



Universal Explosion Proof LED Lighting (THT-L1203) Operating Instructions

Zone 1、Zone 2
Zone 21、Zone 22

久鑫科技股份有限公司

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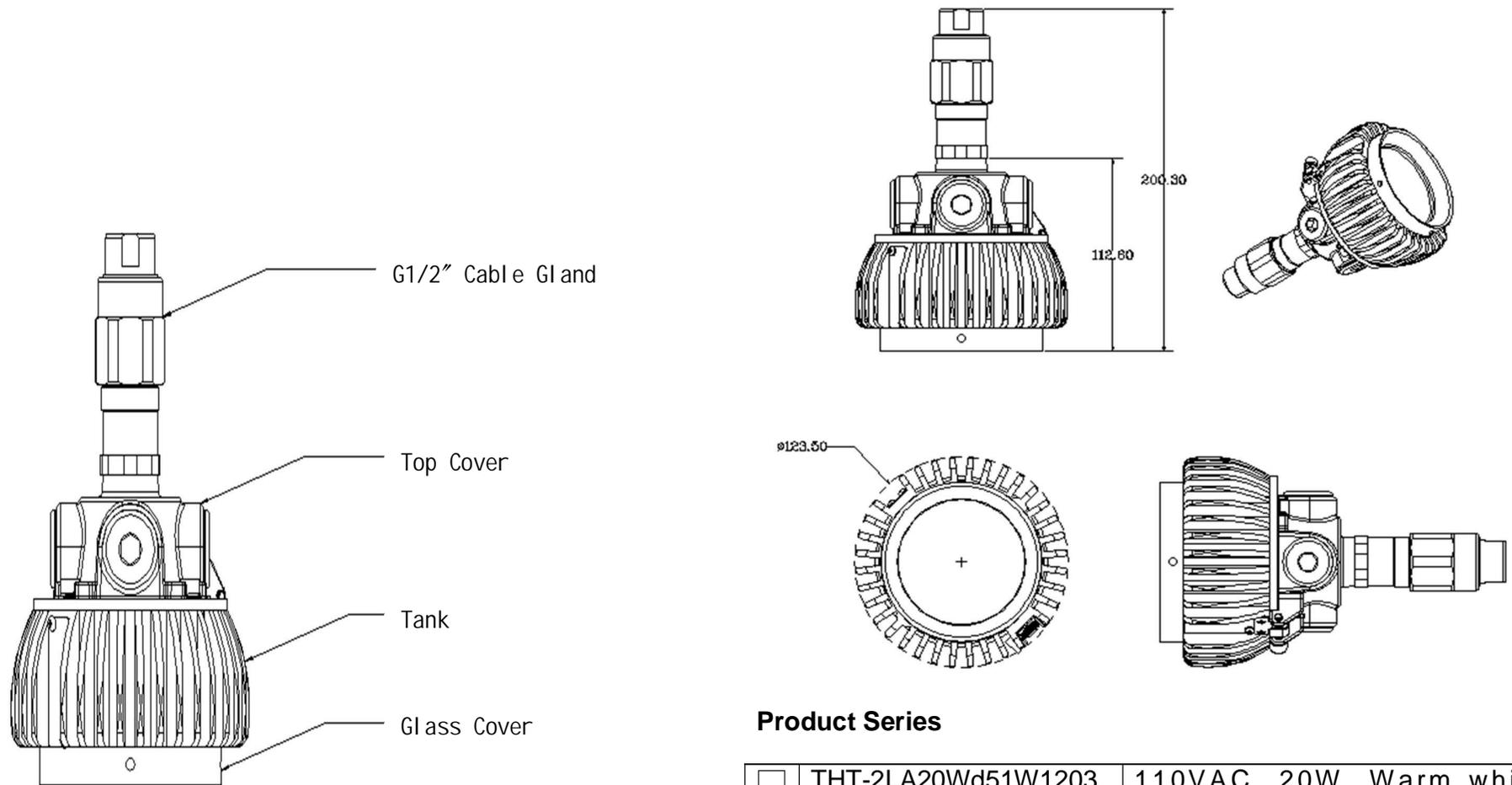
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No. : THT-L1203 Rev.01

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General Drawing (Unit : millimeter)

