

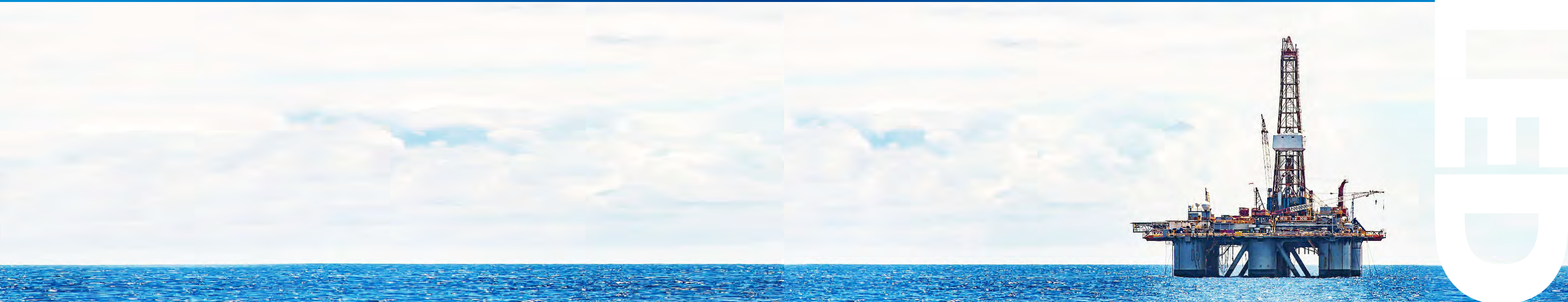


202208 - V1.0



Providing customized and cost-effective  
explosion-proof solutions for  
a wide array of hazardous and industrial applications.

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**RoHS**

**SHENZHEN KHJ SEMICONDUCTOR LIGHTING CO., LTD**



## Company Profile

Shenzhen KHJ Semiconductor Lighting Co., Ltd was established in 2009 engaged in R&D, manufacturing and marketing. KHJ's products enlarge from single to two major parts: safety lighting and industrial lighting. KHJ committed to become a Global, innovative, Responsible, Public lighting solution provider and the leader of safety lighting segments.

**KHJ's culture:** Self-discipline and Social Commitment



**Focus On Security And Energy-Saving  
Carry Brightness And Sustainable Future**

## Product Categories

**KHJ-LED Explosion Proof Lighting** Focus on researching explosion proof lights in the hazardous environment areas where a potential for explosion and/or fires exist due to flammable gases, vapors and dust in the air, enhancing the strength of housing, offering failsafe design resistant to the fire, spark, electric arc, hot surface, ensuring the safety.

**KHJ-Industrial Lighting** Focus on researching the industrial lights used in areas with industrial vibration, corrosion, high temperature, enhancing products' anti-vibration, protective performances, environmental adaptability and improving energy efficiency to assure a continuous production and energy saving.



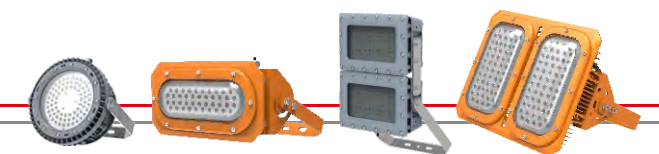
## Test Capacity

With rapid development, KHJ pay more attention to product's quality and build laboratories with test equipment, Thus 90% testing items could be done by us.



## Production Capacity

Possessing 3,000 square meter factory area, several advanced automatic SMT production lines, semi-automatic DIP and assembly production lines, our daily average output can reach more than 2,000 set of industrial luminaires.





# Management Concepts

**Mission:**  
Providing the best semiconductor products and service for customers.

**Vision:**  
Becoming the best partner with customers.

**Core Values:**  
Human-people oriented.

- Technology-knowledge innovation, technical innovation, management innovation.
- Value-Bring profit to customers, create wealth to society.
- Sharing-Together we share the responsibility and possession.
- Devotion-Great enthusiasm to work, whole-hearted to give.
- Responsibility-Undertaking and devotion.



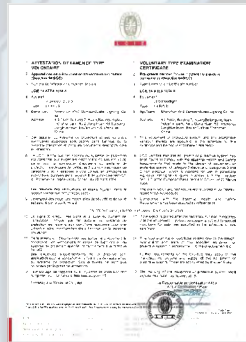
# Service

With" Customer First" service principle, KHJ increase investment in service system constantly to provide customers with all-round service : pre-sale, sells and post-sale, including project solution, installation and maintenance , and technical support. We have founded four domestic marketing centers : Huabei, Shanxi, Xinjiang, Bohai, meanwhile, have expanded our international business to Europe, Asia, North America, South America and Middle East.

# R&D Team

Owning a team of 20 engineers (over 7 senior engineers) with rich experience in safety lighting field.

# Qualification and Certification

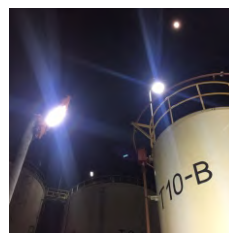




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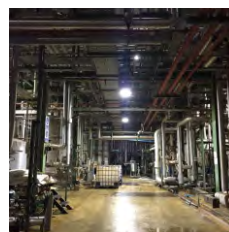
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**Luminous flux**

quantity derived from radiant flux by evaluating the radiation according to its action upon the CIE standard photometric observer. For photopic vision

$$\Phi = K_m \int_0^{\infty} \frac{d\Phi_e(\lambda)}{d\lambda} \cdot V(\lambda) \cdot d\lambda$$

where

$$d\Phi_e(\lambda)/d\lambda$$

is the spectral distribution of the radiant flux and  $v(\lambda)$  is the spectral luminous efficiency.  
unit: lm

**Luminous intensity**(of a source, in a given direction)(I)

quotient of the luminous flux  $d\Phi$  leaving the source and propagated in the element of solid angle  $d\Omega$  containing the given direction, by the element of solid angle

$$I = \frac{d\Phi}{d\Omega}$$

unit: cd = lm • sr<sup>-1</sup>

**Luminance** (in a given direction, at a given point of a real or imaginary surface) (L)

quantity defined by the formula

$$L = d\Phi / (dA \cdot \cos \Theta \cdot d\Omega)$$

where

$d\Phi$  is the luminous flux transmitted by an elementary beam passing through the given point and propagating in the solid angle  $d\Omega$  containing the given direction;

$dA$  is the area of a section of that beam containing the given point.

$\Theta$  is the angle between the normal to that section and the direction of the beam.

unit : cd • m<sup>-2</sup> = lm • m<sup>-2</sup> • sr<sup>-1</sup>

**luminance uniformity**

ratio of minimum luminance to average luminance

**Illuminance (at a point of a surface) (E)**

quotient of the luminous flux  $d\Phi$  incident on an element of the surface containing the point, by the area  $dA$  of that element Equivalent definition. Integral, taken over the hemisphere visible from the given point, of the expression  $L \cdot \cos \Theta \cdot d\Omega$ , where  $L$  is the luminance at the given point in the various directions of the incident elementary beams of solid angle  $d\Omega$ , and  $\Theta$  is the angle between any of these beams and the normal to the surface at the given point.

$$E = \frac{d\Phi}{dA}$$

unit : lx = lm m<sup>-2</sup>

**Average illuminance (E)**

illuminance averaged over the specified area  
unit : lx

**Illuminance uniformity**

ratio of minimum illuminance to average illuminance on a surface

**Reference surface**

surface on which illuminance is measured or specified

**Disability glare**

glare that impairs the vision of objects without necessarily causing discomfort

**Discomfort glare**

glare that causes discomfort without necessarily impairing the vision of objects

**Veiling reflections**

specular reflections that appear on the object viewed and that partially or wholly obscure the details by reducing contrast.

**Luminous environment**

lighting considered in relation to its physiological and psychological effects

**Colour rendering**

effect of an illuminant on the colour appearance of objects by conscious or subconscious comparison with their colour appearance under a reference illuminant.

**CIE 1974 general colour rendering index [Ra]**

mean of the CIE 1974 special colour rendering indices for a specified set of eight test colour samples.

**Colour temperature (Tc)**

temperature of a Planckian radiator whose radiation has the same chromaticity as that of a given stimulus.

unit : K

**Reflectance**

(for incident radiation of given spectral composition, polarization and geometrical distribution) ( $\rho$ )  
ratio of the reflected radiant or luminous flux to the incident flux in the given conditions

unit : 1

**Transmittance** (for incident radiation of given spectral composition, polarization and geometrical distribution) ( $\tau$ ) ratio of the transmitted radiant or luminous flux to the incident flux in the given conditions

unit : 1

**Absorptance ( $\alpha$ )**

ratio of the absorbed radiant or luminous flux to the incident flux under specified conditions  
unit : 1



## Explosion Proof Knowledge

### Gas and Dust Grouping for Electrical Equipment for IEC 60079-0

| Group | Representative Gases and Dusts                                            |
|-------|---------------------------------------------------------------------------|
| I     | All underground coal mining. Firedamp (methane)                           |
| IIA   | Industrial methane, propane, petrol and the majority of industrial gasses |
| IIB   | Ethylene, coke oven gas and other industrial gasses                       |
| IIC   | Hydrogen, acetylene, carbon disulphide                                    |
| IIIA  | Combustible flyings                                                       |
| IIIB  | Non-conductive dust                                                       |
| IIIC  | Conductive dust                                                           |



### Comparison of Surface Temperature Classification IEC and NEC

| Maximum Temperature °C | Surface Temperature Classification |            |
|------------------------|------------------------------------|------------|
|                        | EN 50014                           | ANSI/UL844 |
| 450                    | T1                                 | T1         |
| 300                    | T2                                 | T2         |
| 280                    | 280°C (T2)                         | T2A        |
| 260                    | 260°C (T2)                         | T2B        |
| 230                    | 230°C (T2)                         | T2C        |
| 210                    | 215°C (T2)                         | T2D        |
| 200                    | T3                                 | T3         |
| 180                    | 180°C (T3)                         | T3A        |
| 160                    | 165°C (T3)                         | T3B        |
| 160                    | 160°C (T3)                         | T3C        |
| 135                    | T4                                 | T4         |
| 120                    | 120°C (T4)                         | T4A        |
| 100                    | T5                                 | T5         |
| 85                     | T6                                 | T6         |



### Comparison of Representative Gases in IEC and NEC Gas Groups

| Representative Gas | Explosion Group IEC 60079-0 | Explosion Group National Electrical Code |
|--------------------|-----------------------------|------------------------------------------|
| Acetylene          | IIC                         | A                                        |
| Carbon disulphide  | IIC                         | B                                        |
| Hydrogen           | IIC                         | B                                        |
| Ethylene oxide     | IIB                         | B                                        |
| Hydrogen sulphide  | IIB                         | C                                        |
| Ethylene           | IIB                         | C                                        |
| Acrylo-nitrile     | IIA                         | D                                        |
| Industrial methane | IIA                         | D                                        |
| Propane            | IIA                         | D                                        |
| Ethyl acetate      | IIA                         | D                                        |



### Hazardous Areas Classification according to IEC 60079-10-1 and IEC 61241-10-2

| Zone               | Description                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Zone 0 and Zone 20 | An area in which an explosive atmosphere is continuously present or for long periods or frequently                                              |
| Zone 1 and Zone 21 | An area in which an explosive atmosphere is likely to occur occasionally in normal operation                                                    |
| Zone 2 and Zone 22 | An area in which an explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only |

### Selection of Protected Equipment in Hazardous Areas generally according to IEC 60079-14

| Zone    | Type of Protection Assigned to Equipment                                                                                    | EPL |
|---------|-----------------------------------------------------------------------------------------------------------------------------|-----|
| Zone 0  | Ex ia Ex ma and types of protection suitable for Zone 0 as constructed to IEC 60079-26                                      | Ga  |
| Zone 1  | Any type of protection suitable for Zone 0 and Ex d, Ex ib, Ex py, Ex e, Ex q and Ex mb (Also see notes on Ex s protection) | Gb  |
| Zone 2  | Any type of protection suitable for Zone 0 or 1 and Ex n, Ex mc, Ex ic, Ex pz and Ex o (Also see notes on Ex s protection)  | Gc  |
| Zone 20 | tD A20, tD B20, iaD and maD                                                                                                 | Da  |
| Zone 21 | Any type of protection suitable for Zone 20 and tD A21, tD B21, ibD, mbD and pD                                             | Db  |
| Zone 22 | Any type of protection suitable for Zone 20 or 21 and tD A22 IP 6X                                                          | Dc  |

### EPL, ATEX Category, Design Requirements and Expected Application

| IEC EPL | ATEX Category | Degree of Safety              | Design Requirement(condensed)                                                | Expected Zone of use |
|---------|---------------|-------------------------------|------------------------------------------------------------------------------|----------------------|
| Ga      | Category 1    | Very high level of protection | Two independent means of protection or safe with two independent faults      | Zone 0               |
| Da      | Category 1    |                               |                                                                              | Zone 20              |
| Gb      | Category 2    | High level of protection      | Safe with frequently occurring disturbances or with a normal operating fault | Zone 1               |
| Db      | Category 2    |                               |                                                                              | Zone 21              |
| Gc      | Category 3    | Enhanced level of protection  | Safe in normal operation                                                     | Zone 2               |
| Dc      | Category 3    |                               |                                                                              | Zone 22              |





Certified Instrumentation from Endress+Hauser for North America

Markings for Canada (Marking Examples)

Option A: Zones                      Option B: Divisions

Ex ia IIC T4    Class I, Division 1, Groups A,B,C&D T4

|        |                                      |               |                                                                                        |
|--------|--------------------------------------|---------------|----------------------------------------------------------------------------------------|
| Means: |                                      | Means:        |                                                                                        |
| Ex     | Explosion protected                  | Class I       | Flammable gas or vapor                                                                 |
| ia     | Protection method (Intrinsic Safety) | Division 1    | Area classification (explosive atmosphere may exist under normal operating conditions) |
| IIC    | Gas group (acetylene & hydrogen)     | Group A,B,C&D | Gas groups                                                                             |
| T4     | Temperature class                    | T4            | Temperature code                                                                       |

Protection Concepts                      Ex/AEx

| Method of Protection | Code                                                                   | Permitted Use                                                                                        | Standard US (FM)                                                                          | Standard Canada (CSA)                                        | Protection Principle                           |
|----------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------|
| Increased Safety     | AEx e<br>Ex e                                                          | Class I, Zone 1<br>Zone 1                                                                            | FM 3600* (ISA S12.16.01)<br>IEC 60079-7                                                   | CSA Std. E79-7                                               | No arcs, sparks or hot surfaces                |
| Non-incendive        | (NI)                                                                   | Class I, Div 2                                                                                       | FM 3611                                                                                   | CSA Std. C22.2 No. 213 and CEC, Part I, App. J               |                                                |
| Non-sparking         | Ex nA                                                                  | Zone 2                                                                                               | IEC 60079-15                                                                              | CSA Std. E79-15                                              |                                                |
| Explosionproof       | (XP)                                                                   | Class I, Div 1                                                                                       | FM 3615                                                                                   | CSA Std. C22.2 No. 30                                        |                                                |
| Flameproof           | AEx d<br>Ex d                                                          | Class I, Zone 1<br>Zone 1                                                                            | FM 3600* (ISA S12.22.01)<br>IEC 60079-1                                                   | CSA Std. E79-1                                               | Contain the explosion and quench the flame     |
| Powder Filled        | AEx q<br>Ex q                                                          | Class I, Zone 1<br>Zone 1                                                                            | FM 3600* (ISA S12.25.01)<br>IEC 60079-5                                                   | CSA Std. E79-5                                               |                                                |
| Enclosed Break       | Ex nC                                                                  | Zone 2                                                                                               | IEC 60079-15                                                                              | CSA Std. 79-15                                               |                                                |
| Intrinsic Safety     | (IS)<br>AEx ia<br>AEx ib<br>Ex ia                                      | Class I, Div 1<br>Class I, Zone 0<br>Class I, Zone 1<br>Zone 0                                       | FM 3610<br>FM 3610<br>FM 3610<br>IEC 60079-11                                             | CSA Std. C22.2 No. 157<br>CSA Std. E79-11<br>CSA Std. E79-11 | Limit energy of sparks and surface temperature |
|                      | Ex ib<br>Ex nA<br>Ex nL                                                | Zone 1<br>Zone 2<br>Zone 2                                                                           | IEC 60079-11<br>IEC 60079-15<br>IEC 60079-15                                              | CSA Std. E79-11<br>CSA Std. E79-15<br>CSA Std. E79-15        |                                                |
| Limited Energy       | Ex nL                                                                  | Zone 2                                                                                               | IEC 60079-15                                                                              | CSA Std. E79-15                                              |                                                |
| Pressurized          | Type X<br>Type Y<br>Type Z<br>Ex p<br>Ex px<br>Ex py<br>Ex pz<br>Ex nZ | Class I, Div 1<br>Class I, Div 1<br>Class I, Div 2<br>Zone 1<br>Zone 1<br>Zone 1<br>Zone 2<br>Zone 2 | FM 3620<br>FM 3620<br>FM3620<br>IEC 60079-2<br>IEC 60079-2<br>IEC 60079-2<br>IEC 60079-15 | CSA Std. E79-2<br>CSA Std. E79-15                            | Keep flammable gas out                         |
| Restricted Breathing | Ex nR                                                                  | Zone 2                                                                                               | IEC 60079-15                                                                              | CSA Std. E79-15                                              |                                                |
| Encapsulation        | AEx m<br>Ex m                                                          | Class I, Zone 1<br>Zone 1                                                                            | FM 3600* (ISA S12.23.01)<br>IEC 60079-18                                                  | CSA Std. E79-18                                              |                                                |
| Oil Immersion        | AEx o<br>Ex o                                                          | Class I, Zone 1<br>Zone 1                                                                            | FM 3600* (ISA S12.26.01)<br>IEC 60079-6                                                   | CSA Std. E79-6                                               |                                                |

\*Also shall comply with ISA S12.00.01                      Based on ISA S12.02.01

Certified Instrumentation from Endress+Hauser for North America

Markings for the United States (Marking Examples)

Option A: Zones                      Option B: Divisions

Class I, Zone 0, AEx ia IIC T4    IS Class I, Division 1, Groups A,B,C&D T4

|         |                                                                 |               |                                                                                        |
|---------|-----------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|
| Means:  |                                                                 | Means:        |                                                                                        |
| Class I | Flammable gas or vapor                                          | IS            | Protection method (Intrinsic Safety)                                                   |
| Zone 0  | Area classification (explosive atmosphere present continuously) | Class I       | Flammable gas or vapor                                                                 |
| A       | Conformity to US requirements                                   | Division 1    | Area classification (explosive atmosphere may exist under normal operating conditions) |
| Ex      | Explosion protected                                             | Group A,B,C&D | Gas groups                                                                             |
| ia      | Protection method (Intrinsic Safety)                            | T4            | Temperature code                                                                       |
| IIC     | Gas group (acetylene & hydrogen)                                |               |                                                                                        |
| T4      | Temperature class                                               |               |                                                                                        |

Area Classification                      Zone/Division

|                           |                      | Flammable Material Present Continuously (> 1000 h/y) | Flammable Material Present Intermittently (10...000 h/y) | Flammable Material Present Abnormally (< 10 h/y) |
|---------------------------|----------------------|------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------|
| IEC                       | Gas                  | Zone 0                                               | Zone 1                                                   | Zone 2                                           |
| CENELEC                   |                      |                                                      |                                                          |                                                  |
| CENELEC                   | Dust                 | Zone 20                                              | Zone 21                                                  | Zone 22                                          |
| NEC & CEC (North America) | Gas, Dust and Fibers | Division 1                                           | Division 1                                               | Division 2                                       |
|                           | Gas                  | Zone 0                                               | Zone 1                                                   | Zone 2                                           |

Special Purpose Enclosures

| Enclosure Type US (NEMA 250) and Canada (CSA Std. C22.2 No. 94) | Approximate equivalent IP-Code (IEC 60529) | Protection against                                                                          |
|-----------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------|
| 1                                                               | → IP10                                     | incidental contact with the enclosed equipment                                              |
| 2                                                               | → IP11                                     | dripping and light splashing of liquids                                                     |
| 3                                                               | → IP54                                     | windblown dust, rain, sleet, snow and external formation of ice                             |
| 3R                                                              | → IP14                                     | rain, sleet, snow and external formation of ice                                             |
| 3S                                                              | → IP54                                     | windblown dust, rain, sleet, snow and external mechanism(s) remain operable when ice laden  |
| 4                                                               | → IP56                                     | windblown dust, rain, sleet, snow, splashing water, hose-directed water                     |
| 4X                                                              | → IP56                                     | windblown dust, rain, sleet, snow, splashing water, hose-directed water and corrosion       |
| 5                                                               | → IP52                                     | settling airborne dust, lint, fibers, flyings, dripping and light splashing of liquids      |
| 6                                                               | → IP67                                     | hose-directed water, entry of water during occasional temporary submersion at limited depth |
| 6P                                                              | → IP67                                     | hose-directed water, entry of water during prolonged submersion at limited depth            |

Temperature Code T4 and Temperature Class

| Maximum Surface Temperature [°C] | North American Temperature Code | CENELEC/IEC Temperature Class |
|----------------------------------|---------------------------------|-------------------------------|
| 450                              | T1                              | T1                            |
| 300                              | T2                              | T2                            |
| 280                              | T2A                             |                               |
| 260                              | T2B                             |                               |
| 230                              | T2C                             |                               |
| 215                              | T2D                             |                               |
| 200                              | T3                              | T3                            |
| 180                              | T3A                             |                               |
| 165                              | T3B                             |                               |
| 160                              | T3C                             |                               |
| 135                              | T4                              | T4                            |
| 120                              | T4A                             |                               |
| 100                              | T5                              | T5                            |
| 85                               | T6                              | T6                            |

IIC/Groups Hazardous Locations Groups

| Typical Hazard | North America CEC Section 18 NEC Article 500 | CENELEC/IEC CENELEC EN50014 IEC 60079 |
|----------------|----------------------------------------------|---------------------------------------|
| Acetylene      | Class I/Group A or IIC                       | IIC                                   |
| Hydrogen       | Class I/Group B or IIC                       | IIC                                   |
| Ethylene       | Class I/Group C or IIB                       | IIB                                   |
| Propane        | Class I/Group D or IIA                       | IIA                                   |
| Methane        | Group D (gaseous mines) or I                 | I                                     |
| Metal Dust     | Class II/Group E                             |                                       |
| Coal Dust      | Class II/Group F                             |                                       |
| Grain Dust     | Class II/Group G                             |                                       |
| Fibers         | Class III                                    |                                       |





## Explosion Proof Knowledge



## Explosion Proof Knowledge

ATEX certified instrumentation from Endress+Hauser

### Approval number EC

KEMA 01 ATEX 1234 X

Notified body i.e. KEMA, PTB, CESI, TÜV, DMT, etc. Year of issue ATEX directive Consecutive number Special conditions

#### Protection Method

Summary of protection methods against explosion

| General Principles                           | IEC / European Practice                            |                       | Cenelec EN        | American <sup>1</sup> Practice |      | Principle Characteristics                                                                                                                           |
|----------------------------------------------|----------------------------------------------------|-----------------------|-------------------|--------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | Zone                                               |                       |                   | Division                       |      |                                                                                                                                                     |
| Explosion Containment                        | Explosion-proof Ex >d<<                            | 1, 2                  | 50018             | Explosion-proof                | 1, 2 | Relatively easy to be applied, but with specific mechanical requirements. Maintenance and checks are more time consuming.                           |
| Segregation                                  | Pressurization Ex >p<<                             | 1, 2                  | 50016             | Purging                        | 1, 2 | Suitable for cabinets and motors. Requires specific monitoring alarm systems.                                                                       |
|                                              | Encapsulation Ex >m<<                              | 1, 2                  | 50028             | Not recognized                 | -    | Suitable for sensors, small circuits and solenoid valves. Maintenance practically impossible.                                                       |
|                                              | Oil-immersion Ex >o<<                              | 1, 2                  | 50015             | Oil-immersion                  | 1, 2 | Suitable for transformers and where there are moving parts. Generally not widely used.                                                              |
|                                              | Powder filling Ex >q<<                             | 1, 2                  | 50017             | Not recognized                 | -    | Suitable where there are no moving parts. Present maintenance difficulty. Not widely used.                                                          |
| Prevention                                   | Increased safety Ex >e<<                           | 1, 2                  | 50019             | Not recognized                 | -    | Suitable for non-sparking apparatus during normal functioning (terminals, connections, lamp sockets, motors). Particular construction requirements. |
|                                              | Intrinsic safety Ex >ia<<                          | 0, 1, 2 (20, 21, 22)* | 50020/50039/50284 | Intrinsic safety               | 1, 2 | Suitable for process instrumentation. Economical and easy installation, maintenance and checks. Limited to low power circuits.                      |
|                                              | Intrinsic safety Ex >ib<<                          | 1, 2 (21, 22)*        | 50020/50039       | Not recognized                 | -    | Similar to Ex "ia" except for the number of faults to be considered.                                                                                |
|                                              | Type n Ex >n<<                                     | 2                     | 50021             | Non incendive                  | 2    | Alternative to standardized types of protection for zone 2 and division 2. No certificate required in Europe.                                       |
| Special requirement for category 1 equipment |                                                    | 0 (1, 2)*             | 50284             | Not recognized                 | -    | Additional requirements for equipment protected by standardized types of protection.                                                                |
| Dust Ex Protection                           | Protection by enclosure and temperature limitation | 20, 21, 22            | 50281             | NEC Section 90-4               | 1, 2 | Special requirements for equipment in dust explosion hazardous areas.                                                                               |

EEx ia

ATEX certified instrumentation from Endress+Hauser

### ATEX Marking

Marking example:

CE xxxx Ex II 2G  
CE marking Identification code of notified body Ex mark Equipment group Gas, vapors Category of protection

### Type of Protection

EEx ia IIC T4  
Protection method Apparatus group/Gas group Temperature classification

#### Category of Equipment

ATEX directive divides equipment into groups and additional into categories:

| Group I (Mines)            |                                                                   | Group II (Surface (non-mining) equipment) |                                                |           |
|----------------------------|-------------------------------------------------------------------|-------------------------------------------|------------------------------------------------|-----------|
| Subdivided into categories |                                                                   | Category                                  | subdivided into                                | Zone      |
| M1                         | Equipment remains functional with an explosive atmosphere present | 1G (gas)                                  | Equipment with a very high level of protection | 0 (gas)   |
|                            |                                                                   | 1D (dust)                                 |                                                | 20 (dust) |
| M2                         | Equipment to be de-energized in the event of an explosive         | 2G (gas)                                  | Equipment with a high level of protection      | 1 (gas)   |
|                            |                                                                   | 2D (dust)                                 |                                                | 21 (dust) |
|                            |                                                                   | 3G (gas)                                  | Equipment with a normal level of protection    | 2 (gas)   |
|                            |                                                                   | 3D (dust)                                 |                                                | 22 (dust) |

Note: category 2D apparatus required for Zone 22 (conductive dust).

Examples of Category marking:

1/2G for equipment interfacing Zone 0 and Zone 1 areas  
1/3D for equipment interfacing Zone 20 and Zone 22 areas  
(1) for associated apparatus with intrinsically safe output into Zone 0

#### Temperature Classification

\*\* for comparison only

| Maximum Surface Temperature |          | Temperature Classification |                             |
|-----------------------------|----------|----------------------------|-----------------------------|
| Degree C                    | Degree F | IEC/European               | North American <sup>1</sup> |
| 450                         | 842      | T1                         | T1                          |
| 300                         | 572      | T2                         | T2                          |
| 280                         | 536      |                            | T2A                         |
| 260                         | 500      |                            | T2B                         |
| 230                         | 446      |                            | T2C                         |
| 215                         | 419      |                            | T2D                         |
| 200                         | 392      | T3                         | T3                          |
| 180                         | 356      |                            | T3A                         |
| 165                         | 329      |                            | T3B                         |
| 160                         | 320      |                            | T3C                         |
| 135                         | 275      | T4                         | T4                          |
| 120                         | 248      |                            | T4A                         |
| 100                         | 212      | T5                         | T5                          |
| 85                          | 185      | T6                         | T6                          |

#### Apparatus Group and Gas/Dust Group

| Hazard Categories | Apparatus Classification |                            | Min. Ignition Energy  |
|-------------------|--------------------------|----------------------------|-----------------------|
|                   | Europe                   | North America <sup>1</sup> |                       |
| Mines             | Group I                  | Group D (gaseous mines)    |                       |
| Acetylene         | Group IIC                | Class I, Group A           | 20 µJ                 |
| Hydrogen          | Group IIC                | Class I, Group B           | 20 µJ                 |
| Ethylene          | Group IIB                | Class I, Group C           | 60 µJ                 |
| Propane           | Group IIA                | Class I, Group D           | 180 µJ                |
| Metal dust        |                          | Class II, Group E          | More easily ignitable |
| Coal dust         |                          | Class II, Group F          |                       |
| Grain dust        |                          | Class II, Group G          |                       |
| Fibers            |                          | Class III                  |                       |

## ATEX

#### ATEX Directives

ATmosphere EXposable

Old directives specify the European standards

New directives specify the so called Essential Health and Safety Requirements

Dust-Ex hazardous areas are regulated first time in EC.

At this moment there are three directives for equipment intended for use in Hazardous Area:

82/139/EEC (Mines)  
Will be valid until June 30, 2003  
Only Electrical Equipment

76/117/EEC (Surface Industries)  
Will be valid until June 30, 2003  
Only Electrical Equipment

New directive  
94/9/EC (ATEX) valid since March 1, 1996 mandatory July 1, 2003  
All Equipment, Protective Systems and Components

It will be mandatory to re-certify equipment certified under the old directives if you want to sell this equipment after July 1, 2003.

Summary of changes:

Categorisation of equipment matching area classifications.

Categorisation based upon Essential Safety Requirements (ESR):

- Consider electrical and non-electrical equipment, also dust-Ex hazardous areas
- Influencing equipment design with respect to:
  - Protective method
  - Choice of materials
  - Equipment marking
  - Safety instructions included
  - Environmental and atmospheric conditions
  - Software included





| Type of interior, task or activity                                                            | Em lux | UGRL | Ra | Remarks                                                                   |
|-----------------------------------------------------------------------------------------------|--------|------|----|---------------------------------------------------------------------------|
| General building areas                                                                        |        |      |    |                                                                           |
| Entrance halls                                                                                | 100    | 22   | 60 |                                                                           |
| Lounges                                                                                       | 200    | 22   | 80 |                                                                           |
| Circulation areas and corridors                                                               | 100    | 28   | 40 | At exits and entrances provide a transition zone and avoid suddenchanges. |
| Stairs, escalators, travelators                                                               | 150    | 25   | 40 |                                                                           |
| Loading ramps/bays                                                                            | 150    | 25   | 40 |                                                                           |
| Canteens                                                                                      | 200    | 22   | 80 |                                                                           |
| Rest rooms                                                                                    | 100    | 22   | 80 |                                                                           |
| Rooms for physical exercise                                                                   | 300    | 22   | 80 |                                                                           |
| Cloakrooms, washrooms,bathrooms, toilets                                                      | 200    | 25   | 80 |                                                                           |
| Sick bay                                                                                      | 500    | 19   | 80 |                                                                           |
| Rooms for medical attention                                                                   | 500    | 16   | 90 | Tcp at least 4000 K                                                       |
| Plant rooms, switch gear rooms                                                                | 200    | 25   | 60 |                                                                           |
| Post room, switchboard                                                                        | 500    | 19   | 80 |                                                                           |
| Store, stockrooms, cold store                                                                 | 100    | 25   | 60 | 200 lux if continuously occupied                                          |
| Dispatch packing handling areas                                                               | 300    | 25   | 60 |                                                                           |
| Control station                                                                               | 150    | 22   | 60 | 200 lux if continuously occupied                                          |
| Cement, concrete, & bricks industry                                                           |        |      |    |                                                                           |
| Drying                                                                                        | 50     | 28   | 20 | Safety colours shall be recognisable.                                     |
| Preparation of materials, work on kilns and mixers                                            | 200    | 28   | 40 |                                                                           |
| General machine work                                                                          | 300    | 25   | 80 |                                                                           |
| Rough forms                                                                                   | 300    | 25   | 80 |                                                                           |
| Ceramics and glass industry                                                                   |        |      |    |                                                                           |
| Drying                                                                                        | 50     | 28   | 20 |                                                                           |
| Preparation, general machine work                                                             | 300    | 25   | 80 |                                                                           |
| Enamelling, rolling, pressing,shaping simple parts, glazing,glass blowing                     | 300    | 25   | 80 |                                                                           |
| Grinding, engraving, glass polishing,shaping precision parts,manufacture of glass instruments | 700    | 19   | 80 |                                                                           |
| Decorative work                                                                               | 500    | 19   | 80 |                                                                           |
| Grinding of optical glass, crystal hand grinding and engraving, work on average goods         | 750    | 16   | 80 |                                                                           |
| Precision work e.g decorative grinding, hand painting                                         | 1000   | 16   | 90 | Tcp at least 4000 K                                                       |
| Manufacture of synthetic precious stones                                                      | 1500   | 16   | 90 | Tcp at least 4000 K                                                       |

| Type of interior, task or activity                        | Em lux | UGRL | Ra | Remarks                                |
|-----------------------------------------------------------|--------|------|----|----------------------------------------|
| Chemicals, plastics and rubber industry                   |        |      |    |                                        |
| Remote operated processing installations                  | 50     |      | 20 | Safety colours shall be recognisable . |
| Processing installations with limited manual intervention | 150    | 28   | 40 |                                        |
| Constantly manned work places in processing installations | 300    | 25   | 80 |                                        |
| Precision measuring rooms,laboratories                    | 500    | 19   | 80 |                                        |
| Pharmaceutical production                                 | 500    | 22   | 80 |                                        |
| Tyre production                                           | 500    | 22   | 80 |                                        |
| Colour inspection                                         | 1000   | 16   | 90 | Tcp at least 6500 K                    |
| Cutting, finishing, inspection                            | 750    | 19   | 80 |                                        |
| Electrical industry                                       |        |      |    |                                        |
| Cable and wire manufacture                                | 300    | 25   | 80 |                                        |
| Winding:                                                  |        |      |    |                                        |
| -large coils                                              | 300    | 25   | 80 |                                        |
| -medium-sized coils                                       | 500    | 22   | 80 |                                        |
| -small coils                                              | 750    | 19   | 80 |                                        |
| Coil impregnating                                         | 300    | 25   | 80 |                                        |
| Galvanising                                               | 300    | 25   | 80 |                                        |
| Assembly work:                                            |        |      |    |                                        |
| -rough e.g. large transformers                            | 300    | 25   | 80 |                                        |
| -medium e.g. switchboards                                 | 500    | 22   | 80 |                                        |
| -fine e.g telephones                                      | 750    | 19   | 80 |                                        |
| -precision e.g. measuring equipm.                         | 1000   | 16   | 80 |                                        |
| Electronic workshops, testing,adjusting                   | 1500   | 16   | 80 |                                        |
| Foundries and metal casting plants                        |        |      |    |                                        |
| Mansize underfloor tunnels, cellars etc.                  | 50     | 28   | 20 | Safety colours shall be recognisable.  |
| Platforms                                                 | 100    | 25   | 40 |                                        |
| Sand preparation                                          | 200    | 25   | 80 |                                        |
| Dressing room                                             | 200    | 25   | 80 |                                        |
| Workplaces at cupola and mixer                            | 200    | 25   | 80 |                                        |
| Casting bay                                               | 200    | 25   | 80 |                                        |
| Shake out areas                                           | 200    | 25   | 80 |                                        |
| Machine moulding                                          | 200    | 25   | 80 |                                        |
| Hand and core moulding                                    | 300    | 25   | 80 |                                        |
| Die casting                                               | 300    | 25   | 80 |                                        |
| Model building                                            | 500    | 22   | 80 |                                        |
| Metal working and processing                              |        |      |    |                                        |
| Open die forging                                          | 200    | 25   | 60 |                                        |
| Drop forging, welding, cold forming                       | 300    | 25   | 60 |                                        |





Lighting Standard in Industrial Architecture

Lighting Standard in Industrial Architecture

| Type of interior, task or activity                                | Em lux | UGRL | Ra | Remarks                                                              |
|-------------------------------------------------------------------|--------|------|----|----------------------------------------------------------------------|
| Rough and average machining: tolerances > 0,1 mm                  | 300    | 22   | 60 |                                                                      |
| Precision machining: grinding: tolerances < 0,1 mm                | 500    | 19   | 60 |                                                                      |
| Scribing; inspection                                              | 750    | 19   | 60 |                                                                      |
| Wire & pipe drawing shapes                                        | 300    | 25   | 60 |                                                                      |
| Plate machining >5mm                                              | 200    | 25   | 60 |                                                                      |
| Sheet metalwork <5mm                                              | 300    | 22   | 60 |                                                                      |
| Tool making; cutting equipment manufacture                        | 750    | 19   | 60 |                                                                      |
| Assembly:                                                         |        |      |    |                                                                      |
| -rough                                                            | 200    | 25   | 80 |                                                                      |
| -medium                                                           | 300    | 25   | 80 |                                                                      |
| -fine                                                             | 500    | 22   | 80 |                                                                      |
| -precision                                                        | 750    | 19   | 80 |                                                                      |
| Galvanising                                                       | 300    | 25   | 80 |                                                                      |
| Surface preparation and painting                                  | 750    | 25   | 80 |                                                                      |
| Tool, template and jig making,precision mechanics, micromechanics | 1000   | 19   | 80 |                                                                      |
| Power stations                                                    |        |      |    |                                                                      |
| Fuel supply plant                                                 | 50     | 28   | 20 | Safety colours shall be recognisable.                                |
| Boiler house                                                      | 100    | 28   | 40 |                                                                      |
| Machine halls                                                     | 200    | 25   | 80 |                                                                      |
| Auxiliary rooms, e.g pump rooms,condenser rooms, switchboard,etc. | 200    | 25   | 60 |                                                                      |
| Control rooms                                                     | 500    | 16   | 80 | 1. Control panels are often vertical.<br>2. Dimming may be required. |
| Offices                                                           |        |      |    |                                                                      |
| Filing, copying, circulation, etc.                                | 300    | 19   | 80 |                                                                      |
| Writing, typing, reading, data processing                         | 500    | 19   | 80 |                                                                      |
| Technical drawing                                                 | 750    | 16   | 80 |                                                                      |
| CAD workstation                                                   | 500    | 19   | 80 |                                                                      |
| Conference and meeting rooms                                      | 500    | 19   | 80 |                                                                      |
| Reception desk                                                    | 300    | 22   | 80 |                                                                      |
| Archives                                                          | 200    | 25   | 80 |                                                                      |
| Restaurants and hotels                                            |        |      |    |                                                                      |
| Reception/cashier desk, porters desk                              | 300    | 22   | 80 |                                                                      |
| Kitchen                                                           | 500    | 22   | 80 |                                                                      |
| Restaurant, dining room, function room                            | 200    | 22   | 80 |                                                                      |
| Self-service restaurant                                           | 200    | 22   | 80 |                                                                      |

| Type of interior, task or activity               | Em lux | UGRL | Ra | Remarks                                                                                                  |
|--------------------------------------------------|--------|------|----|----------------------------------------------------------------------------------------------------------|
| Buffet                                           | 300    | 22   | 80 |                                                                                                          |
| Conference rooms                                 | 500    | 19   | 80 |                                                                                                          |
| Corridors                                        | 100    | 25   | 80 |                                                                                                          |
| Places of entertainment                          |        |      |    |                                                                                                          |
| Theatres & concert halls                         | 200    | 22   | 80 |                                                                                                          |
| Multi purpose halls                              | 300    | 22   | 80 |                                                                                                          |
| Practice rooms, dressing rooms                   | 300    | 22   | 80 | Glare free mirror lighting for make -up required.                                                        |
| Museums (general)                                | 300    | 19   | 80 | Lighting to suit the display requirements, protect against radiation effects. See Museum Lighting Guide. |
| Libraries                                        |        |      |    |                                                                                                          |
| Bookshelves                                      | 200    | 19   | 80 |                                                                                                          |
| Reading area                                     | 500    | 19   | 80 |                                                                                                          |
| Counters                                         | 500    | 19   | 80 |                                                                                                          |
| Public car parks (indoor)                        |        |      |    |                                                                                                          |
| In/out ramps (during the day)                    | 300    | 25   | 40 |                                                                                                          |
| In/out ramps (at night)                          | 75     | 25   | 40 |                                                                                                          |
| Traffic lanes                                    | 75     | 25   | 40 |                                                                                                          |
| Parking areas                                    | 75     | 28   | 40 |                                                                                                          |
| Ticket office                                    | 300    | 19   | 80 |                                                                                                          |
| Airports                                         |        |      |    |                                                                                                          |
| Arrival and departure halls, baggage claim areas | 200    | 22   | 80 |                                                                                                          |
| Connecting areas, escalators, travelators        | 150    | 22   | 80 |                                                                                                          |
| Information desks, check -in desks               | 500    | 19   | 80 |                                                                                                          |
| Customs and passport control desks               | 500    | 19   | 80 | Vertical illuminance is important.                                                                       |
| Waiting areas                                    | 500    | 22   | 80 |                                                                                                          |
| Luggage store rooms                              | 200    | 28   | 60 |                                                                                                          |
| Security check areas                             | 300    | 19   | 80 |                                                                                                          |
| Air traffic control tower                        | 500    | 16   | 80 | 1. Lighting should be dimmable.<br>2. Glare from daylight should be avoided.                             |
| Air traffic rooms                                | 500    | 16   | 80 | 1. Lighting should be dimmable.                                                                          |
| Testing and repair hangars                       | 500    | 22   | 80 |                                                                                                          |
| Engine test areas                                | 500    | 22   | 80 |                                                                                                          |
| Measuring areas in hangars                       | 500    | 22   | 80 |                                                                                                          |
| Platforms and passenger subways (underpasses)    | 50     | 28   | 40 |                                                                                                          |
| Ticket hall and concourse                        | 200    | 28   | 40 |                                                                                                          |





# KHJ LED Explosion Proof Lighting Selection table

| LED Hazardous Area Lighting | Product Series | Power(W)                                                 | Code |   |   |   |   |   | Group |        |     |      |      | ATEX/IECEX |         |        |         | UL                  |                      |           | ATEX | IECEX | UL | CE | RoHS | Emergency battery |           |       |       |
|-----------------------------|----------------|----------------------------------------------------------|------|---|---|---|---|---|-------|--------|-----|------|------|------------|---------|--------|---------|---------------------|----------------------|-----------|------|-------|----|----|------|-------------------|-----------|-------|-------|
|                             |                |                                                          | d    | e | i | m | n | t | IIB   | IIB+H2 | IIC | IIIB | IIIC | Zone 1     | Zone 21 | Zone 2 | Zone 22 | Class I, Division 2 | Class II, Division 2 | Class III |      |       |    |    |      | Lithium battery   | Lead-acid | Ni-Cd | Ni-MH |
| Lighting Fixture            | Arowana        | 18/30                                                    | ●    |   |   |   |   | ● | ●     |        |     |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       |       |
|                             | Brown Bear     | 80/100/120/150                                           |      |   |   |   | ● | ● |       |        | ●   |      | ●    |            |         | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    |                   |           |       |       |
|                             | Firefly        | 12/24/35                                                 | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    |                   |           |       |       |
|                             | Forest Frog    | 30/45/60                                                 | ●    | ● |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       |       |
|                             | Golden Frog    | 30/60                                                    | ●    |   |   |   |   | ● | ●     |        |     |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       |       |
|                             | Polar Bear     | 80/120/150/160/200/240                                   |      |   |   |   | ● | ● |       |        | ●   |      | ●    |            |         | ●      | ●       | ●                   | ●                    | ●         | ●    | ●     | ●  | ●  | ●    |                   |           |       |       |
|                             | Tank           | 80/100/120/160W<br>200W/240W/300W<br>320W/360W/400W/480W | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       |       |
|                             | Sealion        | 30/45/60/80/100/120<br>150/200/240/300                   | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       |       |
| Emergency Light             | Swordfish      | 18/36/48/56/72/100                                       | ●    | ● |   |   |   | ● | ●     |        | ●   |      | ●    | ●          | ●       | ●      | ●       | ●                   |                      |           | ●    | ●     | ●  | ●  | ●    |                   |           |       |       |
|                             | BDJ11          | 0.6                                                      | ●    |   |   |   |   | ● | ●     | ●      |     |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           | ●     |       |
|                             | Polaris        | 0.5                                                      |      |   | ● | ● |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    |                   |           |       | ●     |
|                             | Mickey Mouse   | 3                                                        | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    |                   |           | ●     |       |
|                             | Sealion        | 10                                                       | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       | ●     |
|                             | Swordfish      | 5                                                        | ●    | ● |   |   |   | ● | ●     |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           | ●     |       |
|                             | Tank           | 10                                                       | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   |           |       | ●     |
| Portable Light              | Alcidae        | 1/3                                                      |      |   | ● |   |   | ● | ●     |        |     |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    | ●                 |           |       |       |
|                             | Hill Myna      | 3/6                                                      |      |   | ● | ● |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    | ●                 | ●         |       |       |
| Work Light                  | Firefly        | 12/24/35                                                 | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    |       |    | ●  | ●    |                   |           |       |       |
|                             | Forest Frog    | 10/15                                                    | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    | ●                 |           |       |       |
|                             | Saturn         | 5~60                                                     | ●    | ● |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    |                   | ●         |       |       |
|                             | Sealion        | 30                                                       | ●    |   |   |   |   | ● |       |        | ●   |      | ●    | ●          | ●       | ●      | ●       |                     |                      |           | ●    | ●     |    | ●  | ●    | ●                 |           |       |       |





## LED Explosion Proof Floodlight / Bay light / High bay light

- **Sealion Series**

| Standard & Certificate:            |           |                                                                                                                                                                                                                                                              |
|------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           |           | Gas:  II 2 G Ex db IIC T4/T5 Gb<br>Dust:  II 2 D Ex tb IIIC T115°C/105°/T95°C Db IP66      |
| Certificate:                       |           | ATEX Certification NO.: TÜV 20 ATEX 8608 X CE<br>IECEX Certification NO.: IECEX TUR 20.0086X RoHS                                                                                                                                                            |
| Executive Standard:                |           | (IEC)EN 60079-0,(IEC)EN 60079-18,(IEC)EN 60079-1,(IEC)EN 60079-31,(IEC)EN 60079-7<br>EN 55015,EN 61000-3-3,EN 61547,EN 61000-3-2<br>EN 60598-1,EN 62493,EN 60598-2-5,EN 62031<br>IEC 62321-4,IEC 62321-7-1,IEC 62321-5,IEC 62321-7-2,IEC 62321-6,IEC 62321-8 |
| Classification:                    |           | Group II, Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                             |
| Electrical & Photometric Features: |           |                                                                                                                                                                                                                                                              |
| Luminarie Efficacy:                |           | 136.5lm/W                                                                                                                                                                                                                                                    |
| Lifespan:                          |           | >50,000 hours                                                                                                                                                                                                                                                |
| Operating Voltage:                 | Normal    | 20-30 VAC/100-277 VAC/347-480 VAC;20-30 VDC/28-42 VDC/141-392 VDC/491-679 VDC                                                                                                                                                                                |
|                                    | Emergency | 220-240 VAC/311-339 VDC                                                                                                                                                                                                                                      |
| Power:                             | Normal    | 30W/45W/60W/80W/100W/120W/150W/200W/240W/300W                                                                                                                                                                                                                |
|                                    | Emergency | 10W                                                                                                                                                                                                                                                          |
| Frequency:                         |           | 50/60Hz                                                                                                                                                                                                                                                      |
| Battery Capacity:                  |           | 9.6V 4Ah                                                                                                                                                                                                                                                     |
| Battery Type:                      |           | NI-MH                                                                                                                                                                                                                                                        |
| Battery Lifespan:                  |           | 500 cycles                                                                                                                                                                                                                                                   |
| Light Duration:                    |           | 3h                                                                                                                                                                                                                                                           |
| Charge Time:                       |           | >24h                                                                                                                                                                                                                                                         |
| Power Factor:                      |           | >0.98                                                                                                                                                                                                                                                        |
| THD:                               |           | <10%                                                                                                                                                                                                                                                         |
| Insulation Class:                  |           | I                                                                                                                                                                                                                                                            |
| Surge Protection:                  |           | 4KV/6KV                                                                                                                                                                                                                                                      |
| LED Driver:                        |           | Over voltage protection/short circuit protection                                                                                                                                                                                                             |
| Mechanical Features:               |           |                                                                                                                                                                                                                                                              |
| Weight:                            |           | 8.5Kg(30-80W)/11Kg(100-150W)/14Kg(200-300W)                                                                                                                                                                                                                  |
| Size:                              |           | ϕ 275*195mm(30-80W)/ ϕ 330*197mm(100-150W)<br>ϕ 415*197mm(200-300W)                                                                                                                                                                                          |
| Ambient Temperature:               |           | -40℃~+55℃(Normal);-20℃~+55℃(Emergency)                                                                                                                                                                                                                       |
| Connecting Terminals:              |           | 3*1.0-4.0mm²(L+N+PE)                                                                                                                                                                                                                                         |
| Cable Entries:                     |           | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                                                                                 |
| Earthing Protection:               |           | M4 (Internal & external earth bolts)                                                                                                                                                                                                                         |
| IP Code:                           |           | IP66                                                                                                                                                                                                                                                         |
| Enclosure Maternal:                |           | Die-casting aluminium alloy                                                                                                                                                                                                                                  |
| Enclosure Colour:                  |           | Grey RAL7040                                                                                                                                                                                                                                                 |
| Coating:                           |           | Epoxy powder coating                                                                                                                                                                                                                                         |
| Exposed Fastener:                  |           | Stainless steel                                                                                                                                                                                                                                              |
| Protective Cover:                  |           | Tempered glass,Stand 7J impact                                                                                                                                                                                                                               |



### Product Definition

| Ex                 | K     | SL         | XX                                                                       | XX                                                   | XX                                   | XX                                                           | -X                                                                                    | -X         |
|--------------------|-------|------------|--------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|------------|
| Type               | Brand | Series     | Power                                                                    | Input Voltage                                        | Candela Distribution                 | CCT(K)                                                       | Type                                                                                  | Area       |
| Ex-Explosion Proof |       |            | 30W<br>45W<br>60W<br>80W<br>100W<br>120W<br>150W<br>200W<br>240W<br>300W |                                                      | H4V4(60°)<br>H5V5(80°)<br>H6V6(120°) |                                                              | Default-Normal<br>DA-DALI Dimming<br>ON-Emergency Type<br>S-Sensor<br>V-0~10V Dimming | E- English |
|                    | K-KHJ | SL-SeaLion |                                                                          | Default-100~277VAC<br>D-347~480VAC<br>E-20~30 VAC/DC |                                      | WM-3000K±300<br>NH-4000K±300<br>NH-5000K±300<br>CH-5700K±300 |                                                                                       |            |

### Ordering Information

| P/N           | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |           |
|---------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|-----------|
|               |                            |                   |          |     |               |          | -40℃~+55℃            | -40℃~+65℃ |
| Ex-KSL30*WM-E | 100~277 AC<br>(141~392 DC) | 3795              | 30       | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KSL30*NH-E |                            | 4095              | 30       | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KSL30*NH-E |                            | 4095              | 30       | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KSL30*CH-E |                            | 4095              | 30       | 70  | Cool white    | 5700±300 | T5                   | T4        |
| Ex-KSL45*WM-E |                            | 5693              | 45       | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KSL45*NH-E |                            | 6143              | 45       | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KSL45*NH-E |                            | 6143              | 45       | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KSL45*CH-E |                            | 6143              | 45       | 70  | Cool white    | 5700±300 | T5                   | T4        |
| Ex-KSL60*WM-E |                            | 7590              | 60       | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KSL60*NH-E |                            | 8190              | 60       | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KSL60*NH-E |                            | 8190              | 60       | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KSL60*CH-E |                            | 8190              | 60       | 70  | Cool white    | 5700±300 | T5                   | T4        |
| Ex-KSL80*WM-E |                            | 10120             | 80       | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KSL80*NH-E |                            | 10920             | 80       | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KSL80*NH-E |                            | 10920             | 80       | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KSL80*CH-E |                            | 10920             | 80       | 70  | Cool white    | 5700±300 | T5                   | /         |



Ordering Information

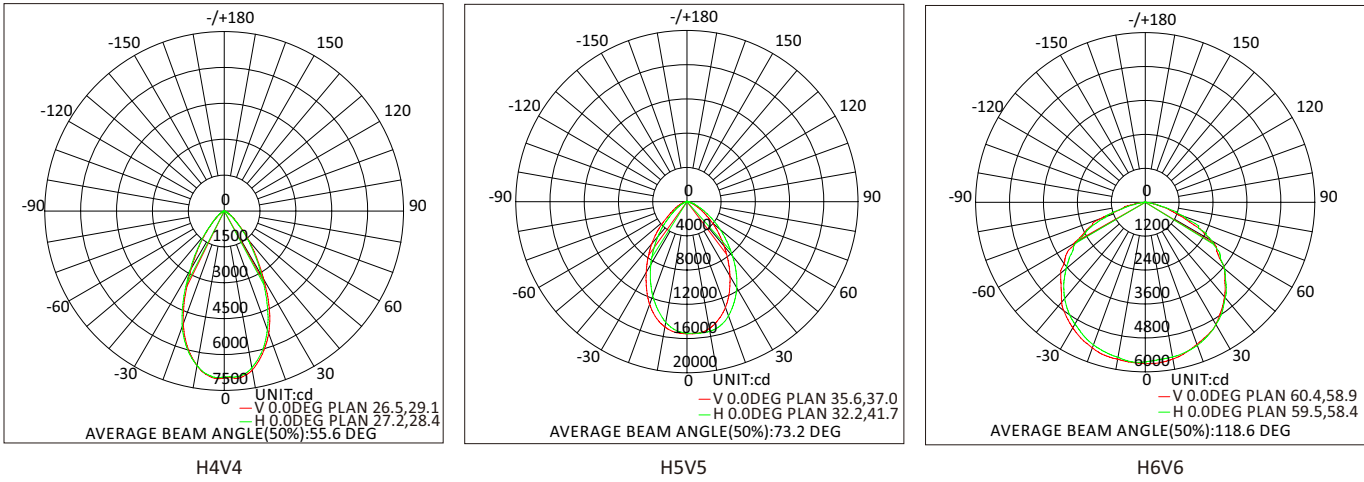
| P/N            | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |           |
|----------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|-----------|
|                |                            |                   |          |     |               |          | -40℃~+55℃            | -40℃~+65℃ |
| Ex-KSL100*WM-E | 100~277 AC<br>(141~392 DC) | 12650             | 100      | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KSL100*NH-E |                            | 13650             | 100      | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KSL100*NH-E |                            | 13650             | 100      | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KSL100*CH-E |                            | 13650             | 100      | 70  | Cool white    | 5700±300 | T5                   | T4        |
| Ex-KSL120*WM-E |                            | 15180             | 120      | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KSL120*NH-E |                            | 16380             | 120      | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KSL120*NH-E |                            | 16380             | 120      | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KSL120*CH-E |                            | 16380             | 120      | 70  | Cool white    | 5700±300 | T5                   | T4        |
| Ex-KSL150*WM-E |                            | 18975             | 150      | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KSL150*NH-E |                            | 20475             | 150      | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KSL150*NH-E |                            | 20475             | 150      | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KSL150*CH-E |                            | 20475             | 150      | 70  | Cool white    | 5700±300 | T5                   | /         |
| Ex-KSL200*WM-E |                            | 25300             | 200      | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KSL200*NH-E |                            | 27300             | 200      | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KSL200*NH-E |                            | 27300             | 200      | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KSL200*CH-E |                            | 27300             | 200      | 70  | Cool white    | 5700±300 | T5                   | /         |
| Ex-KSL240*WM-E |                            | 30360             | 240      | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KSL240*NH-E |                            | 32760             | 240      | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KSL240*NH-E |                            | 32760             | 240      | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KSL240*CH-E |                            | 32760             | 240      | 70  | Cool white    | 5700±300 | T5                   | /         |
| Ex-KSL300*WM-E |                            | 37950             | 300      | 70  | Warm white    | 3000±300 | T4                   | /         |
| Ex-KSL300*NH-E |                            | 40950             | 300      | 70  | Natural white | 4000±300 | T4                   | /         |
| Ex-KSL300*NH-E |                            | 40950             | 300      | 70  | Natural white | 5000±300 | T4                   | /         |
| Ex-KSL300*CH-E |                            | 40950             | 300      | 70  | Cool white    | 5700±300 | T4                   | /         |

Remarks: 1.\*Stands for beam angle , including H4V4 / H5V5 / H6V6 .  
2.For beam angle H4V4 and H5V5,the luminous flux will be 15% less;

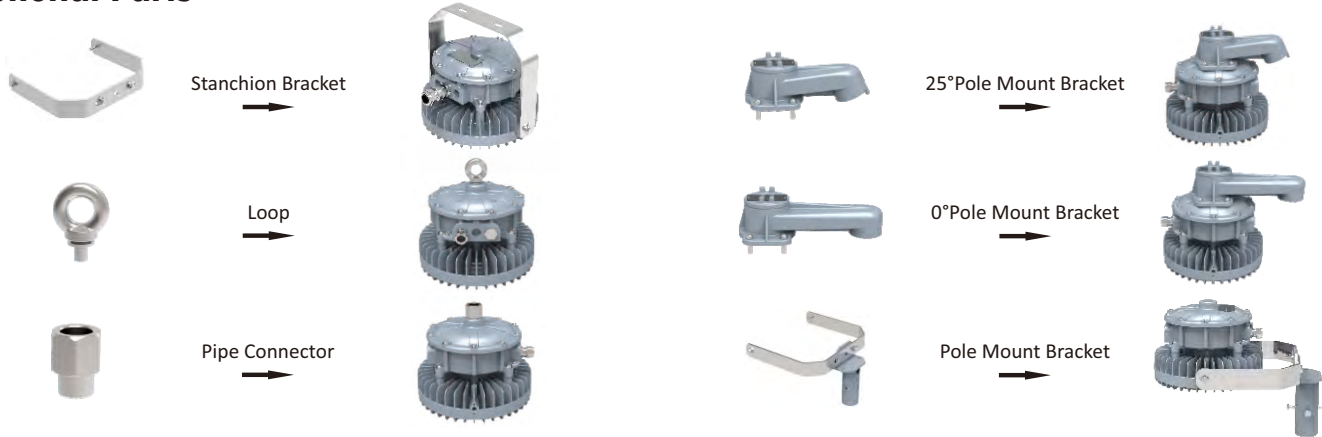
KHJ Replaceable Luminaire Models

| KHJ LED | HPS        | Metal halide lame | Typical Energy Saving               |
|---------|------------|-------------------|-------------------------------------|
| 30W     | 70W        | 70W               | Up to 60% reduction in energy costs |
| 45W     | 100W-150W  | 100W-150W         |                                     |
| 60W     | 150W-175W  | 150W-175W         |                                     |
| 80W     | 175W-250W  | 175W-250W         |                                     |
| 100W    | 250W-400W  | 250W-400W         |                                     |
| 120W    | 250W-400W  | 250W-400W         |                                     |
| 150W    | 400W       | 400W              |                                     |
| 200W    | 400W-500W  | 400W-500W         |                                     |
| 240W    | 600W-750W  | 600W-750W         |                                     |
| 300W    | 750W-1000W | 750W-1000W        |                                     |

Candela Distribution

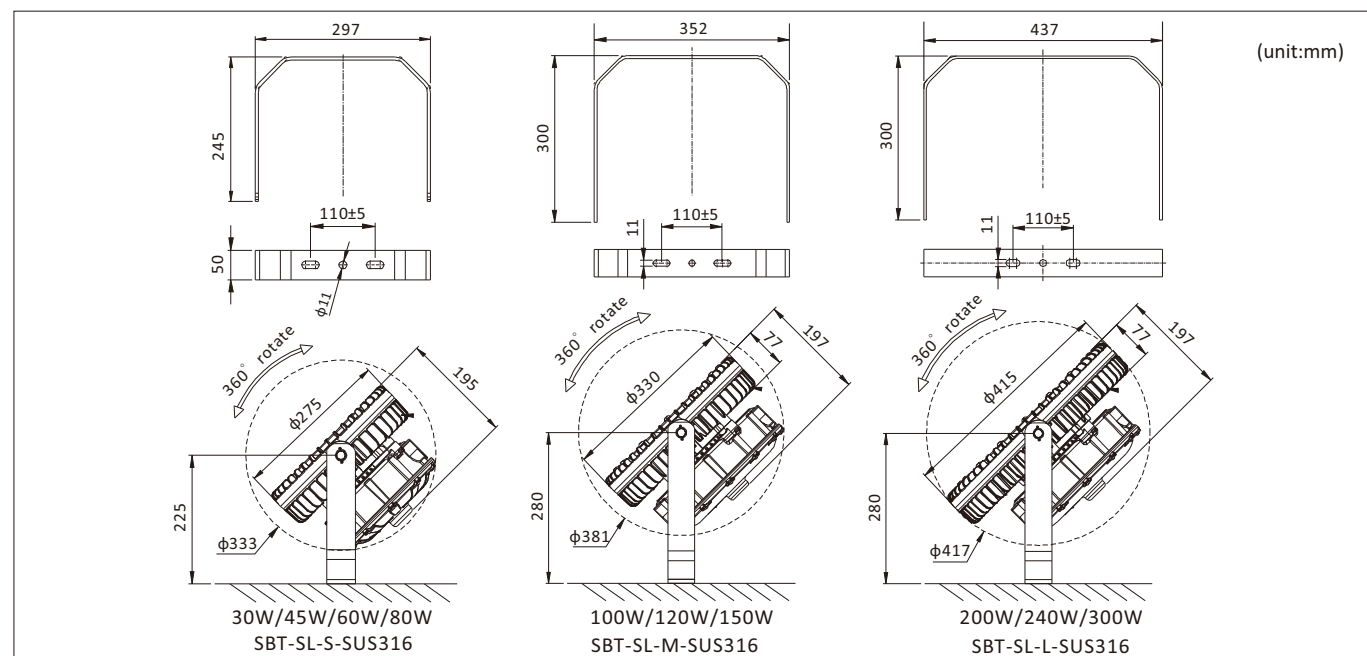


Optional Parts

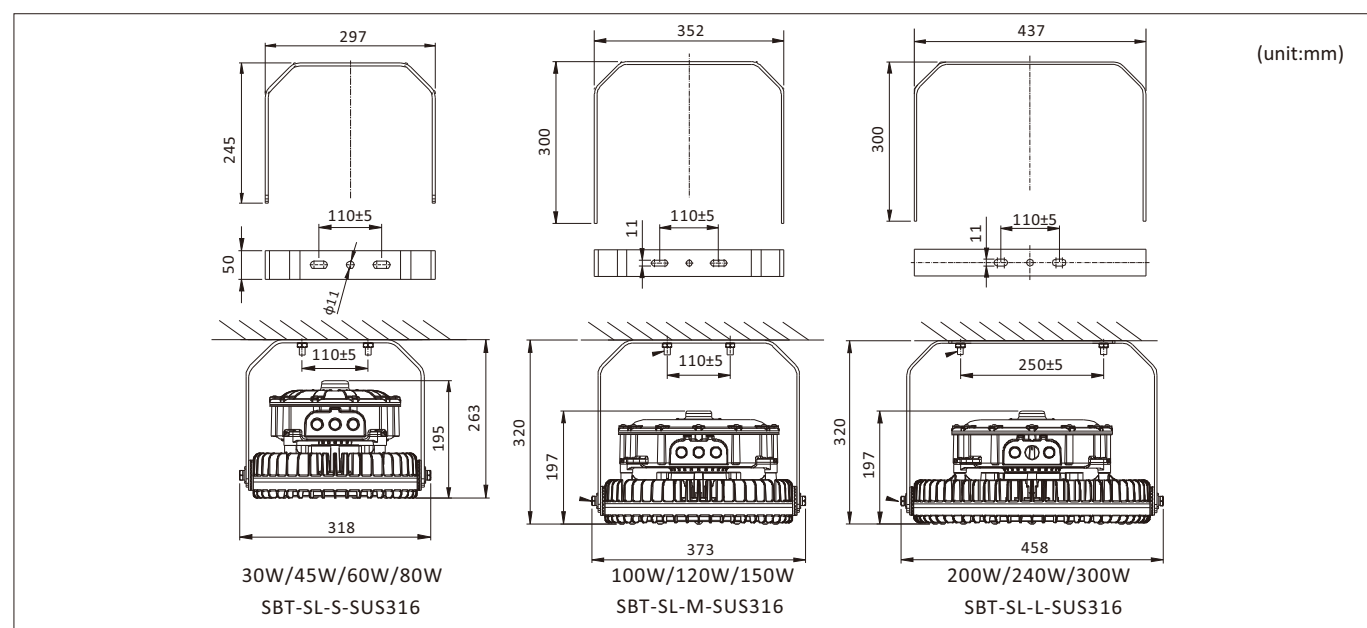




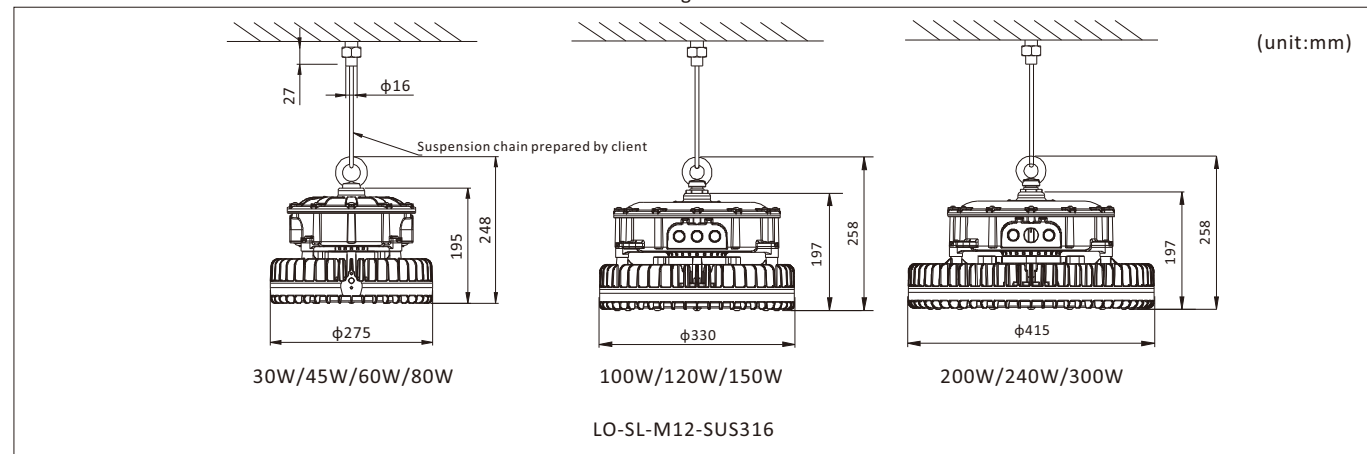
## Installation Method



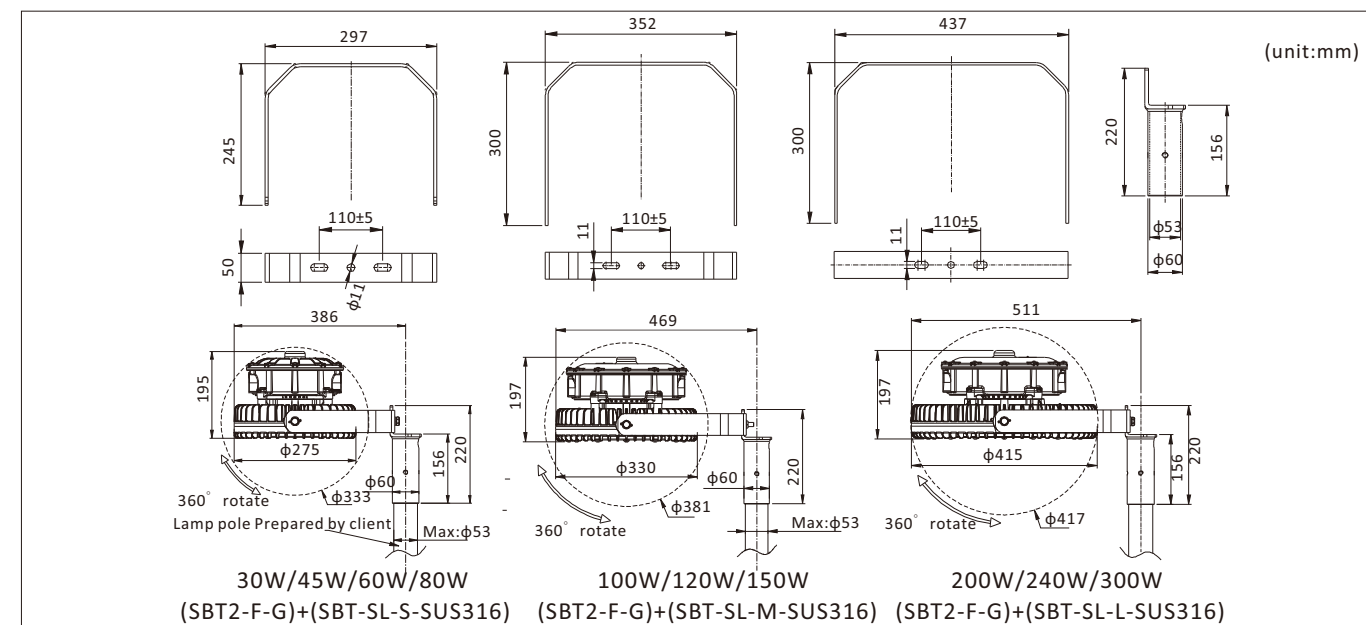
Stanchion Mount



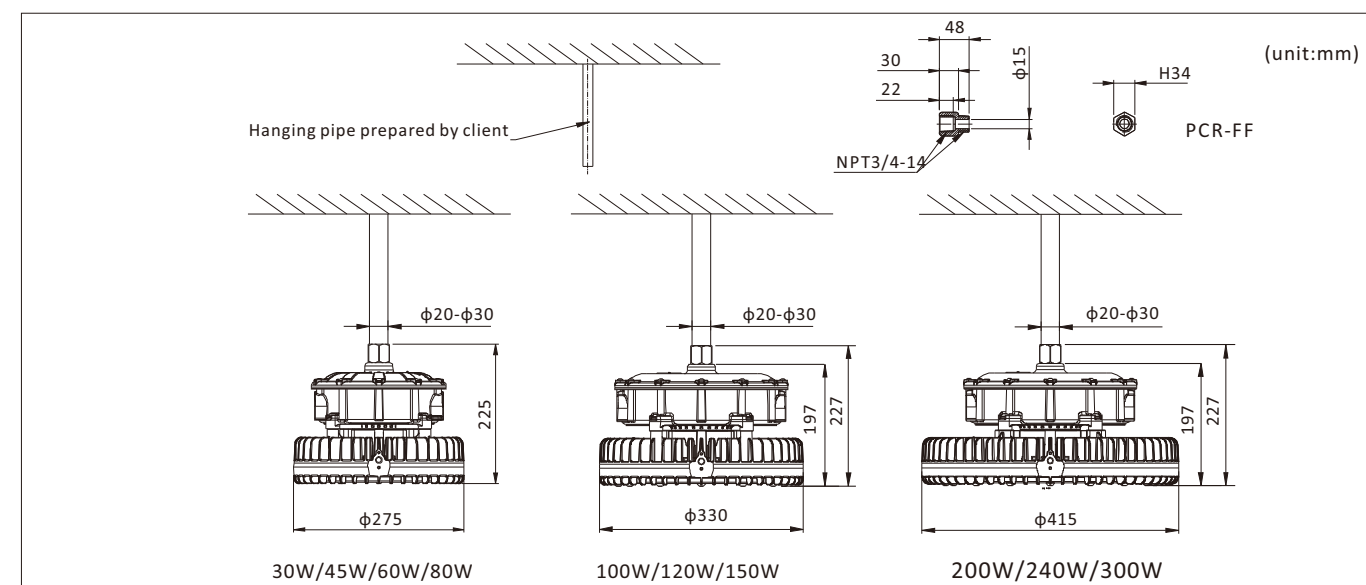
Ceiling Mount



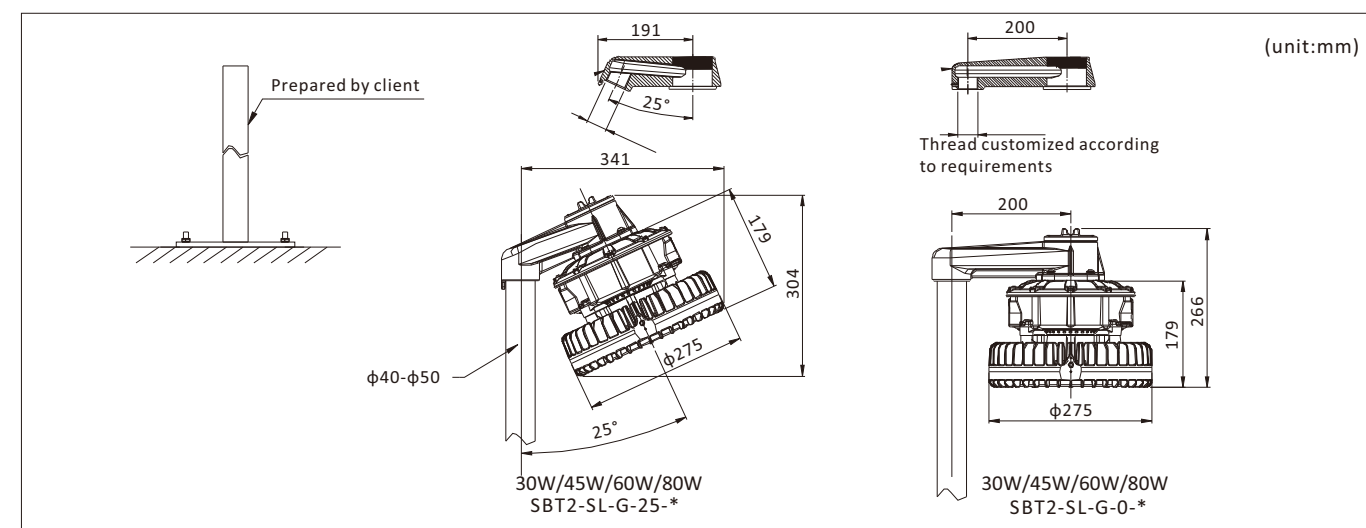
Pendant Mount



Pole Mount



Pipe Mount



Pole Mount





## LED Explosion Proof Floodlight

- Tank Series

| Standard & Certificate:            |           |                                                                                                                                                                                                                                                              |
|------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           |           | Gas:  II 2 G Ex db IIC T* Gb<br>Dust:  II 2 D Ex tb IIIC T* Db IP66                        |
| Certificate:                       |           | ATEX Certification NO.: TÜV 21 ATEX 8775 X<br>IECEX Certification NO.: IECEX TUR 21.0070X<br>CE<br>RoHS                                                                                                                                                      |
| Executive Standard:                |           | (IEC)EN 60079-0, (IEC)EN 60079-1, (IEC)EN 60079-28, (IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                    |           | Group II, Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                             |
| Electrical & Photometric Features: |           |                                                                                                                                                                                                                                                              |
| Luminarie Efficacy:                |           | 152lm/W                                                                                                                                                                                                                                                      |
| Lifespan:                          |           | >50,000 hours                                                                                                                                                                                                                                                |
| Operating Voltage:                 | Normal    | 100-277 VAC,20-30 VAC,347-480 VAC,141-391VDC,491-679 VDC                                                                                                                                                                                                     |
|                                    | Emergency | 220-240 VAC,311-339VDC                                                                                                                                                                                                                                       |
| Power:                             | Normal    | 80W/100W/120W(Single lamp),160W/200W/240W(Two lamps),<br>240W/300W/360W(Three lamps),320W/400W/480W(Four lamps)                                                                                                                                              |
|                                    | Emergency | 10W                                                                                                                                                                                                                                                          |
| Frequency:                         |           | 50/60Hz                                                                                                                                                                                                                                                      |
| Battery Capacity:                  |           | 9.6V 4Ah                                                                                                                                                                                                                                                     |
| Battery Type:                      |           | NI-MH                                                                                                                                                                                                                                                        |
| Battery Lifespan:                  |           | 500 cycles                                                                                                                                                                                                                                                   |
| Light Duration:                    |           | 3h                                                                                                                                                                                                                                                           |
| Charge Time:                       |           | >24h                                                                                                                                                                                                                                                         |
| Power Factor:                      |           | >0.98                                                                                                                                                                                                                                                        |
| THD:                               |           | <10%                                                                                                                                                                                                                                                         |
| Insulation Class:                  |           | I                                                                                                                                                                                                                                                            |
| Surge Protection:                  |           | 4KV/6KV                                                                                                                                                                                                                                                      |
| LED Driver:                        |           | Over voltage protection/short circuit protection                                                                                                                                                                                                             |
| Mechanical Features:               |           |                                                                                                                                                                                                                                                              |
| Weight:                            |           | 8.3Kg(80W~120W)/17Kg(160W~240W)/26Kg(240W~360W)/36kg(320W~480W)                                                                                                                                                                                              |
| Size:                              |           | 332*212*142mm(80W~120W)/332*426*142mm(160W~240W)<br>332*640*142mm(240W~360W)/671*426*142mm(320W~480W)                                                                                                                                                        |
| Ambient Temperature:               |           | -40℃~+55℃(Normal);-20℃~+55℃(Emergency)                                                                                                                                                                                                                       |
| Connecting Terminals:              |           | 3*1.0-4.0mm²(L+N+PE)                                                                                                                                                                                                                                         |
| Cable Entries:                     |           | 2 x M20*1.5 (NPT 3/4", M25*1.5 are optional)                                                                                                                                                                                                                 |
| Earthing Protection:               |           | M4 (Internal & external earth bolts)                                                                                                                                                                                                                         |
| IP Code:                           |           | IP66                                                                                                                                                                                                                                                         |
| Enclosure Maternal:                |           | Aluminium                                                                                                                                                                                                                                                    |
| Enclosure Colour:                  |           | Grey RAL7040                                                                                                                                                                                                                                                 |
| Coating:                           |           | Epoxy powder coating                                                                                                                                                                                                                                         |
| Exposed Fastener:                  |           | Stainless steel                                                                                                                                                                                                                                              |
| Protective Cover:                  |           | Tempered glass,Stand 7J impact                                                                                                                                                                                                                               |



### Product Definition

| Ex                 | K     | TK          | XX                                                                                                                             | X                                                 | XX                                   | XX                                                           | -X                                                                  | -X                             | -X         |
|--------------------|-------|-------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------|------------|
| Type               | Brand | Series      | Power                                                                                                                          | Input Voltage                                     | Candela Distribution                 | CCT(K)                                                       | Type                                                                | Type                           | Area       |
| Ex-Explosion Proof | K-KHJ | Tank series | 80-80W<br>100-100W<br>120-120W<br>160-160W<br>200-200W<br>240-240W<br>300-300W<br>320-320W<br>360-360W<br>400-400W<br>480-480W | Default:100v~277VAC<br>D-347-480VAC<br>E-20-30VAC | H3V3(40°)<br>H5V5(80°)<br>H6V6(120°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | Default-single lamp<br>P2-Two lamp<br>P3-Three lamp<br>P4-Four lamp | Default-Normal<br>ON-Emergency | E- English |

### Ordering Information

| P/N                | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)     | Temp. Classification<br>-40℃~+55℃ |
|--------------------|----------------------------|-------------------|----------|-----|---------------|------------|-----------------------------------|
| Ex-KTK80**CH-E     | 100-277 AC<br>(141-392 DC) | 12107             | 80       | 70  | Cool white    | 5700K±300K | T5                                |
| Ex-KTK80**NH-E     |                            | 12107             |          | 70  | Natural white | 5000K±300K | T5                                |
| Ex-KTK80**NH-E     |                            | 12107             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK80**WM-E     |                            | 10896             |          | 70  | Warm white    | 3000±300k  | T5                                |
| Ex-KTK100**CH-E    |                            | 14954             | 100      | 70  | Cool white    | 5700±300k  | T5                                |
| Ex-KTK100**NH-E    |                            | 14954             |          | 70  | Natural white | 5000±300k  | T5                                |
| Ex-KTK100**NH-E    |                            | 14954             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK100**WM-E    |                            | 13458             |          | 70  | Warm white    | 3000±300k  | T5                                |
| Ex-KTK120**CH-E    |                            | 17310             | 120      | 70  | Cool white    | 5700±300k  | T5                                |
| Ex-KTK120**NH-E    |                            | 17310             |          | 70  | Natural white | 5000±300k  | T5                                |
| Ex-KTK120**NH-E    |                            | 17310             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK120**WM-E    |                            | 15579             |          | 70  | Warm white    | 3000±300k  | T5                                |
| Ex-KTK160**CH-P2-E |                            | 22910             | 160      | 70  | Cool white    | 5700K±300K | T5                                |
| Ex-KTK160**NH-P2-E |                            | 22910             |          | 70  | Natural white | 5000K±300K | T5                                |
| Ex-KTK160**NH-P2-E |                            | 22910             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK160**WM-P2-E |                            | 20619             |          | 70  | Warm white    | 3000±300k  | T5                                |
| Ex-KTK200**CH-P2-E |                            | 29145             | 200      | 70  | Cool white    | 5700±300k  | T5                                |
| Ex-KTK200**NH-P2-E |                            | 29145             |          | 70  | Natural white | 5000±300k  | T5                                |
| Ex-KTK200**NH-P2-E |                            | 29145             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK200**WM-P2-E |                            | 26230             |          | 70  | Warm white    | 3000±300k  | T5                                |
| Ex-KTK240**CH-P2-E |                            | 34136             | 240      | 70  | Cool white    | 5700±300k  | T5                                |
| Ex-KTK240**NH-P2-E |                            | 34136             |          | 70  | Natural white | 5000±300k  | T5                                |
| Ex-KTK240**NH-P2-E |                            | 34136             |          | 70  | Natural white | 4000±300k  | T5                                |
| Ex-KTK240**WM-P2-E |                            | 30884             |          | 70  | Warm white    | 3000±300k  | T5                                |

Ordering Information

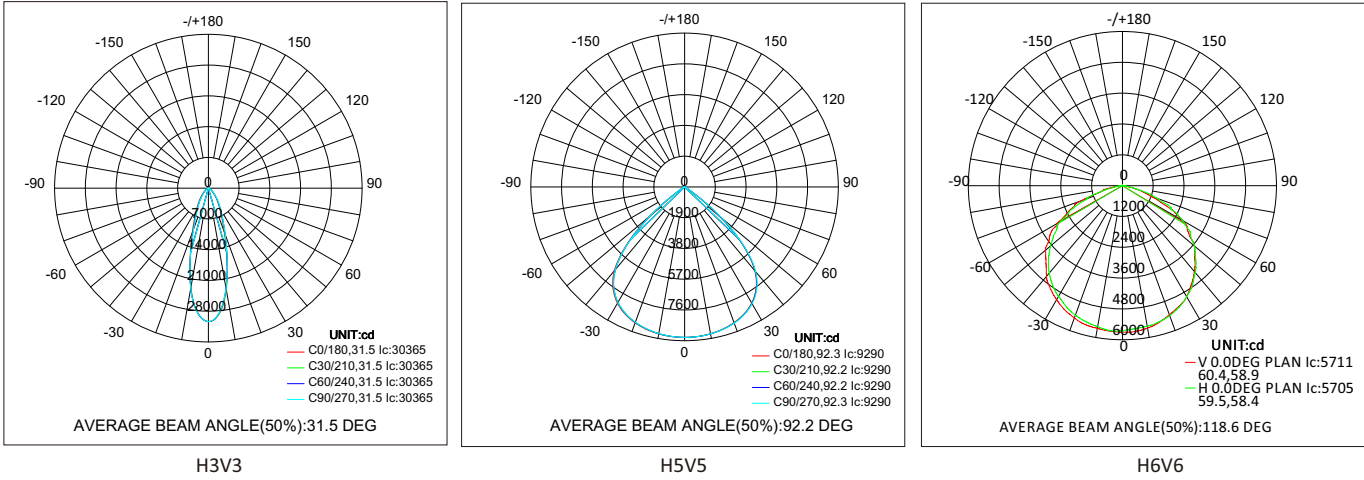
| P/N                 | Operating Voltage(V)         | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)    | Temp. Classification<br>-40℃~+55℃ |
|---------------------|------------------------------|-------------------|----------|-----|---------------|-----------|-----------------------------------|
| Ex-KTK240**CH-P3-E  | 100-277 VAC<br>(141-392 VDC) | 33520             | 240      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK240**NH-P3-E  |                              | 33520             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK240**NH-P3-E  |                              | 33520             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK240**WM-P3-E  |                              | 30168             |          | 70  | Warm white    | 3000±300k | T5                                |
| Ex-KTK300**CH-P3-E  |                              | 43500             | 300      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK300**NH-P3-E  |                              | 43500             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK300**NH-P3-E  |                              | 43500             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK300**WM-P3-E  |                              | 31950             |          | 70  | Warm white    | 3000±300k | T5                                |
| Ex-KTK360** CH-P3-E |                              | 51120             | 360      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK360** NH-P3-E |                              | 51120             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK360** NH-P3-E |                              | 51120             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK360** WM-P3-E |                              | 46008             |          | 70  | Warm white    | 3000±300k | T5                                |
| Ex-KTK320**CH-P4-E  |                              | 46400             | 320      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK320**NH-P4-E  |                              | 46400             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK320**NH-P4-E  |                              | 46400             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK320**WM-P4-E  |                              | 41760             |          | 70  | Warm white    | 3000±300k | T5                                |
| Ex-KTK400**CH-P4-E  |                              | 58054             | 400      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK400**NH-P4-E  |                              | 58054             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK400**NH-P4-E  |                              | 58054             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK400**WM-P4-E  |                              | 52248             |          | 70  | Warm white    | 3000±300k | T5                                |
| Ex-KTK480**CH-P4-E  |                              | 69120             | 480      | 70  | Cool white    | 5700±300k | T5                                |
| Ex-KTK480**NH-P4-E  |                              | 69120             |          | 70  | Natural white | 5000±300k | T5                                |
| Ex-KTK480**NH-P4-E  |                              | 69120             |          | 70  | Natural white | 4000±300k | T5                                |
| Ex-KTK480**WM-P4-E  |                              | 62208             |          | 70  | Warm white    | 3000±300k | T5                                |

Remarks: 1.The first \* stands for Operating Voltage including default -100-277VAC,D-347-480VAC ,E-20-30VAC.  
2.The second \* stands for Candela Distribution including H3V3,H5V5,H6V6.

