maintenance personnel.
- Please continue reading the subsequent content of this manual after properly understanding the meanings of these illustrations.



- To remind that the behavior may cause serious injury or death.
- ※ Detailed description will be given in the box.



- To remind that the behavior may cause injury to people or damage to product.
- ※ Detailed description will be given in the box.



- To notify that the behavior is prohibited.
- ※ Detailed description will be given in the box.

1.2 Safety Rules and Notices



- Using the light fixtures outside of airport is strictly prohibited.
- ※ Inadequate maintenance or casual touch will cause light faults.



- Be careful when handling the lighting fixtures.
- ※ Falling to the ground may cause damage of the optical cover or other internal components of the lighting fixtures and injury of personnel.



- When the light body is handled, holding the light head prism or directly carrying the lead plug with hands is strictly prohibited.
- ※ Otherwise it may cause broken cable, damage to the insulating layer or other failures.



- Don't touch the damaged optical cover or other glass directly with hands.
- ※ Glass fragments may scratch hands.



- Using power supply other than CCR and CCT is strictly prohibited.
- ※ Other power supply may cause damage to light source or other component of the lighting fixtures, or even malfunctions of power supply.



- A frangible pole is equipped at the lower part of the lamp pole. During installation, applying force onto it is strictly prohibited.
- ※ Otherwise it may cause the frangible pole to be broken.



- Non-professional electricians are strictly forbidden to maintain any electrical fault of the lighting fixtures.
- ※ It may damage any electrical component of the lighting fixtures or cause bigger fault.



- Making sure that CCR is on power-off state before the installation or maintenance of the lighting fixtures.
- ※ Current surge produced during the installation of the lighting fixtures may cause damage to light source.



- Touching the lighting fixtures with wet hand is strictly prohibited.
- ※ It may cause electric shock or other accident.

1.3 Quality Assurance and Responsibility

Any defect in design, material or workmanship, which may occur during proper and normal use over a period of one year from date of installation but less than 15 months from date of shipment, or within the warranty period of the tender, will be repaired or replaced by manufacturer free of charge. The warranty doesn't cover the failures resulting from lamp burnt out, improper maintenance, installation or operation, or damages due to snow ploughs. Manufacturer shall not be liable to any further claims or particularly claims for damages not affecting the goods themselves.

2.0 Introduction

The elevated runway guard light is used to warn the air pilot or driver of vehicle on the taxiway that he will enter an operating runway.

2.1 Technical Specifications

- Comply with the Attachment 14- Airport Requirements of ICAO Convention.
- Federal Aviation Administration (FAA) AC150/5345-46B;
- Comply with the provisions of the national standard of the People's Republic of China GB/T 7256-2005 General Requirements for Lighting Fixtures of Civil Airport.

2.2 Application Environment

- Altitude: below 4,000m;
- Outdoor: -40°C ~ +55°C;
- Relative air humidity: 95%, at (+24.5°C), the maximum humidity may be greater than 100%;
- In rain, snow, ice and water;
- Expose to corrosive salt atmosphere.
- Basic earthquake intensity VII.

2.3 Technical Features

- Long life, energy saving and free maintenance of LED bring about huge economic benefits for the customer;
- Light intensity and color comply with the requirements.
- Strict LED color management ensures consistent luminous color;
- Lighting fixtures flash 45-50 times/min.
- Several protection functions of the control circuit to avoid misoperation or damage to the circuit due to other impacts.
- Precision optical control and excellent optical performance.
- Lighting fixtures meet the dimmable requirements.
- Lighting fixtures have attractive appearance and excellent heat dispersion.
- Lighting fixture has a split structure and the light body has a totally closed structure to reduce the impurities and moisture to enter the lamp, enhancing the service life of the optical devices of the lighting fixtures and reducing the maintenance times.
- Light body is made of the aluminum alloy material and the fastener is made of the stainless steel material, with good resistance to corrosion.
- Lighting fixture body is made of the corrosion resistant aluminum alloy and its surface is treated with the special anodizing process. All fasteners are made of the stainless steel, which are applicable to various harsh environments;
- Precision machining of the frangible pole after thermal treatment makes its performance stable and reliable.
- High precision machining ensures the overall quality and precision of the lighting fixtures.

