

# Operating Instructions

## Universal Explosion Proof LED Lighting

### Model L1701



Drawing No: Instructions L1701 IECEx

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## 1. General Safety Instructions

### WARNING

**This manual contains basic safety instructions to be observed during installation, operation and maintenance of the apparatus, and for properly and safety run of the apparatus according to its performance data. Any damage of the apparatus may result explosion protection null and void. This manual represents the most relevant information about the product, applicable codes and regulations shall supplement it. Non-observance will endanger persons, plant and the environment. The person in charge is required to secure its employment in the industrial unit. Any improper usage, as well as non-compliance with the rules under this manual, shall release the manufacturer's all responsibilities.**

**The flameproof joints are not intended to be disassembled or repaired.**

**WARNING – The luminaire shall not be opened**

### 1.1 Before assembly/commissioning:

- ☞ Read through the operating instructions.
- ☞ Give adequate training to the assembly and operating personnel.
- ☞ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ☞ The national installation and assembly regulations (e.g. IEC 60079-14) apply.

### 1.2 When operating the device:

- ☞ Ensure the operating instructions are made available for the person in charge on location at all times.
- ☞ Observe these instructions, other working instructions and national safety regulations.
- ☞ Verify the implementation of safety instructions.

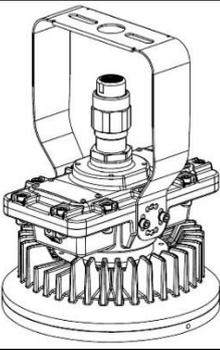
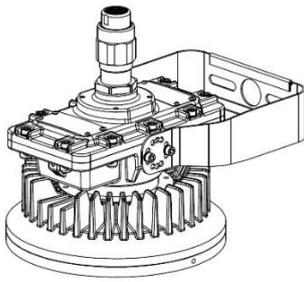
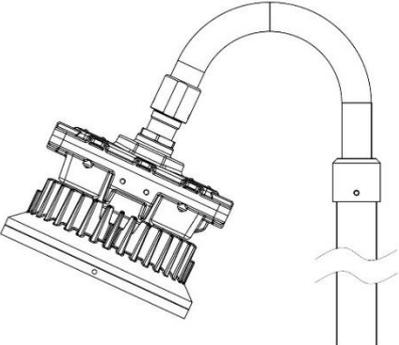
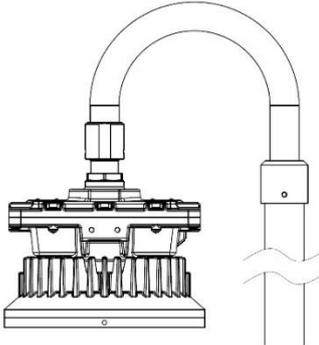
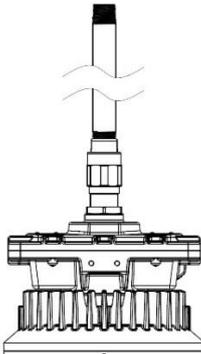
## 2. Intended Field of Application

The Universal Explosion Proof LED Lighting, Model L1701 is intended for using in gas explosive atmospheres (Zone 1 and Zone 2 according to IEC60079-10-1) and dust explosion hazards (Zone 21 and Zone 22 according to IEC60079-10-2). The use in other potentially explosive atmospheres does not correspond to

the designated use and is therefore not allowed.

The apparatus is designed for using in indoor and outdoor environments.