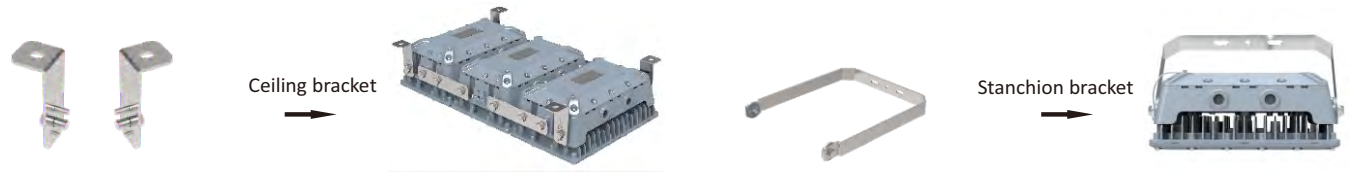
KHJ Replaceable Luminaire Models

| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 80W     | 175W-250W   | 175W-250W         | Up to 60% reduction in energy costs |
| 100W    | 250W-400W   | 250W-400W         |                                     |
| 120W    | 250W-400W   | 250W-400W         |                                     |
| 160W    | 400W        | 400W              |                                     |
| 200W    | 400W-500W   | 400W-500W         |                                     |
| 240W    | 600W-750W   | 600W-750W         |                                     |
| 300W    | 750W-1000W  | 750W-1000W        |                                     |
| 320W    | 750W-1000W  | 750W-1000W        |                                     |
| 360W    | 750W-1000W  | 750W-1000W        |                                     |
| 400W    | 1000W-1500W | 1000W-1500W       |                                     |
| 480W    | 1000W-2000W | 1000W-2000W       |                                     |

Candela Distribution

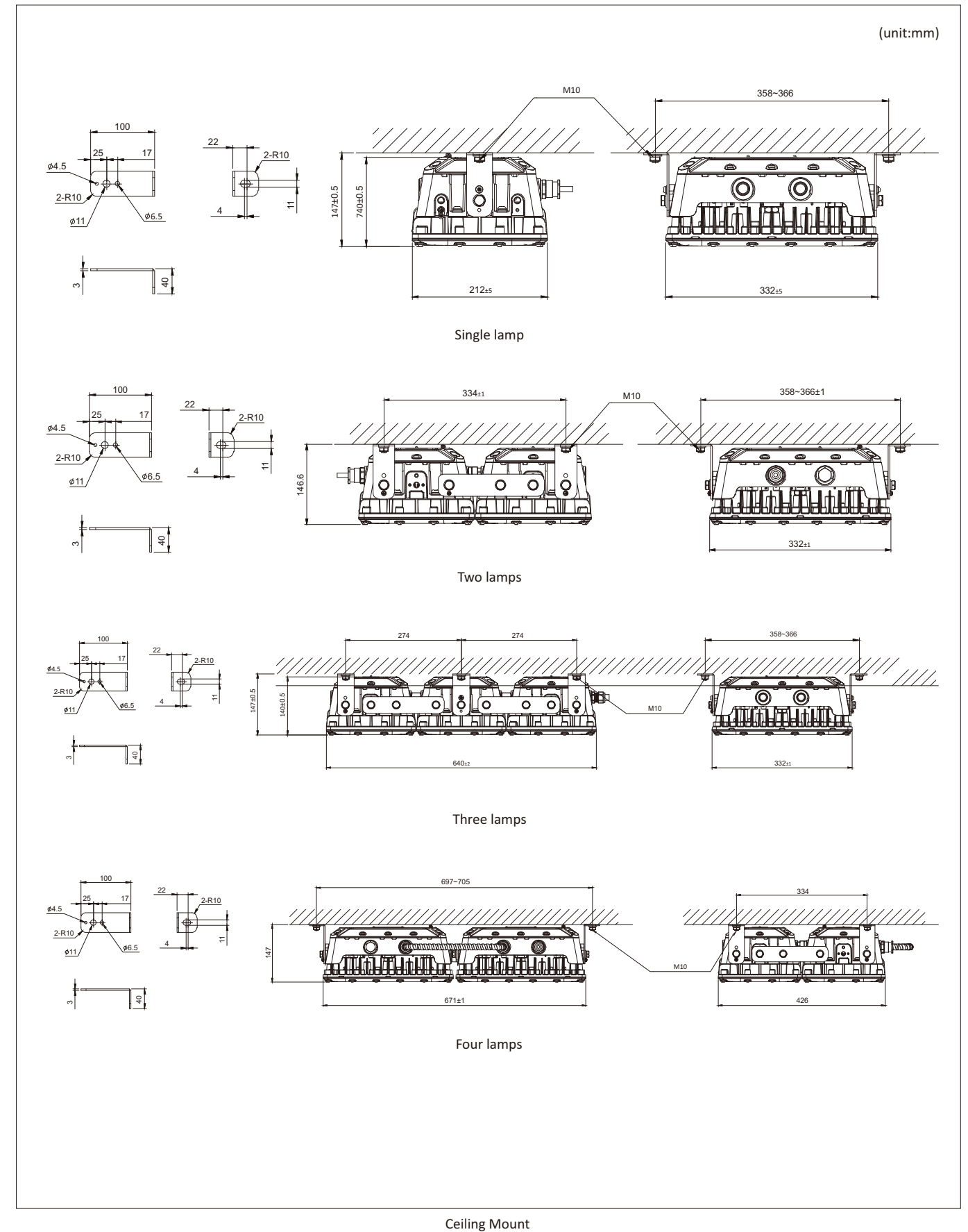
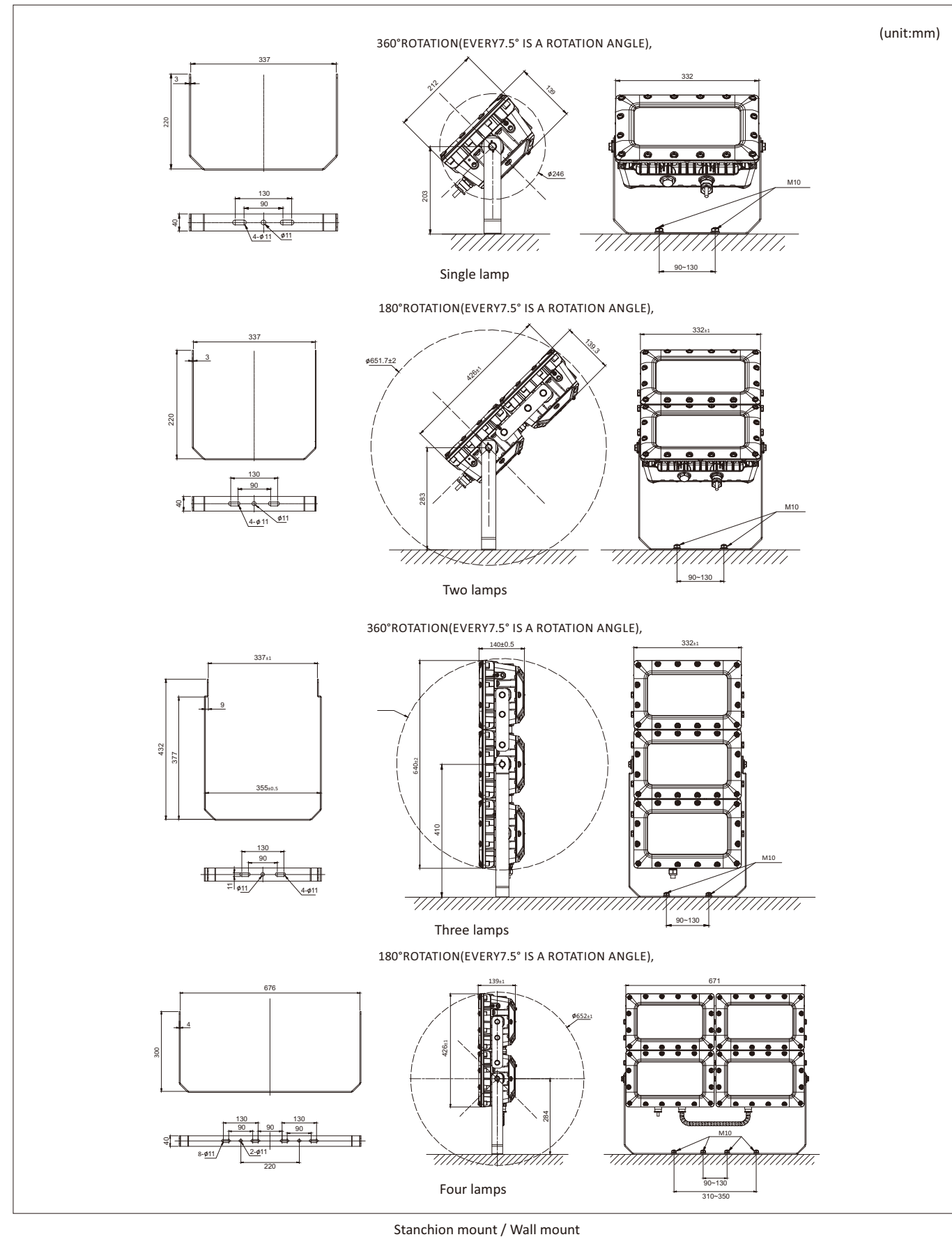


Optional Parts





## Installation Method





## LED Explosion Proof Linear light

### - Swordfish Series

| Standard & Certificate:            |                                                                                                                            |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | UL Certification NO.: 20170823- E491372,E491373,E491374                                                                    |
| Executive Standard:                | UL 1598,UL 1598A,UL 844,UL 8750<br>CSA C22.2 No.137-M1981,CSA C22.2 No.250.1-08,CSA C22.2 No.250.13,CSA C22.2 No.250.13-14 |
| Classification:                    | Class I Division 2,Group A, B ,C ,D<br>Class II Division 2,Group F, G                                                      |
| Electrical & Photometric Features: |                                                                                                                            |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                  |
| Lifespan:                          | >50,000 hours                                                                                                              |
| Operating Voltage:                 | 100-277 VAC,141-391VDC                                                                                                     |
| Power:                             | 36W/48W/56W(0.6m),36W/48W/56W/72W/100W(1.2m),                                                                              |
| Frequency:                         | 50/60Hz                                                                                                                    |
| Power Factor:                      | >0.98                                                                                                                      |
| THD:                               | <10%                                                                                                                       |
| Insulation Class:                  | I                                                                                                                          |
| Surge Protection:                  | 4KV/6KV                                                                                                                    |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                           |
| Mechanical Features:               |                                                                                                                            |
| Weight:                            | 6.9Kg(0.6m)/11.5Kg(1.2m)                                                                                                   |
| Size:                              | 600*136*124mm(36W/48W/56W)/1200*136*124mm(36W/48W/56W/72W/100W)                                                            |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                          |
| Cable Entries:                     | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                               |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                       |
| IP Code:                           | IP66                                                                                                                       |
| Enclosure Maternal:                | Copper-free Aluminium                                                                                                      |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                      |
| Coating:                           | Epoxy powder coating                                                                                                       |
| Exposed Fastener:                  | Stainless steel                                                                                                            |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                             |

## Product Definition

| Ex                 | K     | SF                  | XX                 | XX                  | XX                       | XX         | XX           | -U                                                           | -UL       | -E                 | -X         |                          |
|--------------------|-------|---------------------|--------------------|---------------------|--------------------------|------------|--------------|--------------------------------------------------------------|-----------|--------------------|------------|--------------------------|
| Type               | Brand | Series              | Power              | Input Voltage       | Length                   | Candela    | Distribution | CCT(K)                                                       | Type      | Type               | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | SF-Swordfish series | 36-36W             | Default-100-277 VAC | 600-600mm<br>1200-1200mm | H7V7(120°) |              |                                                              | U- Update | UL- UL Certificate | E- English | Default-Orange<br>G-Grey |
|                    |       |                     | 48-48W             |                     |                          |            |              |                                                              |           |                    |            |                          |
|                    |       |                     | 56-56W             |                     |                          |            |              |                                                              |           |                    |            |                          |
|                    |       |                     | 72-72W<br>100-100W |                     |                          |            |              |                                                              |           |                    |            |                          |
|                    |       |                     |                    |                     |                          |            |              | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K |           |                    |            |                          |

## Ordering Information

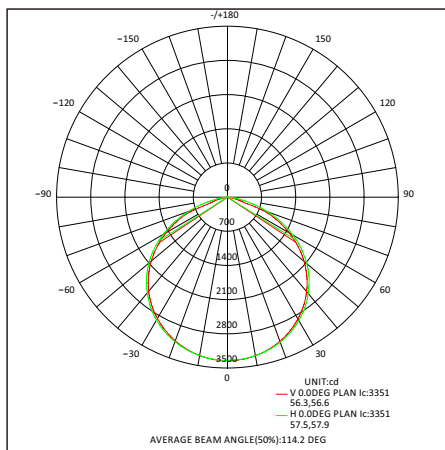
| P/N                        | Operating Voltage (V)      | Luminous Flux (lm) | Powr (W) | CRI | Color Temp.   | CCT(K)   |
|----------------------------|----------------------------|--------------------|----------|-----|---------------|----------|
| Ex-KSF36600H7V7WM-U-UL-E   | 100-277 AC<br>(141-392 DC) | 4536               | 36       | 82  | Warm white    | 3000±300 |
| Ex-KSF36600H7V7NH-U-UL-E   |                            | 4914               | 36       | 70  | Natural white | 4000±300 |
| Ex-KSF36600H7V7NH-U-UL-E   |                            | 4914               | 36       | 70  | Natural white | 5000±300 |
| Ex-KSF36600H7V7CH-U-UL-E   |                            | 4914               | 36       | 70  | Cool white    | 5700±300 |
| Ex-KSF48600H7V7WM-U-UL-E   |                            | 6048               | 48       | 82  | Warm white    | 3000±300 |
| Ex-KSF48600H7V7NH-U-UL-E   |                            | 6552               | 48       | 70  | Natural white | 4000±300 |
| Ex-KSF48600H7V7NH-U-UL-E   |                            | 6552               | 48       | 70  | Natural white | 5000±300 |
| Ex-KSF48600H7V7CH-U-UL-E   |                            | 6552               | 48       | 70  | Cool white    | 5700±300 |
| Ex-KSF56600H7V7WM-U-UL-E   |                            | 7056               | 56       | 82  | Warm white    | 3000±300 |
| Ex-KSF56600H7V7NH-U-UL-E   |                            | 7644               | 56       | 70  | Natural white | 4000±300 |
| Ex-KSF56600H7V7NH-U-UL-E   |                            | 7644               | 56       | 70  | Natural white | 5000±300 |
| Ex-KSF56600H7V7CH-U-UL-E   |                            | 7644               | 56       | 70  | Cool white    | 5700±300 |
| Ex-KSF361200H7V7WM-U-UL-E  |                            | 4536               | 36       | 82  | Warm white    | 3000±300 |
| Ex-KSF361200H7V7NH-U-UL-E  |                            | 4914               | 36       | 70  | Natural white | 4000±300 |
| Ex-KSF361200H7V7NH-U-UL-E  |                            | 4914               | 36       | 70  | Natural white | 5000±300 |
| Ex-KSF361200H7V7CH-U-UL-E  |                            | 4914               | 36       | 70  | Cool white    | 5700±300 |
| Ex-KSF481200H7V7WM-U-UL-E  |                            | 6048               | 48       | 82  | Warm white    | 3000±300 |
| Ex-KSF481200H7V7NH-U-UL-E  |                            | 6552               | 48       | 70  | Natural white | 4000±300 |
| Ex-KSF481200H7V7NH-U-UL-E  |                            | 6552               | 48       | 70  | Natural white | 5000±300 |
| Ex-KSF481200H7V7CH-U-UL-E  |                            | 6552               | 48       | 70  | Cool white    | 5700±300 |
| Ex-KSF561200H7V7WM-U-UL-E  |                            | 7056               | 56       | 82  | Warm white    | 3000±300 |
| Ex-KSF561200H7V7NH-U-UL-E  |                            | 7644               | 56       | 70  | Natural white | 4000±300 |
| Ex-KSF561200H7V7NH-U-UL-E  |                            | 7644               | 56       | 70  | Natural white | 5000±300 |
| Ex-KSF561200H7V7CH-U-UL-E  |                            | 7644               | 56       | 70  | Cool white    | 5700±300 |
| Ex-KSF721200H7V7WM-U-UL-E  |                            | 9072               | 72       | 82  | Warm white    | 3000±300 |
| Ex-KSF721200H7V7NH-U-UL-E  |                            | 9828               | 72       | 70  | Natural white | 4000±300 |
| Ex-KSF721200H7V7NH-U-UL-E  |                            | 9828               | 72       | 70  | Natural white | 5000±300 |
| Ex-KSF721200H7V7CH-U-UL-E  |                            | 9828               | 72       | 70  | Cool white    | 5700±300 |
| Ex-KSF1001200H7V7WM-U-UL-E |                            | 12600              | 100      | 82  | Warm white    | 3000±300 |
| Ex-KSF1001200H7V7NH-U-UL-E |                            | 13650              | 100      | 70  | Natural white | 4000±300 |
| Ex-KSF1001200H7V7NH-U-UL-E |                            | 13650              | 100      | 70  | Natural white | 5000±300 |
| Ex-KSF1001200H7V7CH-U-UL-E |                            | 13650              | 100      | 70  | Cool white    | 5700±300 |



## KHJ Replaceable Luminaire Models

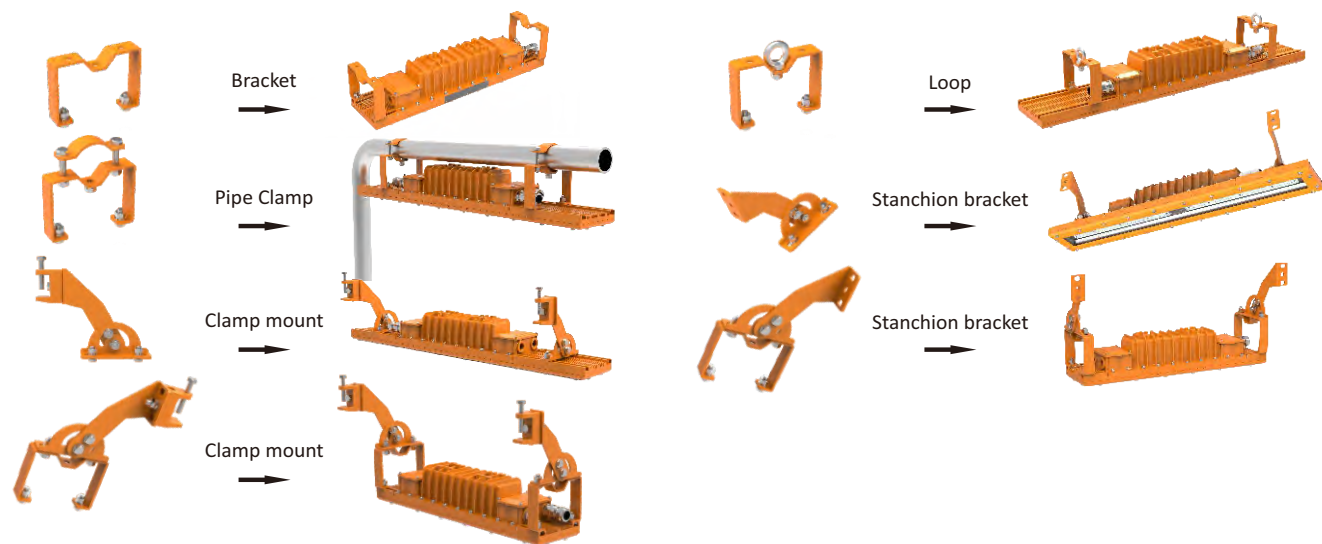
| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 36W     | 4*18W/2*36W | 4*18W/2*36W       | Up to 60% reduction in energy costs |
| 48W     | 4*18W/3*36W | 4*18W/3*36W       |                                     |
| 56W     | 3*36W       | 3*36W             |                                     |
| 72W     | 4*36W       | 4*36W             |                                     |
| 100W    | 5*36W/6*36W | 5*36W/6*36W       |                                     |

## Candela Distribution

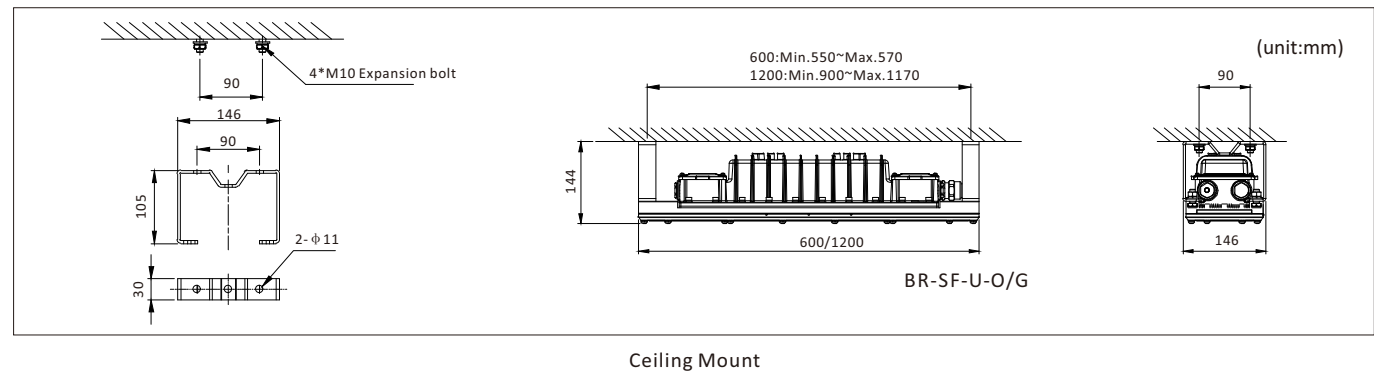


H7V7

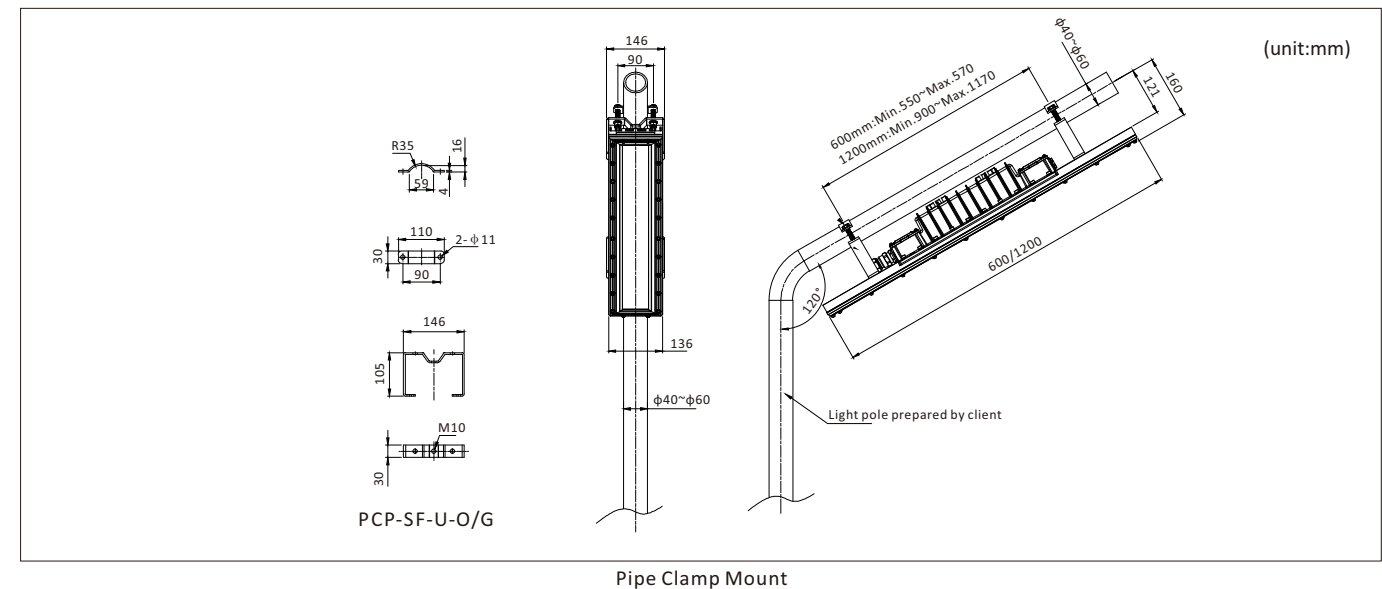
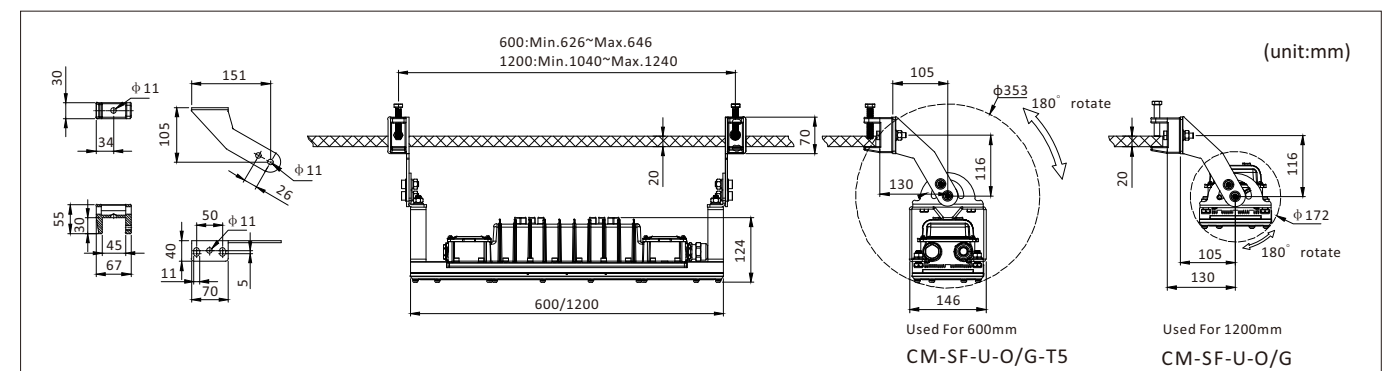
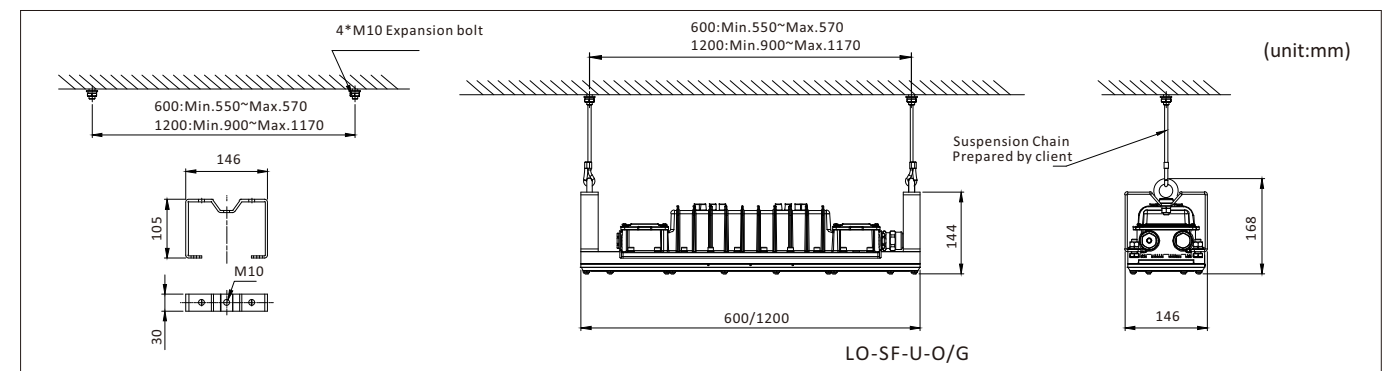
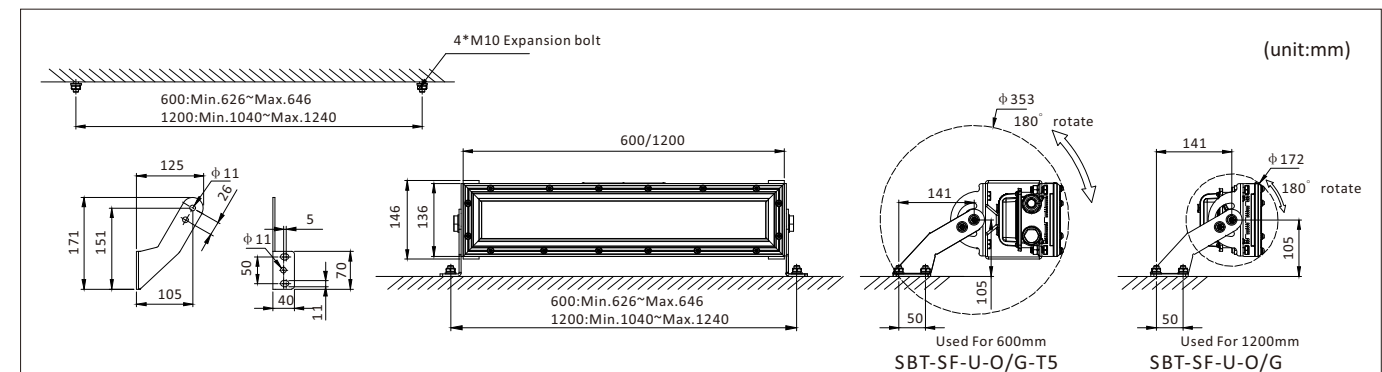
## Optional Parts



## Installation Method



## Installation Method





LED Explosion Proof Linear light

- Swordfish Series

| Standard & Certificate:               |                                                                                                                                                                                                                                                                                                                                                                    |                                                       |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Ex Mark:                              | Gas:  II 2 G Ex d eb op is IIB T6 Gb  II 2 G Ex d eb op is IIC T6 Gb<br>Dust:  II 2 D Ex tb op is IIIC T80°C Db |                                                       |
| Certificate:                          | ATEX Certification NO.:TÜV 15 ATEX 7673 X CE<br>IECEX Certification NO.: IECEx TUR 16.0028X RoHS                                                                                                                                                                                                                                                                   |                                                       |
| Executive Standard:                   | (IEC)EN 60079-0, (IEC)EN 60079-1, (IEC)EN 60079-7, (IEC)EN 60079-28, (IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8                                                                                         |                                                       |
| Classification:                       | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                                                                                                                                    |                                                       |
| Electrical & Photometric Features:    |                                                                                                                                                                                                                                                                                                                                                                    |                                                       |
| Luminarie Efficacy:                   | 136.5lm/W                                                                                                                                                                                                                                                                                                                                                          |                                                       |
| Lifespan:                             | >50,000 hours                                                                                                                                                                                                                                                                                                                                                      |                                                       |
| Operating Voltage:                    | Normal                                                                                                                                                                                                                                                                                                                                                             | 100-277 VAC/24-48 VAC,10-30 VDC/24-48 VDC/141-392 VDC |
|                                       | Emergency                                                                                                                                                                                                                                                                                                                                                          | 220-240 VAC,311-339 VDC                               |
| Power:                                | Normal                                                                                                                                                                                                                                                                                                                                                             | 18W/36W/48W(0.6m),36W/48W/56W/72W(0.9m)               |
|                                       | Emergency                                                                                                                                                                                                                                                                                                                                                          | 5W                                                    |
| Frequency:                            | 50/60Hz                                                                                                                                                                                                                                                                                                                                                            |                                                       |
| Power Factor:                         | >0.98                                                                                                                                                                                                                                                                                                                                                              |                                                       |
| THD:                                  | <10%                                                                                                                                                                                                                                                                                                                                                               |                                                       |
| Insulation Class:                     | I                                                                                                                                                                                                                                                                                                                                                                  |                                                       |
| Surge Protection:                     | 4KV/6KV                                                                                                                                                                                                                                                                                                                                                            |                                                       |
| LED Driver:                           | Over voltage protection/short circuit protection                                                                                                                                                                                                                                                                                                                   |                                                       |
| Battery Capacity:                     | 2.2 Ah                                                                                                                                                                                                                                                                                                                                                             |                                                       |
| Battery Type:                         | Ni-Cd                                                                                                                                                                                                                                                                                                                                                              |                                                       |
| Battery Lifespan:                     | 500 cycles                                                                                                                                                                                                                                                                                                                                                         |                                                       |
| Back up:                              | 180 min                                                                                                                                                                                                                                                                                                                                                            |                                                       |
| Chargeing time:(after full discharge) | 24 hours                                                                                                                                                                                                                                                                                                                                                           |                                                       |
| Mechanical Features:                  |                                                                                                                                                                                                                                                                                                                                                                    |                                                       |
| Weight:                               | Normal                                                                                                                                                                                                                                                                                                                                                             | 6.9Kg(0.6m)/9.2Kg(0.9m)                               |
|                                       | Emergency                                                                                                                                                                                                                                                                                                                                                          | 7.3Kg(0.6m)/9.6Kg(0.9m)                               |
| Size:                                 | 600*136*124mm(18W/36W/48W)/900*136*124mm(36W/48W/56W/72W)                                                                                                                                                                                                                                                                                                          |                                                       |
| Ambient Temperature:                  | -20℃-+55℃                                                                                                                                                                                                                                                                                                                                                          |                                                       |
| Connecting Terminals:                 | 3*1.0-4.0mm²(L+N+PE)                                                                                                                                                                                                                                                                                                                                               |                                                       |
| Cable Entries:                        | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                                                                                                                                                                                       |                                                       |
| Earthing Protection:                  | M4 (Internal & external earth bolts)                                                                                                                                                                                                                                                                                                                               |                                                       |
| IP Code:                              | IP66                                                                                                                                                                                                                                                                                                                                                               |                                                       |
| Enclosure Maternal:                   | Copper-free Aluminium                                                                                                                                                                                                                                                                                                                                              |                                                       |
| Enclosure Colour:                     | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                                                                                                                                              |                                                       |
| Coating:                              | Epoxy powder coating                                                                                                                                                                                                                                                                                                                                               |                                                       |
| Exposed Fastener:                     | Stainless steel                                                                                                                                                                                                                                                                                                                                                    |                                                       |
| Protective Cover:                     | Tempered glass,Stand 7J impact                                                                                                                                                                                                                                                                                                                                     |                                                       |



Product Definition

| Ex                 | K     | SF                  | XX     | XX                                                                                | XX         | XX         | XX           | -X                                                           | -U             | -E        | -X         |                          |
|--------------------|-------|---------------------|--------|-----------------------------------------------------------------------------------|------------|------------|--------------|--------------------------------------------------------------|----------------|-----------|------------|--------------------------|
| Type               | Brand | Series              | Power  | Input Voltage                                                                     | Length     | Candela    | Distribution | CCT(K)                                                       | Type           | Type      | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | SF-Swordfish series | 18-18W | Default-100-277VAC<br>A-24-48VAC/DC<br>B-10-30VDC<br>Emergency Deafult-220-240VAC | 600-600mm  | H7V7(120°) |              | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | Default-Normal | U- Update | E- English | Default-Orange<br>G-Grey |
|                    |       |                     | 36-36W |                                                                                   | 1200-900mm |            |              |                                                              | ON- Emergency  |           |            |                          |
|                    |       |                     | 48-48W |                                                                                   |            |            |              |                                                              |                |           |            |                          |
|                    |       |                     | 56-56W |                                                                                   |            |            |              |                                                              |                |           |            |                          |
|                    |       |                     | 72-72W |                                                                                   |            |            |              |                                                              |                |           |            |                          |

Ordering Information

| P/N                      | Operating Voltage<br>(V)   | Luminous Flux(lm) |           | Power(W) |           | CRI | Color Temp.   | CCT(K)   | Temp. Classification<br>-20℃-+55℃ |
|--------------------------|----------------------------|-------------------|-----------|----------|-----------|-----|---------------|----------|-----------------------------------|
|                          |                            | Normal            | Emergency | Normal   | Emergency |     |               |          |                                   |
| Ex-KSF18600H7V7WM-*-U-E  | 100-277 AC<br>(141-391 DC) | 2268              | 630       | 18       | 5         | 82  | Warm white    | 3000±300 | T6                                |
| Ex-KSF18600H7V7NH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF18600H7V7NH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF18600H7V7CH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF36600H7V7WM-*-U-E  |                            | 4536              | 630       | 36       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF36600H7V7NH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF36600H7V7NH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF36600H7V7CH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF48600H7V7WM-*-U-E  |                            | 6048              | 630       | 48       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF48600H7V7NH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF48600H7V7NH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF48600H7V7CH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF361200H7V7WM-*-U-E |                            | 4536              | 630       | 36       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF361200H7V7NH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF361200H7V7NH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF361200H7V7CH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF481200H7V7WM-*-U-E |                            | 6048              | 630       | 48       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF481200H7V7NH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF481200H7V7NH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF481200H7V7CH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF561200H7V7WM-*-U-E |                            | 7056              | 630       | 56       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF561200H7V7NH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF561200H7V7NH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF561200H7V7CH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Cool white    | 5700±300 |                                   |
| Ex-KSF721200H7V7WM-*-U-E |                            | 9072              | 630       | 72       |           | 82  | Warm white    | 3000±300 |                                   |
| Ex-KSF721200H7V7NH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Natural white | 4000±300 |                                   |
| Ex-KSF721200H7V7NH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Natural white | 5000±300 |                                   |
| Ex-KSF721200H7V7CH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Cool white    | 5700±300 |                                   |

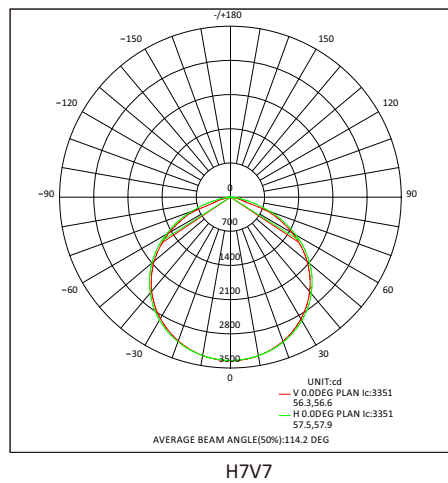
Remarks: The \* stands for product type including default -Normal, ON-Emergency.



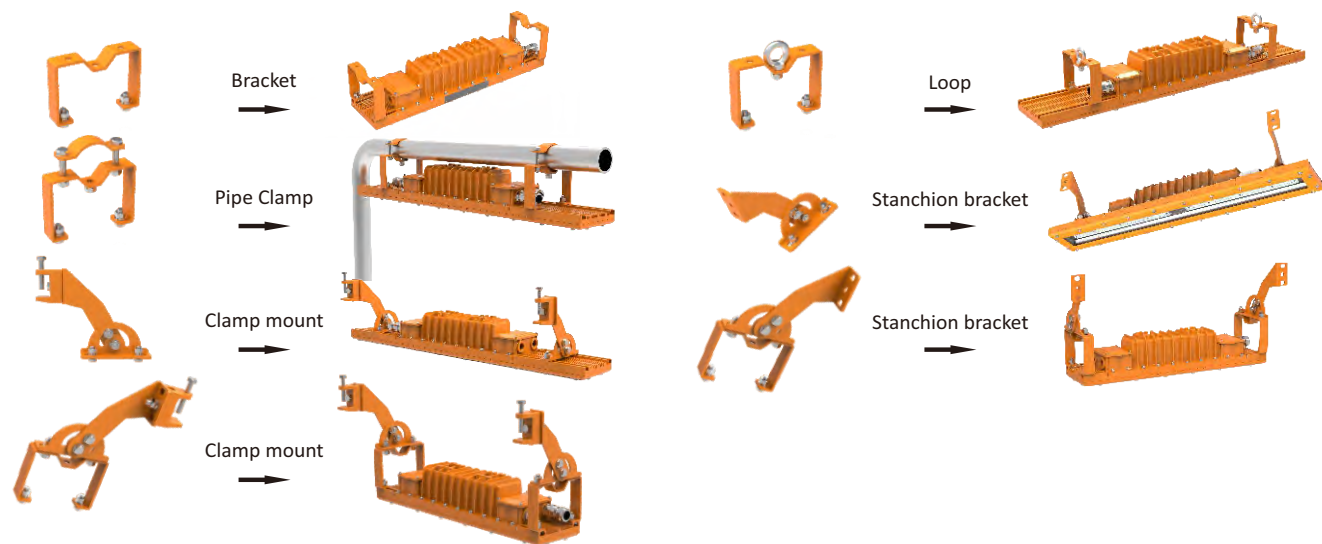
## KHJ Replaceable Luminaire Models

| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 18W     | 2*18W/1*36W | 2*18W/1*36W       | Up to 60% reduction in energy costs |
| 36W     | 4*18W/2*36W | 4*18W/2*36W       |                                     |
| 48W     | 4*18W/3*36W | 4*18W/3*36W       |                                     |
| 56W     | 3*36W       | 3*36W             |                                     |
| 72W     | 4*36W       | 4*36W             |                                     |

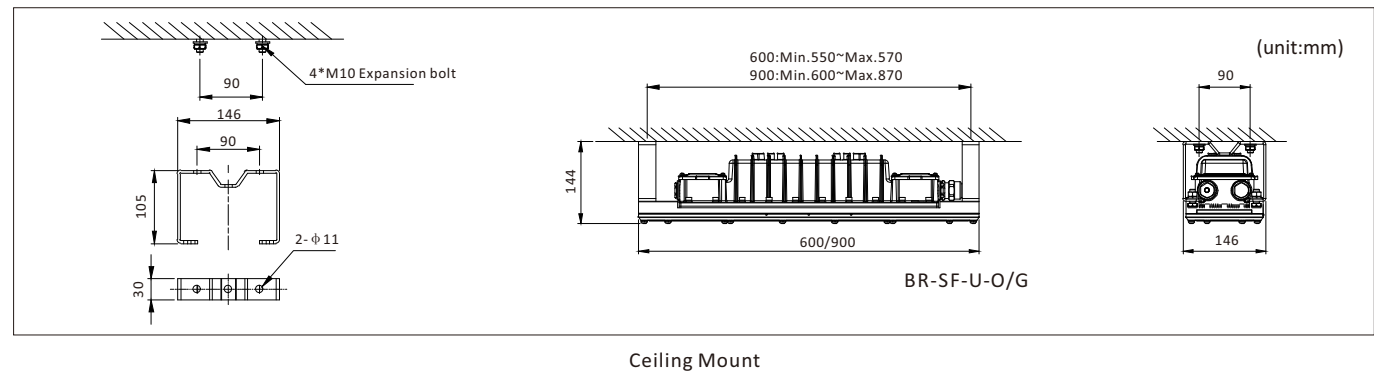
## Candela Distribution



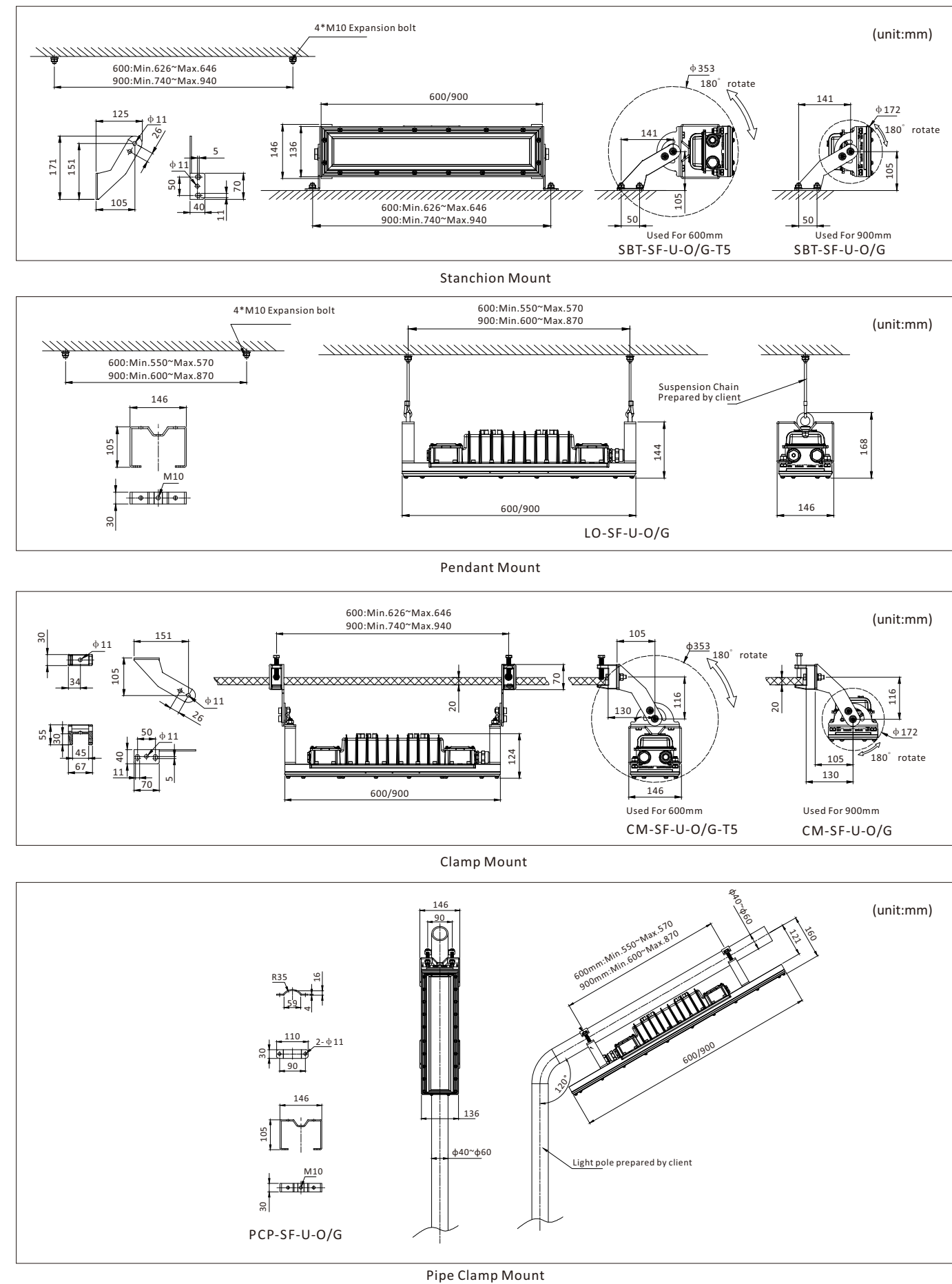
## Optional Parts



## Installation Method



## Installation Method





## LED Explosion Proof Floodlight/High bay light

- *Polarbear Series*

| Standard & Certificate:            |                                                                                                                            |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | UL Certification NO.: 20170823- E491372,E491373,E491374                                                                    |
| Executive Standard:                | UL 1598,UL 1598A,UL 844,UL 8750<br>CSA C22.2 No.137-M1981,CSA C22.2 No.250.1-08,CSA C22.2 No.250.13,CSA C22.2 No.250.13-14 |
| Classification:                    | Class I Division 2,Group A, B ,C ,D                                                                                        |
| Electrical & Photometric Features: |                                                                                                                            |
| Luminarie Efficacy:                | 147lm/W                                                                                                                    |
| Lifespan:                          | >50,000 hours                                                                                                              |
| Operating Voltage:                 | 100-277 VAC,141-391VDC                                                                                                     |
| Power:                             | 80W/120W/150W/200W/240W                                                                                                    |
| Frequency:                         | 50/60Hz                                                                                                                    |
| Power Factor:                      | >0.98                                                                                                                      |
| THD:                               | <10%                                                                                                                       |
| Insulation Class:                  | I                                                                                                                          |
| Surge Protection:                  | 4KV/6KV                                                                                                                    |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                           |
| Mechanical Features:               |                                                                                                                            |
| Weight:                            | 7.3Kg(80W)/11Kg(120W,150W)/18.4Kg(200W,240W)                                                                               |
| Size:                              | 210*400*161mm(80W)/260*400*161mm(120W,150W)/500*400*161mm(200W,240W)                                                       |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                          |
| Cable Entries:                     | 1 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                               |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                       |
| IP Code:                           | IP66                                                                                                                       |
| Enclosure Maternal:                | Copper-free Aluminium                                                                                                      |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                      |
| Coating:                           | Epoxy powder coating                                                                                                       |
| Exposed Fastener:                  | Stainless steel                                                                                                            |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                             |

### Product Definition

| Ex                 | K     | PLB                   | XX                                                     | XX                                                                                 | XX                                                           | -UL                | -X         | -X                       |
|--------------------|-------|-----------------------|--------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------|------------|--------------------------|
| Type               | Brand | Series                | Power                                                  | Candela Distribution                                                               | CCT(K)                                                       | Type               | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | PLB-Polar Bear series | 80-80W<br>120-120W<br>150-150W<br>200-200W<br>240-240W | H1V1(15°)<br>H4V4(60°)<br>H5V5(80°)<br>H6V6(120°)<br>SL(C0-180°;90°;C90-270°;150°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | UL- UL Certificate | E- English | Default-Orange<br>G-Grey |

### Ordering Information

| P/N                | Operating Voltage (V)      | Luminous Flux (lm) | Power (W) | CRI | Color Temp.   | CCT(K)   |
|--------------------|----------------------------|--------------------|-----------|-----|---------------|----------|
| Ex-KPLB80*WM-UL-E  | 100-277 AC<br>(141-392 DC) | 10920              | 80        | 70  | Warm white    | 3000±300 |
| Ex-KPLB80*NH-UL-E  |                            | 11760              | 80        | 70  | Natural white | 4000±300 |
| Ex-KPLB80*NH-UL-E  |                            | 11760              | 80        | 70  | Natural white | 5000±300 |
| Ex-KPLB80*CH-UL-E  |                            | 11760              | 80        | 70  | Cool white    | 5700±300 |
| Ex-KPLB120*WM-UL-E |                            | 16380              | 120       | 70  | Warm white    | 3000±300 |
| Ex-KPLB120*NH-UL-E |                            | 17640              | 120       | 70  | Natural white | 4000±300 |
| Ex-KPLB120*NH-UL-E |                            | 17640              | 120       | 70  | Natural white | 5000±300 |
| Ex-KPLB120*CH-UL-E |                            | 17640              | 120       | 70  | Cool white    | 5700±300 |
| Ex-KPLB150*WM-UL-E |                            | 21840              | 150       | 70  | Warm white    | 3000±300 |
| Ex-KPLB150*NH-UL-E |                            | 23520              | 150       | 70  | Natural white | 4000±300 |
| Ex-KPLB150*NH-UL-E |                            | 23520              | 150       | 70  | Natural white | 5000±300 |
| Ex-KPLB150*CH-UL-E |                            | 23520              | 150       | 70  | Cool white    | 5700±300 |
| Ex-KPLB200*WM-UL-E |                            | 27300              | 200       | 70  | Warm white    | 3000±300 |
| Ex-KPLB200*NH-UL-E |                            | 29400              | 200       | 70  | Natural white | 4000±300 |
| Ex-KPLB200*NH-UL-E |                            | 29400              | 200       | 70  | Natural white | 5000±300 |
| Ex-KPLB200*CH-UL-E |                            | 29400              | 200       | 70  | Cool white    | 5700±300 |
| Ex-KPLB240*WM-UL-E |                            | 32760              | 240       | 70  | Warm white    | 3000±300 |
| Ex-KPLB240*NH-UL-E |                            | 35280              | 240       | 70  | Natural white | 4000±300 |
| Ex-KPLB240*NH-UL-E |                            | 35280              | 240       | 70  | Natural white | 5000±300 |
| Ex-KPLB240*CH-UL-E |                            | 35280              | 240       | 70  | Cool white    | 5700±300 |

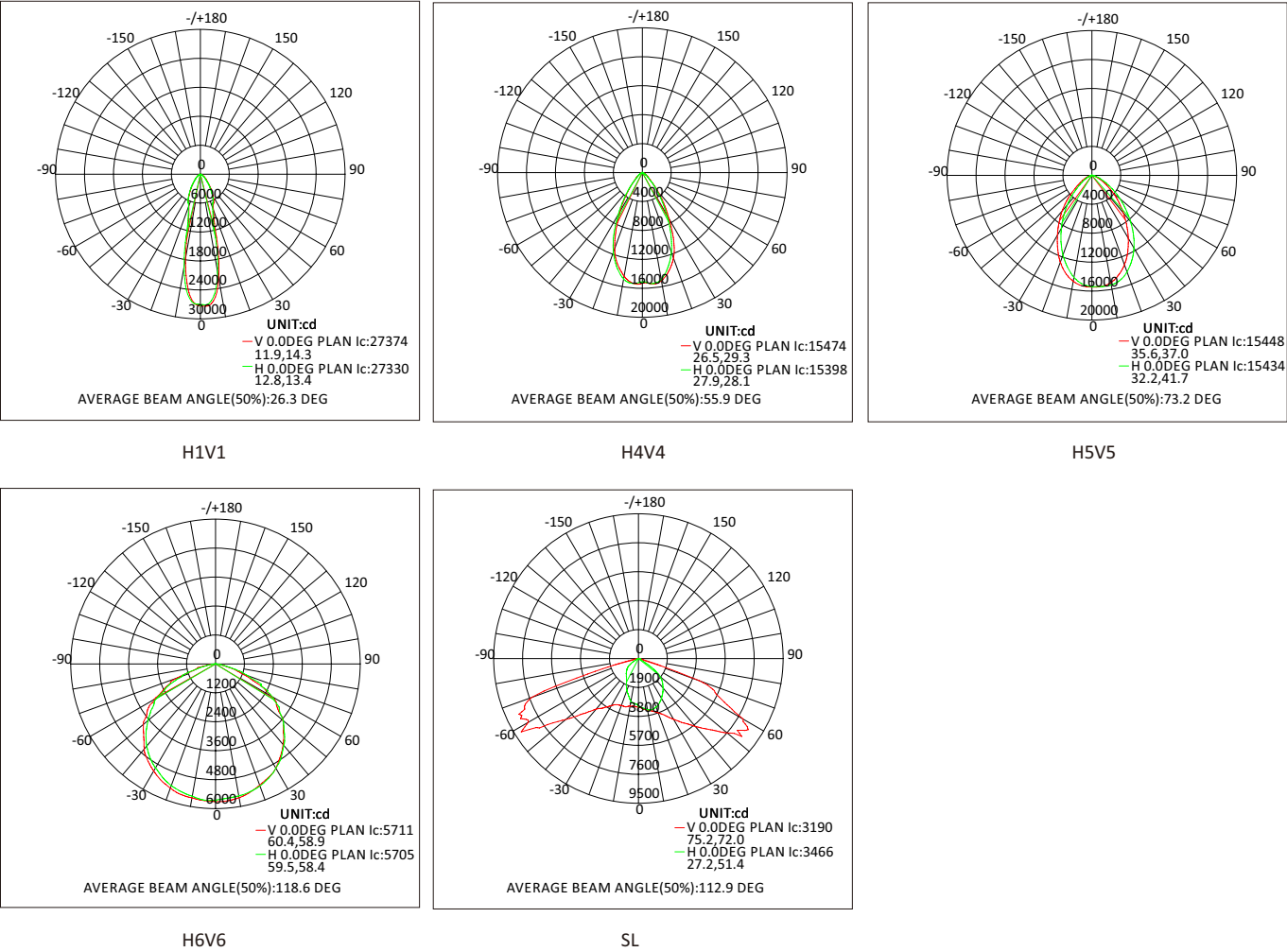
Remarks: 1.\* Stands for beam angle,including H1V1 / H4V4 / H5V5 / H6V6 / SL;  
 2.For Beam angle H1V1,H4V4 and H5V5,the luminous flux will be 15% less;  
 For Beam angle SL the luminous flux will be 30% less.  
 3.SL beam angle is only applicable for 80W&120W.



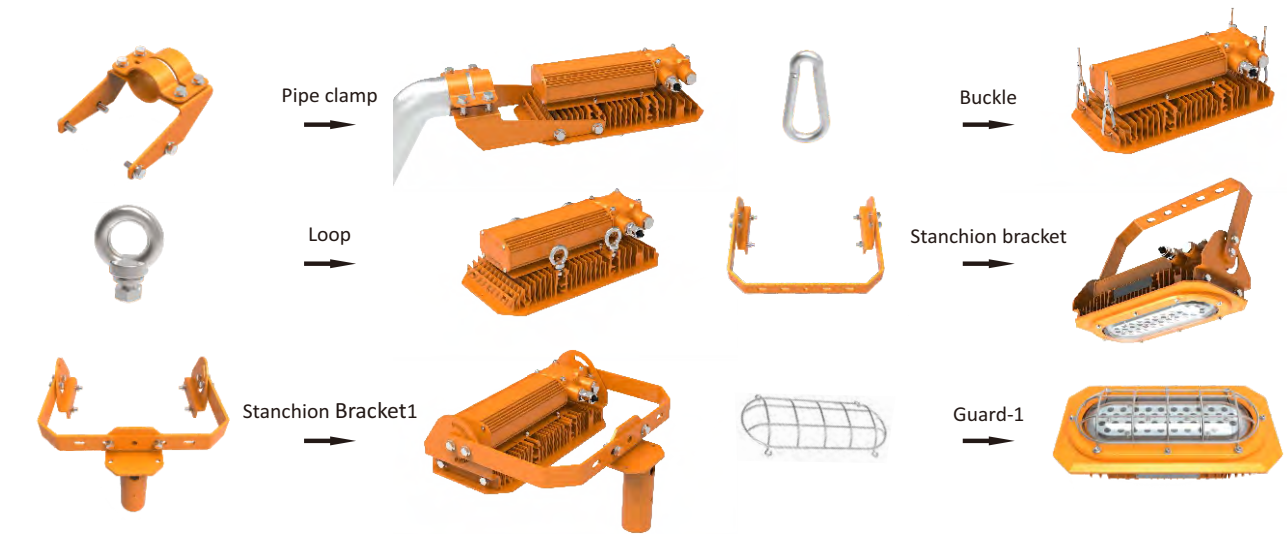
**KHJ Replaceable Luminaire Models**

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 80W     | 175W~250W | 175W~250W         | Up to 60% reduction in energy costs |
| 120W    | 250W~400W | 250W~400W         |                                     |
| 150W    | 400W      | 400W              |                                     |
| 200W    | 400W~500W | 400W~500W         |                                     |
| 240W    | 600W~750W | 600W~750W         |                                     |

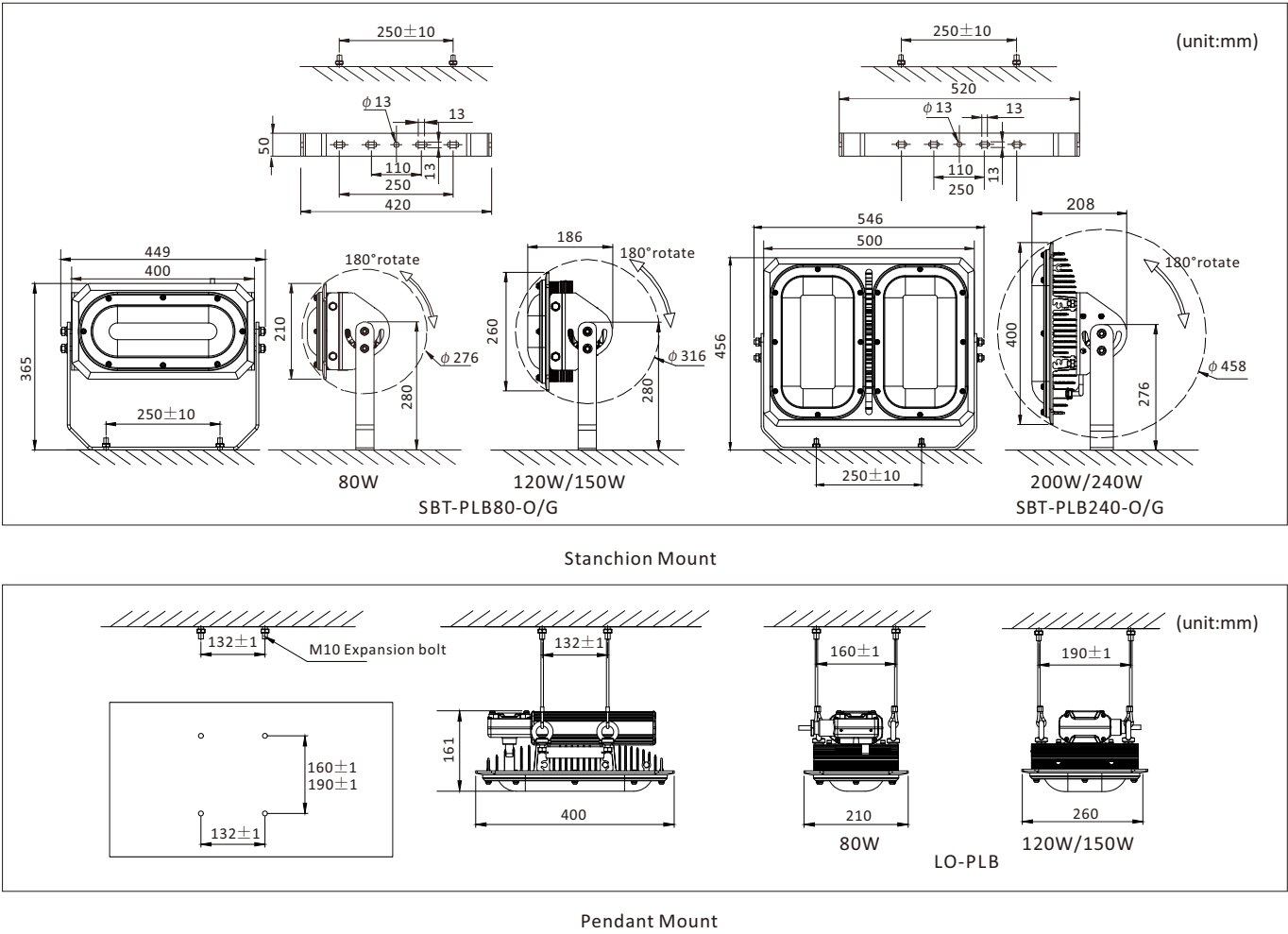
**Candela Distribution**



**Optional Parts**

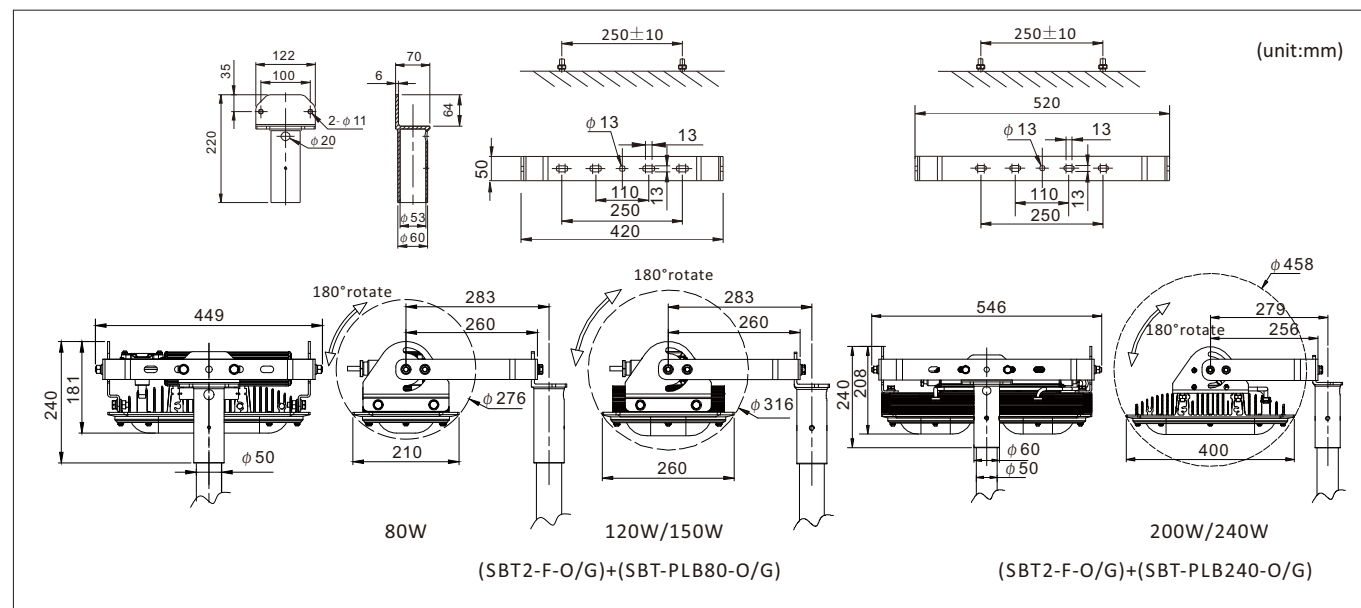


**Installation Method**

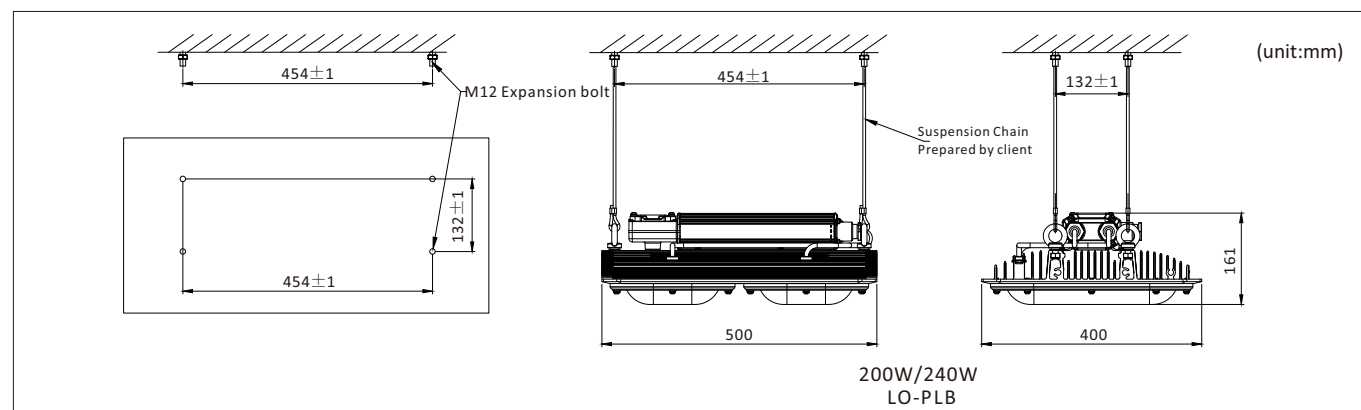




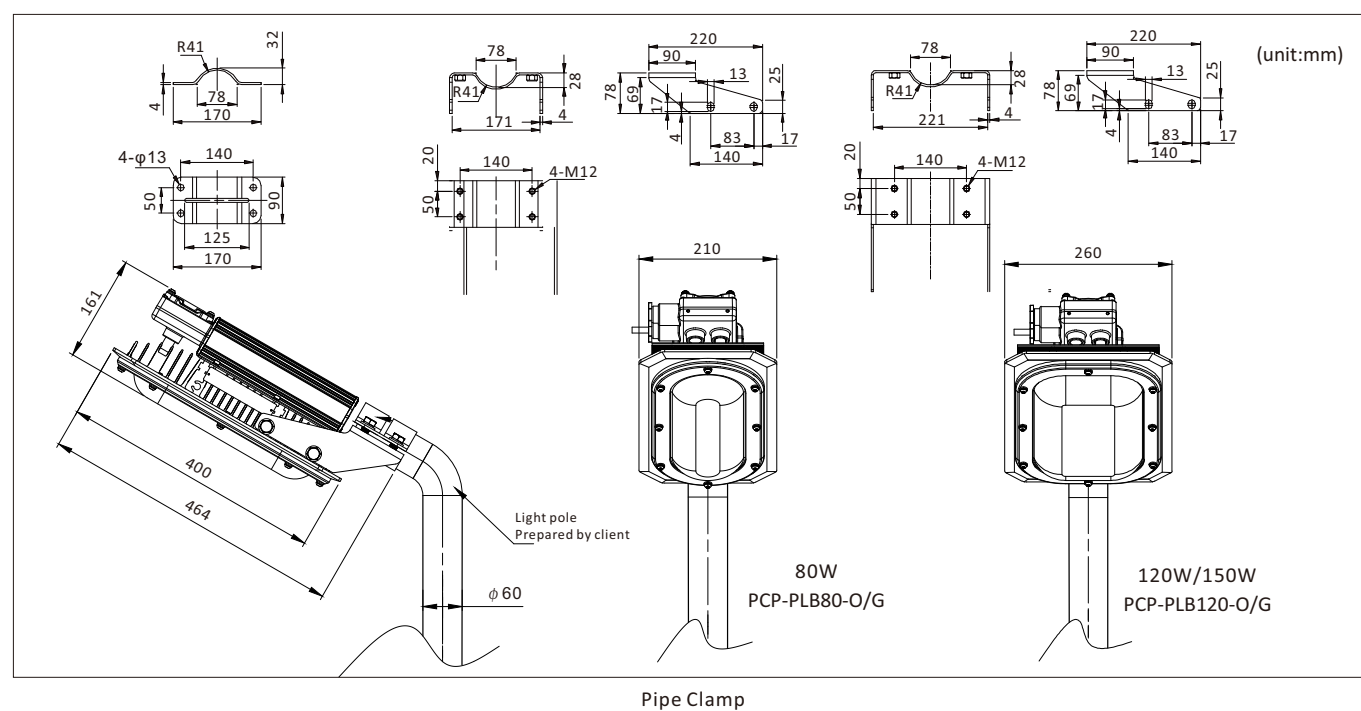
## Installation Method



Pole Mount



Pendant Mount



Pipe Clamp







LED Explosion Proof Floodlight/High bay light

- Polarbear Series

| Standard & Certificate:            |                                                                                                                                                                                                                                            |            |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Ex Mark:                           | Gas:  II 3 G Ex nR IIC T* Gc<br>Dust:  II 3 D Ex tc IIIC T* Dc IP66      |            |
| Certificate:                       | ATEX Certification NO.:LCIE 14 ATEX 1014X<br>IECEX Certification NO.:IECEX CQM 13.0044X                                                                                                                                                    | CE<br>RoHS |
| Executive Standard:                | (IEC)EN 60079-0, (IEC)EN 60079-15,(IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |            |
| Classification:                    | Group II Zone 2 & 22                                                                                                                                                                                                                       |            |
| Electrical & Photometric Features: |                                                                                                                                                                                                                                            |            |
| Luminarie Efficacy:                | 147lm/W                                                                                                                                                                                                                                    |            |
| Lifespan:                          | >50,000 hours                                                                                                                                                                                                                              |            |
| Operating Voltage:                 | 100-277 VAC/220-240 VAC/100-130 VAC<br>141-392 VDC/311-339 VDC/141-184 VDC                                                                                                                                                                 |            |
| Power:                             | 80W/120W/160W/200W/240W                                                                                                                                                                                                                    |            |
| Frequency:                         | 50/60Hz                                                                                                                                                                                                                                    |            |
| Power Factor:                      | >0.98                                                                                                                                                                                                                                      |            |
| THD:                               | <10%                                                                                                                                                                                                                                       |            |
| Insulation Class:                  | I                                                                                                                                                                                                                                          |            |
| Surge Protection:                  | 4KV/6KV                                                                                                                                                                                                                                    |            |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                                                                           |            |
| Mechanical Features:               |                                                                                                                                                                                                                                            |            |
| Weight:                            | 7.3Kg(80W)/11Kg(120W,160W)/18.4Kg(200W,240W)                                                                                                                                                                                               |            |
| Size:                              | 210*400*161mm(80W)/260*400*161mm(120W,160W)/500*400*161mm(200W,240W)                                                                                                                                                                       |            |
| Ambient Temperature:               |                                                                                                                                                                                                                                            |            |
| Connecting Terminals:              | 3*1.0-4.0mm²(L+N+PE)                                                                                                                                                                                                                       |            |
| Cable Entries:                     | 2 x NPT 3/4” (M20*1.5, M25*1.5 are optional)                                                                                                                                                                                               |            |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                                                                       |            |
| IP Code:                           | IP66                                                                                                                                                                                                                                       |            |
| Enclosure Maternal:                | Copper-free Aluminium                                                                                                                                                                                                                      |            |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                      |            |
| Coating:                           | Epoxy powder coating                                                                                                                                                                                                                       |            |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                                                                            |            |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                                                                             |            |



Product Definition

| Ex                 | K     | PLB                   | XX                                                     | XX                                                | XX                                                                                                                   | XX                                                           | -X         | -X                       |
|--------------------|-------|-----------------------|--------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series                | Power                                                  | Input Voltage                                     | Candela Distribution                                                                                                 | CCT(K)                                                       | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | PLB-Polar Bear series | 80-80W<br>120-120W<br>160-160W<br>200-200W<br>240-240W | Default-100-277 VAC<br>100-130 VAC<br>220-240 VAC | H1V1(15°)<br>H4V4(60°)<br>H5V5(80°)<br>H6V6(120°)<br>SL(C0-180°;90°;C90-270°;150°)<br>FW(C0-180°;120°;C90-270°;100°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English | Default-Orange<br>G-Grey |

Ordering Information

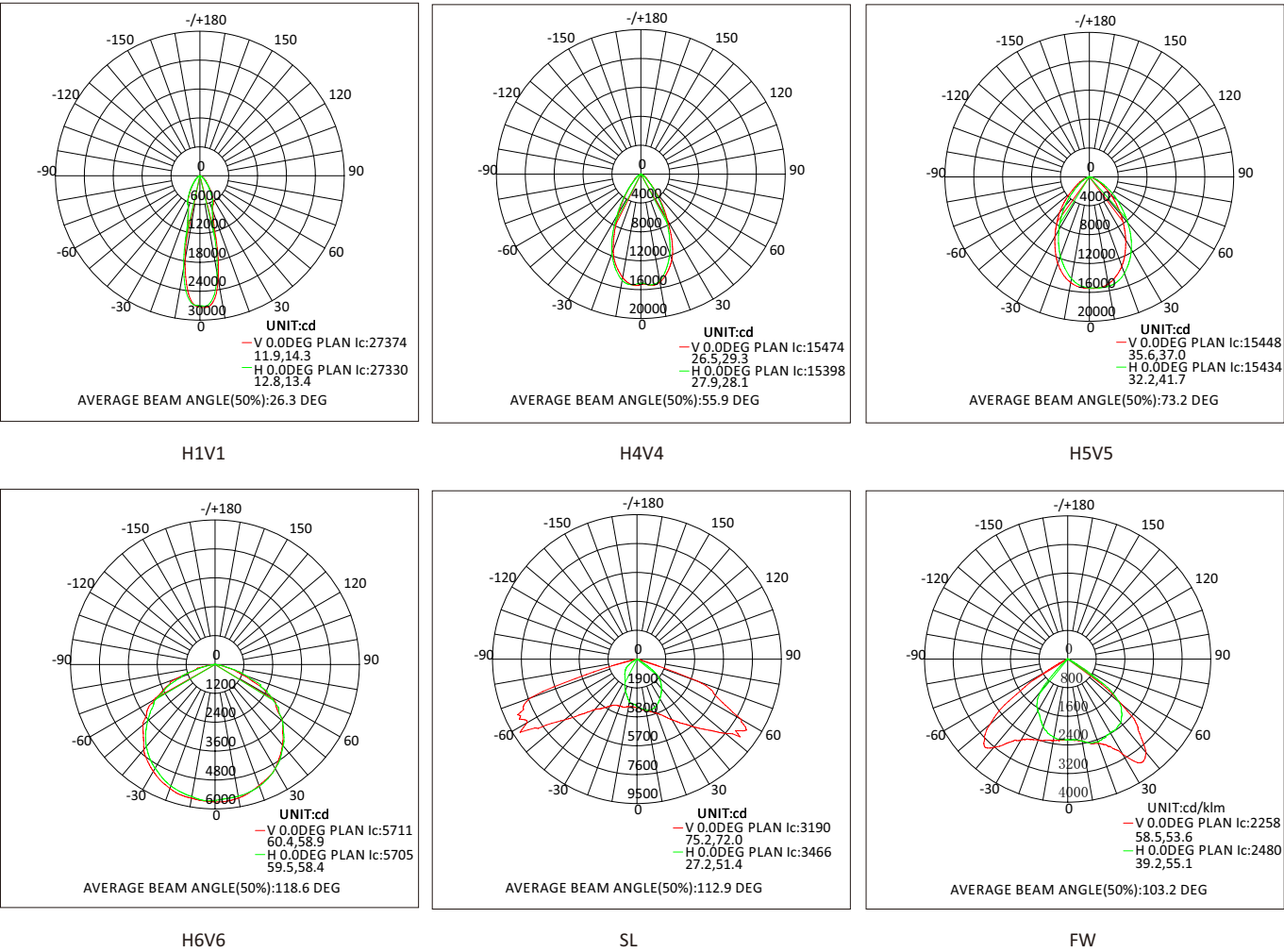
| P/N             | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification<br>-40℃~+55℃ |
|-----------------|----------------------------|-------------------|----------|-----|---------------|----------|-----------------------------------|
| Ex-KPLB80*WM-E  | 100-277 AC<br>(141-392 DC) | 10920             | 80       | 70  | Warm white    | 3000±300 | T6/T5                             |
| Ex-KPLB80*NH-E  |                            | 11760             | 80       | 70  | Natural white | 4000±300 | T6/T5                             |
| Ex-KPLB80*NH-E  |                            | 11760             | 80       | 70  | Natural white | 5000±300 | T6/T5                             |
| Ex-KPLB80*CH-E  |                            | 11760             | 80       | 70  | Cool white    | 5700±300 | T6/T5                             |
| Ex-KPLB120*WM-E |                            | 16380             | 120      | 70  | Warm white    | 3000±300 | T6/T5                             |
| Ex-KPLB120*NH-E |                            | 17640             | 120      | 70  | Natural white | 4000±300 | T6/T5                             |
| Ex-KPLB120*NH-E |                            | 17640             | 120      | 70  | Natural white | 5000±300 | T6/T5                             |
| Ex-KPLB120*CH-E |                            | 17640             | 120      | 70  | Cool white    | 5700±300 | T6/T5                             |
| Ex-KPLB160*WM-E |                            | 21840             | 160      | 70  | Warm white    | 3000±300 | T6/T5                             |
| Ex-KPLB160*NH-E |                            | 23520             | 160      | 70  | Natural white | 4000±300 | T6/T5                             |
| Ex-KPLB160*NH-E |                            | 23520             | 160      | 70  | Natural white | 5000±300 | T6/T5                             |
| Ex-KPLB160*CH-E |                            | 23520             | 160      | 70  | Cool white    | 5700±300 | T6/T5                             |
| Ex-KPLB200*WM-E |                            | 27300             | 200      | 70  | Warm white    | 3000±300 | T6/T5                             |
| Ex-KPLB200*NH-E |                            | 29400             | 200      | 70  | Natural white | 4000±300 | T6/T5                             |
| Ex-KPLB200*NH-E |                            | 29400             | 200      | 70  | Natural white | 5000±300 | T6/T5                             |
| Ex-KPLB200*CH-E |                            | 29400             | 200      | 70  | Cool white    | 5700±300 | T6/T5                             |
| Ex-KPLB240*WM-E |                            | 32760             | 240      | 70  | Warm white    | 3000±300 | T5/T4                             |
| Ex-KPLB240*NH-E |                            | 35280             | 240      | 70  | Natural white | 5000±300 | T5/T4                             |
| Ex-KPLB240*NH-E |                            | 35280             | 240      | 70  | Natural white | 4000±300 | T5/T4                             |
| Ex-KPLB240*CH-E |                            | 35280             | 240      | 70  | Cool white    | 5700±300 | T5/T4                             |

Remarks: 1.\* Stands for beam angle,including H1V1 / H4V4 / H5V5 / H6V6 / SL/FW;  
2.For Beam angle H1V1,H4V4 and H5V5,the luminous flux will be 15% less;  
For Beam angle SL,FW the luminous flux will be 30% less.  
3.SL beam angle is only applicable for 80W&120W.