2.4 Technical Parameters

Current: 2.8A~6.6A, dimmable

Power: 24W

Lamp life: 1,000h

Average intensity (vertical: $-8^{\circ}\sim+8^{\circ}$, horizontal: $-8^{\circ}\sim+8^{\circ}$); Reach 4,000cd (3,000cd is required)

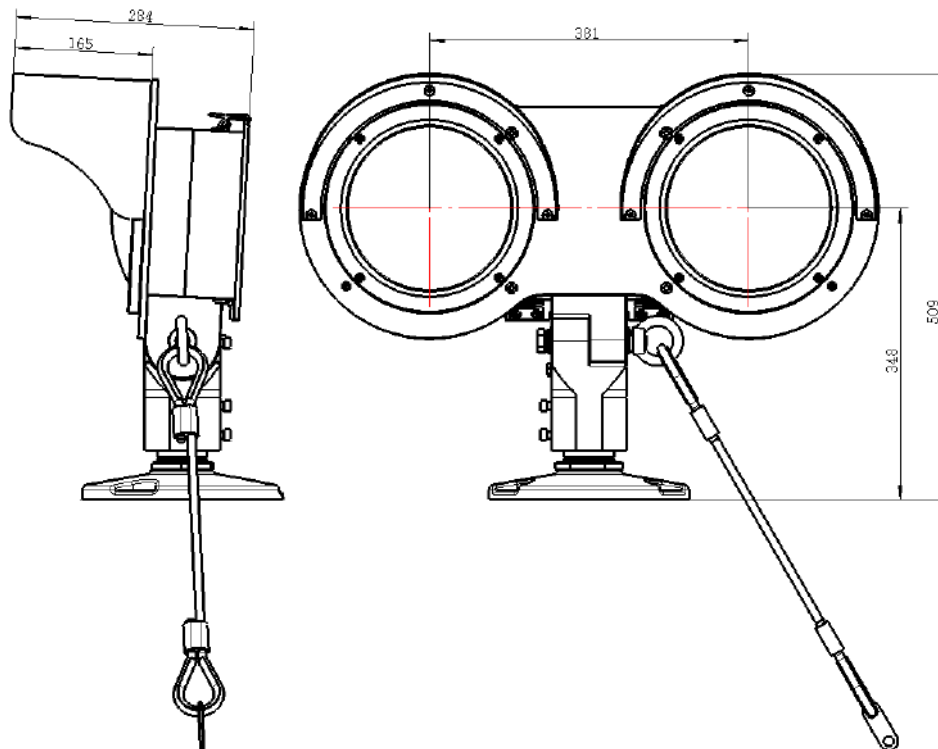
Weight of lighting fixture: 13.5kg

2.5 Ordering Type

EUL-RG-LED

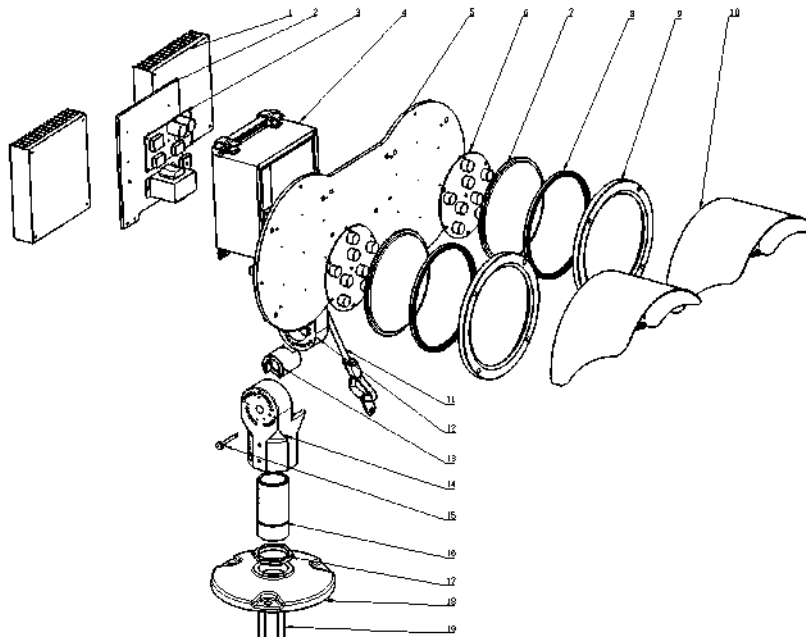
2.6 Structure

2.6.1 Boundary Dimension



2.6.2 Main Components:

Main components of the lighting fixture are shown in Figure below:

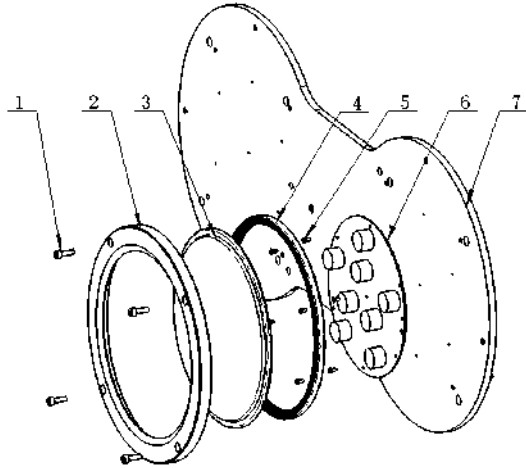


1. Heat sink
2. Electric cover plate
3. Circuit board
4. Electric box
5. Front panel
6. LED baseplate
7. Front lens
8. Front lens gasket
9. Front lens cover plate
10. Lens hood
11. Connecting piece
12. Tether