### 3. Technical Data

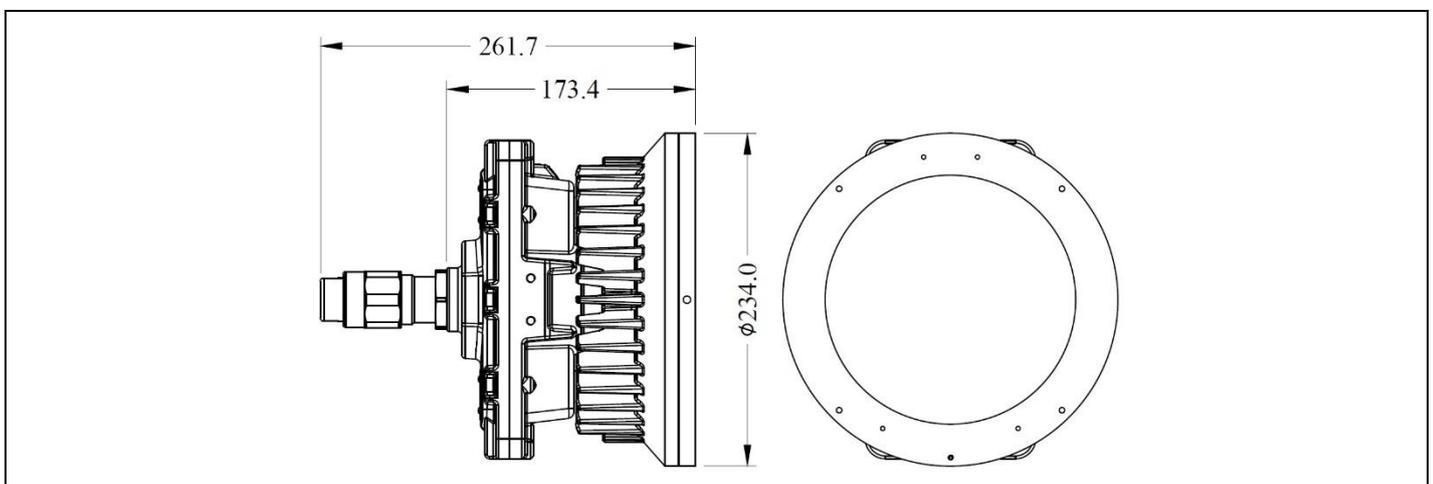
Item	Description		
Explosion Protection IECEX (Ta: -20°C ~ +40°C) Gas Explosion Protection Dust Explosion Protection IECEX (Ta: -20°C ~ +55°C) Gas Explosion Protection Dust Explosion Protection	Ex db IIC T5 Gb Ex tb IIIC T95°C Db  Ex db IIC T4 Gb Ex tb IIIC T130°C Db		
Rated Voltage	120 Vac~277 Vac (±10%), 50 & 60 Hz (Note information on type label)		
Wattage	60W / 80W / 100W		
Color of LED light	3000K ± 10% (Warm White) / 5000K ± 10% (Cool White)		
CRI	> 80		
Power Factor	$\cos \varphi \geq 0.9$		
Ambient Temperate Range	-20°C ~ +40°C (T5) -20°C ~ +55°C (T4)		
Degree of Protection	IP67		
Material Enclosure Glass	Aluminum alloy Temperature-resistant pressed glass		
LED Service Life	60,000 hrs		
Fitting Cable	Tube size 8.5mm(ID) of fitting cable range: $\varnothing$ 7.5~ $\varnothing$ 8.5 Tube size 9.0mm(ID) of fitting cable range: $\varnothing$ 8.0~ $\varnothing$ 9.0 (We will provide cable gland together with lighting fixture)		
Mounting Type / Weight	WHT = Two position (wall/Pendant) adjustable trunnion, each position with two aiming angles		
			
	8.6 kg	8.6 kg	
	Bending electrical tube 25°	Bending electrical tube 90°	Straight electrical tube 90°
			
	9.4 kg	9.5 kg	8.5 kg

#### 4. Model Code

THT	E	1701	A	C	K	C	A	J0	-S25
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

- (1) Brand name, THT = Top Hi-Tech Co., Ltd
- (2) Category of product, E = Explosion proof lighting fixtures
- (3) Model name, 1701 = Model L1701 series
- (4) Sub-series designation , A = Use EVERLIGHT SMD LED and PHILIPS supplier
- (5) Designates type of Top Cover, C = Top Cover with opening
- (6) Designates type of LED module, K = SMD LED
- (7) Designates C.C.T of LED, C = Cool white, W = Warm white
- (8) Designates voltage, A=120~277V
- (9) Designates wattage of LED lighting, J0 = 100W, H0=80W, F0=60W
- (10) Mounting type , S25 = Bending electrical tube 25°  
 S90 = Bending electrical tube 90°  
 P90 = Straight electrical tube 90°  
 WHT = Two position (wall/Pendant) adjustable trunnion, each position with two aiming angles