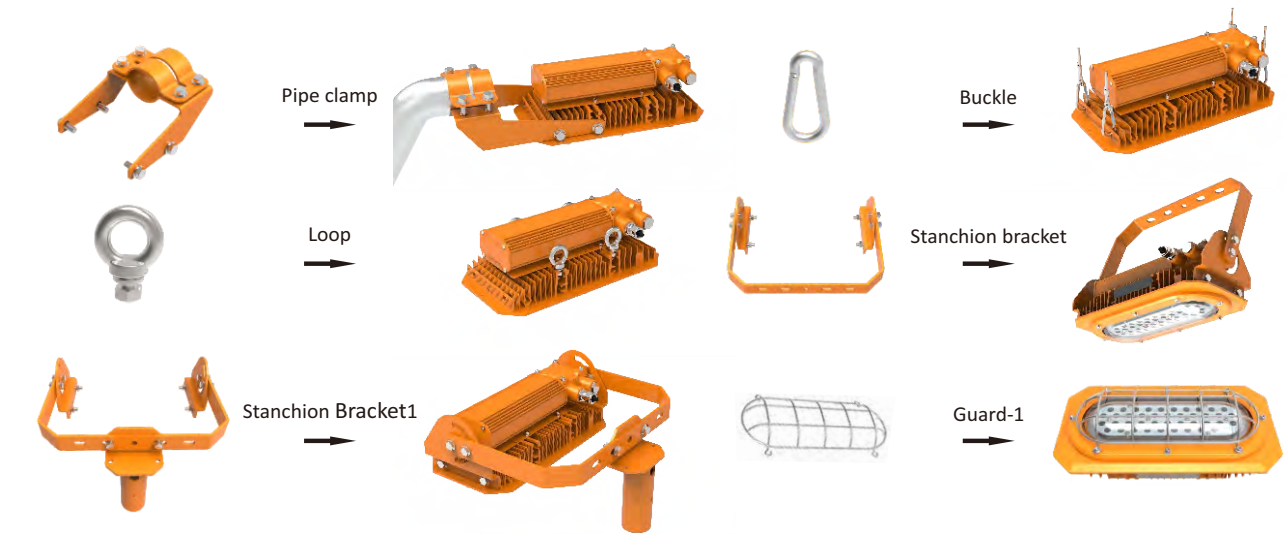
**KHJ Replaceable Luminaire Models**

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 80W     | 175W~250W | 175W~250W         | Up to 60% reduction in energy costs |
| 120W    | 250W~400W | 250W~400W         |                                     |
| 160W    | 400W      | 400W              |                                     |
| 200W    | 400W~500W | 400W~500W         |                                     |
| 240W    | 600W~750W | 600W~750W         |                                     |

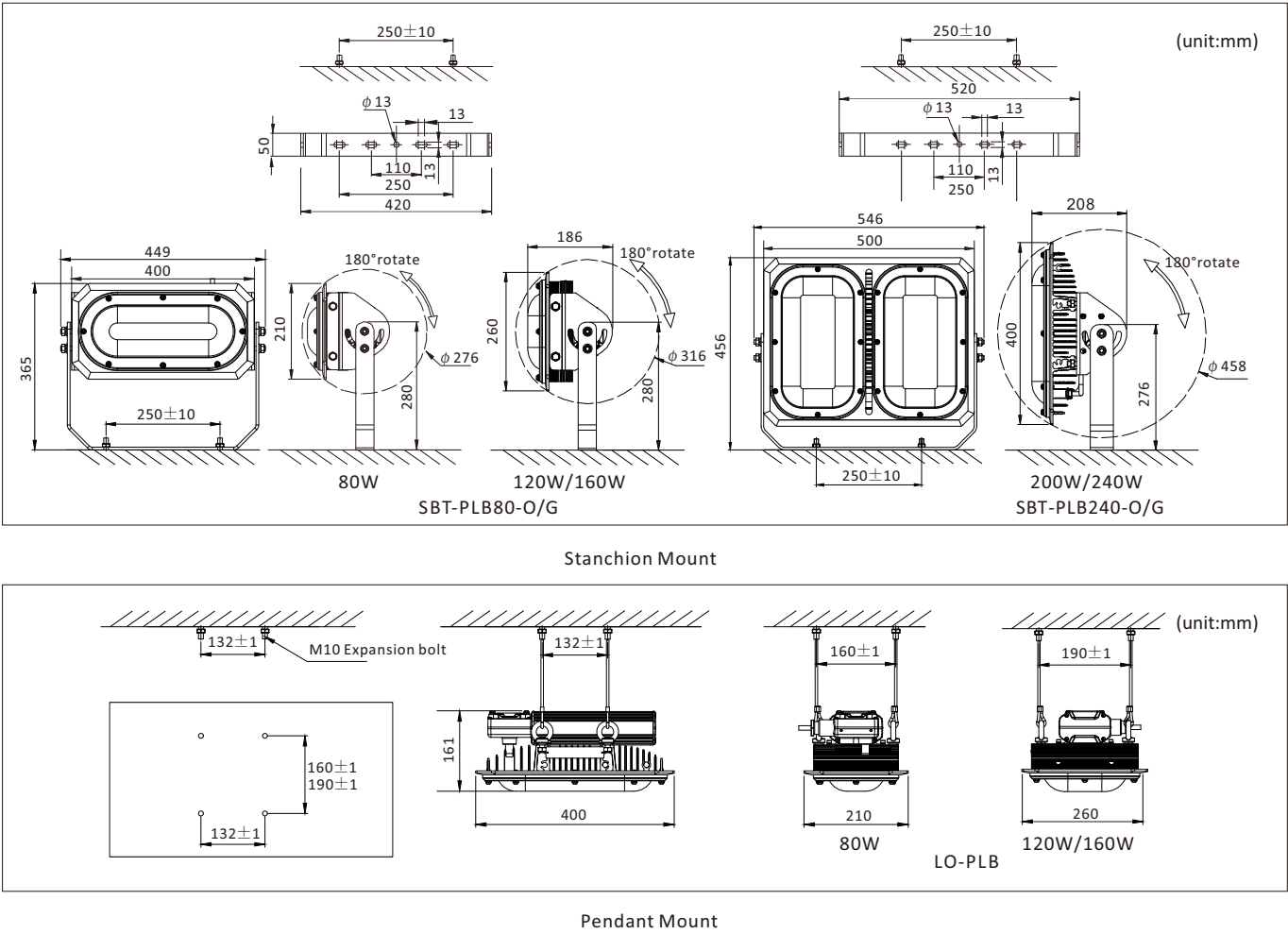
**Candela Distribution**



**Optional Parts**

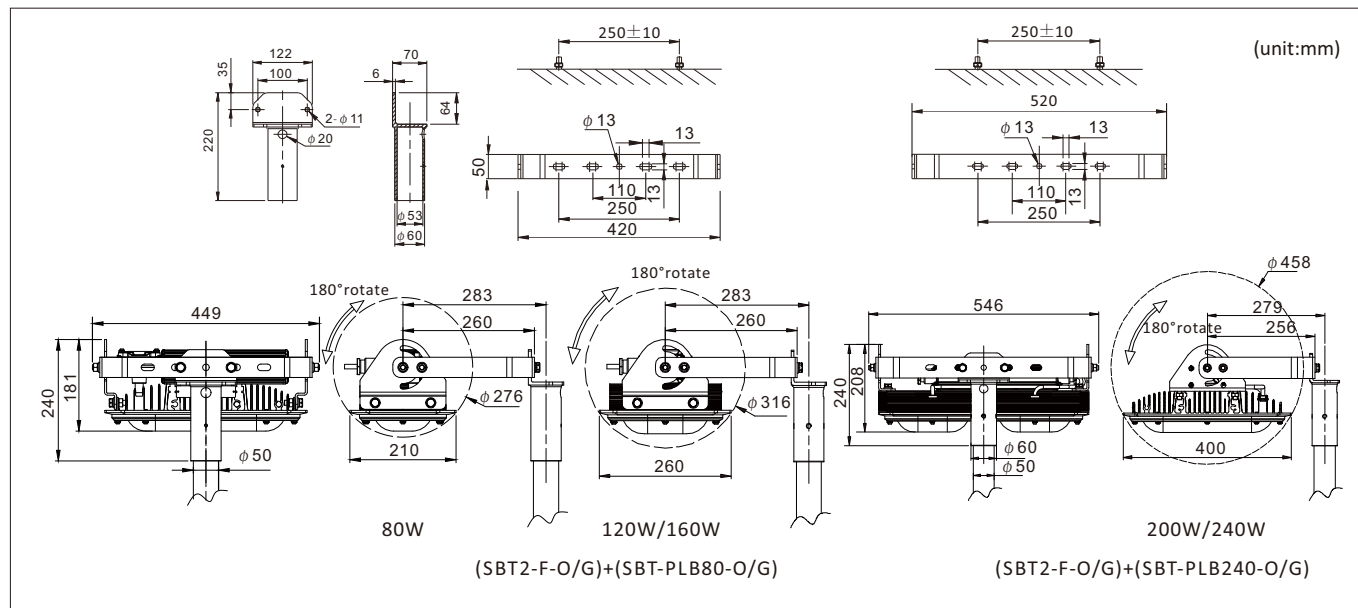


**Installation Method**

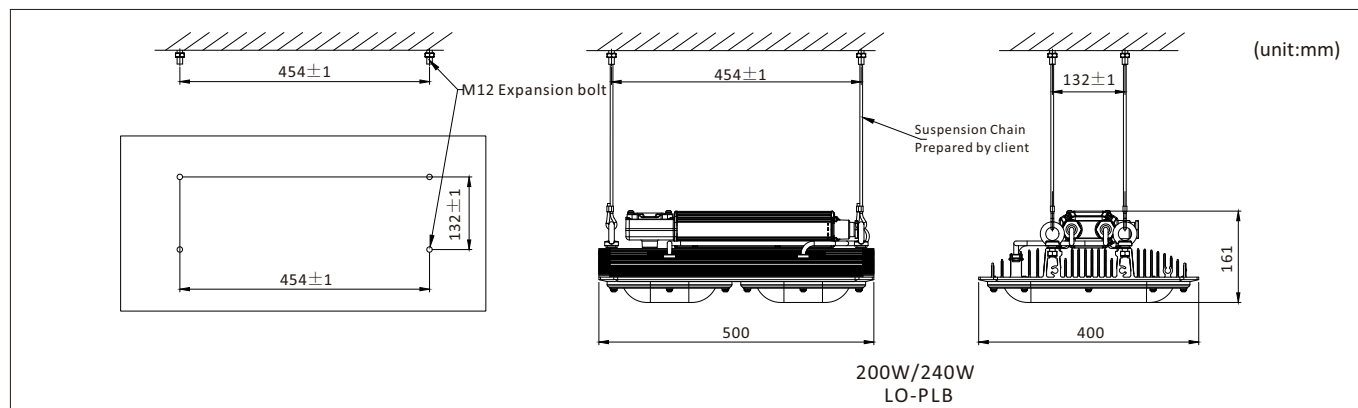




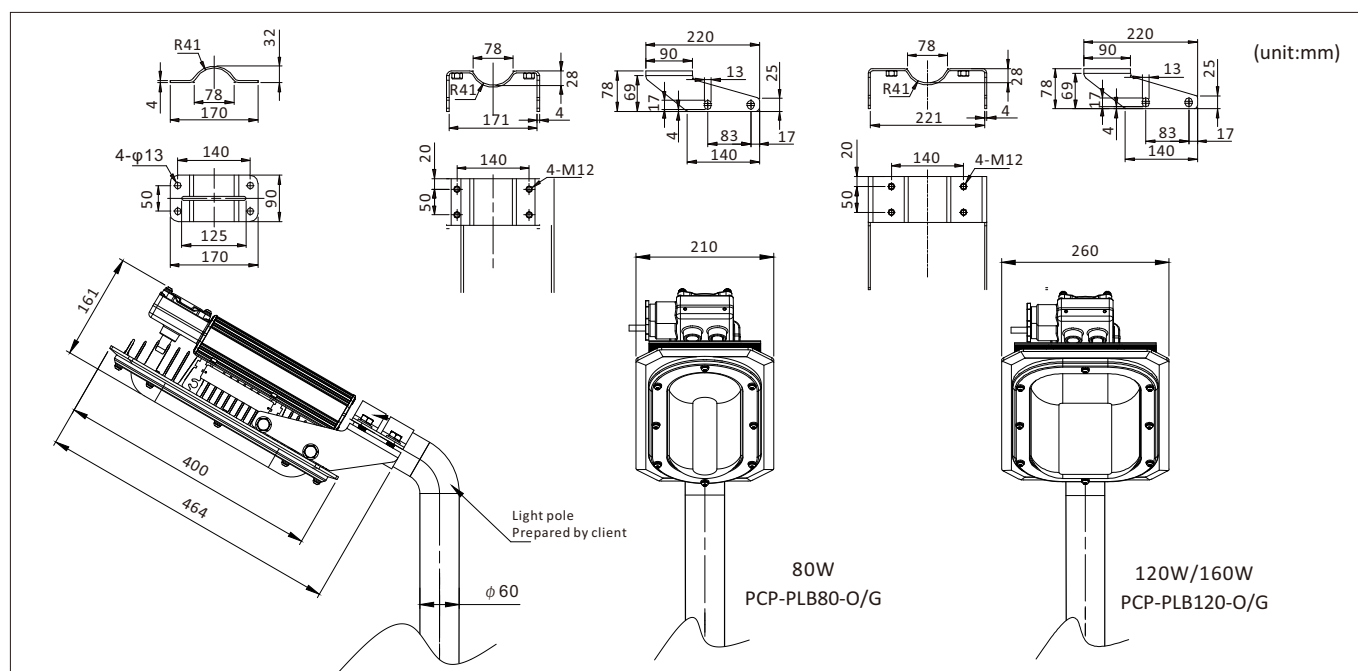
## Installation Method



Pole Mount



Pendant Mount



Pipe Clamp







## LED Explosion Proof Floodlight/Bay light/Platform light

- Forest Frog Series

| Standard & Certificate:            |                                                                                                                                                                                                                                                                               |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 2 G Ex db op is IIC T* Gb<br>II 2 G Ex db eb op is IIC T* Gb<br>Dust:  II 2 D Ex tb op is IIC T* Db                                                                                                                                                                  |
| Certificate:                       | ATEX Certification NO.:EPT 18 ATEX 2977 X<br>IECEX Certification NO.:IECEX CQM 15.0039X<br>CE<br>RoHS                                                                                                                                                                         |
| Executive Standard:                | (IEC)EN 60079-0, (IEC)EN 60079-1, (IEC)EN 60079-7, (IEC)EN 60079-28, (IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                    | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                                               |
| Electrical & Photometric Features: |                                                                                                                                                                                                                                                                               |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                                                                                                                     |
| Lifespan:                          | >50,000 hours                                                                                                                                                                                                                                                                 |
| Operating Voltage:                 | 24-48 VAC/100-277 VAC<br>10-30 VDC/24-48 VDC/141-392 VDC                                                                                                                                                                                                                      |
| Power:                             | 30W/45W/60W                                                                                                                                                                                                                                                                   |
| Frequency:                         | 50/60Hz                                                                                                                                                                                                                                                                       |
| Power Factor:                      | >0.98                                                                                                                                                                                                                                                                         |
| THD:                               | <10%                                                                                                                                                                                                                                                                          |
| Insulation Class:                  | I                                                                                                                                                                                                                                                                             |
| Surge Protection:                  | 5KV                                                                                                                                                                                                                                                                           |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                                                                                                              |
| Mechanical Features:               |                                                                                                                                                                                                                                                                               |
| Weight:                            | 3.3Kg                                                                                                                                                                                                                                                                         |
| Size:                              | φ 220*191mm                                                                                                                                                                                                                                                                   |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                                                                                                                     |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                                                                                                             |
| Cable Entries:                     | 1 x NPT 3/4" (M25*1.5 option)                                                                                                                                                                                                                                                 |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                                                                                                          |
| IP Code:                           | IP66                                                                                                                                                                                                                                                                          |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                                                                                                                   |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                                                         |
| Coating:                           | Epoxy powder coating                                                                                                                                                                                                                                                          |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                                                                                                               |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                                                                                                                |

### Product Definition

| Ex                 | K     | FF            | XX                         | XX                                                   | XX                                                                                | XX                                                           | -X                                     | -J             | -X           | -X                       |       |
|--------------------|-------|---------------|----------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|----------------|--------------|--------------------------|-------|
| Type               | Brand | Series        | Power                      | Input Voltage                                        | Candela                                                                           | Distribution                                                 | CCT(K)                                 | Type           | Junction box | Area                     | Color |
| Ex-Explosion Proof | K-KHJ | FF-ForestFrog | 30-30W<br>45-45W<br>60-60W | Default-100-277 VAC<br>A-24-48 VAC/DC<br>B-10-30 VDC | H1V1(15°)<br>H5V5(80°)<br>H6V6(120°)<br>F(200°)<br>FW(C0-180°:120°:C90-270°:100°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | Default-Normal<br>P-Pole mount bracket | J-Junction box | E- English   | Default-Orange<br>G-Grey |       |
|                    |       |               |                            |                                                      |                                                                                   |                                                              |                                        |                |              |                          |       |
|                    |       |               |                            |                                                      |                                                                                   |                                                              |                                        |                |              |                          |       |
|                    |       |               |                            |                                                      |                                                                                   |                                                              |                                        |                |              |                          |       |
|                    |       |               |                            |                                                      |                                                                                   |                                                              |                                        |                |              |                          |       |

### Ordering Information

| P/N             | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |           |
|-----------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|-----------|
|                 |                            |                   |          |     |               |          | -40℃~+40℃            | -40℃~+55℃ |
| Ex-KFF30*WM-J-E | 100~277 AC<br>(141~392 DC) | 3780              | 30       | 70  | Warm white    | 3000±300 | T6                   | T5        |
| Ex-KFF30*NH-J-E |                            | 4095              | 30       | 70  | Natural white | 4000±300 | T6                   | T5        |
| Ex-KFF30*NH-J-E |                            | 4095              | 30       | 70  | Natural white | 5000±300 | T6                   | T5        |
| Ex-KFF30*CH-J-E |                            | 4095              | 30       | 70  | Cool white    | 5700±300 | T6                   | T5        |
| Ex-KFF45*WM-J-E |                            | 5670              | 45       | 70  | Warm white    | 3000±300 | T6                   | T5        |
| Ex-KFF45*NH-J-E |                            | 6142              | 45       | 70  | Natural white | 4000±300 | T6                   | T5        |
| Ex-KFF45*NH-J-E |                            | 6142              | 45       | 70  | Natural white | 5000±300 | T6                   | T5        |
| Ex-KFF45*CH-J-E |                            | 6142              | 45       | 70  | Cool white    | 5700±300 | T6                   | T5        |
| Ex-KFF60*WM-J-E |                            | 7560              | 60       | 70  | Warm white    | 3000±300 | T5                   | T4        |
| Ex-KFF60*NH-J-E |                            | 8190              | 60       | 70  | Natural white | 4000±300 | T5                   | T4        |
| Ex-KFF60*NH-J-E |                            | 8190              | 60       | 70  | Natural white | 5000±300 | T5                   | T4        |
| Ex-KFF60*CH-J-E |                            | 8190              | 60       | 70  | Cool white    | 5700±300 | T5                   | T4        |

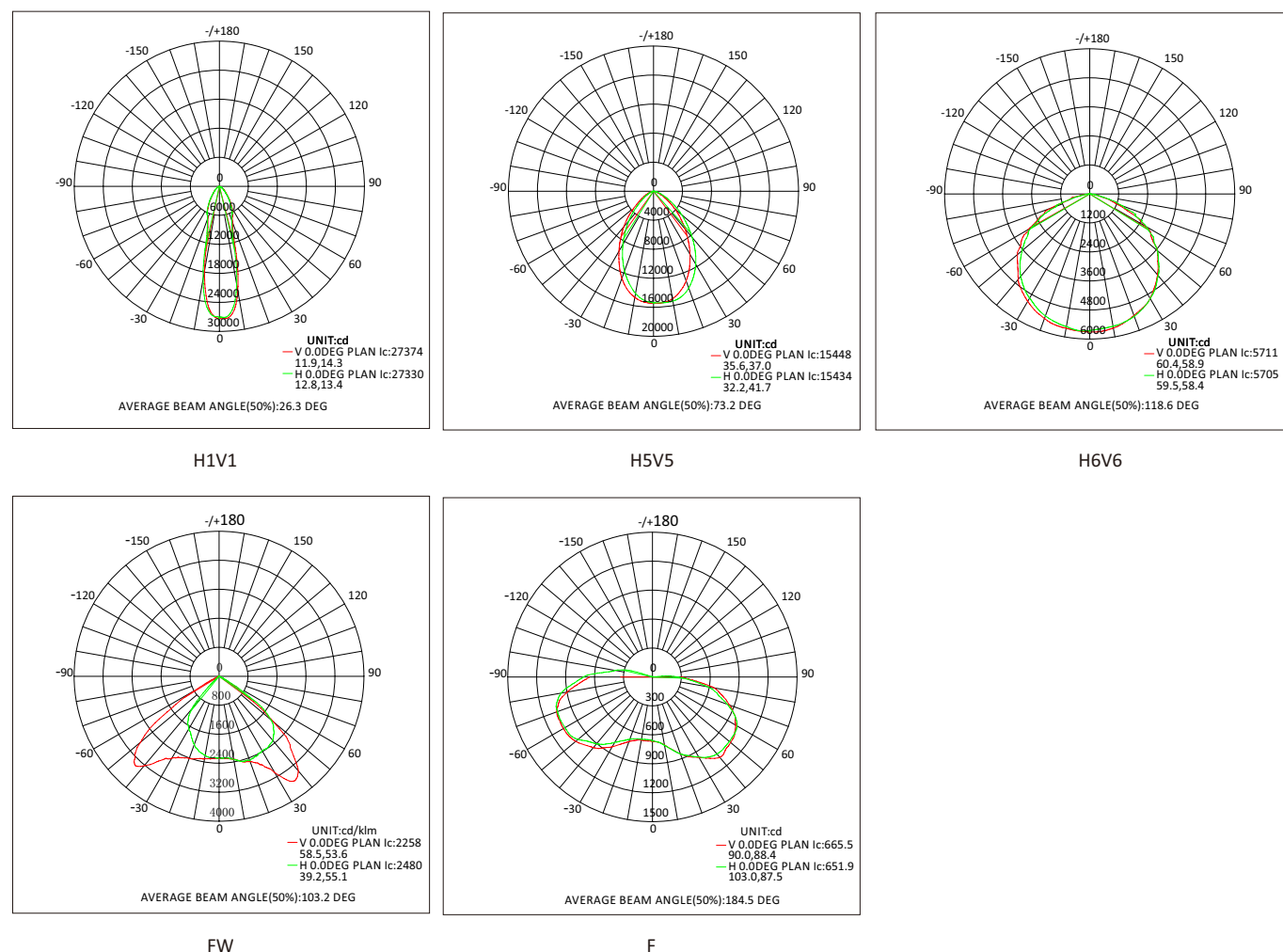
Remarks: 1、\*Stands for candela distribution, including H1V1 / H5V5 / H6V6/F/FW;  
2、For beam angle H1V1/H5V5,the luminous flux will be 8% less;  
3、For beam angle FW/F,the luminous flux will be 25% less.

### KHJ Replaceable Luminaire Models

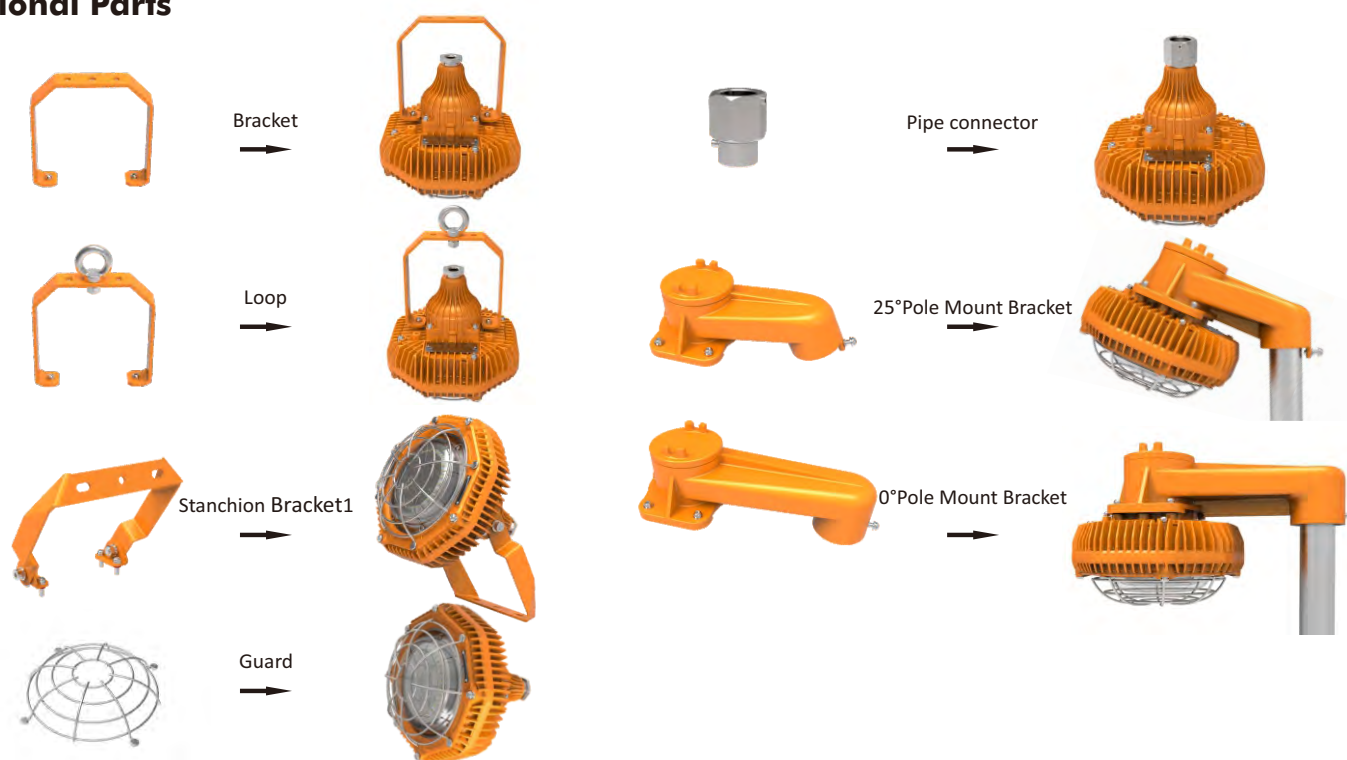
| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 30W     | 70W       | 70W               | Up to 60% reduction in energy costs |
| 45W     | 100W~150W | 100W~150W         |                                     |
| 60W     | 150W~175W | 150W~175W         |                                     |



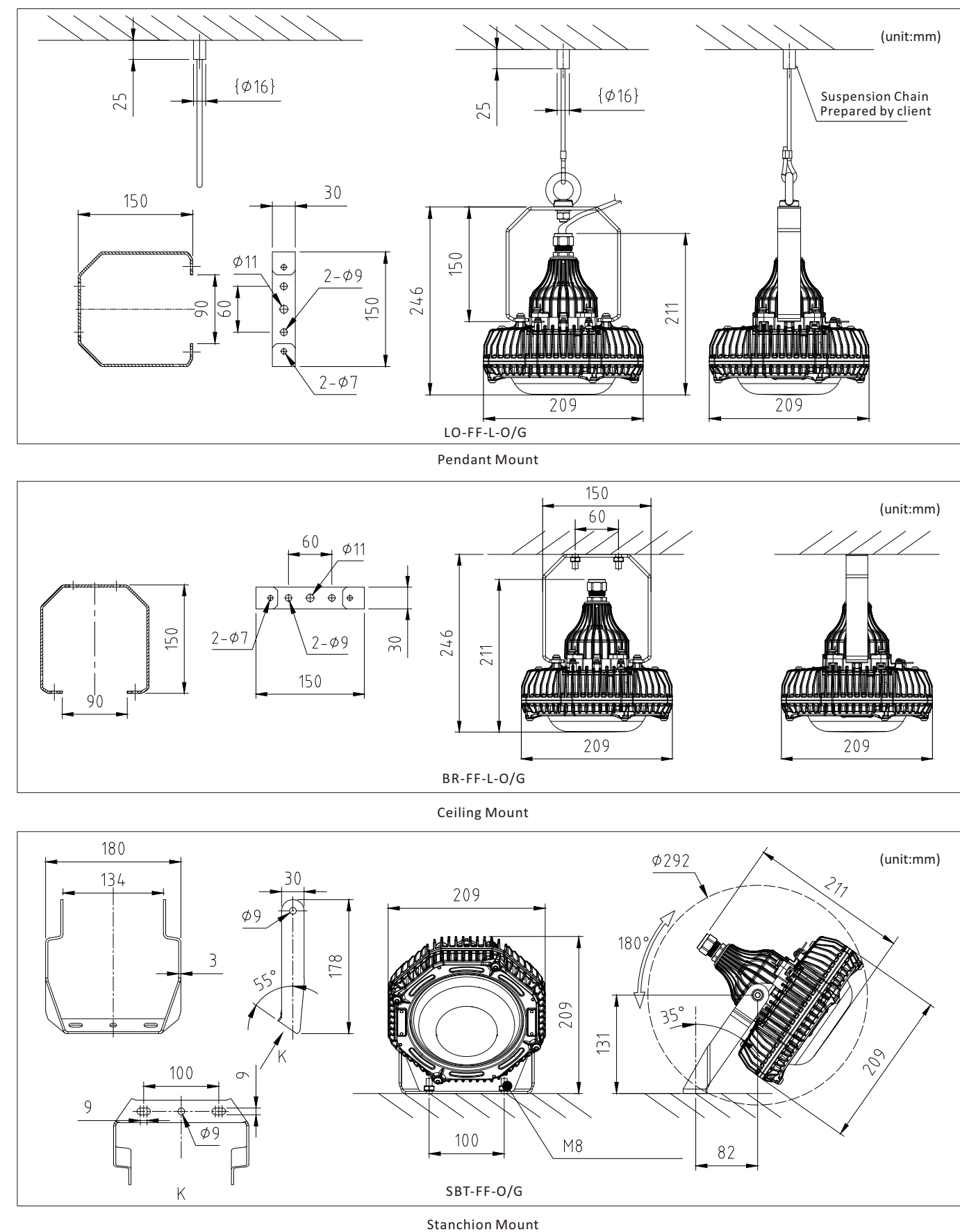
## Candela Distribution



## Optional Parts

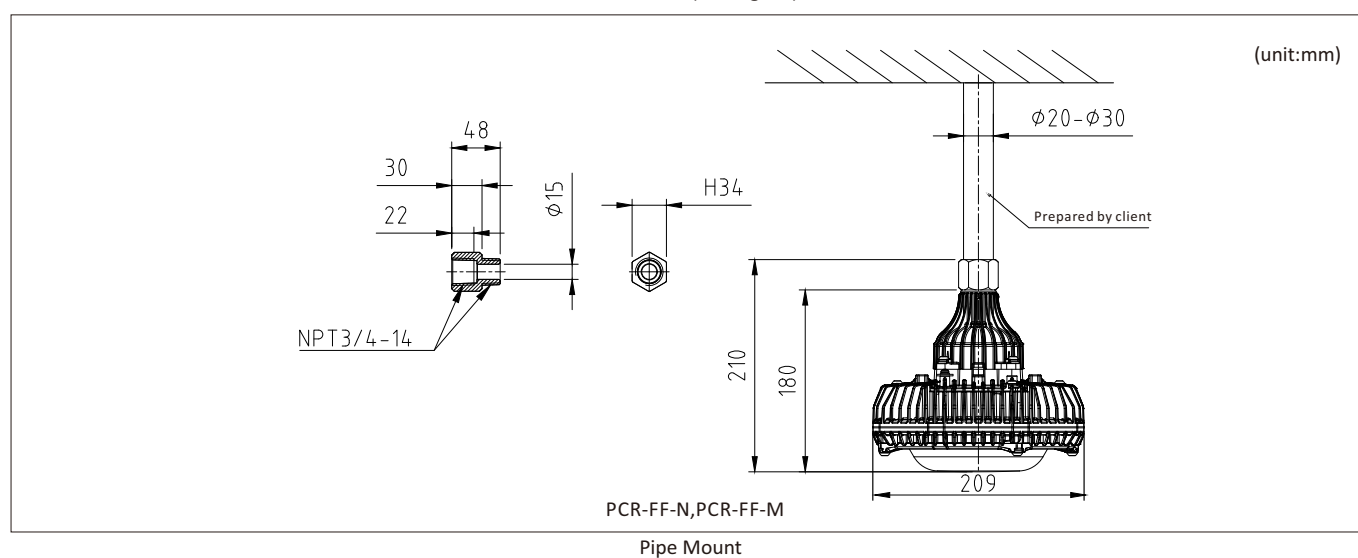
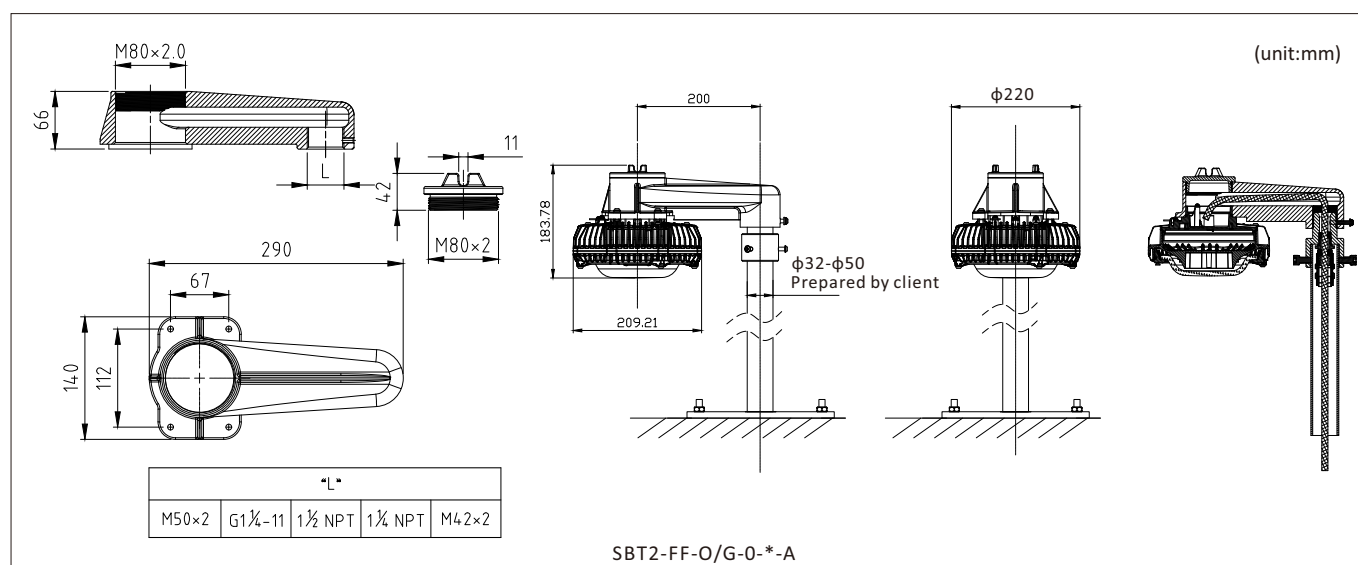
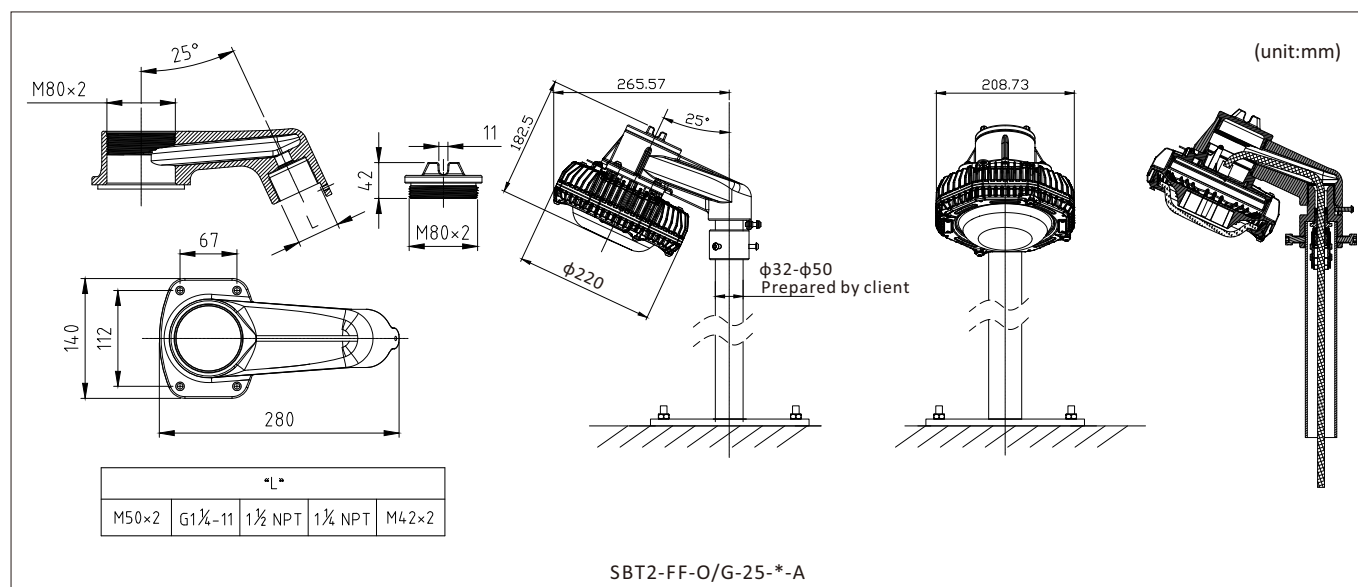


## Installation Method





## Installation Method







## LED Explosion Proof Floodlight/Bay light

### - Golden Frog Series

| Standard & Certificate:            |                                                                                                                                                                                                                                            |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 2 G Ex d IIB T5 or T6 Gb<br>Dust:  II 2 D Ex t IIIC T95°C or T80°C Db IP66                                                                                                                                                        |
| Certificate:                       | ATEX Certification NO.:LCIE 12 ATEX 3070X<br>IECEx Certification NO.:IECEx CQM 12.0033X                                                                                                                                                    |
| Executive Standard:                | (IEC)EN 60079-0, (IEC)EN 60079-1, (IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                    | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                            |
| Electrical & Photometric Features: |                                                                                                                                                                                                                                            |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                                                                                  |
| Lifespan:                          | >50,000 hours                                                                                                                                                                                                                              |
| Operating Voltage:                 | 24-48 VAC/100-240 VAC<br>10-30 VDC/24-48 VDC/141-339 VDC                                                                                                                                                                                   |
| Power:                             | 30W/60W                                                                                                                                                                                                                                    |
| Frequency:                         | 50/60Hz                                                                                                                                                                                                                                    |
| Power Factor:                      | >0.98                                                                                                                                                                                                                                      |
| THD:                               | <10%                                                                                                                                                                                                                                       |
| Insulation Class:                  | I                                                                                                                                                                                                                                          |
| Surge Protection:                  | 5KV                                                                                                                                                                                                                                        |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                                                                           |
| Mechanical Features:               |                                                                                                                                                                                                                                            |
| Weight:                            | 5.5Kg                                                                                                                                                                                                                                      |
| Size:                              | 311*284*190mm                                                                                                                                                                                                                              |
| Ambient Temperature:               | -40°C-+55°C                                                                                                                                                                                                                                |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                                                                          |
| Cable Entries:                     | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                                                               |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                                                                       |
| IP Code:                           | IP66                                                                                                                                                                                                                                       |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                                                                                |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                      |
| Coating:                           | Epoxy powder coating                                                                                                                                                                                                                       |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                                                                            |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                                                                             |

## Product Definition

| Ex                 | K     | GF            | XX                                                            | XX               | XX                                                   | XX                                                           | -X         | -X                       |
|--------------------|-------|---------------|---------------------------------------------------------------|------------------|------------------------------------------------------|--------------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series        | Candela Distribution                                          | Power            | Input Voltage                                        | CCT(K)                                                       | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | GF-GoldenFrog | S-Spot light(15°)<br>B- Bay Light(80°)<br>F-Floodlight (180°) | 30-30W<br>60-60W | Deafult-100-240V AC<br>A-24-48V AC/DC<br>B-10-30V DC | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English | Default-Orange<br>G-Grey |

## Ordering Information

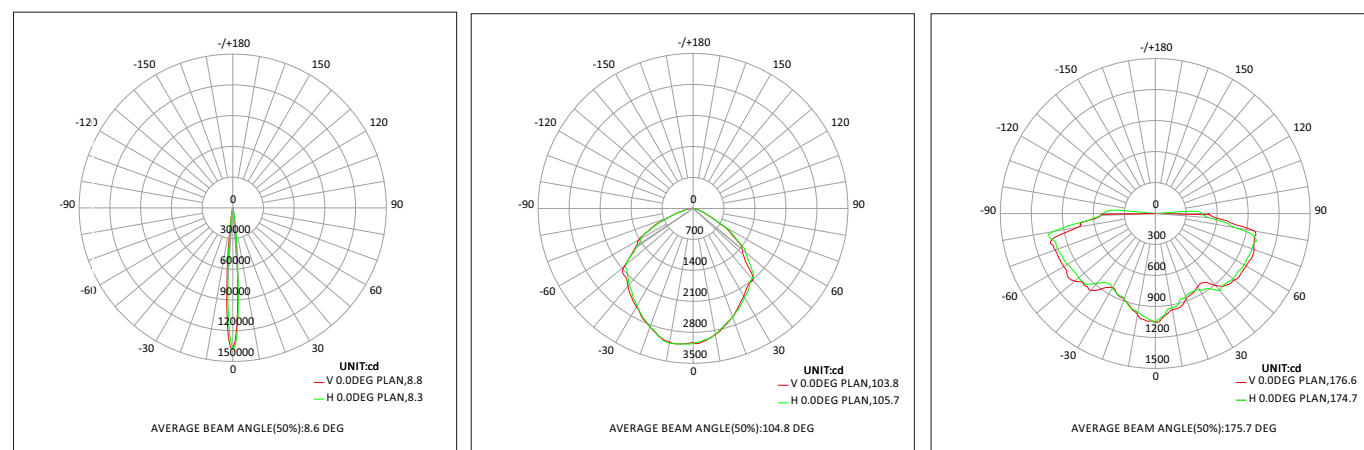
| P/N           | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Beam Distribution | Temp. Classification<br>-40°C-+55°C |
|---------------|----------------------------|-------------------|----------|-----|---------------|----------|-------------------|-------------------------------------|
| Ex-KGFF30WM-E | 100~240 AC<br>(141~339 DC) | 2992              | 30       | 80  | Warm white    | 3000±300 | 180°              | T6                                  |
| Ex-KGFF30NH-E |                            | 3307              | 30       | 70  | Natural white | 4000±300 | 180°              | T6                                  |
| Ex-KGFF30NH-E |                            | 3307              | 30       | 70  | Natural white | 5000±300 | 180°              | T6                                  |
| Ex-KGFF30CH-E |                            | 3307              | 30       | 70  | Cool white    | 5700±300 | 180°              | T6                                  |
| Ex-KGFB30WM-E |                            | 3780              | 30       | 70  | Warm white    | 3000±300 | 80°               | T6                                  |
| Ex-KGFB30NH-E |                            | 4095              | 30       | 70  | Natural white | 4000±300 | 80°               | T6                                  |
| Ex-KGFB30NH-E |                            | 4095              | 30       | 70  | Natural white | 5000±300 | 80°               | T6                                  |
| Ex-KGFB30CH-E |                            | 4095              | 30       | 70  | Cool white    | 5700±300 | 80°               | T6                                  |
| Ex-KGFS30WM-E |                            | 2992              | 30       | 80  | Warm white    | 3000±300 | 15°               | T6                                  |
| Ex-KGFS30NH-E |                            | 3307              | 30       | 70  | Natural white | 4000±300 | 15°               | T6                                  |
| Ex-KGFS30NH-E |                            | 3307              | 30       | 70  | Natural white | 5000±300 | 15°               | T6                                  |
| Ex-KGFS30CH-E |                            | 3307              | 30       | 70  | Cool white    | 5700±300 | 15°               | T6                                  |
| Ex-KGFF60WM-E |                            | 5670              | 60       | 80  | Warm white    | 3000±300 | 180°              | T6/T5                               |
| Ex-KGFF60NH-E |                            | 6300              | 60       | 70  | Natural white | 4000±300 | 180°              | T6/T5                               |
| Ex-KGFF60NH-E |                            | 6300              | 60       | 70  | Natural white | 5000±300 | 180°              | T6/T5                               |
| Ex-KGFF60CH-E |                            | 6300              | 60       | 70  | Cool white    | 5700±300 | 180°              | T6/T5                               |
| Ex-KGFB60WM-E |                            | 7245              | 60       | 70  | Warm white    | 3000±300 | 80°               | T6/T5                               |
| Ex-KGFB60NH-E |                            | 7560              | 60       | 70  | Natural white | 4000±300 | 80°               | T6/T5                               |
| Ex-KGFB60NH-E |                            | 7560              | 60       | 70  | Natural white | 5000±300 | 80°               | T6/T5                               |
| Ex-KGFB60CH-E |                            | 7560              | 60       | 70  | Cool white    | 5700±300 | 80°               | T6/T5                               |
| Ex-KGFS60WM-E |                            | 5670              | 60       | 80  | Warm white    | 3000±300 | 15°               | T6/T5                               |
| Ex-KGFS60NH-E |                            | 6300              | 60       | 70  | Natural white | 4000±300 | 15°               | T6/T5                               |
| Ex-KGFS60NH-E |                            | 6300              | 60       | 70  | Natural white | 5000±300 | 15°               | T6/T5                               |
| Ex-KGFS60CH-E |                            | 6300              | 60       | 70  | Cool white    | 5700±300 | 15°               | T6/T5                               |

Remark: Operating voltage including Default-100~240V AC; A-24-48V AC/DC; B-10-30V DC

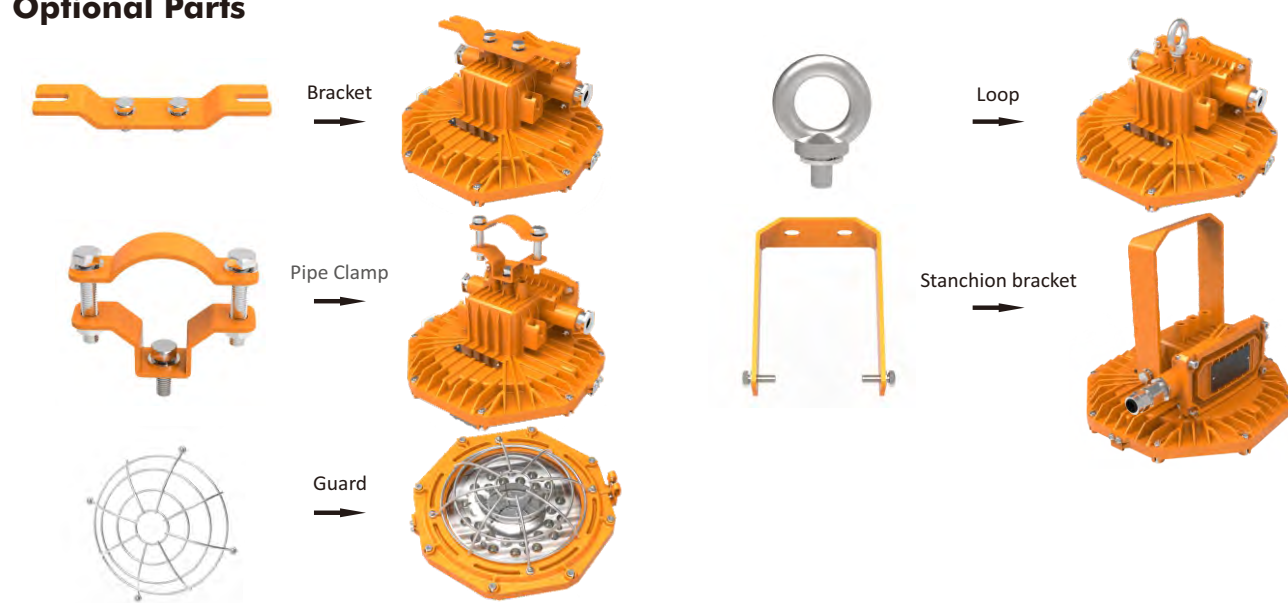
## KHJ Replaceable Luminaire Models

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 30W     | 70W       | 70W               | Up to 60% reduction in energy costs |
| 45W     | 100W~150W | 100W~150W         |                                     |
| 60W     | 150W~175W | 150W~175W         |                                     |

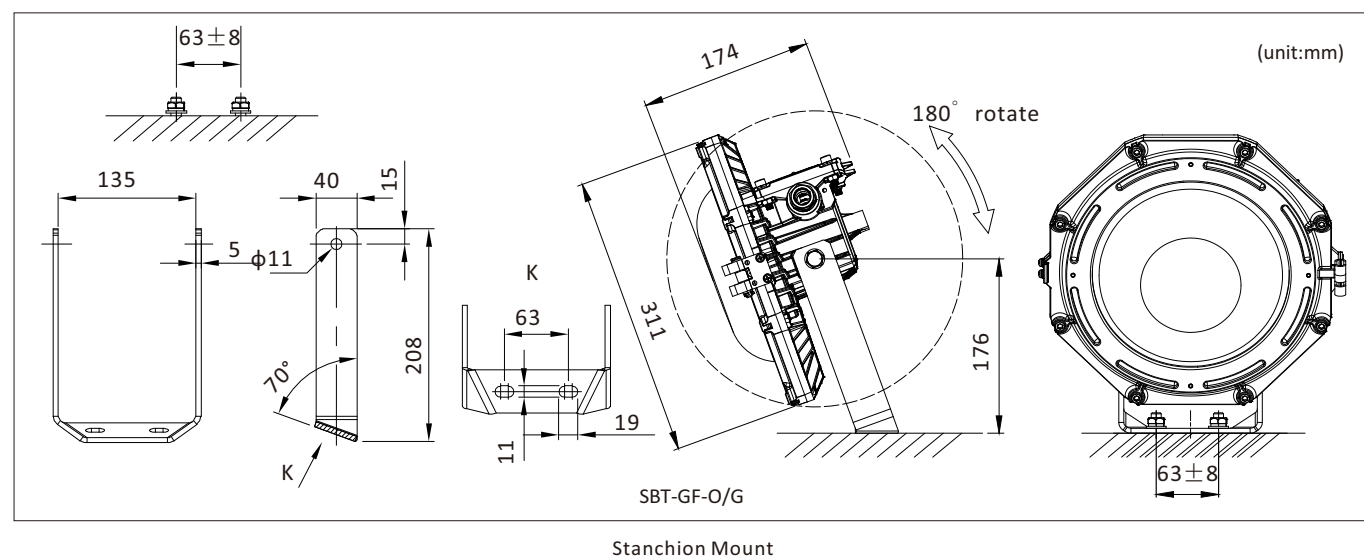
## Candela Distribution



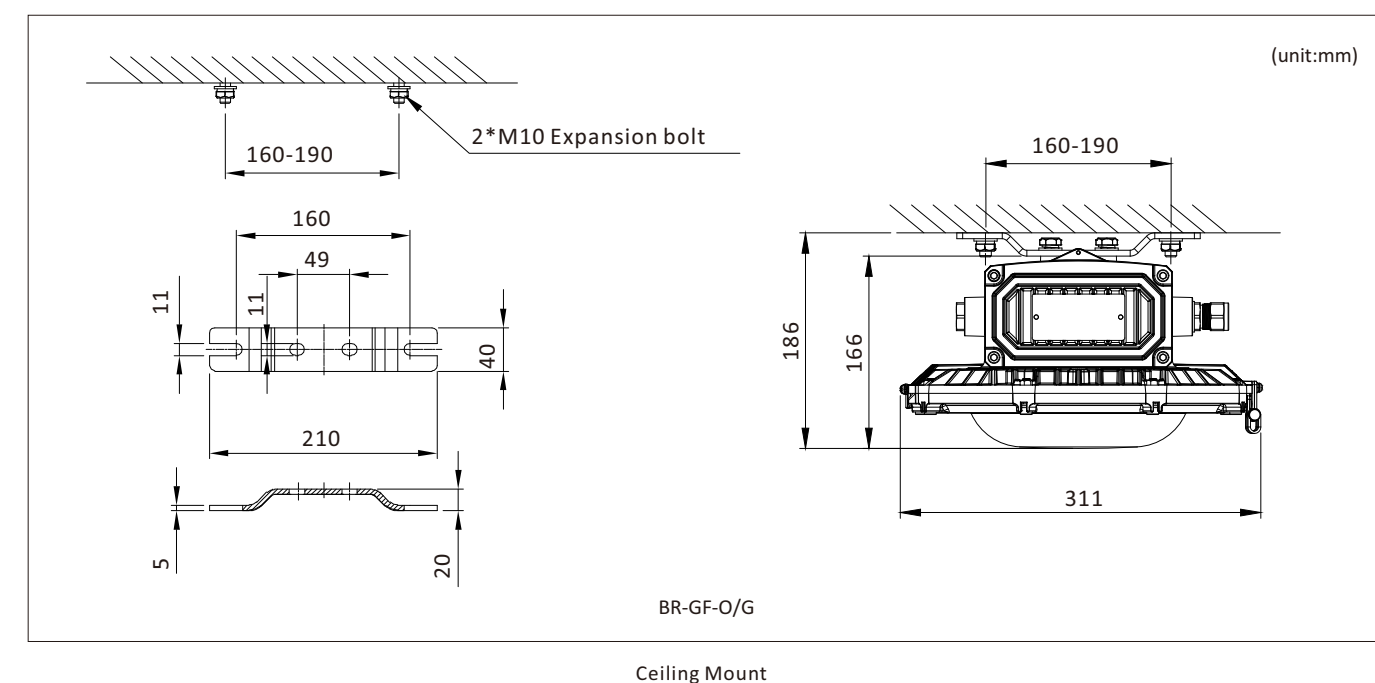
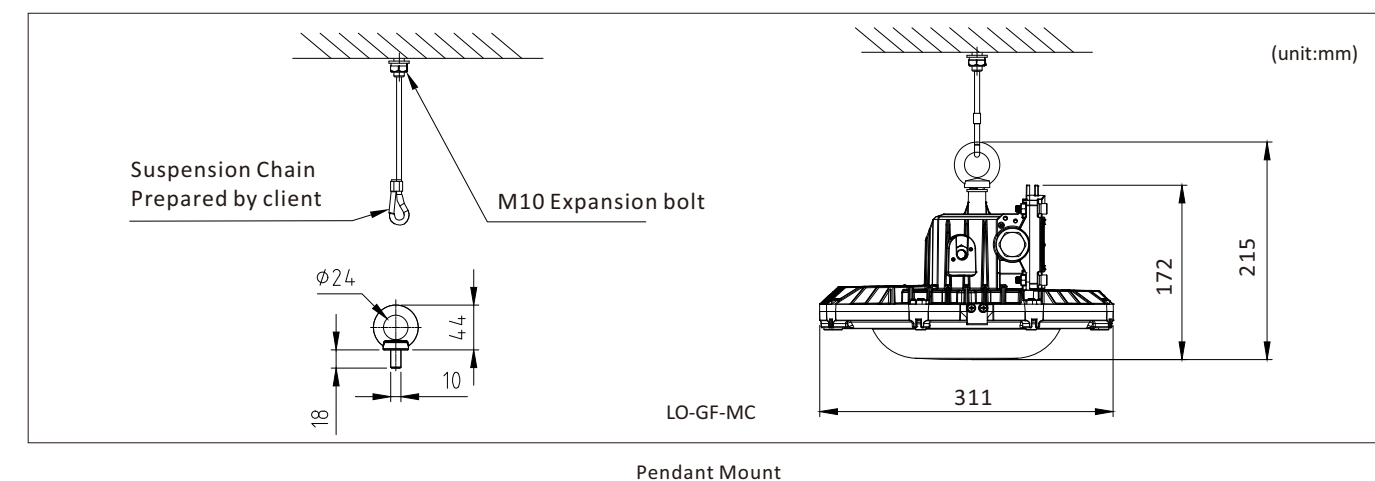
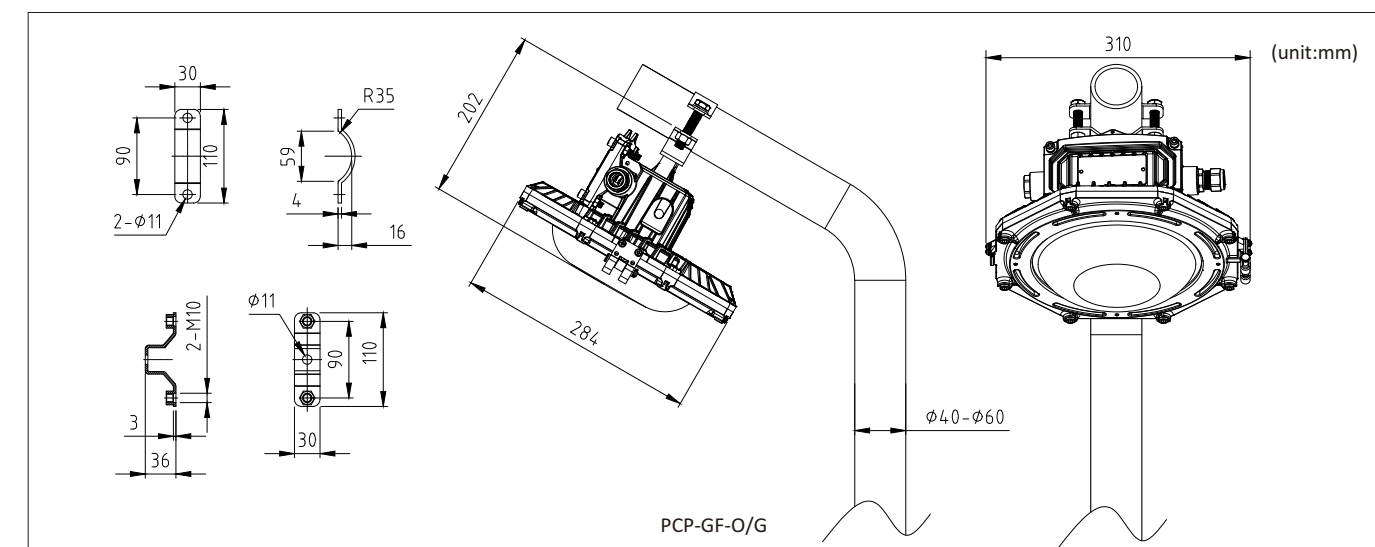
## Optional Parts



## Installation Method



## Installation Method







## LED Explosion Proof Floodlight

- **Arowana Series**

| Standard & Certificate:            |                                                                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 2 G Ex d IIB T6 Gb<br>Dust:  II 2 D Ex tb IIIC T80°C Db IP66                                                                                                                                                                     |
| Certificate:                       | ATEX Certification NO.:LCIE 12 ATEX 3069X/01<br>IECEX Certification NO.:IECEX CQM 12.0034X<br>CE<br>RoHS                                                                                                                                  |
| Executive Standard:                | (IEC)EN 60079-0, (IEC)EN 60079-1,(IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                    | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                           |
| Electrical & Photometric Features: |                                                                                                                                                                                                                                           |
| Luminarie Efficacy:                | 147lm/W                                                                                                                                                                                                                                   |
| Lifespan:                          | >50,000 hours                                                                                                                                                                                                                             |
| Operating Voltage:                 | 100-240 VAC<br>141-339 VDC                                                                                                                                                                                                                |
| Power:                             | 18W/30W                                                                                                                                                                                                                                   |
| Frequency:                         | 50/60Hz                                                                                                                                                                                                                                   |
| Power Factor:                      | >0.98                                                                                                                                                                                                                                     |
| THD:                               | <10%                                                                                                                                                                                                                                      |
| Insulation Class:                  | I                                                                                                                                                                                                                                         |
| Surge Protection:                  | 5KV                                                                                                                                                                                                                                       |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                                                                          |
| Mechanical Features:               |                                                                                                                                                                                                                                           |
| Weight:                            | 5Kg                                                                                                                                                                                                                                       |
| Size:                              | 480*180*62mm                                                                                                                                                                                                                              |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                                                                                 |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                                                                         |
| Cable Entries:                     | 2 x NPT 3/4" (M25*1.5 is optional)                                                                                                                                                                                                        |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                                                                      |
| IP Code:                           | IP66                                                                                                                                                                                                                                      |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                                                                               |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                     |
| Coating:                           | Epoxy powder coating                                                                                                                                                                                                                      |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                                                                           |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                                                                            |



### Product Definition

| Ex                 | K     | A         | XX                   | XX               | XX                  | XX                                                           | -X         | -X                       |
|--------------------|-------|-----------|----------------------|------------------|---------------------|--------------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series    | Candela Distribution | Power            | Input Voltage       | CCT(K)                                                       | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | A-Arowana | F-Floodlight (120°)  | 18-18W<br>30-30W | Default-100-240 VAC | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English | Default-Orange<br>G-Grey |

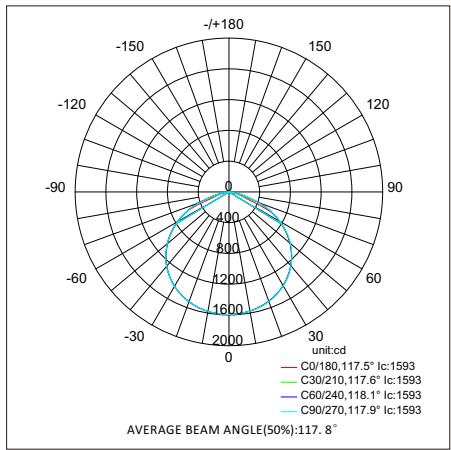
### Ordering Information

| P/N          | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification<br>-40℃~+55℃ |
|--------------|----------------------------|-------------------|----------|-----|---------------|----------|-----------------------------------|
| Ex-KAF18WM-E | 100~240 AC<br>(141~339 DC) | 2376              | 18       | 70  | Warm white    | 3000±300 | T6                                |
| Ex-KAF18NH-E |                            | 2520              | 18       | 70  | Natural white | 4000±300 | T6                                |
| Ex-KAF18NH-E |                            | 2520              | 18       | 70  | Natural white | 5000±300 | T6                                |
| Ex-KAF18CH-E |                            | 2520              | 18       | 70  | Cool white    | 5700±300 | T6                                |
| Ex-KAF30WM-E |                            | 3960              | 30       | 70  | Warm white    | 3000±300 | T6                                |
| Ex-KAF30NH-E |                            | 4410              | 30       | 70  | Natural white | 4000±300 | T6                                |
| Ex-KAF30NH-E |                            | 4410              | 30       | 70  | Natural white | 5000±300 | T6                                |
| Ex-KAF30CH-E |                            | 4410              | 30       | 70  | Cool white    | 5700±300 | T6                                |

### KHJ Replaceable Luminaire Models

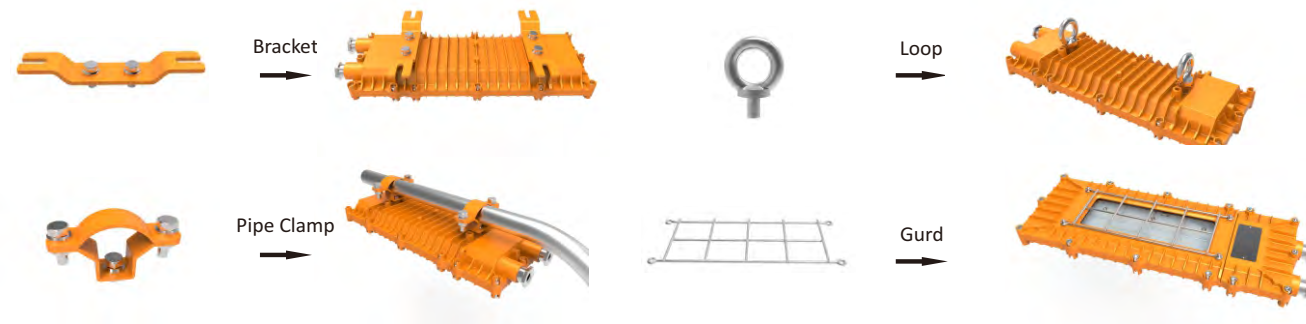
| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 18W     | 2*18W       | 2*18W             | Up to 60% reduction in energy costs |
| 30W     | 4*18W/2*36W | 4*18W/2*36W       |                                     |

### Candela Distribution

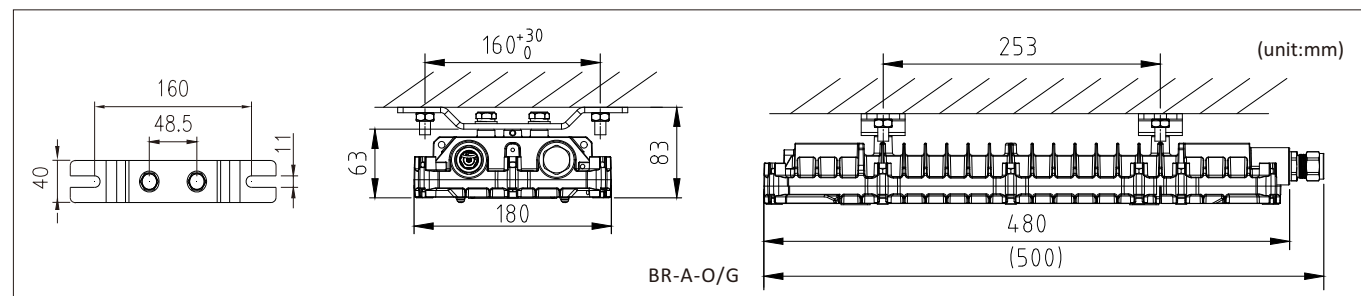


F-Floodlight(120°)

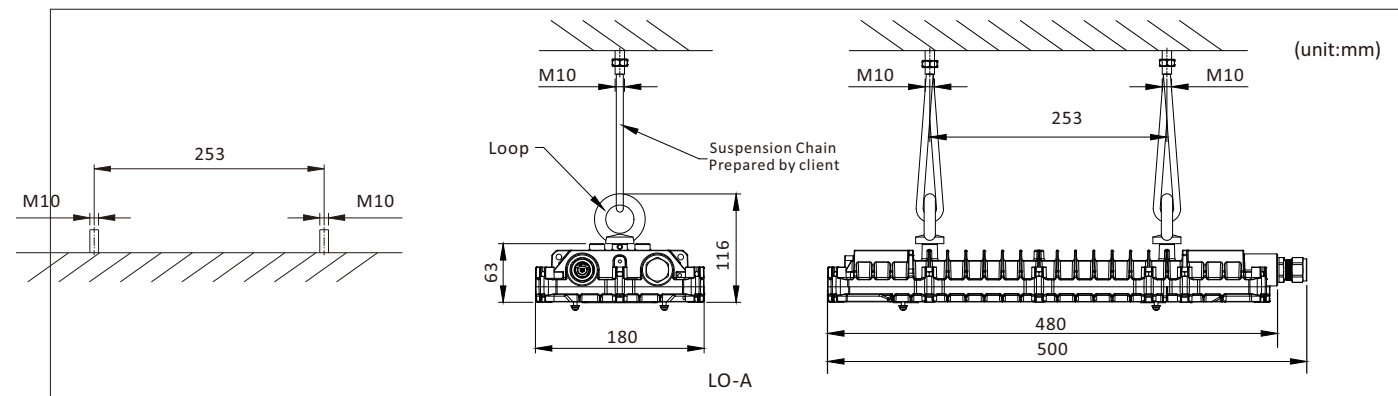
## Optional Parts



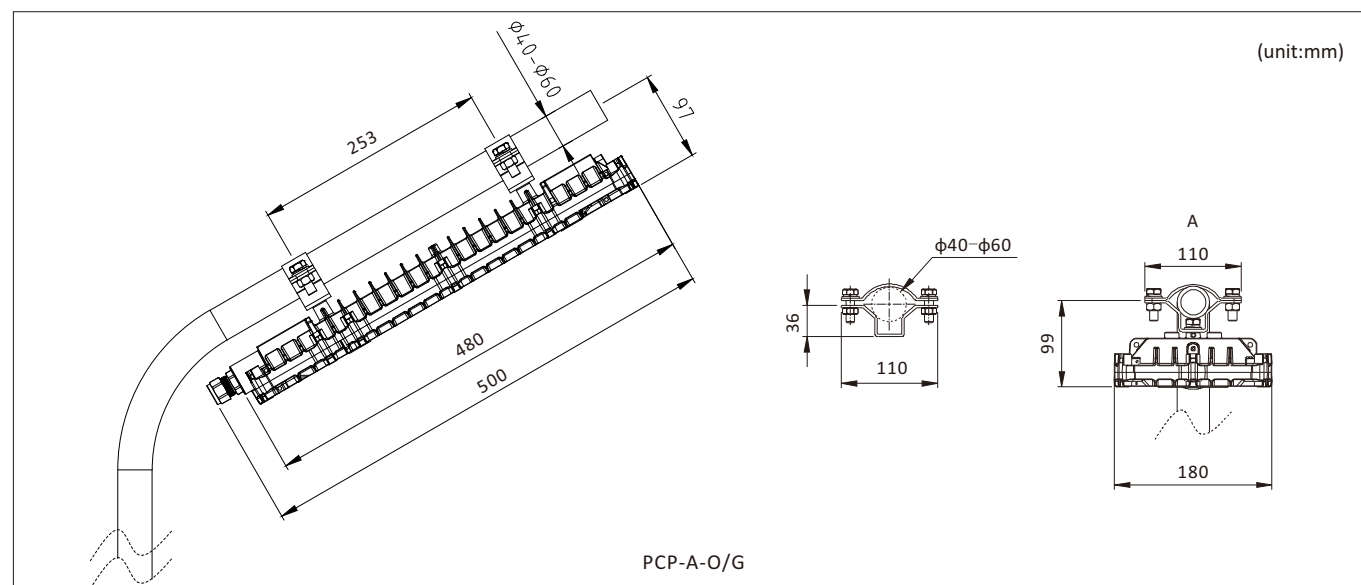
## Installation Method



Ceiling mount



Pendant mount



Pipe mount







## LED Explosion Proof Floodlight/Bay light

- **Brown Bear Series**

| Standard & Certificate:            |                                                                                                                                                                                                                                            |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 3 G Ex nR IIC T5 or T6 Gc<br>Dust:  II 3 D Ex tc IIIC T95°C or T85°C Dc                                                                                                                                                           |
| Certificate:                       | ATEX Certification NO.:TÜV 15 ATEX 7672 X<br>CE ,RoHS                                                                                                                                                                                      |
| Executive Standard:                | (IEC)EN 60079-0, (IEC)EN 60079-15,(IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                    | Group II ,Zone 2 & 22                                                                                                                                                                                                                      |
| Electrical & Photometric Features: |                                                                                                                                                                                                                                            |
| Luminarie Efficacy:                | 142lm/W                                                                                                                                                                                                                                    |
| Lifespan:                          | >50,000 hours                                                                                                                                                                                                                              |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                                                                                 |
| Power:                             | 80W/100W/120W/150W                                                                                                                                                                                                                         |
| Frequency:                         | 50/60Hz                                                                                                                                                                                                                                    |
| Power Factor:                      | >0.98                                                                                                                                                                                                                                      |
| THD:                               | <10%                                                                                                                                                                                                                                       |
| Insulation Class:                  | I                                                                                                                                                                                                                                          |
| Surge Protection:                  | 5KV(80W,100W)/10KV(120W,150W)                                                                                                                                                                                                              |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                                                                           |
| Mechanical Features:               |                                                                                                                                                                                                                                            |
| Weight:                            | 10.5Kg                                                                                                                                                                                                                                     |
| Size:                              | 336*336*163mm                                                                                                                                                                                                                              |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                                                                                  |
| Connecting Terminals:              | 3*1.0-4.0mm²(L+N+PE)                                                                                                                                                                                                                       |
| Cable Entries:                     | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                                                               |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                                                                       |
| IP Code:                           | IP66                                                                                                                                                                                                                                       |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                                                                                |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                                                                      |
| Coating:                           | Epoxy powder coating                                                                                                                                                                                                                       |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                                                                            |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                                                                             |

### Product Definition

| Ex                 | K     | BB                   | XX                                         | XX                  | XX                                                        | XX                                                           | -X         | -X                       |
|--------------------|-------|----------------------|--------------------------------------------|---------------------|-----------------------------------------------------------|--------------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series               | Power                                      | Input Voltage       | Candela Distribution                                      | CCT(K)                                                       | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | BB-Brown Bear series | 80-80W<br>100-100W<br>120-120W<br>150-150W | Default-100-277 VAC | H5V5(80°)<br>H6V6(120°)<br>FW(C0-180°:120°;C90-270°:100°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English | Default-Orange<br>G-Grey |

### Ordering Information

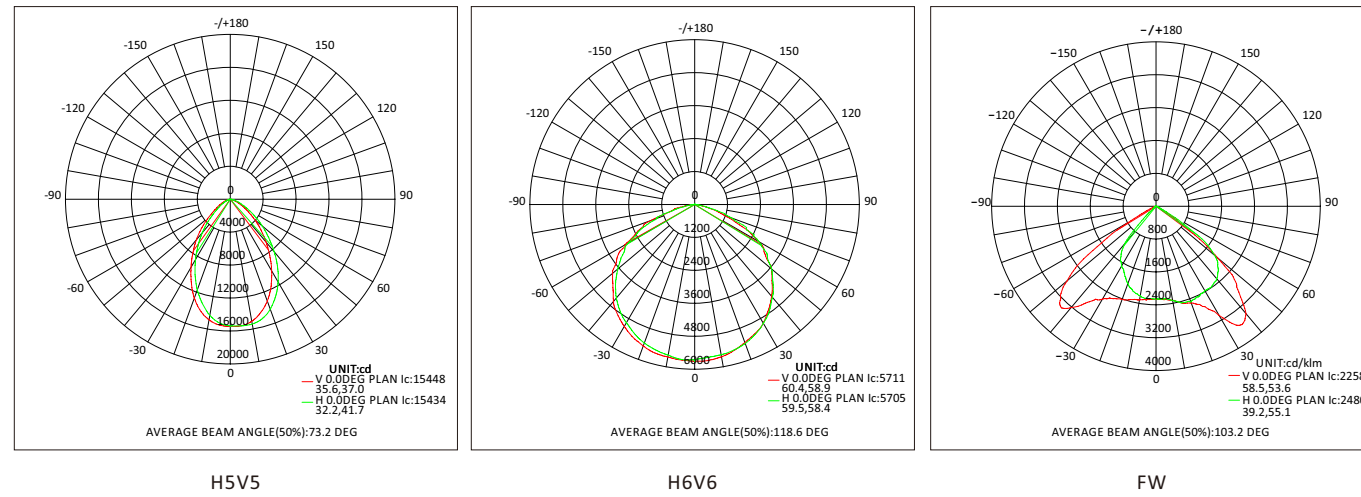
| P/N            | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |           |
|----------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|-----------|
|                |                            |                   |          |     |               |          | -40℃~+55℃            | -40℃~+65℃ |
| Ex-KBB80*WM-E  | 100-277 AC<br>(141-392 DC) | 10500             | 80       | 70  | Warm white    | 3000±300 | T6                   | T5        |
| Ex-KBB80*NH-E  |                            | 11340             | 80       | 70  | Natural white | 4000±300 | T6                   | T5        |
| Ex-KBB80*NH-E  |                            | 11340             | 80       | 70  | Natural white | 5000±300 | T6                   | T5        |
| Ex-KBB80*CH-E  |                            | 11340             | 80       | 70  | Cool white    | 5700±300 | T6                   | T5        |
| Ex-KBB100*WM-E |                            | 13125             | 100      | 70  | Warm white    | 3000±300 | T6                   | /         |
| Ex-KBB100*NH-E |                            | 14175             | 100      | 70  | Natural white | 4000±300 | T6                   | /         |
| Ex-KBB100*NH-E |                            | 14175             | 100      | 70  | Natural white | 5000±300 | T6                   | /         |
| Ex-KBB100*CH-E |                            | 14175             | 100      | 70  | Cool white    | 5700±300 | T6                   | /         |
| Ex-KBB120*WM-E |                            | 15750             | 120      | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KBB120*NH-E |                            | 17010             | 120      | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KBB120*NH-E |                            | 17010             | 120      | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KBB120*CH-E |                            | 17010             | 120      | 70  | Cool white    | 5700±300 | T5                   | /         |
| Ex-KBB150*WM-E |                            | 19687             | 150      | 70  | Warm white    | 3000±300 | T5                   | /         |
| Ex-KBB150*NH-E |                            | 21262             | 150      | 70  | Natural white | 4000±300 | T5                   | /         |
| Ex-KBB150*NH-E |                            | 21262             | 150      | 70  | Natural white | 5000±300 | T5                   | /         |
| Ex-KBB150*CH-E |                            | 21262             | 150      | 70  | Cool white    | 5700±300 | T5                   | /         |

Remarks: 1.\* Stands for beam angle,including H5V5 / H6V6/FW;  
2.For Beam angle H5V5,the luminous flux will be 15% less;  
3.For Beam angle FW,the luminous flux will be 30% less;

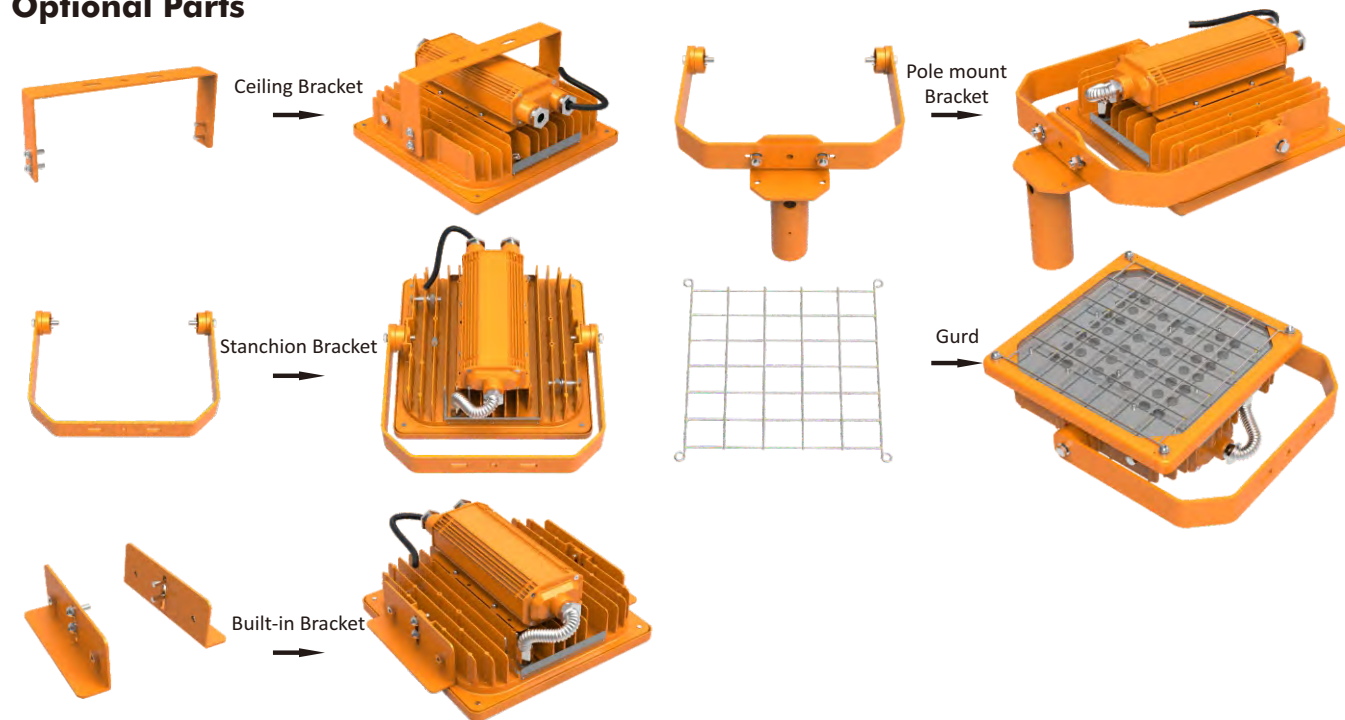
### KHJ Replaceable Luminaire Models

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 80W     | 175W~250W | 175W~250W         | Up to 60% reduction in energy costs |
| 100W    | 250W~400W | 250W~400W         |                                     |
| 120W    | 250W~400W | 250W~400W         |                                     |
| 150W    | 400W      | 400W              |                                     |

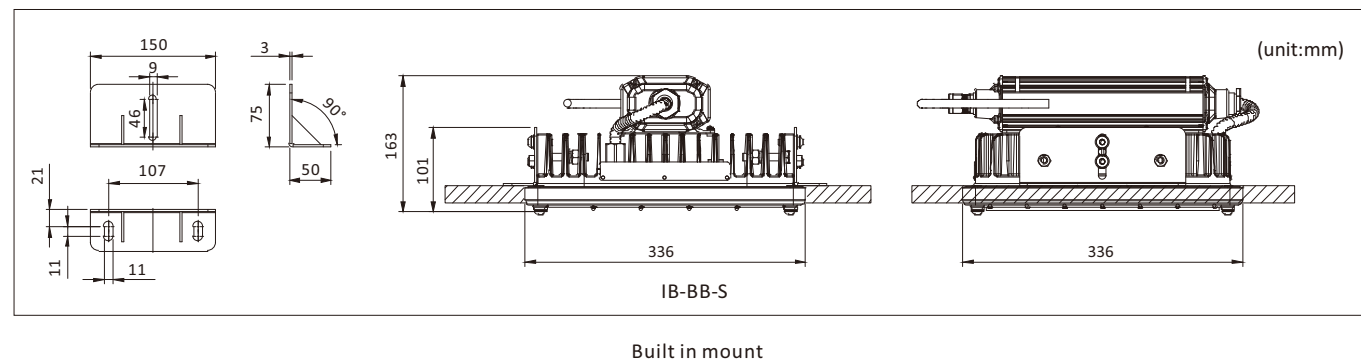
## Candela Distribution



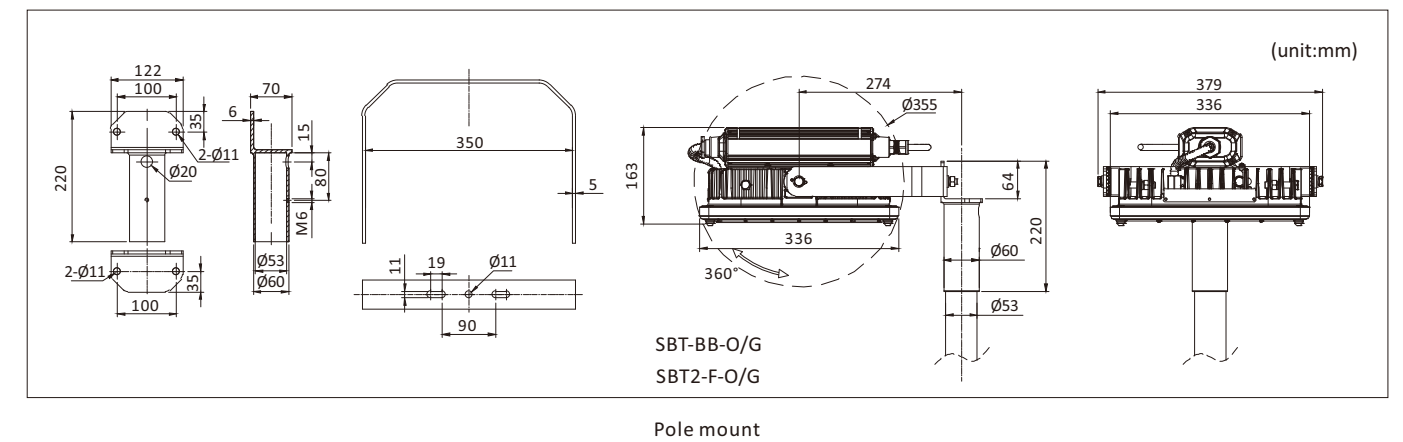
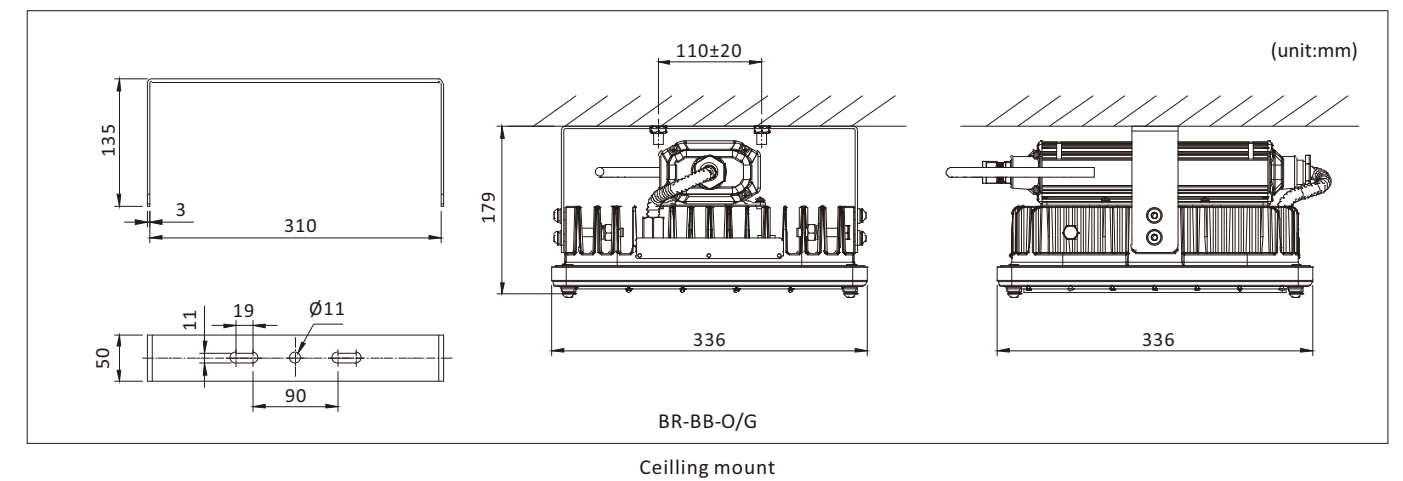
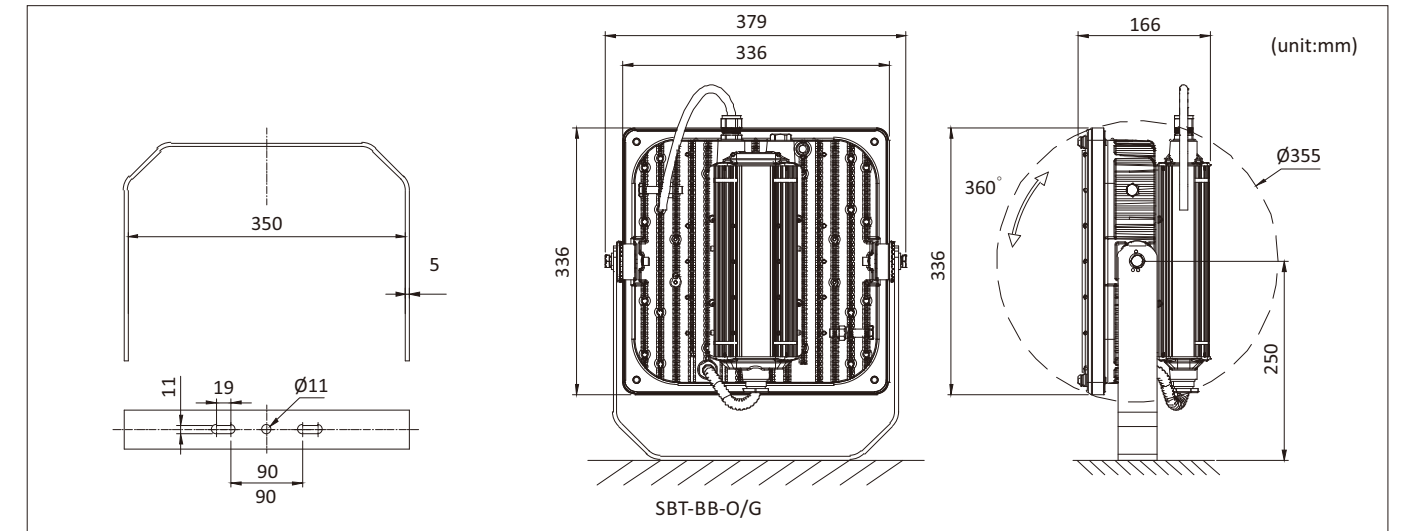
## Optional Parts



## Installation Method



## Installation Method







## LED Explosion Proof Mobile light

- Saturn Series

| Standard & Certificate:                    |                                                                                                                    |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                                   | Gas:  II 2 G Ex de IIC T5 Gb IP54 |
| Certificate:                               | ATEX Certification NO.:ECM 17 ATEX-B TD45<br>IECEx Certification NO.:IECEX CQM 16.0005X<br>CE<br>RoHS              |
| Executive Standard:                        | EN 60079-0,EN 60079-1,EN 60079-7<br>IEC 60079-0:2011,IEC 60079-1:2007-04,IEC 60079-7:2006-07                       |
| Classification:                            | Group II Zone 1 and Zone 2                                                                                         |
| Electrical & Photometric Features:         |                                                                                                                    |
| Luminarie Efficacy:                        | 126lm/W                                                                                                            |
| Lifespan:                                  | >50,000 hours                                                                                                      |
| Operating Voltage:                         | 100-277 VAC<br>141-392 VDC                                                                                         |
| Power:                                     | 5W~60W                                                                                                             |
| Battery Rated Capacity:                    | 12Ah                                                                                                               |
| Battery Type:                              | Lead-acid batteries                                                                                                |
| Rated Lifespan:                            | 300 Cycles                                                                                                         |
| Battery Back Up:                           | 12 h(15W);8 h(30W);4 h(60W)                                                                                        |
| Battery Charge Time:(after full discharge) | 12 h-14h                                                                                                           |
| Frequency:                                 | 50/60Hz                                                                                                            |
| Insulation Class:                          | I                                                                                                                  |
| LED Driver:                                | Over voltage protection/short circuit protection                                                                   |
| Mechanical Features:                       |                                                                                                                    |
| Weight:                                    | 18Kg                                                                                                               |
| Size:                                      | 695*350*218mm                                                                                                      |
| Ambient Temperature:                       | -20℃~+55℃                                                                                                          |
| Earthing Protection:                       | M4 (Internal & external earth bolts)                                                                               |
| IP Code:                                   | IP54                                                                                                               |
| Enclosure Maternal:                        | Die-casting aluminium alloy                                                                                        |
| Enclosure Colour:                          | Orange,RAL2011                                                                                                     |
| Coating:                                   | Epoxy powder coating                                                                                               |
| Exposed Fastener:                          | Stainless steel                                                                                                    |
| Protective Cover:                          | Tempered glass,Stand 7J impact                                                                                     |