13. Joint pin
14. Fixed part
15. M5 adjusting pin
16. Frangible pole
17. G2 nut
18. Flange
19. A6 lead

2.6.3 Structure Diagram of Lamp Assy

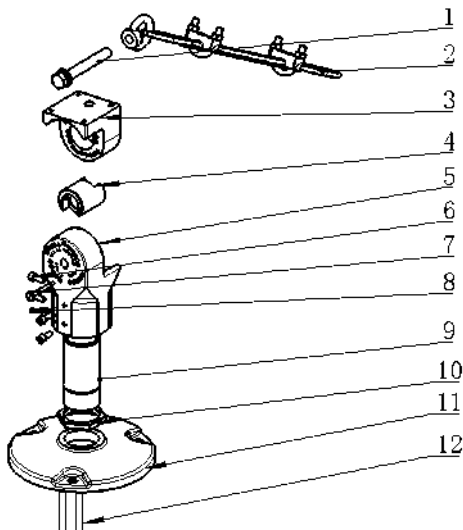
The lamp assy is the core part of the optical structure of the lighting fixture, with its structure shown in Figure below.

2.6.4 Structure Diagram of Lamp Components



1. Set screw of pressing bracket
2. Pressing bracket of front lens
3. Front lens
4. Lens gasket
5. Set screw of baseplate
6. LED baseplate
7. Front panel


2.6.5 Structure Diagram of Holder Assy



1. Coupling screw
2. Tether
3. Connecting piece
4. Joint pin
5. Fixed part
6. Set screw in the vertical direction
7. M5 adjusting pin
8. Frangible pole
9. G2 nut
10. Flange
11. Lead
12. Base plate

