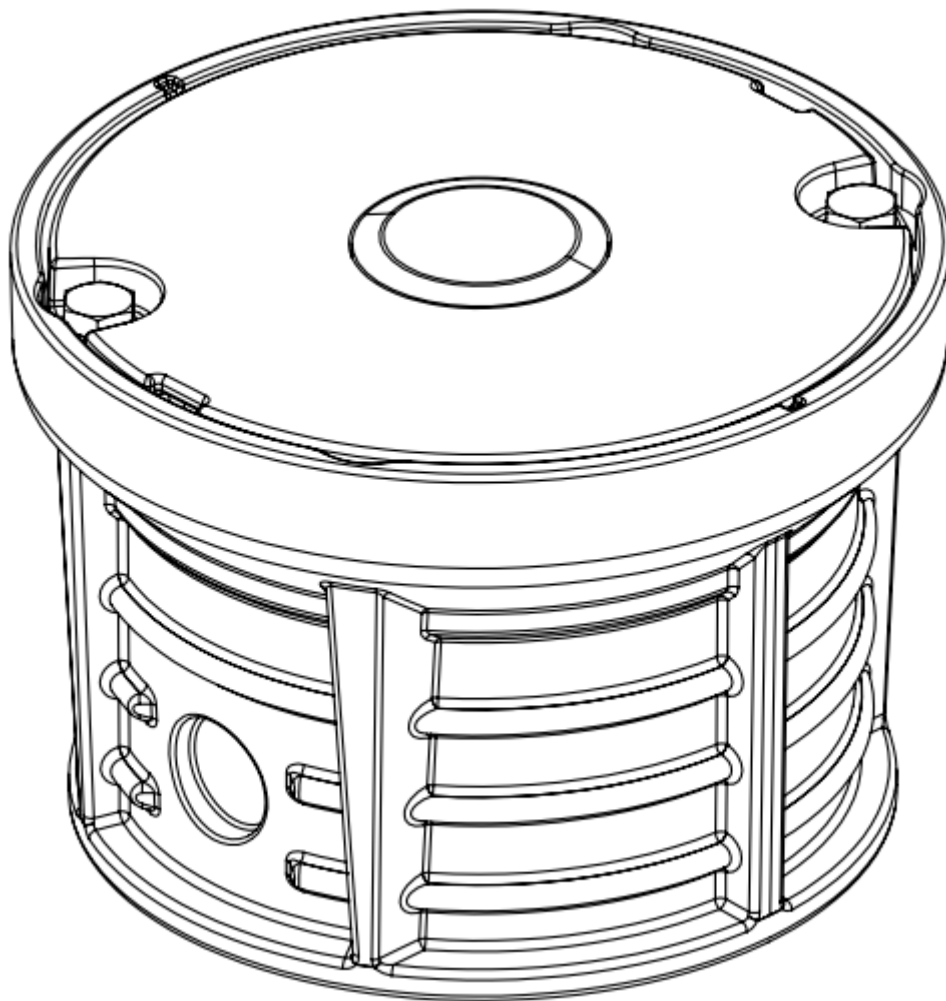


LED AIRFIELD LIGHTING



CONTENT

Disclaimer/Standard Warranty	5
1. Safety	6
2. Introduction	7
2.1. Models & Variants.....	8
2.2. Product Features.....	9
2.3. Electrical Properties	10
2.4. Mechanical Properties.....	11
2.5. Main Components.....	12
2.6. Nameplate	14
3. Installation.....	14
3.1. Tools Requirement.....	15
3.2. Unpacking Unit	15
3.3. Installing on 8-inch Light Base.....	16
3.4. Installing on the 12-inch Light Base.....	18
3.5. Removal of the Light Fixture.....	19
4. Maintenance	20
4.1. Watertightness Test Procedure	20
4.2. Basic Maintenance Program.....	21
4.3. Tools Preparation.....	21
4.4. Maintenance Procedures.....	22

4.5.	Light Fixture Removal and Installation	24
4.5.1.	Removal and Installation of the Light Bottom Cover.....	24
4.5.2.	Removal and Installation of the Driver Module.....	26
4.5.3.	Removal and Installation of the Optic Module.....	27
4.5.4.	Removal and Installation of the Power Supply Cable	28
4.6.	Fail Open Function	29
4.7.	Trouble Shooting	32
5.	Support	33
5.1.	Customer Service.....	33
5.2.	Recycling	33
5.3.	About HDK	33

Hangdakang Mechanical & Electrical Technology (Wuhan) Co., Ltd.

Address: Building No. 10, Optic and mechanical park, High tech 5# Road, East lake tech district, Wuhan, Hubei, China

Tel: +86-27-63498449

Email: airport@hdk-aero.com.

Website: <http://www.hdk.-aero.com>

List of Tables

Table 1	List of the Omnidirectional Inset Light	8
Table 2	Requirements for Specification of Isolation Transformer	10
Table 3	Basic Maintenance Program of Omnidirectional Inset Light	21
Table 4	Specification of Screw & Washers	22
Table 5	Maintenance Items for Light Fixture (Deployed)	22
Table 6	Maintenance Items for Light Fixture (Non-deployed)	23
Table 7	Trouble Shooting	32

List of Figures

Figure 1	Omnidirectional Inset Light	8
Figure 2	Major Dimensions of the Light Fixture	11
Figure 3	Exploded View of the Light Structure	14
Figure 4	Install Omnidirectional Inset Light on 8-inch Light Base	16
Figure 5	Diagram of Omnidirectional Inset Light on 8-inch Light Base	18
Figure 6	Install Omnidirectional Inset Light on 12-inch Light Base with Adapter Ring	19
Figure 7	Watertightness Test	20
Figure 8	Remove the Light Bottom Cover	25
Figure 9	Remove the Driver Module	26
Figure 10	Remove the Optic Module	27
Figure 11	Remove the Power Supply Cable	28
Figure 12	Driver with Fail Open module	31

Disclaimer/Standard Warranty

All products manufactured by Hangdakang mechanical & electrical technology (Wuhan) co. LTD, hereinafter referred to as HDK, meet the requirements of CAAC, ICAO and IEC. All warranties provided by HDK exclude all cases of gross negligence and handling of all products.

In case of avoidable defects or failure caused by mechanical, electrical or physical defects, the company will provide the necessary spare parts for repair.

The replacement and delivery of spare parts shall meet the requirements of proper storage, installation, and maintenance of the products, and shall submit the spare parts requirements to the Company in writing.

Hangdakang mechanical & electrical technology (Wuhan) co. LTD reserves the right to inspect the avoidable defective or damaged products in its own company facilities.

The obligations of Hangdakang Mechanical & Electrical technology (Wuhan) Co. LTD are limited to the labor cost required for disassembly and assembly of the product and the delivery of the corresponding products.