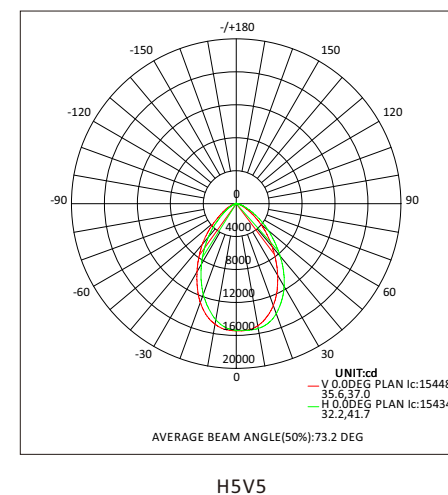
### Product Definition

| Ex                 | K     | ST        | BXX          | XX       | XX             | XX                                                           | -U        | -E         |
|--------------------|-------|-----------|--------------|----------|----------------|--------------------------------------------------------------|-----------|------------|
| Type               | Brand | Series    | Battery Type | Capacity | Optional       | CCT(K)                                                       | Type      | Area       |
| Ex-Explosion Proof |       |           | B24V-24V DC  |          | FF-Forest Frog | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | U- Update | E- English |
|                    | K-KHJ | ST-Saturn |              | 12-12Ah  |                |                                                              |           |            |

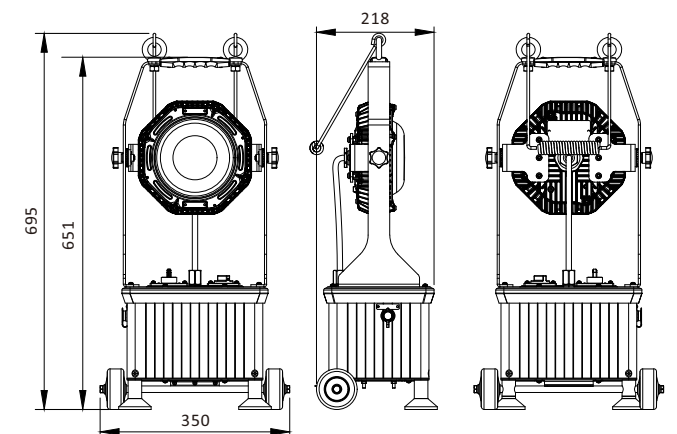
### Ordering Information

| P/N                  | Operating Voltage(V)       | Color Temp.   | CCT(K)   | Power(W) | CRI | Luminous Flux(lm) | Temp. Classification<br>-20℃~+55℃ |
|----------------------|----------------------------|---------------|----------|----------|-----|-------------------|-----------------------------------|
| Ex-KSTB24V12FFWM-U-E | 100~277 AC<br>(141~392 DC) | Warm white    | 3000±300 | 15       | 70  | 1740              | T5                                |
|                      |                            |               |          | 30       | 70  | 3480              |                                   |
|                      |                            |               |          | 60       | 70  | 6950              |                                   |
| Ex-KSTB24V12FFNH-U-E |                            | Natural white | 4000±300 | 15       | 70  | 1890              |                                   |
|                      |                            |               |          | 30       | 70  | 3780              |                                   |
|                      |                            |               |          | 60       | 70  | 7560              |                                   |
| Ex-KSTB24V12FFNH-U-E |                            | Natural white | 5000±300 | 15       | 70  | 1890              |                                   |
|                      |                            |               |          | 30       | 70  | 3780              |                                   |
|                      |                            |               |          | 60       | 70  | 7560              |                                   |
| Ex-KSTB24V12FFCH-U-E |                            | Cool white    | 5700±300 | 15       | 70  | 1890              |                                   |
|                      |                            |               |          | 30       | 70  | 3780              |                                   |
|                      |                            |               |          | 60       | 70  | 7560              |                                   |

### Candela Distribution



### Size(unit:mm)





**LED Explosion Proof Portable light**  
**- Forest Frog Series**

| Standard & Certificate:              |                                                                                                                                                                                                                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                             | Gas:  II 2 G Ex db op is IIC T* Gb<br>Dust:  II 2 D Ex tb op is IIIC T* Db                                                                                                                                                                                                    |
| Certificate:                         | ATEX Certification NO.:EPT 18 ATEX 2977 X<br>IECEx Certification NO.:IECEx CQM 15.0039X<br>CE<br>RoHS                                                                                                                                                                         |
| Executive Standard:                  | (IEC)EN 60079-0, (IEC)EN 60079-1, (IEC)EN 60079-7, (IEC)EN 60079-28, (IEC)EN 60079-31<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                      | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                                               |
| Electrical & Photometric Features:   |                                                                                                                                                                                                                                                                               |
| Luminarie Efficacy:                  | 136.5lm/W                                                                                                                                                                                                                                                                     |
| Lifespan:                            | >50,000 hours                                                                                                                                                                                                                                                                 |
| Operating Voltage:                   | 100-277 VAC<br>141-392 VDC                                                                                                                                                                                                                                                    |
| Power:                               | 10W/15W                                                                                                                                                                                                                                                                       |
| Battery Capacity:                    | 4.4 Ah                                                                                                                                                                                                                                                                        |
| Battery Type:                        | Lithium battery                                                                                                                                                                                                                                                               |
| Battery Lifespan:                    | 500 cycles                                                                                                                                                                                                                                                                    |
| Light Duration:                      | >10h(10W)/>6h(15W)                                                                                                                                                                                                                                                            |
| Charging Time:(after full discharge) | 3h                                                                                                                                                                                                                                                                            |
| Frequency:                           | 50/60Hz                                                                                                                                                                                                                                                                       |
| Insulation Class:                    | I                                                                                                                                                                                                                                                                             |
| Surge Protection:                    | 5KV                                                                                                                                                                                                                                                                           |
| LED Driver:                          | Over voltage protection/short circuit protection                                                                                                                                                                                                                              |
| Mechanical Features:                 |                                                                                                                                                                                                                                                                               |
| Weight:                              | 6.5Kg(Magnetic)/5.2Kg(Bracket)                                                                                                                                                                                                                                                |
| Size:                                | 209*198*293mm(Magnetic)/209*236*303mm(Bracket)                                                                                                                                                                                                                                |
| Ambient Temperature:                 | -20℃-+55℃                                                                                                                                                                                                                                                                     |
| Earthing Protection:                 | M4 (Internal & external earth bolts)                                                                                                                                                                                                                                          |
| IP Code:                             | IP66                                                                                                                                                                                                                                                                          |
| Enclosure Maternal:                  | Die-casting aluminium alloy                                                                                                                                                                                                                                                   |
| Enclosure Colour:                    | Orange,RAL2011                                                                                                                                                                                                                                                                |
| Coating:                             | Epoxy powder coating                                                                                                                                                                                                                                                          |
| Exposed Fastener:                    | Stainless steel                                                                                                                                                                                                                                                               |
| Protective Cover:                    | Tempered glass,Stand 7J impact                                                                                                                                                                                                                                                |

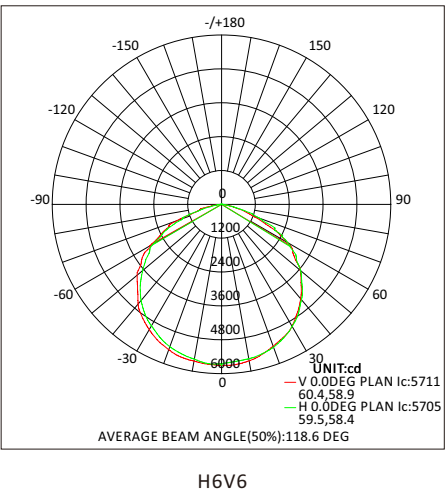
**Product Definition**

| Ex                 | K     | FF            | XX               | XX                  | XX                   | XX                                                           | -T        | -X         |
|--------------------|-------|---------------|------------------|---------------------|----------------------|--------------------------------------------------------------|-----------|------------|
| Type               | Brand | Series        | Power            | Input Voltage       | Candela Distribution | CCT(K)                                                       | Type      | Area       |
| Ex-Explosion Proof |       |               |                  | Default-100-277 VAC |                      |                                                              | T-Typical | E- English |
|                    | K-KHJ | FF-ForestFrog | 10-10W<br>15-15W |                     | H6V6(120°)           | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K |           |            |

**Ordering Information**

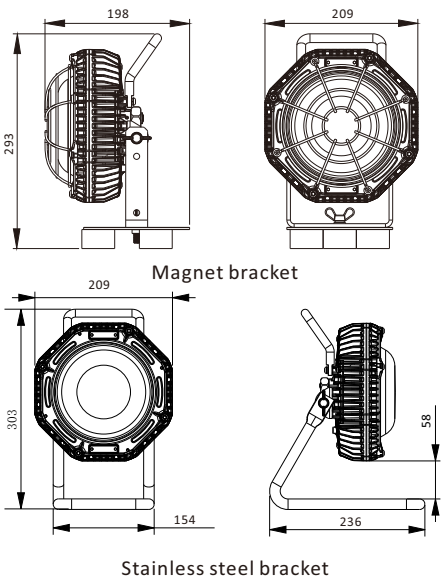
| P/N                | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |
|--------------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|
|                    |                            |                   |          |     |               |          | -20℃~+55℃            |
| Ex-KFF10H6V6WM-T-E | 100~277 AC<br>(141~392 DC) | 1260              | 10       | 80  | Warm white    | 3000±300 | T6                   |
| Ex-KFF10H6V6NH-T-E |                            | 1365              | 10       | 70  | Natural white | 4000±300 |                      |
| Ex-KFF10H6V6NH-T-E |                            | 1365              | 10       | 70  | Natural white | 5000±300 |                      |
| Ex-KFF10H6V6CH-T-E |                            | 1365              | 10       | 70  | Cool white    | 5700±300 |                      |
| Ex-KFF15H6V6WM-T-E |                            | 1890              | 15       | 80  | Warm white    | 3000±300 |                      |
| Ex-KFF15H6V6NH-T-E |                            | 2047              | 15       | 70  | Natural white | 4000±300 |                      |
| Ex-KFF15H6V6NH-T-E |                            | 2047              | 15       | 70  | Natural white | 5000±300 |                      |
| Ex-KFF15H6V6CH-T-E |                            | 2047              | 15       | 70  | Cool white    | 5700±300 |                      |

**Candela Distribution**



H6V6

**Size(unit:mm)**



Magnet bracket

Stainless steel bracket





**LED Explosion Proof Platform light**  
**- Firefly Series**

| Standard & Certificate:            |                                                                                                                                                                              |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 2 G Ex db op is IIC T5 or T6 Gb<br>Dust:  II 2 D Ex tb op is IIC T95°C or T80°C Db IP66                                                                             |
| Certificate:                       | ATEX Certification NO.:ECM 19 ATEX-B SU43<br>CE ,RoHS                                                                                                                        |
| Executive Standard:                | EN 60079-0:2018,EN 60079- 1:2014,EN 60079-7:2015<br>EN 60079-11:2012,EN 60079-18:2015+A1:2017,EN 60079-28:2015<br>EN 60079-31:2014,IEC 60079-0:2018,IEC 60079-7:2015+A1:2018 |
| Classification:                    | Group II Zone 1 & 21 and 2 & 22                                                                                                                                              |
| Electrical & Photometric Features: |                                                                                                                                                                              |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                    |
| Lifespan:                          | >50,000 hours                                                                                                                                                                |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                   |
| Power:                             | 12W/24W/35W                                                                                                                                                                  |
| Frequency:                         | 50/60Hz                                                                                                                                                                      |
| Power Factor:                      | >0.98                                                                                                                                                                        |
| THD:                               | <10%                                                                                                                                                                         |
| Insulation Class:                  | I                                                                                                                                                                            |
| Surge Protection:                  | 5KV                                                                                                                                                                          |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                             |
| Mechanical Features:               |                                                                                                                                                                              |
| Weight:                            | 2.4Kg(Junction box),2.6Kg(Stanchion junction box)                                                                                                                            |
| Size:                              | φ 136*210mm(Junction box), φ 136*194mm(Stanchion junction box)                                                                                                               |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                    |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                            |
| Cable Entries:                     | 1 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                 |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                         |
| IP Code:                           | IP66                                                                                                                                                                         |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                  |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                        |
| Coating:                           | Epoxy powder coating                                                                                                                                                         |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                              |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                               |

**Product Definition**

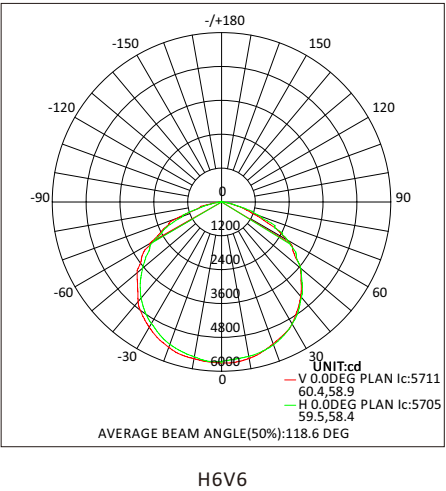
| Ex                 | K     | FIF         | XX                         | XX                  | XX                   | XX                                                           | -X                                          | -X                       | -X                       |
|--------------------|-------|-------------|----------------------------|---------------------|----------------------|--------------------------------------------------------------|---------------------------------------------|--------------------------|--------------------------|
| Type               | Brand | Series      | Power                      | Input Voltage       | Candela Distribution | CCT(K)                                                       | Type                                        | Area                     | Color                    |
| Ex-Explosion Proof |       |             |                            | Default-100-277 VAC |                      |                                                              | J-Junction box<br>J1-Stanchion junction box | E- English<br>E- English |                          |
|                    | K-KHJ | FIF-FireFly | 12-12W<br>24-24W<br>35-35W |                     | H6V6(120°)           | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K |                                             |                          | Default-Orange<br>G-Grey |

**Ordering Information**

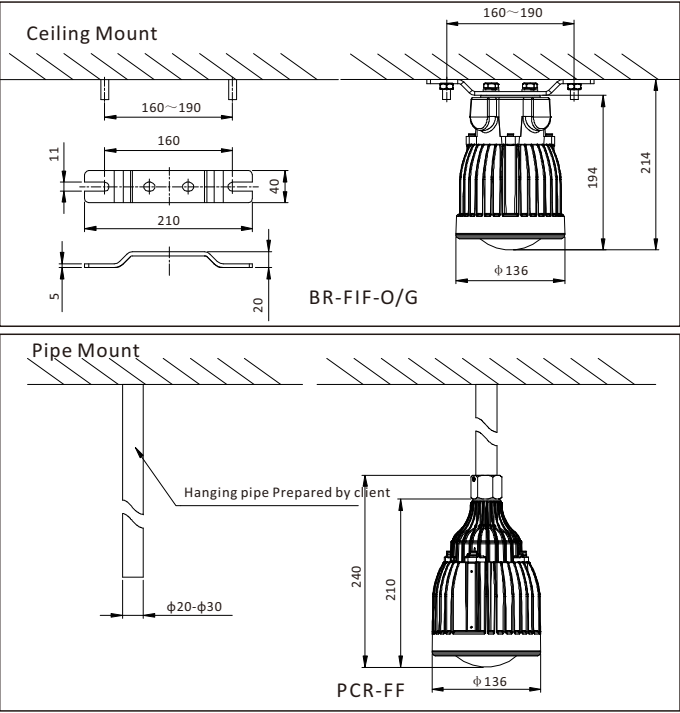
| P/N                | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification<br>-40℃~+55℃ |
|--------------------|----------------------------|-------------------|----------|-----|---------------|----------|-----------------------------------|
| Ex-KFIF12H6V6WM-*E | 100~277 AC<br>(141~392 DC) | 1512              | 12       | 80  | Warm white    | 3000±300 | T6                                |
| Ex-KFIF12H6V6NH-*E |                            | 1638              | 12       | 70  | Natural white | 4000±300 |                                   |
| Ex-KFIF12H6V6NH-*E |                            | 1638              | 12       | 70  | Natural white | 5000±300 |                                   |
| Ex-KFIF12H6V6CH-*E |                            | 1638              | 12       | 70  | Cool white    | 5700±300 |                                   |
| Ex-KFIF24H6V6WM-*E |                            | 3024              | 24       | 80  | Warm white    | 3000±300 |                                   |
| Ex-KFIF24H6V6NH-*E |                            | 3276              | 24       | 70  | Natural white | 4000±300 |                                   |
| Ex-KFIF24H6V6NH-*E |                            | 3276              | 24       | 70  | Natural white | 5000±300 | T5                                |
| Ex-KFIF24H6V6CH-*E |                            | 3276              | 24       | 70  | Cool white    | 5700±300 |                                   |
| Ex-KFIF35H6V6WM-*E |                            | 4410              | 35       | 80  | Warm white    | 3000±300 |                                   |
| Ex-KFIF35H6V6NH-*E |                            | 4778              | 35       | 70  | Natural white | 4000±300 |                                   |
| Ex-KFIF35H6V6NH-*E |                            | 4778              | 35       | 70  | Natural white | 5000±300 |                                   |
| Ex-KFIF35H6V6CH-*E |                            | 4778              | 35       | 70  | Cool white    | 5700±300 |                                   |

Remarks:\*Stands for product type,including J,J1

**Candela Distribution**



**Installation Method(unit:mm)**





## LED Explosion Proof Working Light

### - Firefly Series

| Standard & Certificate:            |                                                                                                                                                                              |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           | Gas:  II 2 G Ex db op is IIC T5 or T6 Gb<br>Dust:  II 2 D Ex tb op is IIC T95°C or T80°C Db IP66                                                                             |
| Certificate:                       | ATEX Certification NO.:ECM 19 ATEX-B Su43<br>CE ,RoHS                                                                                                                        |
| Executive Standard:                | EN 60079-0:2018,EN 60079- 1:2014,EN 60079-7:2015<br>EN 60079-11:2012,EN 60079-18:2015+A1:2017,EN 60079-28:2015<br>EN 60079-31:2014,IEC 60079-0:2018,IEC 60079-7:2015+A1:2018 |
| Classification:                    | Group II Zone 1 & 21 and 2 & 22                                                                                                                                              |
| Electrical & Photometric Features: |                                                                                                                                                                              |
| Luminarie Efficacy:                | 90lm/W(Frosted)                                                                                                                                                              |
| Lifespan:                          | >50,000 hours                                                                                                                                                                |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                   |
| Power:                             | 12W/24W/35W                                                                                                                                                                  |
| Frequency:                         | 50/60Hz                                                                                                                                                                      |
| Power Factor:                      | >0.98                                                                                                                                                                        |
| THD:                               | <10%                                                                                                                                                                         |
| Insulation Class:                  | I                                                                                                                                                                            |
| Surge Protection:                  | 5KV                                                                                                                                                                          |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                             |
| Mechanical Features:               |                                                                                                                                                                              |
| Weight:                            | 3.2Kg                                                                                                                                                                        |
| Size:                              | 413*203*136mm                                                                                                                                                                |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                    |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                            |
| Cable Entries:                     | 1 x NPT 3/4" (M25*1.5 are optional)                                                                                                                                          |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                         |
| IP Code:                           | IP66                                                                                                                                                                         |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                  |
| Enclosure Colour:                  | Orange,RAL2011(optional grey RAL7040)                                                                                                                                        |
| Coating:                           | Epoxy powder coating                                                                                                                                                         |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                              |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                               |

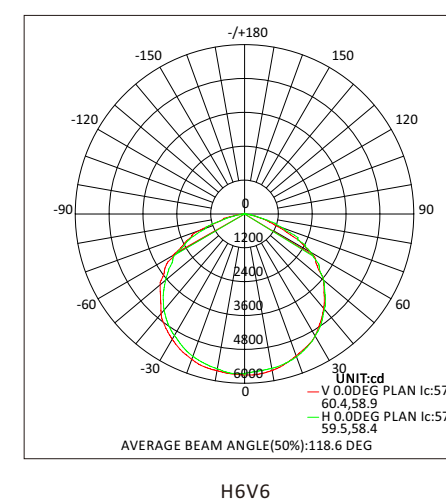
## Product Definition

| Ex                 | K     | FIF         | W           | XX                         | XX                  | XX      | XX           | -X                                                           | -X         | -X                       |
|--------------------|-------|-------------|-------------|----------------------------|---------------------|---------|--------------|--------------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series      | Type        | Power                      | Input Voltage       | Candela | Distribution | CCT(K)                                                       | Area       | Color                    |
| Ex-Explosion Proof |       |             | W-Worklight |                            | Default-100-277 VAC |         |              |                                                              | E- English | F-Frosted                |
|                    | K-KHJ | FIF-FireFly |             | 12-12W<br>24-24W<br>35-35W |                     |         | H6V6(120°)   | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K |            | Default-Orange<br>G-Grey |

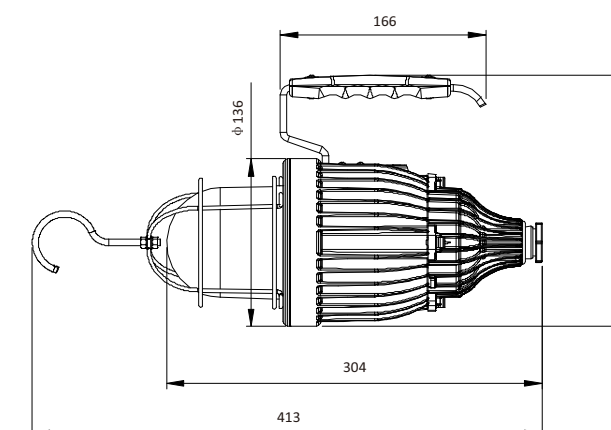
## Ordering Information

| P/N                  | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Temp. Classification |
|----------------------|----------------------------|-------------------|----------|-----|---------------|----------|----------------------|
| Ex-KFIFW12H6V6WM-E-F | 100~277 AC<br>(141~392 DC) | 900               | 12       | 80  | Warm white    | 3000±300 | T6                   |
| Ex-KFIFW12H6V6NH-E-F |                            | 1080              | 12       | 70  | Natural white | 4000±300 |                      |
| Ex-KFIFW12H6V6NH-E-F |                            | 1080              | 12       | 70  | Natural white | 5000±300 |                      |
| Ex-KFIFW12H6V6CH-E-F |                            | 1080              | 12       | 70  | Cool white    | 5700±300 |                      |
| Ex-KFIFW24H6V6WM-E-F |                            | 1800              | 24       | 80  | Warm white    | 3000±300 |                      |
| Ex-KFIFW24H6V6NH-E-F |                            | 2160              | 24       | 70  | Natural white | 4000±300 |                      |
| Ex-KFIFW24H6V6NH-E-F |                            | 2160              | 24       | 70  | Natural white | 5000±300 | T5                   |
| Ex-KFIFW24H6V6CH-E-F |                            | 2160              | 24       | 70  | Cool white    | 5700±300 |                      |
| Ex-KFIFW35H6V6WM-E-F |                            | 2625              | 35       | 80  | Warm white    | 3000±300 |                      |
| Ex-KFIFW35H6V6NH-E-F |                            | 3150              | 35       | 70  | Natural white | 4000±300 |                      |
| Ex-KFIFW35H6V6NH-E-F |                            | 3150              | 35       | 70  | Natural white | 5000±300 |                      |
| Ex-KFIFW35H6V6CH-E-F |                            | 3150              | 35       | 70  | Cool white    | 5700±300 |                      |

## Candela Distribution



## Size(unit:mm)





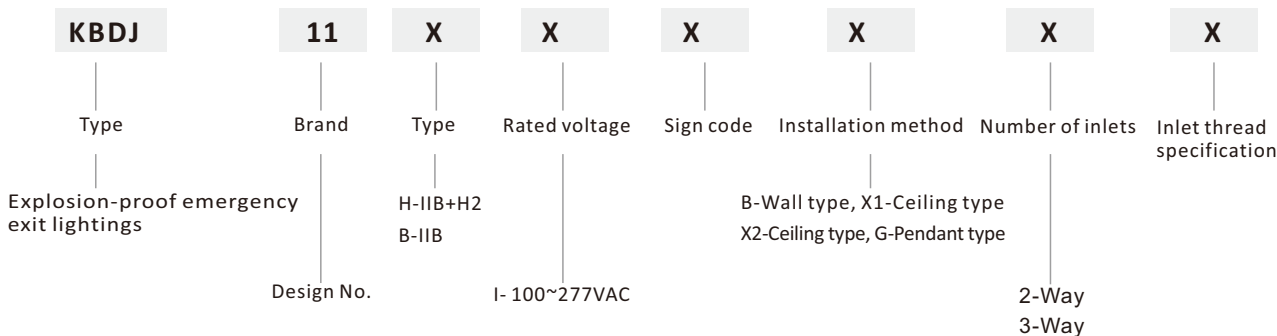


**LED Explosion Proof LED Emergency Exit Light**  
**- KBDJ11 Series**

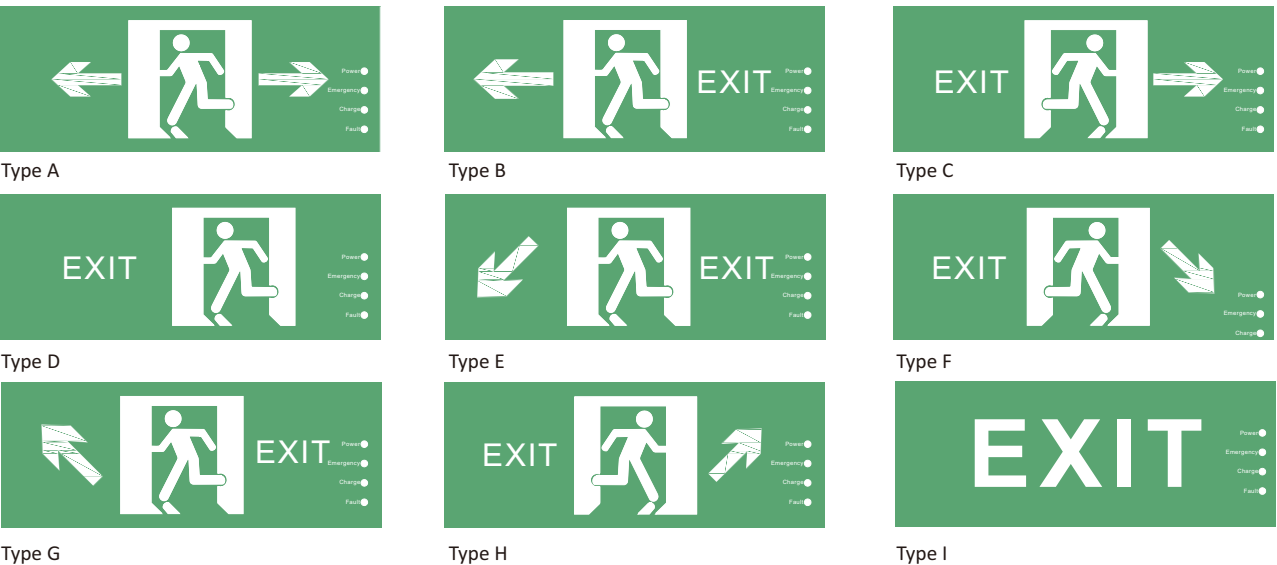
| Standard & Certificate:            |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                           |                                       | Gas:  II 2 G Ex db IIB T6 Gb, II 2 GEx db IIB +H2 T6 Gb,<br>Dust:  II 2 D Ex tb IIIC T80℃ Db                                                                                                                                                                                           |
| Certificate:                       |                                       | ATEX Certification NO.: SEV 22 ATEX 0608 X<br>IECEx Certification NO.: IECEx SEV 22.0013X<br>CE<br>RoHS                                                                                                                                                                                                                                                                                                                                                  |
| Executive Standard:                |                                       | IEC60079-0, IEC60079-1, IEC60079-31<br>EN60079-0, EN60079-1, EN60079-31                                                                                                                                                                                                                                                                                                                                                                                  |
| Classification:                    |                                       | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Electrical & Photometric Features: |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Light Source:                      |                                       | LED                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Rated Voltage:                     |                                       | 100~277V AC, 141-392 VDC                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Emergency Unit Voltage:            |                                       | DC3.0~3.5V                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Emergency Working Time:            |                                       | ≤180 min                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Charging Time:                     |                                       | <24h                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Frequency:                         |                                       | 50/60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Rated Power:                       |                                       | ≤6W                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mechanical Features:               |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Weight:                            |                                       | Wall type (B): 7kg, Ceiling type (X1): 6.6kg, Ceiling type (X2): 6.8kg, Pendant type (G): 6.6kg                                                                                                                                                                                                                                                                                                                                                          |
| Ambient Temperature:               |                                       | -40℃~+55℃/60℃                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Connecting Terminals:              |                                       | 3X1.5~4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Cable Entries:                     |                                       | NPT 3/4" (M20*1.5, M25*1.5, NPT1/2 are optional)                                                                                                                                                                                                                                                                                                                                                                                                         |
| IP Code:                           |                                       | IP66, IP67                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Structure Material                 | Enclosure                             | Aluminum alloy enclosure, powder coated, industrial grey with dark lines texture (RAL7035)                                                                                                                                                                                                                                                                                                                                                               |
|                                    | Transparent cover                     | Tempered glass, resistant to 4J impact                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                    | Guide sign                            | 9 signs, and customizable                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                    | Control module<br>Self-check function | With overcharge, overdischarge, short circuit protection and others.<br>With self-checking function, automatic discharge once per month, emergency working for 120seconds, and automatically back to main power supply. Annual self-checking function, automatically switch to emergency state and run over the battery, then automatically back to main power supply and charge the battery<br>The fault will automatically alert with light and sound. |
|                                    | Exposed fastener                      | Stainless steel                                                                                                                                                                                                                                                                                                                                                                                                                                          |



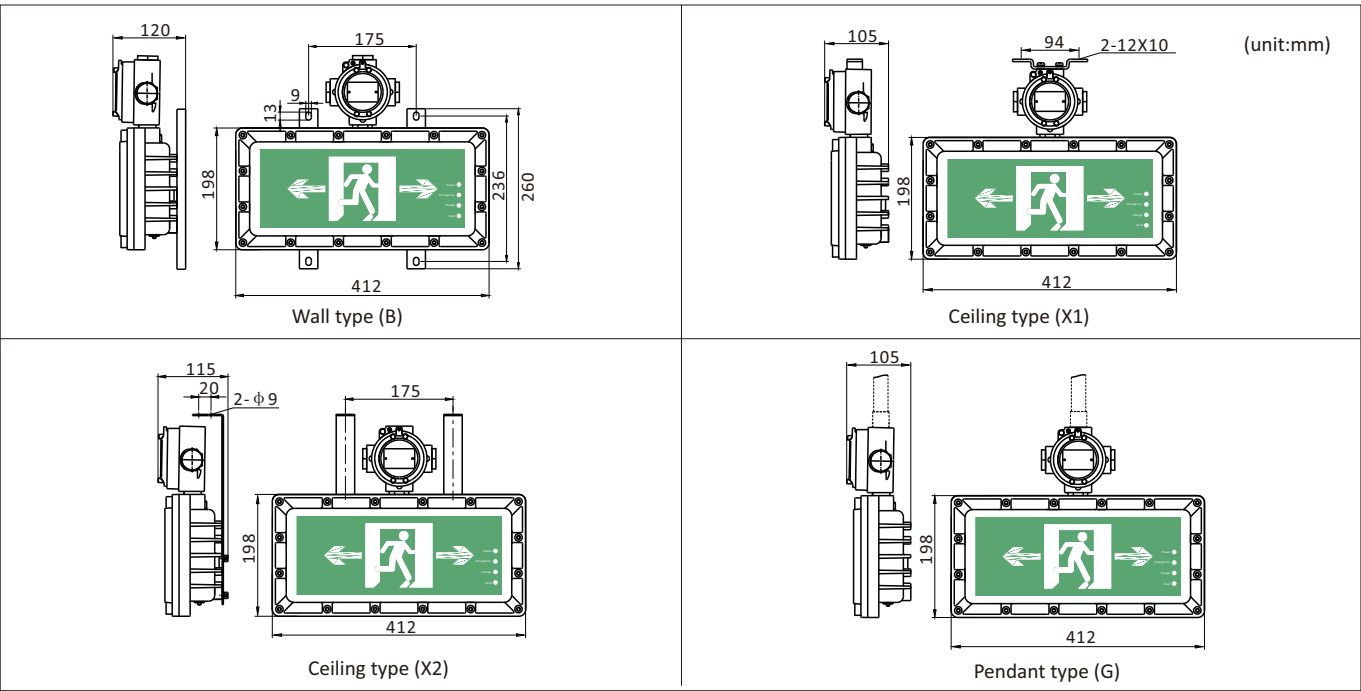
**Product Definition**



**Guide sign**



**Installation Method**





**KHJ**® ATEX Certified LED Emergency Exit light  
in Hazardous Area

## LED Explosion Proof LED Emergency Exit Light

- **Polaris Series**

| Standard & Certificate:                    |                                                                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                                   | Gas:  II 2 G Ex mb ib op is IIC T6 Gb<br>Dust:  II 2 D Ex tb op is IIIC T95°C or T80°C Db                                                                                                   |
| Certificate:                               | ATEX Certification NO.: ECM 19 ATEX-B SU43<br>CE,RoHS                                                                                                                                       |
| Executive Standard:                        | EN 60079-0:2018, EN 60079- 1:2014, EN 60079-7:2015+A1:2018<br>EN 60079-11:2012, EN 60079-18:2015+A1:2017, EN 60079-28:2015<br>EN 60079-31:2014., IEC 60079-0:2018, IEC 60079-7:2015+A1:2018 |
| Classification:                            | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                             |
| Electrical & Photometric Features:         |                                                                                                                                                                                             |
| Lifespan:                                  | >50,000 hours                                                                                                                                                                               |
| Operating Voltage:                         | 100-277 VAC, 141-392 VDC                                                                                                                                                                    |
| Power:                                     | Normal:6W;Emergency:0.5W                                                                                                                                                                    |
| Battery Rated Capacity:                    | 2.6Ah                                                                                                                                                                                       |
| Battery Type:                              | Ni-MH                                                                                                                                                                                       |
| Rated Lifespan:                            | 300 Cycles                                                                                                                                                                                  |
| Battery Back Up:                           | 180 Min                                                                                                                                                                                     |
| Battery Charge Time:(after full discharge) | 12 h                                                                                                                                                                                        |
| Frequency:                                 | 50/60Hz                                                                                                                                                                                     |
| Power Factor:                              | >0.98                                                                                                                                                                                       |
| Insulation Class:                          | I                                                                                                                                                                                           |
| LED Driver:                                | Over voltage protection/short circuit protection                                                                                                                                            |
| Mechanical Features:                       |                                                                                                                                                                                             |
| Weight:                                    | 3.1Kg                                                                                                                                                                                       |
| Size:                                      | 337*310*76mm                                                                                                                                                                                |
| Ambient Temperature:                       | -20°C~+55°C                                                                                                                                                                                 |
| Connecting Terminals:                      | 3X1.0~4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                           |
| Cable Entries:                             | 1 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                |
| Earthing Protection:                       | M4 (Internal & external earth bolts)                                                                                                                                                        |
| IP Code:                                   | IP54                                                                                                                                                                                        |
| Enclosure Material:                        | Copper-free Aluminium                                                                                                                                                                       |
| Enclosure Colour:                          | Orange,RAL2011(optional grey RAL7040)                                                                                                                                                       |
| Coating:                                   | Epoxy powder coating                                                                                                                                                                        |
| Exposed Fastener:                          | Stainless steel                                                                                                                                                                             |
| Protective Cover:                          | Tempered glass,Stand 4J impact                                                                                                                                                              |

ATEX Certified LED Emergency Exit light  
in Hazardous Area



### Product Definition

| Ex                 | K     | PS         | E      | XX                 | -X                                               | -ON           | -X                                                        | -E         | -X                       |
|--------------------|-------|------------|--------|--------------------|--------------------------------------------------|---------------|-----------------------------------------------------------|------------|--------------------------|
| Type               | Brand | Series     | Type   | Light Color        | Exit Sign Designation                            | Control Mode  | Junction Box                                              | Area       | Color                    |
| Ex-Explosion Proof | K-KHJ | PS-Polaris | E-EXIT | W-White<br>G-Green | GE<br>GHL<br>GHR<br>GHLR<br>E<br>HL<br>HR<br>HLR | ON-Maintained | J2AL-<br>J2AR-<br>J2AU-<br>J2B-<br>J2C-<br>J2EL-<br>J2ER- | E- English | Default-Orange<br>G-Grey |

### Ordering Information

| P/N                 | Operating Voltage(V)       | Light Color | Exit Sign Designation | Temp. Classification<br>-20°C~+55°C |
|---------------------|----------------------------|-------------|-----------------------|-------------------------------------|
| Ex-KPSEW-GE-ON-*E   | 100-277 AC<br>(141-392 DC) | White       |                       | T6                                  |
| Ex-KPSEW-GHL-ON-*E  |                            |             |                       |                                     |
| Ex-KPSEW-GHR-ON-*E  |                            |             |                       |                                     |
| Ex-KPSEW-GHLR-ON-*E |                            |             |                       |                                     |
| Ex-KPSEG-E-ON-*E    |                            | Green       |                       |                                     |
| Ex-KPSEG-HL-ON-*E   |                            |             |                       |                                     |
| Ex-KPSEG-HR-ON-*E   |                            |             |                       |                                     |
| Ex-KPSEG-HLR-ON-*E  |                            |             |                       |                                     |

Remarks:\* Stands for junction box ,including J2AL,J2AR,J2AU,J2B,J2C,J2EL,J2ER.









**LED Explosion Proof LED Emergency Light**  
**- Mickeymouse Series**

| Standard & Certificate:                    |                                                                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                                   | Gas:  II 2 G Ex db op is IIC T5 or T6 Gb<br>Dust:  II 2 D Ex tb IIC T95°C or T80°C Db                                                                                                       |
| Certificate:                               | ATEX Certification NO.: ECM 19 ATEX-B SU43<br>CE,RoHS                                                                                                                                       |
| Executive Standard:                        | EN 60079-0:2018, EN 60079- 1:2014, EN 60079-7:2015+A1:2018<br>EN 60079-11:2012, EN 60079-18:2015+A1:2017, EN 60079-28:2015<br>EN 60079-31:2014., IEC 60079-0:2018, IEC 60079-7:2015+A1:2018 |
| Classification:                            | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                             |
| Electrical & Photometric Features:         |                                                                                                                                                                                             |
| Lifespan:                                  | >50,000 hours                                                                                                                                                                               |
| Operating Voltage:                         | 100-277 VAC, 141-392 VDC                                                                                                                                                                    |
| Power:                                     | 3W                                                                                                                                                                                          |
| Battery Rated Capacity:                    | 1.4Ah                                                                                                                                                                                       |
| Battery Type:                              | Ni-cd                                                                                                                                                                                       |
| Rated Lifespan:                            | 300 Cycles                                                                                                                                                                                  |
| Battery Back Up:                           | >120min                                                                                                                                                                                     |
| Battery Charge Time:(after full discharge) | 12 h                                                                                                                                                                                        |
| Frequency:                                 | 50/60Hz                                                                                                                                                                                     |
| Power Factor:                              | >0.98                                                                                                                                                                                       |
| Insulation Class:                          | I                                                                                                                                                                                           |
| LED Driver:                                | Over voltage protection/short circuit protection                                                                                                                                            |
| Mechanical Features:                       |                                                                                                                                                                                             |
| Weight:                                    | 2.3Kg                                                                                                                                                                                       |
| Size:                                      | 223*95*233mm                                                                                                                                                                                |
| Ambient Temperature:                       | -20°C~+40°C                                                                                                                                                                                 |
| Cable Entries:                             | 1 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                |
| Earthing Protection:                       | M4 (Internal & external earth bolts)                                                                                                                                                        |
| IP Code:                                   | IP66                                                                                                                                                                                        |
| Enclosure Material:                        | Copper-free Aluminium                                                                                                                                                                       |
| Enclosure Colour:                          | Orange, RAL2011(optional grey RAL7040)                                                                                                                                                      |
| Coating:                                   | Epoxy powder coating                                                                                                                                                                        |
| Exposed Fastener:                          | Stainless steel                                                                                                                                                                             |
| Protective Cover:                          | Tempered glass, Stand 7J impact                                                                                                                                                             |

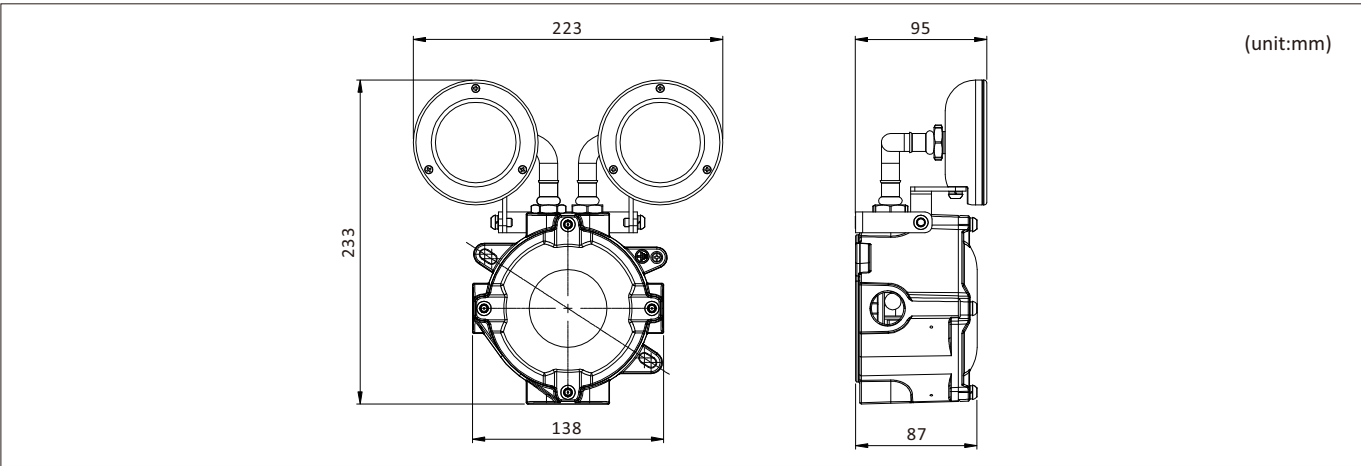
**Product Definition**

| Ex                 | K     | MM             | F            | XX                  | XX                                                           | -OFF               | -X               | -X         |
|--------------------|-------|----------------|--------------|---------------------|--------------------------------------------------------------|--------------------|------------------|------------|
| Type               | Brand | Series         | Type         | Input Voltage       | CCT(K)                                                       | EmergencyType      | Opening Type     | Area       |
| Ex-Explosion Proof | K-KHJ | MM-MickeyMouse | F-Floodlight | Default-100-277 VAC | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | OFF-Non-maintained | AL-<br>AR-<br>B- | E- English |

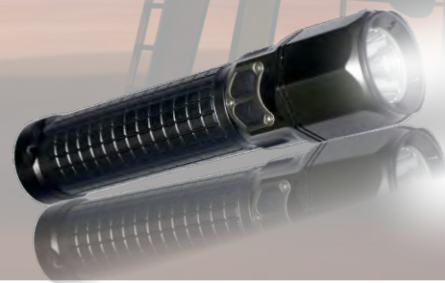
**Ordering Information**

| P/N                | Operating Voltage(V)       | CRI | Color Temp.   | CCT(K)   | Opening Type                                                                          | Temp. Classification |
|--------------------|----------------------------|-----|---------------|----------|---------------------------------------------------------------------------------------|----------------------|
|                    |                            |     |               |          |                                                                                       | -20℃~+40℃            |
| Ex-KMMFWM-OFF-AL-E | 100~277 AC<br>(141~392 DC) | 80  | Warm white    | 3000±300 |   | T6                   |
| Ex-KMMFNH-OFF-AL-E |                            | 70  | Natural white | 4000±300 |                                                                                       |                      |
| Ex-KMMFNH-OFF-AL-E |                            | 70  | Natural white | 5000±300 |                                                                                       |                      |
| Ex-KMMFCH-OFF-AL-E |                            | 70  | Cool white    | 5700±300 |                                                                                       |                      |
| Ex-KMMFWM-OFF-AR-E |                            | 80  | Warm white    | 3000±300 |  |                      |
| Ex-KMMFNH-OFF-AR-E |                            | 70  | Natural white | 4000±300 |                                                                                       |                      |
| Ex-KMMFNH-OFF-AR-E |                            | 70  | Natural white | 5000±300 |                                                                                       |                      |
| Ex-KMMFCH-OFF-AR-E |                            | 70  | Cool white    | 5700±300 |                                                                                       |                      |
| Ex-KMMFWM-OFF-B-E  |                            | 80  | Warm white    | 3000±300 |  |                      |
| Ex-KMMFNH-OFF-B-E  |                            | 70  | Natural white | 4000±300 |                                                                                       |                      |
| Ex-KMMFNH-OFF-B-E  |                            | 70  | Natural white | 5000±300 |                                                                                       |                      |
| Ex-KMMFCH-OFF-B-E  |                            | 70  | Cool white    | 5700±300 |                                                                                       |                      |

**Size**







## LED Explosion Proof LED Portable Light

- *Alcidae Series*

| Standard & Certificate:                    |       |                                                                                                                                                                                                                                           |
|--------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                                   |       | Gas:  II 2 G Ex ib IIC T4 Gb<br>Dust:  II 2 D Ex ib IIIC T130°C Db IP68 |
| Certificate:                               |       | ATEX Certification NO.: :TÜV 15 ATEX 7713X<br>CE,RoHS                                                                                                                                                                                     |
| Executive Standard:                        |       | (IEC)EN 60079-0, (IEC)EN 60079-11<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8                 |
| Classification:                            |       | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                           |
| Electrical & Photometric Features:         |       |                                                                                                                                                                                                                                           |
| Luminaire Efficacy:                        |       | 110lm/W                                                                                                                                                                                                                                   |
| Illuminance:                               | Front | 320 lx(5m)                                                                                                                                                                                                                                |
|                                            | Back  | 150 lx(1m)                                                                                                                                                                                                                                |
| Lifespan:                                  |       | >50,000 hours                                                                                                                                                                                                                             |
| Operating Voltage:                         |       | 100-240VAC,141-339 VDC                                                                                                                                                                                                                    |
| Power:                                     |       | 2.52W                                                                                                                                                                                                                                     |
| Battery Rated Capacity:                    |       | 2.2Ah                                                                                                                                                                                                                                     |
| Battery Type:                              |       | Lithium battery                                                                                                                                                                                                                           |
| Rated Lifespan:                            |       | 300 Cycles                                                                                                                                                                                                                                |
| Battery Back Up:                           |       | >9h(High output);>18h(Normal ouput)                                                                                                                                                                                                       |
| Battery Charge Time:(after full discharge) |       | 2~3h                                                                                                                                                                                                                                      |
| Frequency:                                 |       | 50/60Hz                                                                                                                                                                                                                                   |
| Power Factor:                              |       | >0.98                                                                                                                                                                                                                                     |
| Insulation Class:                          |       | I                                                                                                                                                                                                                                         |
| LED Driver:                                |       | Over voltage protection/short circuit protection                                                                                                                                                                                          |
| Mechanical Features:                       |       |                                                                                                                                                                                                                                           |
| Weight:                                    |       | 0.19Kg                                                                                                                                                                                                                                    |
| Size:                                      |       | φ35*156mm                                                                                                                                                                                                                                 |
| Ambient Temperature:                       |       | -20℃~+55℃                                                                                                                                                                                                                                 |
| IP Code:                                   |       | IP68(3m)                                                                                                                                                                                                                                  |
| Enclosure Material:                        |       | Aluminium alloy                                                                                                                                                                                                                           |

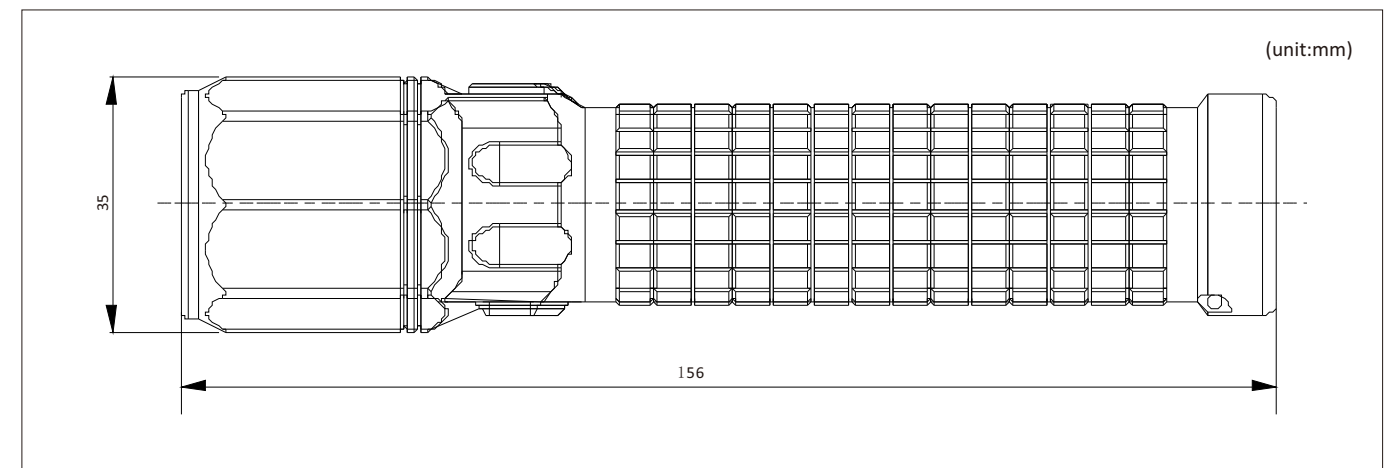
## Product Definition

| K     | AC         | F            | XX         | XX     | XX                                                           | -X         |
|-------|------------|--------------|------------|--------|--------------------------------------------------------------|------------|
| Brand | Series     | Type         | Beam angle | Color  | CCT(K)                                                       | Area       |
| K-KHJ | AC-Alcidae | F-Flashlight | 80-80°     | G-Gray | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English |

## Ordering Information

| P/N         | Charge Voltage(V)         | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Beam angle(°) |            | Temp. Classification<br>-20°C~+55°C |
|-------------|---------------------------|-------------------|----------|-----|---------------|----------|---------------|------------|-------------------------------------|
|             |                           |                   |          |     |               |          | Spotlight     | Floodlight |                                     |
| KACF80GWM-E | 100~240AC<br>(141~339 DC) | 227               | 2.52     | 80  | Warm white    | 3000±300 | 10            | 80         | T4                                  |
| KACF80GNH-E |                           | 277               | 2.52     | 70  | Natural white | 4000±300 |               |            |                                     |
| KACF80GNH-E |                           | 277               | 2.52     | 70  | Natural white | 5000±300 |               |            |                                     |
| KACF80GCH-E |                           | 277               | 2.52     | 70  | Cool white    | 5700±300 |               |            |                                     |

## Size





## LED Explosion Proof LED Portable Light

- Hill Myna Series

| Standard & Certificate:                    |                                                                                                                                                                                                                           |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:                                   | Gas:  II 2 G Ex mb ib op is IIC T6 Gb<br>Dust:  II 2 D Ex tb op is IIIC T80°C Db IP66                                                                                                                                     |
| Certificate:                               | ATEX Certification NO.: ECM 19 ATEX-B Su43<br>CE,RoHS                                                                                                                                                                     |
| Executive Standard:                        | (IEC)EN 60079-0, (IEC)EN 60079-11<br>EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Classification:                            | Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                           |
| Electrical & Photometric Features:         |                                                                                                                                                                                                                           |
| Luminaire Efficacy:                        | 110lm/W                                                                                                                                                                                                                   |
| Illuminance: Front                         | 480 lx(5m)                                                                                                                                                                                                                |
| Lifespan:                                  | >50,000 hours                                                                                                                                                                                                             |
| Operating Voltage:                         | 100-240VAC,141-339 VDC                                                                                                                                                                                                    |
| Input voltage:                             | 3.7V                                                                                                                                                                                                                      |
| Power:                                     | 3W/6W                                                                                                                                                                                                                     |
| Battery Rated Capacity:                    | 15.6 Ah                                                                                                                                                                                                                   |
| Battery Type:                              | Lithium battery                                                                                                                                                                                                           |
| Rated Lifespan:                            | 500 Cycles                                                                                                                                                                                                                |
| Battery Back Up:                           | >8h(High output);>16h(Normal ouput)                                                                                                                                                                                       |
| Battery Charge Time:(after full discharge) | <6h                                                                                                                                                                                                                       |
| Frequency:                                 | 50/60Hz                                                                                                                                                                                                                   |
| Power Factor:                              | >0.98                                                                                                                                                                                                                     |
| Insulation Class:                          | I                                                                                                                                                                                                                         |
| LED Driver:                                | Over voltage protection/short circuit protection                                                                                                                                                                          |
| Mechanical Features:                       |                                                                                                                                                                                                                           |
| Weight:                                    | 1Kg                                                                                                                                                                                                                       |
| Size:                                      | 190*105*134mm                                                                                                                                                                                                             |
| Ambient Temperature:                       | -20°C~+40°C                                                                                                                                                                                                               |
| IP Code:                                   | IP66                                                                                                                                                                                                                      |

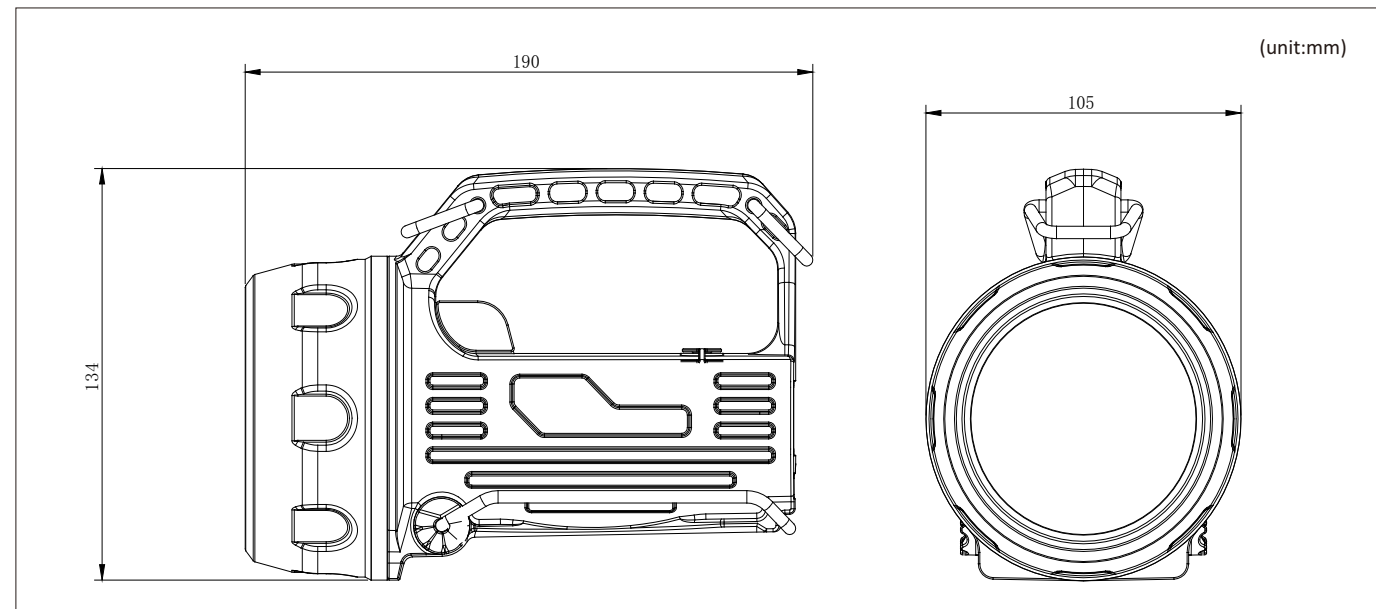
### Product Definition

| Ex                 | K     | HM          | W            | XX                                                           | -X         |
|--------------------|-------|-------------|--------------|--------------------------------------------------------------|------------|
| Type               | Brand | Series      | Type         | CCT(K)                                                       | Area       |
| Ex-Explosion Proof | K-KHJ | HM-HillMyna | W-work light | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | E- English |

### Ordering Information

| P/N         | Charge Voltage(V)          | Luminous Flux(lm) |     | Power(W)  |            | CRI | Color Temp.   | CCT(K)   | Temp. Classification |
|-------------|----------------------------|-------------------|-----|-----------|------------|-----|---------------|----------|----------------------|
|             |                            | 3W                | 6W  | Spotlight | Floodlight |     |               |          | -20°C~+55°C          |
| Ex-KHMWWM-E | 100~240 AC<br>(141~339 DC) | 270               | 540 | 6         | 3          | 80  | Warm white    | 3000±300 | T6                   |
| Ex-KHMWNH-E |                            | 330               | 660 | 6         | 3          | 70  | Natural white | 4000±300 |                      |
| Ex-KHMWNH-E |                            | 330               | 660 | 6         | 3          | 70  | Natural white | 5000±300 |                      |
| Ex-KHMWCH-E |                            | 330               | 660 | 6         | 3          | 70  | Cool white    | 5700±300 |                      |

### Size







## LED Floodlight / Bay light / High bay light

- *Sealion Series*

| Standard & Certificate:            |                                                                                                                                                                                       |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                              |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1,<br>IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                       |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                             |
| Lifespan:                          | >50,000 hours                                                                                                                                                                         |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                            |
| Power:                             | 45W/60W/80W/100W/120W/150W/200W/240W/300W                                                                                                                                             |
| Frequency:                         | 50/60Hz                                                                                                                                                                               |
| Power Factor:                      | >0.98                                                                                                                                                                                 |
| THD:                               | <10%                                                                                                                                                                                  |
| Insulation Class:                  | I                                                                                                                                                                                     |
| Surge Protection:                  | 4KV/Line-Line 6KV/Line-Earth                                                                                                                                                          |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                      |
| Mechanical Features:               |                                                                                                                                                                                       |
| Weight:                            | 6.5Kg(45-100W);8.6Kg(120-150W);12.3Kg(200-300W)                                                                                                                                       |
| Size:                              | φ 275*157mm(45-100W); φ 330*157mm(120-150W);<br>φ 415*168mm(200-300W)                                                                                                                 |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                             |
| Cable Entries:                     | 1 x M16*1.5                                                                                                                                                                           |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                  |
| IP Code:                           | IP66                                                                                                                                                                                  |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                           |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                          |
| Coating:                           | Epoxy powder coating                                                                                                                                                                  |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                       |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                        |

### Product Definition

| K     | SL         | XX                                                                                                 | XX                   | XX                                   | XX                                                           | -X                                                               | -X         |
|-------|------------|----------------------------------------------------------------------------------------------------|----------------------|--------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|------------|
| Brand | Series     | Power                                                                                              | Input Voltage        | Candela Distribution                 | CCT(K)                                                       | Type                                                             | Area       |
| K-KHJ | SL-Sealion | 45-45W<br>60-60W<br>80-80W<br>100-100W<br>120-120W<br>150-150W<br>200-200W<br>240-240W<br>300-300W | Default-100V~ 277VAC | H4V4(60°)<br>H5V5(80°)<br>H6V6(120°) | WM-3000K±300<br>NH-4000K±300<br>NH-5000K±300<br>CH-5700K±300 | Default-Normal<br>DA-DALI Dimming<br>S-Sensor<br>V-0~10V Dimming | E- English |

### Ordering Information

| P/N        | Operating Voltage(V)       | Luminous Flux(lm) | Power | CRI | Color Temp.   | CCT(K)   |
|------------|----------------------------|-------------------|-------|-----|---------------|----------|
| KSL45*WM-E | 100~277 AC<br>(141~392 DC) | 5693              | 45    | 70  | Warm white    | 3000±300 |
| KSL45*NH-E |                            | 6143              | 45    | 70  | Natural white | 4000±300 |
| KSL45*NH-E |                            | 6143              | 45    | 70  | Natural white | 5000±300 |
| KSL45*CH-E |                            | 6143              | 45    | 70  | Cool white    | 5700±300 |
| KSL60*WM-E |                            | 7590              | 60    | 70  | Warm white    | 3000±300 |
| KSL60*NH-E |                            | 8190              | 60    | 70  | Natural white | 4000±300 |
| KSL60*NH-E |                            | 8190              | 60    | 70  | Natural white | 5000±300 |
| KSL60*CH-E |                            | 8190              | 60    | 70  | Cool white    | 5700±300 |
| KSL80*WM-E |                            | 10120             | 80    | 70  | Warm white    | 3000±300 |
| KSL80*NH-E |                            | 10920             | 80    | 70  | Natural white | 4000±300 |
| KSL80*NH-E |                            | 10920             | 80    | 70  | Natural white | 5000±300 |
| KSL80*CH-E |                            | 10920             | 80    | 70  | Cool white    | 5700±300 |

Ordering Information

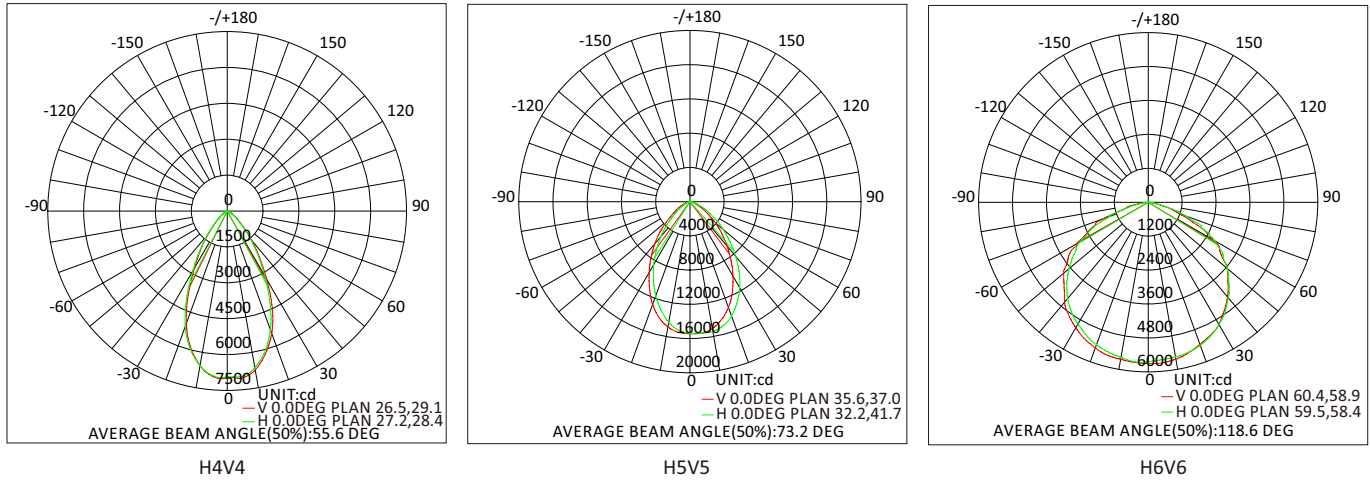
| P/N         | Operating Voltage(V)       | Luminous Flux(lm) | Power | CRI | Color Temp.   | CCT(K)   |
|-------------|----------------------------|-------------------|-------|-----|---------------|----------|
| KSL100*WM-E | 100~277 AC<br>(141~392 DC) | 12650             | 100   | 70  | Warm white    | 3000±300 |
| KSL100*NH-E |                            | 13650             | 100   | 70  | Natural white | 4000±300 |
| KSL100*CH-E |                            | 13650             | 100   | 70  | Natural white | 5000±300 |
| KSL100*CH-E |                            | 13650             | 100   | 70  | Cool white    | 5700±300 |
| KSL120*WM-E |                            | 15180             | 120   | 70  | Warm white    | 3000±300 |
| KSL120*NH-E |                            | 16380             | 120   | 70  | Natural white | 4000±300 |
| KSL120*NH-E |                            | 16380             | 120   | 70  | Natural white | 5000±300 |
| KSL120*CH-E |                            | 16380             | 120   | 70  | Cool white    | 5700±300 |
| KSL150*WM-E |                            | 18975             | 150   | 70  | Warm white    | 3000±300 |
| KSL150*NH-E |                            | 20475             | 150   | 70  | Natural white | 4000±300 |
| KSL150*NH-E |                            | 20475             | 150   | 70  | Natural white | 5000±300 |
| KSL150*CH-E |                            | 20475             | 150   | 70  | Cool white    | 5700±300 |
| KSL200*WM-E |                            | 25300             | 200   | 70  | Warm white    | 3000±300 |
| KSL200*NH-E |                            | 27300             | 200   | 70  | Natural white | 4000±300 |
| KSL200*NH-E |                            | 27300             | 200   | 70  | Natural white | 5000±300 |
| KSL200*CH-E |                            | 27300             | 200   | 70  | Cool white    | 5700±300 |
| KSL240*WM-E |                            | 30360             | 240   | 70  | Warm white    | 3000±300 |
| KSL240*NH-E |                            | 32760             | 240   | 70  | Natural white | 4000±300 |
| KSL240*NH-E |                            | 32760             | 240   | 70  | Natural white | 5000±300 |
| KSL240*CH-E |                            | 32760             | 240   | 70  | Cool white    | 5700±300 |
| KSL300*WM-E |                            | 37950             | 300   | 70  | Warm white    | 3000±300 |
| KSL300*NH-E |                            | 40950             | 300   | 70  | Natural white | 4000±300 |
| KSL300*NH-E |                            | 40950             | 300   | 70  | Natural white | 5000±300 |
| KSL300*CH-E |                            | 40950             | 300   | 70  | Cool white    | 5700±300 |

Remarks: 1. \*Stands for beam angle , including H4V4 / H5V5 / H6V6 .  
2. For beam angle H4V4 and H5V5, the luminous flux will be 15% less;

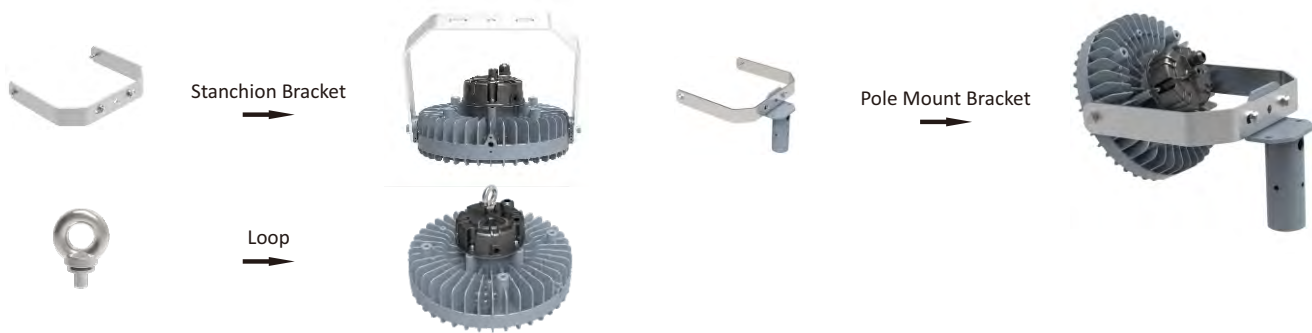
KHJ Replaceable Luminaire Models

| KHJ LED | HPS        | Metal halide lame | Typical Energy Saving               |
|---------|------------|-------------------|-------------------------------------|
| 45W     | 100W-150W  | 100W-150W         | Up to 60% reduction in energy costs |
| 60W     | 150W-175W  | 150W-175W         |                                     |
| 80W     | 175W-250W  | 175W-250W         |                                     |
| 100W    | 250W-400W  | 250W-400W         |                                     |
| 120W    | 250W-400W  | 250W-400W         |                                     |
| 150W    | 400W       | 400W              |                                     |
| 200W    | 400W-500W  | 400W-500W         |                                     |
| 240W    | 600W-750W  | 600W-750W         |                                     |
| 300W    | 750W-1000W | 750W-1000W        |                                     |

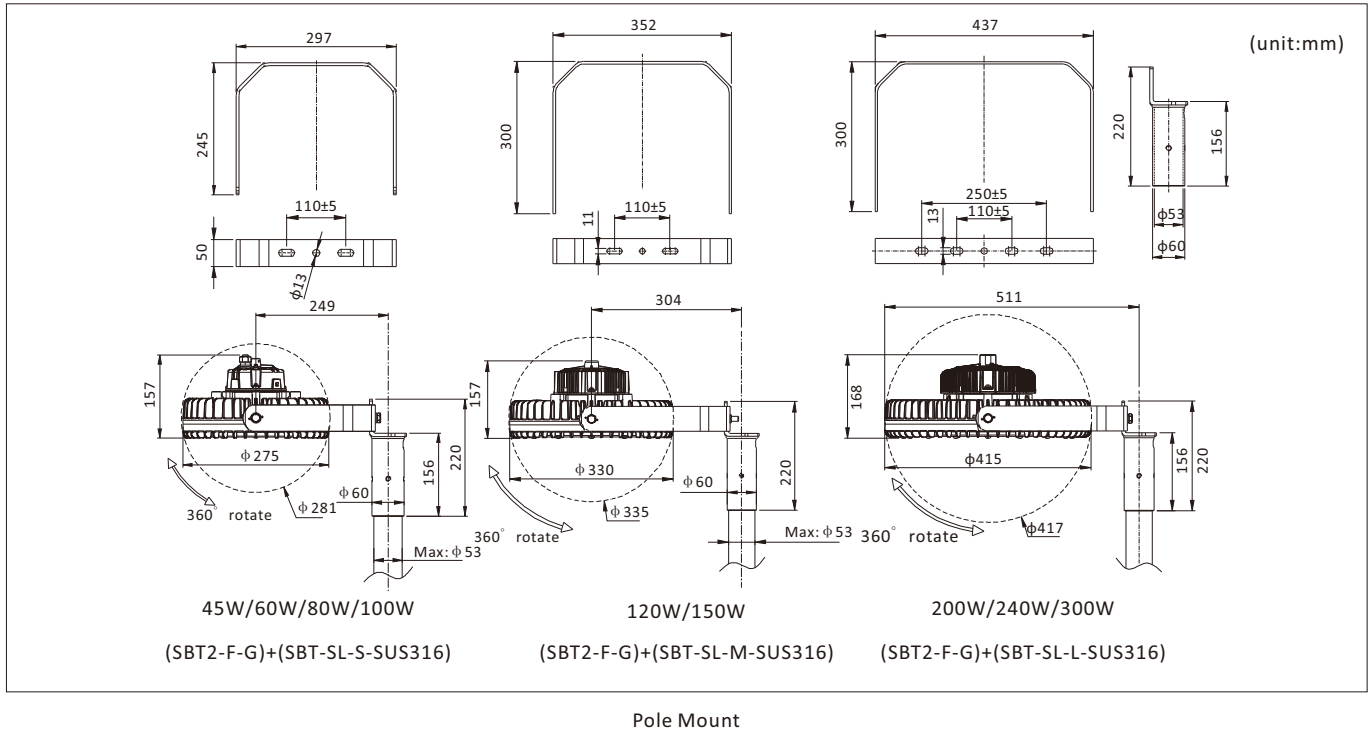
Candela Distribution



Optional Parts

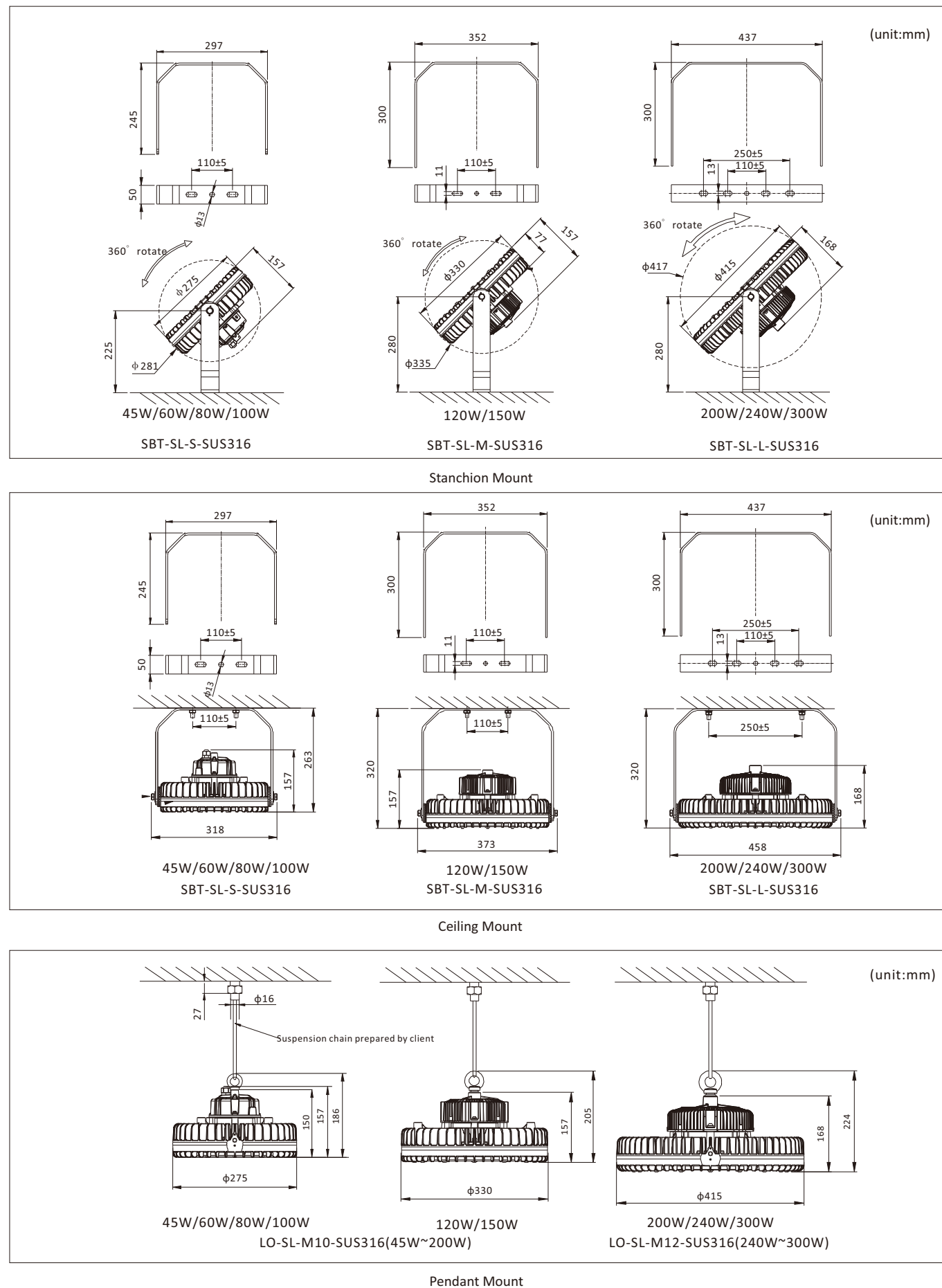


Installation Method





## Installation Method





LED Floodlight  
- Tank Series

| Standard & Certificate:            |                                                                                                                                                                                      |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                             |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3,<br>EN 60598-1, EN 60598-2-5, EN 62031, EN 62493,<br>IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                      |
| Luminarie Efficacy:                | 152lm/W                                                                                                                                                                              |
| Lifespan:                          | >50,000 hours                                                                                                                                                                        |
| Operating Voltage:                 | 100-277 VAC,141-391VDC(347-480 VAC,491-679 VDC are optional)                                                                                                                         |
| Power:                             | 80W/100W/120W(Single lamp),160W/200W/240W(Two lamps),<br>320W/400W/480W(Four lamps)                                                                                                  |
| Frequency:                         | 50/60Hz                                                                                                                                                                              |
| Power Factor:                      | >0.98                                                                                                                                                                                |
| THD:                               | <10%                                                                                                                                                                                 |
| Insulation Class:                  | I                                                                                                                                                                                    |
| Surge Protection:                  | 4KV/6KV                                                                                                                                                                              |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                     |
| Mechanical Features:               |                                                                                                                                                                                      |
| Weight:                            | 6.3Kg(80W~120W)/13Kg(160W~240W)/28kg(320W~480W)                                                                                                                                      |
| Size:                              | 332*212*100mm(80W~120W)/332*426*100mm(160W~240W)<br>671*426*100mm(320W~480W)                                                                                                         |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                            |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                                 |
| IP Code:                           | IP66                                                                                                                                                                                 |
| Enclosure Maternal:                | Aluminium                                                                                                                                                                            |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                         |
| Coating:                           | Epoxy powder coating                                                                                                                                                                 |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                      |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                       |

Product Definition

| K     | TK          | XX                                                                                                     | X                                   | XX                                   | XX                                                           | -X                                                   | -X         |
|-------|-------------|--------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------------------------------|------------------------------------------------------|------------|
| Brand | Series      | Power                                                                                                  | Input Voltage                       | Candela Distribution                 | CCT(K)                                                       | Type                                                 | Area       |
| K-KHJ | Tank series | 80-80W<br>100-100W<br>120-120W<br>160-160W<br>200-200W<br>240-240W<br>320-320W<br>400-400W<br>480-480W | Default:100v~277VAC<br>D-347-480VAC | H3V3(40°)<br>H5V5(80°)<br>H6V6(120°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | Default-single lamp<br>S2-Two lamps<br>S4-Four lamps | E- English |

Ordering Information

| P/N             | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)     |
|-----------------|----------------------------|-------------------|----------|-----|---------------|------------|
| KTK80**CH-E     | 100-277 AC<br>(141-392 DC) | 12107             | 80       | 70  | Cool white    | 5700K±300K |
| KTK80**NH-E     |                            | 12107             |          | 70  | Natural white | 5000K±300K |
| KTK80**NH-E     |                            | 12107             |          | 70  | Natural white | 4000±300k  |
| KTK80**WM-E     |                            | 10896             |          | 70  | Warm white    | 3000±300k  |
| KTK100**CH-E    |                            | 14954             | 100      | 70  | Cool white    | 5700±300k  |
| KTK100**NH-E    |                            | 14954             |          | 70  | Natural white | 5000±300k  |
| KTK100**NH-E    |                            | 14954             |          | 70  | Natural white | 4000±300k  |
| KTK100**WM-E    |                            | 13458             |          | 70  | Warm white    | 3000±300k  |
| KTK120**CH-E    |                            | 17310             | 120      | 70  | Cool white    | 5700±300k  |
| KTK120**NH-E    |                            | 17310             |          | 70  | Natural white | 5000±300k  |
| KTK120**NH-E    |                            | 17310             |          | 70  | Natural white | 4000±300k  |
| KTK120**WM-E    |                            | 15579             |          | 70  | Warm white    | 3000±300k  |
| KTK160**CH-S2-E |                            | 22910             | 160      | 70  | Cool white    | 5700K±300K |
| KTK160**NH-S2-E |                            | 22910             |          | 70  | Natural white | 5000K±300K |
| KTK160**NH-S2-E |                            | 22910             |          | 70  | Natural white | 4000±300k  |
| KTK160**WM-S2-E |                            | 20619             |          | 70  | Warm white    | 3000±300k  |
| KTK200**CH-S2-E |                            | 29145             | 200      | 70  | Cool white    | 5700±300k  |
| KTK200**NH-S2-E |                            | 29145             |          | 70  | Natural white | 5000±300k  |
| KTK200**NH-S2-E |                            | 29145             |          | 70  | Natural white | 4000±300k  |
| KTK200**WM-S2-E |                            | 26230             |          | 70  | Warm white    | 3000±300k  |
| KTK240**CH-S2-E |                            | 34136             | 240      | 70  | Cool white    | 5700±300k  |
| KTK240**NH-S2-E |                            | 34136             |          | 70  | Natural white | 5000±300k  |
| KTK240**NH-S2-E |                            | 34136             |          | 70  | Natural white | 4000±300k  |
| KTK240**WM-S2-E |                            | 30884             |          | 70  | Warm white    | 3000±300k  |



Ordering Information

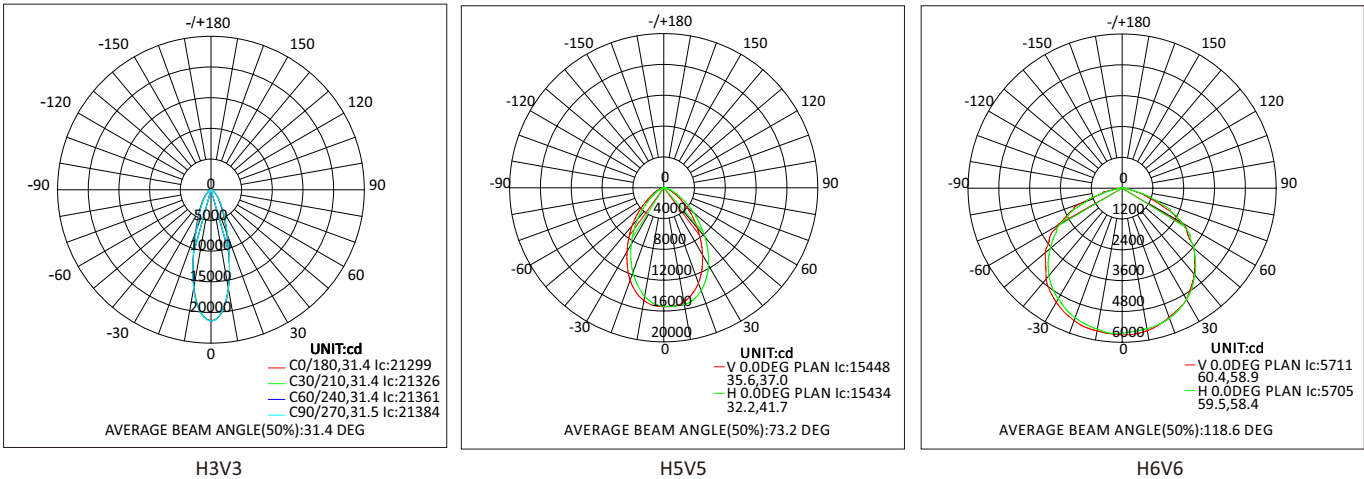
| P/N             | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)    |
|-----------------|----------------------------|-------------------|----------|-----|---------------|-----------|
| KTk320**CH-S4-E | 100-277 AC<br>(141-392 DC) | 46400             | 320      | 70  | Cool white    | 5700±300k |
| KTk320**NH-S4-E |                            | 46400             |          | 70  | Natural white | 5000±300k |
| KTk320**NH-S4-E |                            | 46400             |          | 70  | Natural white | 4000±300k |
| KTk320**WM-S4-E |                            | 41760             |          | 70  | Warm white    | 3000±300k |
| KTk400**CH-S4-E |                            | 58054             | 400      | 70  | Cool white    | 5700±300k |
| KTk400**NH-S4-E |                            | 58054             |          | 70  | Natural white | 5000±300k |
| KTk400**NH-S4-E |                            | 58054             |          | 70  | Natural white | 4000±300k |
| KTk400**WM-S4-E |                            | 52248             |          | 70  | Warm white    | 3000±300k |
| KTk480**CH-S4-E |                            | 69120             | 480      | 70  | Cool white    | 5700±300k |
| KTk480**NH-S4-E |                            | 69120             |          | 70  | Natural white | 5000±300k |
| KTk480**NH-S4-E |                            | 69120             |          | 70  | Natural white | 4000±300k |
| KTk480**WM-S4-E |                            | 62208             |          | 70  | Warm white    | 3000±300k |

Remarks: 1.The first \* stands for Operating Voltage including default -100-277VAC,D-347-480VAC .  
2.The second \* stands for Candela Distribution including H3V3,H5V5,H6V6.