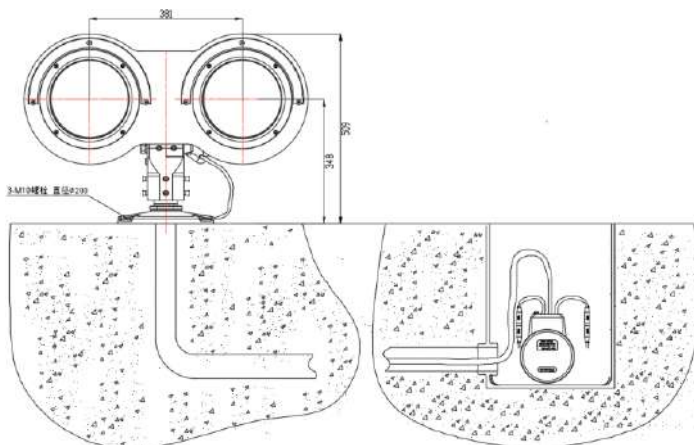
3.0 Installation

Correct installation of lighting fixtures is very important for ensuring their normal work and giving play to their functions. Make sure that they are installed by the professional.

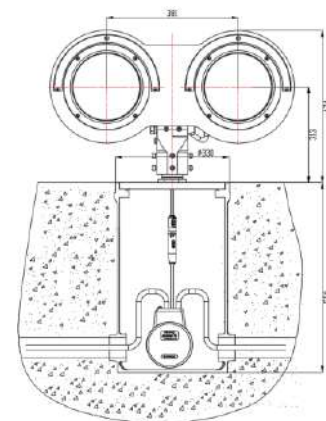


- Installing the lighting fixtures by the laypeople is strictly prohibited.
- ※ Otherwise it may impact their normal function or cause greater failure.


3.1 Installation Methods



Installation method I: Floor installation



Installation method II:
Coordinated with base L-867



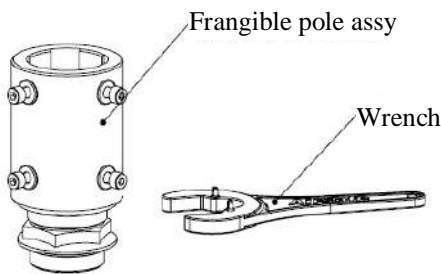
- It is suggested to cushion the isolation transformer for at least 100mm.
- ※ Prevent accidental inflow into the deep bucket to make the isolation transformer to be soaked in water.

Method 1: Direct floor installation; it is fixed on the cement foundation through the flange.

Method 2: Installation of L-867 deep bucket flange; lighting fixture may be installed on the deep bucket base through a flange applicable to L-867 deep bucket base; G2 frangible pole is directly installed onto the flange.

3.2 Installation Steps

- Unpacking to check whether the article quantity is correct and the lighting fixtures are damaged. Please handle the lighting fixtures with care to avoid damaging the assy.
- Clean the site especially the place contacting the lighting fixture flange.
- Connect the lighting fixture flange with the isolation transformer box or floor.
- Load the frangible pole into the flange. Clamp the hexagonal plane at the lower part for screwing and fixation.



(Our standard tool wrench may be ordered, with the ordering No. of 54101-01.)



- When the frangible pole is screwed, a special tool must be used.
- ※ Otherwise it may cause damage to the lighting fixtures or personal injury.



- Wrench must be placed on the hexagonal plane under the V-shaped groove of the frangible point for applying force.
- ※ The frangible pole may be damaged or broken.

- Connect A6 plug of the lighting fixture with the secondary connector A7 of the isolation transformer.



- Making sure to check whether A6 and A7 have good contact and good waterproof performance.
- ※ Otherwise it may cause failure of the lighting fixtures.

