

# Factory lamp

## INSTRUCTION MANUAL

FCC ID: 2AA55HUNHE120

For Model: SBF6110-YQL120;

SBF6105B-YQL120;

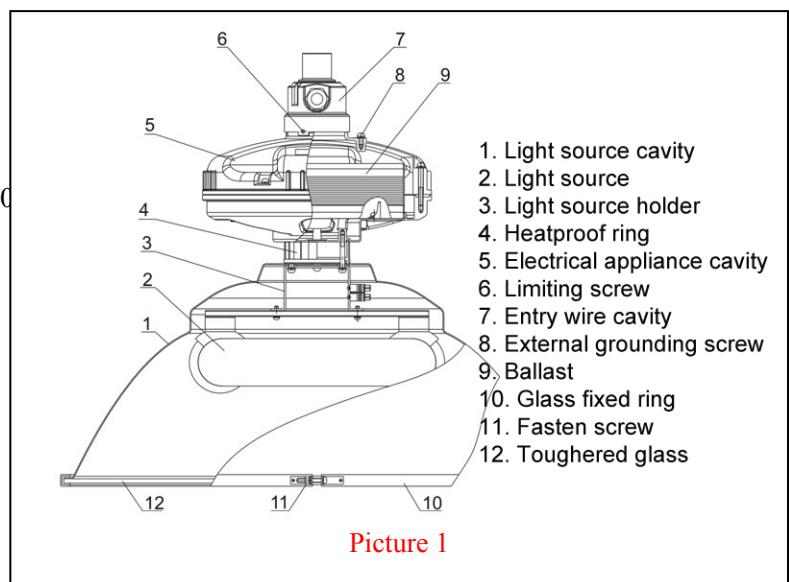
SBD1105B-YQL120;

### Summary and usage

SBF6110-YQL120, SBF6105B -YQL120, SBD1105B-YQL120 maintenance free, energy-saving, water proof, dust proof and corrosion proof factory lamp is designed and produced according to GB7000.1-2007 (Fixture's safety requirements and test), GB4208-93 (Electrical appliances shell protection test standard) etc regulations. This series luminaire's light source is induction lamp, and have the high luminous efficiency and long life-span etc characteristic. The luminaire is composed by Aluminum alloy ballast box and Aluminium plate spinning lampshade, the ballast box is sprayed by pure polyester powder, the surface of reflector in lampshade undergoes anodic oxidation treatment, the external surface adopt anodic oxidation treatment or polyester powder spraying. The luminaire had good protection and corrosion proof performance. It is applicable to plant, exhibition building, superstore etc, is special for moist and dusty indoor and outdoor places lighting: This product is applicable for the common lighting or emergency lighting of such indoor and outdoor place with mech dust or damp such as factory ,airport,tunnel,especially power plant and its boiler unit,iron& steel plant and so on.

### Technical Specification

1. Rated Voltage: 220V/50Hz
2. Applicable Light Source: Induction lamp
3. Rated Power: 120W to 300W
4. Applicable Ambient Temperature: -20°C to +40°C
5. Protection class: IP65
6. Corrosion proof class: WF2
7. Cable diameter: G3/4"(Pendant mounting)
8. Size: φ578×492mm (120W & 150W)  
φ635×510mm (200W & 300W)
9. Weight: 7 to 8.4 kgs



### Performance and structure

- 1.The luminaire is the waterproof, dustproof and corrosion proof lighting device for factory lighting, have

good protection, the performance is reliable. The luminarie appearance and main structure, please see [Picture 1](#)