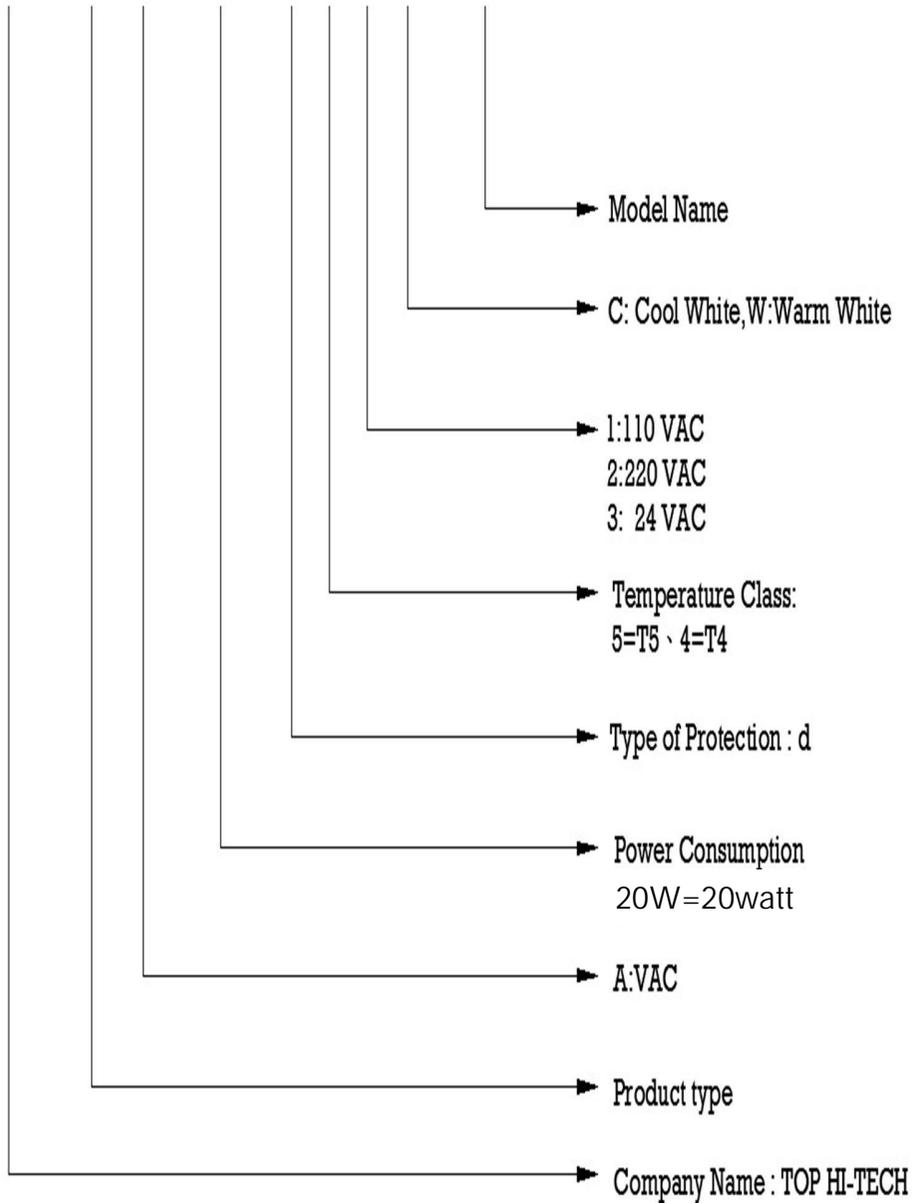


Product Series

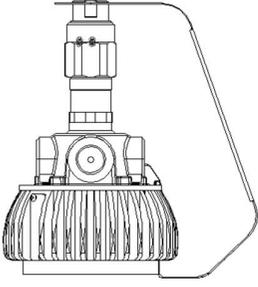
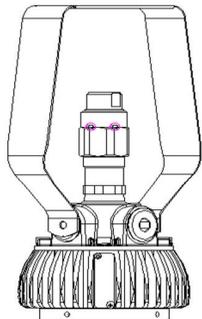
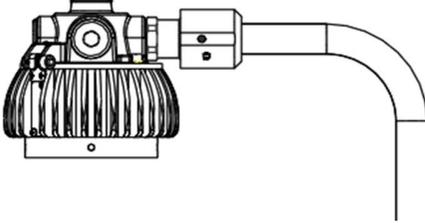
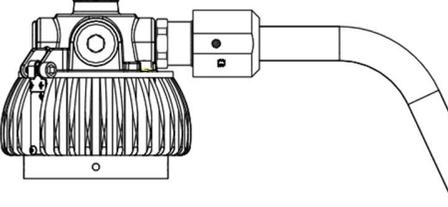
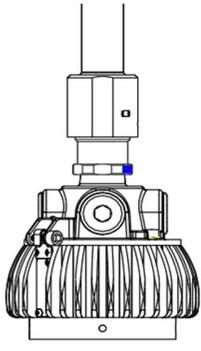
<input type="checkbox"/>	THT-2LA20Wd51W1203	110VAC, 20W, Warm white
<input type="checkbox"/>	THT-2LA20Wd41C1203	110VAC, 20W, Cool white
<input type="checkbox"/>	THT-2LA20Wd52W1203	220VAC, 20W, Warm white
<input type="checkbox"/>	THT-2LA20Wd42C1203	220VAC, 20W, Cool white
<input type="checkbox"/>	THT-2LA20Wd53W1203	24VAC, 20W, Warm white
<input type="checkbox"/>	THT-2LA20Wd43C1203	24VAC, 20W, Cool white

Product Number Description

THT-2L A 20W d 5 l W 1203



Package Contents

<input type="checkbox"/> Mobility Type	<input type="checkbox"/> Hanging Mount 90°
	
<input type="checkbox"/> Stanchion 90°	<input type="checkbox"/> Stanchion 25°
	
<input type="checkbox"/> Pendant	
	

1. Luminaire Specification

ITEM	SPENERAL INFORMATION	EXPLANATION
1	Temperature Rating	-20°C ~ +40°C
2	Humidity Rating	65%RH~100%RH
3	Environment	Hazardous , Chemical corrosive, Salty, Dusty
4	Hazardous area Classification	Zone 1 、 Zone 2 、 Zone 21 、 Zone 22
5	Certification Marking	II 2 G Ex d II B+H2 T5...T4 Gb II 2 D Ex tb IIIC T105°C Db
6	Classification of IPXX	IP67
7	Voltage Rating	<input type="checkbox"/> 24Vac <input type="checkbox"/> 110Vac <input type="checkbox"/> 220Vac
8	Frequency	50/60Hz
9	Lighting Rating	20W
10	Equipment Material	ADC12 、 AL6063-T5
11	Luminaire Lifetime	30,000hrs
12	Power Factor	>0.9
13	Cable Gland	<input type="checkbox"/> G 1/2" / (a)

(a). Cable Specification

	Tube	Cable
1	ID:Ø8.0 , L=25.6mm	OD: Ø7.0~ Ø8.0
2	ID:Ø10.0 , L=25.6mm	OD: Ø9.0~ Ø10.0
3	ID:Ø12.0 , L=25.6mm	OD: Ø11.0~ Ø12.0