Hangdakang Mechanical & Electrical technology (Wuhan) co. LTD assumes no liability for injury or damage resulting from any incorrect use of the equipment. All products and their equipment are explicitly designed for their intended use only. Any other use outside the scope of the instructions is considered incorrect and excluded from the warranty.

Included are:

- Use HDK products outside of their intended operating use.
- Any changes or modifications to products that are not explicitly approved.
- Use of unauthorized, incompatible or unapproved tools by HDK or local regulations.

Local regulations on labour safety must always be followed in addition to those of HDK.

HDK reserves the right of interpretation within the scope permitted by law.

1. Safety

Airfield Ground Lighting is installed in high voltage series circuits, where the primary voltage is usually from several hundred to thousand volts and can be fatal if operated improperly. International or national standards referring to the electrical safety and safety of electrical operations should be strictly implemented during the operation and at any stage where powered lighting products are handled or maintained. Correct safety code must be followed during any operation in lighting circuit On and Off state conditions.

Pay attention to all safety instructions in this user manual. Negligence in following safety practices and instructions can result in serious injury, accident, or death. Safety instructions are categorized following the IEC standard and accompanied by an icon accordingly. Safety instructions and icons are listed and explained below:

**DANGER:**

Risk of electrical shock or flashover. Before any operations disconnect the equipment from line voltage, never connect or disconnect live circuits. Failure to observe "Danger" may result in severe injury, death, or equipment damage.

**WARNING:**

Failure to observe "Warning" may result in personal injury, death or equipment damage.

**CAUTION:**

Ignoring or violating "Caution" may cause damage to equipment.

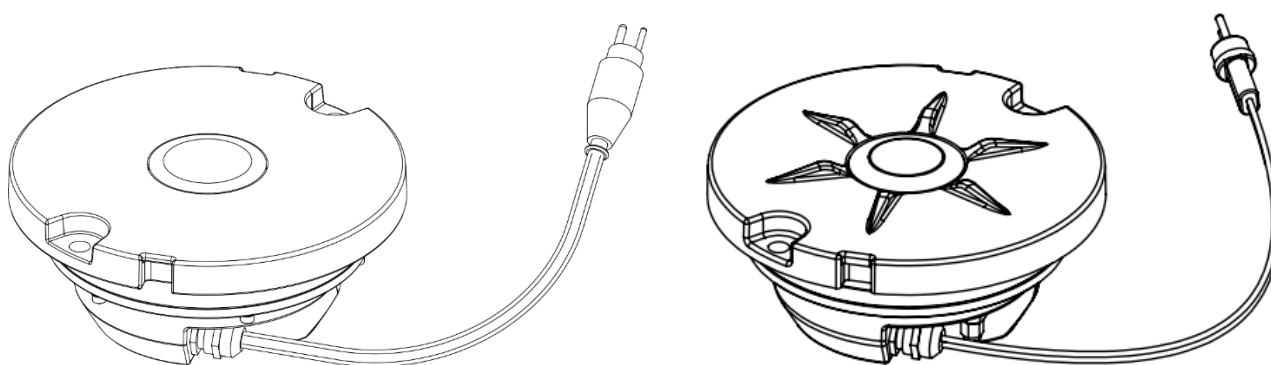
**Note:**

Explanations and supplements to some of the text description

2. Introduction

The 8 inch omnidirectional inset light produced by HDK can be applied to airfields with various conditions. The product has met the requirements of ICAO, CAAC, IEC and FAA standard and is famous for its ultra-durable structure, extreme elegant design as well as long maintenance-free period. The light source itself is made from energy-saving and long-life LED.

Figure 1 - Omnidirectional Inset Light



2.1. Models & Variants

This manual presents essential information for handling, installation and maintenance operations of the omnidirectional inset light series. The series can be divided into different models according to the number of luminous units and power supply type of the system. All models are shown in Table 1:

Table 1 List of the Omnidirectional Inset Light

Application	Model	Glowing Direction/ Color	CAAC Type	ICAO Type	FAA Type
Taxiway Edge Light	ILC-TWE(L)	Omnidirection / Blue	L-2K	5.3.18	L-852T
	ILC-P-TWE(L)				
Parking Apron Light	ILC-PAL-R(L)	Omnidirection / Red			
Landing Direction Indicator	ILC-TSL(L)	Omnidirection / White			
Stand Manoeuvring	ILC-SMG(L)	Omnidirection / Yellow		5.3.27	
Guidance Light	ILC-P-SMG(L)				

NOTE: This manual also applies to the installation and maintenance of some



ILC-TXE(L) taxiway side lights

2.2. Product Features

The main components of the light fixture are aluminum alloy upper cover, bottom cover, lens, LED light source and drive circuit components, sealing rings and so on. The top cover uses aluminum alloy forging and casting techniques, while the bottom cover uses aluminum alloy high-pressure precision casting and molding techniques. All fasteners are made of 316 stainless steels and the sealing ring is made of high temperature and aging resistant silicone rubber. The overall design logic of the light fixture is for stable installation and heat dissipation.

The light source of the product is OSRAM LED equipped with optical lens. The optical components of the product adopt a fully universal design.

This series of LED light fixture can be used on the existing AC series circuit. A dimming control of 5 light intensity levels can also be performed with the equipped isolation transformer in corresponding power.

The light fixture is equipped with secondary cables and L-823 electrical connection plugs that comply with FAA standards. Also, the light fixture can be mounted on an 8-inch base or on a 12-inch isolated transformer box using a ring adapter.

The performance parameters of the light fixture meet the following standards:

- CAAC AC-137-CA-2015-01~04 & MH 5001-2021
- ICAO Annex 14, Volume 1, 9th Edition & Aerodrome Design Manual
- EASA CS-ADR-DSN Issue 6
- FAA AC150/5345-46E & Engineering Brief No. 67D
- IEC TS 61827-2004
- AENA DIN-DSEYN-PPT
- TCCA TP312 5th Edition
- UK CAA CAP 168 Edition 12