- 2.The luminarie adopts the integrated structure, closed structure, and pendant mounting type, have the independent light source cavity, electrical appliance cavity and connection cavity
- 3.The luminarie's electrical appliance cavity and connection cavity shell is die-casted by aluminum alloy, the surface is sprayed by pure polyester powder.
- 4.The light source cavity is spined by pure Aluminium sheet. The reflector is undergone anodic oxidation treatment, High reflectivity, good Oxidation resistance, long life-span. The light source cavity is adopted anodic oxidation treatment or polyester powder spraying, have good corrosion proof performance.
- 5.The luminarie is equipped with toughened glass transparent plate, high luminousness, good high intensity and good impact resistance
- 6.The connection cavity and electrical appliance cavity connection is fast dismantling structure, and prevent the trouble operation in aloft work, and is convenient for luminarie installation and maintenance.
7. Induction lamp is selected to be the fixture's light source, and is equipped with high stable frequency and high stable power output ballast, has the advantages, such as, voltage can be widely used, high light efficacy, no visual fatigue, long lifespan etc
- 8.This product is of flame-proof and increased safety structure, O type sealing rings are adopted in the flame proof joints to make this product fulfill the dust-proof structural requirements. The flameproof electrical box, increased safety illuminant chamber and junction box are casted from aluminum alloy and painted with polyester on the outer surface.
- 9.The tensile strength of the aluminum alloy enclosure is no less than 120MPa and content of magnesium and titanium of the enclosure is no more than 7.5% of the total content, the enclosure is anti-corrosion. See Figure 2 for the light structure.
- 10.The flame proof electrical box shall subjected to specified internal explosion without any damage, the flame proof threads will provide a flame path to cooldown the enclosure in case of internal explosion.
- 11.Increased safety chamber is used as a reflector, it's casted by aluminum plate with anodizing on the internal surface and polycarbonate coated on the external surface. Light with 120W and 150W illuminant has assistant reflectors.
- 12.The maximum surface temperature of the enclosure shall be less than 80°C without dust layer.
- 13.Flat toughed glass or polycarbonate prisma can be adopted as transparent plate.
- 14.Transparent plate and illuminant enclosure are fixed with aluminum alloy made hoop, it's endurable and reliable with good oxidation resistance.
- 15.Rubber sealing rings are adopted between flame proof electrical box and increased safety chamber, these will ensure the good ingress protection performance.
- 16.Electromagnetic induction illuminant equipped special ballast with high steady frequency and high steady power, make the light is available to work under a wide range of voltage with long service life, it will also ease visual fatigue.

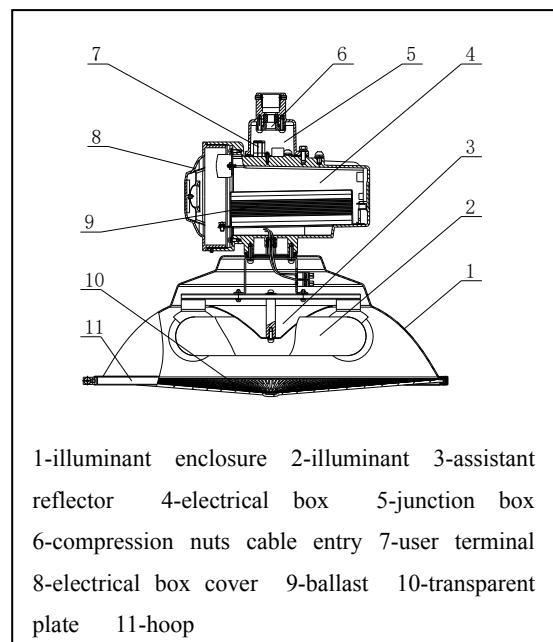


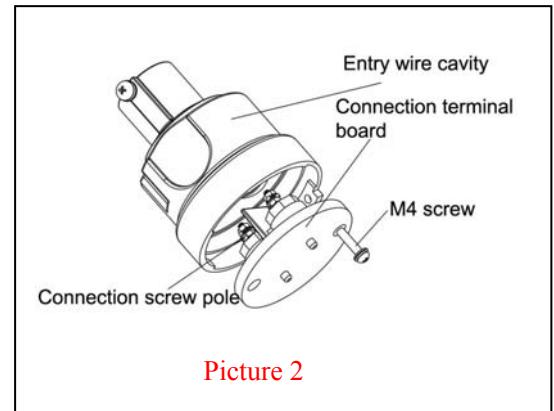
Figure2

17. The light is provided with cable entries (compression nut type) with rubber sealing rings inside for user's convenience to wiring and cable sealing.
18. Bulk type terminals make wiring reliable.
19. The light can be installed in pipe suspending type, ceiling type, wall mounting type, guard pole type and flange pole type. See Figure 2 for installation instructions.

## Installation and Maintenance

1. Before installation, user should read the manual carefully, and keep the manual well.
2. Luminarie should be avoided to endure the impact of the external force, in order to avoid to affect the performance of explosion-proof and dust-proof
3. The luminarie is entry wire into the tube (applicable to Pendant mounting type) or entry the wire into connection cavity side (applicable to Hook mounting type). Applicable cable's diameter is  $\Phi 9 \sim \Phi 12.5$ mm, and is three core rubber sheath cable inlet wire, guide wire's section is  $1 \sim 1.5$ mm<sup>2</sup>. If user mount it by Pendant type and enter into by guide wire, need have three holes metallic gasket and three holes seal ring for replacing use.