※Flameproof enclosure “d”

Enclosure in which the parts which can ignite an explosive gas atmosphere are placed and which can withstand the pressure developed during an internal explosion of an explosive mixture, and which prevents the transmission of the explosive to the explosive gas atmosphere surrounding the enclosure.

This product is certificated explosion-proof standard according to the explosion protect standard of the IEC 60079-0 、 IEC60079-1 and IEC 60079-31. It is applicable the dangerous gas and dust hazardous environments that match with its protected grade. And it is posted with warning and qualified nameplate in a prominent place on luminaire.

※This product is designed according to the international standard structure of the IEC/EN 60079-0 、 IEC/EN 60079-1 、 IEC/EN 60079-31. The suitable hazard zone is for:

Zone 1: An area in which an explosive gas atmosphere is likely to occur in normal operation;

Zone 2: An area in which an explosive gas atmosphere is not likely to occur in normal operation and, if it occurs, will only exist for a short time.

Zone 21: A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally.

Zone 22: A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

2. Safety Instructions



In accordance with regulations, installation, inspection and maintenance of the device shall be carried by experienced person who trained various explosion protection laws and regulations of safe operation (IEC / EN 60079-14, IEC / EN 60079-17) and the general principles of classification of the regions. The person should implement appropriate in-service training periodically, and has electrician (machine) certificate qualifications and the background about explosion safe and

the professional knowledge relevant electrical regulations.