2.3. Electrical Properties

Input Cable

- FAA L823 Class A, Type II, Style 6 ; Plug*1

Input Current

- 2.8A-6.6A_{eff} AC

Sinusoidal CCR

- $I_{\text{peak max}} = 9.88\text{A}$

Thyristor CCR

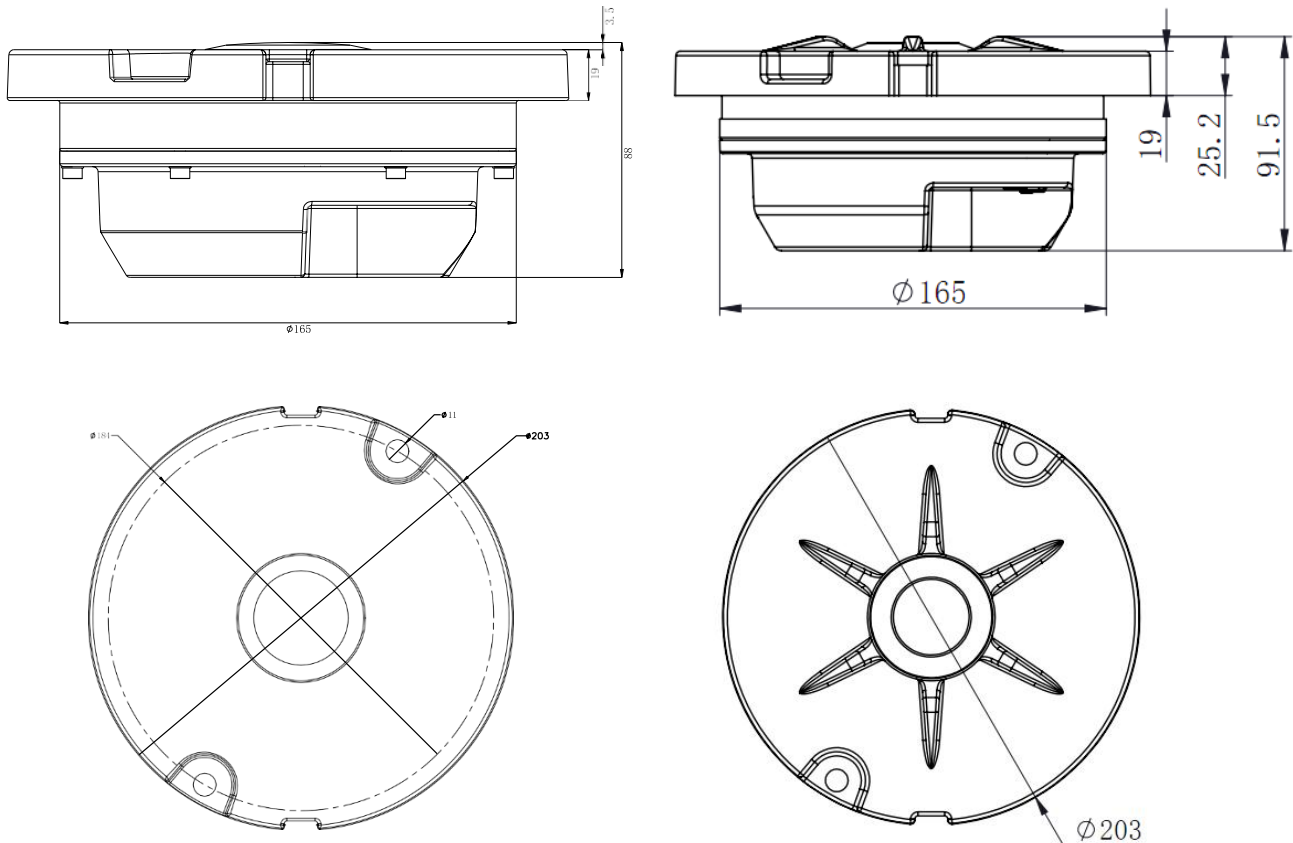
- $I_{\text{peak max}} = 12.60\text{A}$, $j_{\text{min}} = 45^\circ$

Table 2 - Requirements for Specification of Isolation Transformer

Application	Model	Suggested Transformer Specs
Taxiway Edge	ILC-TWE(L)	$\geq 25\text{W}$
Taxiway Edge	ILC-P-TWE(L)	$\geq 25\text{W}$
Parking Apron Light	ILC-PAL-R(L)	$\geq 25\text{W}$
Landing Direction Indicator	ILC-TSL(L)	$\geq 25\text{W}$
Stand Manoeuvring Guidance	ILC-SMG(L)	$\geq 45\text{W}$
Stand Manoeuvring Guidance	ILC-P-SMG(L)	$\geq 45\text{W}$

2.4. Mechanical Properties

Figure 2 – Major Dimensions of the Light Fixture



Diameter of upper cover:

- 203mm

Thickness of flange:

- 19mm

Diameter of bottom cover:

- 165mm

Height of light fixture:

- 88/91.5mm

Degree of Protection

- IP68 (IEC 60598-1)

Operating Temperature

- -55°C ~ +55°C

Storage Temperature

- -55°C ~ +85°C

Weight

- Net Weight: 2.5 kg

Package Dimensions

- 250mmx235mmx110mm, Weight: 2.9kg

2.5. Main Components

The HDK omnidirectional inset LED light fixture contains following main components:

Light Fixture Top Cover (Hereinafter referred to as “Top Cover”)

- Aluminum alloy top cover with surface anodizing treatment
- Ultra-durable silicate glass prism
- High performance sealing silicone
- High and low temperature resistant silicone gasket

LED Light Source

- LED light source with the color of blue, red, yellow.
- LED Aluminum-based circuit board
- Omnidirectional light lens

Driver Module

- Driver circuit board
- Potting compound
- Heat sink

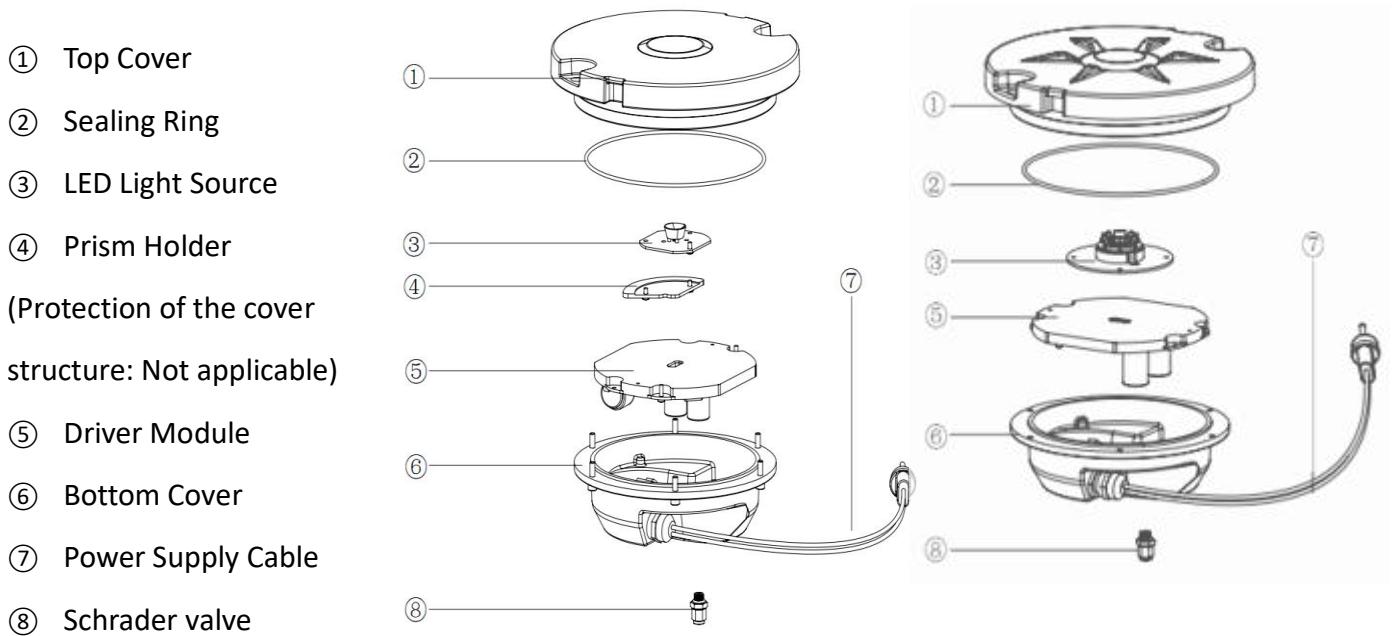
Light Fixture Bottom Cover(Hereinafter referred to as “Bottom Cover”)