Luminarie's inlet wire guide wire should be multistrand core wires.



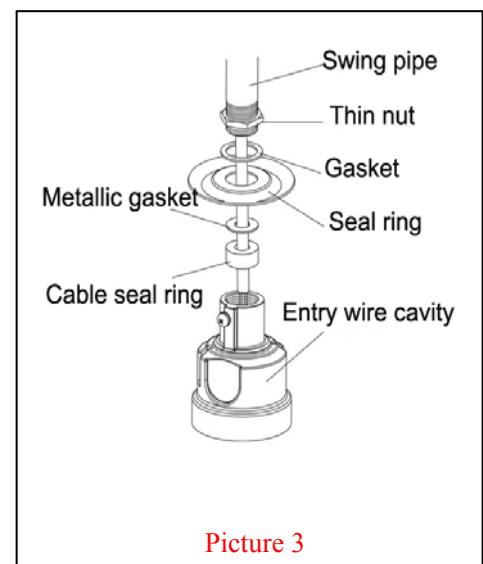
Picture 2

4. When the luminarie leave the factory, the connection cavity outlet is connected by power cable, user don't need dismount any parts, and just need mount the connection cavity parts first, then connect the luminarie by following 8. If user need connect the other wire, please operate by following procedures (example entry wire inside of tube)

- 1) Screw off two M4 screws, and dismount the Terminal board (See [picture 2](#))
- 2) Strip the cable skin about 10cm, and the wire's stripping head is 10-12mm. Following [picture 3](#), enter into the three water proof sets (thin nut, gasket, seal ring) on the swing pipe successively, and then enter the cable into the metallic gasket, cable seal ring and connection cavity line entrance successively. (If choose the hang type mounting without the three water proof sets, user just need to enter the cable into the cable entry device)
- 3) Screw the swing pipe into the entry wire cavity's interface thread

(attention: the length of cylindrical G3/4" pipe tooth should be larger than 30mm), (if choose the hang type mounting, user should screw the gland nut on the entry Device), and compress the cable tightly (the cable not twitch is qualified). The cable (have the intact skin part) should be less than 5mm in cavity

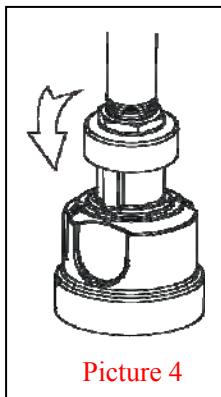
- 4) Tighten the fasten screw in the entry wire cavity thread place. For the hang mounting type, the hook



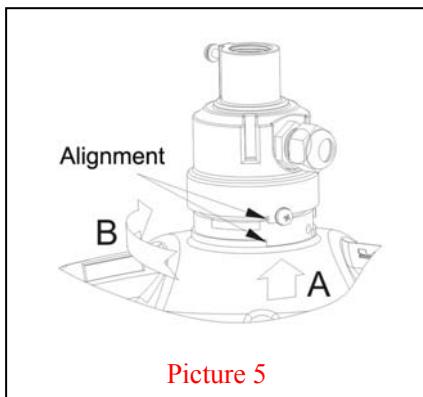
Picture 3

should be hanged on the solid and suitable components

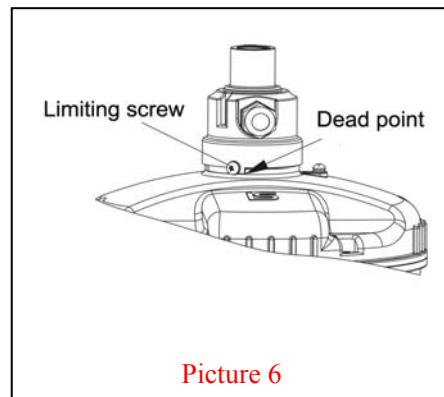
- 5) See [picture 4](#), scroll down the seal ring (see the arrow), then screw the thin nut and fasten—
- 6) Connect solidly the power line and zero line on the connection terminal board's two connection screw poles (please see the [picture 2](#))