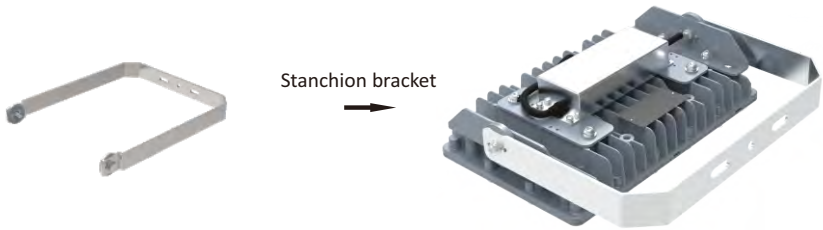
KHJ Replaceable Luminaire Models

| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 80W     | 175W-250W   | 175W-250W         | Up to 60% reduction in energy costs |
| 100W    | 250W-400W   | 250W-400W         |                                     |
| 120W    | 250W-400W   | 250W-400W         |                                     |
| 160W    | 400W        | 400W              |                                     |
| 200W    | 400W-500W   | 400W-500W         |                                     |
| 240W    | 600W-750W   | 600W-750W         |                                     |
| 320W    | 750W-1000W  | 750W-1000W        |                                     |
| 360W    | 750W-1000W  | 750W-1000W        |                                     |
| 400W    | 1000W-1500W | 1000W-1500W       |                                     |
| 480W    | 1000W-2000W | 1000W-2000W       |                                     |

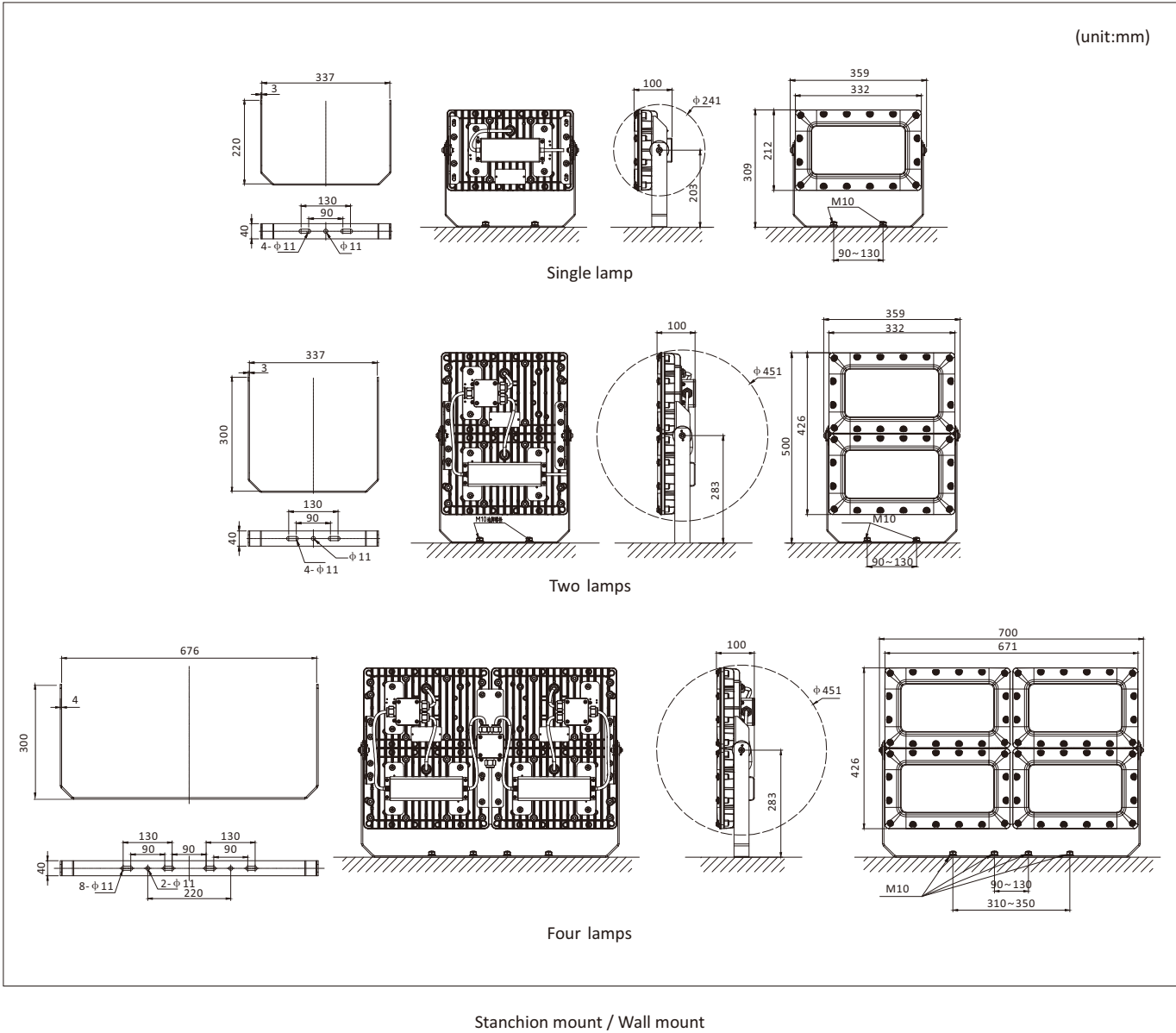
Candela Distribution



Optional Parts



Installation Method





CE & RoHS Certified LED Linear light  
in Industrial Area

CE RoHS

LED Linear light  
- *Swordfish Series*

| Standard & Certificate:               |           |                                                                                                                                                                                |
|---------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                          |           | CE,RoHS                                                                                                                                                                        |
| Executive Standard:                   |           | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features:    |           |                                                                                                                                                                                |
| Luminarie Efficacy:                   |           | 136.5lm/W                                                                                                                                                                      |
| Lifespan:                             |           | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                    | Normal    | 100-277 VAC/24-48 VAC,10-30 VDC/24-48 VDC/141-392 VDC                                                                                                                          |
|                                       | Emergency | 220-240 VAC,311-339 VDC                                                                                                                                                        |
| Power:                                | Normal    | 18W/36W/48W(0.6m),36W/48W/56W/72W(0.9m)                                                                                                                                        |
|                                       | Emergency | 5W                                                                                                                                                                             |
| Frequency:                            |           | 50/60Hz                                                                                                                                                                        |
| Power Factor:                         |           | >0.98                                                                                                                                                                          |
| THD:                                  |           | <10%                                                                                                                                                                           |
| Insulation Class:                     |           | I                                                                                                                                                                              |
| Surge Protection:                     |           | 5KV                                                                                                                                                                            |
| LED Driver:                           |           | Over voltage protection/short circuit protection                                                                                                                               |
| Battery Capacity:                     |           | 2.2 Ah                                                                                                                                                                         |
| Battery Type:                         |           | Ni-Cd                                                                                                                                                                          |
| Battery Lifespan:                     |           | 500 cycles                                                                                                                                                                     |
| Back up:                              |           | 180 min                                                                                                                                                                        |
| Chargeing time:(after full discharge) |           | 24 hours                                                                                                                                                                       |
| Mechanical Features:                  |           |                                                                                                                                                                                |
| Weight:                               | Normal    | 6.9Kg(0.6m)/9.2Kg(0.9m)                                                                                                                                                        |
|                                       | Emergency | 7.3Kg(0.6m)/9.6Kg(0.9m)                                                                                                                                                        |
| Size:                                 |           | 600*136*124mm(18W/36W/48W)/900*136*124mm(36W/48W/56W/72W)                                                                                                                      |
| Connecting Terminals:                 |           | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                              |
| Cable Entries:                        |           | 2 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                   |
| Earthing Protection:                  |           | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                              |           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                   |           | Copper-free Aluminium                                                                                                                                                          |
| Enclosure Colour:                     |           | Grey RAL7040                                                                                                                                                                   |
| Coating:                              |           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                     |           | Stainless steel                                                                                                                                                                |
| Protective Cover:                     |           | Tempered glass,Stand 7J impact                                                                                                                                                 |

CE & RoHS Certified LED Linear light  
in Industrial Area



Product Definition

| K     | SF                  | XX                                             | XX                                                                              | XX                      | XX         | XX           | -X                                                           | -U                                           | -E   |            |
|-------|---------------------|------------------------------------------------|---------------------------------------------------------------------------------|-------------------------|------------|--------------|--------------------------------------------------------------|----------------------------------------------|------|------------|
| Brand | Series              | Power                                          | Input Voltage                                                                   | Length                  | Candela    | Distribution | CCT(K)                                                       | Type                                         | Type | Area       |
| K-KHJ | SF-Swordfish series | 18-18W<br>36-36W<br>48-48W<br>56-56W<br>72-72W | Deaful-100-277VAC<br>A-24-48VAC/DC<br>B-10-30VDC<br>Emergency Deaful-220-240VAC | 600-600mm<br>1200-900mm | H7V7(120°) |              | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | Default-Normal<br>ON- Emergency<br>U- Update |      | E- English |

Ordering Information

| P/N                    | Operating Voltage(V)       | Luminous Flux(lm) |           | Power(W) |           | CRI | Color Temp.   | CCT(K)   |
|------------------------|----------------------------|-------------------|-----------|----------|-----------|-----|---------------|----------|
|                        |                            | Normal            | Emergency | Normal   | Emergency |     |               |          |
| KSF18*600H7V7WM-*-U-E  | 220-240 AC<br>(311-339 DC) | 2268              | 630       | 18       | 5         | 82  | Warm white    | 3000±300 |
| KSF18*600H7V7NH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Natural white | 4000±300 |
| KSF18*600H7V7NH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Natural white | 5000±300 |
| KSF18*600H7V7CH-*-U-E  |                            | 2457              | 683       | 18       |           | 70  | Cool white    | 5700±300 |
| KSF36*600H7V7WM-*-U-E  |                            | 4536              | 630       | 36       |           | 82  | Warm white    | 3000±300 |
| KSF36*600H7V7NH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Natural white | 4000±300 |
| KSF36*600H7V7NH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Natural white | 5000±300 |
| KSF36*600H7V7CH-*-U-E  |                            | 4914              | 683       | 36       |           | 70  | Cool white    | 5700±300 |
| KSF48*600H7V7WM-*-U-E  |                            | 6048              | 630       | 48       |           | 82  | Warm white    | 3000±300 |
| KSF48*600H7V7NH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Natural white | 4000±300 |
| KSF48*600H7V7NH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Natural white | 5000±300 |
| KSF48*600H7V7CH-*-U-E  |                            | 6552              | 683       | 48       |           | 70  | Cool white    | 5700±300 |
| KSF36*1200H7V7WM-*-U-E |                            | 4536              | 630       | 36       |           | 82  | Warm white    | 3000±300 |
| KSF36*1200H7V7NH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Natural white | 4000±300 |
| KSF36*1200H7V7NH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Natural white | 5000±300 |
| KSF36*1200H7V7CH-*-U-E |                            | 4914              | 683       | 36       |           | 70  | Cool white    | 5700±300 |
| KSF48*1200H7V7WM-*-U-E |                            | 6048              | 630       | 48       |           | 82  | Warm white    | 3000±300 |
| KSF48*1200H7V7NH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Natural white | 4000±300 |
| KSF48*1200H7V7NH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Natural white | 5000±300 |
| KSF48*1200H7V7CH-*-U-E |                            | 6552              | 683       | 48       |           | 70  | Cool white    | 5700±300 |
| KSF56*1200H7V7WM-*-U-E |                            | 7056              | 630       | 56       |           | 82  | Warm white    | 3000±300 |
| KSF56*1200H7V7NH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Natural white | 4000±300 |
| KSF56*1200H7V7NH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Natural white | 5000±300 |
| KSF56*1200H7V7CH-*-U-E |                            | 7644              | 683       | 56       |           | 70  | Cool white    | 5700±300 |
| KSF72*1200H7V7WM-*-U-E |                            | 9072              | 630       | 72       |           | 82  | Warm white    | 3000±300 |
| KSF72*1200H7V7NH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Natural white | 4000±300 |
| KSF72*1200H7V7NH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Natural white | 5000±300 |
| KSF72*1200H7V7CH-*-U-E |                            | 9828              | 683       | 72       |           | 70  | Cool white    | 5700±300 |

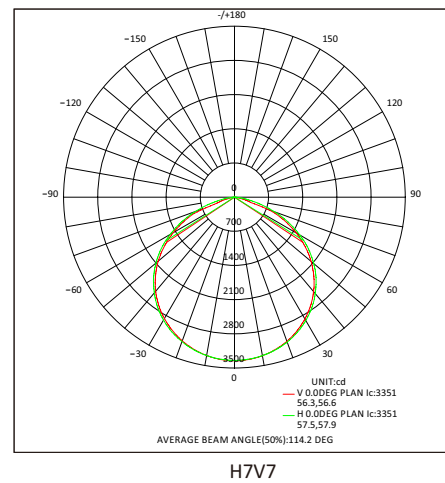
Remarks: 1.The first \*Stands for Operating Voltage, including Default -AC-100~277V,A-AC/DC 24~48V,B-DC 10~30V.  
2.The second \*Stands for product type, including Default -Normal,ON-Emergency  
3.10-30VDC is not suitable for 72W



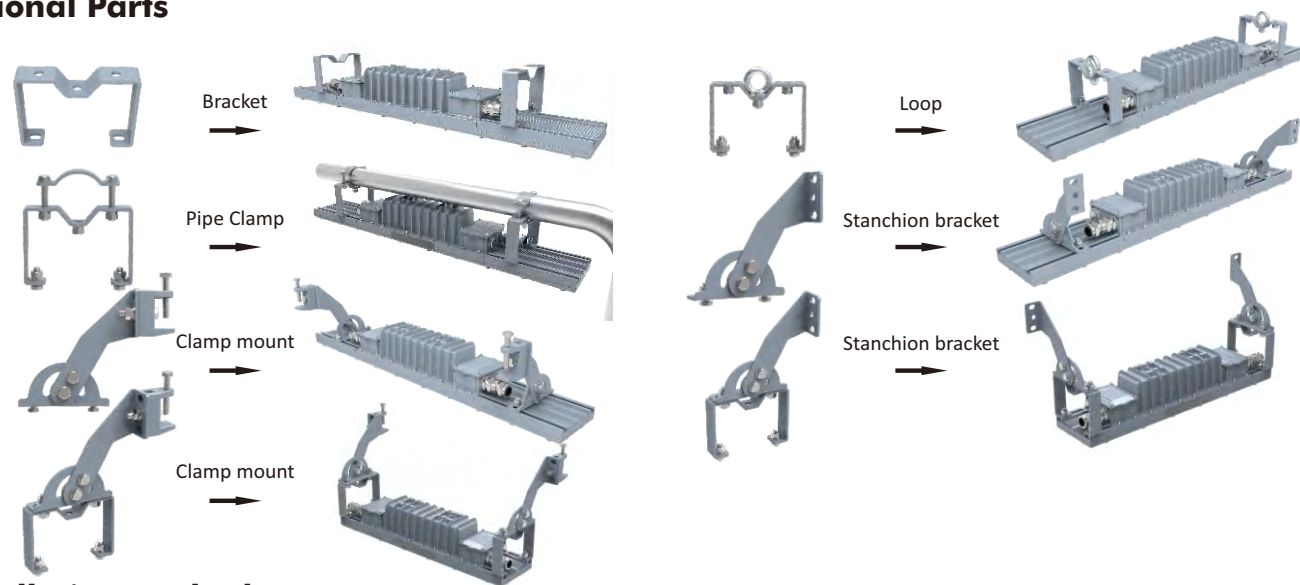
## KHJ Replaceable Luminaire Models

| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 18W     | 2*18W/1*36W | 2*18W/1*36W       | Up to 60% reduction in energy costs |
| 36W     | 4*18W/2*36W | 4*18W/2*36W       |                                     |
| 48W     | 4*18W/3*36W | 4*18W/3*36W       |                                     |
| 56W     | 3*36W       | 3*36W             |                                     |
| 72W     | 4*36W       | 4*36W             |                                     |

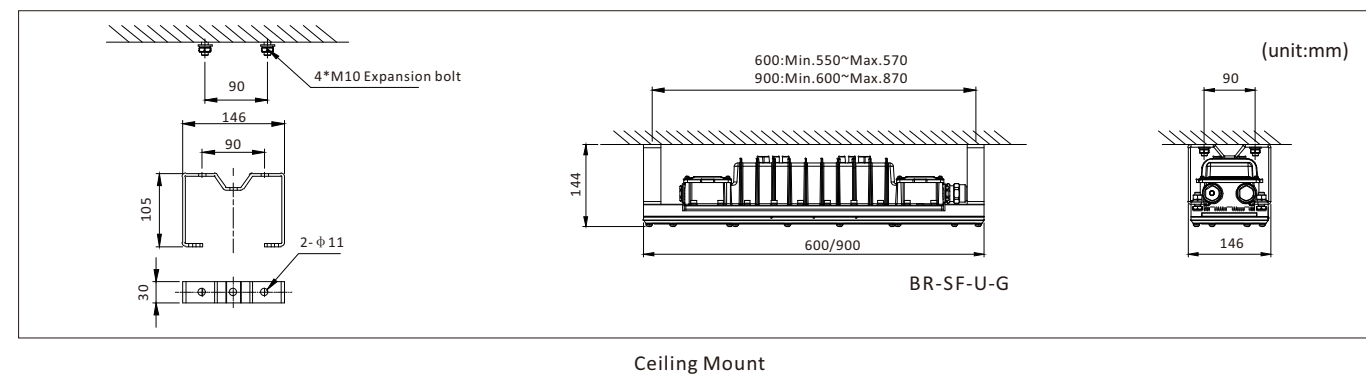
## Candela Distribution



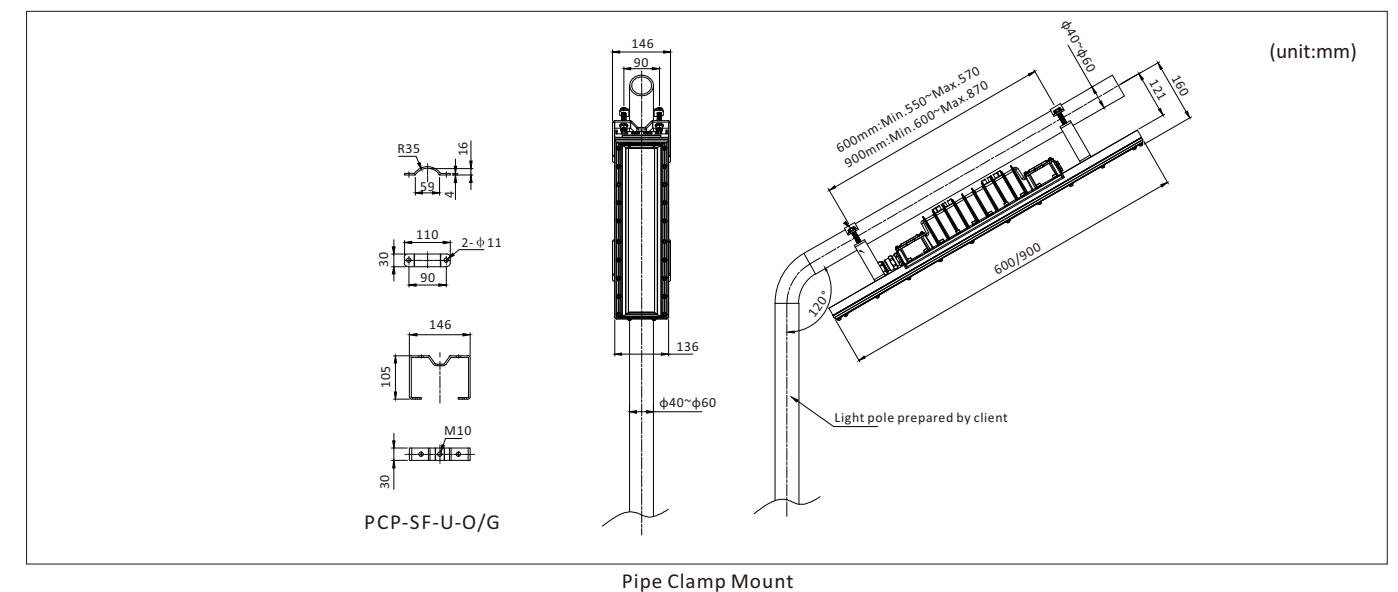
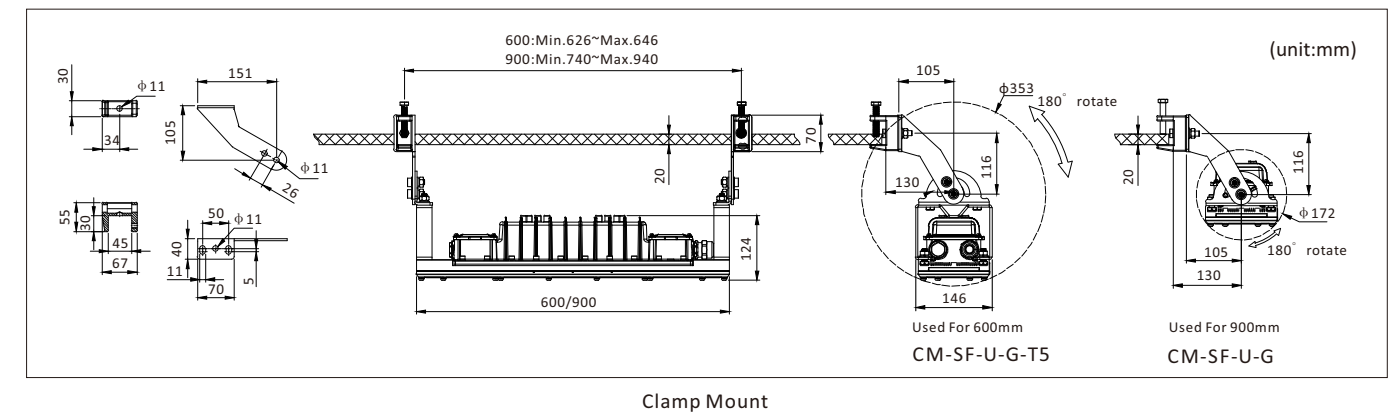
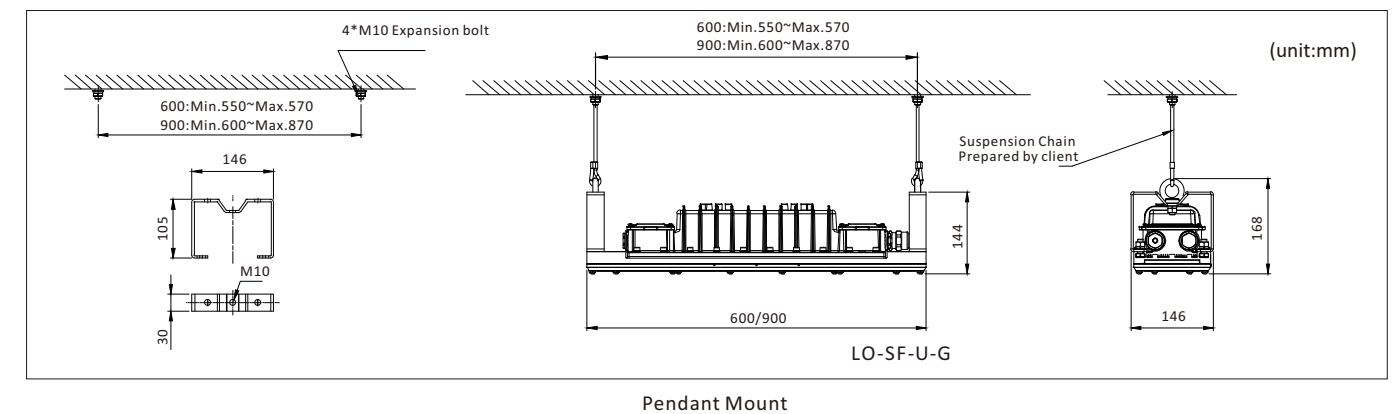
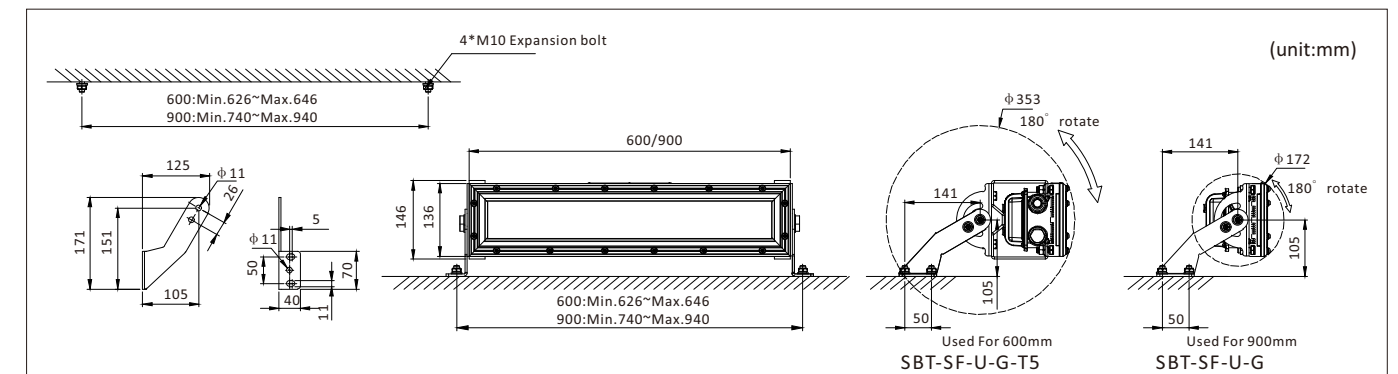
## Optional Parts

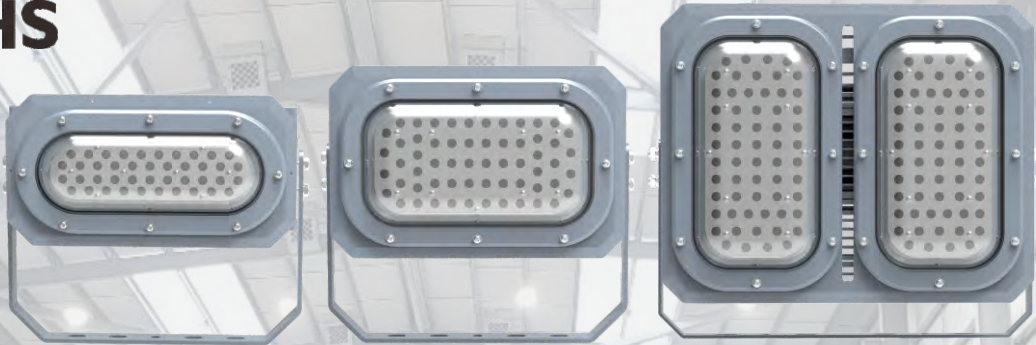


## Installation Method



## Installation Method





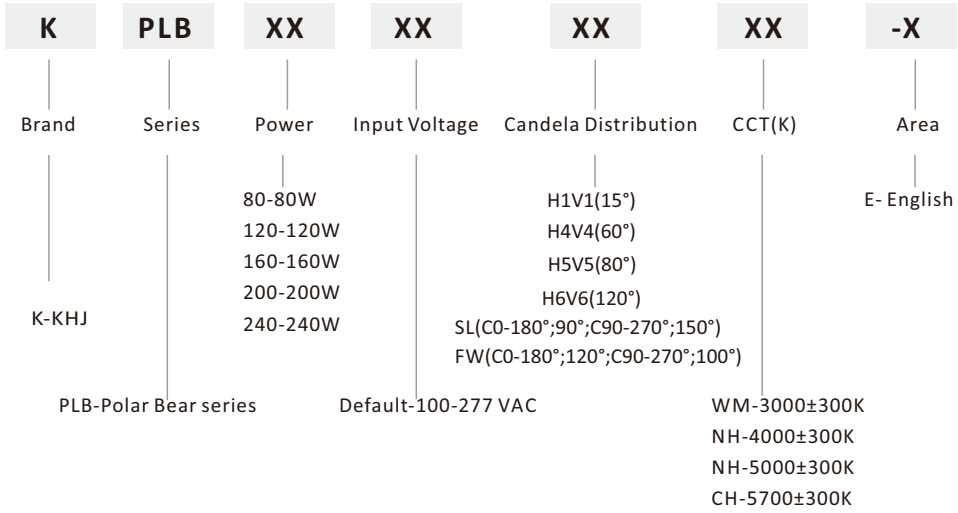
## LED Floodlight/High bay light

- *Polarbear Series*

| Standard & Certificate:            |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                       |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                |
| Luminarie Efficacy:                | 147lm/W                                                                                                                                                                        |
| Lifespan:                          | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                 | 100-277 VAC,141-392 VDC                                                                                                                                                        |
| Power:                             | 80W/120W/160W/200W/240W                                                                                                                                                        |
| Frequency:                         | 50/60Hz                                                                                                                                                                        |
| Power Factor:                      | >0.98                                                                                                                                                                          |
| THD:                               | <10%                                                                                                                                                                           |
| Insulation Class:                  | I                                                                                                                                                                              |
| Surge Protection:                  | 4KV/6KV                                                                                                                                                                        |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                               |
| Mechanical Features:               |                                                                                                                                                                                |
| Weight:                            | 7.3Kg(80W)/11Kg(120W,160W)/18.4Kg(200W,240W)                                                                                                                                   |
| Size:                              | 210*400*161mm(80W)/260*400*161mm(120W,160W)/500*400*161mm(200W,240W)                                                                                                           |
| Ambient Temperature:               | -40℃-+55℃                                                                                                                                                                      |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                              |
| Cable Entries:                     | 2 x M25*1.5 (M20*1.5 is optional)                                                                                                                                              |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                | Copper-free Aluminium                                                                                                                                                          |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                   |
| Coating:                           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                 |



### Product Definition



### Ordering Information

| P/N          | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   |
|--------------|----------------------------|-------------------|----------|-----|---------------|----------|
| KPLB80*WM-E  | 100-277 AC<br>(141-392 DC) | 10920             | 80       | 70  | Warm white    | 3000±300 |
| KPLB80*NH-E  |                            | 11760             | 80       | 70  | Natural white | 4000±300 |
| KPLB80*NH-E  |                            | 11760             | 80       | 70  | Natural white | 5000±300 |
| KPLB80*CH-E  |                            | 11760             | 80       | 70  | Cool white    | 5700±300 |
| KPLB120*WM-E |                            | 16380             | 120      | 70  | Warm white    | 3000±300 |
| KPLB120*NH-E |                            | 17640             | 120      | 70  | Natural white | 4000±300 |
| KPLB120*NH-E |                            | 17640             | 120      | 70  | Natural white | 5000±300 |
| KPLB120*CH-E |                            | 17640             | 120      | 70  | Cool white    | 5700±300 |
| KPLB160*WM-E |                            | 21840             | 160      | 70  | Warm white    | 3000±300 |
| KPLB160*NH-E |                            | 23520             | 160      | 70  | Natural white | 4000±300 |
| KPLB160*NH-E |                            | 23520             | 160      | 70  | Natural white | 5000±300 |
| KPLB160*CH-E |                            | 23520             | 160      | 70  | Cool white    | 5700±300 |
| KPLB200*WM-E |                            | 27300             | 200      | 70  | Warm white    | 3000±300 |
| KPLB200*NH-E |                            | 29400             | 200      | 70  | Natural white | 4000±300 |
| KPLB200*NH-E |                            | 29400             | 200      | 70  | Natural white | 5000±300 |
| KPLB200*CH-E |                            | 29400             | 200      | 70  | Cool white    | 5700±300 |
| KPLB240*WM-E |                            | 32760             | 240      | 70  | Warm white    | 3000±300 |
| KPLB240*NH-E |                            | 35280             | 240      | 70  | Natural white | 5000±300 |
| KPLB240*NH-E |                            | 35280             | 240      | 70  | Natural white | 4000±300 |
| KPLB240*CH-E |                            | 35280             | 240      | 70  | Cool white    | 5700±300 |

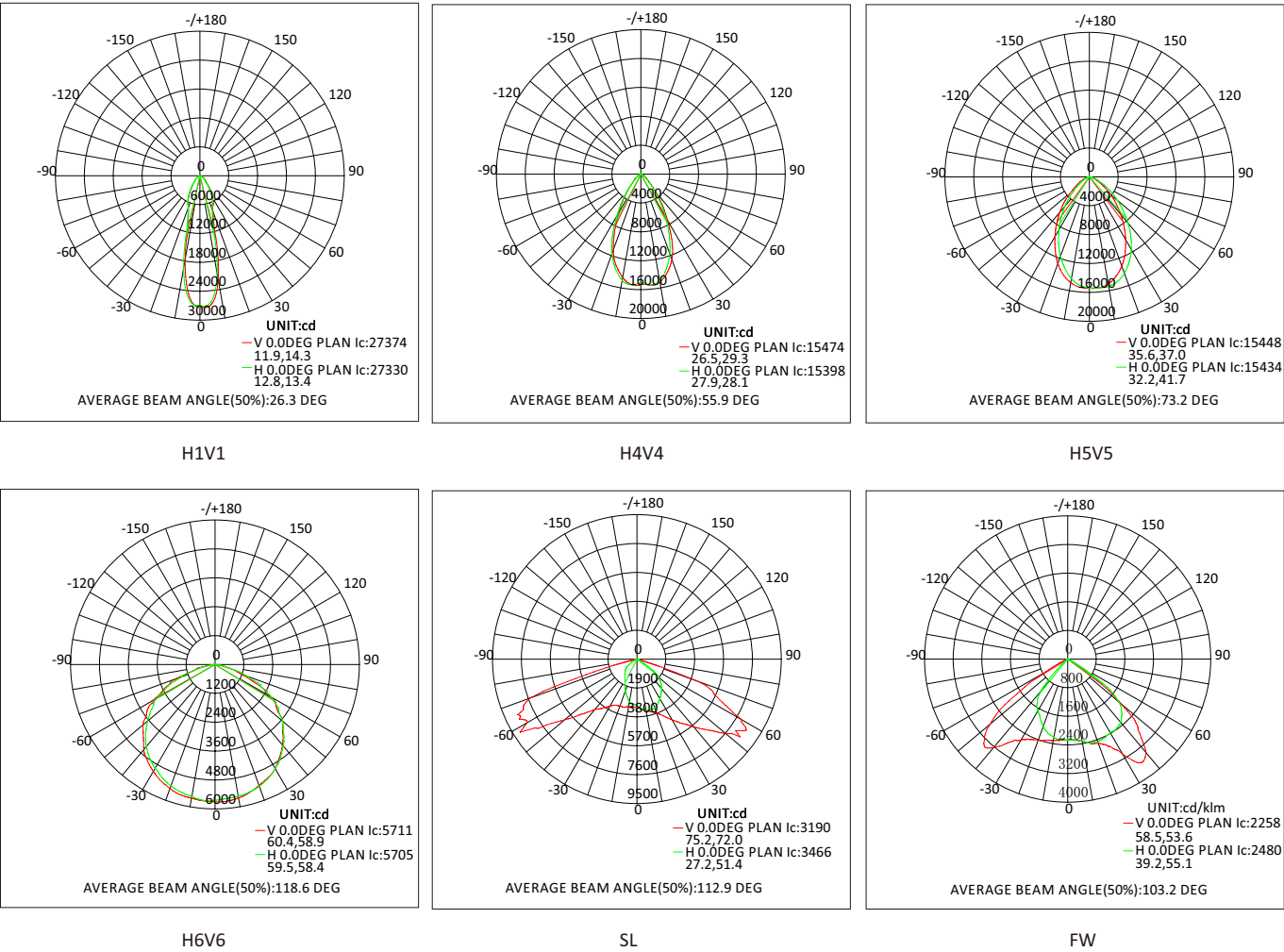
Remarks: 1.\* Stands for beam angle,including H1V1 / H4V4 / H5V5 / H6V6 / SL/FW;  
2.For Beam angle H1V1,H4V4 and H5V5,the luminous flux will be 15% less;  
For Beam angle SL,FW the luminous flux will be 30% less.  
3.SL beam angle is only applicable for 80W&120W.



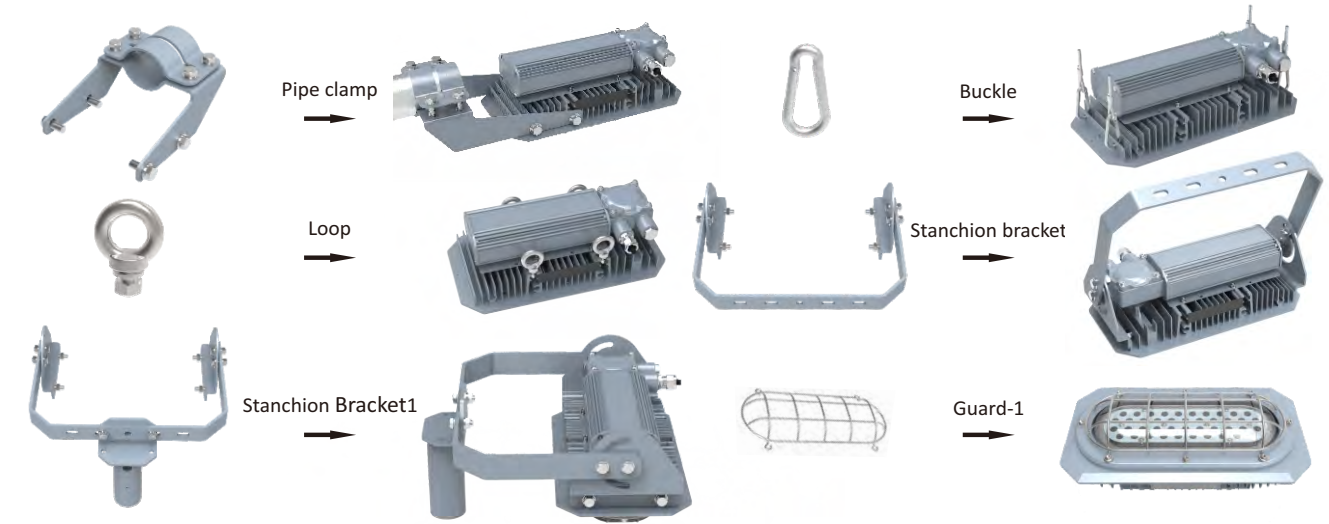
**KHJ Replaceable Luminaire Models**

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 80W     | 175W~250W | 175W~250W         | Up to 60% reduction in energy costs |
| 120W    | 250W~400W | 250W~400W         |                                     |
| 160W    | 400W      | 400W              |                                     |
| 200W    | 400W~500W | 400W~500W         |                                     |
| 240W    | 600W~750W | 600W~750W         |                                     |

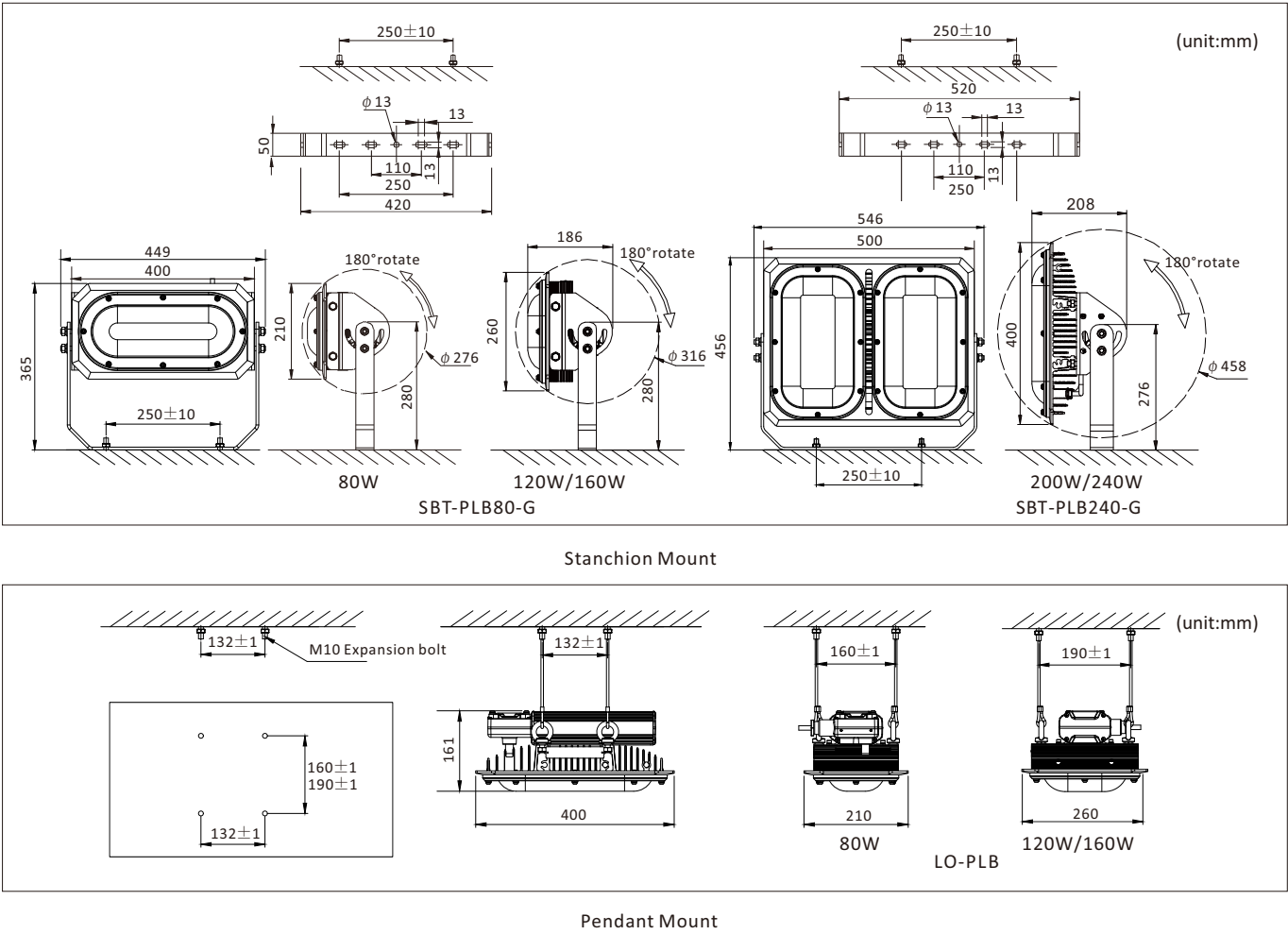
**Candela Distribution**



**Optional Parts**

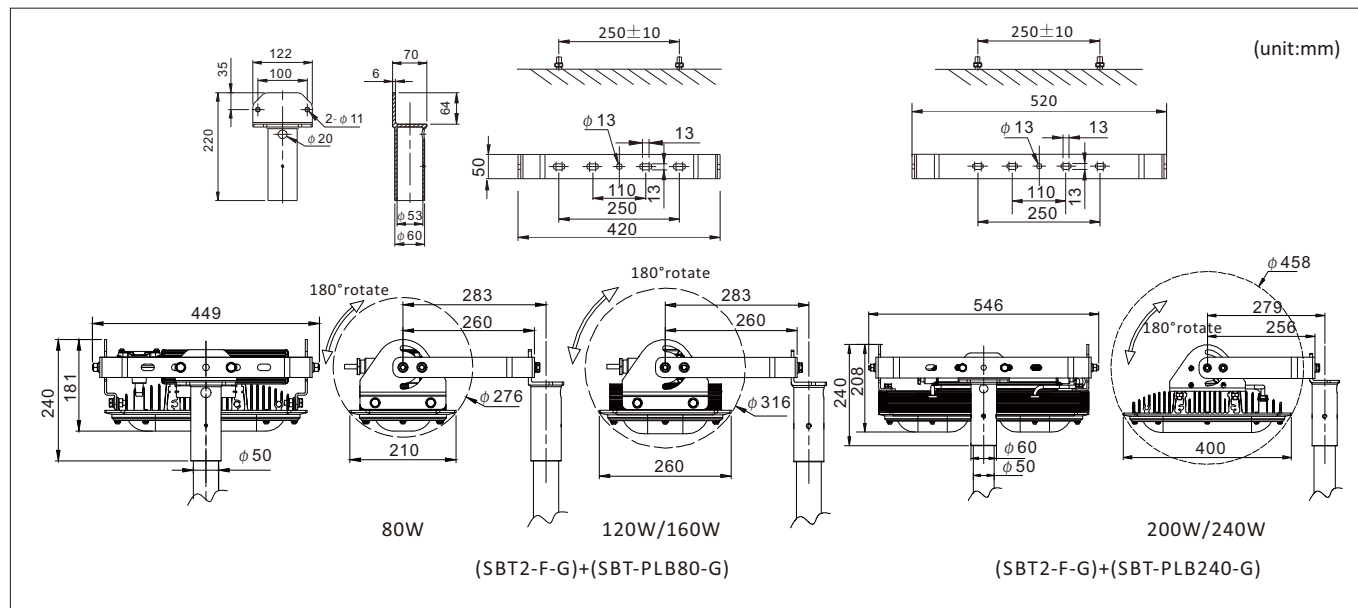


**Installation Method**

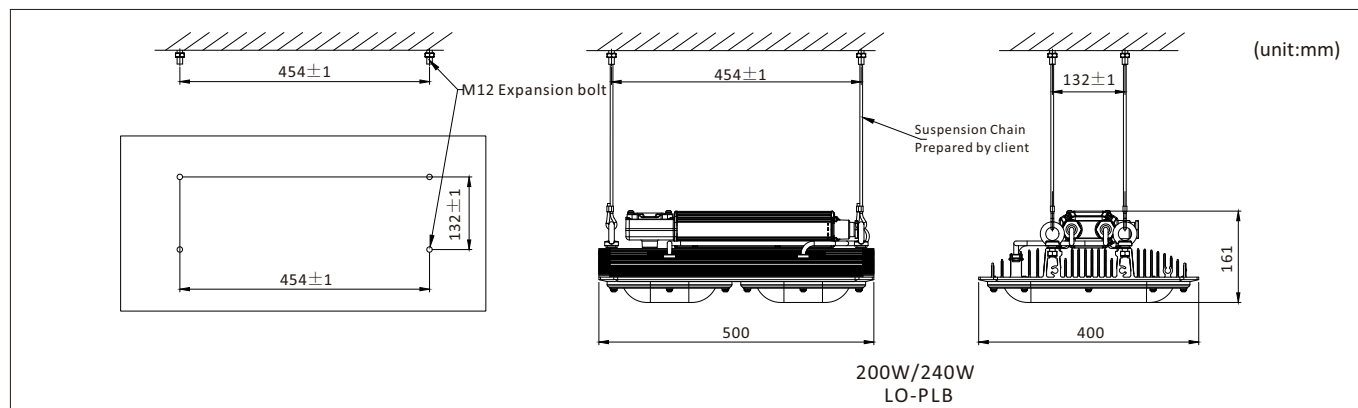




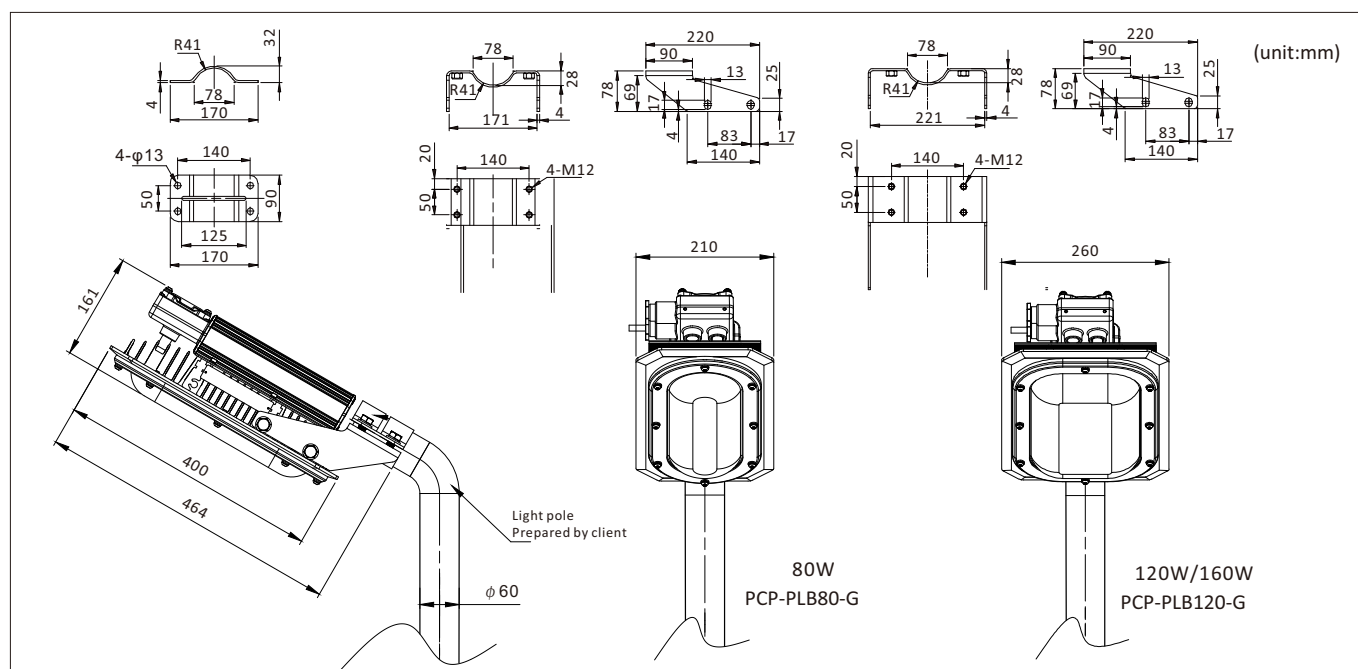
## Installation Method



Pole Mount



Pendant Mount



Pipe Clamp







CE & RoHS Certified LED Floodlight/Bay light/Platform light in Industrial Area



LED Floodlight/Bay light/Platform light  
- Forest Frog Series

| Standard &Certificate:             |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                       |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                      |
| Lifespan:                          | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                 | 24-48 VAC/100-277 VAC<br>10-30 VDC/24-48 VDC/141-392 VDC                                                                                                                       |
| Power:                             | 30W/45W/60W                                                                                                                                                                    |
| Frequency:                         | 50/60Hz                                                                                                                                                                        |
| Power Factor:                      | >0.98                                                                                                                                                                          |
| THD:                               | <10%                                                                                                                                                                           |
| Insulation Class:                  | I                                                                                                                                                                              |
| Surge Protection:                  | 5KV                                                                                                                                                                            |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                               |
| Mechanical Features:               |                                                                                                                                                                                |
| Weight:                            | 3.3Kg                                                                                                                                                                          |
| Size:                              | φ 220*191mm                                                                                                                                                                    |
| Ambient Temperature:               | -40℃-+55℃                                                                                                                                                                      |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                              |
| Cable Entries:                     | 1x M25*1.5                                                                                                                                                                     |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                    |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                   |
| Coating:                           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                 |

CE & RoHS Certified LED Floodlight/Bay light/Platform light in Industrial Area



Product Definition

| K     | FF            | XX                         | XX                                                   | XX                                                                                | XX                                                           | -X                                     | -J             | -X         |
|-------|---------------|----------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|----------------|------------|
| Brand | Series        | Power                      | Input Voltage                                        | Candela Distribution                                                              | CCT(K)                                                       | Type                                   | Junction box   | Area       |
|       |               |                            | Default-100-277 VAC<br>A-24-48 VAC/DC<br>B-10-30 VDC |                                                                                   |                                                              | Default-Normal<br>P-Pole mount bracket |                | E- English |
| K-KHJ | FF-ForestFrog | 30-30W<br>45-45W<br>60-60W |                                                      | H1V1(15°)<br>H5V5(80°)<br>H6V6(120°)<br>F(200°)<br>FW(C0-180°:120°;C90-270°:100°) | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K |                                        | J-Junction box |            |

Ordering Information

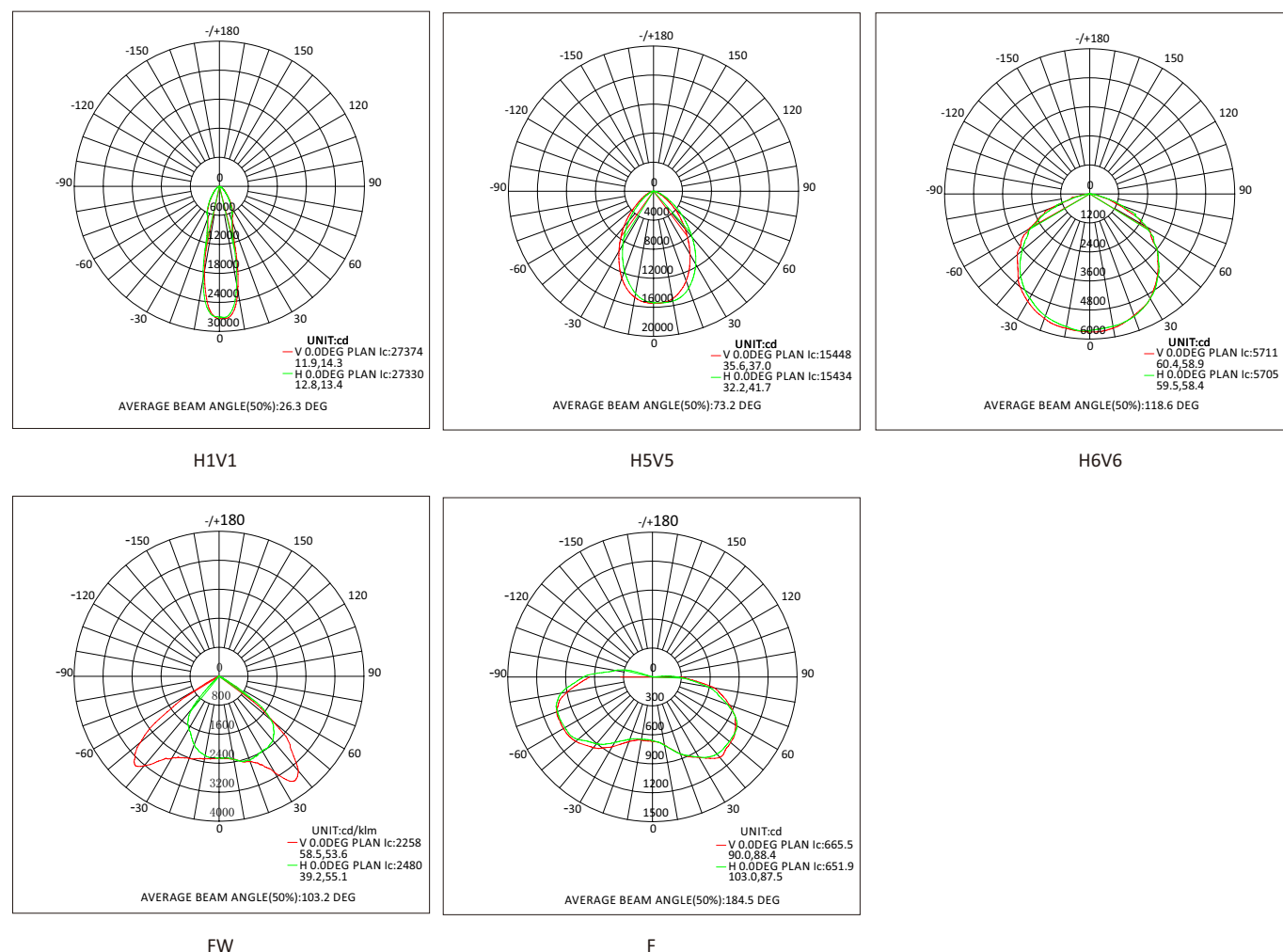
| P/N          | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   |
|--------------|----------------------------|-------------------|----------|-----|---------------|----------|
| KFF30*WM-J-E | 100~277 AC<br>(141~392 DC) | 3780              | 30       | 70  | Warm white    | 3000±300 |
| KFF30*NH-J-E |                            | 4095              | 30       | 70  | Natural white | 4000±300 |
| KFF30*NH-J-E |                            | 4095              | 30       | 70  | Natural white | 5000±300 |
| KFF30*CH-J-E |                            | 4095              | 30       | 70  | Cool white    | 5700±300 |
| KFF45*WM-J-E |                            | 5670              | 45       | 70  | Warm white    | 3000±300 |
| KFF45*NH-J-E |                            | 6142              | 45       | 70  | Natural white | 4000±300 |
| KFF45*NH-J-E |                            | 6142              | 45       | 70  | Natural white | 5000±300 |
| KFF45*CH-J-E |                            | 6142              | 45       | 70  | Cool white    | 5700±300 |
| KFF60*WM-J-E |                            | 7560              | 60       | 70  | Warm white    | 3000±300 |
| KFF60*NH-J-E |                            | 8190              | 60       | 70  | Natural white | 4000±300 |
| KFF60*NH-J-E |                            | 8190              | 60       | 70  | Natural white | 5000±300 |
| KFF60*CH-J-E |                            | 8190              | 60       | 70  | Cool white    | 5700±300 |

Remarks: 1、\*Stands for candela distribution, including H1V1 / H5V5 / H6V6/F/FW;  
2、For beam angle H1V1/H5V5,the luminous flux will be 8% less;  
3、For beam angle FW/F,the luminous flux will be 25% less.

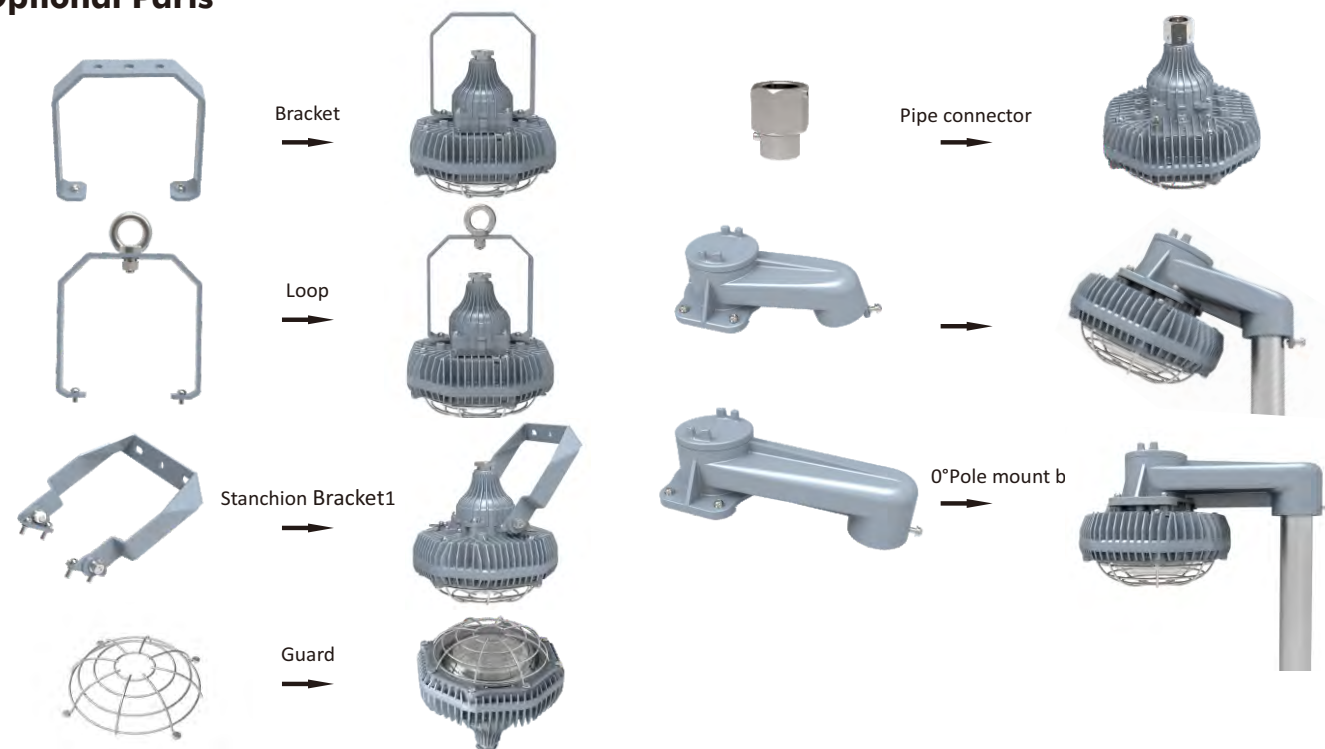
KHJ Replaceable Luminaire Models

| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 30W     | 70W       | 70W               | Up to 60% reduction in energy costs |
| 45W     | 100W~150W | 100W~150W         |                                     |
| 60W     | 150W~175W | 150W~175W         |                                     |

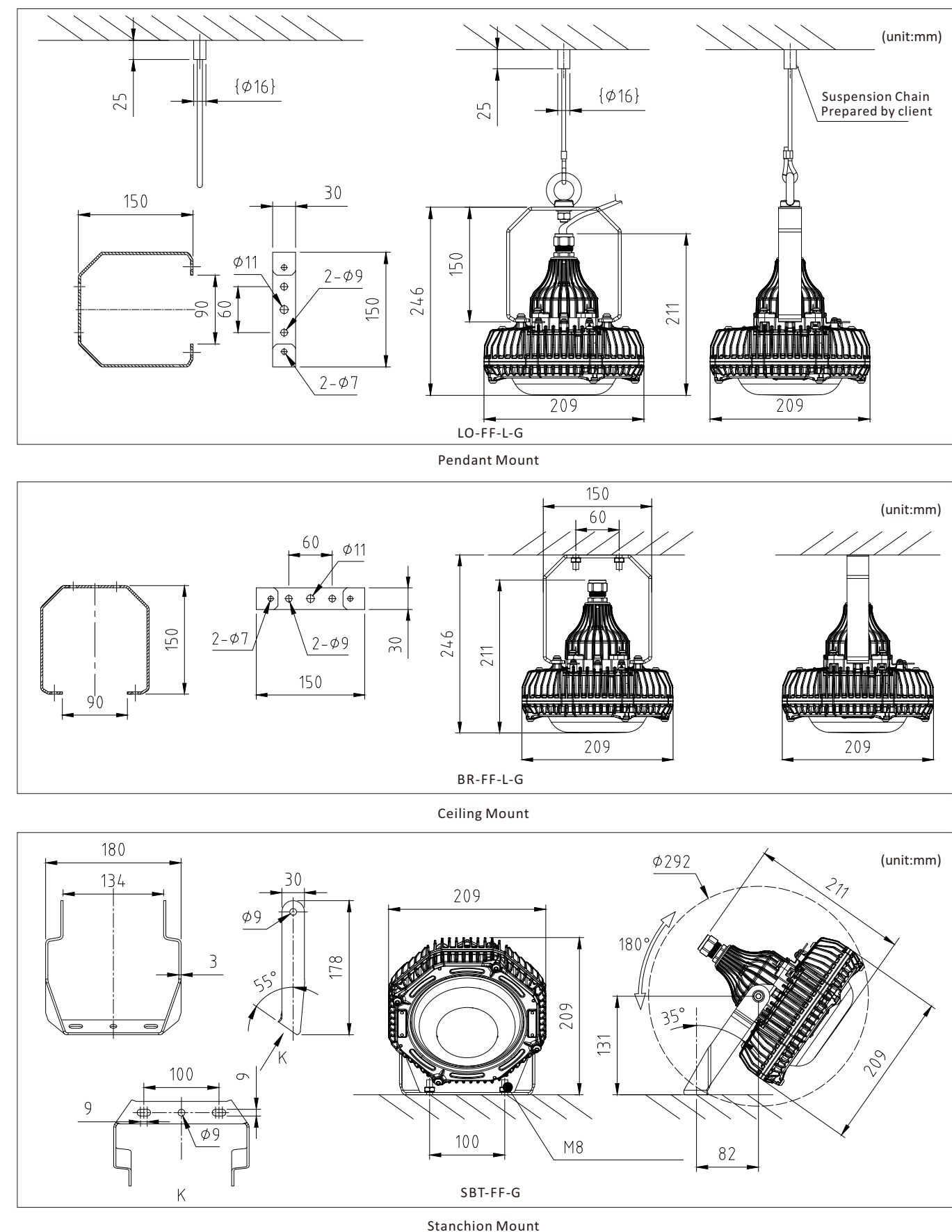
## Candela Distribution



## Optional Parts

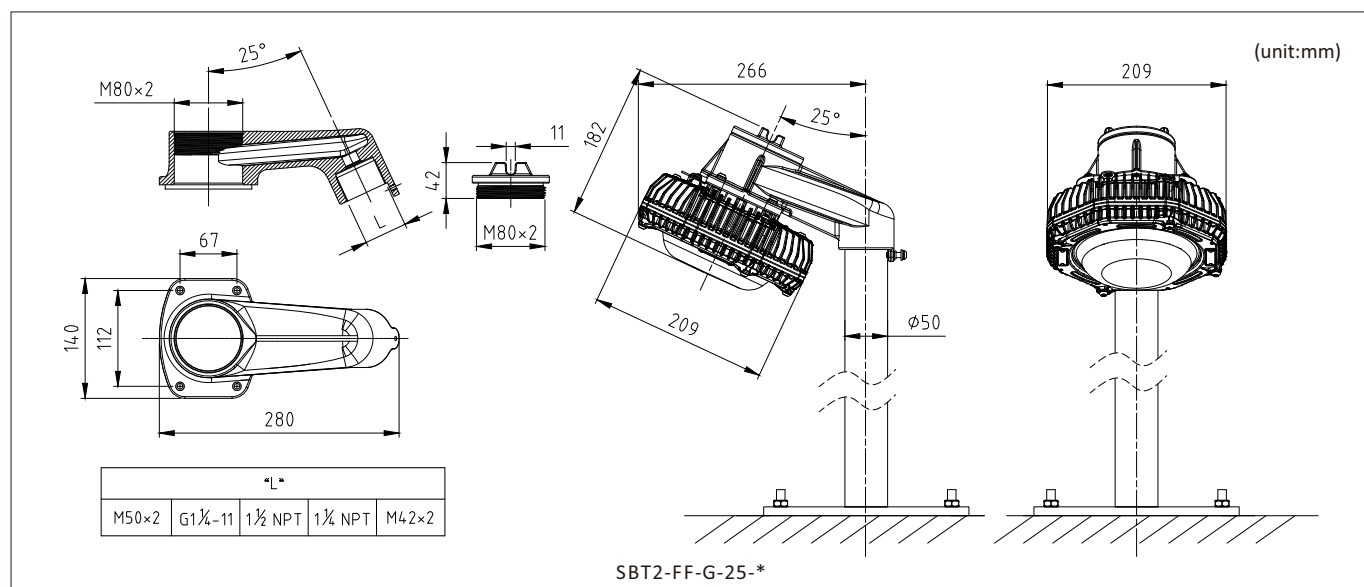


## Installation Method

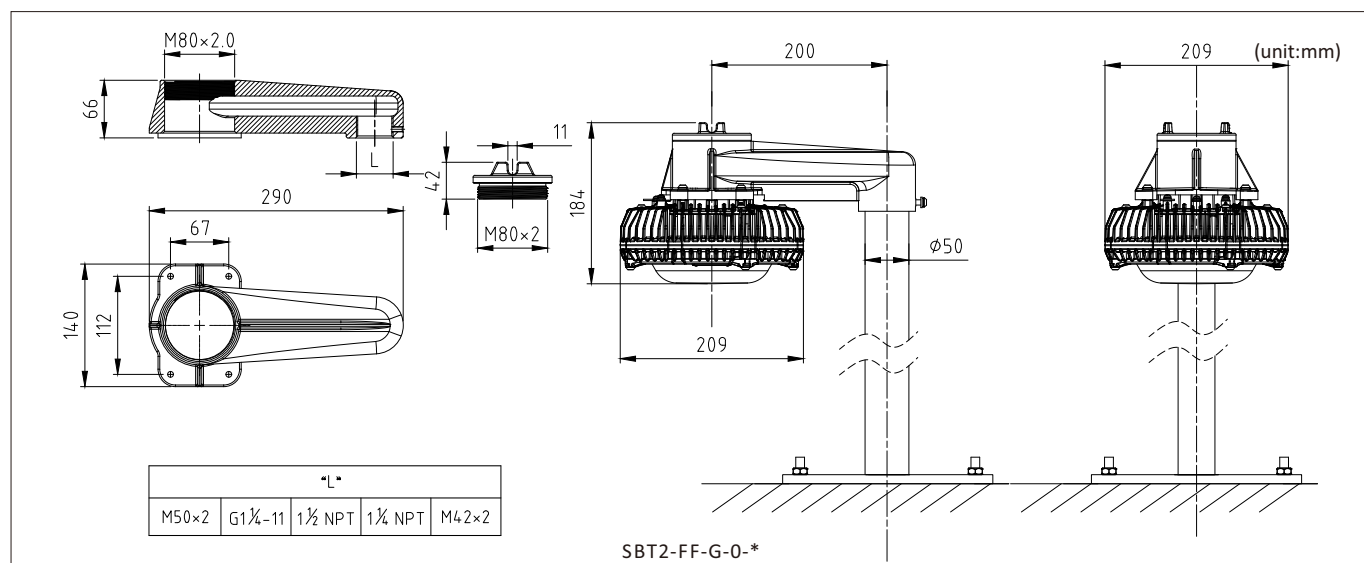




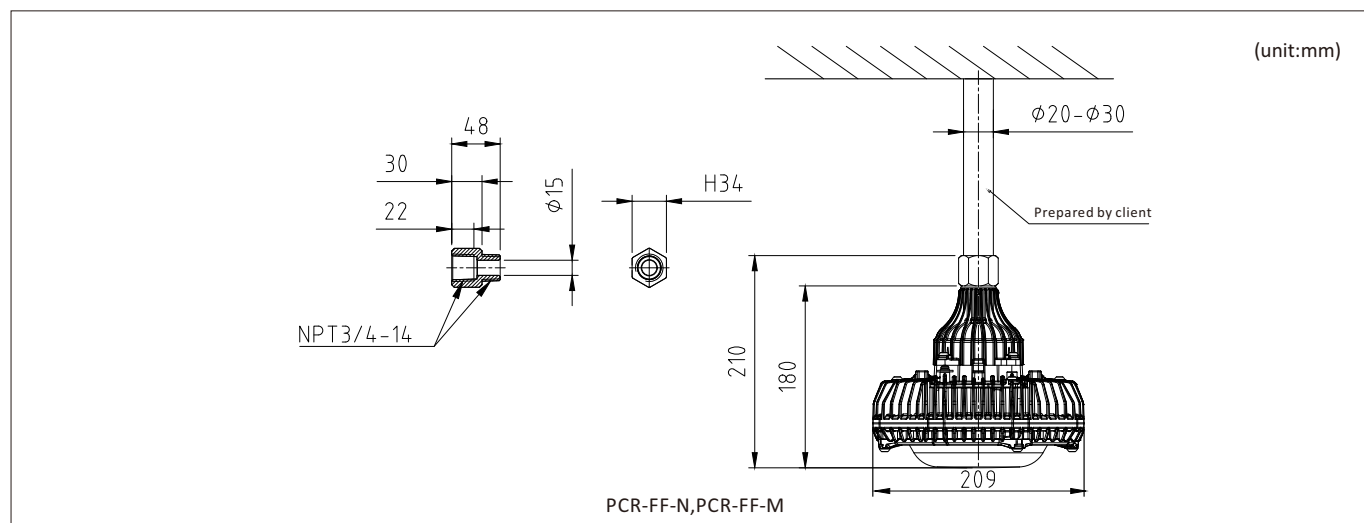
## Installation Method



Pole Mount

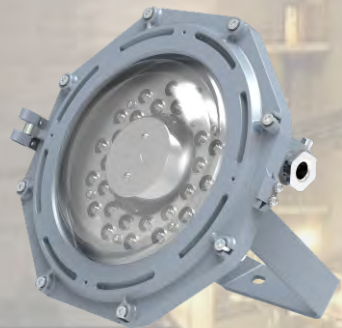


Pole Mount



Pipe Mount



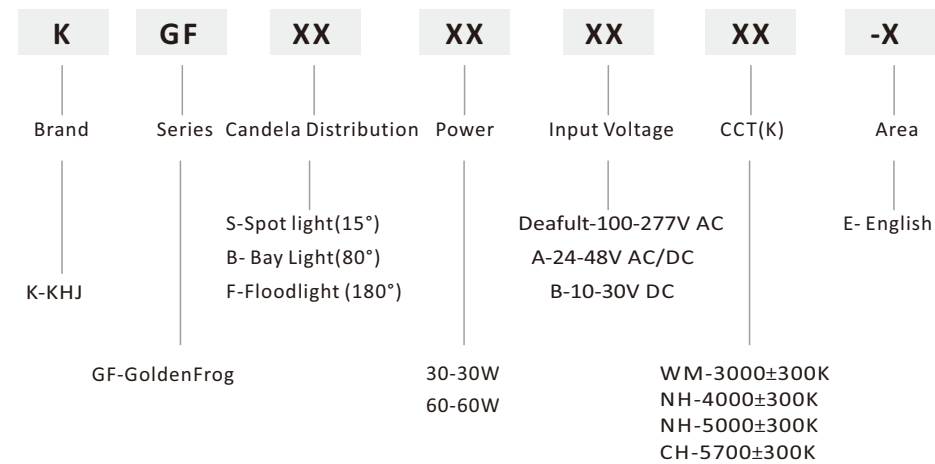


## LED Floodlight/Bay light

- *Golden Frog Series*

| Standard & Certificate:            |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                       |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                      |
| Lifespan:                          | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                 | 24-48 VAC/100-277 VAC<br>10-30 VDC/24-48 VDC/141-392 VDC                                                                                                                       |
| Power:                             | 30W/60W                                                                                                                                                                        |
| Frequency:                         | 50/60Hz                                                                                                                                                                        |
| Power Factor:                      | >0.98                                                                                                                                                                          |
| THD:                               | <10%                                                                                                                                                                           |
| Insulation Class:                  | I                                                                                                                                                                              |
| Surge Protection:                  | 5KV                                                                                                                                                                            |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                               |
| Mechanical Features:               |                                                                                                                                                                                |
| Weight:                            | 5.5Kg                                                                                                                                                                          |
| Size:                              | 311*284*190mm                                                                                                                                                                  |
| Ambient Temperature:               | -40℃-+55℃                                                                                                                                                                      |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                              |
| Cable Entries:                     | 2 x M25*1.5 (M20*1.5 is optional)                                                                                                                                              |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                    |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                   |
| Coating:                           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                 |

### Product Definition



### Ordering Information

| P/N        | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   | Beam Distribution |
|------------|----------------------------|-------------------|----------|-----|---------------|----------|-------------------|
| KGFF30WM-E | 100~277 AC<br>(141~392 DC) | 2992              | 30       | 80  | Warm white    | 3000±300 | 180°              |
| KGFF30NH-E |                            | 3307              | 30       | 70  | Natural white | 4000±300 | 180°              |
| KGFF30NH-E |                            | 3307              | 30       | 70  | Natural white | 5000±300 | 180°              |
| KGFF30CH-E |                            | 3307              | 30       | 70  | Cool white    | 5700±300 | 180°              |
| KGFB30WM-E |                            | 3780              | 30       | 70  | Warm white    | 3000±300 | 80°               |
| KGFB30NH-E |                            | 4095              | 30       | 70  | Natural white | 4000±300 | 80°               |
| KGFB30NH-E |                            | 4095              | 30       | 70  | Natural white | 5000±300 | 80°               |
| KGFB30CH-E |                            | 4095              | 30       | 70  | Cool white    | 5700±300 | 80°               |
| KGFS30WM-E |                            | 2992              | 30       | 80  | Warm white    | 3000±300 | 15°               |
| KGFS30NH-E |                            | 3307              | 30       | 70  | Natural white | 4000±300 | 15°               |
| KGFS30NH-E |                            | 3307              | 30       | 70  | Natural white | 5000±300 | 15°               |
| KGFS30CH-E |                            | 3307              | 30       | 70  | Cool white    | 5700±300 | 15°               |
| KGFF60WM-E |                            | 5670              | 60       | 80  | Warm white    | 3000±300 | 180°              |
| KGFF60NH-E |                            | 6300              | 60       | 70  | Natural white | 4000±300 | 180°              |
| KGFF60NH-E |                            | 6300              | 60       | 70  | Natural white | 5000±300 | 180°              |
| KGFF60CH-E |                            | 6300              | 60       | 70  | Cool white    | 5700±300 | 180°              |
| KGFB60WM-E |                            | 7245              | 60       | 70  | Warm white    | 3000±300 | 80°               |
| KGFB60NH-E |                            | 7560              | 60       | 70  | Natural white | 4000±300 | 80°               |
| KGFB60NH-E |                            | 7560              | 60       | 70  | Natural white | 5000±300 | 80°               |
| KGFB60CH-E |                            | 7560              | 60       | 70  | Cool white    | 5700±300 | 80°               |
| KGFS60WM-E |                            | 5670              | 60       | 80  | Warm white    | 3000±300 | 15°               |
| KGFS60NH-E |                            | 6300              | 60       | 70  | Natural white | 4000±300 | 15°               |
| KGFS60NH-E |                            | 6300              | 60       | 70  | Natural white | 5000±300 | 15°               |
| KGFS60CH-E |                            | 6300              | 60       | 70  | Cool white    | 5700±300 | 15°               |

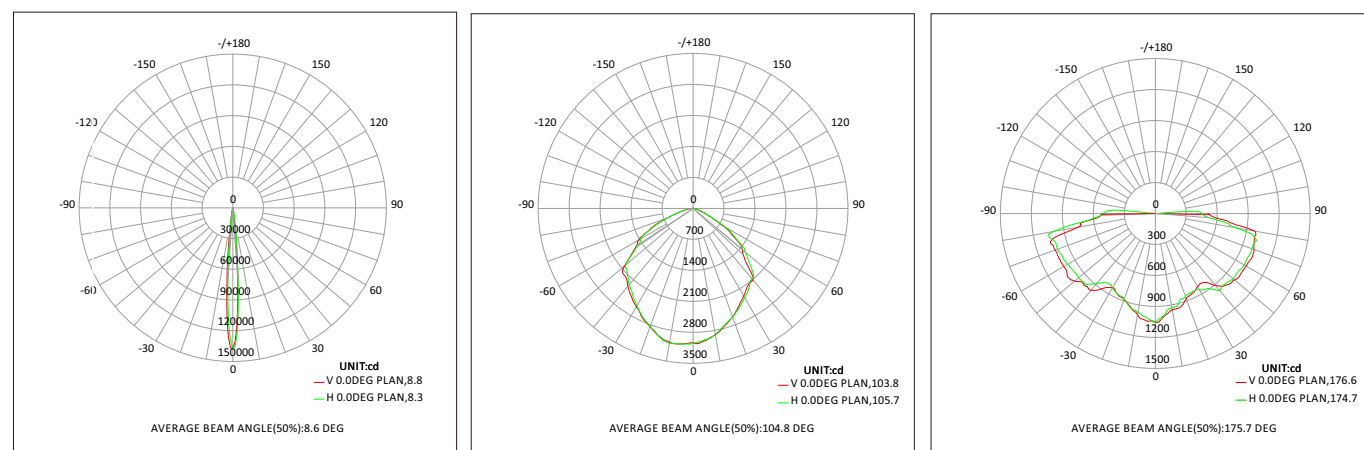
Remark: Operating voltage including Default-100~240V AC; A-24-48V AC/DC; B-10-30V DC

### KHJ Replaceable Luminaire Models

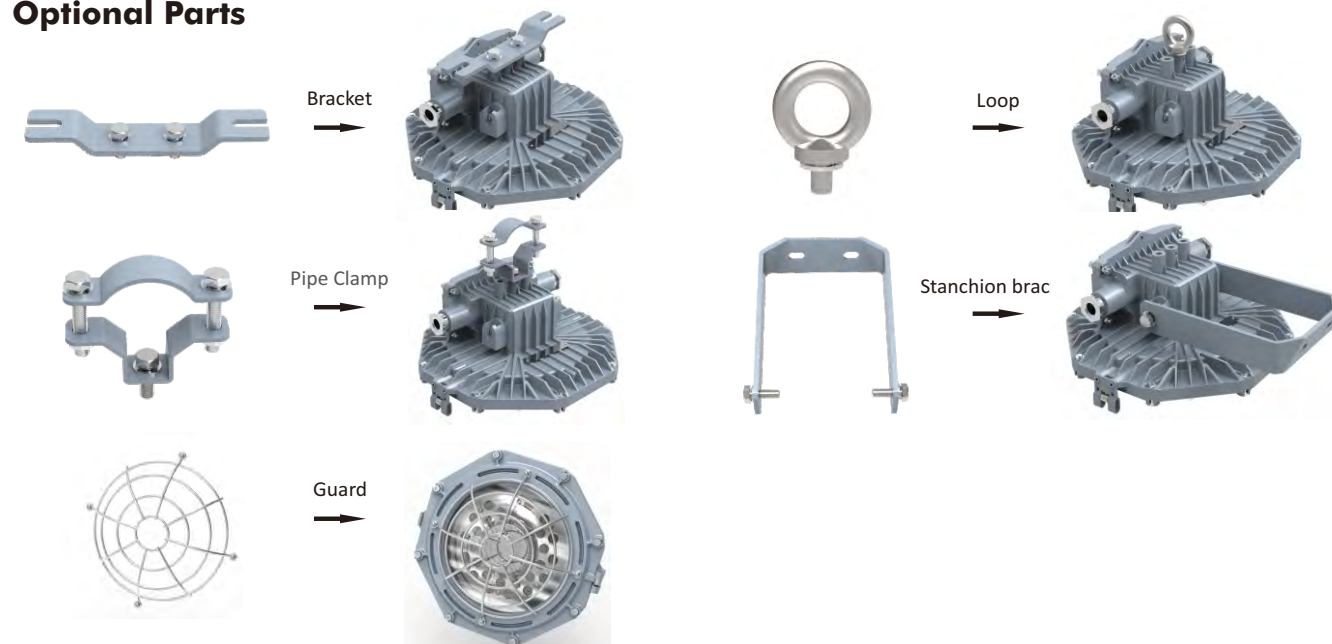
| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 30W     | 70W       | 70W               | Up to 60% reduction in energy costs |
| 45W     | 100W~150W | 100W~150W         |                                     |
| 60W     | 150W~175W | 150W~175W         |                                     |



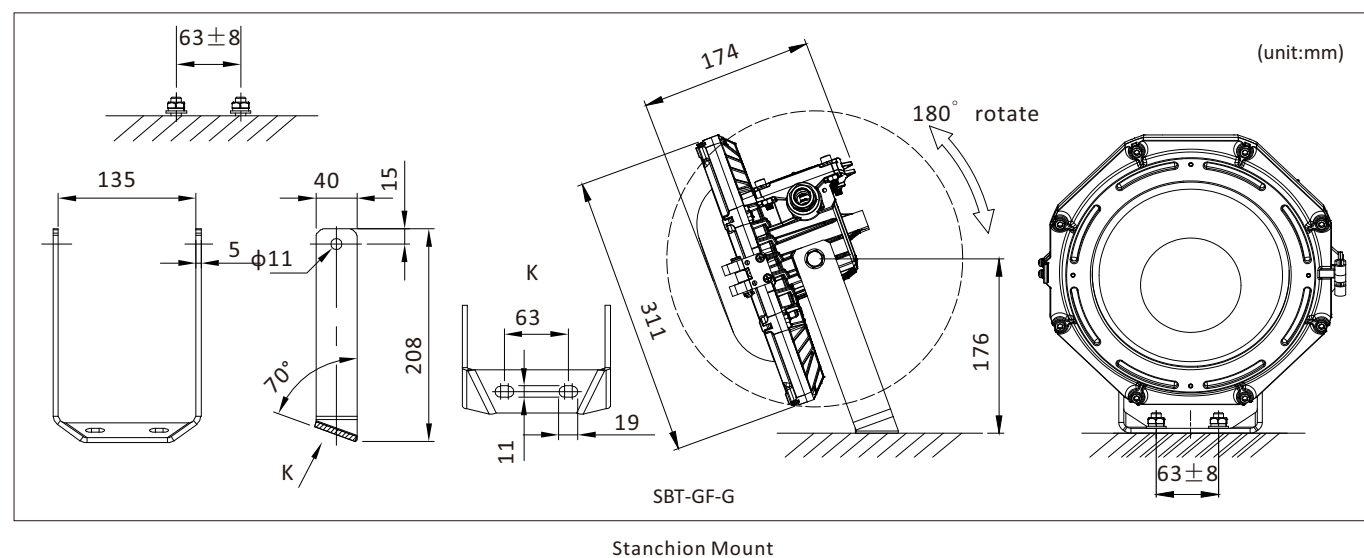
## Candela Distribution



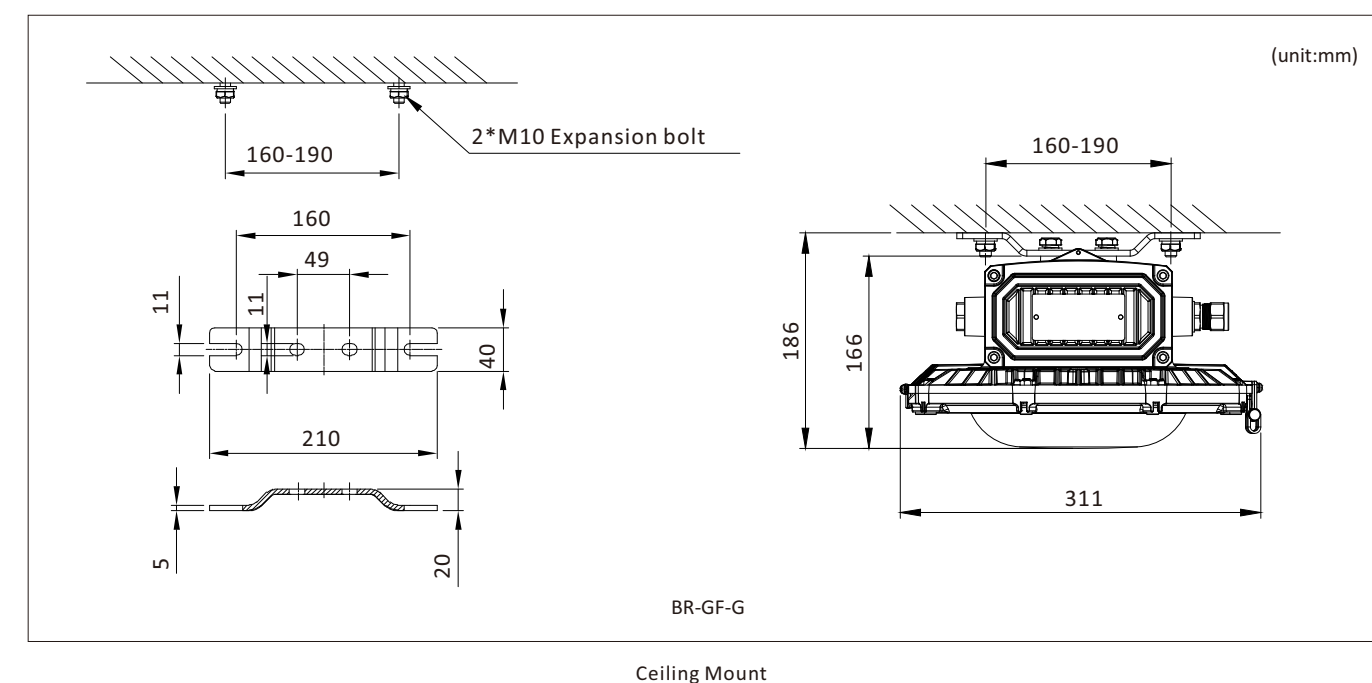
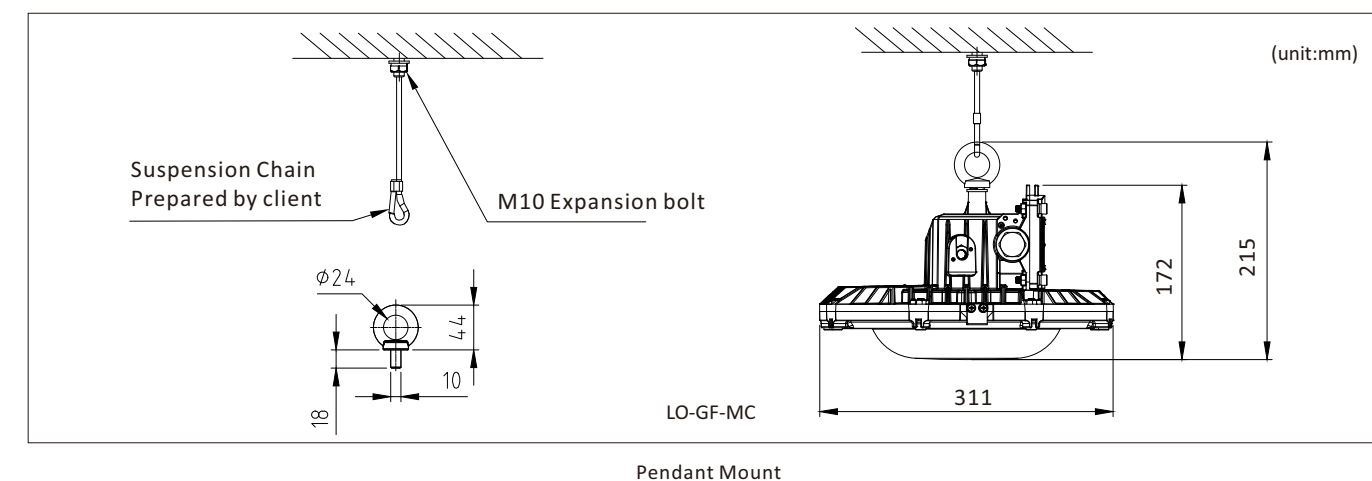
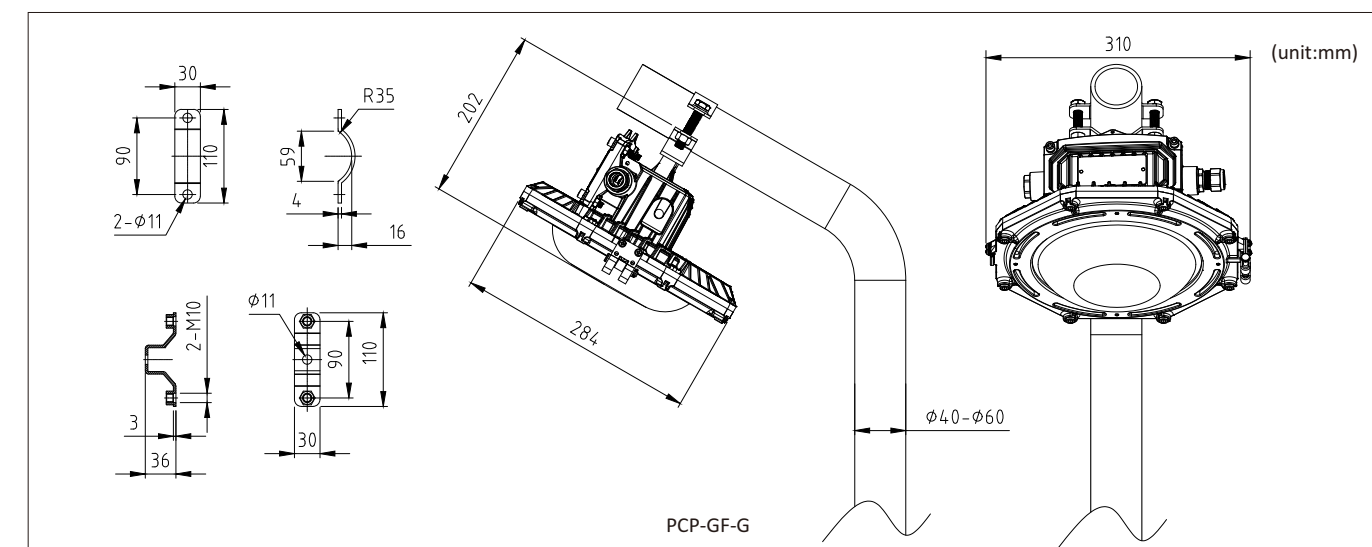
## Optional Parts