- Aluminum alloy bottom cover with spray plastic anti-corrosion treatment
- Power cord - Plug: FAA L-823 Class A, Type II, Style 6. Secondary cable: FAA 150/5345-7F Standard
- Power cord sealing head

Consumable Parts

- Light fixture body sealing ring - Rubber O-ring
- Fasteners - Anti-corrosion 316 Stainless Steel

Figure 3 – Exploded View of the Light Structure



2.6. Nameplate

滑行道边灯

类型: L-2K
 型号: ILC-TWE(L)
 规格: AC 2.8A-6.6A
 颜色: 蓝
 功率: 5.5W
 S/N: 3G20015

航达康机电技术(武汉)有限公司



Taxiway Edge Light

Model: ILC-TWE(L)
 Type: 5.3.18(ICAO) L-852T(FAA)
 CS ADR-DSN.M.720 c3(EASA)
 Input: AC 2.8A-6.6A
 Color: Blue
 Power: 5.5W
 Function: FOA
 S/N: 2JH1803
 www.hdk-aero.com



3. Installation

WARNING: Before starting the installation, please make sure that the primary circuit of the light fixture is powered off, that is, turn off the constant current regulators power of the circuit.



Note: For the installation position requirements of the light fixture, refer to the Aerodrome Design Manual and the ICAO Annex 14, Volume 1.



3.1. Tools Requirement

The tools and materials required for installation are listed below:

- HDK light fixture handle (or 2 large size slotted screwdriver)
- Torque wrench (Specification: 16mm, 17mm)
- Socket wrench (Specification: 16mm, 17mm)
- Clean cloth

Note: The HDK light fixture handle is a special designed tool for uninstalling the HDK light fixture and can be ordered from HDK



3.2. Unpacking Unit

Please check carefully whether the package is in good condition. After opening the package, please promptly claim compensation from the carrier if the product and accessories in the package are damaged.

When receiving the light fixture cargo, please confirm whether the product information on the cargo list is consistent with the actual construction design. At the same time, please check whether the quantity, type, specification, color and other characteristics of the light fixtures on the cargo list are consistent with those of the actual cargo. If you find any problem, please contact the supplier as soon as possible.

CAUTION: The packaging of this product can be used for various purposes such as future maintenance, uninstallation and transportation of the light fixture. Please keep the product packaging properly after receiving the cargo.

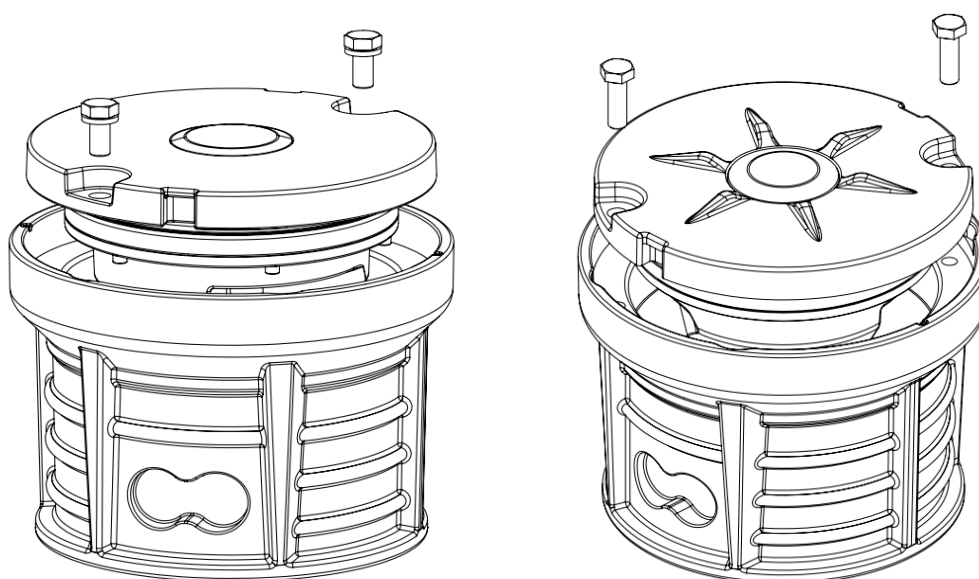


3.3. Installing on 8-inch Light Base

Please check the following items before proceeding:

- Please confirm that the angle of the light fixture base have met the standard of FAA AC 150/5345-42 L-868, otherwise the installation may not be proceeded.
- Please confirm that the angle of the pre-embedded light fixture base is consistent with the design requirements and construction regulations.
- Please make sure that the length of the reserved secondary cable is 30-50cm for installation and maintenance.

Figure 4 – Install Omnidirectional Inset Light on 8-inch Light Base



- Remove the dirt and moisture inside the base and make sure that the base of the light fixture is clean and dry during the subsequent operation.
- Install the sealing ring of the light fixture.



Note: The sealing ring of the light fixture is the sealing ring used when installing the light fixture on the base, while the sealing ring of the light fixture body is the sealing ring used for the assembly of the light fixture itself. It should be distinguished. The specification of the sealing ring of the light fixture should be determined by the type of base used in construction, HDK

provides different types of sealing ring of the light fixture such as O-Type and T-Type.

CAUTION: When disassembling the light fixture, the old sealing ring of the light fixture must be replaced every time.



- Assemble the secondary power supply cable of the light fixture according to the L-823 plug and socket connection method. (Plug: FAA L-823, Style 6; Socket: FAA L-823, Style 12). After connecting the plug and socket, place them along the side wall of the base.
- Connecting the ground wire between light base and bottom cover of the light is necessary.
- Use the HDK special handle (or 2 large size slotted screwdriver) to lift the light fixture into the base.
- Align the pins and pin holes, and slowly move the light fixture into the base according to its direction of glowing.
- Tighten the two M10 fixing bolts and use a torque wrench to gradually tighten the bolts to a torque value, torque value refer to section 4.4, Table 5.