Picture 4



Picture 5



Picture 6

- 7) Fix the connection terminal board on the entry wire cavity. And check the Conductive pole connection's integrity. (The Conductive pole's elasticity is good, connection screw pole have no deactivation phenomenon, now the conductive pole and internal is disconnected )
- 8) Follow the picture 5, aim the electrical appliance cavity (luminaire) to the related place, then push the luminaire into the entry wire cavity following the Arrow A, and then following Arrow B, screw the luminaire to the dead point (please see [picture 6](#)) place (now the Conductive pole is connecting with internal)
5. The luminaire is equipped with external grounding screws, please ground according to the regulation when mount
6. If need change the ballast and light source, user can dismount the luminaire first following above 8) method, then operate it on the operating platform, in order to operate expediently and ensure the safety
7. Before mount, user should check the all of connecting bolt were screw well, in case impact the luminaire's protection performance and safety
8. User should check the luminaire's electric whether it is in good condition regularly. In order to ensure the luminaire's efficiency, safety and life-span, user should clean the luminaire's surface
9. Check the following items before installation, the product can not be put into use if any of the followings is not satisfied:
  - 2) Check if there is a certificate of conformity number
  - 3) Check if the applicable area indicated in the Ex marking is suitable for the intend location
  - 4) Check if there is any crack or other defect that may damage the Ex performance
10. Check if all the accessories for the intended installation type are sufficient (see attached table) and check if the illuminant is well protected by foam, remove the transparent cover and take off the protective foam if necessary.
11. The light shall be protected from force to ensure its dust-proof and explosion proof performance are not affected.
12. Threaded joints are smeared with anti-rust oil on finished products, user shall protect the flame proof joint from damage.

13. User shall follow the installation instructions to install the light correctly.(See Figure 3 for instruction)

14. Model A is provided with water-resistant sealing ring assembly, see Figure 4 for correct installation, the procedures as followed:

- a) Rip the pipe into the tiny nut, gasket and sealing ring successively(see Figure 4 a);
- b) Screw the pipe into the top cover then screw down the tiny nut to compress the gasket and sealing ring tightly(see Figure 4 b);
- c) Tighten the fastening bolt on the top cover;
- d) Locate the sealing ring as the arrow shows in Figure 4.

15. Model D(D-guard pole type and E-flange pole type), screw the two M6 bolts on the side cover into the screw holes in the installation pole then fasten them to ensure the reliable fastening of the light(See Figure 5).

16. Only junction chamber shall be opened when wiring(the junction chamber cover is not mounted on finished products), the light is provided with cable entries(compression nut type) with rubber sealing rings inside.

Three-core cable with rubber sheath with outer diameter of  $\phi 9\text{mm} \sim \phi 12.5\text{mm}$  are available for the sealing ring. There are several cuts in the sealing ring for user to select the proper diameter marked on the surface. User shall adopt internal compression device to fasten and seal the cable after it lead in(see Figure 6), ensure the cable can not be moved easily, additional gasket between the compression nut and the sealing ring is optional if the cable is not fastened well(see Figure 8 for lead-in cable sealing of Model D).

17. If the light is intended to use out door or in other wet environment, use shall check if the electrical box is equipped with sealing ring and is it well fastened; if not, the cover shall be screwed tightly to ensure the sealing.