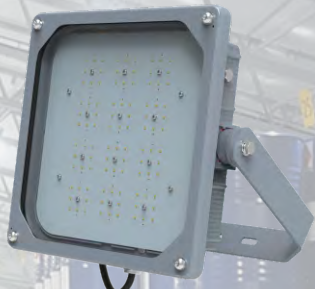


## Installation Method



## Installation Method



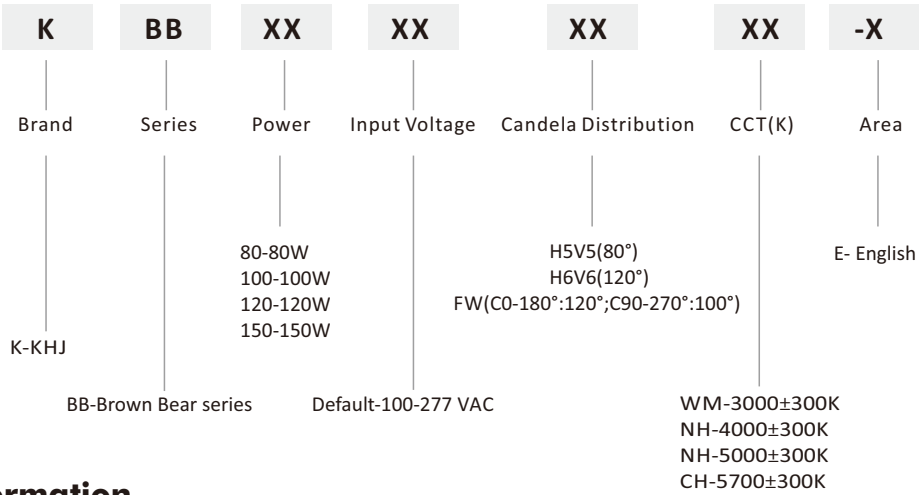


LED Floodlight/Bay light  
- Brown Bear Series

| Standard & Certificate:            |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                       |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                |
| Luminarie Efficacy:                | 142lm/W                                                                                                                                                                        |
| Lifespan:                          | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                     |
| Power:                             | 80W/100W/120W/150W                                                                                                                                                             |
| Frequency:                         | 50/60Hz                                                                                                                                                                        |
| Power Factor:                      | >0.98                                                                                                                                                                          |
| THD:                               | <10%                                                                                                                                                                           |
| Insulation Class:                  | I                                                                                                                                                                              |
| Surge Protection:                  | 5KV(80W,100W)/10KV(120W,150W)                                                                                                                                                  |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                               |
| Mechanical Features:               |                                                                                                                                                                                |
| Weight:                            | 10.5Kg                                                                                                                                                                         |
| Size:                              | 336*336*163mm                                                                                                                                                                  |
| Ambient Temperature:               | -40℃-+55℃                                                                                                                                                                      |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                              |
| Cable Entries:                     | 2 x M25*1.5 (M20*1.5 is optional)                                                                                                                                              |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                    |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                   |
| Coating:                           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                 |



Product Definition



Ordering Information

| P/N         | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   |
|-------------|----------------------------|-------------------|----------|-----|---------------|----------|
| KBB80*WM-E  | 100-277 AC<br>(141-392 DC) | 10500             | 80       | 70  | Warm white    | 3000±300 |
| KBB80*NH-E  |                            | 11340             | 80       | 70  | Natural white | 4000±300 |
| KBB80*NH-E  |                            | 11340             | 80       | 70  | Natural white | 5000±300 |
| KBB80*CH-E  |                            | 11340             | 80       | 70  | Cool white    | 5700±300 |
| KBB100*WM-E |                            | 13125             | 100      | 70  | Warm white    | 3000±300 |
| KBB100*NH-E |                            | 14175             | 100      | 70  | Natural white | 4000±300 |
| KBB100*NH-E |                            | 14175             | 100      | 70  | Natural white | 5000±300 |
| KBB100*CH-E |                            | 14175             | 100      | 70  | Cool white    | 5700±300 |
| KBB120*WM-E |                            | 15750             | 120      | 70  | Warm white    | 3000±300 |
| KBB120*NH-E |                            | 17010             | 120      | 70  | Natural white | 4000±300 |
| KBB120*NH-E |                            | 17010             | 120      | 70  | Natural white | 5000±300 |
| KBB120*CH-E |                            | 17010             | 120      | 70  | Cool white    | 5700±300 |
| KBB150*WM-E |                            | 19687             | 150      | 70  | Warm white    | 3000±300 |
| KBB150*NH-E |                            | 21262             | 150      | 70  | Natural white | 4000±300 |
| KBB150*NH-E |                            | 21262             | 150      | 70  | Natural white | 5000±300 |
| KBB150*CH-E |                            | 21262             | 150      | 70  | Cool white    | 5700±300 |

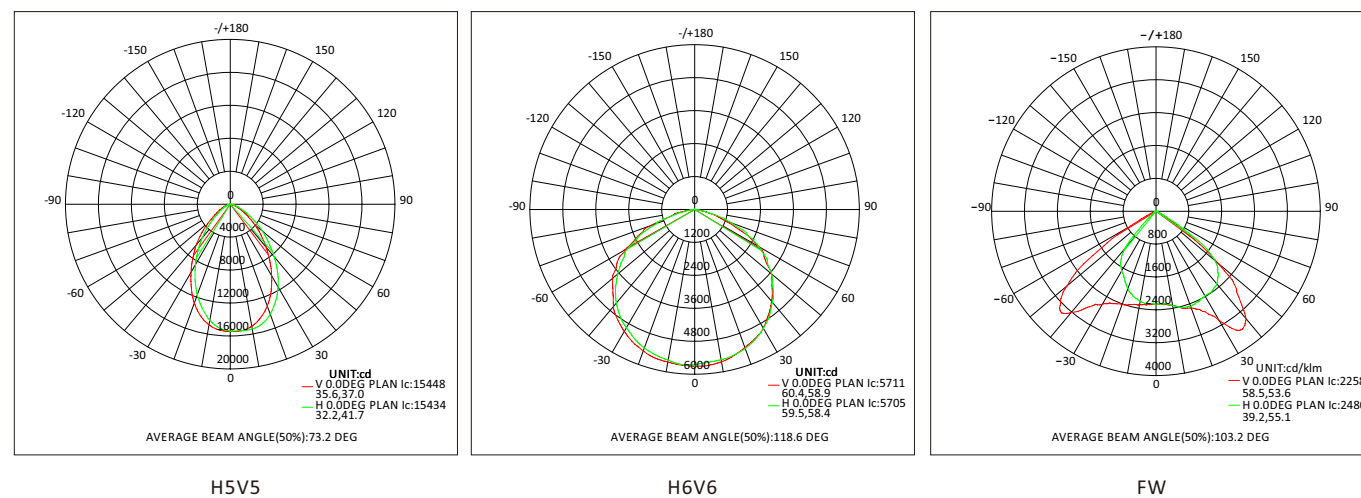
Remarks: 1.\* Stands for beam angle,including H5V5 / H6V6/FW;  
2.For Beam angle H5V5,the luminous flux will be 15% less;  
3.For Beam angle FW,the luminous flux will be 30% less;

KHJ Replaceable Luminaire Models

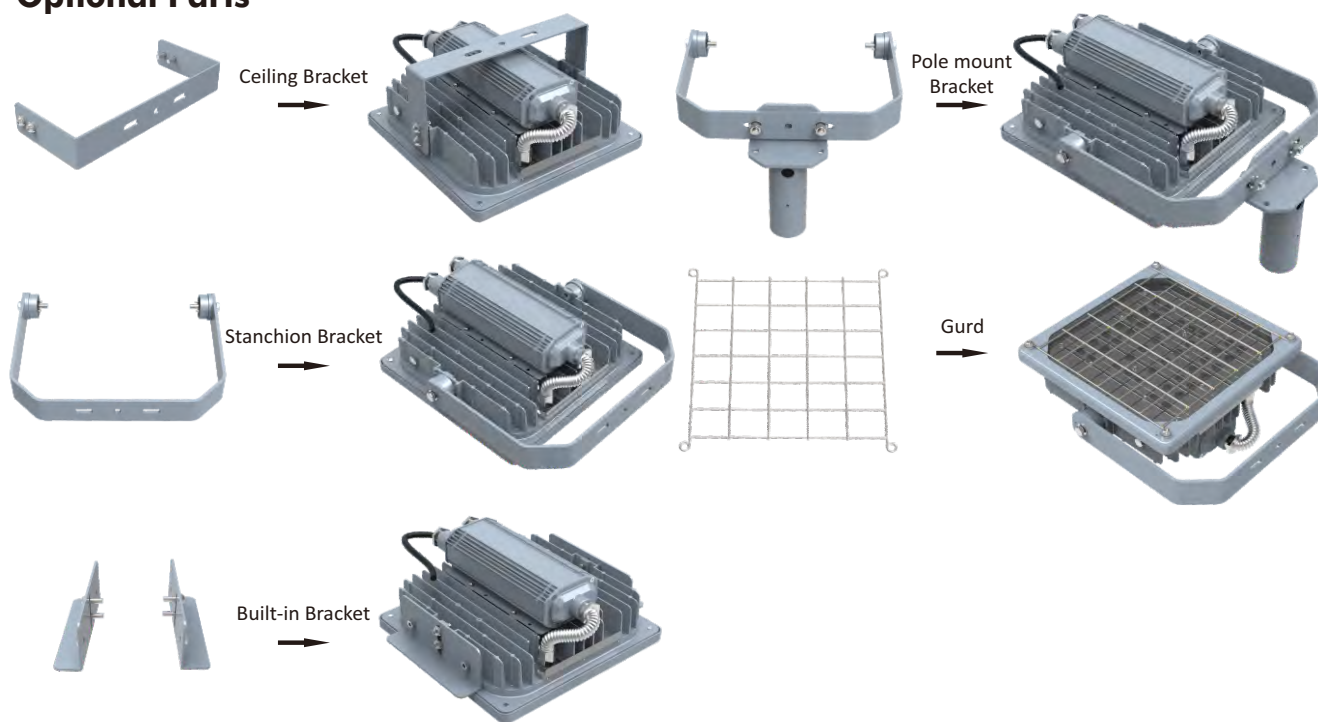
| KHJ LED | HPS       | Metal halide lame | Typical Energy Saving               |
|---------|-----------|-------------------|-------------------------------------|
| 80W     | 175W~250W | 175W~250W         | Up to 60% reduction in energy costs |
| 100W    | 250W~400W | 250W~400W         |                                     |
| 120W    | 250W~400W | 250W~400W         |                                     |
| 150W    | 400W      | 400W              |                                     |



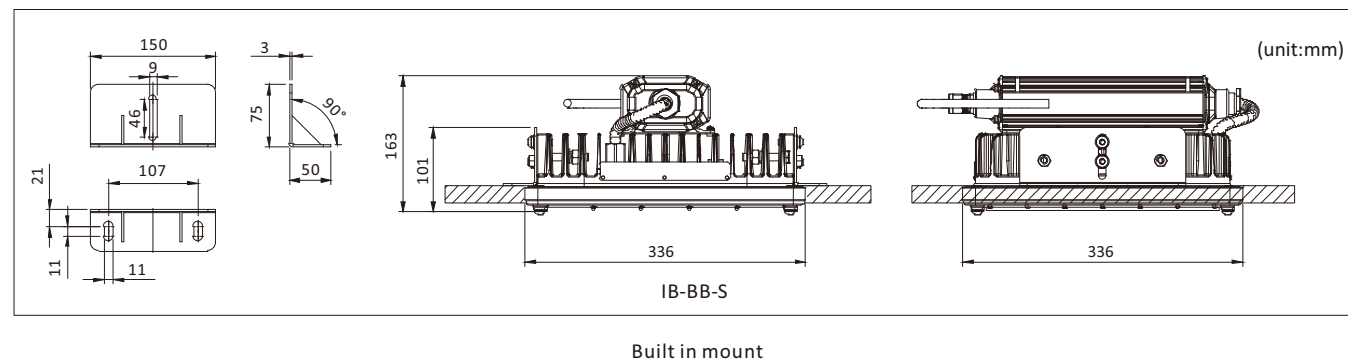
## Candela Distribution



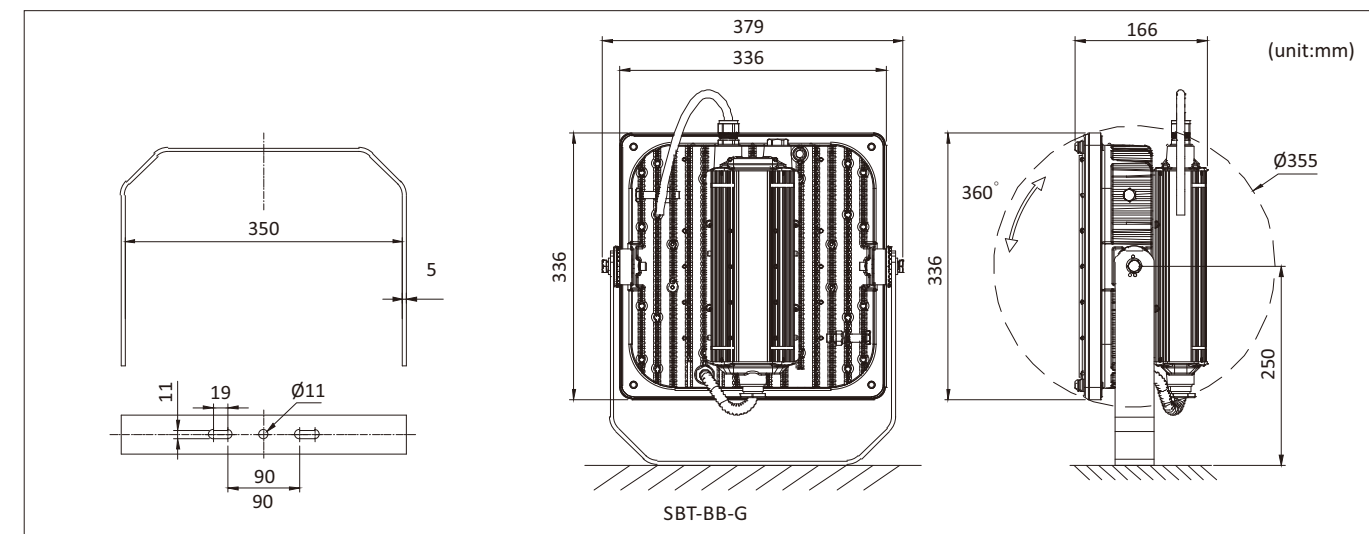
## Optional Parts



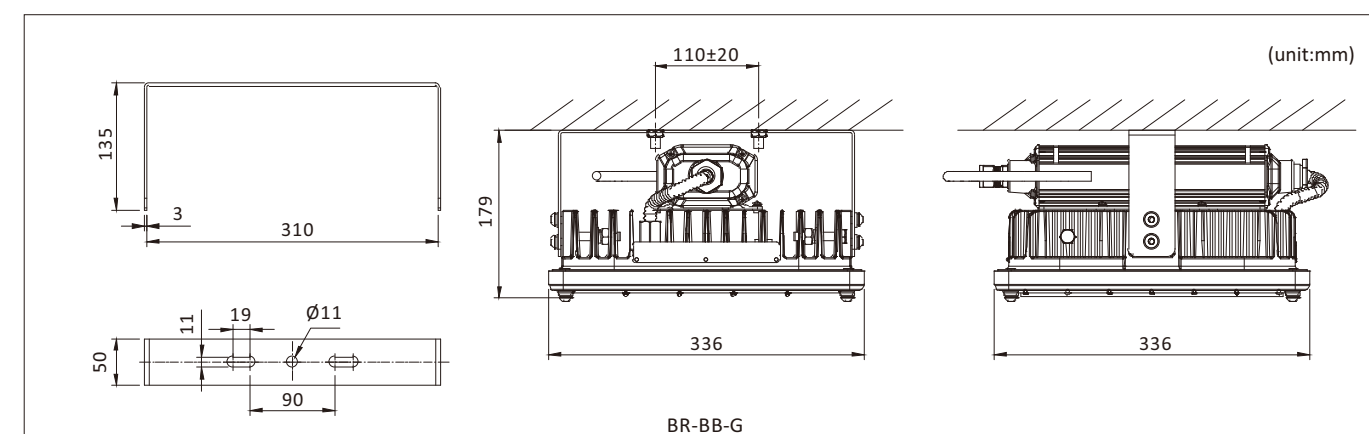
## Installation Method



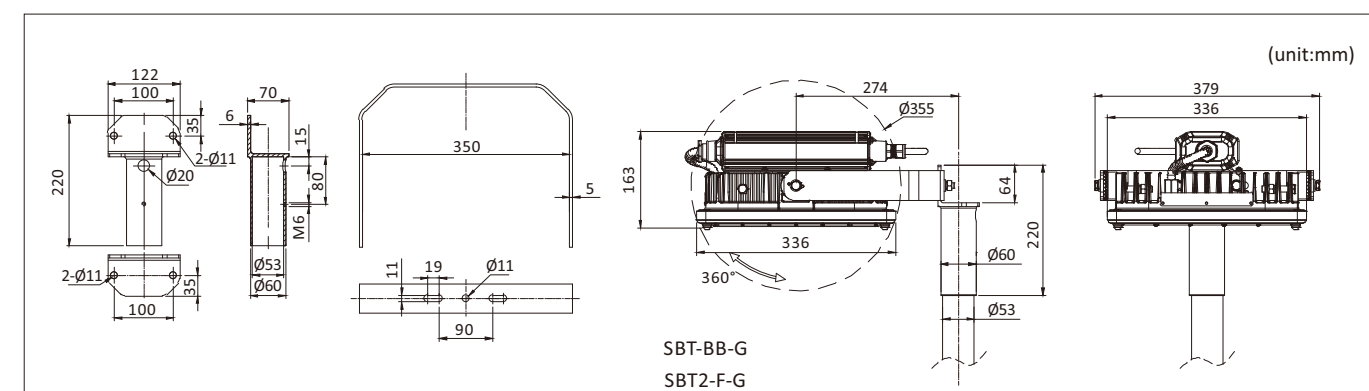
## Installation Method



Stanchion mount / Wall mount



Ceiling mount



Pole mount

LED Bay light/High bay light - SeaAnemone Series

| Standard & Certificate:            |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                       |
| Executive Standard:                | EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 60598-1, EN 60598-2-5, EN 62031, EN 62493, IEC 62321-4, IEC 62321-5, IEC 62321-6, IEC 62321-7-1, IEC 62321-7-2, IEC 62321-8 |
| Electrical & Photometric Features: |                                                                                                                                                                                |
| Luminarie Efficacy:                | 110lm/W                                                                                                                                                                        |
| Lifespan:                          | >50,000 hours                                                                                                                                                                  |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                     |
| Power:                             | 360W/480W/720W                                                                                                                                                                 |
| Frequency:                         | 50/60Hz                                                                                                                                                                        |
| Power Factor:                      | >0.98                                                                                                                                                                          |
| THD:                               | <10%                                                                                                                                                                           |
| Insulation Class:                  | I                                                                                                                                                                              |
| Surge Protection:                  | L-N 4K/LN-PE 6K                                                                                                                                                                |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                               |
| Mechanical Features:               |                                                                                                                                                                                |
| Weight:                            | 24Kg(360W/480W);27Kg(720W)                                                                                                                                                     |
| Size:                              | φ 580*210mm                                                                                                                                                                    |
| Ambient Temperature:               | -40℃-+55℃                                                                                                                                                                      |
| Connecting Terminals:              | 3*2.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                  |
| Cable Entries:                     | 1 x M16*1.5                                                                                                                                                                    |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                           |
| IP Code:                           | IP66                                                                                                                                                                           |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                    |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                   |
| Coating:                           | Epoxy powder coating                                                                                                                                                           |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                |
| Protective Cover:                  | Tempered glass,Stand 7J impact                                                                                                                                                 |

Product Definition

| K     | SL             | XX                               | XX                  | XX                                  | XX                                                           | -X         |
|-------|----------------|----------------------------------|---------------------|-------------------------------------|--------------------------------------------------------------|------------|
| Brand | Series         | Power                            | Input Voltage       | Candela Distribution                | CCT(K)                                                       | Area       |
| K-KHJ | SA-Sea Anemone | 360-360W<br>480-480W<br>720-720W | Default-100~ 277VAC | H1V1(15°)<br>H4V4(60°)<br>H5V5(80°) | WM-3000K±300<br>NH-4000K±300<br>NH-5000K±300<br>CH-5700K±300 | E- English |

Ordering Information

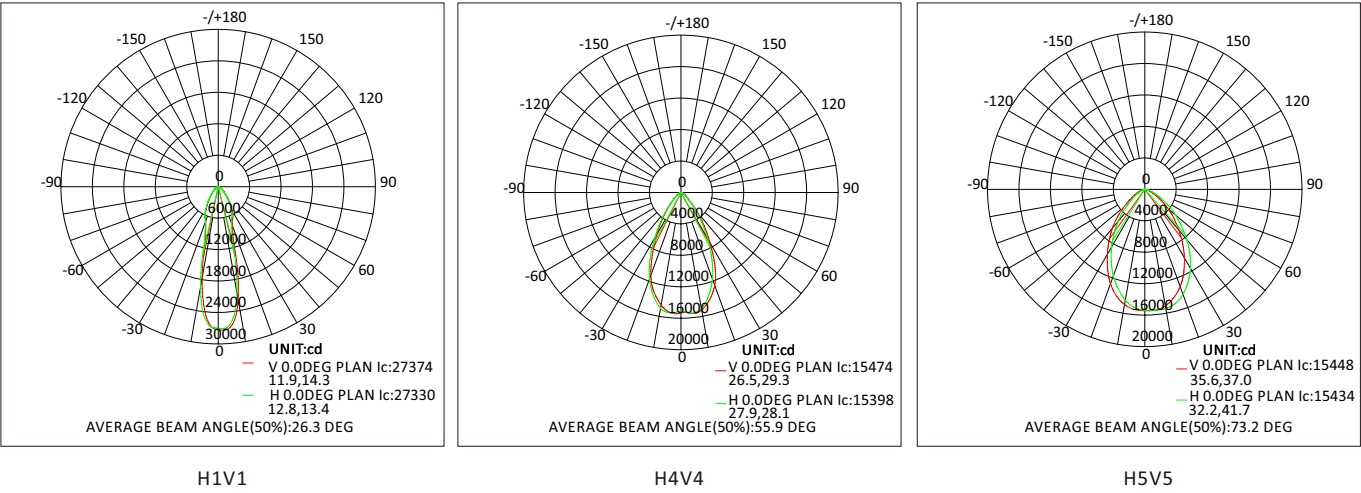
| P/N         | Operating Voltage(V)       | Luminous Flux(lm) | Power | CRI | Color Temp.   | CCT(K)   |
|-------------|----------------------------|-------------------|-------|-----|---------------|----------|
| KSA360*WM-E | 100~277 AC<br>(141~392 DC) | 36000             | 360   | 70  | Warm white    | 3000±300 |
| KSA360*NH-E |                            | 39600             | 360   | 70  | Natural white | 4000±300 |
| KSA360*NH-E |                            | 39600             | 360   | 70  | Natural white | 5000±300 |
| KSA360*CH-E |                            | 39600             | 360   | 70  | Cool white    | 5700±300 |
| KSA480*WM-E |                            | 48000             | 480   | 70  | Warm white    | 3000±300 |
| KSA480*NH-E |                            | 52800             | 480   | 70  | Natural white | 4000±300 |
| KSA480*NH-E |                            | 52800             | 480   | 70  | Natural white | 5000±300 |
| KSA480*CH-E |                            | 52800             | 480   | 70  | Cool white    | 5700±300 |
| KSA720*WM-E |                            | 72000             | 720   | 70  | Warm white    | 3000±300 |
| KSA720*NH-E |                            | 79200             | 720   | 70  | Natural white | 4000±300 |
| KSA720*NH-E |                            | 79200             | 720   | 70  | Natural white | 5000±300 |
| KSA720*CH-E |                            | 79200             | 720   | 70  | Cool white    | 5700±300 |

Remarks: 1.\*Stands for beam angle , including H1V1 / H4V4 / H5V5 .

KHJ Replaceable Luminaire Models

| KHJ LED | HPS         | Metal halide lame | Typical Energy Saving               |
|---------|-------------|-------------------|-------------------------------------|
| 360W    | 750W~1200W  | 750W~1200W        | Up to 60% reduction in energy costs |
| 480W    | 1200W~1500W | 1200W~1500W       |                                     |
| 720W    | 1500W~2400W | 1500W~2400W       |                                     |

Candela Distribution

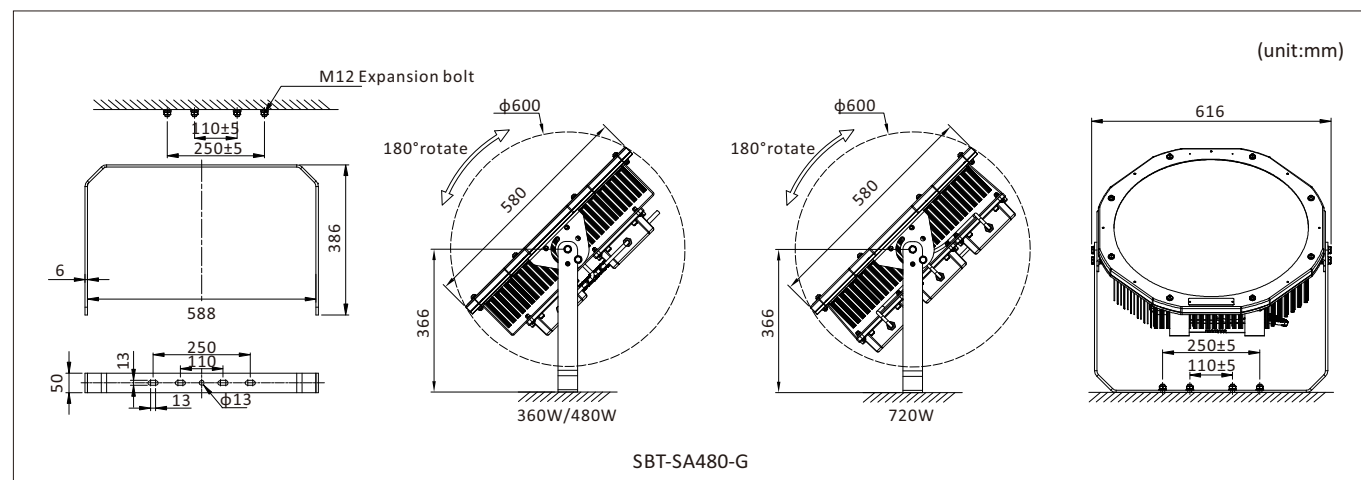




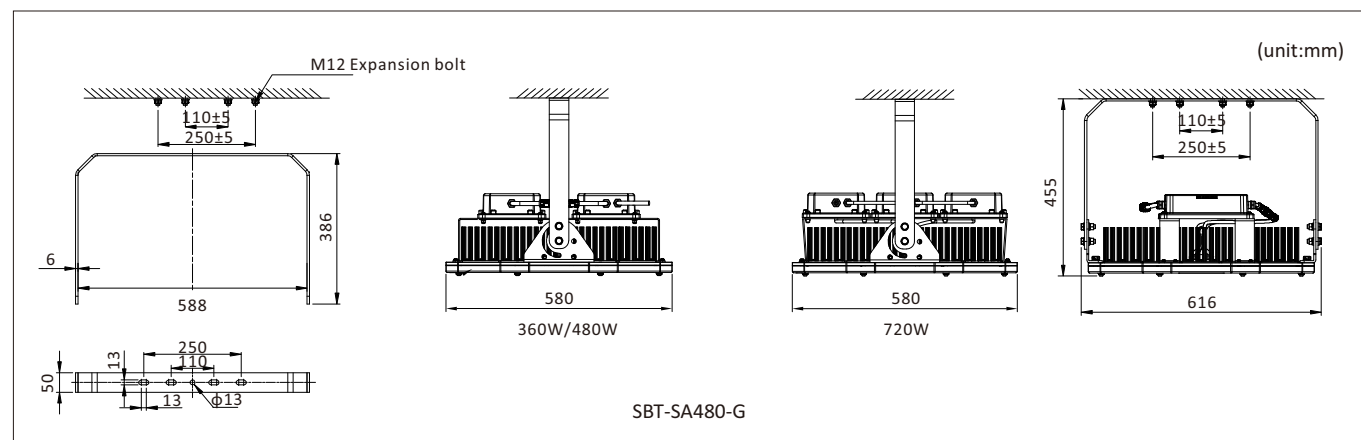
## Optional Parts



## Installation Method



Stanchion mount / Wall mount



Ceiling mount





## LED Platform light - Firefly Series

| Standard & Certificate:            |                                                                                                                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                       | CE ,RoHS                                                                                                                                                                          |
| Executive Standard:                | EN 60079-0:2018, EN 60079-1:2014, EN 60079-7:2015<br>EN 60079-11:2012, EN 60079-18:2015+A1:2017, EN 60079-28:2015<br>EN 60079-31:2014, IEC 60079-0:2018, IEC 60079-7:2015+A1:2018 |
| Electrical & Photometric Features: |                                                                                                                                                                                   |
| Luminarie Efficacy:                | 136.5lm/W                                                                                                                                                                         |
| Lifespan:                          | >50,000 hours                                                                                                                                                                     |
| Operating Voltage:                 | 100-277 VAC<br>141-392 VDC                                                                                                                                                        |
| Power:                             | 12W/24W/35W                                                                                                                                                                       |
| Frequency:                         | 50/60Hz                                                                                                                                                                           |
| Power Factor:                      | >0.98                                                                                                                                                                             |
| THD:                               | <10%                                                                                                                                                                              |
| Insulation Class:                  | I                                                                                                                                                                                 |
| Surge Protection:                  | 5KV                                                                                                                                                                               |
| LED Driver:                        | Over voltage protection/short circuit protection                                                                                                                                  |
| Mechanical Features:               |                                                                                                                                                                                   |
| Weight:                            | 2.4Kg(Junction box), 2.6Kg(Stanchion junction box)                                                                                                                                |
| Size:                              | φ 136*210mm(Junction box), φ 136*194mm(Stanchion junction box)                                                                                                                    |
| Ambient Temperature:               | -40℃~+55℃                                                                                                                                                                         |
| Connecting Terminals:              | 3*1.0-4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                 |
| Cable Entries:                     | 1 x M25*1.5 (M20*1.5 is optional)                                                                                                                                                 |
| Earthing Protection:               | M4 (Internal & external earth bolts)                                                                                                                                              |
| IP Code:                           | IP66                                                                                                                                                                              |
| Enclosure Maternal:                | Die-casting aluminium alloy                                                                                                                                                       |
| Enclosure Colour:                  | Grey RAL7040                                                                                                                                                                      |
| Coating:                           | Epoxy powder coating                                                                                                                                                              |
| Exposed Fastener:                  | Stainless steel                                                                                                                                                                   |
| Protective Cover:                  | Tempered glass, Stand 7J impact                                                                                                                                                   |

## Product Definition

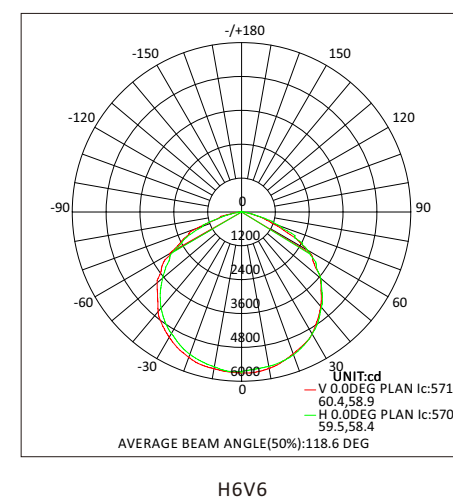
| K     | FIF         | XX                         | XX                  | XX                   | XX                                                           | -X                                          | -X         |
|-------|-------------|----------------------------|---------------------|----------------------|--------------------------------------------------------------|---------------------------------------------|------------|
| Brand | Series      | Power                      | Input Voltage       | Candela Distribution | CCT(K)                                                       | Type                                        | Area       |
| K-KHJ | FIF-FireFly | 12-12W<br>24-24W<br>35-35W | Default-100-277 VAC | H6V6(120°)           | WM-3000±300K<br>NH-4000±300K<br>NH-5000±300K<br>CH-5700±300K | J-Junction box<br>J1-Stanchion junction box | E- English |

## Ordering Information

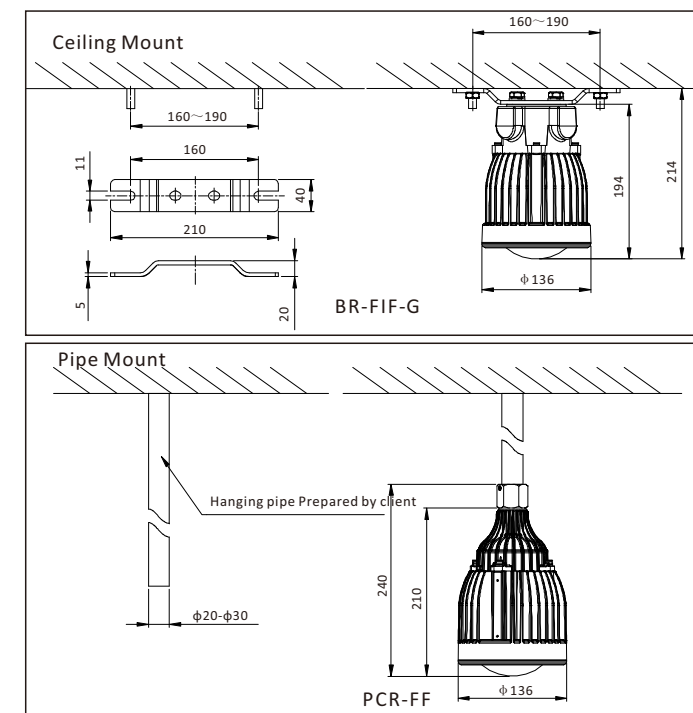
| P/N              | Operating Voltage(V)       | Luminous Flux(lm) | Power(W) | CRI | Color Temp.   | CCT(K)   |
|------------------|----------------------------|-------------------|----------|-----|---------------|----------|
| KFIF12H6V6WM-*-E | 100~277 AC<br>(141~392 DC) | 1512              | 12       | 80  | Warm white    | 3000±300 |
| KFIF12H6V6NH-*-E |                            | 1638              | 12       | 70  | Natural white | 4000±300 |
| KFIF12H6V6NH-*-E |                            | 1638              | 12       | 70  | Natural white | 5000±300 |
| KFIF12H6V6CH-*-E |                            | 1638              | 12       | 70  | Cool white    | 5700±300 |
| KFIF24H6V6WM-*-E |                            | 3024              | 24       | 80  | Warm white    | 3000±300 |
| KFIF24H6V6NH-*-E |                            | 3276              | 24       | 70  | Natural white | 4000±300 |
| KFIF24H6V6NH-*-E |                            | 3276              | 24       | 70  | Natural white | 5000±300 |
| KFIF24H6V6CH-*-E |                            | 3276              | 24       | 70  | Cool white    | 5700±300 |
| KFIF35H6V6WM-*-E |                            | 4410              | 35       | 80  | Warm white    | 3000±300 |
| KFIF35H6V6NH-*-E |                            | 4778              | 35       | 70  | Natural white | 4000±300 |
| KFIF35H6V6NH-*-E |                            | 4778              | 35       | 70  | Natural white | 5000±300 |
| KFIF35H6V6CH-*-E |                            | 4778              | 35       | 70  | Cool white    | 5700±300 |

Remarks:\*Stands for product type,including J,J1

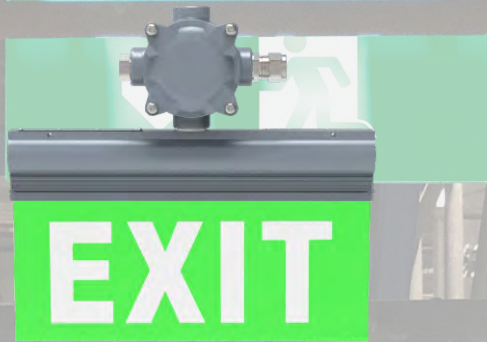
## Candela Distribution



## Installation Method(unit:mm)



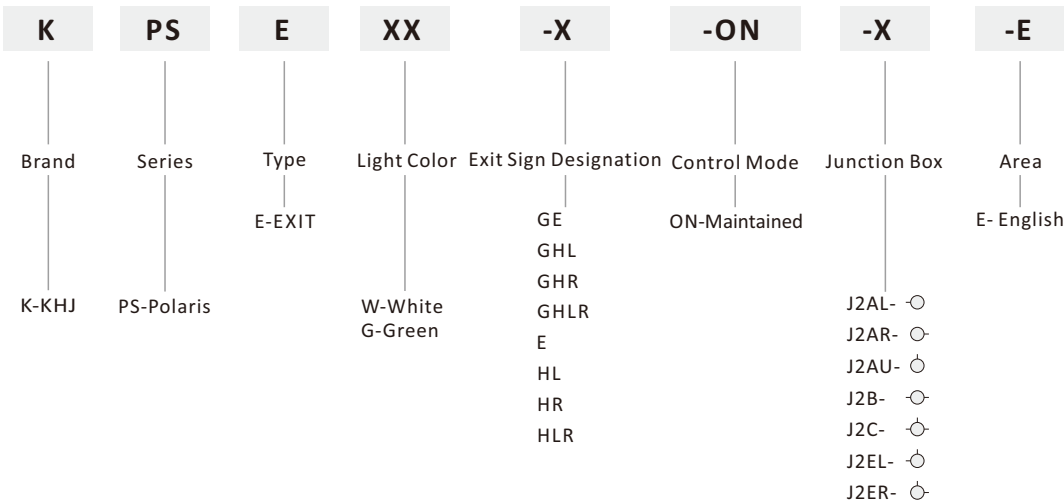




LED Emergency Exit Light  
- *Polaris Series*

| Standard & Certificate:                    |                                                                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certificate:                               | CE RoHS                                                                                                                                                                                     |
| Executive Standard:                        | EN 60079-0:2018, EN 60079- 1:2014, EN 60079-7:2015+A1:2018<br>EN 60079-11:2012, EN 60079-18:2015+A1:2017, EN 60079-28:2015<br>EN 60079-31:2014., IEC 60079-0:2018, IEC 60079-7:2015+A1:2018 |
| Electrical & Photometric Features:         |                                                                                                                                                                                             |
| Lifespan:                                  | >50,000 hours                                                                                                                                                                               |
| Operating Voltage:                         | 100-277 VAC, 141-392 VDC                                                                                                                                                                    |
| Power:                                     | Normal:6W;Emergency:0.5W                                                                                                                                                                    |
| Battery Rated Capacity:                    | 2.6Ah                                                                                                                                                                                       |
| Battery Type:                              | Ni-MH                                                                                                                                                                                       |
| Rated Lifespan:                            | 300 Cycles                                                                                                                                                                                  |
| Battery Back Up:                           | 180 Min                                                                                                                                                                                     |
| Battery Charge Time:(after full discharge) | 12 h                                                                                                                                                                                        |
| Frequency:                                 | 50/60Hz                                                                                                                                                                                     |
| Power Factor:                              | >0.98                                                                                                                                                                                       |
| Insulation Class:                          | I                                                                                                                                                                                           |
| LED Driver:                                | Over voltage protection/short circuit protection                                                                                                                                            |
| Mechanical Features:                       |                                                                                                                                                                                             |
| Weight:                                    | 3.1Kg                                                                                                                                                                                       |
| Size:                                      | 337*310*76mm                                                                                                                                                                                |
| Ambient Temperature:                       | -20℃~+55℃                                                                                                                                                                                   |
| Connecting Terminals:                      | 3X1.0~4.0mm <sup>2</sup> (L+N+PE)                                                                                                                                                           |
| Cable Entries:                             | 1 x NPT 3/4" (M20*1.5, M25*1.5 are optional)                                                                                                                                                |
| Earthing Protection:                       | M4 (Internal & external earth bolts)                                                                                                                                                        |
| IP Code:                                   | IP54                                                                                                                                                                                        |
| Enclosure Material:                        | Copper-free Aluminium                                                                                                                                                                       |
| Enclosure Colour:                          | Orange, RAL2011(optional grey RAL7040)                                                                                                                                                      |
| Coating:                                   | Epoxy powder coating                                                                                                                                                                        |
| Exposed Fastener:                          | Stainless steel                                                                                                                                                                             |
| Protective Cover:                          | Tempered glass, Stand 4J impact                                                                                                                                                             |

Product Definition



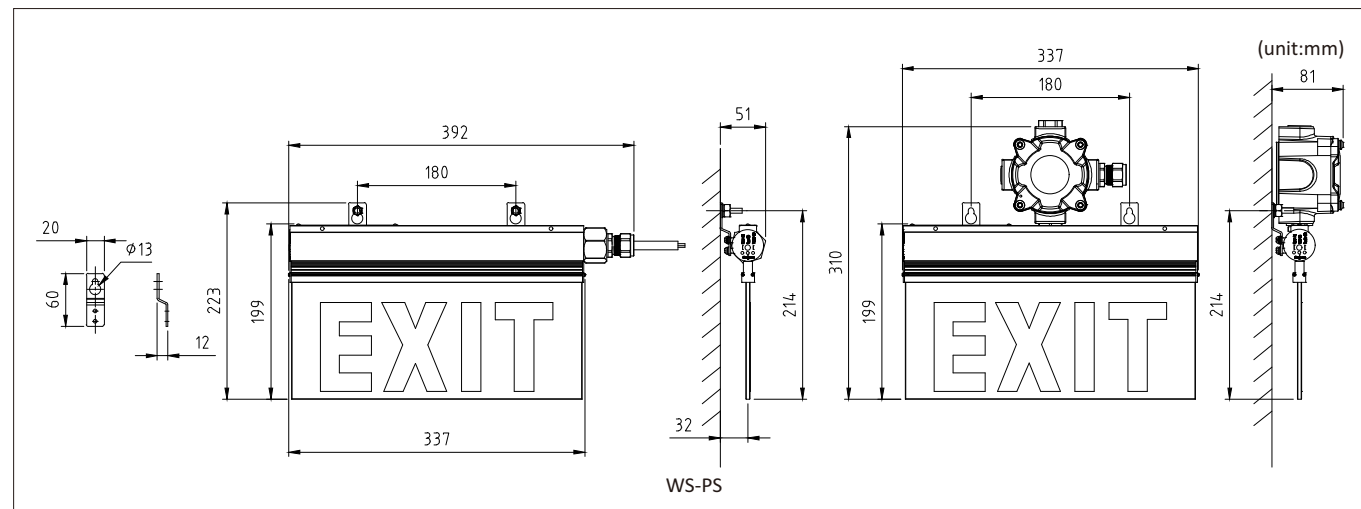
Ordering Information

| P/N               | Operating Voltage(V)       | Light Color | Exit Sign Designation |
|-------------------|----------------------------|-------------|-----------------------|
| KPSEW-GE-ON-*-E   | 100-277 AC<br>(141-392 DC) | White       |                       |
| KPSEW-GHL-ON-*-E  |                            |             |                       |
| KPSEW-GHR-ON-*-E  |                            |             |                       |
| KPSEW-GHLR-ON-*-E |                            |             |                       |
| KPSEG-E-ON-*-E    |                            | Green       |                       |
| KPSEG-HL-ON-*-E   |                            |             |                       |
| KPSEG-HR-ON-*-E   |                            |             |                       |
| KPSEG-HLR-ON-*-E  |                            |             |                       |

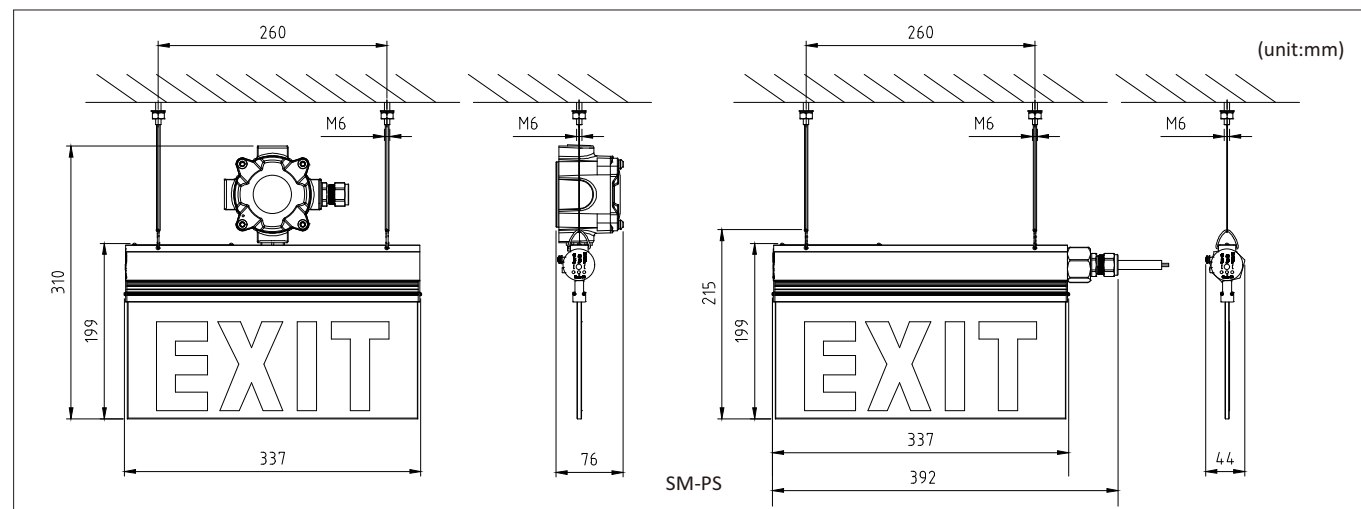
Remarks:\* Stands for junction box ,including J2AL,J2AR,J2AU,J2B,J2C,J2EL,J2ER.



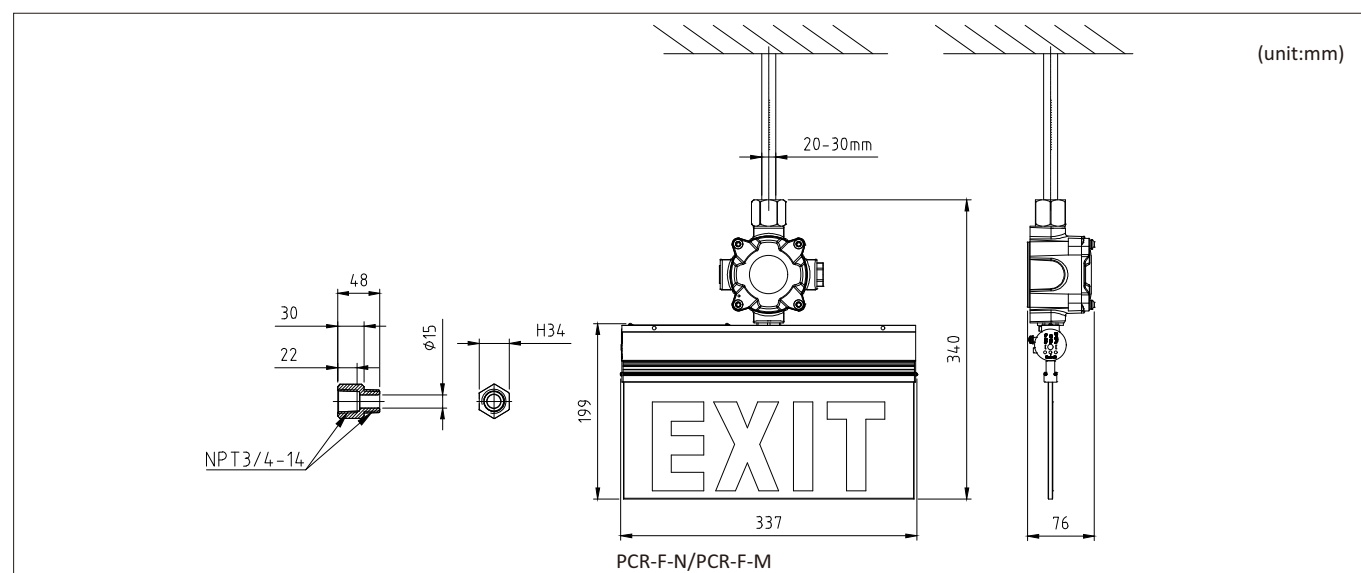
## Installation Method



wall mount



Pendant Mount



Pipe mount







# Explosion proof Electrical Apparatus

| Product Name                                           | Product Series | Product Classification | Code |   |   |   | Group |        |     |      |      |  | ATEX/IECEX |         |        |         |        |         | ATEX | IECEX |
|--------------------------------------------------------|----------------|------------------------|------|---|---|---|-------|--------|-----|------|------|--|------------|---------|--------|---------|--------|---------|------|-------|
|                                                        |                |                        | d    | e | I | t | IIB   | IIB+H2 | IIC | IIIB | IIIC |  | Zone 0     | Zone 20 | Zone 1 | Zone 21 | Zone 2 | Zone 22 |      |       |
| Explosion-proof Terminal Box                           | KBH            | KBH02-S                |      | ● | ● | ● |       |        | ●   |      | ●    |  | ●          |         | ●      | ●       | ●      | ●       | ●    | ●     |
|                                                        |                | KBH03                  |      | ● | ● | ● |       |        | ●   |      | ●    |  | ●          |         | ●      | ●       | ●      | ●       | ●    | ●     |
|                                                        |                | KBH05                  |      | ● | ● | ● |       |        | ●   |      | ●    |  | ●          |         | ●      | ●       | ●      | ●       | ●    | ●     |
|                                                        |                | KBH31<br>KBH32         | ●    |   | ● | ● |       |        | ●   |      | ●    |  | ●          |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Control Station                        | KBX            | KBX02                  | ●    | ● |   | ● |       |        | ●   |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
|                                                        |                | KBX03                  | ●    | ● |   | ● |       |        | ●   |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
|                                                        |                | KBX05                  | ●    | ● |   | ● |       |        | ●   |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Distribution Box                       | KDP            | KDP03                  | ●    |   | ● | ● | ●     | ●      |     |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Circuit Breaker                        |                | KDP05                  | ●    |   |   | ● | ●     |        |     |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Motor Starters                         |                | KDP06                  | ●    |   |   | ● | ●     |        |     |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Control Box                            |                | KDP07                  | ●    |   | ● | ● | ●     | ●      |     |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Terminal Box                           |                | KDP11                  | ●    |   |   | ● | ●     |        |     |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Plug And Sockets                       | KBSP01         | /                      | ●    |   |   | ● |       |        | ●   |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    | ●     |
| Explosion-proof Junction Box<br>Explosion-Proof Switch | KVH            | /                      | ●    |   |   | ● |       |        | ●   |      | ●    |  |            |         | ●      | ●       | ●      | ●       | ●    |       |



## Explosion - proof Terminal Box

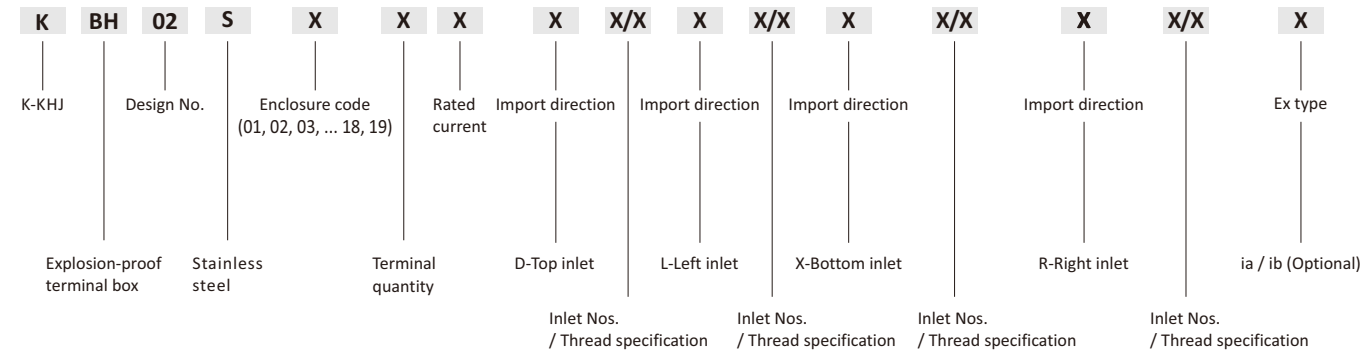
### - KBH02-S Series

#### Application and Features

- Explosion proof certificates  
- ATEX : Pending  
- IECEx : Pending
- Application in hazardous area  
Zone 0,  
Zone 1 and Zone 2,  
Zone 21 and Zone 22
- Stainless steel enclosure, three types of explosion protection(Ex eb, Ex ia, Ex tb IIIC), which can meet the requirements of various places.
- There are 19 types of enclosure specifications, the current, the number of terminals, the size and direction of the entry can be customized upon request.
- Stainless steel exposed fastener, anti dropping structure, easy installation and maintenance.

- Ex II 2 G Ex eb IIC T6/T5/T4 Gb
- Ex II 1 G Ex ia IIC T6 Ga
- Ex II 2 G Ex ia IIC T6 Gb
- Ex II 2 D Ex tb IIIC T80/T95/T130°C Db

#### Product Definition



**Note:** Please confirm the quantity, specification, and direction (position) of cable entry holes, if that is needed.  
No cable gland as default when delivery, which is supplied by users.  
Pls specify the required quantity, specification and position of the cable entries.



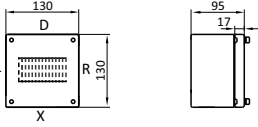
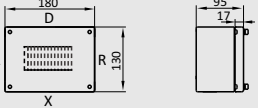
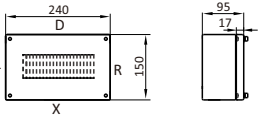
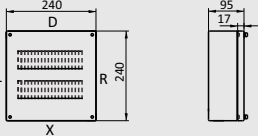
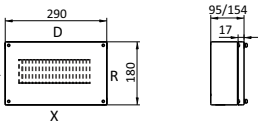
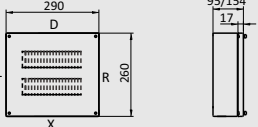
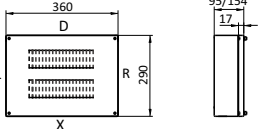
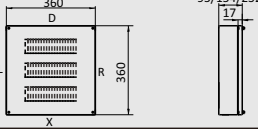
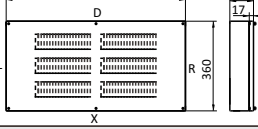
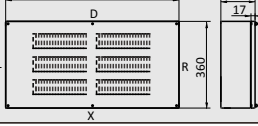
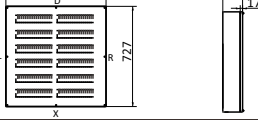
#### Technical Parameter

|                      |             |                                                                                                          |                    |                  |                  |                   |                              |                   |                   |  |
|----------------------|-------------|----------------------------------------------------------------------------------------------------------|--------------------|------------------|------------------|-------------------|------------------------------|-------------------|-------------------|--|
| Ex marking           | Gas         | Ex II 2 G Ex eb IIC T6/T5/T4 Gb                                                                          |                    |                  |                  |                   | Ex eb IIC T6/T5/T4 Gb        |                   |                   |  |
|                      |             | Ex II 1 G Ex ia IIC T6 Ga                                                                                |                    |                  |                  |                   | Ex ia IIC T6 Ga              |                   |                   |  |
|                      |             | Ex II 2 G Ex ib IIC T6 Gb                                                                                |                    |                  |                  |                   | Ex ib IIC T6 Gb              |                   |                   |  |
|                      | Dust        | Ex II 2 D Ex tb IIIC T80/T95/T130°C Db                                                                   |                    |                  |                  |                   | Ex tb IIIC T80/T95/T130°C Db |                   |                   |  |
| Executive Standard   |             | IEC 60079-0, IEC 60079-7, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-7, EN 60079-11, EN 60079-31 |                    |                  |                  |                   |                              |                   |                   |  |
| Enclosure material   |             | Stainless steel                                                                                          |                    |                  |                  |                   |                              |                   |                   |  |
| Brand of terminal    |             | International brand                                                                                      |                    |                  |                  |                   |                              |                   |                   |  |
| Exposed fastener     |             | Stainless steel                                                                                          |                    |                  |                  |                   |                              |                   |                   |  |
| Rated voltage        | Ex e,Ex tb  | Max. 690V AC, 250V DC                                                                                    |                    |                  |                  |                   |                              |                   |                   |  |
|                      | Ex i, Ex tb | Max. AC/DC36V                                                                                            |                    |                  |                  |                   |                              |                   |                   |  |
| Rated current        |             | 1.5mm <sup>2</sup>                                                                                       | 2.5mm <sup>2</sup> | 4mm <sup>2</sup> | 6mm <sup>2</sup> | 10mm <sup>2</sup> | 16mm <sup>2</sup>            | 35mm <sup>2</sup> | 50mm <sup>2</sup> |  |
|                      | Ex e,Ex tb  | -                                                                                                        | 10A                | 16A              | 25A              | 40A               | 50A                          | 100A              | 142A              |  |
|                      | Ex i, Ex tb | 5A                                                                                                       | -                  | -                | -                | -                 | -                            | -                 | -                 |  |
| Degree of protection |             | IP66                                                                                                     |                    |                  |                  |                   |                              |                   |                   |  |
| Ambient temperature  | Ex e,Ex tb  | -40°C ~+40/55°C                                                                                          |                    |                  |                  |                   |                              |                   |                   |  |
|                      | Ex i, Ex tb | -40°C ~+40/45/55/60°C                                                                                    |                    |                  |                  |                   |                              |                   |                   |  |
| Cable gland          |             | KBM Series Explosion-proof Cable Glands are recommended.                                                 |                    |                  |                  |                   |                              |                   |                   |  |

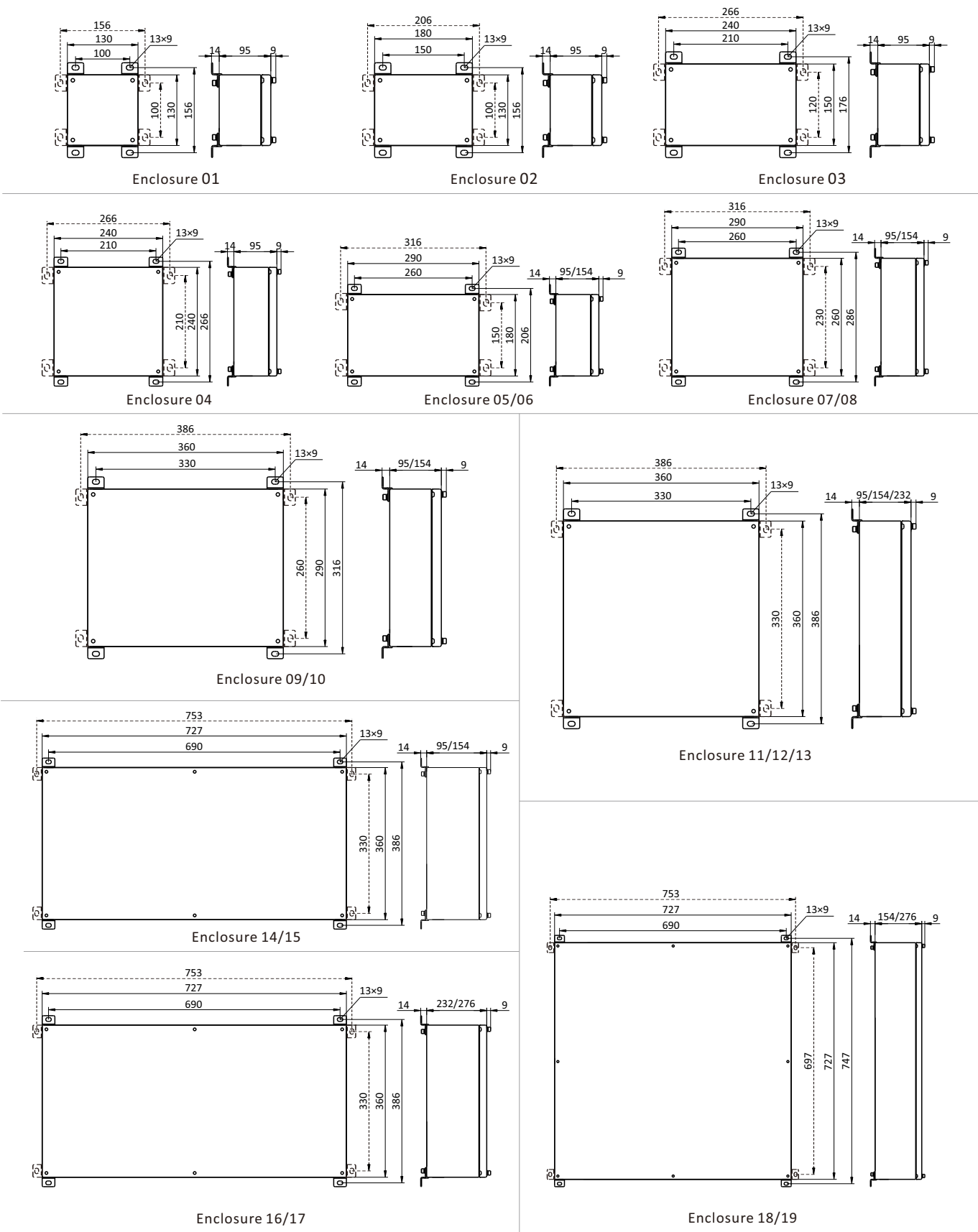


Selection Table

The maximum terminal cross-section is 35mm<sup>2</sup>, and the maximum quantity of terminals that can be installed are shown in the table below.

| Enclosure specification |                                                                                     |       | Guideway×Terminal (specification and quantity) |                |                |                 |                 |                 | Outlet direction | Available maximum cable entries quantity |          |         |         |        |        |                  | Weight (kg) |
|-------------------------|-------------------------------------------------------------------------------------|-------|------------------------------------------------|----------------|----------------|-----------------|-----------------|-----------------|------------------|------------------------------------------|----------|---------|---------|--------|--------|------------------|-------------|
|                         |                                                                                     |       | 2.5 <sup>2</sup>                               | 4 <sup>2</sup> | 6 <sup>2</sup> | 10 <sup>2</sup> | 16 <sup>2</sup> | 35 <sup>2</sup> |                  |                                          |          |         |         |        |        |                  |             |
|                         |                                                                                     |       | UK3N                                           | UK5N           | UK6N           | UK10N           | UK16N           | UK35N           |                  |                                          |          |         |         |        |        |                  |             |
|                         |                                                                                     |       | SAK2.5EN                                       | SAK4EN         | SAK6EN         | SAK10EN         | SAK16EN         | SAK35EN         |                  | M16                                      | M20      | M25     | M32     | M40    | M50    | M63              |             |
| 01                      |    | 1×14  | 1×12                                           | 1×9            | —              | —               | —               | D/X             | 8                | 6                                        | 5        | 3       | 2       | 1      | —      | 1.3              |             |
|                         |                                                                                     | L/R   | 8                                              | 6              | 5              | 3               | 2               | 1               | —                |                                          |          |         |         |        |        |                  |             |
| 02                      |    | 1×21  | 1×18                                           | 1×13           | 1×11           | 1×8             | —               | D/X             | 12               | 10                                       | 8        | 4       | 3       | 2      | —      | 1.9              |             |
|                         |                                                                                     | L/R   | 8                                              | 6              | 5              | 3               | 2               | 1               | —                |                                          |          |         |         |        |        |                  |             |
| 03                      |    | 1×27  | 1×23                                           | 1×18           | 1×14           | 1×12            | 1×9             | D/X             | 16               | 12                                       | 10       | 4       | 3       | 3      | —      | 3.1              |             |
|                         |                                                                                     | L/R   | 10                                             | 8              | 8              | 3               | 2               | 2               | —                |                                          |          |         |         |        |        |                  |             |
| 04                      |    | 2×27  | 2×23                                           | 1×18           | 1×14           | 1×12            | 1×9             | D/X             | 16               | 12                                       | 10       | 4       | 3       | 3      | —      | 4.0              |             |
|                         |                                                                                     | L/R   | 16                                             | 12             | 10             | 4               | 3               | 3               | —                |                                          |          |         |         |        |        |                  |             |
| 05/06                   |   | 1×37  | 1×31                                           | 1×25           | 1×20           | 1×18            | 1×11            | D/X             | 18/36            | 16/21                                    | 14/21    | 5/10    | 4/8     | 4/6    | --/4   | 4.5 /5.5         |             |
|                         |                                                                                     | L/R   | 12/24                                          | 10/15          | 8/12           | 3/6             | 3/4             | 2/3             | --/2             |                                          |          |         |         |        |        |                  |             |
| 07/08                   |  | 2×37  | 2×31                                           | 1×25           | 1×20           | 1×18            | 1×11            | D/X             | 18/36            | 16/21                                    | 14/21    | 5/10    | 4/8     | 4/6    | --/4   | 6.5 /7.5         |             |
|                         |                                                                                     | L/R   | 16/32                                          | 14/21          | 12/18          | 5/10            | 4/6             | 3/5             | --/3             |                                          |          |         |         |        |        |                  |             |
| 09/10                   |  | 2×52  | 2×43                                           | 1×33           | 1×25           | 1×22            | 1×18            | D/X             | 24/48            | 20/30                                    | 18/27    | 7/14    | 5/10    | 4/8    | --/5   | 8.5 /9.5         |             |
|                         |                                                                                     | L/R   | 18/36                                          | 16/21          | 14/21          | 5/10            | 4/8             | 4/6             | --/4             |                                          |          |         |         |        |        |                  |             |
| 11/12/13                |  | 3×52  | 3×43                                           | 2×33           | 2×25           | 2×22            | 1×18            | D/X             | 24/48/66         | 20/30/50                                 | 18/27/35 | 7/14/28 | 5/10/15 | 4/8/12 | --/5/8 | 10.8 /11.8 /12.8 |             |
|                         |                                                                                     | L/R   | 24/48/66                                       | 20/30/50       | 18/27/35       | 7/14/28         | 5/10/15         | 4/8/12          | --/5/8           |                                          |          |         |         |        |        |                  |             |
| 14/15                   |  | 6×52  | 6×43                                           | 2×66           | 2×50           | 2×44            | 1×36            | D/X             | 48/92            | 40/60                                    | 36/54    | 14/28   | 10/20   | 8/10   | --/8   | 17.5 /18.5       |             |
|                         |                                                                                     | L/R   | 24/48                                          | 20/30          | 18/27          | 7/14            | 5/10            | 4/8             | --/5             |                                          |          |         |         |        |        |                  |             |
| 16/17                   |  | 6×52  | 6×43                                           | 2×66           | 2×50           | 2×44            | 1×36            | D/X             | 138/161          | 100/120                                  | 83/102   | 42/56   | 30/40   | 20/25  | 15/20  | 21/22            |             |
|                         |                                                                                     | L/R   | 66/77                                          | 50/60          | 27/54          | 28/30           | 15/20           | 12/16           | 8/10             |                                          |          |         |         |        |        |                  |             |
| 18/19                   |  | 12×52 | 12×43                                          | 12×66          | 4×50           | 4×44            | 3×36            | D/X             | 92/161           | 60/120                                   | 54/102   | 28/56   | 20/40   | 10/25  | 8/20   | 29/31            |             |
|                         |                                                                                     | L/R   | 92/161                                         | 60/120         | 54/102         | 28/56           | 20/40           | 10/25           | 8/20             |                                          |          |         |         |        |        |                  |             |

Outline and Installation(mm)





## Explosion-proof Terminal Box

- **KBH03 - Series**

### Application and Features

- Explosion proof certificates
- ATEX : SEV 22 ATEX 0630 X
- IECEx : IECEx SEV 22.0012X
- Application in hazardous area
- Zone 0, Zone 1 and Zone 2, Zone 21 and Zone 22
- This series of products have 4 types explosion protection (Ex eb, Ex ia, Ex ib and Ex tb IIIC), which can meet various requirements.
- GRP enclosure.
- There are 7 types of enclosure, easy to customize the current, terminals, size and direction of entry according to customer requirements.
- Stainless steel exposed fastener, anti dropping structure, easy installation and maintenance.

- II 2 G Ex eb IIC T6/T5 Gb
- II 1 G Ex ia IIC T6 Ga
- II 2 G Ex ib IIC T6 Gb
- II 2 D Ex tb IIIC T80/T95°C Db

### Product Definition

|                                 |                  |     |                                                   |             |                                      |              |                                      |                  |                                      |                  |                                      |                  |   |                                               |
|---------------------------------|------------------|-----|---------------------------------------------------|-------------|--------------------------------------|--------------|--------------------------------------|------------------|--------------------------------------|------------------|--------------------------------------|------------------|---|-----------------------------------------------|
| K                               | BH               | 03- | X                                                 | X           | X                                    | X            | X                                    | X/X              | X                                    | X/X              | X                                    | X/X              | X | X                                             |
| K-KHJ                           | Design No.       |     | Enclosure code<br>(01,02,03,04,05,<br>06,06.1,07) |             | Rated<br>current                     |              | Import direction                     | Import direction | Import direction                     | Import direction |                                      | Import direction |   | K-Electric heating<br>bracket type (Optional) |
| Explosion-proof<br>terminal box | ia/ib (Optional) |     | Terminal<br>quantity                              | D-Top inlet | Inlet Nos.<br>/ Thread specification | L-Left inlet | Inlet Nos.<br>/ Thread specification | X-Bottom inlet   | Inlet Nos.<br>/ Thread specification | R-Right inlet    | Inlet Nos.<br>/ Thread specification |                  |   |                                               |

**Note:**  
Please confirm the quantity, specification, and direction (position) of cable entry holes, if that is needed; No cable gland as default when delivery, which is supplied by users.



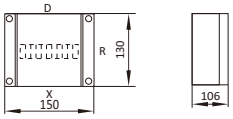
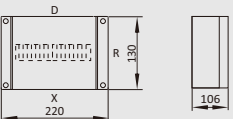
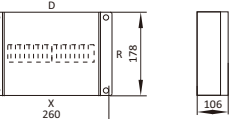
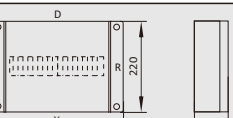
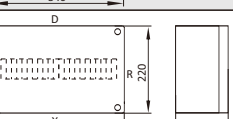
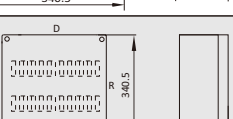
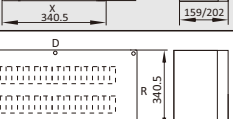
### Technical Parameter

|                      |             |                                                                                                                    |                    |                  |                  |                   |                         |                   |                   |  |
|----------------------|-------------|--------------------------------------------------------------------------------------------------------------------|--------------------|------------------|------------------|-------------------|-------------------------|-------------------|-------------------|--|
| Ex marking           | Gas         |  II 2 G Ex eb IIC T6/T5 Gb      |                    |                  |                  |                   | Ex eb IIC T6/T5 Gb      |                   |                   |  |
|                      |             |  II 1 G Ex ia IIC T6 Ga         |                    |                  |                  |                   | Ex ia IIC T6 Ga         |                   |                   |  |
|                      |             |  II 2 G Ex ib IIC T6 Gb         |                    |                  |                  |                   | Ex ib IIC T6 Gb         |                   |                   |  |
|                      | Dust        |  II 2 D Ex tb IIIC T80/T95°C Db |                    |                  |                  |                   | Ex tb IIIC T80/T95°C Db |                   |                   |  |
| Exectutive standards |             | IEC 60079-0, IEC 60079-7, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-7, EN 60079-11, EN 60079-31           |                    |                  |                  |                   |                         |                   |                   |  |
| Enclosure material   |             | GRP (Polyester resin, glass fibre reinforced), anti-static                                                         |                    |                  |                  |                   |                         |                   |                   |  |
| Enclosure color      |             | Black                                                                                                              |                    |                  |                  |                   |                         |                   |                   |  |
| Brand of terminal    |             | International brand                                                                                                |                    |                  |                  |                   |                         |                   |                   |  |
| Exposed fastener     |             | Stainless steel                                                                                                    |                    |                  |                  |                   |                         |                   |                   |  |
| Rated voltage        | Ex e,Ex tb  | Max 690V AC, 220V DC                                                                                               |                    |                  |                  |                   |                         |                   |                   |  |
|                      | Ex i, Ex tb | Max AC/DC36V                                                                                                       |                    |                  |                  |                   |                         |                   |                   |  |
| Rated current        | ~           | 1.5mm <sup>2</sup>                                                                                                 | 2.5mm <sup>2</sup> | 4mm <sup>2</sup> | 6mm <sup>2</sup> | 10mm <sup>2</sup> | 16mm <sup>2</sup>       | 35mm <sup>2</sup> | 50mm <sup>2</sup> |  |
|                      | Ex e,Ex tb  | -                                                                                                                  | 10A                | 16A              | 25A              | 40A               | 50A                     | 100A              | 142A              |  |
|                      | Ex i, Ex tb | 5A                                                                                                                 | -                  | -                | -                | -                 | -                       | -                 | -                 |  |
| Degree of protection |             | IP66                                                                                                               |                    |                  |                  |                   |                         |                   |                   |  |
| Ambient temperature  | Ex e,Ex tb  | -40°C~+40/55°C                                                                                                     |                    |                  |                  |                   |                         |                   |                   |  |
|                      | Ex i, Ex tb | -40°C~+50/60/65°C                                                                                                  |                    |                  |                  |                   |                         |                   |                   |  |
| Cable gland          |             | KBM Series Explosion-proof Cable Glands is recommended.                                                            |                    |                  |                  |                   |                         |                   |                   |  |

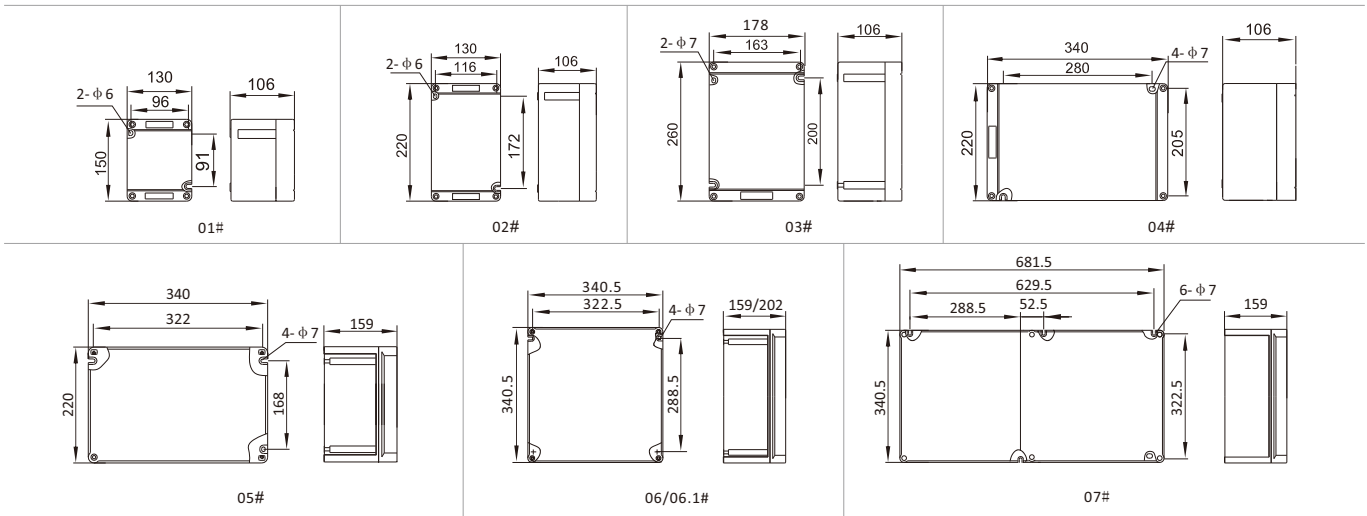


**Selection Table(mm)**

The maximum terminal cross-section is 35mm<sup>2</sup>, and the maximum quantity of terminals that can be installed are shown in the table below.

| Enclosure specification                                                                         | Guideway×Terminal (specification and quantity) |                       |                      |                   |                   |                   |                 |                 | Outlet direction | Cable gland quantity |          |          |          |        |        |        |        | Weight (kg) |
|-------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|----------------------|-------------------|-------------------|-------------------|-----------------|-----------------|------------------|----------------------|----------|----------|----------|--------|--------|--------|--------|-------------|
|                                                                                                 | 1.5 <sup>2</sup>                               | 2.5 <sup>2</sup>      | 4 <sup>2</sup>       | 6 <sup>2</sup>    | 10 <sup>2</sup>   | 16 <sup>2</sup>   | 35 <sup>2</sup> | 50 <sup>2</sup> |                  | M16                  | M20      | M25      | M32      | M40    | M50    | M63    | —      |             |
|                                                                                                 | UK2N                                           | UK3N                  | UK5N                 | UK6N              | UK10N             | UK16N             | UK35N           | UK50N           |                  | —                    | G15      | G20      | G25      | G32    | G40    | G50    | G70    |             |
|                                                                                                 | SAK1.5EN                                       | SAK2.5EN              | SAK4EN               | SAK6EN            | SAK10EN           | SAK16EN           | SAK35EN         | SAK50EN         |                  | —                    | G15      | G20      | G25      | G32    | G40    | G50    | G70    |             |
| 01#<br>        | 1X12                                           | 1X12                  | 1X10                 | 1X8               | —                 | —                 | —               | —               | D/X              | 3                    | 3        | 2        | 1        | 1      | —      | —      | —      | 1.2         |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 2                    | 2        | 2        | 1        | 1      | —      | —      | —      |             |
| 02#<br>        | 1X25                                           | X25                   | 1X20                 | 1X15              | —                 | —                 | —               | —               | D/X              | 7                    | 5        | 3        | 3        | 2      | 1      | —      | —      | 1.5         |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 2                    | 2        | 2        | 1        | 1      | —      | —      | —      |             |
| 03#<br>        | 1X30                                           | 1X30                  | 1X27                 | 1X20              | 1X15              | 1X13              | —               | —               | D/X              | 8                    | 6        | 4        | 3        | 2      | —      | —      | —      | 2.3         |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 6                    | 4        | 4        | 3        | 2      | —      | —      | —      |             |
| 04#<br>        | 1X49<br>2X39                                   | 1X49<br>2X40          | 1X41<br>2X31         | 1X31<br>2X18      | 1X24<br>—         | 1X20<br>—         | —<br>—          | —               | D/X              | 12<br>—              | 10<br>8  | 8<br>7   | 4<br>4   | 3<br>3 | 3<br>3 | —<br>— | —      | 3.3         |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 7<br>—               | 5<br>5   | 3<br>3   | 3<br>3   | 2<br>2 | 2<br>2 | —<br>— | —      |             |
| 05#<br>       | 1X49<br>2X40                                   | 1X49<br>2X40          | 1X41<br>2X31         | 1X31<br>2X18      | 1X24<br>—         | 1X20<br>—         | 1X10<br>—       | —               | D/X              | 20<br>—              | 14<br>12 | 12<br>9  | 7<br>7   | 5<br>4 | 3<br>3 | 3<br>2 | —<br>2 | 4.3         |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 11<br>—              | 8<br>6   | 7<br>5   | 4<br>3   | 3<br>3 | 2<br>2 | 1<br>1 | —<br>1 |             |
| 06/06.1#<br> | 1X102<br>2X73<br>3X49                          | 1X51<br>2X49<br>3X49  | 1X43<br>2X41<br>3X41 | 1X32<br>2X31<br>— | 1X26<br>2X24<br>— | 1X21<br>2X20<br>— | 1X17<br>—<br>—  | 1X8<br>—<br>—   | D/X              | 20<br>—              | 14<br>12 | 12<br>9  | 7<br>7   | 5<br>4 | 3<br>3 | 3<br>2 | —<br>2 | 6.1<br>/6.7 |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 16<br>—              | 11<br>9  | 9<br>6   | 6<br>6   | 3<br>3 | 2<br>3 | 2<br>2 | —<br>2 |             |
| 07#<br>      | 1X102<br>2X102<br>3X98                         | 1X102<br>2X98<br>3X98 | 1X86<br>2X82<br>3X82 | 1X64<br>2X62<br>— | 1X52<br>2X48<br>— | 1X42<br>2X40<br>— | 1X34<br>—<br>—  | 1X16<br>—<br>—  | D/X              | 32<br>—              | 22<br>18 | 18<br>12 | 12<br>12 | 6<br>6 | 4<br>6 | 4<br>4 | —<br>4 | 11.3        |
|                                                                                                 |                                                |                       |                      |                   |                   |                   |                 |                 | L/R              | 20<br>—              | 14<br>12 | 12<br>9  | 7<br>7   | 5<br>4 | 3<br>3 | 3<br>2 | —<br>2 |             |

**Outline and Installation(mm)**





## Explosion-proof Terminal Box

### - KBH05 - Series

#### Application and Features

- Explosion proof certificate
- ATEX : SEV 22 ATEX 0630 X
- IECEx : IECEx SEV 22.0012X
- Application in hazardous area
- Zone 0, Zone 1 and Zone 2, Zone 21 and Zone 22
- This series of products have 4 types explosion protection (Ex eb, Ex ia, Ex ib and Ex tb IIIC), which can meet the requirements of various places.
- PA66 enclosure.
- There are two types of enclosure which the current, terminal, size and direction of entry can be customized based on customer requirements.
- Type A: open crimping type terminal in enclosure.
- Type B (Standard): an International brand of terminal will be installed in the enclosure.
- Stainless steel exposed fastener, anti dropping structure, easy installation and maintenance.