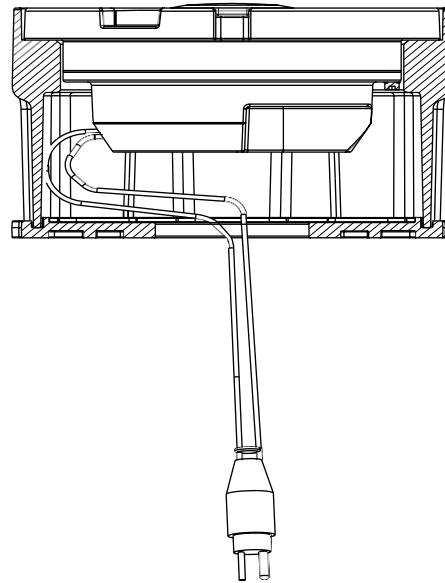
CAUTION: (1) Be careful not to cut or press the cable during the operation.



(2) Do not use high-speed power tools to tighten the bolts, as this may cause slippage.

(3) Please make sure the sealing ring stay at its correct position during the entire inserting process.

Figure 5 – Diagram of Omnidirectional Inset Light on 8-inch Light Base



3.4. Installing on the 12-inch Light Base

When the light fixture needs to be installed on a base other than 8-inch base, a ring adapter is required for the installation.

Note: The ring adapter should meet the requirement of FAA AC 150/5345-42. HDK provides customized ring adapter and can be ordered if it is necessary.

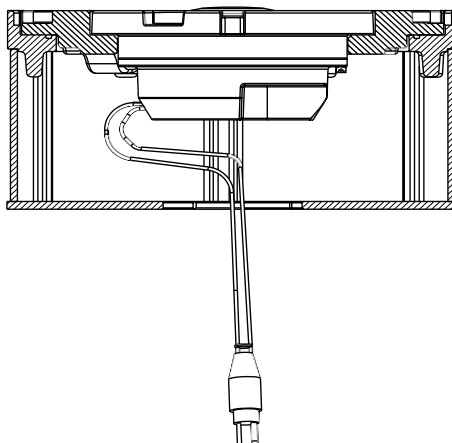


- Keep the inside of the light fixture base clean and dry.
- Assemble the adapter ring and place the sealing ring in its reserved socket above the adapter ring. The direction mark on the ring adapter should be aligned with the direction mark on the 12- inch light fixture base. Install six M10 bolts and use a torque wrench to tighten the bolts in a diagonal sequence to a torque value, torque value refer to section 4.4, Table 5.
- Assemble the secondary power supply cable of the light fixture according to the L-823 plug and socket connection method to assemble the socket (assembled connector). Coil the cables after plugging along the side wall of the base.
- Connecting the ground wire between light base and bottom cover of the light is

necessary.

- Use the HDK special handle to lift the light fixture into the base. Be careful to avoid cutting the cable during the operation.
- Align the pins and pin holes, and slowly move the light fixture into the base according to its direction of glowing. Please make sure the sealing ring stay at its correct position during the entire inserting process.
- Tighten the two M10 fixing bolts and use a torque wrench to gradually tighten the bolts to a torque value, torque value refer to section 4.4, Table 5.
- Do not use high-speed power tools to tighten the bolts, as this may cause slippage.

Figure 6 – Install Omnidirectional Inset Light on 12-inch Light Base with Adapter Ring



3.5. Removal of the Light Fixture

- Loosen the two M10 inside hexagonal bolts at the bottom. Take out the light fixture with special tools.
- Separate the secondary cable connector which connects to the isolation transformer.
- Take out the light fixture.

WARNING: After the Airport put into use, the maintenance department should equip enough spare parts according to relevant management requirement. And after the light fixture disassembled, the spare parts should be installed on the original base according to the steps in 3.3 of this article.



After disassembling the light fixture, all tools and parts on the site should be carefully checked and taken away to avoid "FOD".

CAUTION: During the on-site operation, dust or any other kind of pollution on the prism of the light fixture should be avoided.



4. Maintenance

Note: For method of replacing the spare parts, please refer to 4.5. For trouble shooting, please refer to section 4.7;

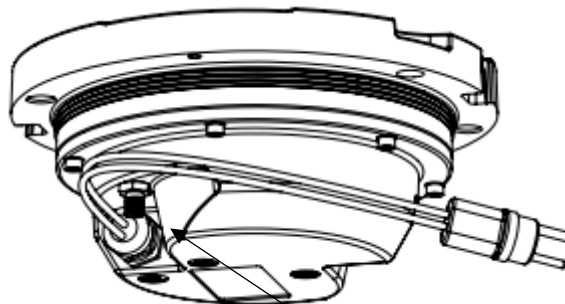


After any bottom cover opening operation, the inset light watertightness must be checked again. The method of checking can refer to IEC 61827 section 6.4.1.6.

4.1. Watertightness Test Procedure

- Prior to performing this test, the wire leads shall be subjected to a tension of 14 kg, for 5 min to test the integrity of the seal where the leads enter the inset light fixture.
- The entire inset light fixture shall then be submerged in water at least 76 mm below the surface, subjected to an internal air pressure of 140 kPa and maintained for a period of 10 min.
- Any leakage shall be reason for rejection.
- Press the thimble in the middle of the schrader valve core with allen wrench for 10 seconds to deflate the light fixture after this test.

Figure 7 – Watertightness Test



Inflate before test and deflate after test

4.2. Basic Maintenance Program

According to the requirements of CCAR-140-R1, AP-140-CA-2009-1, ICAO, Airport Services Manual Part 9, Airport Maintenance Practice and FAA AC 150/5340-26A, Maintenance of airport visual aids facilities, the suggested maintenance program plan is listed in Table 3.

Table 3 - Basic Maintenance Program of Omnidirectional Inset Light

Maintenance Frequency	Maintenance Task
Daily	Check if light is emitted/illuminated.
Semiannual	Check if there is any damage to the top cover. Clean the dust and dirt on the light fixture surface. Make sure the light fixture is in the correct position inside the base and check the bolt torque.
Annual/Biennial	Check the sealing performance of the light fixture Clean the optical component (If necessary).

Note: The table above is the recommended plan. The actual implementation of the plan should be subject to the maintenance regulations of the customers.