Before using the luminaire, we should check whether the specifications is the same with the purchase first, and inspect the main parts is missing or damaged. (Refer to General Drawing and Luminaire Specification)

After take out the luminaire, please follow the installation instruction manual to use.

Comply with the specifications marked on the luminaire.

Before installation, be sure to read the detailed operating instructions and make sure the voltage is consistent with the on-site installation.

Before the installation, it have to be sure that there is in the environment that have no dangerous gas anymore and power is turn off.

Before wiring, it should to turn off the main power to avoid electric shock.

This product is certificated according to the explosion protect standard to be a explosion-proof luminaire, so that if modifications or change to their design id not permitted. If it has any unauthorized changed then THT-EX will be not liable for it.

Before starting, make sure the input voltage is correct or not, and the wiring is properly insulation.

To prevent leakage, electric shock and sense of power, please be sure to take ground.

When is transporting the product, please care to avoid collision and pay more attention to avoid impact and dropping.

Do not allow anything to stick on fins; otherwise used in hazardous plant will cause poor heat dissipation and may result in fire and other hazards.

Prohibited replacement and maintenance in dangerous places or when power on.

Replacements parts or maintenance, please call original factory to do these things.

The luminaire of any additional warning labels or tamper label is prohibited tear, any modification or removal may cause danger or explosion.

If need replacement the cable entries that attach with luminaire , please follow this specifications and operating instructions to replacement and repair.

If needs to open luminaire enclosure, it have to be sure that there is in the environment that have no dangerous gas anymore and power is turn off at least 30 minutes.

Strictly prohibited used on the place that Luminaire temperature class greater than ignition temperature of dangerous gases.

Strictly prohibited used on the place environment temperature greater the allow range temperature that marked on nameplate.

3. Application of Places

Please refer to this instruction of “**Luminaire Specification**” .

Please refer to the explanatory luminaire specifications. In case of use in an extremely aggressive atmosphere, please refer to manufacturer.

Absolutely do not be used in Zone 0: The area in which an explosive gas atmosphere is present continuously or for long periods.

4. Standard Notice

This product is designed according to the international standard structure of the IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-31.

The place that are flammable gases or vapors (more known as explosive gases), such as petrochemical, gas, printing, coating, wineries, oil, gas stations, etc., must be used explosion-proof electrical equipment. These place (Petrochemical plants, flammable gas factories, chemical fiber manufacturing, medical products manufacturing, paint manufacturing and coating industry, semiconductor and electrical equipment industries) often use a lot of flammable gas or flammable liquids, it is easy formed an explosive atmosphere due to leakage or other factors. The usually necessary flammable material is filled in the operating environment. As the result, it must be particularly avoid leakage and control fire, and the electrical equipment should be used explosion-protected structure machinery to prevention the occurrence of fire. The explosion-protected structure is not only the feature of fire source, but the principle, strategies,

techniques and methods also vary on each other. To recognize its explosion-proof function, usually must be performed by a third party verified and users enable to identify by certificates and mark.

Explosion protected machinery, the basic principles is that put General electrical Machinery in the sturdy enclosure or cabinet. While flammable gas or vapor enter into the tank shell and detonation by the sparks or high temperature, the sturdy enclosure or cabinet have sufficient strength to withstand the pressure generated by an internal explosion, besides the explosion sparks won't be ignition external explosive gas. To play the overall function of this principles and techniques of explosion-proof, the installation that connected with explosion protected machinery should be also comply with this policy to achieve the purpose of explosion-proof.

5. Installation

The explosion-proof equipment install or set up , please observe IEC/EN 60079-14 safety standard ◦

It may cause explode, if the explosion-proof equipment install, operating or maintenance is not correct ◦

The luminaire include any part is not available arbitrary dismantle, and according to the customer designated installing accessory mode to "Installation Precautions" ◦