#### Product Definition

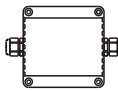
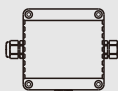
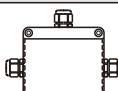
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|---------------------------------|------------|---------------------------------------------------|----------------------|------------------|------------------|------------------|------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------|------------------|------------------|
| K                               | BH         | 05-                                               | X                    | X                | X                | X                | X                | X/X                                  | X                                    | X/X                                  | X                                    | X/X              | X                | X/X              |
| K-KHJ                           | Design No. | Enclosure code<br>(01,02,03,04,05,<br>06,06.1,07) | Rated<br>current     | Import direction | Import direction | Import direction | Import direction | Import direction                     | Import direction                     | Import direction                     | Import direction                     | Import direction | Import direction | Import direction |
|                                 |            | ia/ib (Optional)                                  |                      | D-Top inlet      | L-Left inlet     | X-Bottom inlet   | R-Right inlet    |                                      |                                      |                                      |                                      |                  |                  |                  |
| Explosion-proof<br>terminal box |            |                                                   | Terminal<br>quantity |                  |                  |                  |                  | Inlet Nos.<br>/ Thread specification | Inlet Nos.<br>/ Thread specification | Inlet Nos.<br>/ Thread specification | Inlet Nos.<br>/ Thread specification |                  |                  |                  |

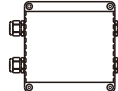
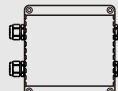
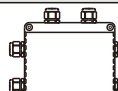
**Note:** Please confirm the quantity, specification, and direction (position) of cable entry holes, if that is needed; No cable gland as default when delivery, which is supplied by users.

#### Technical Parameter

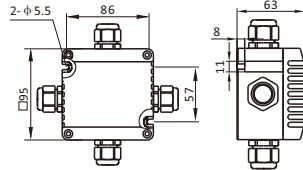
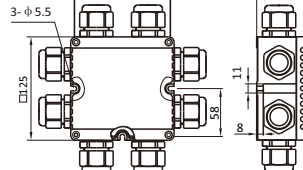
|                      |               |                                                                                                          |                     |
|----------------------|---------------|----------------------------------------------------------------------------------------------------------|---------------------|
| Ex marking           | Gas           |                       | Ex eb IIC T6 Gb     |
|                      |               |                       | Ex ia IIC T6 Ga     |
|                      |               |                       | Ex ib IIC T6 Gb     |
|                      | Dust          |                       | Ex tb IIIC T80°C Db |
| Executive standards  |               | IEC 60079-0, IEC 60079-7, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-7, EN 60079-11, EN 60079-31 |                     |
| Enclosure material   |               | Nylon (PA66)                                                                                             |                     |
| Enclosure color      |               | Black                                                                                                    |                     |
| Brand of terminal    |               | Type A: open crimping type terminal in enclosure                                                         |                     |
|                      |               | Type B (Standard): International brand                                                                   |                     |
| Exposed fastener     |               | Stainless steel                                                                                          |                     |
| Rated voltage        | Ex e, Ex tb   | Max. 500V AC, 220V DC                                                                                    |                     |
|                      | Ex i, Ex tb   | Max. AC/DC36V                                                                                            |                     |
|                      |               |                                                                                                          |                     |
| Rated current        | Wire diameter | 1.5mm <sup>2</sup>                                                                                       | 2.5mm <sup>2</sup>  |
|                      | Ex e, Ex tb   | 10A, 12A                                                                                                 | 10A, 12A, 20A       |
|                      | Ex i, Ex tb   | 5A                                                                                                       | 5A                  |
| Degree of protection |               | IP66                                                                                                     |                     |
| Ambient temperature  | Ex e, Ex tb   | -40°C~+45/55/60°C                                                                                        |                     |
|                      | Ex i, Ex tb   | -40°C~+45/65°C                                                                                           |                     |
| Cable gland          |               | M20X1.5, M25X1.5, M32X1.5<br>KBM Series Explosion-proof Cable Glands is Recommend                        |                     |

#### Proposal Examples

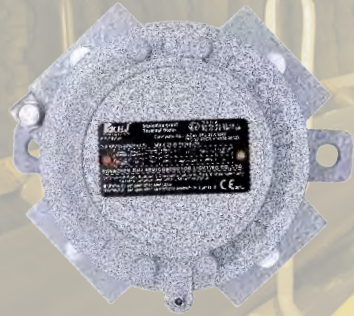
| KBH05-01                                                                              | Cable entries | Cable outer dia. |
|---------------------------------------------------------------------------------------|---------------|------------------|
|  | 2XM20         | φ 6~ φ 12mm      |
|                                                                                       | 2XM25         | φ 10~ φ 14mm     |
|  | 3XM20         | φ 6~ φ 12mm      |
|                                                                                       | 3XM25         | φ 10~ φ 14mm     |
|  | 4XM20         | φ 6~ φ 12mm      |
|                                                                                       | 4XM25         | φ 10~ φ 14mm     |

| KBH05-02                                                                              | Cable entries | Cable outer dia. |
|---------------------------------------------------------------------------------------|---------------|------------------|
|  | 4XM25         | φ 10~ φ 14mm     |
|                                                                                       | 4XM32         | φ 13~ φ 19mm     |
|  | 6XM25         | φ 10~ φ 14mm     |
|                                                                                       | 6XM32         | φ 13~ φ 19mm     |
|  | 8XM25         | φ 10~ φ 14mm     |
|                                                                                       | 8XM32         | φ 13~ φ 19mm     |

#### Outline and Installation(mm)

|                                                                                                   |                                                                                                   |                                                                                                                  |                                                                                                                  |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <br>KBH05-01 | <br>KBH05-02 | <br>Type A<br>Weight: 0.6kg | <br>Type B<br>Weight: 0.5kg |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|





## Explosion-proof Junction Box

- **KBH 31/32 - Series**

### Application and Features

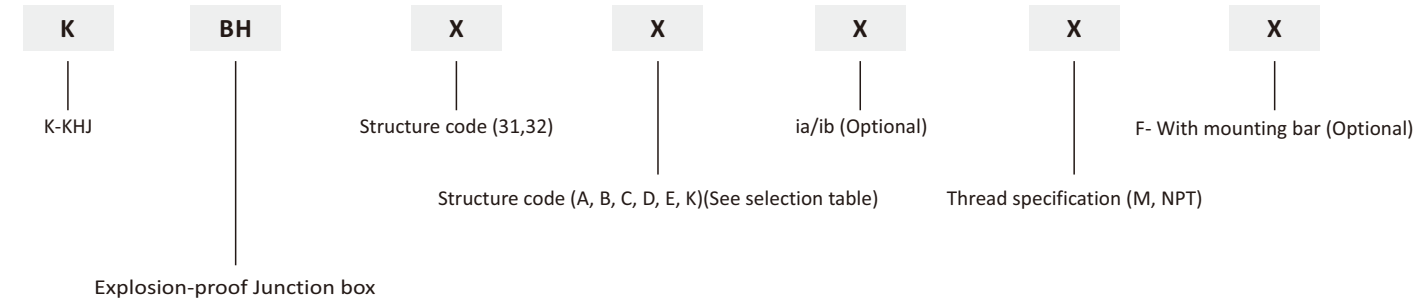
- Explosion proof certificate:
  - ATEX : TPS 22 ATEX 114950 0002 X
  - IECEx : IECEx TPS 22.0024X

- Application in hazardous area
  - Zone 0,
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22

- This series product has 6 types for selection: A, B, C, D, E and K.

-  II 2 G Ex db IIC T6 Gb
-  II 1 G Ex ia IIC T6 Ga
-  II 2 G Ex ib IIC T6 Gb
-  II 2 D Ex tb IIIC T80°C Db

### Product Definition

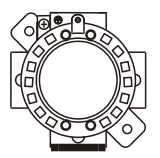
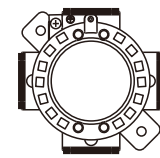
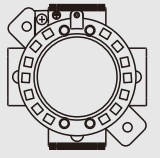
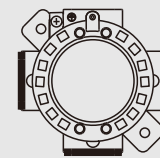
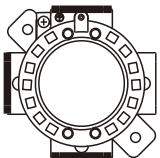
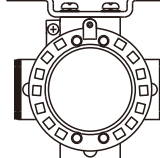


**Note:**  
Cable gland should be installed.

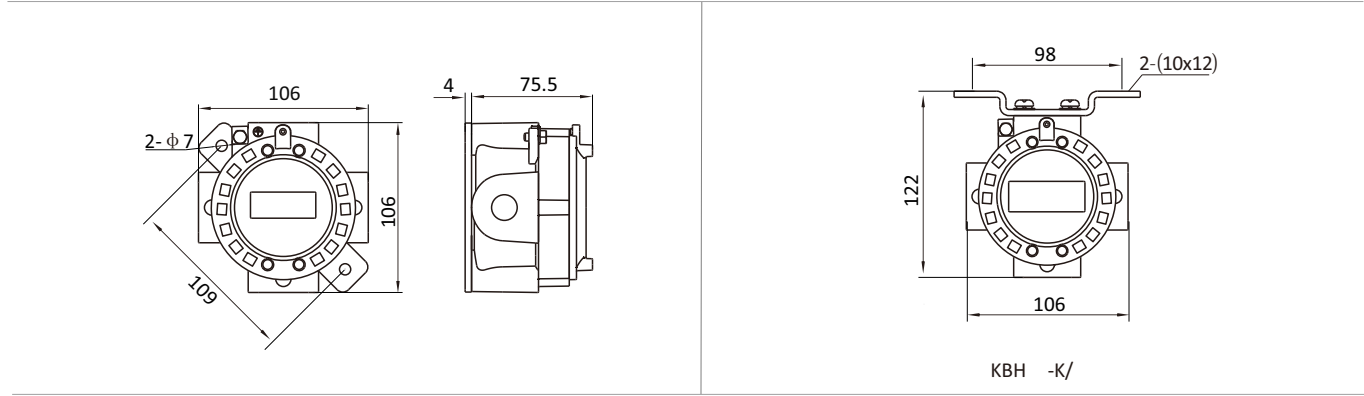
### Technical Parameter

|                         |                     |        |                                                                                                                |                        |         |                                                                                     |        |        |  |
|-------------------------|---------------------|--------|----------------------------------------------------------------------------------------------------------------|------------------------|---------|-------------------------------------------------------------------------------------|--------|--------|--|
| Ex marking              | Gas                 | M, NPT |  II 2 G Ex db IIC T6 Gb     | Ex db IIC T6 Gb        |         |                                                                                     |        |        |  |
|                         | Dust                | M, NPT |  II 1 G Ex ia IIC T6 Ga     | Ex ia IIC T6 Ga        |         |                                                                                     |        |        |  |
|                         |                     |        |  II 2 G Ex ib IIC T6 Gb     | Ex ib IIC T6 Gb        |         |                                                                                     |        |        |  |
|                         |                     |        |  II 2 D Ex tb IIIC T80°C Db | Ex tb IIIC T80°C Db    |         |                                                                                     |        |        |  |
| Conformity to standards |                     |        | IEC 60079-0, IEC 60079-1, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-11, EN 60079-31       |                        |         |                                                                                     |        |        |  |
| Enclosure material      |                     |        | Aluminum alloy enclosure, powder coated, industrial gray with dark lines texture(RAL7035)                      |                        |         |                                                                                     |        |        |  |
| Exposed fastener        |                     |        | Stainless steel                                                                                                |                        |         |                                                                                     |        |        |  |
| Frequency               |                     |        | 50Hz / 60Hz                                                                                                    |                        |         |                                                                                     |        |        |  |
| Terminal block          | Ex marking          | Type   | Terminal                                                                                                       | Voltage                | Current | Picture                                                                             | Qty    | Weight |  |
|                         | Ex d, Ex tb         | KBH31  | MBK3/E-Z                                                                                                       | 400V AC<br>220V DC     | 16A     |  | 6      | 0.05kg |  |
|                         |                     |        | MBK5/E-Z                                                                                                       | 500V AC<br>220V DC     | 20A     |                                                                                     | 4      | 0.04kg |  |
|                         |                     | KBH32  | Pillar terminal 4-M5                                                                                           |                        | 20A     |  |        | 0.08kg |  |
|                         | Ex i, Ex tb         | KBH31  | MBK3/E-Z                                                                                                       | Max.<br>36VAC/DC       | 5A      |  | 6      | 0.05kg |  |
|                         |                     |        | MBK5/E-Z                                                                                                       |                        |         |                                                                                     | 0.04kg |        |  |
|                         |                     | KBH32  | Pillar terminal 4-M5                                                                                           |                        |         |  | 4      | 0.08kg |  |
|                         | Cable cross section |        |                                                                                                                | 0.2~4.0mm <sup>2</sup> |         |                                                                                     |        |        |  |
| Degree of protection    |                     |        | IP66                                                                                                           |                        |         |                                                                                     |        |        |  |
| Ambient temperature     |                     |        | -60°C~+55°C                                                                                                    |                        |         |                                                                                     |        |        |  |
| Cable entries           |                     |        | Standard M20×1.5~M32×1.5                                                                                       |                        |         |                                                                                     |        |        |  |
|                         |                     |        | Optional NPT1/2~NPT1                                                                                           |                        |         |                                                                                     |        |        |  |

Selection Table

| Type          | Code | Outline                                                                           | Weight (kg) | Type          | Code | Outline                                                                             | Weight (kg) |
|---------------|------|-----------------------------------------------------------------------------------|-------------|---------------|------|-------------------------------------------------------------------------------------|-------------|
| KBH -ANPT1/2  | A    |  | 0.66        | KBH -DNPT1/2  | D    |  | 0.66        |
| KBH -ANPT3/4  |      |                                                                                   | 0.65        | KBH -DNPT3/4  |      |                                                                                     | 0.71        |
| KBH -ANPT 1   |      |                                                                                   | 0.62        | KBH -DNPT 1   |      |                                                                                     | 0.60        |
| KBH -AM20X1.5 |      |                                                                                   | 0.65        | KBH -DM20X1.5 |      |                                                                                     | 0.70        |
| KBH -AM25X1.5 |      |                                                                                   | 0.67        | KBH -DM25X1.5 |      |                                                                                     | 0.67        |
| KBH -AM32X1.5 |      |                                                                                   | 0.62        | KBH -DM32X1.5 |      |                                                                                     | 0.60        |
| KBH -BNPT1/2  | B    |  | 0.68        | KBH -ENPT1/2  | E    |  | 0.68        |
| KBH -BNPT3/4  |      |                                                                                   | 0.66        | KBH -ENPT3/4  |      |                                                                                     | 0.66        |
| KBH -BNPT 1   |      |                                                                                   | 0.61        | KBH -ENPT 1   |      |                                                                                     | 0.61        |
| KBH -BM20X1.5 |      |                                                                                   | 0.67        | KBH -EM20X1.5 |      |                                                                                     | 0.67        |
| KBH -BM25X1.5 |      |                                                                                   | 0.65        | KBH -EM25X1.5 |      |                                                                                     | 0.65        |
| KBH -BM32X1.5 |      |                                                                                   | 0.61        | KBH -EM32X1.5 |      |                                                                                     | 0.61        |
| KBH -CNPT1/2  | C    |  | 0.69        | KBH -K/       | K    |  | 0.80        |
| KBH -CNPT3/4  |      |                                                                                   | 0.66        |               |      |                                                                                     |             |
| KBH -CNPT 1   |      |                                                                                   | 0.61        |               |      |                                                                                     |             |
| KBH -CM20X1.5 |      |                                                                                   | 0.69        |               |      |                                                                                     |             |
| KBH -CM25X1.5 |      |                                                                                   | 0.66        |               |      |                                                                                     |             |
| KBH -CM32X1.5 |      |                                                                                   | 0.61        |               |      |                                                                                     |             |

Outline and Installation(mm)



Lighting Knowledge

LED Explosion Proof Lighting

LED Industrial Lighting

Explosion proof Electrical Apparatus

Explosion proof Cable Gland



## Explosion-proof Control Station

### - KBX02 - Series

#### Application and Features

- Explosion proof certificates
  - ATEX : SEV 22 ATEX 0606 X
  - IECEx : IECEx SEV 22.0011X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Seven types of enclosure size, built-in explosion-proof components (control button, control switch, signal lamp, potentiometer, ammeter, etc.) and terminal blocks. The components is rail mounting type, which can be installed on the guide rail quickly and accurately, easy for installation and maintenance.
- Emergency stop button can be equipped with anti misoperation mechanism and padlock (If need).
- Stainless steel exposed fastener, anti dropping structure, easy for installation and maintenance.

II 2 G Ex db eb IIC T6 Gb

II 2 D Ex tb IIIC T80°C Db

#### Product Definition

| K      | BX         | 02                         | X                               | AX                                | BX                                                         | DX                              | KX             | PX                          | X                          | X                                                     | X                                 |
|--------|------------|----------------------------|---------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------|----------------|-----------------------------|----------------------------|-------------------------------------------------------|-----------------------------------|
| K -KHJ | Design No. | Button quantity (Optional) | Signal lamp quantity (Optional) | Potentiometer quantity (Optional) | Inlet direction<br>D-Top inlet<br>X-Bottom inlet (default) | Explosion-proof control station | Enclosure code | Ammeter quantity (Optional) | Switch quantity (Optional) | Installation method<br>G-Hanging type<br>L-Stand type | Inlet Nos. / Thread specification |

#### Note:

1. Model example: KBX02-07A2D2GM25X1.5, 07# enclosure, equipped with two control buttons and two signal lamps, Hanging mounting, one bottom inlet M25x1.5.
2. Specific components plan description refers to the requirements of the drawings.
3. Button code, switch code, signal lamp code, ammeter code.
4. Rain shade can be customized upon request.

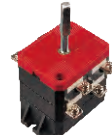
#### Technical Parameter

|                      |                                         |                                                                                                                                                  |                     |
|----------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Ex marking           | Gas                                     | Ex II 2 G Ex db eb IIC T6 Gb                                                                                                                     | Ex db eb IIC T6 Gb  |
|                      | Dust                                    | Ex II 2 D Ex tb IIIC T80°C Db                                                                                                                    | Ex tb IIIC T80°C Db |
| Exectutive standards |                                         | IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31                                           |                     |
| Enclosure material   | Enclosure                               | Stainless steel (Standard 304, if 316 is needed, please indicate)                                                                                |                     |
|                      | Rain shade                              | Bended steel plate surface powder coated, industrial grey with dark lines texture (RAL7035) or stainless steel 304/316, please note when needed. |                     |
| Exposed fastener     |                                         | Stainless steel, anti-drop structure.                                                                                                            |                     |
| Rated voltage        |                                         | Max. 415V AC, 250V DC                                                                                                                            |                     |
| Rated current        |                                         | 6A、10A、16A                                                                                                                                       |                     |
| Wire diameter        | ≤6A: 0.75~2.5mm <sup>2</sup>            |                                                                                                                                                  |                     |
|                      | 6A<I≤10A: 1.5~2.5mm <sup>2</sup>        |                                                                                                                                                  |                     |
|                      | 10A<I≤16A: 2.5mm <sup>2</sup>           |                                                                                                                                                  |                     |
| Degree of protection |                                         | IP66                                                                                                                                             |                     |
| Ambient temperature  |                                         | -40°C~+40/45/50/55/60/65/70°C                                                                                                                    |                     |
| Built-in components  | K0101 explosion-proof control button.   |                                                                                                                                                  |                     |
|                      | K0102 explosion-proof signal lamp.      |                                                                                                                                                  |                     |
|                      | K0101-S explosion-proof control switch. |                                                                                                                                                  |                     |
|                      | K0109 explosion-proof ammeter.          |                                                                                                                                                  |                     |
| Installation method  |                                         | Hanging type, stand type                                                                                                                         |                     |
| Cable entries        | Hanging type                            | M16×1.5~M63×1.5<br>The cable gland is not available when delivery, please indicate if necessary.                                                 |                     |

#### Components and Accessories

|                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| K0101-Control button                                                                  | K0101-A2 Two control button                                                           | K0102-Signal lamp                                                                     | K0101-A Control button with signal lamp                                               |

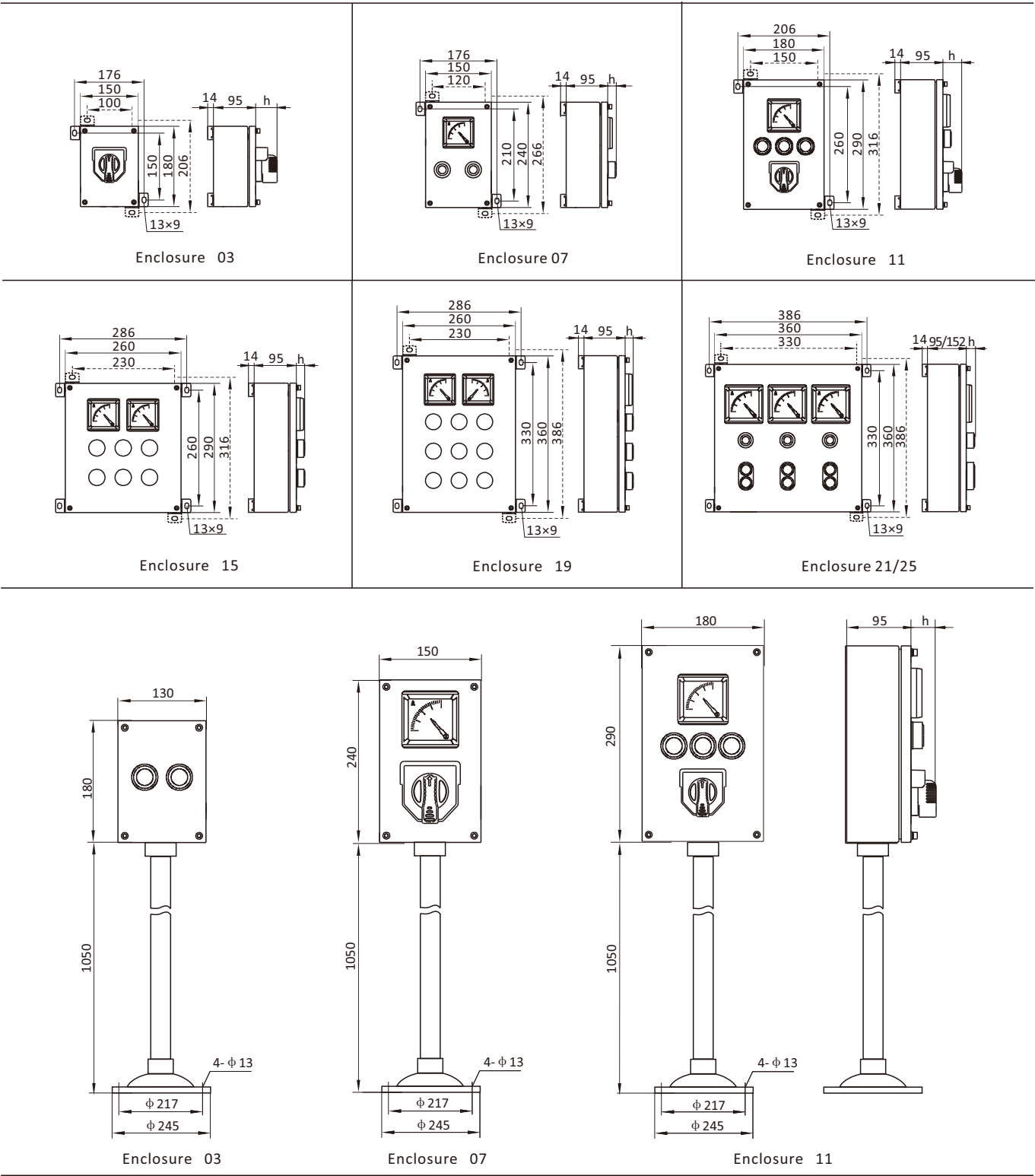
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|                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |
| K0109-Ammeter                                                                         | K0155 Switch                                                                          | φ 38 Operating handle                                                                 | φ 65<br>Operating handle<br>(padlock available)                                       | Square operating handle                                                               |

#### Note:

1. Installation area of 1 pcs K0109-48 is same as 2 pcs buttons.
2. Installation area of 1 pcs φ 65 operating handle or 1 pcs square operating handle is same as 2 pcs buttons.
3. Installation area of 1 pcs K0155 switch or 1 pcs K0109-72 is same as 2~3 buttons.

**Outline and Installation (mm)**



**Height of electrical accessories**

| Electrical accessories | Frame of ammeter | Standard button | Double Button | Button with key | Self-lock button | Mushroom button | Mushroom button with key | Indicator light | illuminated button | Control switch S1, S3 | Control switch S2 | potentiometer (single turn) | potentiometer multi turn) |
|------------------------|------------------|-----------------|---------------|-----------------|------------------|-----------------|--------------------------|-----------------|--------------------|-----------------------|-------------------|-----------------------------|---------------------------|
| h(mm)                  | 11               | 20.5            | 21.5          | 38(62)          | 40               | 32              | 45(69)                   | 23.5            | 20.5               | 40                    | 42                | 27                          | 40.5                      |

**Selection Table**

| Code  | Component layout |   |   |   |   |   |   |   |   |
|-------|------------------|---|---|---|---|---|---|---|---|
| 03    | a                | b | c | d | e | f | g | h |   |
|       |                  |   |   |   |   |   |   |   |   |
| 07    | a                | b | c | d | e | f | g | h |   |
|       |                  |   |   |   |   |   |   |   |   |
| 11    | a                | b | c | d | e | f | g | h | j |
|       |                  |   |   |   |   |   |   |   |   |
| 15    | a                | b | c | d |   |   |   |   |   |
|       |                  |   |   |   |   |   |   |   |   |
| 19    | a                | b | c |   |   |   |   |   |   |
|       |                  |   |   |   |   |   |   |   |   |
| 21/25 | a                | b | c | d |   |   |   |   |   |
|       |                  |   |   |   |   |   |   |   |   |





## Explosion-proof Control Station

### - KBX03 - Series

#### Application and Features

- Explosion proof certificates  
- ATEX : SEV 22 ATEX 0606 X  
- IECEx : IECEx SEV 22.0011X
- Application in hazardous area  
Zone 1 and Zone 2,  
Zone 21 and Zone 22
- There are 5 types of enclosure, assembled with explosion-proof components (control buttons, switches, indicator lights, potentiometers, ammeters, etc.) and terminal blocks. The components are rail-type structure, which can be quickly installed and convenient for installation and maintenance.
- The emergency stop button can be equipped with anti-misoperation mechanism and padlock by requirements.
- Stainless steel exposed fasteners, anti-drop structure, convenient for installation and maintenance.

II 2 G Ex db eb IIC T6 Gb

II 2 D Ex tb IIIC T80°C Db

#### Product Definition

| K      | BX                                 | 03                            | X                                  | AX                                   | BX                                                         | DX | KX | PX | X | X | X |
|--------|------------------------------------|-------------------------------|------------------------------------|--------------------------------------|------------------------------------------------------------|----|----|----|---|---|---|
| K -KHJ | Design No.                         | Button quantity<br>(Optional) | Signal lamp quantity<br>(Optional) | Potentiometer quantity<br>(Optional) | Inlet direction<br>D-Top inlet<br>X-Bottom inlet (default) |    |    |    |   |   |   |
|        | Explosion-proof<br>control station | Enclosure code                | Ammeter quantity<br>(Optional)     | Switch quantity<br>(Optional)        | Installation method<br>G-Hanging type<br>L-Stand type      |    |    |    |   |   |   |

#### Note:

1. Example: KBX03-19A2B1GXM25X1.5, 19# enclosure, which with two control buttons, one ammeter, wall mounting type, one bottom inlet M25X1.5.
2. The specific requirements of the components are based on the drawings.
3. Button code, switch code, signal lamp code, ammeter code.
4. The rain shade is customizable by requirements.



#### Technical Parameter

|                      |                                         |                                                                                                             |                     |
|----------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------|
| Ex marking           | Gas                                     | Ex II 2 G Ex db eb IIC T6 Gb                                                                                | Ex db eb IIC T6 Gb  |
|                      | Dust                                    | Ex II 2 D Ex tb IIIC T80°C Db                                                                               | Ex tb IIIC T80°C Db |
| Exectutive standards |                                         | IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31      |                     |
| Enclosure materials  | Enclosure                               | GRP (Polyester resin, glass fibre reinforced), antistatic                                                   |                     |
|                      | Rain shade                              | Bended steel plate surface powder coated (black color) or stainless steel 304/316, please note when needed. |                     |
| Color of enclosure   |                                         | Black                                                                                                       |                     |
| Exposed fasteners    |                                         | Stainless steel exposed fasteners, anti-drop structure                                                      |                     |
| Rated voltage        |                                         | Maximum 415VAC, 250V DC                                                                                     |                     |
| Rated current        |                                         | 6A、10A、16A                                                                                                  |                     |
| Wire diameter        | ≤6A: 0.75~2.5mm <sup>2</sup>            |                                                                                                             |                     |
|                      | 6A<I≤10A: 1.5~2.5mm <sup>2</sup>        |                                                                                                             |                     |
|                      | 10A<I≤16A: 2.5mm <sup>2</sup>           |                                                                                                             |                     |
| Degree of protection |                                         | IP66                                                                                                        |                     |
| Ambient temperature  |                                         | -40°C~+40/45/50/55/60/65/70°C                                                                               |                     |
| Components           | K0101 explosion-proof control button.   |                                                                                                             |                     |
|                      | K0102 explosion-proof indicator.        |                                                                                                             |                     |
|                      | K0101-S explosion-proof control switch. |                                                                                                             |                     |
|                      | K0109 explosion-proof ammeter.          |                                                                                                             |                     |
| Installation method  |                                         | Wall type and stand type                                                                                    |                     |
| Cable entries        | Wall type                               | M16X1.5~M63X1.5<br>Without cable entry device as default, please note if which is needed.                   |                     |

#### Components and accessories



K0101- Control button



K0101-A2 Double button



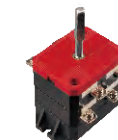
K0102- Signal lamp



K0101-A Illuminated control buttons



K0109- Ammeter



K0155 Switch



φ38 operating handle



φ65 operating handle (with padlock available)

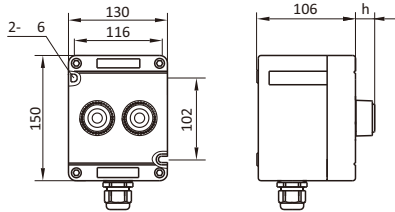
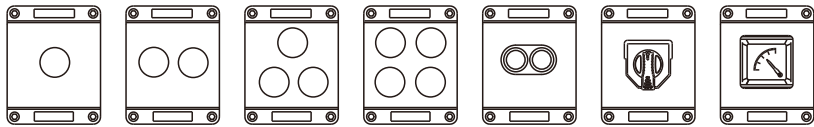
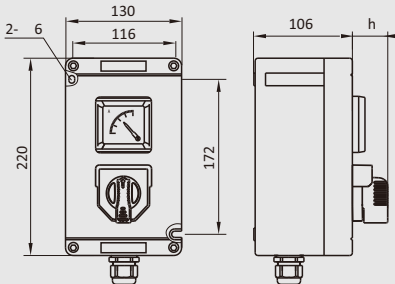
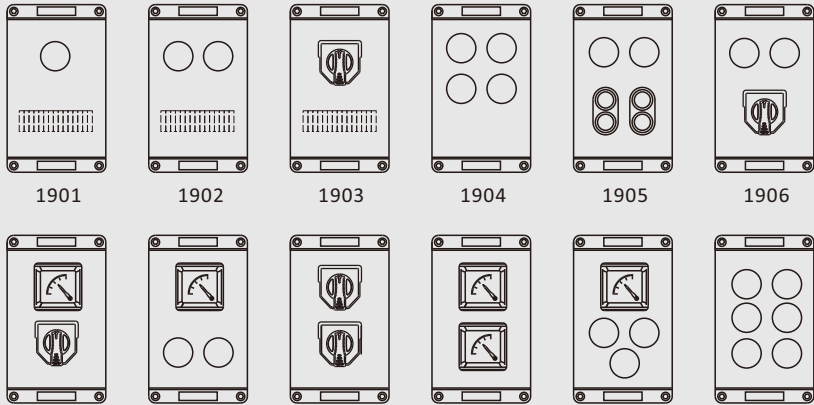
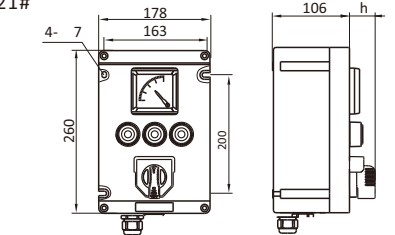
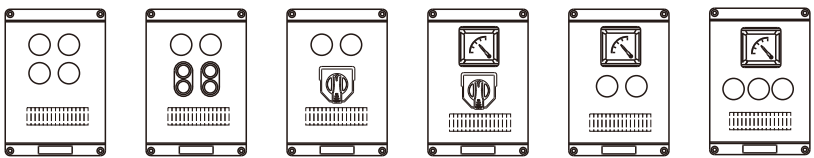
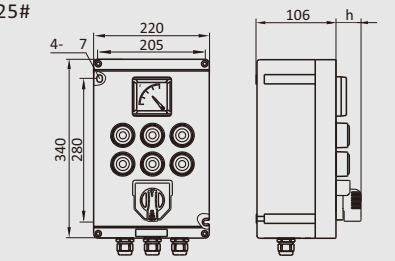
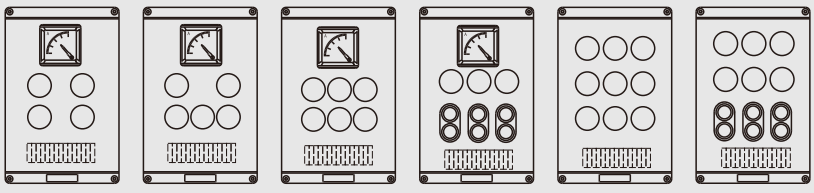
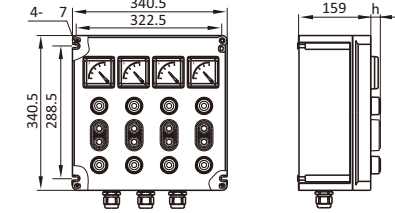
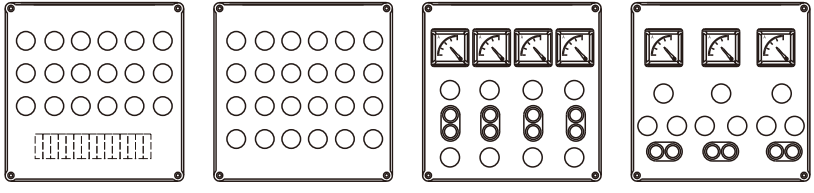


Square operating handle

#### Note:

1. K0109-48 occupies 2 components position;
2. φ 65 and square operating handle occupies 2 components position;
3. K0155 switch, K0109-72 occupies 2~3 components position.

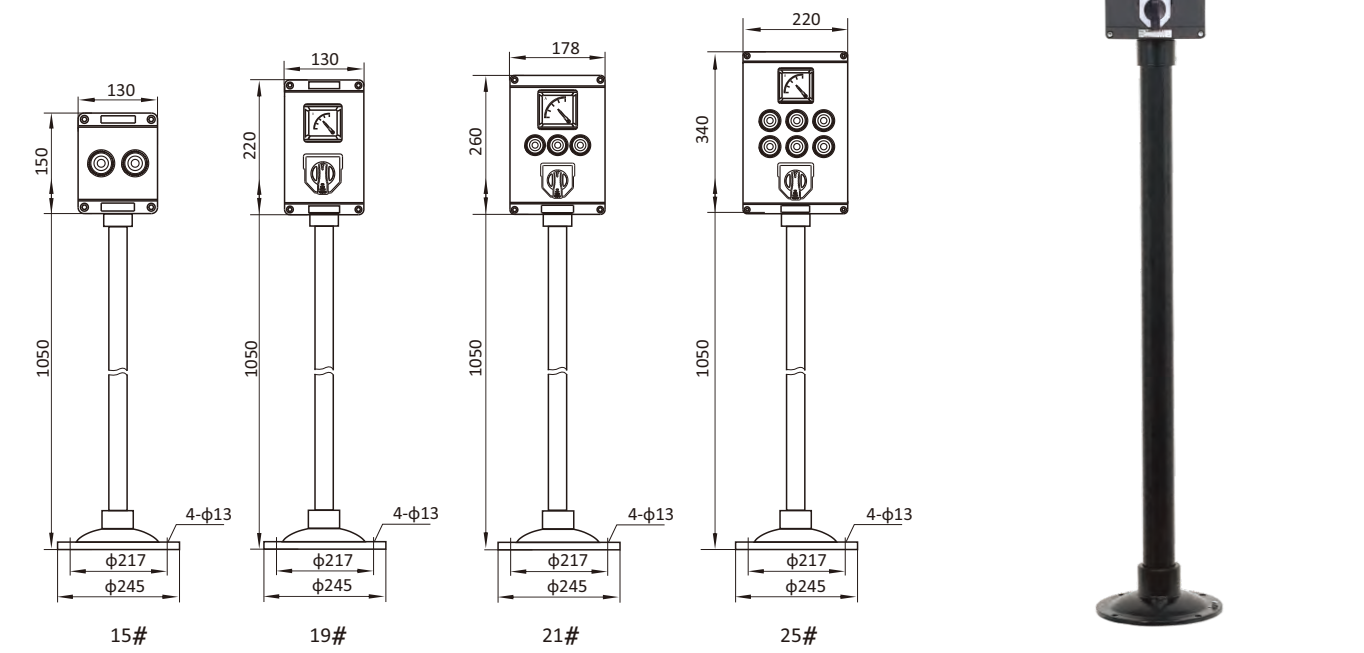
Selection Table (Dimensions in mm)

| Outline                                                                                                | Component layout                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>15#<br/></div>   | <div><div>1501150215031504150515061507</div></div>                     |
| <div>19#<br/></div>   | <div><div>190119021903190419051906190719081909191019111912</div></div> |
| <div>21#<br/></div> | <div><div>210121022103210421052106</div></div>                       |
| <div>25#<br/></div> | <div><div>250125022503250425052506</div></div>                       |
| <div>29#<br/></div> | <div><div>2901290229032904</div></div>                               |

Height of electrical accessories

| Electrical accessories | Frame of ammeter | Standard button | Double Button | Button with key | Self-lock button | Mushroom button | Mushroom button with key | Indicator light | illuminated button | Control switch S1, S3 | Control switch S2 | potentiometer (single turn) | potentiometer multi turn) |
|------------------------|------------------|-----------------|---------------|-----------------|------------------|-----------------|--------------------------|-----------------|--------------------|-----------------------|-------------------|-----------------------------|---------------------------|
| h(mm)                  | 11               | 20.5            | 21.5          | 38(62)          | 40               | 32              | 45(69)                   | 23.5            | 20.5               | 40                    | 42                | 27                          | 40.5                      |

Outline and Installation (stand type)



Accessories list

| Item                          | Picture                                                                               | Weight (kg) |
|-------------------------------|---------------------------------------------------------------------------------------|-------------|
| Stand type<br>connection part |  | 0.3         |
| Pole                          |  | 3.4         |
| Basis                         |  | 0.6         |





## Explosion-proof Control Station

### - KBX05 - Series

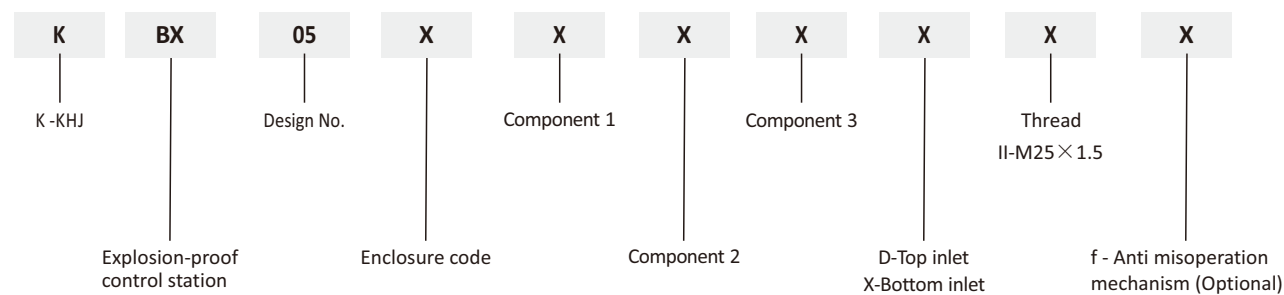
#### Application and Features

- Explosion proof certificates
  - ATEX : SEV 22 ATEX 0606 X
  - IECEx : IECEx SEV 22.0011X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Three types of enclosure size, built-in explosion-proof components (control button, control switch, signal lamp, potentiometer, ammeter, etc.). The components is rail mounting type, which can be installed on the guide rail quickly and accurately, easy for installation and maintenance.
- Component arrangement can be combined upon request.
- Emergency stop can be equipped with anti misoperation mechanism and padlock (If need).
- Stainless steel exposed fastener, anti dropping structure, easy for installation and maintenance.

II 2 G Ex db eb IIC T6 Gb

II 2 D Ex tb IIIC T80°C Db

#### Product Definition



#### Note:

1. Rain shade can be customized upon request.

Model example:

KBX05-07/R01F-A1/I/02FX II : 07# enclosure, equipped with one signal lamp, AC/DC 12-36V, and one push button, 1NO+1NC, with marking "I", bottom inlet M25X1.5.



#### Technical Parameter

|                      |                                         |                                                                                                                |                     |
|----------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------|
| Ex marking           | Gas                                     |  II 2 G Ex db eb IIC T6 Gb  | Ex db eb IIC T6 Gb  |
|                      | Dust                                    |  II 2 D Ex tb IIIC T80°C Db | Ex tb IIIC T80°C Db |
| Exectutive standards |                                         | IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31         |                     |
| Enclosure material   | Enclosure                               | GRP (Polyester resin, glass fibre reinforced), antistatic                                                      |                     |
|                      | Rain shade                              | Bended steel plate surface powder coated (black color)<br>or stainless steel 304/316, please note when needed  |                     |
| Enclosure color      |                                         | Black                                                                                                          |                     |
| Enclosure material   |                                         | Stainless steel, anti-drop structure.                                                                          |                     |
| Rated voltage        |                                         | Max 415V AC, 250V DC                                                                                           |                     |
| Rated current        |                                         | 6A、10A、16A                                                                                                     |                     |
| Wire diameter        | ≤6A: 0.75~2.5mm <sup>2</sup>            |                                                                                                                |                     |
|                      | 6A<I≤10A: 1.5~2.5mm <sup>2</sup>        |                                                                                                                |                     |
|                      | 10A<I≤16A: 2.5mm <sup>2</sup>           |                                                                                                                |                     |
| Degree of protection |                                         | IP66                                                                                                           |                     |
| Ambient temperature  |                                         | -40°C ~ +40/45/50/55/60/65/70°C                                                                                |                     |
| Built-in components  | K0101 explosion-proof control button.   |                                                                                                                |                     |
|                      | K0102 explosion-proof signal lamp.      |                                                                                                                |                     |
|                      | K0101-S explosion-proof control switch. |                                                                                                                |                     |
|                      | K0109 explosion-proof ammeter.          |                                                                                                                |                     |
| Installation method  |                                         | Hanging type                                                                                                   |                     |
| Cable entries        |                                         | Φ 25.5mm<br>The cable gland is not available when delivery, please indicate if necessary.                      |                     |

#### Components and Accessories



K0101-Control button



K0101-A2 Two control button



K0102-Signal lamp



K0101-A Control button with signal lamp



K0109-Ammeter



Φ 38 Operating handle



Φ 65  
Operating handle  
(padlock available)



Square operating handle

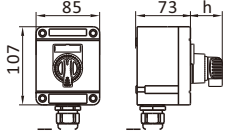
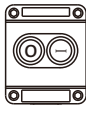
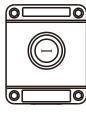
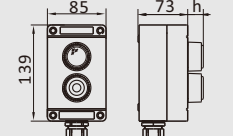
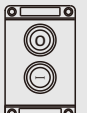
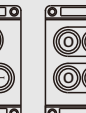
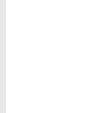
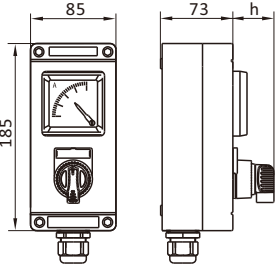
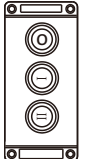
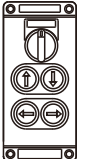
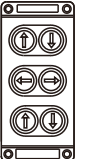
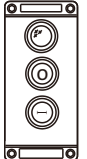
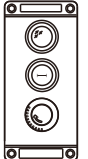
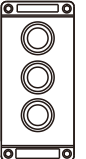
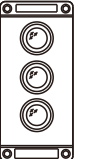
#### Note:

1. Installation area of 1 pcs K0109-48 is same as 2 pcs buttons.

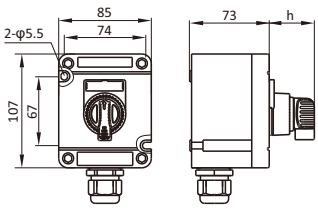
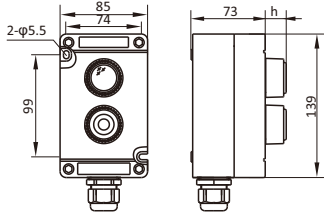
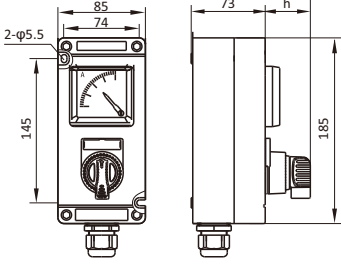
2. Installation area of 1 pcs Φ 65 operating handle or 1 pcs square operating handle is same as 2 pcs buttons.



Selection table (mm)

| Outline                                                                                  | Component layout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03#<br> |  301  302  303  304  305  306                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 07#<br> |  701  702  703  704  705  706  707  708  709                                                                                                                                                                                                                                                                                                                                                                              |
| 11#<br> |  1101  1102  1103  1104  1105  1106  1107<br> 1108  1109  1110  1111  1112  1113 |

Outline and Installation (mm)

|                                                                                            |                                                                                            |                                                                                             |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <br>03# | <br>07# | <br>11# |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|

| Component accessories                   | h (mm) |
|-----------------------------------------|--------|
| Meter frame                             | 11     |
| Standard button                         | 20.5   |
| Double button                           | 21.5   |
| Button with key                         | 38(62) |
| Emergency stop button with self-locking | 40     |
| Mushroom head button                    | 32     |
| Mushroom head button with key           | 45(69) |

| Component accessories       | h (mm) |
|-----------------------------|--------|
| Indicator light             | 23.5   |
| Illuminated control button  | 20.5   |
| Control switch S1、S3        | 40     |
| Control switch S2           | 42     |
| Potentiometer (single-turn) | 27     |
| Potentiometer (multi-turn)  | 40.5   |
| —                           | —      |



Light Knowledge

LED Explosion Proof Lighting

LED Industrial Lighting

Explosion proof Electrical Apparatus

Explosion proof cable Gland





## Explosion - proof Electrical Apparatus

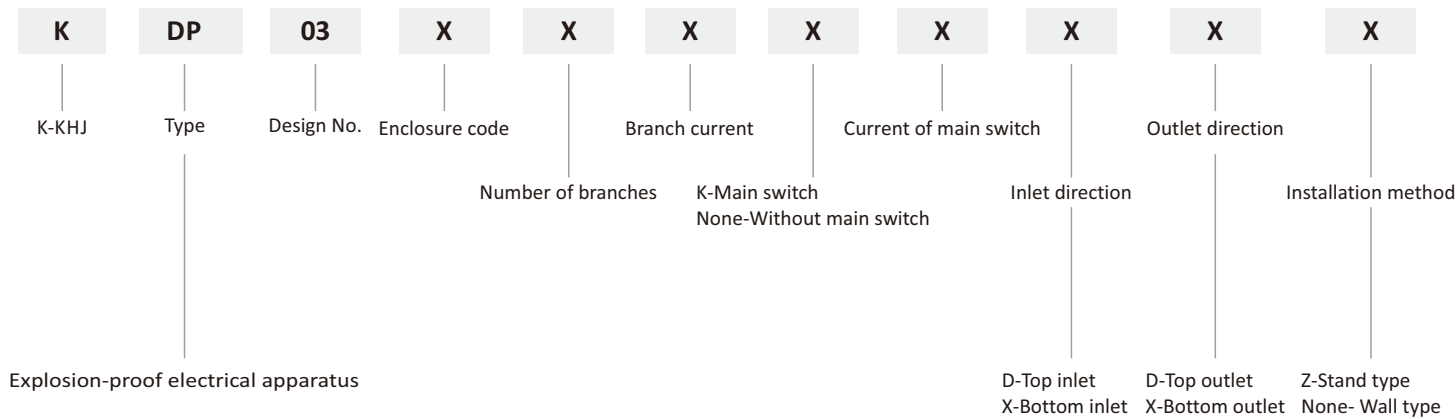
### - KDP03 - Series

#### Application and Features

- Explosion proof certificates  
- ATEX : TPS 22 ATEX 114950 0003 X  
- IECEx : IECEx TPS 22.0025X
- Application in hazardous area  
Zone 1 and Zone 2,  
Zone 21 and Zone 22
- Three types of explosion protection: Ex db IIB, Ex db IIB+H2, Ex tb IIC
- The enclosure can be equipped with miniature circuit breakers (MCB) or molded case circuit breakers (MCCB), leakage circuit breakers, contactors, thermal relays, PLCs, control transformers, soft starters, control buttons, indicator lights, push switches, potentiometers, Voltmeter, ammeter, tachometer, terminal block, etc.
- The enclosure with hinges and handle, convenient for installation and maintenance. Protect the flame-proof surface when operating.
- The circuit breaker using metal handle with frozen-resistant and can be equipped with a padlock.
- The enclosures can be combined and installed to meet the various requirements of power distribution systems.
- Can be customized according to user requirements, meet the certificate use restrictions.
- The number of elements and the maximum number of holes size needs to meet the requirements of power dissipation and mechanical strength of the housing.

- Ex II 2 G Ex db IIB T6/T5/T4 Gb
- Ex II 2 G Ex db[ ia/ib] IIB T6/T5/T4 Gb
- Ex II 2 G Ex db IIB+H2 T6/T5/T4 Gb
- Ex II 2 G Ex db[ia/ib] IIB+H2 T6/T5/T4 Gb
- Ex II 2 D Ex tb IIC T80/T95/T130°C Db

#### Product Definition



- Note:**
1. Please select the model according to the "Product Definition" above, and specify all the technical parameters.
  2. Please provide the electrical schematic diagram.
  3. Pls specify the number, specification and position of the cable entries.
  4. The rain shade is customizable by requirements.



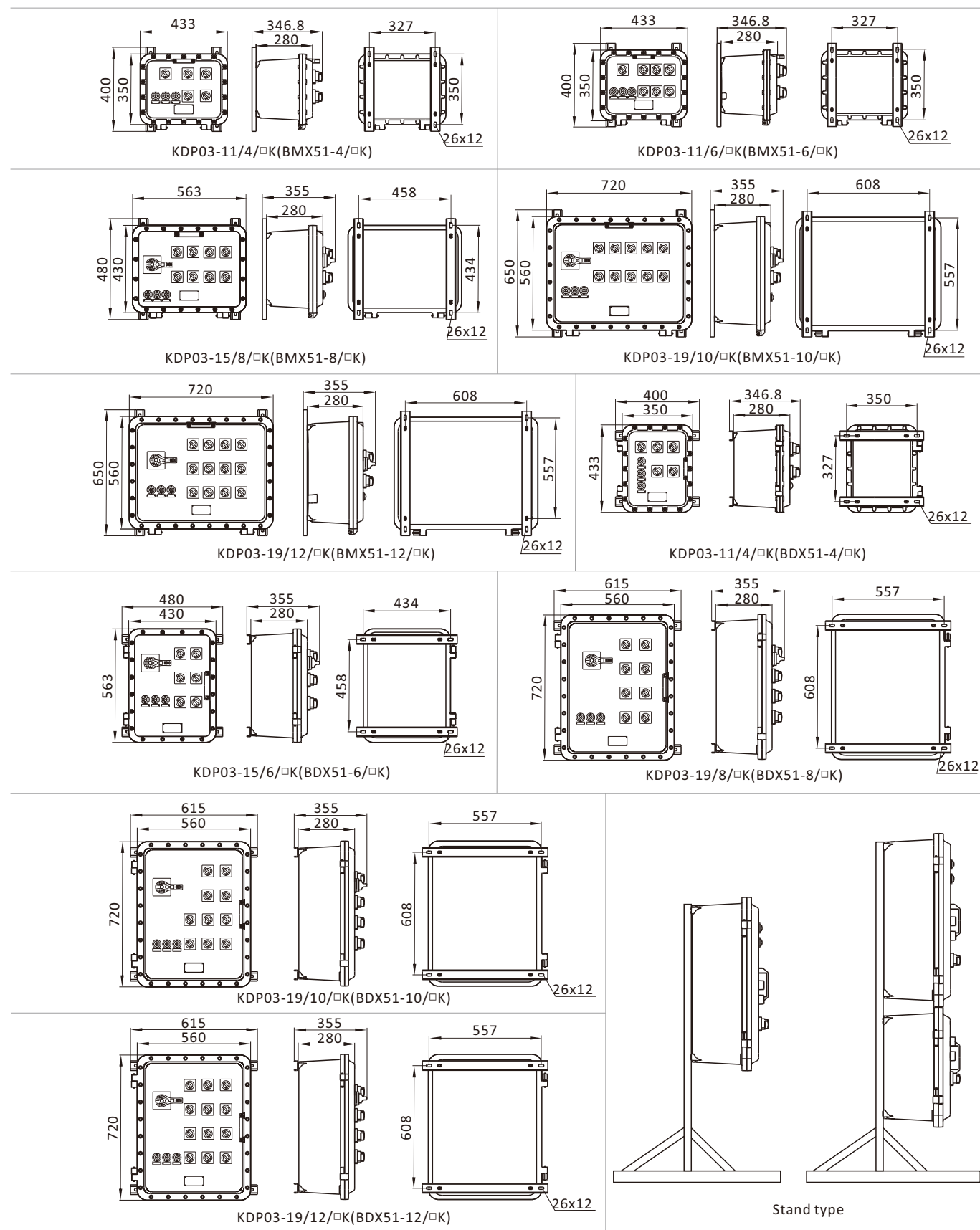
#### Technical Parameter

|                      |                       |                                                                                                                                                 |                                 |
|----------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Ex marking           | Gas                   |  II 2 G Ex db IIB T6/T5/T4 Gb                                | Ex db IIB T6/T5/T4 Gb           |
|                      |                       |  II 2 G Ex db[ ia/ib] IIB T6/T5/T4 Gb                        | Ex db[ ia/ib] IIB T6/T5/T4 Gb   |
|                      |                       |  II 2 G Ex db IIB+H2 T6/T5/T4 Gb                             | Ex db IIB+H2 T6/T5/T4 Gb        |
|                      |                       |  II 2 G Ex db[ia/ib] IIB+H2 T6/T5/T4 Gb                      | Ex db[ia/ib] IIB+H2 T6/T5/T4 Gb |
|                      | Dust                  |  II 2 D Ex tb IIIC T80/T95/T130°C Db                         | Ex tb IIIC T80/T95/T130°C Db    |
| Exectutive standards |                       | IEC 60079-0, IEC 60079-1, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-11, EN 60079-31                                        |                                 |
| Enclosure material   | Enclosure             | Aluminum alloy enclosure, powder coated, Industrial grey with dark lines texture (RAL7035)                                                      |                                 |
|                      | Transparent part      | Tempered glass, resistant to 4J impact                                                                                                          |                                 |
|                      | Rain shade            | Bended steel plate surface powder coated, industrial grey with dark lines texture (RAL7035) or stainless steel 304/316, please note when needed |                                 |
| Exposed fasteners    |                       | Stainless steel                                                                                                                                 |                                 |
| Components           | Power circuit breaker | Miniature circuit breaker (MCB) or molded case circuit breaker (MCCB) and leakage circuit breaker                                               |                                 |
|                      | Branch switch         | Miniature circuit breaker (MCB) or molded case circuit breaker (MCCB) and leakage circuit breaker                                               |                                 |
|                      | Terminal block        | World famous brand                                                                                                                              |                                 |
|                      | Indicator             | Red, green, yellow, blue, white                                                                                                                 |                                 |
|                      | Button                | Red, green, yellow, blue, white                                                                                                                 |                                 |
|                      | Control switch        | LW26-D, LW26-F                                                                                                                                  |                                 |
|                      | AC contactor          | World famous brand                                                                                                                              |                                 |
|                      | Thermal relay         | World famous brand                                                                                                                              |                                 |
|                      | PLC programmer        | World famous brand                                                                                                                              |                                 |
| soft starter         | World famous brand    |                                                                                                                                                 |                                 |
| Rated voltage        |                       | Maximum 1000V AC, 1500V DC                                                                                                                      |                                 |
| Rated current        |                       | Maximum 1200A                                                                                                                                   |                                 |
| Frequency            |                       | 50Hz/60Hz                                                                                                                                       |                                 |
| Degree of protection |                       | IP66                                                                                                                                            |                                 |
| Ambient temperature  |                       | -20°C~+40/60°C, -40°C~+40/60°C                                                                                                                  |                                 |
| Cable entry          |                       | M□X1.5(default, exact size according to requirement) , NPT thread (optional), KBM- for recommended                                              |                                 |
| Inlet direction      |                       | Bottom in and bottom out, upon request                                                                                                          |                                 |
| Installation method  |                       | Wall type (Standard)                                                                                                                            |                                 |
|                      |                       | Stand type (Optional)                                                                                                                           |                                 |

#### Selection Table

| Type     | Enclousre size (mm) | Internal size (mm) | Maximum power dissipation (Ta: +40°C) |          |           | Maximum power dissipation (Ta: +60°C) |          | Weight (Empty enclosure) |
|----------|---------------------|--------------------|---------------------------------------|----------|-----------|---------------------------------------|----------|--------------------------|
|          | LxWxH               | LxWxH              | T6/T80°C                              | T5/T95°C | T4/T130°C | T6/T80°C                              | T5/T95°C |                          |
| KDP03-03 | 282X210X170         | 216X144X126        | 45W                                   | 110W     | 110W      | 45W                                   | 72W      | 9.0kg                    |
| KDP03-07 | 350X210X170         | 282X142X123        | 45W                                   | 80W      | 139W      | 45W                                   | 80W      | 11.5kg                   |
| KDP03-08 | 350X300X235         | 278X228X189        | 45W                                   | 80W      | 139W      | 45W                                   | 80W      | 16.6kg                   |
| KDP03-11 | 433X350X280         | 361X278X225        | 100W                                  | 288W     | 288W      | 100W                                  | 162W     | 26kg                     |
| KDP03-15 | 563X433X280         | 488X358X197        | 130W                                  | 365W     | 365W      | 130W                                  | 225W     | 48kg                     |
| KDP03-19 | 720X563X280         | 630X473X182        | 200W                                  | 448W     | 448W      | 200W                                  | 380W     | 85kg                     |
| KDP03-21 | 720X563X350         | 626X469X257        | 210W                                  | 690W     | 690W      | 210W                                  | 400W     | 95kg                     |

## Outline and Installation(mm)







## Explosion-proof Electrical Apparatus(Circuit Breaker)

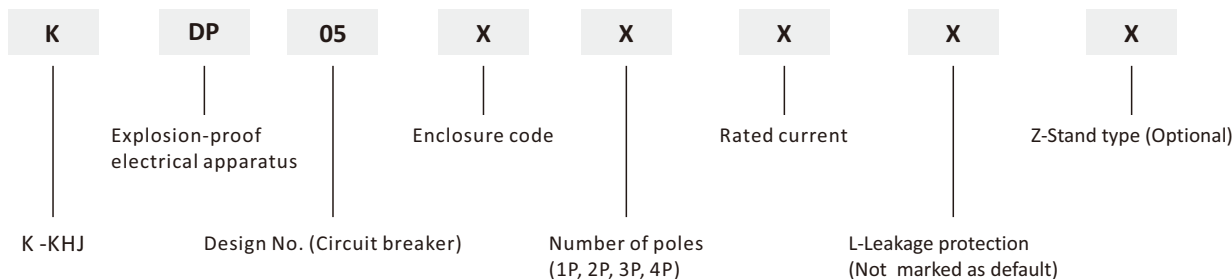
### - KDP05 - Series

#### Application and Features

- Explosion proof certificates  
- ATEX : TPS 22 ATEX 114950 0003 X  
- IECEx : IECEx TPS 22.0025X
- Application in hazardous area  
Zone 1 and Zone 2,  
Zone 21 and Zone 22
- Three types of explosion protection: Ex db IIB, Ex db IIB+H2, Ex tb IIIC.
- The enclosure can be equipped with miniature circuit breakers (MCB) or molded, case circuit breakers (MCCB), leakage circuit breakers.
- leakage protection accessories, shunt tripping device, and other protection devices are optional.
- The enclosure with hinges and handle, convenient for installation and maintenance. Protect the flame-proof surface when operating.
- The circuit breaker using metal handle and can be equipped with a padlock.

- Ex II 2 G Ex db IIB T6/T5/T4 Gb
- Ex II 2 G Ex db IIB+H2 T6/T5/T4 Gb
- Ex II 2 D Ex tb IIIC T80/T95/T130°C Db

#### Product Definition



#### Note:

1. Please select the model according to the "Product definition" above, and specify all the technical parameters.
2. Please specify the number, specification and position of the cable entry holes, and cable entry device provided by user.
3. The rain shade is customizable by requirements.



#### Technical Parameter

|                           |                 |                                                                                                                                                  |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
|---------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------|-----------|-------|-----------|-------|-----------|-------|-----------|------|-------------------------------|-----|--------|
| Ex marking                | Gas             |  II 2 G Ex db IIB T6/T5/T4 Gb                                 |           | Ex db IIB T6/T5/T4 Gb        |           |       |           |       |           |       |           |      |                               |     |        |
|                           |                 |  II 2 G Ex db IIB+H2 T6/T5/T4 Gb                              |           | Ex db IIB+H2 T6/T5/T4 Gb     |           |       |           |       |           |       |           |      |                               |     |        |
|                           | Dust            |  II 2 D Ex tb IIIC T80/T95/T130°C Db                          |           | Ex tb IIIC T80/T95/T130°C Db |           |       |           |       |           |       |           |      |                               |     |        |
| Exective standards        |                 | IEC 60079-0, IEC 60079-1, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-31                                                                    |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Enclosure material        | Enclosure       | Aluminum alloy enclosure, powder coated, Industrial grey with dark lines texture (RAL7035)                                                       |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
|                           | Rain shade      | Bended steel plate surface powder coated, industrial grey with dark lines texture (RAL7035) or stainless steel 304/316, please note when needed. |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Exposed fasteners         |                 | Stainless steel                                                                                                                                  |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Components                | Circuit breaker | Miniature circuit breaker (MCB) or molded case circuit breaker (MCCB) and leakage circuit breaker                                                |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
|                           | Indicator light | Red, green, yellow, blue, white, according to requirement add more                                                                               |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Rated voltage             |                 | Maximum 1000V AC, 1500V DC                                                                                                                       |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Rated current             |                 | Maximum 630A                                                                                                                                     |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Frequency                 |                 | 50Hz/60Hz                                                                                                                                        |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Maximum dissipation power | Enclosure size  | Type                                                                                                                                             | Ta: +40°C |                              |           |       |           |       | Ta: +60°C |       |           |      |                               |     |        |
|                           |                 |                                                                                                                                                  | T6/T80°C  |                              | T5/T95°C  |       | T4/T130°C |       | T6/T80°C  |       | T5/T95°C  |      | The weight of Emptyen closure |     |        |
|                           |                 | Power                                                                                                                                            | Current   | Power                        | Current   | Power | Current   | Power | Current   | Power | Current   |      |                               |     |        |
|                           |                 | 282X210X170                                                                                                                                      | 03        | 45W                          | ≤63A      | 110W  | ---       | 110W  | ---       | 45W   | ≤63A      | 72W  |                               | --- | 9.0kg  |
|                           |                 | 350X210X170                                                                                                                                      | 07        | 45W                          | 63A~100A  | 80W   | ---       | 139W  | ---       | 45W   | 63A~100A  | 80W  |                               | --- | 11.5kg |
|                           |                 | 350X300X235                                                                                                                                      | 08        | 45W                          | 63A~100A  | 80W   | ---       | 139W  | ---       | 45W   | 63A~100A  | 80W  |                               | --- | 16.6kg |
|                           |                 | 433X350X280                                                                                                                                      | 11        | 100W                         | 100A~250A | 288W  | ---       | 288W  | ---       | 100W  | 100A~250A | 162W |                               | --- | 26kg   |
|                           |                 | 563X433X280                                                                                                                                      | 15        | 130W                         | 250A~400A | 365W  | ---       | 365W  | ---       | 130W  | 250A~400A | 225W |                               | --- | 48kg   |
|                           |                 | 720X563X280                                                                                                                                      | 19        | 200W                         | ---       | 448W  | 400A~630A | 448W  | ---       | 200W  | ---       | 380W |                               | --- | 85kg   |
| 720X563X350               | 21              | 210W                                                                                                                                             | ---       | 690W                         | ---       | 690W  | 400A~630A | 210W  | ---       | 400W  | ---       | 95kg |                               |     |        |
| Degree of protection      |                 | IP66                                                                                                                                             |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Ambient temperature       |                 | -20°C~-40/60°C, -40°C~-40/60°C                                                                                                                   |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Cable entry               |                 | M16×1.5-M63×1.5(default, exact size according to requirement) , NPT thread (optional), KBM Series Explosion-proof Cable Glands is recommended.   |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Inlet direction           |                 | Bottom in and bottom out                                                                                                                         |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
| Installation method       |                 | Wall type (Standard )                                                                                                                            |           |                              |           |       |           |       |           |       |           |      |                               |     |        |
|                           |                 | Stand type (Optional)                                                                                                                            |           |                              |           |       |           |       |           |       |           |      |                               |     |        |

#### Selection Table

|                 |  |  |                                    |  |  |
|-----------------|--|--|------------------------------------|--|--|
|                 |  |  |                                    |  |  |
| KDP05-03/□63□   |  |  | KDP05-11□/□160□<br>KDP05-11□/□250□ |  |  |
|                 |  |  |                                    |  |  |
| KDP05-15□/□400□ |  |  | KDP05-19□/□630□                    |  |  |



## Explosion - proof Electrical Apparatus

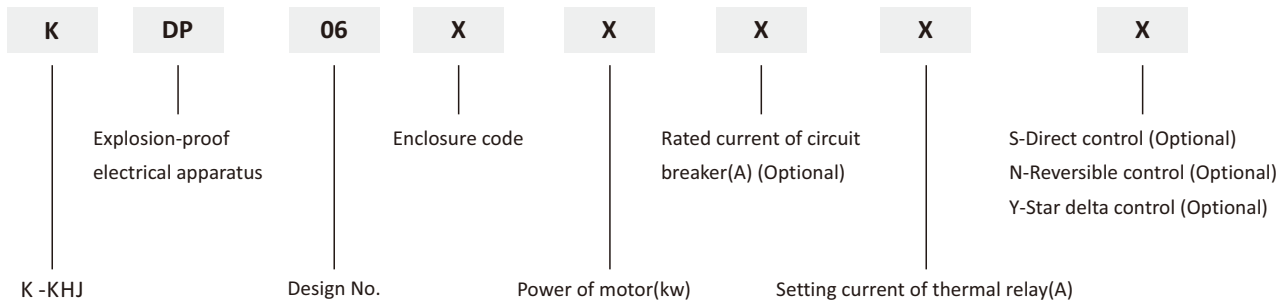
### - KDP06- Series

#### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0003 X
  - IECEx : IECEx TPS 22.0025X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Three types of explosion protection: Ex db IIB, Ex db IIB+H2, Ex tb IIIC.
- The enclosure can be equipped with miniature circuit breakers (MCB) or molded case circuit breakers (MCCB), contactors, thermal relays, control buttons, indicator lights, push switches, potentiometers, voltmeters, ammeters, tachometers, terminals, etc.
- It's able to control the start, stop, forward and reverse rotation of the motor, and the comprehensive protection of the motor, able to multi-places control.
- The enclosure with hinges and handle, convenient for installation and maintenance. Protect the flame-proof surface when operating.
- The circuit breaker using metal handle and can be equipped with a padlock.
- Can be customized according to user requirements, meet the certificate use restrictions.
- The number of elements and the maximum number of holes size needs to meet the requirements of power dissipation and mechanical strength of the housing.
- Please specify the special requirements when ordering.

- II 2 G Ex db IIB T6/T5/T4 Gb
- II 2 G Ex db IIB+H2 T6/T5/T4 Gb
- II 2 D Ex tb IIIC T80/T95/T130°C Db

#### Product Definition



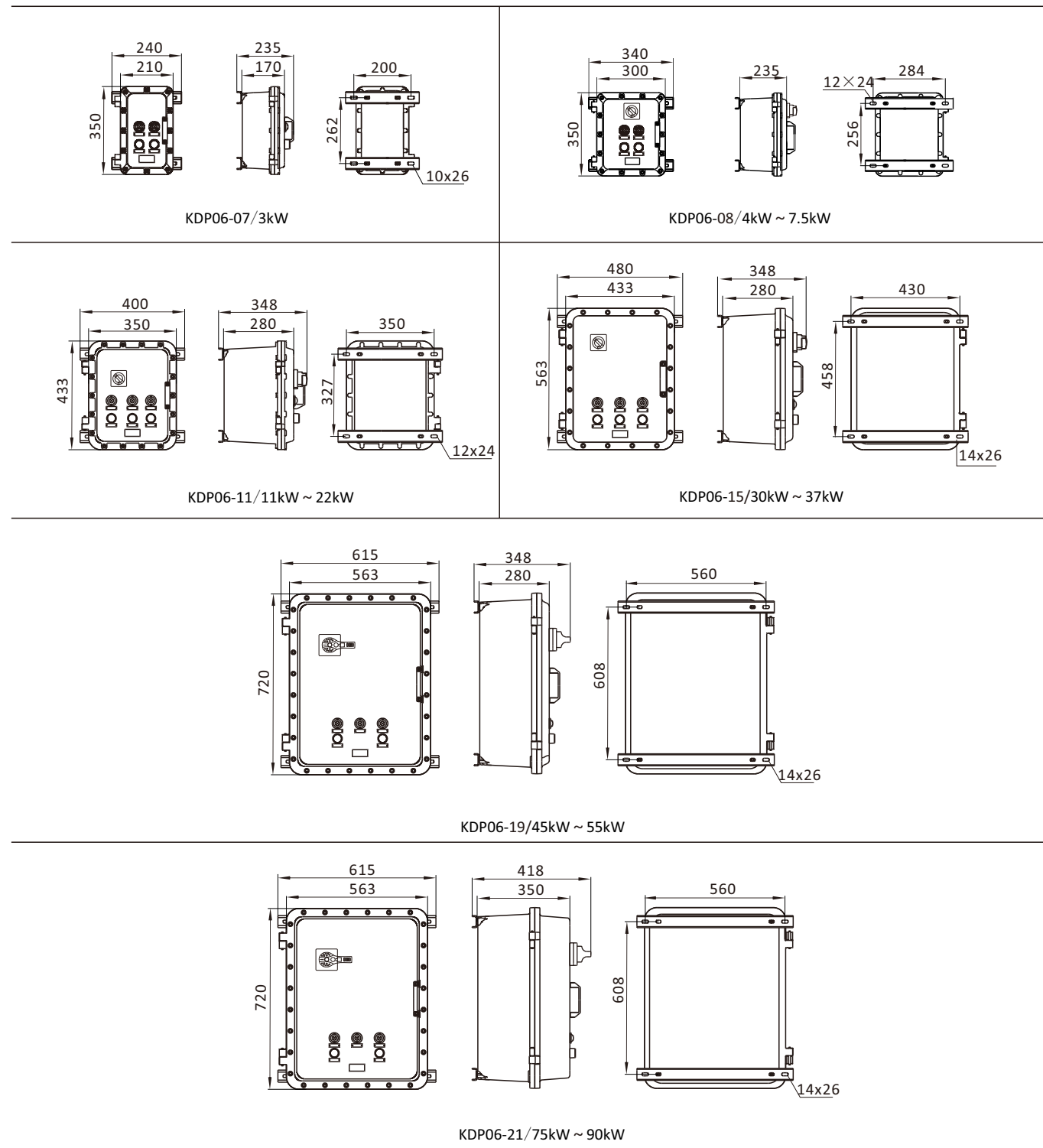
- Note:**
1. Please select the model according to the “Product definition” above, and specify all the technical parameters.
  2. Please provide the electrical schematic diagram.
  3. Please specify the number, specification and position of the cable entry holes, and ex-proof cable glands provided by user.
  4. The rain shade is customizable by requirements.

#### Technical Parameter

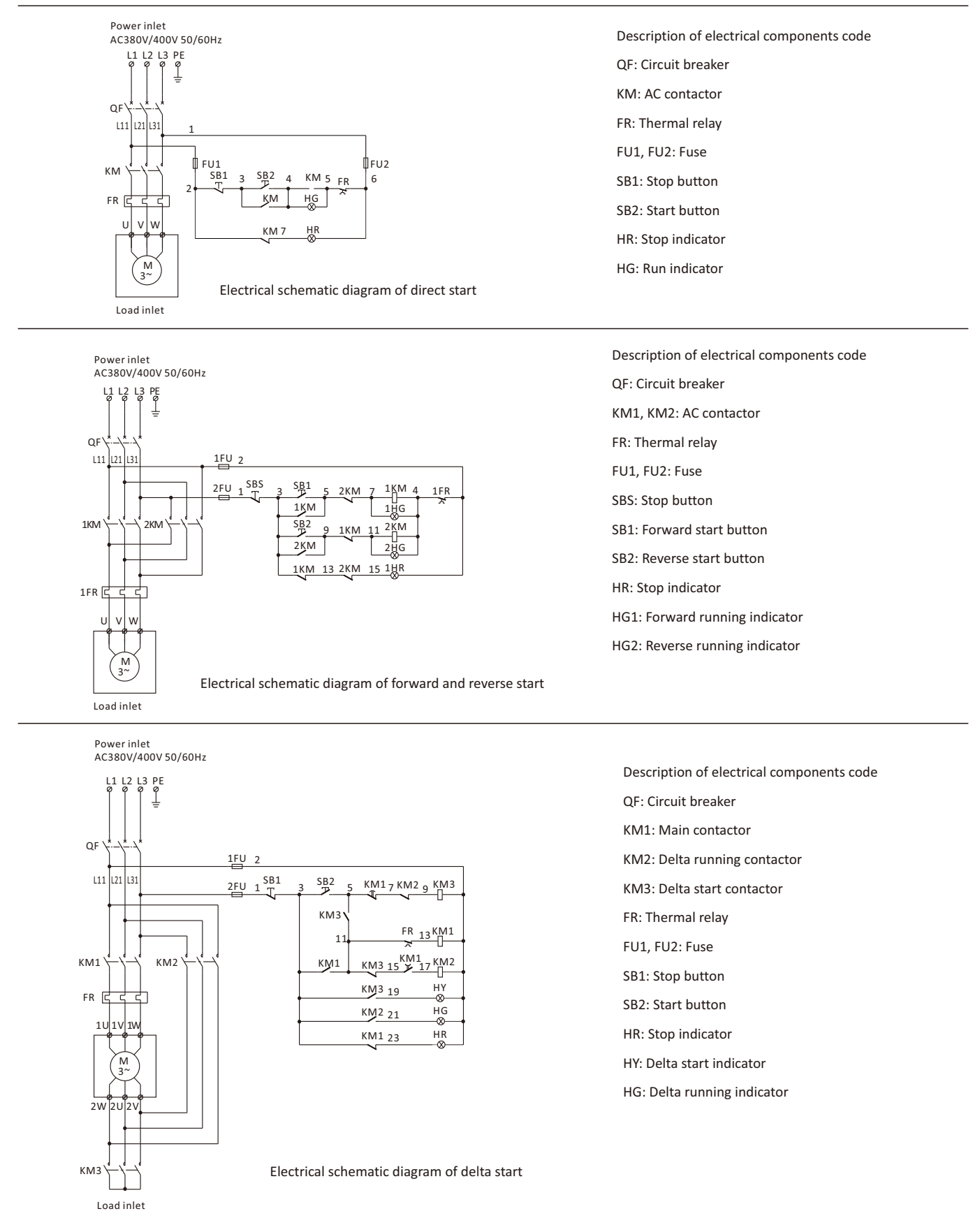
|                           |                       |                                                                                                                                                 |                              |         |          |         |           |         |           |         |          |         |                               |
|---------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------|----------|---------|-----------|---------|-----------|---------|----------|---------|-------------------------------|
| Ex marking                | Gas                   | II 2 G Ex db IIB T6/T5/T4 Gb                                                                                                                    | Ex db IIB T6/T5/T4 Gb        |         |          |         |           |         |           |         |          |         |                               |
|                           |                       | II 2 G Ex db IIB+H2 T6/T5/T4 Gb                                                                                                                 | Ex db IIB+H2 T6/T5/T4 Gb     |         |          |         |           |         |           |         |          |         |                               |
|                           | Dust                  | II 2 D Ex tb IIIC T80/T95/T130°C Db                                                                                                             | Ex tb IIIC T80/T95/T130°C Db |         |          |         |           |         |           |         |          |         |                               |
| Exectutive standards      |                       | IEC 60079-0,IEC 60079-1,IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-31                                                                     |                              |         |          |         |           |         |           |         |          |         |                               |
| Enclosure material        | Enclosure             | Aluminum alloy enclosure, powder coated, Industrial grey with dark lines texture (RAL7035)                                                      |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Transparent part      | Tempered glass, resistant to 4J impact                                                                                                          |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Rain shade            | Bended steel plate surface powder coated, industrial grey with dark lines texture (RAL7035) or stainless steel 304/316, please note when needed |                              |         |          |         |           |         |           |         |          |         |                               |
| Exposed fasteners         |                       | Stainless steel                                                                                                                                 |                              |         |          |         |           |         |           |         |          |         |                               |
| Components                | Power circuit breaker | Miniature circuit breaker (MCB) or molded case circuit breaker (MCCB) and leakage circuit breaker                                               |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Branch switch         | Miniature circuit breaker (MCB) or molded case circuit breaker (MCCB) and leakage circuit breaker                                               |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Terminal block        | World famous brand                                                                                                                              |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Indicator             | Red, green, yellow, blue, white                                                                                                                 |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Button                | Red, green, yellow, blue, white                                                                                                                 |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Control switch        | LW26-D, LW26-F                                                                                                                                  |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | AC contactor          | World famous brand                                                                                                                              |                              |         |          |         |           |         |           |         |          |         |                               |
|                           | Thermal relay         | World famous brand                                                                                                                              |                              |         |          |         |           |         |           |         |          |         |                               |
| Rated voltage             |                       | Maximum 690V AC                                                                                                                                 |                              |         |          |         |           |         |           |         |          |         |                               |
| Rated current             |                       | Maximum 200A                                                                                                                                    |                              |         |          |         |           |         |           |         |          |         |                               |
| Frequency                 |                       | 50Hz/60Hz                                                                                                                                       |                              |         |          |         |           |         |           |         |          |         |                               |
| Maximum dissipation power | Enclosure size        | Type                                                                                                                                            | Ta: +40°C                    |         |          |         |           |         | Ta: +60°C |         |          |         |                               |
|                           |                       |                                                                                                                                                 | T6/T80°C                     |         | T5/T95°C |         | T4/T130°C |         | T6/T80°C  |         | T5/T95°C |         | The weight of Empty enclosure |
|                           | Power                 | Current                                                                                                                                         | Power                        | Current | Power    | Current | Power     | Current | Power     | Current | Power    | Current |                               |
|                           | 282×210×170           | 03                                                                                                                                              | 45W                          | --      | 110W     | --      | 110W      | --      | 45W       | --      | 72W      | --      | 9.0kg                         |
|                           | 350×210×170           | 07                                                                                                                                              | 45W                          | ≤40A    | 80W      | ≤50A    | 139W      | --      | 45W       | ≤40A    | 80W      | ≤50A    | 11.5kg                        |
|                           | 350×300×235           | 08                                                                                                                                              | 45W                          | ≤40A    | 80W      | ≤50A    | 139W      | --      | 45W       | ≤40A    | 80W      | ≤50A    | 16.6kg                        |
|                           | 433×350×280           | 11                                                                                                                                              | 100W                         | ≤95A    | 288W     | ≤120A   | 288W      | --      | 100W      | ≤95A    | 162W     | ≤120A   | 26kg                          |
|                           | 563×433×280           | 15                                                                                                                                              | 130W                         | ≤150A   | 365W     | ≤200A   | 365W      | --      | 130W      | ≤150A   | 225W     | ≤200A   | 48kg                          |
|                           | 720×563×280           | 19                                                                                                                                              | 200W                         | ≤200A   | 448W     | ≤300A   | 448W      | ≤300A   | 200W      | ≤200A   | 380W     | ≤300A   | 85kg                          |
| 720×563×350               | 21                    | 210W                                                                                                                                            | ≤200A                        | 690W    | ≤300A    | 690W    | ≤300A     | 210W    | ≤200A     | 400W    | ≤300A    | 95kg    |                               |
| Degree of protection      |                       | IP66                                                                                                                                            |                              |         |          |         |           |         |           |         |          |         |                               |
| Ambient temperature       |                       | -20°C~+40/60°C, -40°C~+40/60°C                                                                                                                  |                              |         |          |         |           |         |           |         |          |         |                               |
| Cable entry               |                       | M16×1.5-M63×1.5(default, exact size according to requirement) , NPT thread (optional), KBM Series Explosion-proof Cable Glands is recommended   |                              |         |          |         |           |         |           |         |          |         |                               |
| Inlet direction           |                       | Bottom in and bottom out, upon request                                                                                                          |                              |         |          |         |           |         |           |         |          |         |                               |
| Installation method       |                       | Wall type (Standard)                                                                                                                            |                              |         |          |         |           |         |           |         |          |         |                               |
|                           |                       | Stand type (Optional)                                                                                                                           |                              |         |          |         |           |         |           |         |          |         |                               |



## Outline and Installation(mm)



## Electrical Schematic Diagram





## Explosion - proof Electrical Apparatus(Control circuit)

- **KDP07 - Series**

### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0003 X
  - IECEx : IECEx TPS 22.0025X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Three types of explosion protection: Ex db IIB, Ex db IIB+H2, Ex tb IIIC.
- The enclosure can be equipped with transformers, buttons, indicator lights, switches, potentiometers, voltmeters, ammeters, tachometers, etc.
- The emergency stop button can be equipped with an anti-misoperation mechanism and a padlock by requirements.
- The enclosure with hinges and handle, convenient for installation and maintenance. Protect the flame-proof surface when operating.
- The enclosures can be combined and installed to meet the various requirements of power distribution systems.
- Can be customized according to user requirements, meet the certificate use restrictions.
- The number of elements and the maximum number of holes size needs to meet the requirements of power dissipation and mechanical strength of the housing.
- The circuit breaker using metal handle with frozen-resistant and can be equipped with a padlock.
- Please specify the special requirements when ordering.

- Ex II 2 G Ex db IIB T6 Gb
- Ex II 2 G Ex db[ ia/ib] IIB T6 Gb
- Ex II 2 G Ex db IIB+H2 T6 Gb
- Ex II 2 G Ex db[ia/ib] IIB+H2 T6 Gb
- Ex II 2 D Ex tb IIIC T80°C Db

### Product Definition

| K                                       | DP             | 07                                                            | X                                                          | AX                                                     | BX                                        | DX                                        | KX                                     | PX                                               | X                                                  | X | X |
|-----------------------------------------|----------------|---------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------|--------------------------------------------------|----------------------------------------------------|---|---|
| K - KHJ                                 | Design No.     | Number of buttons<br>None-without button                      | Number of indicator lights<br>None-without indicator light | Number of potentiometers<br>None-without potentiometer | Number of switches<br>None-without switch | Number of switches<br>None-without switch | Inlet thread<br>specification/quantity | Inlet direction<br>D-Top inlet<br>X-Bottom inlet | Installation method<br>G-Wall type<br>L-Stand type |   |   |
| Explosion-proof<br>electrical apparatus | Enclosure code | Number of Ammeter/Voltmeter<br>None-without ammeter/voltmeter |                                                            |                                                        |                                           |                                           |                                        |                                                  |                                                    |   |   |

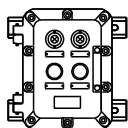
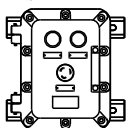
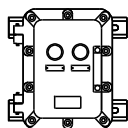
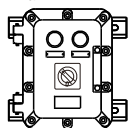
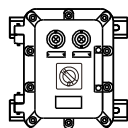
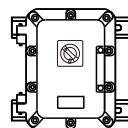
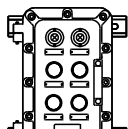
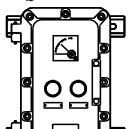
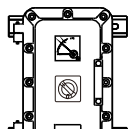
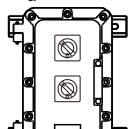
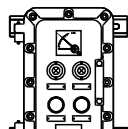
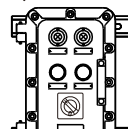
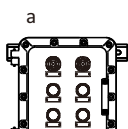
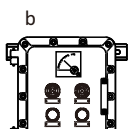
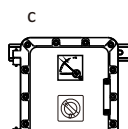
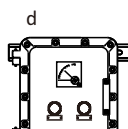
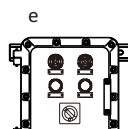
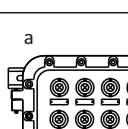
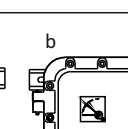
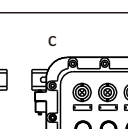
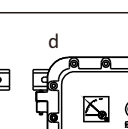
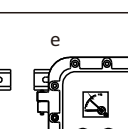
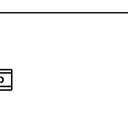
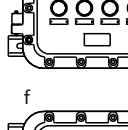
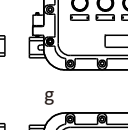
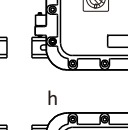
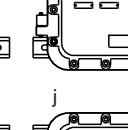
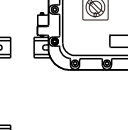
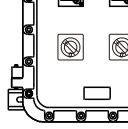
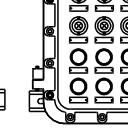
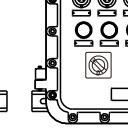
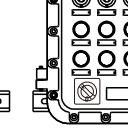
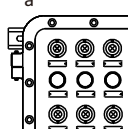
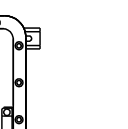
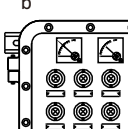
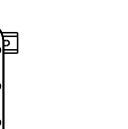
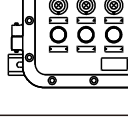
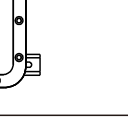
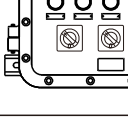
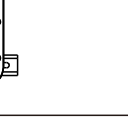
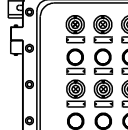
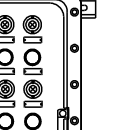
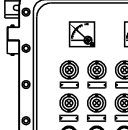
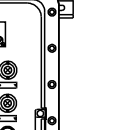
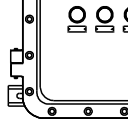
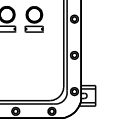
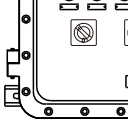
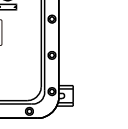
- Note :**
1. Optional components:
    - K0105 explosion-proof switch button(1NO&1NC as default)
    - K0106 explosion-proof indicator
    - control switch
    - K0109 explosion-proof ammeter
  2. Example: KDP07-A2B1K1
    - Components: 2 buttons, 1 ammeter, 1 control switch
    - Details: 1 start button (0105-A1I01, 1NO+1NC);
      - 1 stop button (K0105-A1I21,1NO+1NC);
      - 1 ammeter (50/5);
      - 1 control switch (stop-run-start);
  3. The rain shade is customizable by requirements.