4.3. Tools Preparation

The maintenance tools and materials are as follows

- HDK light fixture handle (or 2 large size slotted screwdriver)
- Torque wrench, nut specs: 16mm / 17mm
- Socket wrench, 16mm / 17mm
- Allen wrench, specification: Metric 3

- Flat-blade screwdriver, specifications: Metric 4~8
- Phillips screwdriver, specifications: PH1/ PH3
- 13/16 open-end wrench
- Clean cloth
- Special non-woven cloth for cleaning optical lenses
- Optical lens cleaner
- Thermal grease
- Tweezers

Table 4 - Specification of Screw & Washers

Screw Name	Screw Specs	Installation Torque (Nm)	Quantity
Light Fixture Body Screw	Screw: M4*16 Hexagon socket head Washer: M4 Flat washer	2	6/6
Driver Module Screw	M3*6 Phillips head M3*10 Phillips head	1.2	4
Optic Module Screw	M3*6 Phillips head	1.2	3

4.4. Maintenance Procedures

For the light fixtures deployed on the runway / taxiway, the following maintenance procedures can be applied:

Table 5 - Maintenance Items for Light Fixture (Deployed)

Maintenance Items	Method/Steps
Check if the light is emitted/illuminated	Visual inspection
Check if there is any damage to the top cover	Visual inspection
Clean the dust and dirt on the light fixture surface	Use a clean cloth or brush
Check the fixing condition	Visual inspection
Check the bolt torque	Using torque wrench to confirm the torque is 4F Airport ^① : Not less than 37.28 Nm ^② 4E Airport ^① : Not less than 33.69 Nm 4D and Inferior Airport: Not less than 24.5 Nm Notes: ①. Including taxiway light fixture installed in the runway area

	②.According to FAA ENGINEERING BRIEF NO.83A In-Pavement Light Fixture Bolts, With the largest A380 model for the calculation
Check the sealing performance of the light fixture	Check if there is any moisture/ water mark(inside the light fixture) through the transparent front cover
Malfunctioning light fixture removal	See section 3.5
Fail Open Reset(Online)	See section 4.6

CAUTION: When cleaning the dirt on the surface of the light fixture, do not use a cloth covered with dirt and sand, or a hard brush to rub the surface of the transparent front cover to avoid scratching the transparent front cover (as it may reduce the luminous performance of the light fixture). A clean soft cloth should be used to gently wipe the glass surface. Optical lens cleaner can be used if necessary.



When inset light fixtures are not in use, please avoid outdoor storage. They should be stored in a dry and clean indoor environment. Also, keep the storage temperature in accordance with the requirements.

After removing the light fixtures from the runway/taxiway, the maintenance items in Table 6 can be applied:

Table 6 - Maintenance Items for Light Fixture (Non-deployed)

Maintenance Items	Method/Steps
Test if the light fixture is working properly	Connect the light fixture with power and visually inspect the light fixture
Trouble shooting	See section 4.7
Check the sealing performance of the light fixture	Check if there is any moisture/ water mark(inside the light fixture) through the transparent front cover or after disassembling the light fixture
Replace sealing ring	See section 4.5.1
Replace driver module	See section 4.5.1, 4.5.2 in order
Clean optical components	See section 4.5.1, 4.5.2, 4.5.3 in order

Replace optical components	See section 4.5.1, 4.5.2, 4.5.3 in order
Replace top cover / prism	See section 4.5.1, 4.5.2, 4.5.3 ,4.5.5 in order
Replace bottom cover	See section 4.5.1
Replace power supply cable	See section 4.5.1, 4.5.5 in order

4.5. Light Fixture Removal and Installation

WARNING: Before operation, make sure that you have read the Safety Instructions carefully.



CAUTION: Use screws and gaskets that meet the requirements during maintenance. Otherwise, security risks may arise. Keep the site environment clean during maintenance.



Do not touch the optical components with bare hands during maintenance. Otherwise, the service life of the light source may be affected and the optical performance may be reduced. If dirt is found on optical components, such as lampshades and LED light sources, carefully wipe them with a soft, clean and dry dust-free cloth.

4.5.1. Removal and Installation of the Light Bottom Cover

Remove the bottom cover:

- Flip over the light fixture.
- Use an Allen wrench (specification: Metric No. 3) to remove 6 screws.
- Open the bottom cover
- Unplug the power cord terminal.
- Take out the sealing ring of the light fixture body.

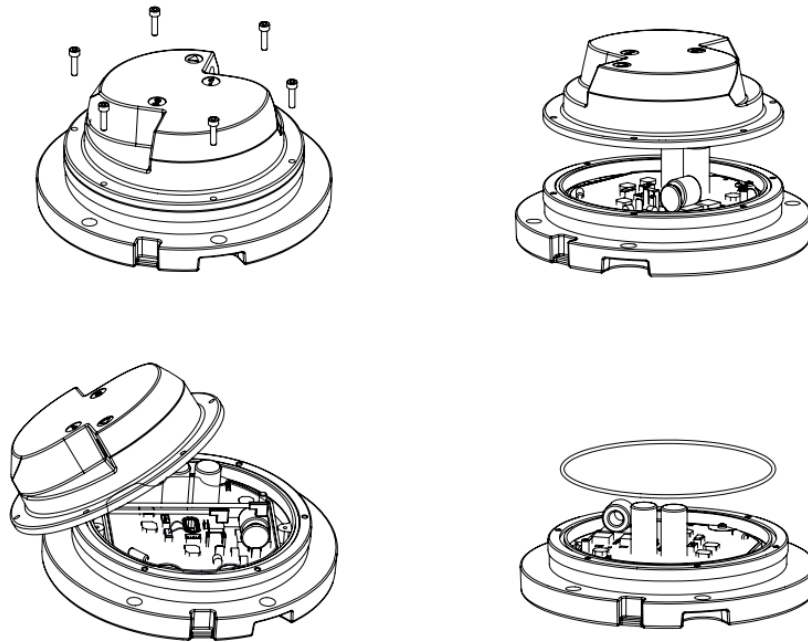
Note: If a screw is tightly fixed, do not remove the screw with a power tool. Loosen the screw with a hand tool and then use a power tool.



If the bottom cover is not easy to break away from the top cover, the flat

opener can be used at the joint.

Figure 8 – Remove the Light Bottom Cover



Install the bottom cover:

- Clean the dirt and dust in the inside of the light body, the contact surface of the top and bottom cover, and the O-ring groove, keep them clean and dry and put a new light body sealing ring
- Insert the plug-in of the power cable into the driver module and ensure that it is tightly inserted
- If possible, the light can be checked for power before installing the bottom cover
- Close the top and bottom cover, align the six screw holes, and tighten the bolts using an inner hexagon wrench (metric No. 3) with torque of 2Nm

Note: The installation of the bottom cover is fool-proofing design. if the position of the bottom cover is incorrect, the screw holes cannot be completely aligned.



WARNING: The light fixture body must be replaced with a new sealing ring each time to ensure the best sealing state.