5.1 Installation Precautions

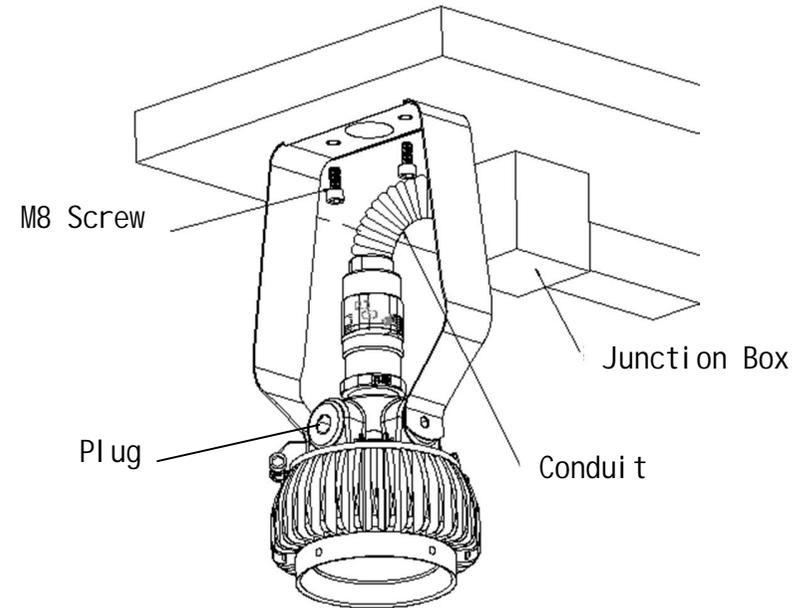
- (1) During installation, it must be a document to make sure no dangerous gases exist ◦
- (2) According to the installation instructions, to install the equipment ◦
- (3) Anti-corrosion: all the screw material is SUS316 ◦

(4) All screw plug must be pass the Ex d/Ex tb certification that approved by ATEX/IECEX, and only need the Hex wrenches to open/close (22 Nm Torque requirement) the screw plug ◦

5.2 Installation Mode

5.2.1 Hanging Mount 90°

1. M8 screw (Material:SUS316) through the bracket into the screw hole on the ceiling.
2. By step 1, screw locking on the ceiling (Torque requirement : 61.0 kgf.cm)



NOTE :

Total weight : 1.7 KG ◦

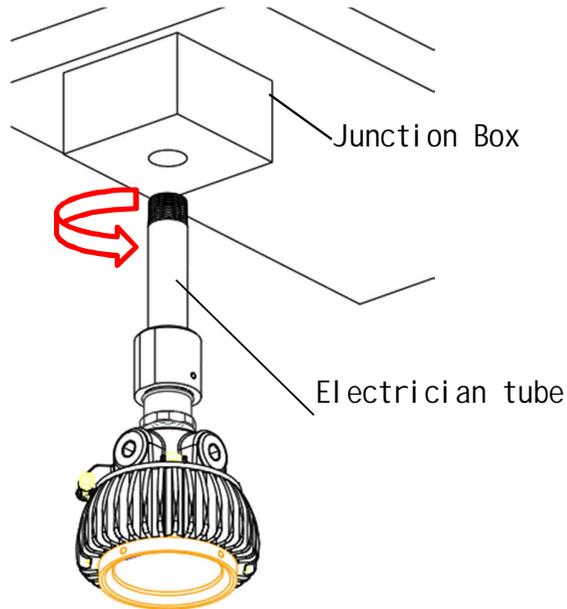
M8 screw tensile strength : 50.0 kN ◦

Conduit: minimum diameter 14mm, Metal Flexible Conduit, link

the Cable Gland and Junction Box ◦ The installation of Conduit can't cause the cable damage ◦

5.2.2 Pendant

1. External thread on the straight pipe with thread lock on the ceiling



NOTE:

Total weight : 2.7 KG ◦

Electrician tube:

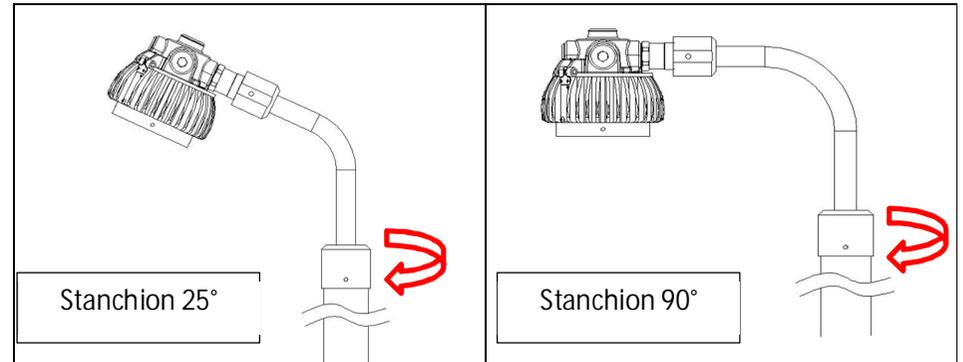
① **Material: SUS304 ◦**

② **Thread : NPT 3/4" G1/2"**

After the installation is completed to confirm whether electric tube locking in the junction box ◦