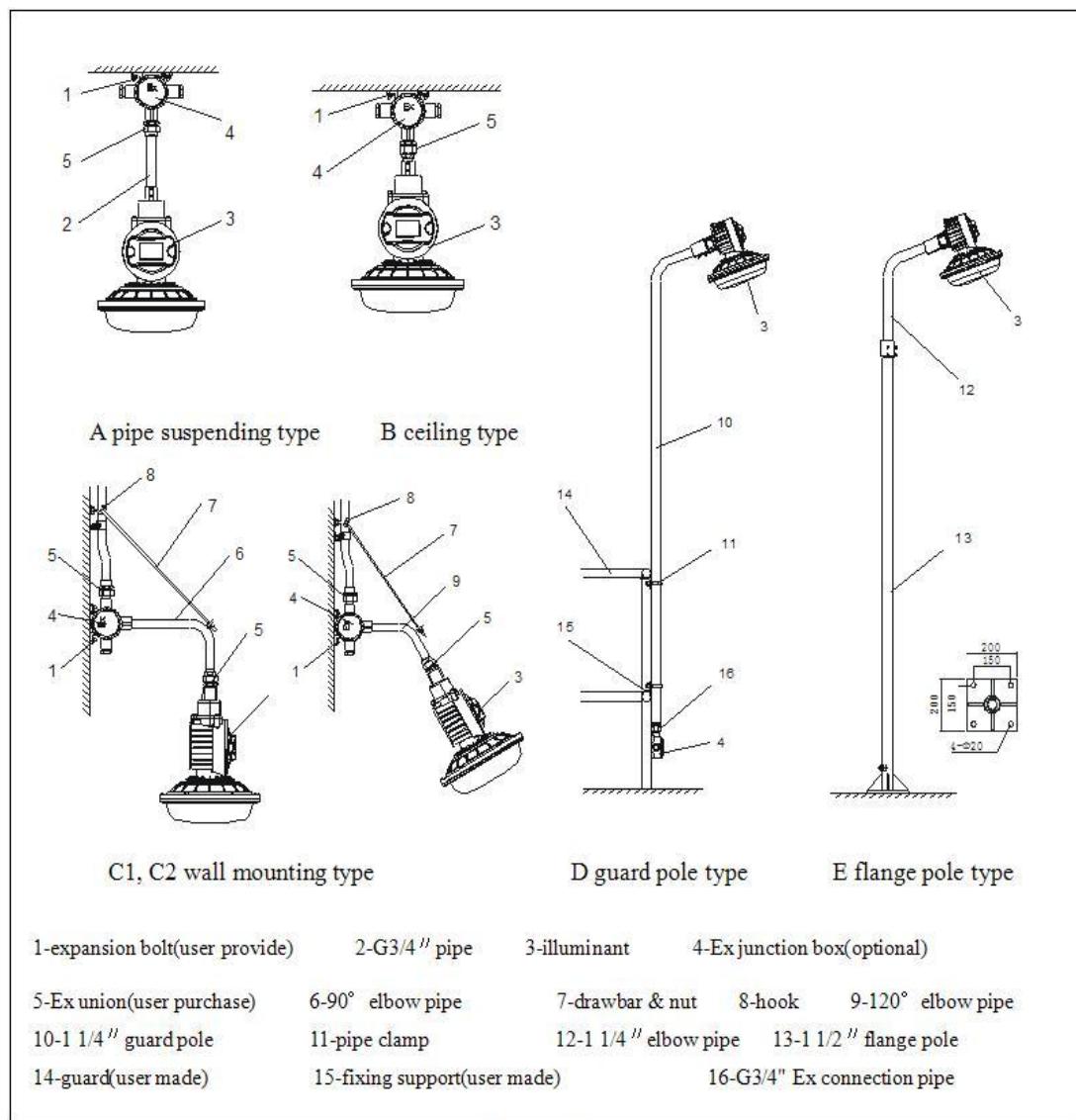


Figure 3

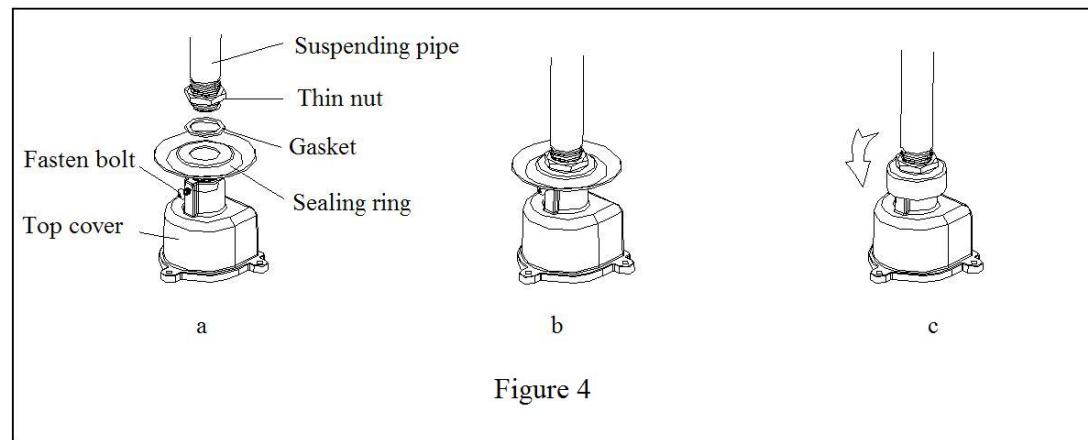


Figure 4

18. Follow the instructions strictly in installation, improper installation may cause leakage of electrical box and junction chamber, it's not the manufacturer's responsibility if the illuminant or ballast malfunction occurs caused by this.