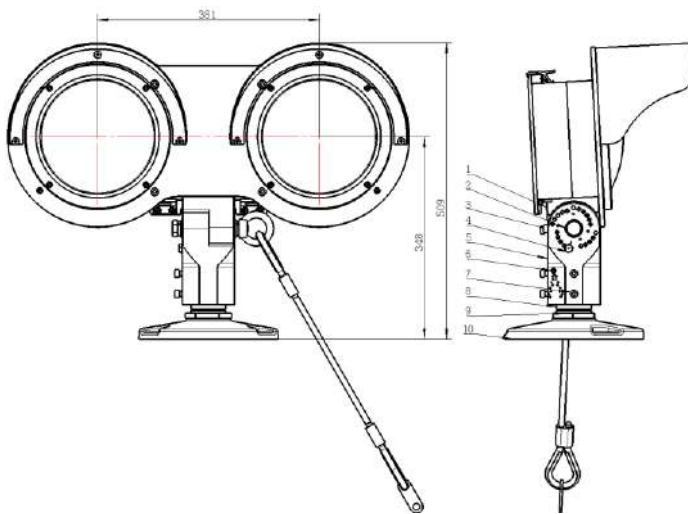
- Load the lighting fixture assy into the frangible pole and lock the set screw.



- During connection, the lead shall not be pressed by the lighting fixture flange.
- ※ Otherwise it may cause inflow in the lighting fixture or other failures of the lighting fixtures.

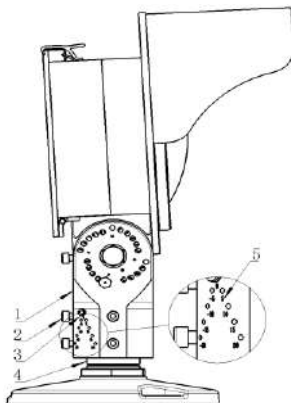
3.3 Horizontal and Vertical Beam Angle Adjustment of Lighting Fixtures

3.3.1 Operating Units of Lighting Fixture Adjustment



1. Connecting piece
2. Coupling screw
3. Set screw in the vertical direction
4. M5 adjusting pin
5. Fixed part
6. Adjusting screw in the horizontal direction
7. Set screw in the horizontal direction
8. Frangible pole
9. G2 nut
10. Flange

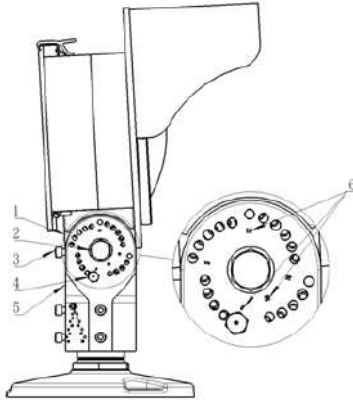
3.3.2 Adjustment of Horizontal Beam Angle:



1. Fixed part
2. Set screw in the horizontal direction
3. Frangible pole Adjusting screw in the horizontal direction
4. Frangible pole
5. Horizontal angle adjustment scale

First unscrew and pull out 3. Adjusting screw in the horizontal direction, unscrew four 2. Set crews in the horizontal direction, find out the scale hole to which to rotate on 1. Fixed part, based on which horizontally rotate the light body, find out the only hold on the frangible pole corresponding to the scale hole on the fixed part, insert and screw 3. Adjusting screw in the horizontal direction and finally screw four 2. Set screws in the horizontal direction to complete the adjustment of horizontal beam angle.

3.3.3 Adjustment of Vertical Beam Angle:



1. Connecting piece
2. Coupling screw
3. Set screw in the vertical direction
4. M5 adjusting pin
5. Fixed part
6. Vertical angle adjustment scale

Unscrew and pull out 4. Adjusting screw in the vertical direction, unscrew 2. Coupling screw on 1. Connecting piece (please hold the upper part of the light body with hand to prevent it from falling due to rotation, so as to cause damage or personal injury). Based on the scale hole on 5. Fixed part, find out the scale to which the adjustment is made, find out the only corresponding hole on 1. Connecting part, insert 4. Adjusting screw in the vertical direction, ensure that the light body does not rotate in the vertical direction and finally screw 2. Coupling screw to complete the adjustment of the vertical beam angle.



- Horizontal adjustment of the lighting fixture is an important part, which shall not be omitted.
- ※ Lighting fixtures without horizontal adjustment may impact the overall light distribution effect of the taxiway.



- Please use the horizontal calibrator designated by the manufacturer.
- ※ Otherwise it may impact the horizontal adjustment effect of the lighting fixtures.