4.5.2. Removal and Installation of the Driver Module

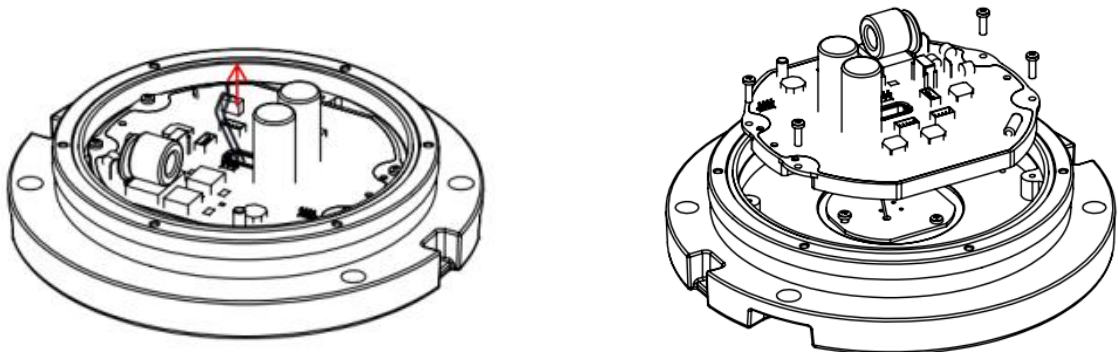
Remove the driver module:

- Unplug the plug of the light source
- Use a Phillips screwdriver (PH1) to remove 4 screws from the driver module
- Pick up the driver module

NOTE: The driver module can be divided into main driver module and sub driver module. The obvious difference between them is that the main driver module has two cylindrical capacitors.



Figure 9 – Remove the Driver Module



Install the driver module:

- Make sure the wires of the light source is plugged well
- Plug the wires on the light source's other side into the wiring terminal on the driver module
- Place the driver module into the top cover and align the screw holes
- Use a Phillips screwdriver (PH1) to install 4 screws of the driver

module with a torque of 1.2Nm

Note: Make sure that the wire is plugged in place and gently pulled without falling off



4.5.3. Removal and Installation of the Optic Module

Optic module refers to the LED aluminum-based circuit board

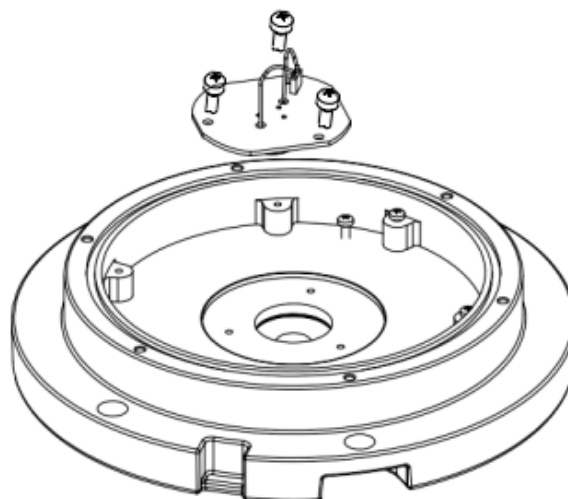
Remove the optic module:

- Use a Phillips screwdriver (PH1) to unscrew the light source component
- Remove the optic module from the light top cover
- After removing the optic module, please place it properly

CAUTION: Please wear plastic gloves before operation. During operation, please avoid to direct contact the luminous surface of optic module.



Figure 10 – Remove the Optic Module



Install the optic module:

- Attach the optic module to the top cover and align the three holes

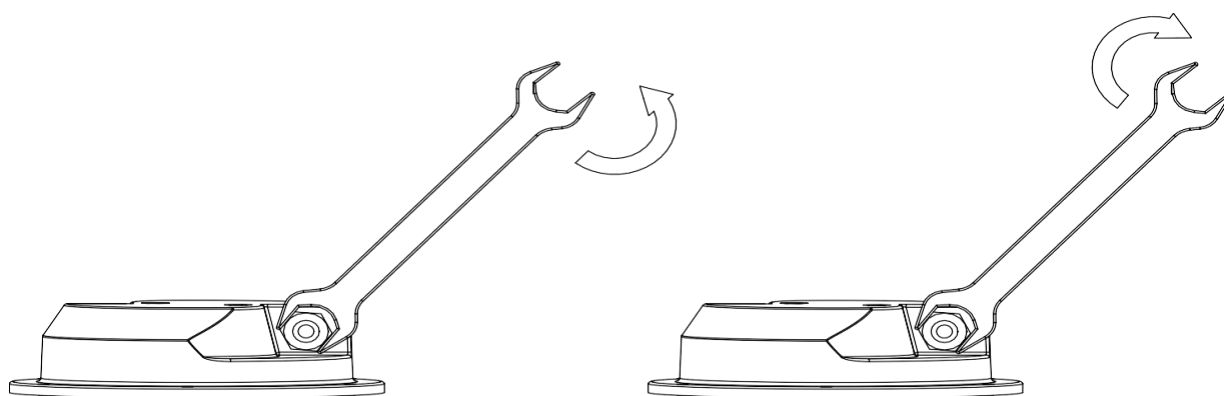
- Using a Phillips screwdriver (PH1) to tighten the screws with a torque of 1.2Nm
- Connect the cables

4.5.4. Removal and Installation of the Power Supply Cable

Remove the Power Supply Cable:

- place the bottom cover (with opening downwards, see figure below) on a flat working surface.
- Use a 13/16 open-end wrench to clamp the root of the power cord seal head and turn it counterclockwise until the seal head is completely separated from the mounting hole of the bottom cover.
- Pull out the cable and clean the mounting hole of the bottom cover.

Figure 11 – Remove the Power Supply Cable



Install the Power Supply Cable:

- Take a new accessories to be replaced, pass the cable through the mounting holes of the bottom cover and reserve cable with 10 cm

length inside.

- Screw the sealing head of the power cord clockwise into the mounting hole of the bottom cover, use a 13/16 open-end wrench to tighten the hexagon nut at the root of the sealing head and the cable locking hexagon nuts . Check whether the cable is tight. If it is loose, you need to tighten the lock Nut.

4.6. Fail Open Function

Description of English abbreviation :

- FON: No fail open.
- FOA: Fail open and automatic reset
- FOM: Fail open and manual reset.

Applicable environment:

- FON: Applicable for circuits without a individual lamp monitoring unit.
- FOA: Applicable for circuits with specific a individual lamp monitoring units.
- FOM: Applicable for circuits with a individual lamp monitoring unit.

Note: With the corresponding module (FOA / FOM) inserted in the drive of the lamp, the drive has the function of fail open. See Figure Figure 15 for the FOA / FOM module.



Functional characteristics:

FON: There is no fail open function. After the LED light source is damaged, the master control will not take any action on the secondary side of the lamp input terminal.