5.2.3 Stanchion 25°、90°

1. The pipe thread with thread lock on the stanchion ◦



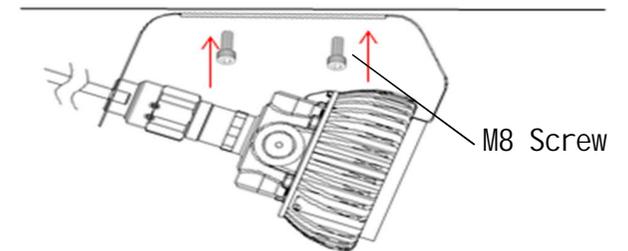
NOTE:

Total weight : 2.7 KG ◦

After the installation is completed to confirm the electric tube is locking in the column ◦

5.2.4 Mobility Type

1. M8 screw (Material:SUS316) through the bracket into the screw hole and locking on the ceiling(Torque requirement : 61.0 kgf.cm)



NOTE :

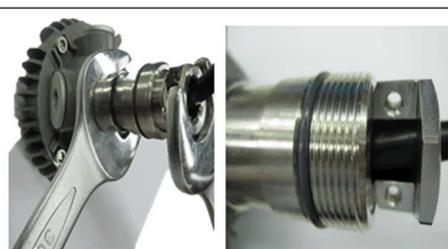
Total weight : 1.7 KG ◦

M8 screw tensile strength : 47.6kN ◦

5.2.5 Cable Gland

1. The client must choose the quality cable that meet CE / IEC to install and use, and the diameter should be refer to " 1. Luminaire Specification 13 (a)"
2. Must install from qualified people.
3. Follow each country electrical standard (to assemble).
4. Installation Steps:

Step one	Step two
	
<p>Confirm the O-Ring already set down with where marked in red area;and chack seven parts. (①Body②Nut Plate③Washer④Tube ⑤Pressure Nut⑥Connector⑦Sleeve) ※(The cable must be certification that approved by CE/IEC.)</p>	<p>Cable should cross through all components correctly in the order as picture shown above. The position in red should be tight with seal tape ° ※To tight three circles is recommended.</p>
Step three	Step four
	
<p>Use "Closed end terminal" to link up following wires: Green wire links Ground wire. Black wire links Center wire. Red wire links Fire wire. Put wires back into lighting after check. ※Check : (1). Pull cable and wire to make sure Closed end terminal does not loose. (2). Confirm the wire meets spot voltage.</p>	<p>Use wrench to fix cable gland on the lighting. ※Notice: (1). Torque Values:22Nm (2). Check O-Ring.</p>

Step five	Step six
	
<p>Follow Step two to put component into Cable Gland. Torque Values is 60Nm to tight up " Pressure Nut" in clockwise. ※Please refer to left top picture which shown above.</p>	<p>Use Nut Plate to press tight cable and use M4 screw to fix it on Pressure Nut. (Please refer to above picture) ※Check M4 screw is tight up.</p>
Step seven	Step eight
	
<p>Put connector into sleeve and fix it on cable gland body.(Please refer to above picture) °</p>	<p>Complete the Cable Gland setting.</p>

Important:

(1) To anti-corrosion, all screw material is SUS316 ◦

(2) Cable Gland :

- ① Cable Gland can install in 5 different cable entry point, refer to 5.2.1. The hole that don't using will be closed by plug that conform 5.1 (4). ◦
- ② Fixed Cable Gland Torque Requirement : 22 Nm ◦
- ③ Specifications of cable and tube refer to 1. Luminaire Specification (a). Cable Specification ◦
- ④ Cable Gland is a part of the luminaire ◦
- ⑤ The Cable must be certification that approved by CE/IEC ◦

(3) Ground wire:

- ① External earth screw location as show the follows Red Circle ◦



The external earth ground wire installation and terminal type as show the follows picture



O Type



U Type



② Ground wire cross-sectional area=4mm² , max LED current=1A

@V=24Vac-10% ◦

- ③ Both ground screw and washer material is M4*5 stainless steel ◦
- ④ Torque Requirement: 7.0 kgf.cm ◦
- ⑤ Screw material is SUS316 ◦
- ⑥ Ensure wire is tied assured.