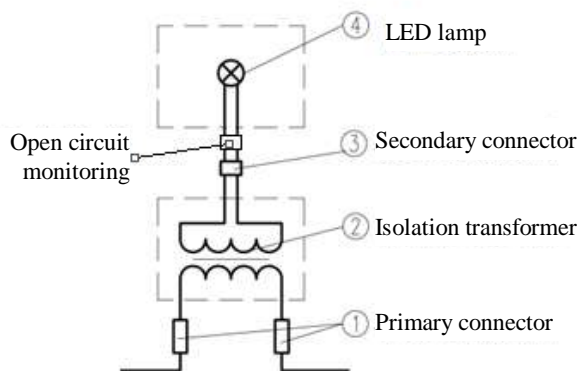
4.0 Lamp and Control

This lighting fixture is directly connected with CCR through isolation transformer.

Lamp: 24W, 16 LED particles, divided into two LED baseplates

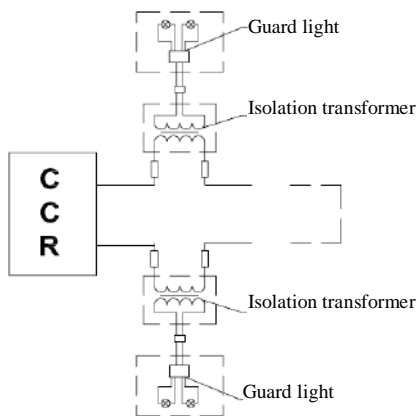
Isolation transformer: Power: 50W Current: 6.6A

4.1 Light Wiring Schematic Diagram



4.2 Light Intensity Adjustment and Control

Through CCR 1-5 levels (2.8A-6.6A) of output conversion, the light of this lighting fixture may be adjusted. The lighting fixture intensity changes according to the curve specified by FAA.

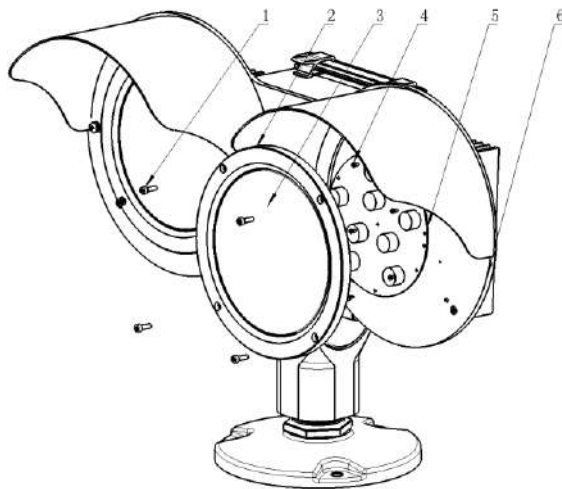


- Using power supply other than CCR and CCT is strictly prohibited.
- ※ Other power supply may cause damage to light source or other component of the lighting fixtures, or even malfunctions of power supply.

5.0 Maintenance of Lighting Fixtures

Maintenance of lighting fixtures shall comply with Part 9 ICAO Airport Service Manual Part 9 “Airport Maintenance Practices” and FAA AC150/5345-26 Maintenance of Airport Visual Aid Facilities.

5.1 Replace Lamp



1. Set screw of pressing bracket
2. Pressing bracket of front lens
3. Front lens
4. Set screw of baseplate
5. LED baseplate
6. Front panel

First unscrew four set screws of the lens pressing bracket whose lamp shall be replaced, take down them with the lens pressing bracket, separate the connector between the LED baseplate and power line and take down 7 baseplate set screws. Please hold the LED baseplate to prevent it from falling, take out the LED baseplate to be replaced, apply the heat conducting silicone grease on its back, fix it onto the front panel with 7 baseplate set screws, plug the connector between the LED baseplate and power line and fix the front lens pressing bracket onto the front panel with 4 set screws of the pressing bracket (please note that the term “TOP” on the front lens shall be upward) to complete the replacement of the lamp.