FOA: a) The automatic fail open function of LED is achieved through the driver with FOA module. When the LED damaged, the driver will disconnect the relay, and the lamp input terminal will form an open circuit. The single-lamp monitoring unit can detect the lamp LED failure fault by detecting the lamp open circuit.

b) It can prevent accidental misjudgment of lamps. When the single-lamp monitoring unit

detects the lamp failure, if the lamp can be powered on again for detection, the lamp will judge whether the LED is invalid again. If the lamp LED is working normal again, it will maintain normal operation. (When the lamp is powered on again, the driver needs about 10s of power-on detection time.)

Note: The lamp with the FOA module, when the lamp is powered on again, the driver needs about 10s of power-on detection time.



c) For the repair of failed LED lamps, after replacing a new LED light source, the lamps can continue to be used without replacing the FOA module components.

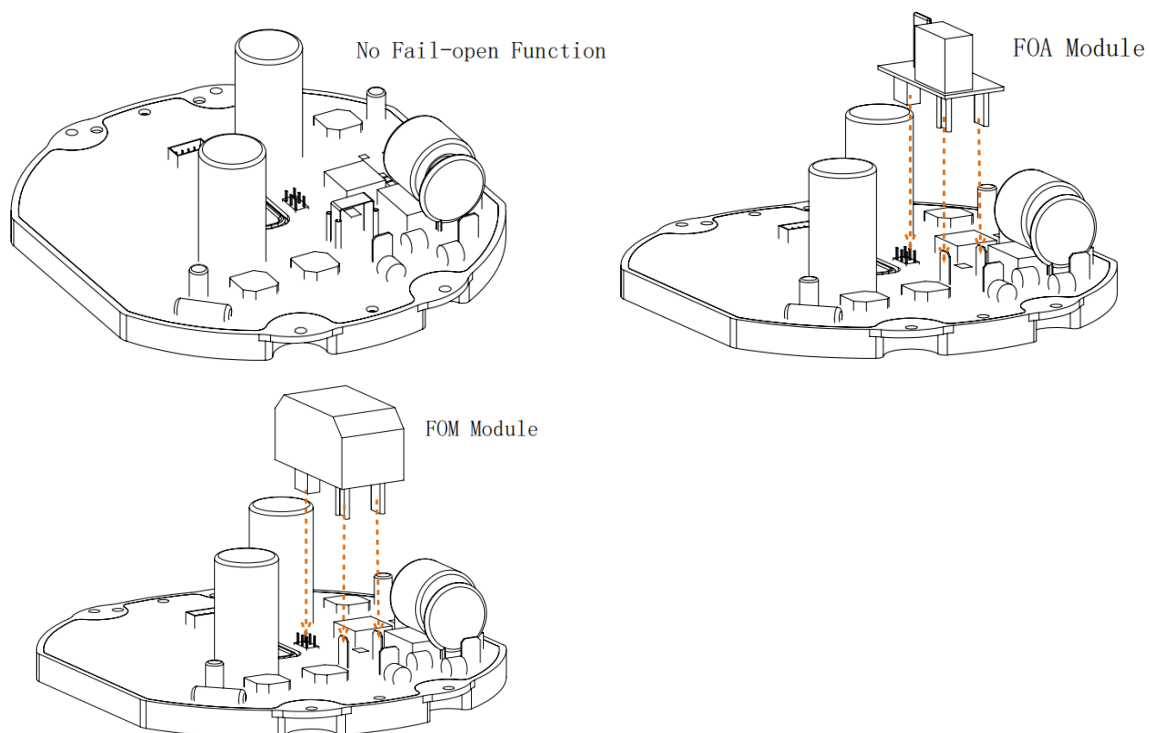
Note: If the lamp with LED failure is not replaced in time, the driver will be powered off after the lamp is powered off, the open circuit status will be cleared, and the resistance value will return to normal, which will cause misjudgment to the single-lamp monitoring unit on the lamp (mistaken for replacing the normal lamp), and the lamp will be powered on repeatedly to detect and feedback the LED failure fault several times.



FOM: a) It has the LED failure detection function. When the LED fails, the driver with FOM module will permanently disconnect the input terminal secondary to form an open circuit. The single-lamp monitoring unit can detect the LED failure of the lamp. In principle, it can be compatible with all single-lamp monitoring units.

b) FOM module is a disposable part. When repairing the lamp with LED failure, the FOM module must be replaced synchronously before it can be used again.

Figure 12 – Driver with Fail Open Module



4.7. Trouble Shooting

Table 7 - Trouble Shooting

Malfunction	Trouble Shooting Step
The light stops working (glowing)	1. Turn off the light and restart after 1 min 2. If the fault is not eliminated, check the power cord plug 3. If the fault is not eliminated, open the bottom cover and check the cable connection between the power cable and the driver board 4. If the fault is not eliminated, check the driver board
Water leak inside the light fixture	1. Check the sealing of the transparent front cover 2. If the fault is not eliminated, check the sealing ring 3. If the fault is not eliminated, check the power cord seal head
Unable to dim normally	1. Confirm that the dimmer and isolation transformer are fault-free and operate without problems 2. If the fault is not eliminated, replace the driver board
Unstable glowing and flickering	1. Make sure that the specifications of the dimmer and isolation transformer match the operation requirements of the light fixture, no operational problem 2. If the fault is not eliminated, replace the driver board 3. If the fault is not eliminated, contact the manufacturer for customers service and update the program

5. Support

5.1. Customer Service

If you need after-sales service, you can contact us through the after-sales service hotline or sales consultant.

After-sales service hotline

+86-27-63498449

Please prepare the following information in advance in order to get the service quickly:

- Product name and serial number
- Airport code or company name
- Your phone and email address

5.2. Recycling

Improper disposal of scrapped electronic equipment may have a negative impact on the environment and human health. Regarding the recycling of electronic products, please follow the local laws and regulations.

5.3. About HDK

Hangdakang Mechanical & Electrical Technology (Wuhan) Co., Ltd established in 2003 in Wuhan/China is an professional locally known provider of Airfield Lighting, Navigation Aids, Frangible Mast Systems and Heavy Duty Support Equipment. In 2017 HDK started to create a new LED Airfield Lighting Portfolio supported by known capacities from Europe, to become the supplier for Airfield Customers in China, Asia, Europe and all over the World for reliable, efficient and innovative Airfield Lighting Products at highest quality.

You can contact us in the following ways**Beijing****Address**

Room 607-610, Building 2 of Sailing International Greenland,
Houshayu, Shunyi District, Beijing

Tel

+86-10-80480105

Email

airport@hdk-aero.com

Wuhan**Address**

Building No. 10, Optic and mechanical park, High tech 5# Road,
East lake tech district, Wuhan, Hubei, China

Tel

+86-27-63498449

Email

airport@hdk-aero.com

Homepage

www.hdk-aero.com

WeChat official account