(4) M4 Screw:

- ① Locks it into M4 Screw as figure ◦



- ② Torque Requirement: 7.0 kgf.cm ◦
- ③ Do not allow remove from users ◦
- ④ Screw material is SUS316 ◦

(5) O-ring:

- ① There has a O-ring groove to make sure the O-ring has no displacement before assembly ◦ (Follow IEC/EN 60079-0 No.16.5)

6. Running

- a. Make sure all electronic wire contact correct ◦

- b. Cable Gland need to lock in the luminaire.
- c. The material crack or deformation don't allowed exist in the luminaire.
- d. The environment and voltage must be meet the Plate board.

Before starting, according to the instructions and other safety standard to confirm the structure.

7 .Maintenance/Serviceing

◎Staff

In accordance with regulations, inspection and maintenance of the device shall be carried by experienced person who trained various explosion protection laws and regulations of safe operation (IEC / EN 60079-14, IEC / EN 60079-17) and the general principles of classification of the regions. The person should implement appropriate in-service training periodically, and has electrician (machine) certificate qualifications and the background about explosion safe and the professional knowledge relevant electrical regulations.

Before cut off the power supply of explosion-proof electrical equipment in a hazardous area, should not open the equipment and must adopt effective methods (e.g., locked in the powered down position switch or fuse removed, etc.).

◎Inspection

All electrical equipment should be checked to determine through its selection and installation is in line with its appropriateness. Another no matter when, the dangerous level to be changed, hazardous locations of flammable substances are changed, or electrical equipment moved to another location, it should re-determine the relevant electrical equipment sub-group or temperature rating is comply with the dangerous places.

After explosion-proof electrical equipment installed or replaced, it should based on the types of the initial field to conduct the initial inspection. Further, when repairs, adjustments or modifications, the associated electrical equipment also should check the types of the initial field to conduct the initial inspection. In addition, it should regularly check the essentials of the following types of periodic checks to execute periodic

inspection.

To assure maintain continuous using could require standards of the condition in hazardous areas, it should be periodically checked at least once every year, or continuing supervision and maintenance by the technical staff.

To keep luminaire well-distributed light, please use neutral cleaning solution to clean glass and use dust appliances spray high-pressure gas to blow off dust and dirt. Regular do the visual inspection, electrical inspection and mechanical inspection. According to the using of environment and frequency, determine the inspection plan.

Overheating observed signs of aging, such as wire or other parts faded, damaged, leaked cause internal inflow water or corrosion. Replace all the aging, damaged or dysfunctional parts. And clean seals before re-use luminaire.

Shutdown Note:

For maintenance purpose to downtime equipment, exposure of the wire connectors should be:

Terminated correctly in the appropriate certification containers;

Isolate with all power supply source and insulation;

Isolate with all power supply source and ground line

For permanently disable the equipment, its associated with the isolation of the power supply wiring should be removed, or the right end in the appropriate certified container.

Check the essentials:

Check the luminaire housing: Check for cracks and damage.

Confirm Cable Gland: whether installing is stable.

Check the power cord: Is there exposed copper or broken skin.

Perform electrical inspections to ensure that all electrical connections are tightly connected without loosening.

Perform mechanical inspection to ensure that all parts are properly assembled.

Using movable explosion-proof luminaire (portable, mobile and handheld) should be strictly controlled only in its appropriate type of explosion protection zone, gas groups and temperature class.

8. Maintenance

Maintenance staff must have the background about explosion safe and the professional knowledge relevant electrical regulations. As the result, if it's any faults and damage while it's doing maintenance, please inform our company to call the staff that within the related maintenance expertise to repair. And use of relevant explosion-proof safety inspection equipment to ensure that the structure is complete and the luminaire is suitable on relevant hazard places after maintenance.

If unauthorized repair result in losing effectiveness of the explosion and dust protected structure function, then THT-EX is not liable for it and warranty period is invalid immediately.

9. Disposal and Recycling

When the apparatus is disposed of , the respective national regulations on waste disposal will have to be observed.