1.



- Purchasing the electrical control circuit of other brands by user is strictly prohibited without authorization.
- ※ Otherwise it may impact the normal operation of the lighting fixtures.



- When a lamp is installed, the cloth gloves shall be worn.
- ※ Oil on the hand contaminating the lamp glass may cause crack of the lamp.

5.2 Daily Maintenance

Daily maintenance is as follows:

- All set screws and tether connecting screws of the lighting fixtures.
- Check whether the flange screw is firm and the frangible pole is normal.
- Wipe the outer surface of the front glass with a clean and soft towel to keep the optical lens bright and clean.
- For the major lighting fixture failure, it is suggested to be maintained at the light station.



- Taking down the lighting fixture prism on site is strictly prohibited without authorization.
- ※ Otherwise it may cause failure of the lighting fixture.



- Dismounting this lighting fixture by the laypeople is strictly prohibited.
- ※ Otherwise it may cause failure of the lighting fixture.



- Disassembling the connecting pole and frangible pole is prohibited unless the frangible pole is replaced.
- ※ Otherwise it may damage the frangible pole.



- Live maintenance of lighting fixtures is strictly prohibited and their maintenance is prohibited when there is thunder or rain.
- ※ Otherwise it may cause electric shock.

5.3 List of Components and Ordering of Spare Articles and Accessories

The table in this chapter lists the components, spare articles and accessories of this product and relevant ordering information. Spare articles and accessories of this product needs to be ordered additionally, and the manufacturer accepts the order in assembly mode and separate order of components. When ordering, please contact the manufacturer or any distributor according to order number listed in the table.

The manufacturer suggests that some important components should be purchased from original factory to ensure various indicators of the lighting fixtures.

List of components and spare articles:

Structure No.	Order No.	Component Name	Description
1	48509	Heat sink	
2	27557	Electric cover plate	
3	945545	Circuit board	
4	241U1	Electric box	
5	46473	Front panel	
6	979244-Y-01	LED baseplate	
7	34104	Front lens	
8	41178	Front lens gasket	
9	46476	Cover plate of front lens	
10	46685	Lens hood	
11	46495	Connecting piece	
12	61114	Tether	
13	46496	Joint pin	
14	241S1	Fixed part	
15	46498	M5 adjusting pin	
16	46362	Frangible pole	
17	46361	G2 nut	
18	276A1	Flange	
19	HT70607	A6 lead	

List of supporting accessories of this product is as follows (needing additional order):

Serial No.	Order No.	Description
1	927151	12 inches shallow base assy (bottom entry)
2	927156	12 inches shallow base assy (side entry)
3	82732X	Deep base (H550) assy For the opening direction, please contact us.
4	70703	Secondary receptacle A7
5	41115	12 inches base O-gasket
6	70703	Secondary cable receptacle (A7)

5.4 Failure Countermeasures

When the control system of the lighting fixture cannot work normally, please replace the circuit board.

After the front glass is damaged, please purchase it from us.

After the frangible pole is broken, please purchase it from us.

The cable shall be timely replaced when it is seriously aging.



- Please purchase the front glass from the former manufacturer when it is damaged.
- ※ Design of the front glass is related to the light distribution curve of the lighting fixture.



- Please purchase the reflection cup in the lighting fixture when it is damaged.
- ※ Design of the reflection cup is related to the light distribution curve of the lighting fixture.

6.0 Packaging, Transportation and Storage

6.1 Packaging and Weight

Packaging: 1 pcs / box

Volume: 600×400×500

Weight: 13Kg

6.2 Transportation Mode

Well packed products may be transported in three modes- railway, highway and air according to factors such as transportation distance, quantity of lights and delivery cycle.

6.3 Storage

This product shall be stored in a place which is dry, well ventilated and far away from heat source and has no caustic gas. Custody should be checked on a regular basis.

The final right to interpret this manual is reserved by Airsafe Airport Equipment Co., Ltd.

Thanks for your purchasing and using AIRSAFE product!

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