#### 5. Dimensions (All Dimensions in mm) – Subject to Alterations

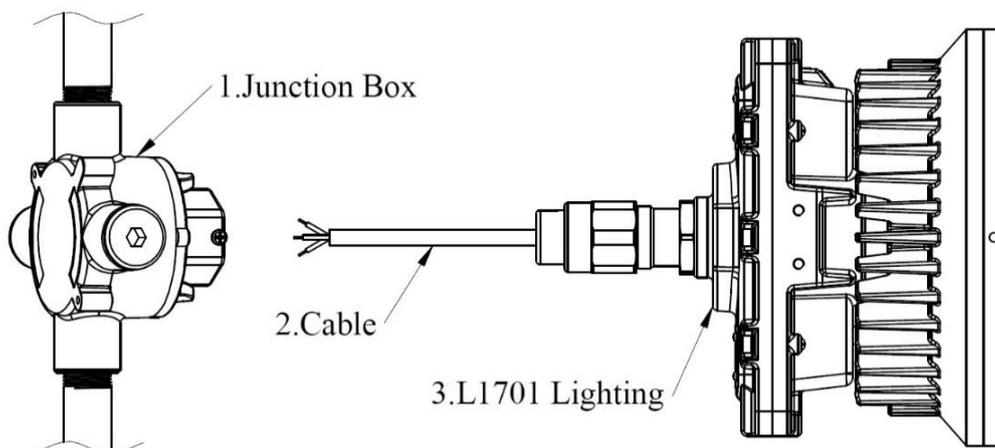


#### 6. Assembly and Installation

##### 6.1 Electrical Connection

###### Overview

1: Junction Box ( Provide by customer)	2: Cable (Length(min):1.5 m)	3: L1701 Lighting
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**Electrical Connection**

1. Insert the cable (2) of the luminary into the Ex certified Junction Box (1).
2. Fix and Introduce the wires of luminary with the terminal post of Junction Box (White-wire connects to Neutral; Red-wire connects to Live; Green-wire connects to Ground.)

**Attention:**

1. The Junction Box must be pass the Ex db/Ex tb certification that approved by IECEx
2. The minimum diameter of suitable cable for cable gland is 7.5 mm.

**6.2 Mounting Bracket Installation**

**6.2.1 Two Position (Wall /Pendant) Adjustable Trunnion Mounting Bracket (WHT)**

- ☞ The mount bracket is for the use of both Wall mount (Figure 1) and Pendant mount (Figure 2).
- ☞ Position the bracket holders and fix it by means of the provided M6 screws,24.5 kgf-cm.
- ☞ Secure the Wall/Hanging mounting bracket to the structure by using two fasteners (not provided).
- ☞ The angle of lighting fixture can be adjusted.

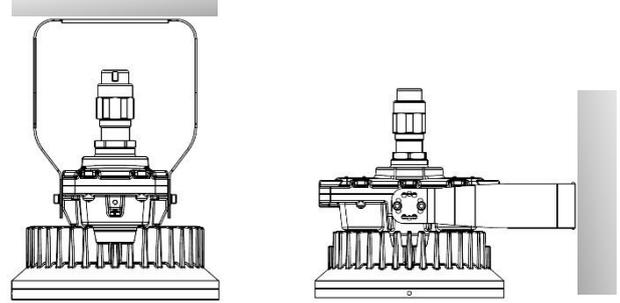


Figure 1

Figure 2

**6.2.2 Straight electrical tube mounting (P90)**

- ☞ The mounting type is for the use of Straight electrical tube mounting (Figure 3).
- ☞ Straight electrical tube mounting thread is NPT 3/4”.
- ☞ Thread the tube mounting on conduit and torque until wrench-tight as requirement,1500 kgf-cm.