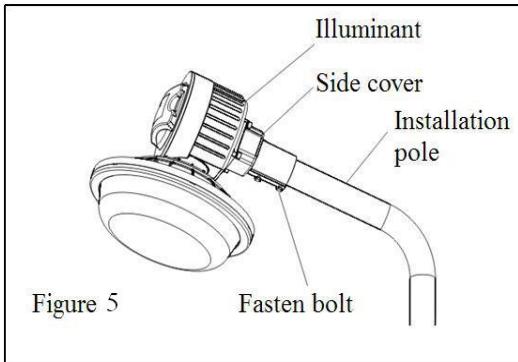


Figure 5

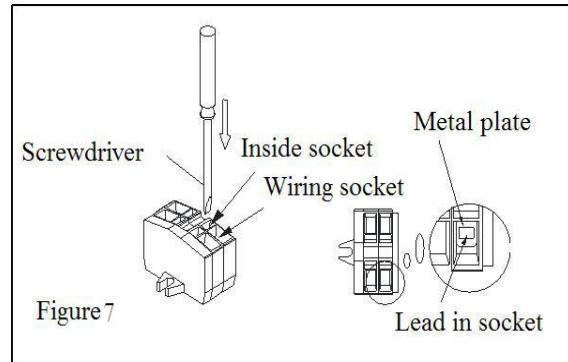


Figure 7

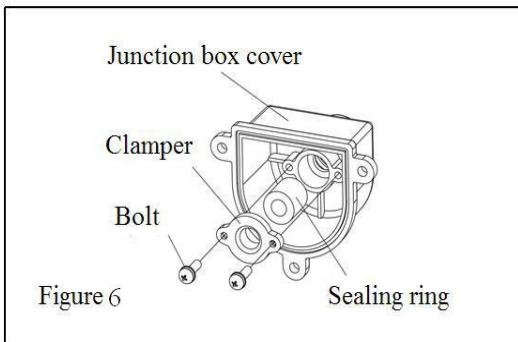


Figure 6

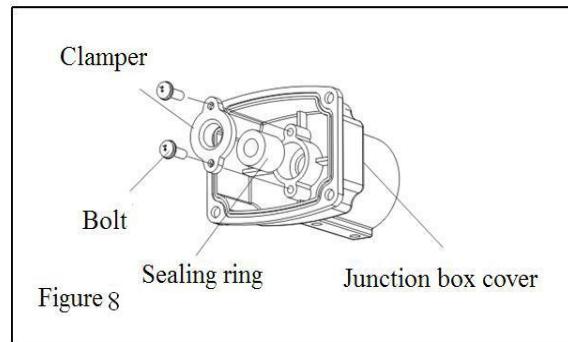


Figure 8

19. Power cable to the light(phase line and null line) shall be plug in socket L and N outside the terminals in junction chamber. Use proper screw driver to press down from inside as the arrow shows to make the terminal metal plate out, then plug in the sockets(see Figure 7). See Figure 9 for the electrical schematic diagram. Same way to plug out the cable.

20. Fix and connect junction chamber cover to the light according to the instruction (see Figure 1 and Figure 2) after the power cable connected. Do not neglect the sealing ring between them.(see Figure 10).

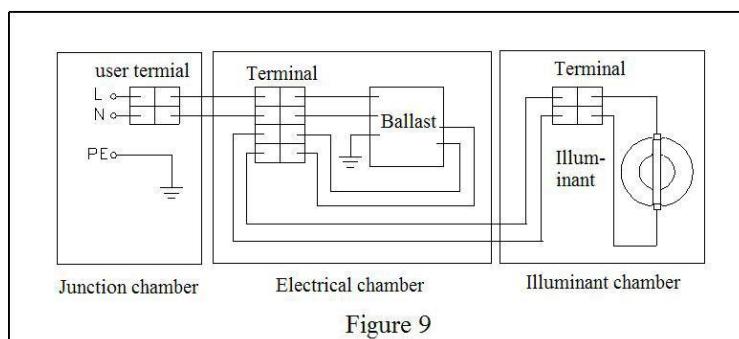
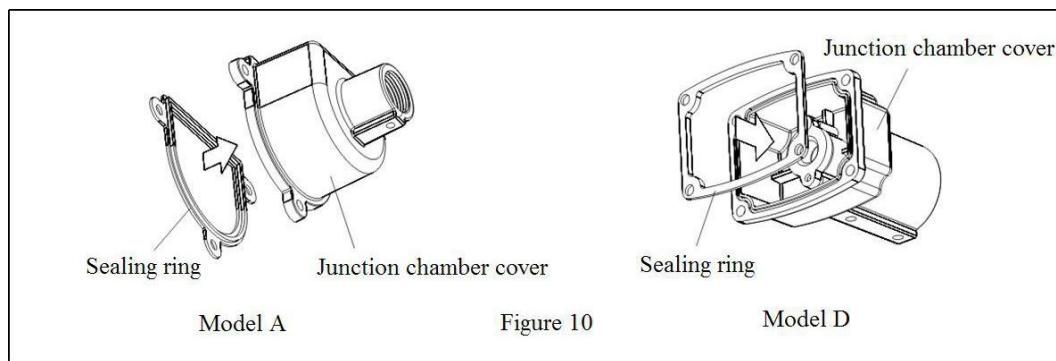


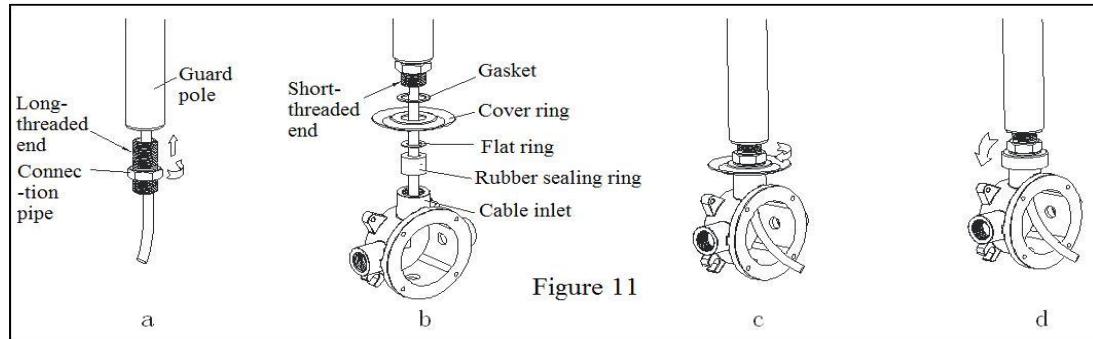
Figure 9



21. If it is necessary to replace the illuminant, the user shall only loose the hoop and take off the transparent plate.

22. Guard pole type connect to connection pipe at the bottom, ensure they are well sealed to avoid water. It shall be installed as followed:

- a. Put the cable(out from the pole) into the connection pipe from the long-threaded end, then screw the connection pipe into the pole;
- b. Put the water proof accessories(gasket, sealing ring) on the short-threaded end by successively, then put the cable into the gasket, sealing ring and cable entry of the junction box;
- c. Screw the connection pipe on the junction box as the arrow shows, meantime compress the rubber sealing ring and the cover ring. Center the gasket if eccentricity occurs.
- d. Turn over the cover ring as the arrow shows.(see Figure 11 for a, b, c and d)



23. The light shall be proper earthed(internal earthing in junction chamber and external earthing out side the electrical box).

24. The sealing ring in the threaded joints can protect the light from dust and water. Light installed in wet or outdoor shall be protected by sealing rings and the electrical box cover shall be well screwed, otherwise the protection level would be affect, and water leakage may cause ballast malfunction. Sealing rings in joints of increased safety chamber shall not be neglected.

25. User shall clean the outer part periodically and ensure the light is in good service condition. See Item 2 in Safety cautions for PC transparent part cleaning issues.

26. Service condition

- a. Atmosphere pressure: 80~110kPa
- b. Ambient temperature: -20°C ~ +40°C
- c. Relative humidity: ≤95%RH(+25°C)