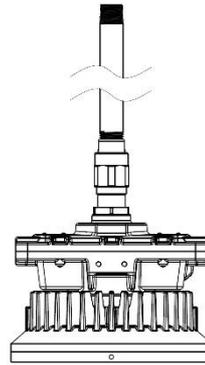


Figure 3

**6.2.3 Angle/Straight Bending electrical tube (S90&S25)**

- ☞ The mounting types are for the use of Bending electrical tube mounting (Figure 4). Tube mounting thread is NPT 1-1/2”
- ☞ Thread the tube mounting on conduit and torque until wrench-tight as requirement, 6600 kgf-cm.
- ☞ Tighten tube locking set screw to conduit 1.0 N-m.(Figures 4 and 5)

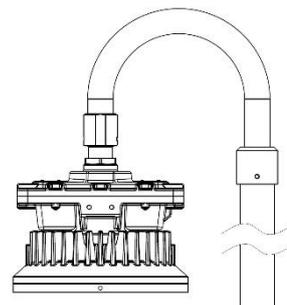


Figure 4

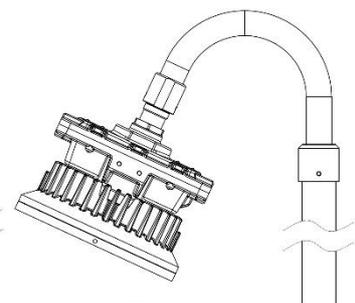


Figure 5

**6.3 Ground wire**

- ☞ External earth screw location as showing in the Red Circle of right pictures.
- ☞ The external earth ground wire installation and terminal type as show the right pictures.
- ☞ Ground wire cross-sectional area=4mm<sup>2</sup>, max LED current=0.9A; @V=120Vac-10%.
- ☞ Both ground screw and washer material is stainless steel.



- ☞ Screw hole spec: M5.
- ☞ Torque requirement: 14.5 kgf-cm.
- ☞ Ensure wire is tied assured.

## 6.4 Putting into Service

Before putting into operating, it's necessary to ensure that:

- ☞ the lighting is correctly installed.
- ☞ the connection has been correctly made.
- ☞ the cable has been inserted correctly.
- ☞ the voltage is correctly

## 7. Maintenance

### WARNING

- ▶ To avoid dangers due to energized parts, all connections and wiring must be disconnected from the power supply. Secure the connections against unauthorized activation.
- ▶ To avoid risk of burn to hands, let the housing, the cable gland and the protective glass cool down for approximate 30 minutes before touching them.
- ▶ Maintenance work is not permitted on flameproof enclosures. Repairs are only to be carried out by the manufacturer. Unauthorized repair shall cause the manufacturer's liability and warranty expires.
- ▶ Exception of corrosion resistance of copper plate between glass and enclosure: Corrosion resistance is not adequate for ammonia, amines and ammonia salts; oxidising acids such as chromic & nitric and their salts; ferric chloride, persulphates and perchlorates; mercury and mercury salts. Copper may also corrode in aerated non oxidising acid such as sulphuric and acetic acids, although it is practically immune from these acids if air is excluded. Copper is not suited for use with acetylene, which can react to form acetylide which is explosive. C11000 is considered to be immune to stress corrosion cracking in ammonia and similar media which causes cracking in brass and other copper alloys.
- ▶ Please avoid let the copper plate directly exposed to acetylene environment by opening the enclosure on-site.
- ▶ The entry point temperature is 78.27°C. The branch point temperature is 88.62°C.
- ▶ A copper plate used as one part of flameproof joint, and the safe use information in the instruction for the copper shall be observed strictly.
- ▶ The maximum cable length from conductor branching point of cable gland to inside flameproof enclosure no more than 16.5 cm when installed.

### Regular Maintenance

- ☞ Consult the relevant national regulations (e.g. IEC 60079-17) to determine the type and extent of inspections.
- ☞ Arrange the plan of regular inspection with the equipment, one time per 3-month at least, so that any defects in the equipment which may be anticipated are promptly detected.

### To check as part of the maintenance schedule as following:

- ☞ Cracks or damages on the glass cover and/or on the enclosure.
- ☞ Condition of the connecting cables.
- ☞ Screws of the mounting bracket are tightened.

## 8. Accessories and Spare Parts

### WARNING

Use only original THT-EX accessories and spare parts. For accessories and spare parts, see data sheet at [www.tht-ex.com](http://www.tht-ex.com).

## 9. Transport, Storage and Disposal

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- ☞ Transport and storage is only allowed in the original packaging, on the way pointed out on the carton box.
- ☞ Transport – Shock-free in its original carton, do not drop, and handle carefully.
- ☞ Store – Store in a dry place in its original packaging.
- ☞ Disposal – Ensure environmentally friendly disposal of all components according to the legal regulations.