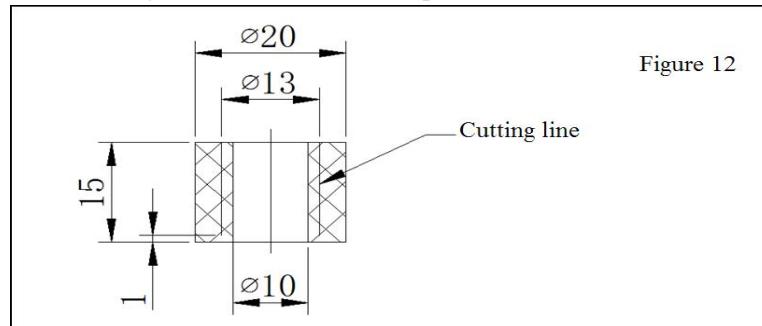
27. L1/L2/L4 (electric filter)and C1/C2/C7/C8 (EMC Capacitors) is a filter, can prevent to make the noise for Public AC power lines, at the same time, AC voltage will be changed to a stable DC voltage by booster composed by D1/D2/D3/D4 (BRIDGE), Q1(mosfet), L5 (active transformer) and components involved in it, then DC voltage is changed to High AC voltage which the frequency is 250kHz±30kHz by Q3/Q4 (mosfet) and components involved in it, then is transformed to lamp, then the lamp is lighting. Rated power of the lamp is 120W and rated current of it is 0.55A. The rated power and current of ballast are the same as the lamp.

## Failure analysis and elimination

Fault phenomenon	Fault reason	Handling method
Induction lamp doesn't light	The line is no power	Power on, the ensure the luminarie is powered on
	The line is not connected well, and poor contact	Inspect the luminarie connection wire, if loosing, need fasten. Inlet wire guide wire need to use multistrand core wires if use single core wire
	Water enter into the cavity, and short circuit	Inspect the luminarie entry wire seal is reliable, or change the sealing elements
	ballast damaged	change the ballast
	light source glass shell leak	change the light source
	coupler break line and burnout	change the light source
Induction lamp strobe	the line is poor contact	Inspect the connection wire, if loosing, need fasten
	ballast damaged	change the ballast

## Safety cautions

1. In order to ensure the safety service of this Ex light, it shall be installed and maintained by trained personnel. Unauthorized people shall not open or disassembly the fasteners.
2. Since polyester transparent cover is adopted, there is a waning label: *Warning - Potential electrostatic charge - see Instruction Manual*. The installation hight shall no less than 2.5m, user shall pay attention to the electrostatic charge. Avoid ignition risks caused by normal service, maintenance and cleaning; do not touch or wipe the light in hazardous areas. Necessary replacement, wiping and touch shall be carried out in non-hazardous area.
3. Installation and maintenance procedures shall meet associate national standards, do not operate when energized. Do not open when energized in maintenance or replacement and waiting for the illuminant to cooldown.
4. There must be a designated person to in charge of the maintenance work specially.
  - a) Special operational platform, ladder, safety belt and other necessary equipment shall be equipped to ensure personnel safety;
  - b) Inspect the light periodically, any component damage, loss shall be fixed in time; replace the aged sealing ring or other plastic part to ensure the explosion proof performance.
5. Take care of the disassembled components to avoid loss or drop from high cause casualties.
6. Aged sealing rings shall be replaced by one of the same specifications to ensure the explosion proof performance. See Figure 12 for the detailed specifications.



7. Ensure *Do not open when energized* is strictly followed, cut off the power if the top cover is required to open in maintenance.
8. The internal and external earthing shall be reliable.
9. Unauthorized personnel is not allowed to disassemble the light.
10. Do not replace the components or change the structure of the qualified product at will, these activities may affect the explosion proof performance.
11. Protect the flameproof joint from damage or rust, lubricate with 204-1 anti-rust oil.
12. **DO NOT OPEN WHEN ENERGIZED!**
13. Check the voltage of the power, make sure that it is in the service range of the light to avoid the light being damaged by improper voltage.

### **Attention**

1. In order to ensure explosion proof lamp work and safety regularly, the serviceman should be trained professionally, then can install and maintenance. Not-professional person should not open the fixture, and do not demount any fastening parts.
2. All procedure of install and maintenance should be corresponded to Country's relevant laws and regulations, prohibit to operate when power on. Before change the light source, the light source should be cool
3. Should have the professional serviceman maintenance and repair.

In order to ensure the safety, the serviceman should use the professional working platform, ladder, safety belt etc special equipments, inspect the condition of the explosion proof lamp regularly. If find parts broken and missed, should repair and supply on time, find the seal rubber ring and other plastic parts aged, should change them, and avoid to affect the explosion-proof and safety performance of the fixture

4. Should pay attention to manage the parts demounted, and avoid to miss the parts, and then the missing parts falling from the sky injure the people

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