### Technical Parameter

|                           |                  |                                                                                                                                                 |                                                                                                |                           |          |                               |
|---------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------|----------|-------------------------------|
| Ex marking                | Gas              |  II 2 G Ex db IIB T6 Gb                                      |                                                                                                | Ex db IIB T6 Gb           |          |                               |
|                           |                  |  II 2 G Ex db[ ia/ib] IIB T6 Gb                              |                                                                                                | Ex db[ ia/ib] IIB T6 Gb   |          |                               |
|                           |                  |  II 2 G Ex db IIB+H2 T6 Gb                                   |                                                                                                | Ex db IIB+H2 T6 Gb        |          |                               |
|                           |                  |  II 2 G Ex db[ia/ib] IIB+H2 T6 Gb                            |                                                                                                | Ex db[ia/ib] IIB+H2 T6 Gb |          |                               |
|                           | Dust             |  II 2 D Ex tb IIIC T80°C Db                                  |                                                                                                | Ex tb IIIC T80°C Db       |          |                               |
| Exectutive standards      |                  | IEC 60079-0, IEC 60079-1, IEC 60079-11, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-11, EN 60079-31                                        |                                                                                                |                           |          |                               |
| Enclosure materials       | Enclosure        | Aluminum alloy enclosure, powder coated, Industrial grey with dark lines texture (RAL7035)                                                      |                                                                                                |                           |          |                               |
|                           | Transparent part | Tempered glass, resistant to 4J impact                                                                                                          |                                                                                                |                           |          |                               |
|                           | Rain shade       | Bended steel plate surface powder coated, industrial grey with dark lines texture (RAL7035) or stainless steel 304/316, please note when needed |                                                                                                |                           |          |                               |
| Exposed fasteners         |                  | Stainless steel                                                                                                                                 |                                                                                                |                           |          |                               |
| Components                |                  |                                                                                                                                                 | K0105 explosion-proof switch button                                                            |                           |          |                               |
|                           |                  |                                                                                                                                                 | K0106 explosion-proof indicator                                                                |                           |          |                               |
|                           |                  |                                                                                                                                                 | K0107 explosion-proof indicator                                                                |                           |          |                               |
|                           |                  |                                                                                                                                                 | Control switch                                                                                 |                           |          |                               |
|                           |                  |                                                                                                                                                 | Specifications of potentiometer according to requirements                                      |                           |          |                               |
|                           |                  |                                                                                                                                                 | The voltmeter, ammeter and tachometer are 48/72 type, specifications according to requirements |                           |          |                               |
| Rated voltage             |                  | Maximum 415V AC                                                                                                                                 |                                                                                                |                           |          |                               |
| Rated current             |                  | Maximum 200A                                                                                                                                    |                                                                                                |                           |          |                               |
| Frequency                 |                  | 50Hz/60Hz                                                                                                                                       |                                                                                                |                           |          |                               |
| Maximum dissipation power | Enclosure size   | Type                                                                                                                                            | Temperature class                                                                              | Ta:+40°C                  | Ta:+60°C | The weight of Empty enclosure |
|                           |                  |                                                                                                                                                 |                                                                                                | T6/T80°C                  | T6/T80°C |                               |
|                           |                  | 105X105X90                                                                                                                                      | 01.1                                                                                           | ≤10A                      | ≤16A     | 1. 1kg                        |
|                           |                  | 105X160X90                                                                                                                                      | 01.2                                                                                           | ≤10A                      | ≤16A     | 1. 5kg                        |
|                           |                  | 116X202X90                                                                                                                                      | 01.3                                                                                           | ≤10A                      | ≤16A     | 2. 6kg                        |
|                           |                  | 282X210X170                                                                                                                                     | 03                                                                                             | 45W                       | 45W      | 9.0kg                         |
|                           |                  | 350X210X170                                                                                                                                     | 07                                                                                             | 45W                       | 45W      | 11.5kg                        |
|                           |                  | 350X300X235                                                                                                                                     | 08                                                                                             | 45W                       | 45W      | 16.6kg                        |
|                           |                  | 433X350X280                                                                                                                                     | 11                                                                                             | 100W                      | 100W     | 26kg                          |
|                           |                  | 563X433X280                                                                                                                                     | 15                                                                                             | 132W                      | 132W     | 48kg                          |
| 720X563X280               | 19               | 201W                                                                                                                                            | 201W                                                                                           | 85kg                      |          |                               |
| 720X563X350               | 21               | 210W                                                                                                                                            | 210W                                                                                           | 95kg                      |          |                               |
| Degree of protection      |                  | IP66                                                                                                                                            |                                                                                                |                           |          |                               |
| Ambient temperature       |                  | -20°C~+60°C, -40°C~+60°C                                                                                                                        |                                                                                                |                           |          |                               |
| Cable entry               |                  | M16×1.5-M63×1.5(default, exact size according to requirement) , NPT thread (optional), KBM Series Explosion-proof Cable Glands is recommended   |                                                                                                |                           |          |                               |
| Inlet direction           |                  | Bottom in and bottom out                                                                                                                        |                                                                                                |                           |          |                               |
| Installation method       |                  | Wall type (Standard)                                                                                                                            |                                                                                                |                           |          |                               |
|                           |                  | Stand type (Optional)                                                                                                                           |                                                                                                |                           |          |                               |



Selection Table

| Enclosure code | Arrangement of components                                                           |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 03             |    |    |    |    |    |    |
|                |    |    |    |    |    |    |
| 07             |    |    |    |    |    |    |
|                |    |    |    |    |    |    |
| 08             |   |   |   |   |   |   |
|                |  |  |  |  |  |  |
| 11             |  |  |  |  |  |  |
|                |  |  |  |  |  |  |
| 15             |  |  |  |  |  |  |
|                |  |  |  |  |  |  |
| 19/21          |  |  |  |  |  |  |
|                |  |  |  |  |  |  |





## Explosion-proof Electrical Apparatus (Terminal Box)

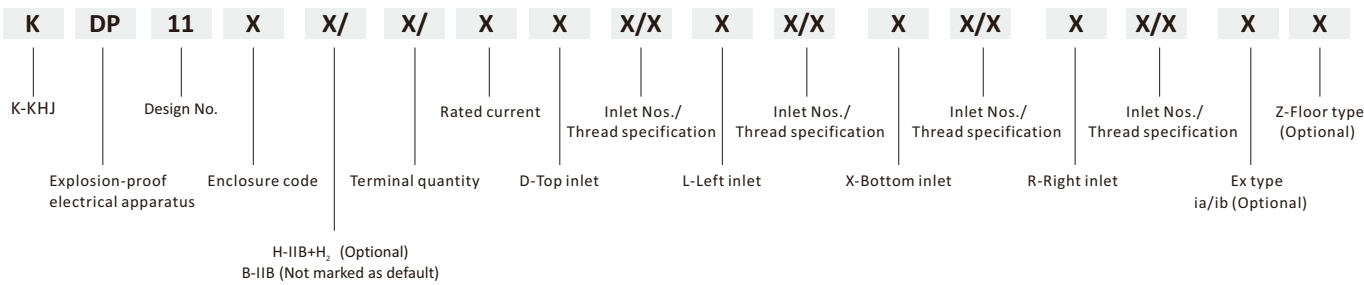
### - KDP11 - Series

#### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0003 X
  - IECEx : IECEx TPS 22.0025X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Three types of explosion protection (Ex db IIB, Ex db IIB+H<sub>2</sub>, Ex tb IIIC).
- Aluminum alloy enclosure, power coated.
- Equipped with hinges and door handle, easy to installation and maintenance, also protect the flameproof surface from damage when the cover is opening or closing.
- Can be customized upon request and able to meet the usage restrictions of the certificate
- The circuit breaker using metal handle with frozen-resistant and can be equipped with a padlock.
- Direction, size and quantity of cable entry can be customized and meet the requirements of dissipated power and mechanical strength of the enclosure.

- II 2 G Ex db IIB T6/T5/T4 Gb
- II 2 G Ex db IIB+H<sub>2</sub> T6/T5/T4 Gb
- II 2 D Ex tb IIIC T80/T95/T130°C Db

#### Product Definition



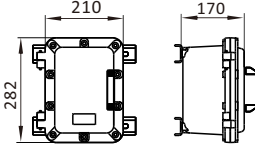
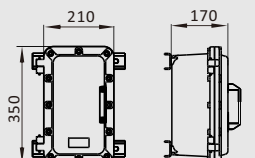
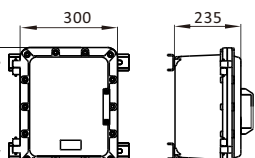
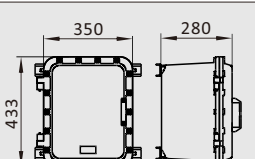
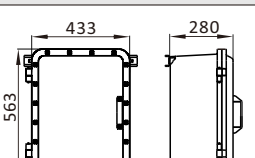
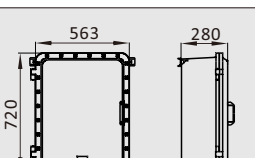
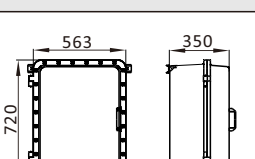
#### Technical Parameter

|                           |                   |                                                                                                                      |                               |               |           |               |            |               |                           |
|---------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-----------|---------------|------------|---------------|---------------------------|
| Ex marking                | Gas               | II 2 G Ex db IIB T6/T5/T4 Gb                                                                                         | Ex db IIB T6/T5/T4 Gb         |               |           |               |            |               |                           |
|                           |                   | II 2 G Ex db IIB+H2 T6/T5/T4 Gb                                                                                      | Ex db IIB+H2 T6/T5/T4 Gb      |               |           |               |            |               |                           |
|                           | Dust              | II 2 D Ex tb IIIC T80 /T95/T130°C Db                                                                                 | Ex tb IIIC T80 /T95/T130°C Db |               |           |               |            |               |                           |
| Exectutive standards      |                   | IEC 60079-0, IEC 60079-1, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-31                                        |                               |               |           |               |            |               |                           |
| Enclosure material        | Enclosure         | Aluminum alloy enclosure, powder coated, industrial gray with dark lines texture(RAL7035)                            |                               |               |           |               |            |               |                           |
| Exposed fastener          |                   | Stainless steel                                                                                                      |                               |               |           |               |            |               |                           |
| Components                | Brand of terminal | International brand                                                                                                  |                               |               |           |               |            |               |                           |
| Rated voltage             |                   | Max. 1000V AC, 1500V DC                                                                                              |                               |               |           |               |            |               |                           |
| Rated current             |                   | Max. 1200A                                                                                                           |                               |               |           |               |            |               |                           |
| Frequency                 |                   | 50Hz/60Hz                                                                                                            |                               |               |           |               |            |               |                           |
| Maximum dissipation power | Enclosure size    | Type                                                                                                                 | Ta: +60°C                     |               | Ta: +40°C |               |            |               | Weight of empty enclosure |
|                           |                   |                                                                                                                      | T6/T80°C                      |               | T5/T95°C  |               | T4/T130°C  |               |                           |
|                           |                   |                                                                                                                      | Power                         | Rated current | Power     | Rated current | Power      | Rated current |                           |
|                           | 282X210X170       | 03                                                                                                                   | 45W                           | ≤63A          | 110W      | --            | 110W       | --            | 9.0kg                     |
|                           | 350X210X170       | 07                                                                                                                   | 45W                           | 63A~100A      | 80W       | --            | 139W       | --            | 11.5kg                    |
|                           | 350X300X235       | 08                                                                                                                   | 45W                           | 63A~100A      | 80W       | --            | 139W       | --            | 16.6kg                    |
|                           | 433X350X280       | 11                                                                                                                   | 100W                          | 100A~250A     | 288W      | --            | 288W       | --            | 26kg                      |
|                           | 563X433X280       | 15                                                                                                                   | 130W                          | 250A~400A     | 365W      | 400A~800A     | 365W       | 800A~1200A    | 48kg                      |
|                           | 720X563X280       | 19                                                                                                                   | 200W                          | 250A~400A     | 448W      | 400A~800A     | 448W       | 800A~1200A    | 85kg                      |
| 720X563X350               | 21                | 210W                                                                                                                 | 250A~400A                     | 690W          | 400A~800A | 690W          | 800A~1200A | 95kg          |                           |
| Degree of protection      |                   | 03,07,08,11,15--IP66/IP67<br>19,21--IP66                                                                             |                               |               |           |               |            |               |                           |
| Ambient temperature       |                   | -20°C~+40/60°C, -40°C~+40/60°C                                                                                       |                               |               |           |               |            |               |                           |
| Cable entries             |                   | Standard M16×1.5-M63×1.5(Upon request),NPT thread (Optional), KBM Series Explosion-proof Cable Glands is recommended |                               |               |           |               |            |               |                           |
| Inlet direction           |                   | Upon request                                                                                                         |                               |               |           |               |            |               |                           |
| Installation Method       |                   | Hanging type (Standard)                                                                                              |                               |               |           |               |            |               |                           |
|                           |                   | Floor type (Optional)                                                                                                |                               |               |           |               |            |               |                           |

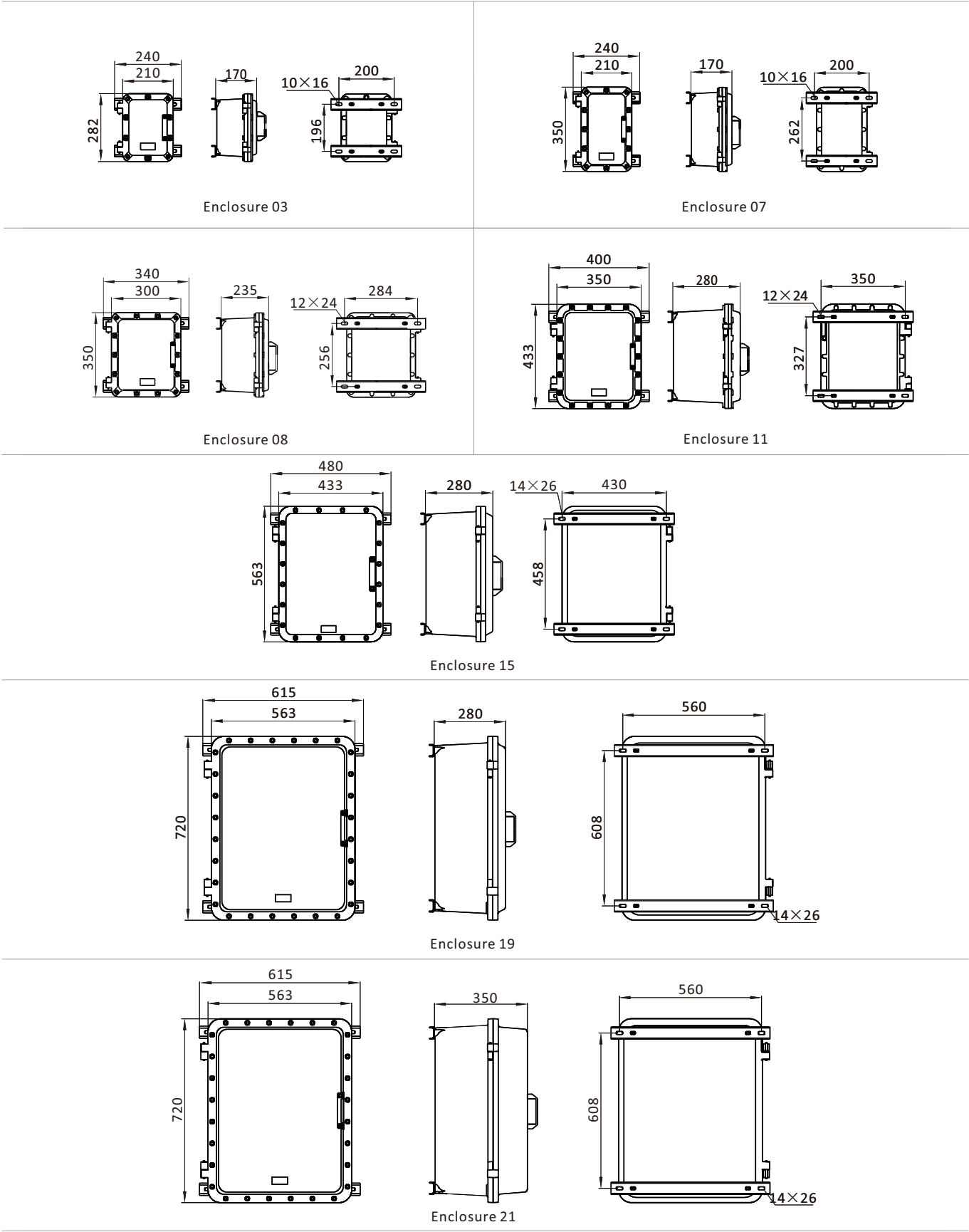


Selection Table (mm)

Maximum quantity of terminals that can be installed are shown in the table below:

| Enclosure specifications                                                                  | Guideway×Terminal (specification and quantity) |                |                |                 |                 |                 |                 |                  |                  |                  |                  |
|-------------------------------------------------------------------------------------------|------------------------------------------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
|                                                                                           | 2.5 <sup>2</sup>                               | 4 <sup>2</sup> | 6 <sup>2</sup> | 10 <sup>2</sup> | 16 <sup>2</sup> | 35 <sup>2</sup> | 70 <sup>2</sup> | 120 <sup>2</sup> | 185 <sup>2</sup> | 240 <sup>2</sup> | 300 <sup>2</sup> |
|                                                                                           | UK3N                                           | UK5N           | UK6N           | UK10N           | UK16N           | UK35N           | —               | —                | —                | —                | —                |
|                                                                                           | SAK2.5EN                                       | SAK4EN         | SAK6EN         | SAK10EN         | SAK16EN         | SAK35EN         | —               | —                | —                | —                | —                |
| 03<br>   | 1X23                                           | 1X21           | 1X18           | 1X14            | 1X12            | —               | —               | —                | —                | —                | —                |
| 07<br>   | 1X31                                           | 1X29           | 1X24           | 1X19            | 1X16            | —               | —               | —                | —                | —                | —                |
| 08<br>   | 1X32                                           | 1X30           | 1X25           | 1X20            | 1X18            | —               | —               | —                | —                | —                | —                |
| 11<br>  | 1X45                                           | 1X40           | 1X34           | 1X28            | 1X24            | 1X16            | —               | —                | —                | —                | —                |
|                                                                                           | 2X45                                           | 2X40           | 2X34           | 2X28            | —               | —               | —               | —                | —                | —                | —                |
| 15<br> | 1X60                                           | 1X54           | 1X48           | 1X36            | 1X30            | 1X20            | —               | —                | —                | —                | —                |
|                                                                                           | 2X60                                           | 2X54           | 2X48           | 2X36            | 2X30            | —               | —               | —                | —                | —                | —                |
| 19<br> | 1X90                                           | 1X80           | 1X70           | 1X60            | 1X40            | 1X25            | 1X25            | 1X14             | 1X10             | 1X8              | 1×X5             |
|                                                                                           | 2X90                                           | 2X80           | 2X70           | 2X60            | 2X40            | —               | —               | —                | —                | —                | —                |
| 21<br> | 1X90                                           | 1X80           | 1X70           | 1X60            | 1X40            | 1X25            | 1X25            | 1X14             | 1X10             | 1X8              | 1X5              |
|                                                                                           | 2X90                                           | 2X80           | 2X70           | 2X60            | 2X40            | —               | —               | —                | —                | —                | —                |

Outline and Installation(mm)





## Explosion-proof Plug and Sockets

### - KBSP01 - Series

#### Application and Features

- Explosion proof certificates
  - ATEX : CSANe 22ATEX1008 X
  - IECEx : IECEx CSAE 22.0005X
- Application in hazardous area
  - Zone 1 and Zone 2
  - Zone 21 and Zone 22
- Flame-proof type enclosure, four types of enclosure. eight kinds of current classes 10A, 16A, 25A, 32A, 50A, 63A, 100A, 125A, and four kinds of pole numbers 2P, 3P, 4P, 5P.
- Reliable interlocking function, the plug can be pulled out only after the power switch is off, and the power switch can be on only after the plug is inserted into the cavity.
- Contact performance of the plug is reliable. The plug sleeve in the socket has an elastic shutter spring sleeve, which not only makes the plug self-cleaning but also ensures small contact resistance and low-temperature rise. At the same time, it also reduces the required insertion and extraction force to the minimum. The design of shutter spring sleeve ensures the normal function of plug and socket and permanent self-cleaning.
- This model includes a timer with different working voltages, set to different colors to avoid mistaken insertion.

#### Product Definition

| K                                    | BSP | 01         | X                                                                                | X             | X                                           | X                                                                                                           |
|--------------------------------------|-----|------------|----------------------------------------------------------------------------------|---------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| K-KHJ                                |     | Design No. | Rated current                                                                    | Rated voltage | Pole                                        | T-Plug (Optional)<br>Z-Socket (Optional)<br>M-Socket without enclosure (Optional) (10, 16, 25, 32, 50, 63A) |
| Explosion-proof electrical apparatus |     |            | 10-10A<br>16-16A<br>25-25A<br>32-32A<br>50-50A<br>63-63A<br>100-100A<br>125-125A |               | 2P<br>3P(2P+PE)<br>4P(3P+PE)<br>5P(3P+N+PE) |                                                                                                             |



Flame-proof thread type cover  
Easy to install and disassemble



Stainless steel nameplate  
Anti-corrosion



Different working voltage product  
with different indication color



Dust-proof cover with safety chain  
Protect contact copper rod and  
flame-proof joint



#### Technical Parameter

|                          |                                                                              |                                                                                                     |        |                     |          |
|--------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------|---------------------|----------|
| Ex marking               | Gas                                                                          | Ex II 2 G Ex db IIC T6 Gb                                                                           |        | Ex db IIC T6 Gb     |          |
|                          | Dust                                                                         | Ex II 2 D Ex tb IIIC T80°C Db                                                                       |        | Ex tb IIIC T80°C Db |          |
| Conformity to standards  |                                                                              | IEC 60079-0, IEC 60079-1, IEC 60079-31<br>EN 60079-0, EN 60079-1, EN 60079-31                       |        |                     |          |
| Enclosure material       |                                                                              | Aluminum alloy enclosure, power coated surface,industrial gray with dark lines texture(RAL7035)     |        |                     |          |
| Exposed fastener         |                                                                              | Stainless steel                                                                                     |        |                     |          |
| Rated voltage            | 24,36V DC(10、16A)                                                            |                                                                                                     |        |                     |          |
|                          | 20~50V AC,100~130V AC, 200~250V AC, 380~415V AC,<br>480~500V AC, 600~690V AC |                                                                                                     |        |                     |          |
| Rated current            |                                                                              | 10A, 16A, 25A, 32A, 50A, 63A,100A, 125A                                                             |        |                     |          |
| Poles                    |                                                                              | 2P、3P(2P+PE)、4P(3P+PE)、5P(3P+N+PE)                                                                  |        |                     |          |
| Frequency                |                                                                              | 50Hz / 60Hz                                                                                         |        |                     |          |
| Degree of protection     |                                                                              | IP66                                                                                                |        |                     |          |
| Ambient temperature      |                                                                              | 10、16、25、32、50、63A: -60°C~+45°C, -60°C~+65°C(Please specify when ordering)<br>100、125A: -60°C~+50°C |        |                     |          |
| Cable outer diameter(mm) | Rated current                                                                | 10、16A                                                                                              | 25、32A | 50、63A              | 100、125A |
|                          | Wire diameter                                                                | 2.5~4mm²                                                                                            | 4~6mm² | 10~16mm²            | 25~35mm² |
|                          | Weight (kg)                                                                  | 2.2                                                                                                 | 3.3    | 6.6                 | 25.2     |

#### Main Parameter

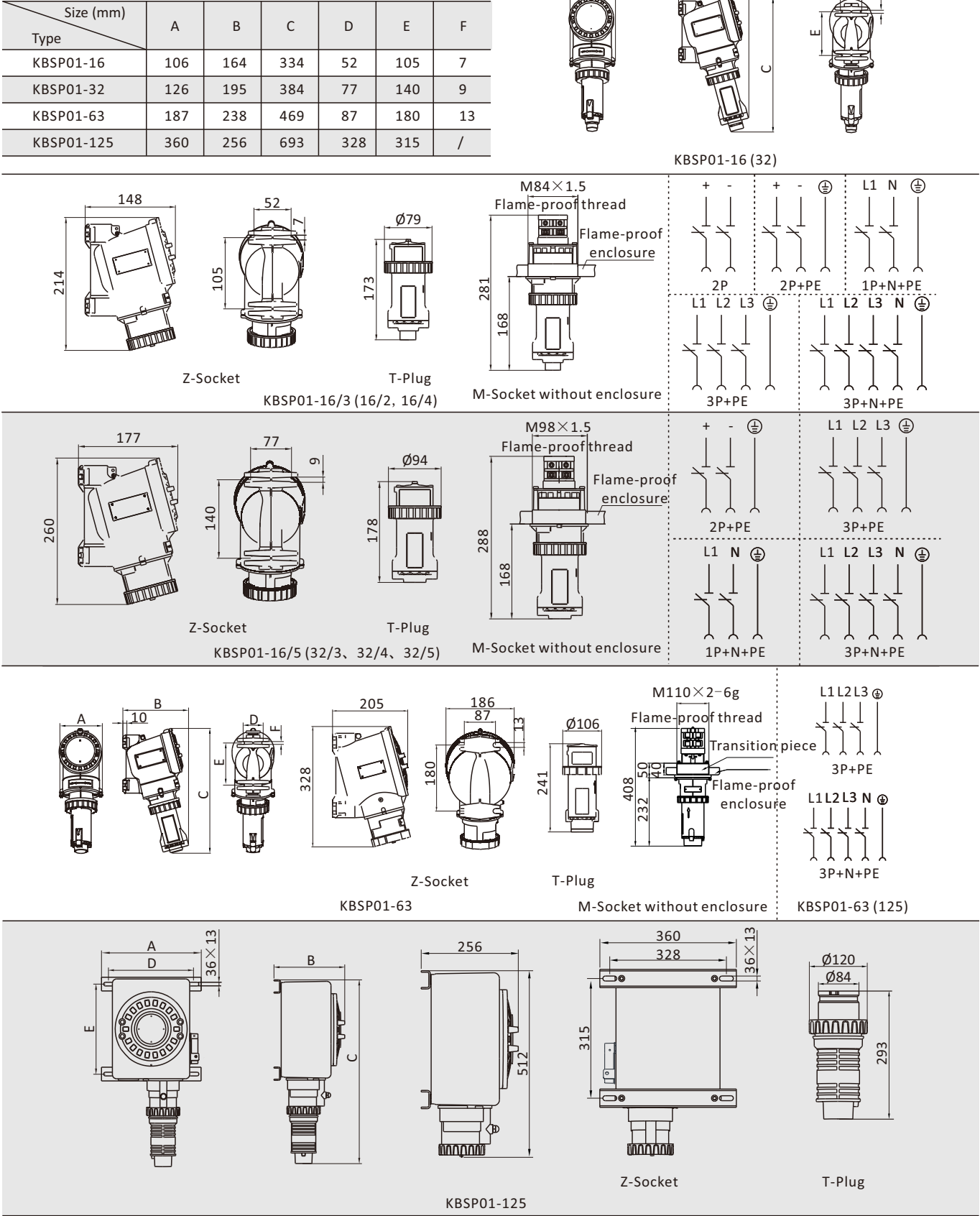
| Rated current (A) | Rated voltage (V) | Pole    | Schematic diagram | h  | Color  | Outlet and Inlet thread                                            |
|-------------------|-------------------|---------|-------------------|----|--------|--------------------------------------------------------------------|
| 10、16             | DC24              | 2P      |                   | -  | Purple | Plug:<br>1-M25×1.5<br>1-NPT3/4<br>Socket:<br>2-M25×1.5<br>2-NPT3/4 |
|                   | DC36              |         |                   | -  | White  |                                                                    |
|                   | AC20 ~ 25         | 2P+PE   |                   | 12 | Purple |                                                                    |
|                   | AC40 ~ 50         |         |                   | 12 | Purple |                                                                    |
|                   | AC100 ~ 130       |         |                   | 4  | Yellow |                                                                    |
|                   | AC200 ~ 250       |         |                   | 6  | Blue   |                                                                    |
|                   | AC100 ~ 130       | 3P+PE   |                   | 4  | Yellow | Plug:<br>1-M32×1.5<br>1-NPT1<br>Socket:<br>2-M32×1.5<br>2-NPT1     |
|                   | AC200 ~ 250       |         |                   | 9  | Blue   |                                                                    |
|                   | AC380 ~ 415       |         |                   | 6  | Red    |                                                                    |
|                   | AC480 ~ 500       |         |                   | 7  | Black  |                                                                    |
|                   | AC600 ~ 690       |         |                   | 5  | Black  |                                                                    |
|                   | AC57 ~ 75         | 3P+N+PE |                   | 4  | Yellow |                                                                    |
|                   | AC100 ~ 130       |         |                   | 4  | Yellow |                                                                    |
|                   | AC120 ~ 144       |         |                   | 9  | Blue   |                                                                    |
|                   | AC208 ~ 250       |         |                   | 9  | Blue   |                                                                    |
|                   | AC200 ~ 240       |         |                   | 9  | Blue   |                                                                    |
|                   | AC346 ~ 415       |         |                   | 5  | Black  |                                                                    |
|                   | AC277 ~ 288       |         |                   | 7  | Black  |                                                                    |
|                   | AC480 ~ 500       |         |                   | 7  | Black  |                                                                    |
|                   | AC347 ~ 400       |         |                   | 5  | Black  |                                                                    |
|                   | AC600 ~ 690       |         |                   | 5  | Black  |                                                                    |



**Selection Table**

| Rated current<br>(A) | Rated voltage<br>(V) | Pole        | Schematic<br>diagram                                                                | h  | Color  | Outlet and Inlet<br>thread                                                               |
|----------------------|----------------------|-------------|-------------------------------------------------------------------------------------|----|--------|------------------------------------------------------------------------------------------|
| 25、32                | AC20 ~ 25            | 2P + PE     |    | 12 | Purple | Plug:<br>1-M32X1.5<br>1-NPT1<br>Socket:<br>2-M32X1.5<br>2-NPT1                           |
|                      | AC40 ~ 50            |             |    | 12 | Purple |                                                                                          |
|                      | AC100 ~ 130          |             |    | 4  | Yellow |                                                                                          |
|                      | AC200 ~ 250          |             |    | 6  | Blue   |                                                                                          |
|                      | AC200 ~ 250          | 3P + PE     |    | 9  | Blue   |                                                                                          |
|                      | AC380 ~ 415          |             |    | 6  | Red    |                                                                                          |
|                      | AC480 ~ 500          |             |    | 7  | Black  |                                                                                          |
|                      | AC600 ~ 690          |             |    | 5  | Black  |                                                                                          |
|                      | AC120 ~ 144          | 3P + N + PE |    | 9  | Blue   |                                                                                          |
|                      | AC208 ~ 250          |             |    | 9  | Blue   |                                                                                          |
|                      | AC200 ~ 240          |             |    | 9  | Blue   |                                                                                          |
|                      | AC346 ~ 415          |             |    | 5  | Black  |                                                                                          |
|                      | AC277 ~ 288          |             |    | 7  | Black  |                                                                                          |
|                      | AC480 ~ 500          |             |    | 7  | Black  |                                                                                          |
|                      | AC347 ~ 400          |             |    | 5  | Black  |                                                                                          |
|                      | AC600 ~ 690          |             |    | 5  | Black  |                                                                                          |
| 50、63                | AC200 ~ 250          | 3P + PE     |  | 9  | Blue   | Plug:<br>1-M50X1.5<br>1-NPT11/2<br>Socket:<br>2-M40X1.5<br>2-NPT11/4                     |
|                      | AC380 ~ 415          |             |  | 6  | Red    |                                                                                          |
|                      | AC480 ~ 500          |             |  | 7  | Black  |                                                                                          |
|                      | AC600 ~ 690          |             |  | 5  | Black  |                                                                                          |
|                      | AC120 ~ 144          | 3P + N + PE |  | 9  | Blue   |                                                                                          |
|                      | AC208 ~ 250          |             |  | 9  | Blue   |                                                                                          |
|                      | AC200 ~ 240          |             |  | 9  | Blue   |                                                                                          |
|                      | AC346 ~ 415          |             |  | 5  | Black  |                                                                                          |
|                      | AC277 ~ 288          |             |  | 7  | Black  |                                                                                          |
|                      | AC480 ~ 500          |             |  | 7  | Black  |                                                                                          |
| 100、125              | AC347 ~ 400          | 3P + PE     |  | 6  | Red    | Plug:<br>1-M50X1.5<br>1-NPT11/2<br>Socket:<br>2-M63X1.5<br>3-M63X1.5<br>2-NPT2<br>3-NPT2 |
|                      | AC600 ~ 690          |             |  | 5  | Black  |                                                                                          |
|                      | AC200 ~ 250          | 3P + N + PE |  | 9  | Blue   |                                                                                          |
|                      | AC380 ~ 415          |             |  | 6  | Red    |                                                                                          |
|                      | AC480 ~ 500          |             |  | 7  | Black  |                                                                                          |
|                      | AC600 ~ 690          |             |  | 5  | Black  |                                                                                          |
|                      | AC200 ~ 240          |             |  | 6  | Red    |                                                                                          |
|                      | AC346 ~ 415          |             |  | 6  | Red    |                                                                                          |
|                      | AC277 ~ 288          |             |  | 7  | Black  |                                                                                          |
|                      | AC480 ~ 500          |             |  | 7  | Black  |                                                                                          |

**Outline and Installation(mm)**





## Explosion - Proof Junction Box

### - Victoria Harbour Series

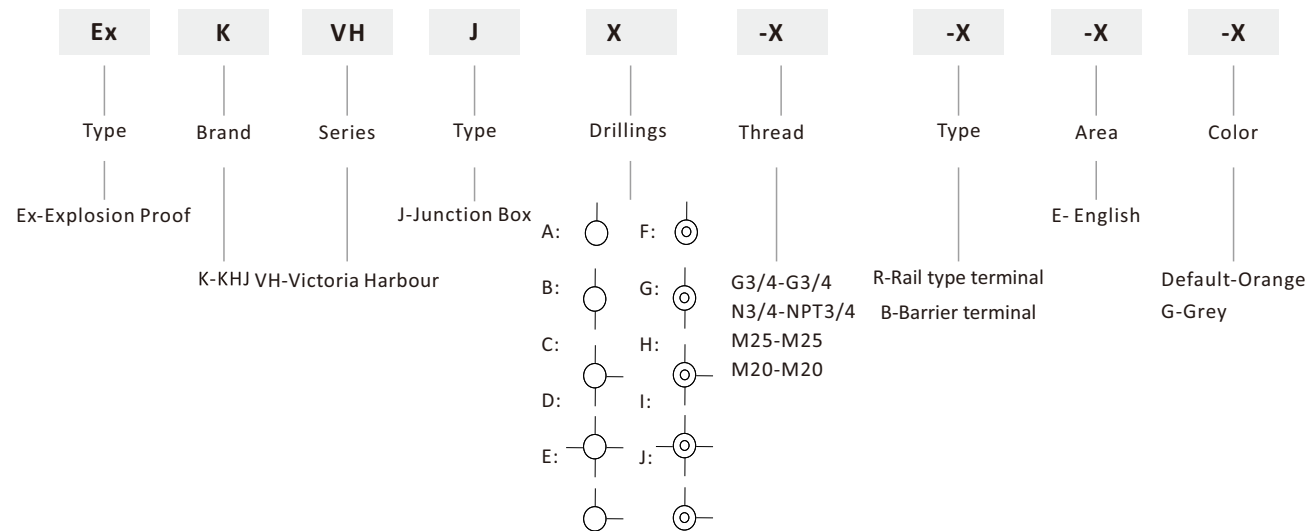
#### Features and Benefits:

- 3 optional terminal blocks for easy connection, to meet different termination requirements
- PA terminals with excellent insulation and reliability
- Copper free aluminium enclosure
- Enclosure: electrostatic powder coated, hardware: Stainless steel
- Multi-type cable entries for different connection requirement
- Optionally, the cables can be introduced into the terminal boxes via conduits or explosion-proof screw connections. Drilled holes through which no cables are conducted should be closed with certified threaded stoppers.

II 2 G Ex db op is IIC T5 or T6 Gb

II 2 D Ex tb op is IIIC T95°C or T80°C Db IP66

#### Product Definition



#### Standard & Certificate:

|                     |                                                                                                                                                                                                                            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:            | Gas:  II 2 G Ex db op is IIC T5 or T6 Gb<br>Dust:  II 2 D Ex tb op is IIIC T95°C or T80°C Db IP66                                                                                                                          |
| Certificate:        | • ATEX Certification NO.: ECM 19 ATEX-B SU43<br>• RoHS<br>• CE                                                                                                                                                             |
| Executive Standard: | • EN 60079-0:2018<br>• EN 60079-1:2014<br>• EN 60079-7:2015+ A1:2018<br>• EN 60079-11:2012<br>• EN 60079-18:2015+ A1:2017<br>• EN 60079-28:2015<br>• EN 60079-31:2014.<br>• IEC 60079-0:2018<br>• IEC 60079-7:2015+A1:2018 |
| Classification:     | • Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                          |

#### Electrical & Photometric Features:

|                    |          |
|--------------------|----------|
| Operating Voltage: | Max.690V |
| Rated current      | 20A      |
| Insulation Class:  | I        |

#### Mechanical Features:

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Weight:               | 1.24Kg                                            |
| Size:                 | 140*138*89mm                                      |
| Ambient Temperature:  | -40°C~+55°C                                       |
| Connecting Terminals: | 3*1.0-4mm <sup>2</sup> (L+N+PE)                   |
| Thread:               | NPT 3/4" ( G 3/4", M25*1.5 ,M25*1.5 are optional) |
| IP Code:              | IP67                                              |
| Enclosure Material:   | Die-casting aluminium alloy                       |
| Enclosure Colour:     | Orange, RAL2011                                   |
| Coating:              | Epoxy powder coating                              |

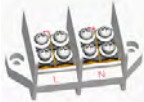
#### Product type And Diagrams

| Product type     | Type | Drillings | structural drawing | Qty of terminals (Rail -type) | Product type     | Type | Drillings | Structural drawing | Qty of terminals (Rail -type) |
|------------------|------|-----------|--------------------|-------------------------------|------------------|------|-----------|--------------------|-------------------------------|
| Ex -KVHJA -□□ -E | A    |           |                    | 2                             | Ex -KVHJF -□□ -E | F    |           |                    | 2                             |
| Ex -KVHJB -□□ -E | B    |           |                    | 2                             | Ex -KVHJG -□□ -E | G    |           |                    | 4                             |
| Ex -KVHJC -□□ -E | C    |           |                    | 4                             | Ex -KVHJH -□□ -E | H    |           |                    | 4                             |
| Ex -KVHJD -□□ -E | D    |           |                    | 4                             | Ex -KVHJI -□□ -E | I    |           |                    | 6                             |
| Ex -KVHJE -□□ -E | E    |           |                    | 2                             | Ex -KVHJJ -□□ -E | J    |           |                    | 2                             |

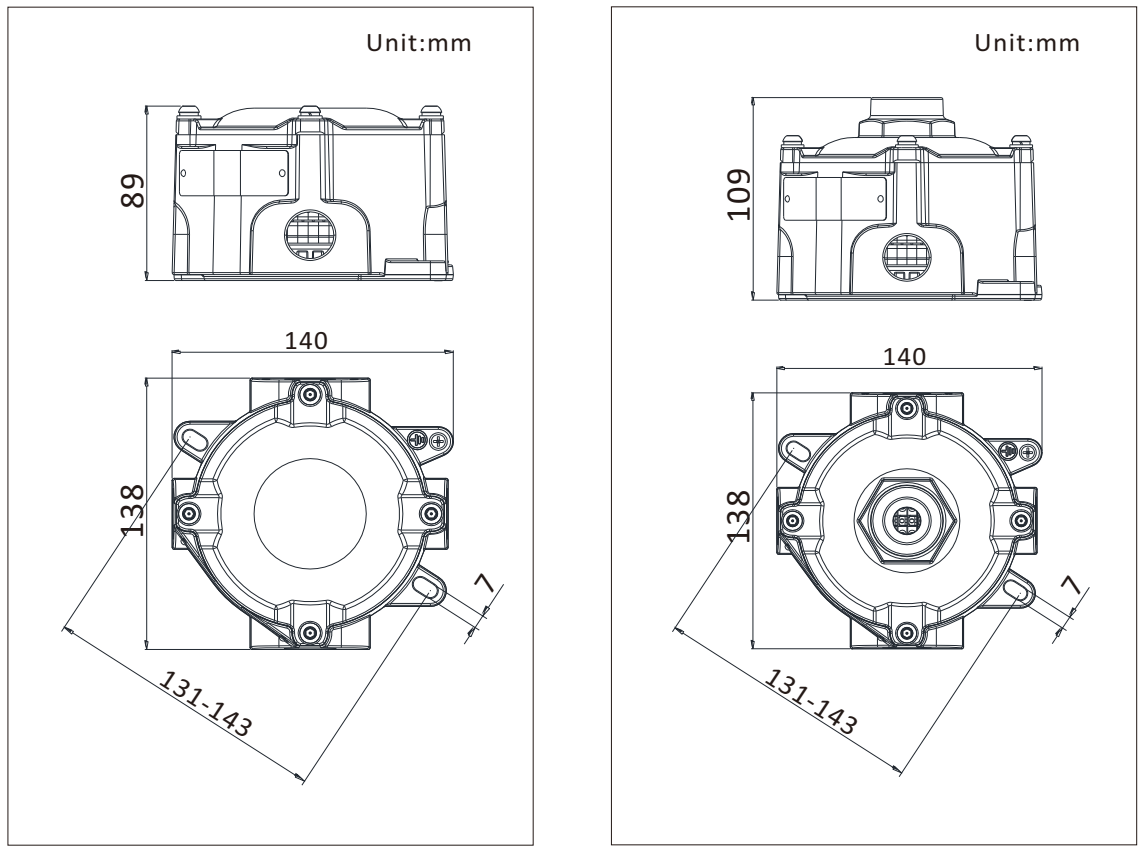
Remark: □□ for type of thread M20、M25、NPT1/2、NTP3/4



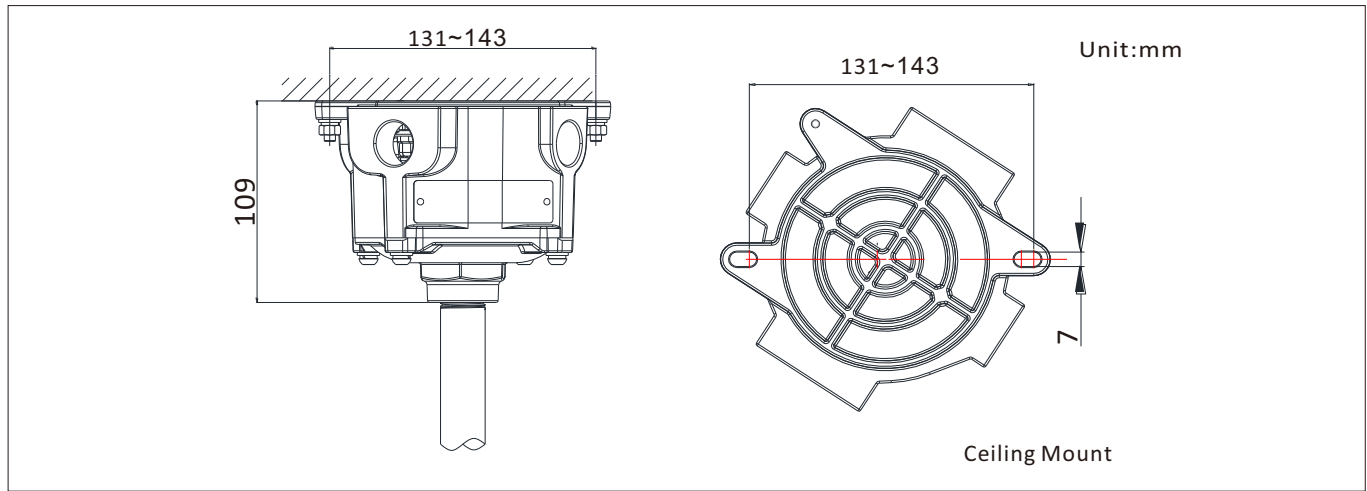
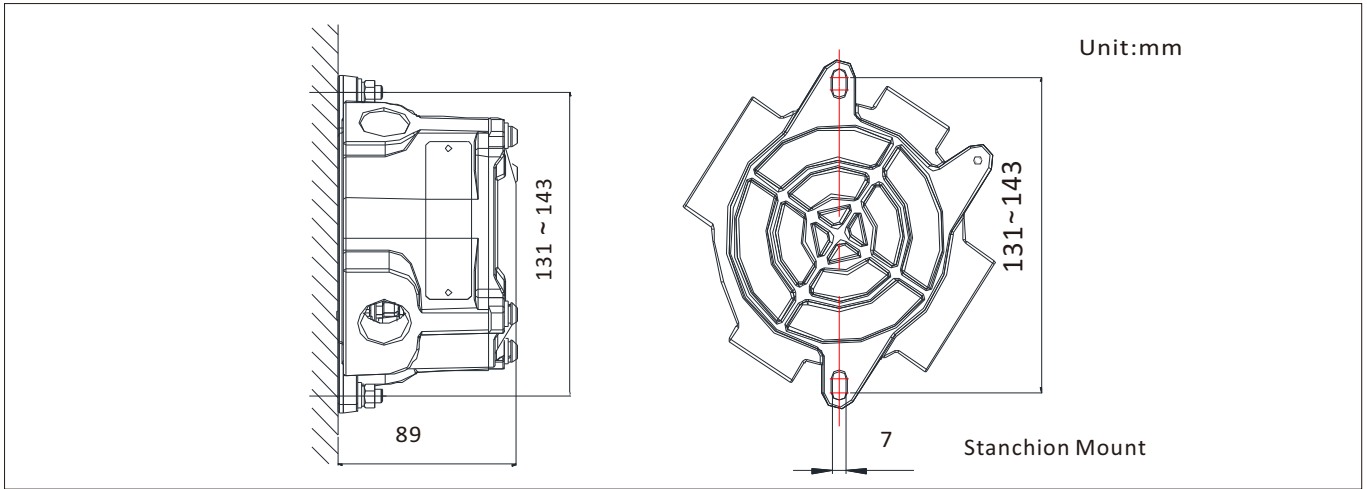
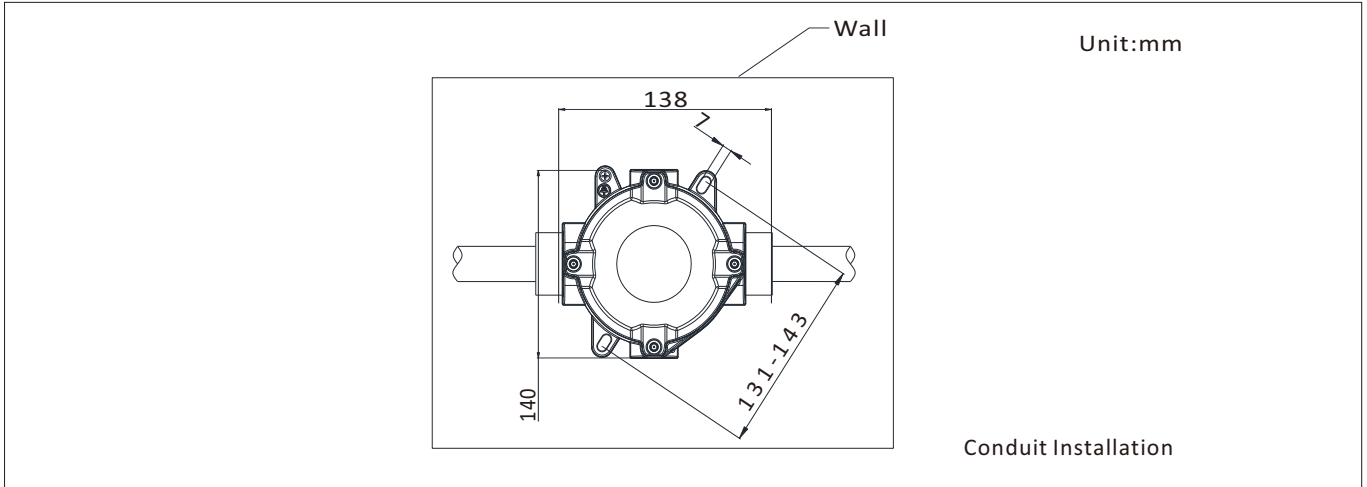
Parameters for terminal blocks

| Type             | Picture                                                                           | Crimping cross-sectional area | QTY (PCS) | Dimension (mm) | material | Stripping length | Terminal mounting space on the terminal rail |
|------------------|-----------------------------------------------------------------------------------|-------------------------------|-----------|----------------|----------|------------------|----------------------------------------------|
| Pillar           |  | 0.2 -4mm <sup>2</sup>         | 1         | 53*53*28       | PA       | 8~10mm           | 18                                           |
| Barrier terminal |  | 0.2 -4mm <sup>2</sup>         | 1         | 75*38*36       | PBT      | 5~8mm            | /                                            |

Size



Installation Method





## Explosion - Proof Switch

### - Victoria Harbour Series

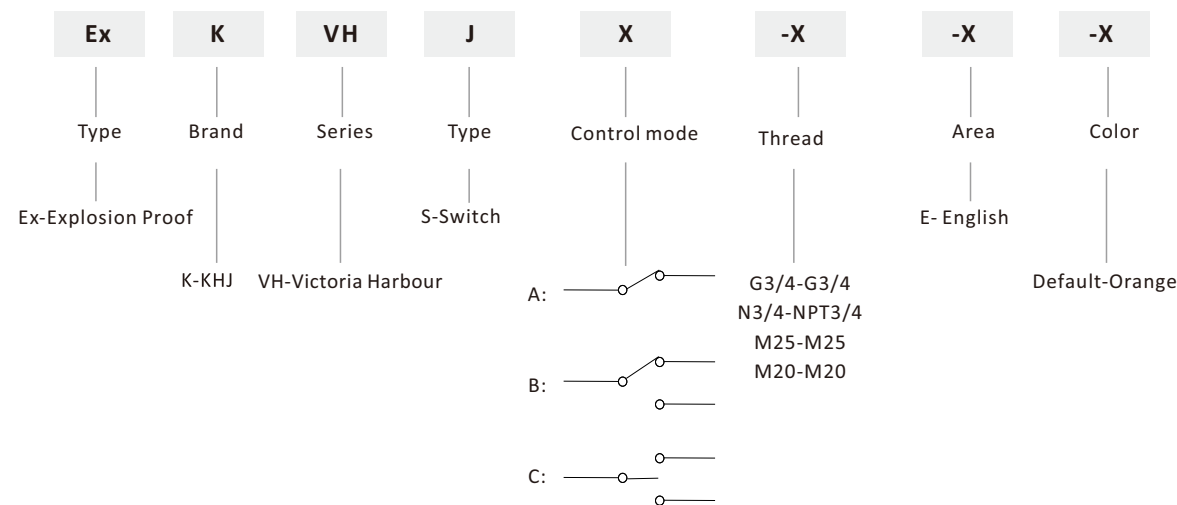
#### Features and Benefits:

- Copper free aluminium enclosure
- Enclosure:electrostatic powder coated,hardware:Stainless steel
- Multi-type cable entries for different connection requirement
- Optionally, the cables can be introduced into the terminal boxes via conduits or explosion-proof screw connections. Drilled holes through which no cables are conducted should be closed with certified threaded stoppers.

 II 2 G Ex db IIC T6 Gb

 II 2 D Ex tb IIIC T80°C Db IP66

#### Product Definition



#### Standard & Certificate:

|                     |                                                                                                                                                                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex Mark:            | Gas:  II 2 G Ex db IIC T6 Gb<br>Dust:  II 2 D Ex tb IIIC T80°C Db IP66 |
| Certificate:        | • ATEX Certification NO.:ECM 19 ATEX-B SU43<br>• RoHS                                                                                                                                                                                        |
| Executive Standard: | • EN 60079-0:2018<br>• EN 60079-1:2014<br>• EN 60079-7:2015+A1:2018<br>• EN 60079-11:2012<br>• EN 60079-18:2015+A1:2017<br>• EN 60079-28:2015<br>• EN 60079-31:2014.<br>• IEC 60079-0:2018<br>• IEC 60079-7:2015+A1:2018                     |
| Classification:     | • Group II Zone 1 & 21 and 2 & 22                                                                                                                                                                                                            |

#### Electrical & Photometric Features:

|                    |          |
|--------------------|----------|
| Operating Voltage: | Max.380V |
| Rated current      | 20A      |
| Insulation Class:  | I        |

#### Mechanical Features:

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Weight:               | 1.23Kg                                           |
| Size:                 | 140*138*104mm                                    |
| Ambient Temperature:  | -40°C~+55°C                                      |
| Connecting Terminals: | 3*1.0-4mm <sup>2</sup> (L+N+PE)                  |
| Thread:               | NPT 3/4" ( G 3/4",M25*1.5 ,M20*1.5 are optional) |
| IP Code:              | IP67                                             |
| Enclosure Material:   | Die-casting aluminium alloy                      |
| Enclosure Colour:     | Orange,RAL2011                                   |
| Coating:              | Epoxy powder coating                             |

#### Main performance parameters

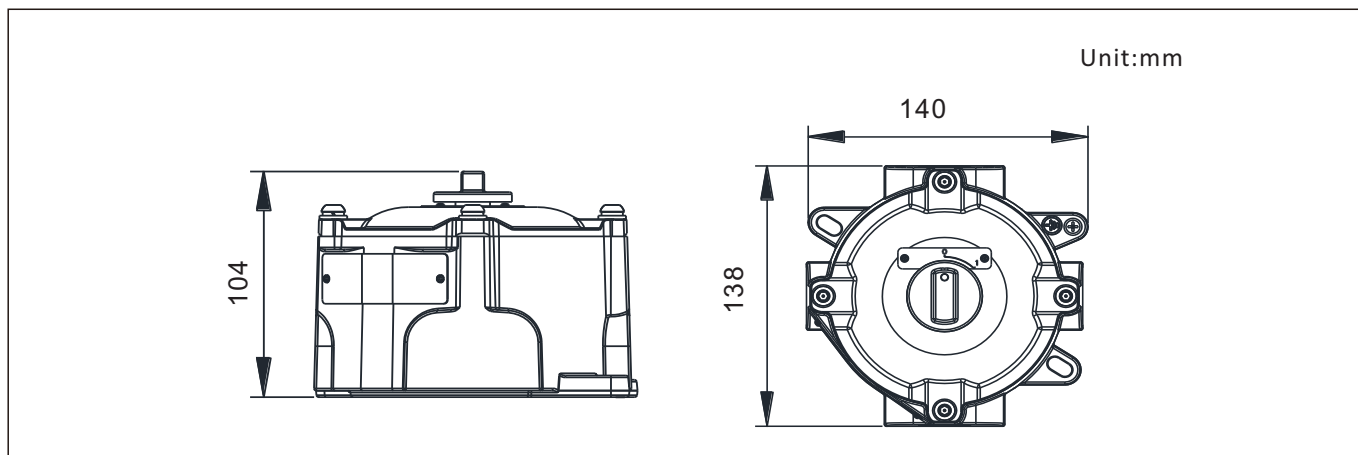
| Product type  | Switch type | Rated voltage | Rated current | Thread                 | Size (mm)   | Weight (Kg) | IP Code | Ambient temp (°C) |
|---------------|-------------|---------------|---------------|------------------------|-------------|-------------|---------|-------------------|
| Ex -KVHSA -□□ | 0-1         | 380VAC        | 20A           | M20, M25, NTP3/4 G 3/4 | 140*138*104 | 1.23Kg      | IP67    | -45°C ~ +55°C     |
| Ex -KVHSB -□□ | 1-2         | 380VAC        | 20A           | M20, M25, NTP3/4 G 3/4 | 140*138*104 | 1.24Kg      | IP67    | -45°C ~ +55°C     |
| Ex -KVHSC -□□ | 1-0-2       | 380VAC        | 20A           | M20, M25, NTP3/4 G 3/4 | 140*138*104 | 1.24Kg      | IP67    | -45°C ~ +55°C     |

#### Switch Parameter

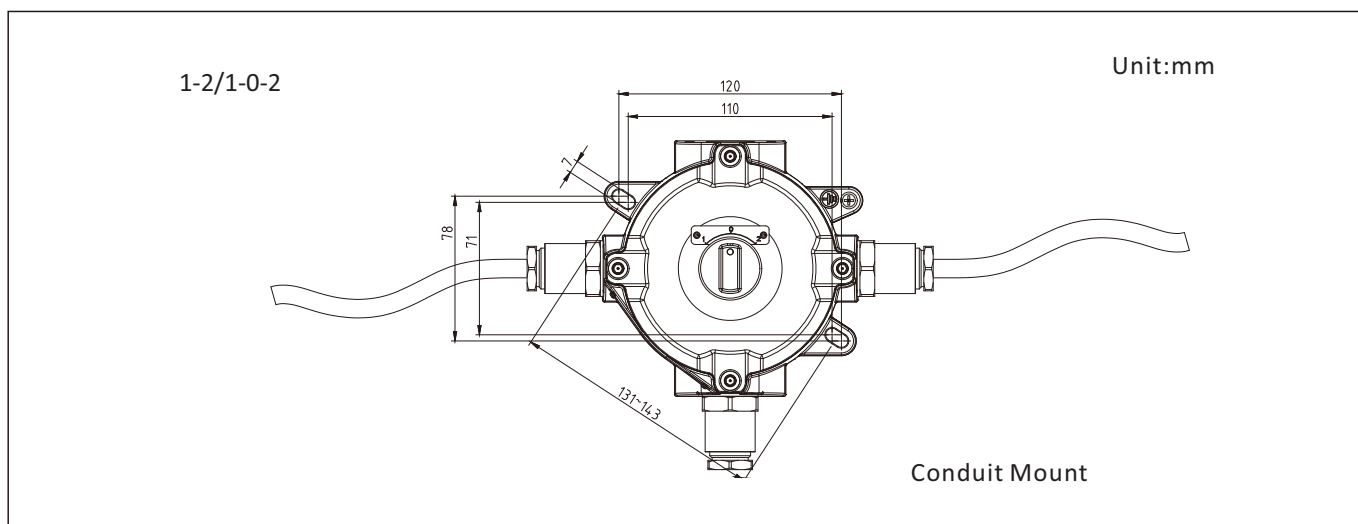
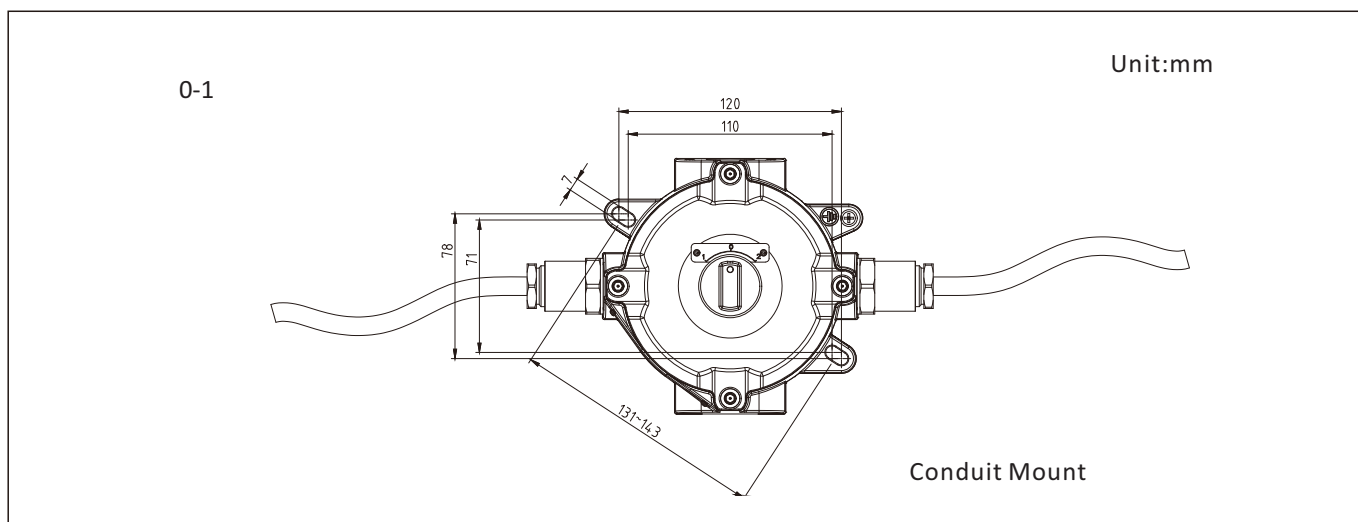
| Product type                                                                                           | Switch type                                                                                    | cross - Crimping sectional area | Dimension(MM) | Suggested stripping length |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------|---------------|----------------------------|
| Ex -KVHSA -□□<br> | 0-1<br>   | 0.2 -3.5mm <sup>2</sup>         | 50*50*43.1    | 5~8mm                      |
| Ex -KVHSB -□□<br> | 1-2<br>   | 0.2 -3.5mm <sup>2</sup>         | 50*50*53.6    | 5~8mm                      |
| Ex -KVHSC -□□<br> | 1-0-2<br> | 0.2 -3.5mm <sup>2</sup>         | 50*50*53.6    | 5~8mm                      |



## Size



## Installation Method





# Explosion proof Cable Gland

| Product Name  | Product Series | Product Classification | Code |   |   |   | Group |     |      |      | ATEX/IECEX |         |        |         |  |  | ATEX | IECEX | Seal        |             |                  | Cable      |          | Material | Wiring       |             |            |
|---------------|----------------|------------------------|------|---|---|---|-------|-----|------|------|------------|---------|--------|---------|--|--|------|-------|-------------|-------------|------------------|------------|----------|----------|--------------|-------------|------------|
|               |                |                        | d    | e | I | t | IIB   | IIC | IIIB | IIIC | Zone 1     | Zone 21 | Zone 2 | Zone 22 |  |  |      |       | Single Seal | Double Seal | Compound Barrier | Unarmoured | Armoured |          | Cable Wiring | Pipe Wiring | Flat Cable |
| Cable Gland   | KBM            | KBM01                  |      | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     | ●           |             |                  | ●          |          | ●        |              |             |            |
|               |                | KBM02                  |      | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     | ●           |             |                  | ●          |          |          | ●            |             |            |
|               |                | KBM07                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     | ●           |             |                  | ●          |          | ●        |              |             | ●          |
|               |                | KBM08                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     | ●           |             |                  | ●          |          |          | ●            |             | ●          |
|               |                | KBM09                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             | ●           |                  | ●          |          | ●        |              |             |            |
|               |                | KBM10                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             | ●           |                  | ●          | ●        |          | ●            |             |            |
|               |                | KBM13                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             | ●           |                  | ●          | ●        |          | ●            |             |            |
|               |                | KBM14                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             | ●           |                  | ●          |          |          | ●            |             |            |
|               |                | KBM15                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             |             | ●                | ●          |          | ●        |              |             |            |
|               |                | KBM16                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             |             | ●                | ●          | ●        |          |              | ●           |            |
|               |                | KBM17                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             |             | ●                | ●          | ●        |          | ●            |             |            |
|               |                | KBM18                  | ●    | ● | ● | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    | ●     |             |             | ●                | ●          |          |          |              |             |            |
| Stopping Plug | KUG            | /                      | ●    | ● |   | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    |       | ●           |             |                  | ●          |          | ●        |              |             |            |
|               | KDCG           | /                      | ●    |   |   | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    |       |             | ●           |                  |            | ●        |          | ●            |             |            |
| Stopping Plug | KTK            | /                      | ●    | ● |   | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    |       |             |             |                  |            |          |          |              |             |            |
| Reducer       | KRC            | /                      | ●    | ● |   | ● |       | ●   |      | ●    | ●          | ●       | ●      | ●       |  |  | ●    |       |             |             |                  |            |          |          |              |             |            |





KBM-01



KBM-02

## Explosion - proof Cable Glands(Single Seal, Unarmoured)

### - KBM-01,02 Series

#### Application and Features

- Explosion proof certificates
- ATEX : TPS 22 ATEX 114950 0001 X
- IECEx : IECEx TPS 22.0023X
- Application in hazardous area
- Zone 1 and Zone 2,
- Zone 21 and Zone 22
- Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Single seal for unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

II 2 G Ex eb IIC Gb

II 3 G Ex nR IIC Gc

II 2 D Ex tb IIIC Db

#### Product Definition

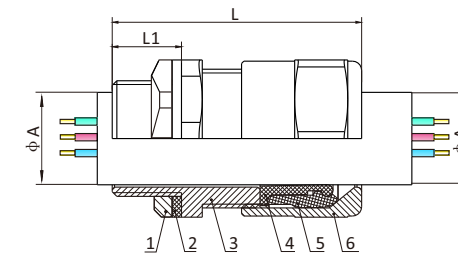
| K               | BM | X                                                 | X/ | X                                | X/ | X                                                        | X | X/                                           |
|-----------------|----|---------------------------------------------------|----|----------------------------------|----|----------------------------------------------------------|---|----------------------------------------------|
| K-KHJ           |    |                                                   |    |                                  |    |                                                          |   |                                              |
| Ex cable glands |    | Product code<br>01-Cable wiring<br>02-Pipe wiring |    | Mounting thread<br>specification |    | D end thread<br>specification (Optional)                 |   | O-With O-ring<br>F-With PTFE gasket(Default) |
|                 |    |                                                   |    |                                  |    | 4-304(Optional)<br>6-316(Optional)<br>H-Brass (Optional) |   | S-Stripe (Optional)                          |
|                 |    |                                                   |    |                                  |    |                                                          |   | nR (Optional)                                |

#### Technical Parameter

|                      |            |                                                                                                          |               |
|----------------------|------------|----------------------------------------------------------------------------------------------------------|---------------|
| Explosion protection | Ex marking |  II 2 G Ex eb IIC Gb  | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc  | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db | Ex tb IIIC Db |
| Exective standards   |            | IEC60079-0,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-7, EN60079-15, EN60079-31            |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                        |               |
| Degree of protection |            | IP66                                                                                                     |               |
| Ambient temperature  |            | -43°C~+100°C                                                                                             |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                            |               |

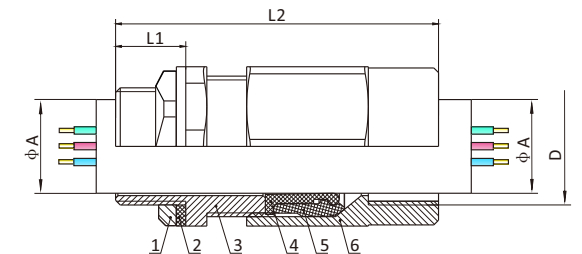


## Outline and Installation (mm)



KBM-01

- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.Sealing ring 5.Sealing ring loop 6. Compression nut



KBM-02

- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.Sealing ring 5.Sealing ring loop 6. Compression nut

| Mounting thread |          | Cable outer diameter<br>φ A(mm) | Thread length<br>L1(mm) | Length<br>L(mm) | Length<br>L2(mm) | KBM-01<br>Weight (kg) | KBM-02<br>Weight (kg) |
|-----------------|----------|---------------------------------|-------------------------|-----------------|------------------|-----------------------|-----------------------|
| M               | NPT      |                                 |                         |                 |                  |                       |                       |
| M16X1.5         | —        | 6.5 ~ 12                        | 15                      | 52.5            | 67.5             | 0.13                  | 0.14                  |
| M20X1.5A        | NPT1/2A  | 6.5 ~ 12                        | 15                      | 52.5            | 67.5             | 0.13                  | 0.14                  |
| M20X1.5         | NPT1/2   | 9.5 ~ 14.5                      | 15                      | 52.5            | 67.5             | 0.11                  | 0.13                  |
| M25X1.5A        | NPT3/4A  | 9.5 ~ 16                        | 15                      | 52.5            | 67.5             | 0.15                  | 0.17                  |
| M25X1.5         | NPT3/4   | 14.5 ~ 20.5                     | 15                      | 54.5            | 70               | 0.17                  | 0.19                  |
| M32X1.5A        | NPT1A    | 14.5 ~ 20.5                     | 15                      | 55.5            | 70               | 0.25                  | 0.28                  |
| M32X1.5         | NPT1     | 20.5 ~ 26                       | 15                      | 58.5            | 73.5             | 0.23                  | 0.26                  |
| M40X1.5A        | NPT11/4A | 20.5 ~ 26                       | 15                      | 58.5            | 73.5             | 0.60                  | 0.63                  |
| M40X1.5         | NPT11/4  | 22 ~ 33                         | 15                      | 60              | 75               | 0.48                  | 0.51                  |
| M50X1.5A        | NPT11/2A | 22 ~ 33                         | 15                      | 60              | 75               | 0.91                  | 0.96                  |
| M50X1.5         | NPT11/2  | 28 ~ 41                         | 15                      | 66.5            | 81.5             | 0.75                  | 0.79                  |
| M63X1.5A        | NPT2A    | 30 ~ 41                         | 15                      | 66.5            | 81.5             | 0.78                  | 0.85                  |
| M63X1.5         | NPT2     | 36 ~ 46                         | 15                      | 73              | 88               | 0.86                  | 0.92                  |
| M63X1.5C        | NPT2C    | 41 ~ 52.6                       | 15                      | 73              | 88               | 0.82                  | 0.88                  |

#### Note:

- Locknut and sealing washer(PTFE gasket) are supplied as standard when delivery. Above weight is based on nickel plated brass material..
- Earth lug and shroud are for optional.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.



**KBM-05**



**KBM-06**

## Explosion-proof Cable Glands (Single Seal, Armoured)

### - KBM - 05,06 Series

#### Application and Features

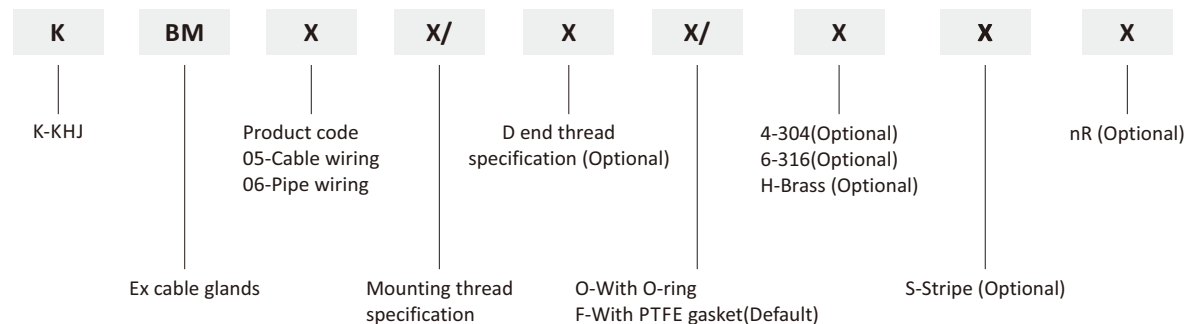
- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0001 X
  - IECEX : IECEx TPS 22.0023X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Single seal for armoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

**Ex** II 2 G Ex eb IIC Gb

**Ex** II 3 G Ex nR IIC Gc

**Ex** II 2 D Ex tb IIIC Db

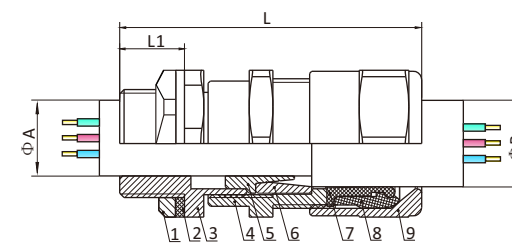
#### Product Definition



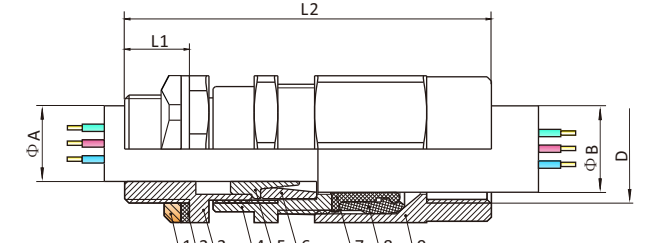
#### Technical Parameter

| Explosion protection | Ex marking |  II 2 G Ex eb IIC Gb  | Ex eb IIC Gb  |
|----------------------|------------|----------------------------------------------------------------------------------------------------------|---------------|
|                      |            |  II 3 G Ex nR IIC Gc  | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-7, EN60079-15, EN60079-31            |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                        |               |
| Degree of protection |            | IP66                                                                                                     |               |
| Ambient temperature  |            | -43°C~+100°C                                                                                             |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                            |               |

#### Outline and Installation(mm)



KBM-05



KBM-06

- Locknut
- Sealing washer
- Inlet connector
- Middle connector
- Armour cone
- Clamping ring
- Sealing ring
- Sealing ring loop
- Compression nut

- Locknut
- Sealing washer
- Inlet connector
- Middle connector
- Armour cone
- Clamping ring
- Sealing ring
- Sealing ring loop
- Compression nut

| Mounting thread |          | Cable outer diameter (mm) |                | Thread length<br>L1<br>(mm) | Length L<br>(mm) | Length L2<br>(mm) | KBM-05<br>Weight (kg) | KBM-06<br>Weight (kg) |
|-----------------|----------|---------------------------|----------------|-----------------------------|------------------|-------------------|-----------------------|-----------------------|
| M               | NPT      | Outlet $\phi$ A           | Inlet $\phi$ B |                             |                  |                   |                       |                       |
| M16X1.5A        | —        | 3~8.2                     | 5.5~12         | 15                          | 68               | 83                | 0.16                  | 0.17                  |
| M16X1.5         | —        | 6.5~12                    | 9.5~16         | 15                          | 69               | 84                | 0.16                  | 0.17                  |
| M20X1.5A        | NPT1/2A  | 3~8.2                     | 5.5~12         | 15                          | 68               | 83                | 0.18                  | 0.20                  |
| M20X1.5         | NPT1/2   | 6.5~12                    | 9.5~16         | 15                          | 68               | 83                | 0.16                  | 0.18                  |
| M20X1.5C        | NPT1/2C  | 10~14.5                   | 12.5~20.5      | 15                          | 72.5             | 87.5              | 0.22                  | 0.24                  |
| M25X1.5A        | NPT3/4A  | 6.5~12                    | 9.5~16         | 15                          | 68               | 83                | 0.20                  | 0.22                  |
| M25X1.5         | NPT3/4   | 10~14.5                   | 12.5~20.5      | 15                          | 70.5             | 85.5              | 0.26                  | 0.28                  |
| M25X1.5C        | NPT3/4C  | 12.5~20.2                 | 17~26          | 15                          | 78.5             | 93.5              | 0.32                  | 0.32                  |
| M32X1.5A        | NPT1A    | 10~14.5                   | 12.5~20.5      | 20                          | 76.5             | 91.5              | 0.36                  | 0.39                  |
| M32X1.5         | NPT1     | 12.5~20.2                 | 17~26          | 20                          | 81.5             | 96.5              | 0.40                  | 0.43                  |
| M32X1.5C        | NPT1C    | 19.5~26.5                 | 22~33          | 20                          | 88               | 103               | 0.52                  | 0.55                  |
| M40X1.5A        | NPT11/4A | 12.5~20.2                 | 17~26          | 20                          | 81.5             | 96.5              | 0.76                  | 0.80                  |
| M40X1.5         | NPT11/4  | 19.5~26.5                 | 22~33          | 20                          | 88               | 103               | 0.72                  | 0.76                  |
| M40X1.5C        | NPT11/4C | 25~32.5                   | 28~41          | 20                          | 94.5             | 110               | 0.98                  | 1.02                  |
| M50X1.5A        | NPT11/2A | 19.5~26.5                 | 22~33          | 20                          | 88               | 103               | 1.17                  | 1.20                  |
| M50X1.5         | NPT11/2  | 25~32.5                   | 28~41          | 20                          | 93.5             | 108.5             | 1.08                  | 1.14                  |
| M50X1.5C        | NPT11/2C | 31.5~44.5                 | 36~46          | 20                          | 105              | 120               | 1.37                  | 1.42                  |
| M50X1.5D        | NPT11/2D | 31.5~44.5                 | 41~52.6        | 20                          | 105              | 120               | 1.33                  | 1.38                  |
| M63A            | NPT2A    | 25~32.5                   | 28~41          | 20                          | 93.5             | 108.5             | 1.24                  | 1.40                  |
| M63             | NPT2     | 31.5~44.5                 | 36~46          | 20                          | 105              | 120               | 1.38                  | 1.44                  |
| M63C            | NPT2C    | 31.5~44.5                 | 41~52.6        | 20                          | 105              | 120               | 1.36                  | 1.42                  |

#### Note:

- Locknut and sealing washer(PTFE gasket) are supplied as standard when delivery. Above weight is based on nickel plated brass material.
- Earth lug and shroud are on request.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.





## Explosion-proof Cable Glands (Single Seal, Unarmoured)

### - KBM - 07,08 Series

#### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0001 X
  - IECEx : IECEx TPS 22.0023X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Flame-proof (Type 'd'), Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Single seal for unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

- Ex II 2 G Ex db IIC Gb
- Ex II 2 G Ex eb IIC Gb
- Ex II 3 G Ex nR IIC Gc
- Ex II 2 D Ex tb IIIC Db

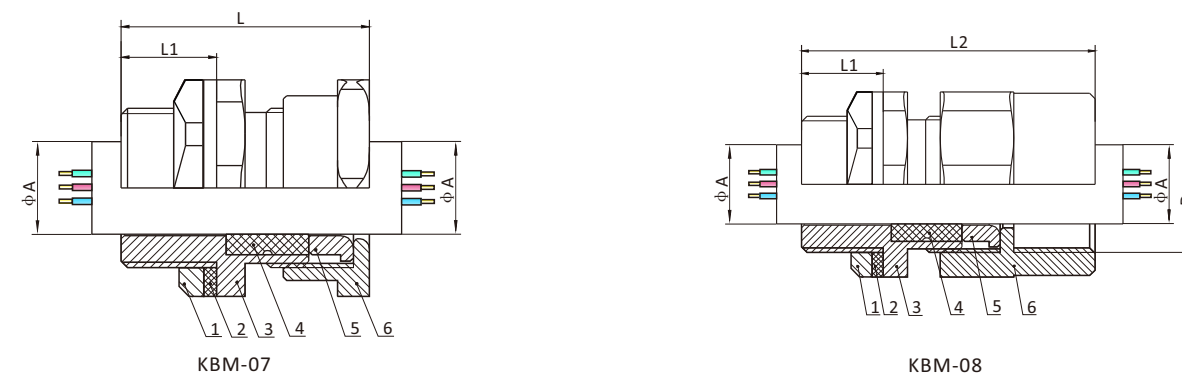
#### Product Definition

| K     | BM                                                | X | X/                               | X                                            | X/ | X                                                        | X | X                       | X |
|-------|---------------------------------------------------|---|----------------------------------|----------------------------------------------|----|----------------------------------------------------------|---|-------------------------|---|
| K-KHJ | Product code<br>07-Cable wiring<br>08-Pipe wiring |   |                                  | D end thread<br>specification (Optional)     |    | 4-304(Optional)<br>6-316(Optional)<br>H-Brass (Optional) |   | e/nR (Optional)         |   |
|       | Ex cable glands                                   |   | Mounting thread<br>specification | O-With O-ring<br>F-With PTFE gasket(Default) |    | S-Stripe (Optional)                                      |   | f-Flat cable (Optional) |   |

#### Technical Parameter

|                      |            |                                                                                                                     |               |
|----------------------|------------|---------------------------------------------------------------------------------------------------------------------|---------------|
| Explosion protection | Ex marking |  II 2 G Ex db IIC Gb             | Ex db IIC Gb  |
|                      |            |  II 2 G Ex eb IIC Gb             | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc             | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db            | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0,IEC60079-1,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-1, EN60079-7, EN60079-15, EN60079-31 |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                                   |               |
| Degree of protection |            | IP66, IP67, IP68(2m/72h)                                                                                            |               |
| Ambient temperature  |            | -43°C~+100°C, -43°C~+120°C(f type)                                                                                  |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                                       |               |

#### Outline and Installation(mm)



- 1.Locknut 2.Sealing washer 3.Connector body  
4.Sealing ring 5.Washer 6. Compression nut

- 1.Locknut 2.Sealing washer 3.Connector body  
4.Sealing ring 5.Washer 6. Compression nut

| Mounting thread |          | Cable outer diameter<br>φA(mm) | Flat cable (mm)  |    |    | Thread length<br>L1(mm) | Length<br>L(mm) | Length<br>L2(mm) | KBM-07<br>Weight (kg) | KBM-08<br>Weight (kg) |
|-----------------|----------|--------------------------------|------------------|----|----|-------------------------|-----------------|------------------|-----------------------|-----------------------|
| M               | NPT      |                                | Outer diameterφA | L  | L1 |                         |                 |                  |                       |                       |
| M16 x 1.5       | —        | 3~8                            | —                |    |    | 16                      | 54              | 69               | 0.10                  | 0.11                  |
| M20 x 1.5A      | NPT1/2A  | 3~8                            | 11×7(±1)         | 39 | 57 | 16                      | 54              | 69               | 0.12                  | 0.12                  |
| M20 x 1.5B      | NPT1/2B  | 6~11                           | 11×7(±1)         | 39 | 57 | 16                      | 56              | 71               | 0.10                  | 0.14                  |
| M20 x 1.5C      | NPT1/2C  | 10~14.5                        | 15×6(±1)         | 40 | 57 | 16                      | 56              | 71               | 0.12                  | 0.14                  |
| M25 x 1.5A      | NPT3/4A  | 10~14.5                        | 11×7(±1)         | 38 | 57 | 16                      | 56              | 71               | 0.15                  | 0.17                  |
| M25 x 1.5B      | NPT3/4B  | 13~20                          | 15×6(±1)         | 38 | 55 | 16                      | 57              | 72               | 0.15                  | 0.17                  |
| M25 x 1.5C      | NPT3/4C  | 19~25.5                        | —                | —  | —  | 16                      | 61              | 76               | 0.16                  | 0.18                  |
| M32 x 1.5A      | NPT1A    | 13~20                          | 15×6(±1)         | 45 | 60 | 18                      | 59              | 74               | 0.25                  | 0.28                  |
| M32 x 1.5B      | NPT1B    | 19~25.5                        | —                | —  | —  | 18                      | 63              | 78               | 0.25                  | 0.28                  |
| M32 x 1.5C      | NPT1C    | 25~32                          | —                | —  | —  | 18                      | 68              | 83               | 0.27                  | 0.30                  |
| M40 x 1.5A      | NPT11/4A | 19~25.5                        | —                | —  | —  | 20                      | 65              | 80               | 0.55                  | 0.58                  |
| M40 x 1.5B      | NPT11/4B | 25~32                          | —                | —  | —  | 20                      | 70              | 85               | 0.50                  | 0.54                  |
| M40 x 1.5C      | NPT11/4C | 32~43                          | —                | —  | —  | 20                      | 74              | 89               | 0.60                  | 0.64                  |
| M50 x 1.5A      | NPT11/2A | 25~32                          | —                | —  | —  | 20                      | 70              | 85               | 0.79                  | 0.84                  |
| M50 x 1.5B      | NPT11/2B | 32~43                          | —                | —  | —  | 20                      | 74              | 89               | 0.69                  | 0.74                  |
| M50 x 1.5C      | NPT11/2C | 42.5~55                        | —                | —  | —  | 20                      | 83              | 98               | 0.86                  | 0.91                  |
| M63A x 1.5A     | NPT2A    | 32~43                          | —                | —  | —  | 20                      | 74              | 89               | 0.86                  | 0.92                  |
| M63 x 1.5B      | NPT2B    | 42.5~55                        | —                | —  | —  | 20                      | 83              | 98               | 0.84                  | 0.90                  |

#### Note:

- Locknut and sealing washer (PTFE washer) are supplied for Ex e, n, t type products, Without lock nut when delivery for Ex d type. Above weight is based on nickel plated brass material.
- Earth lug and shroud are on request.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.



**KBM-09**



**KBM-10**

## Explosion-proof Cable Glands(Double Seal, Unarmoured)

### - KBM - 09,10 Series

#### Application and Features

- Explosion proof certificates  
- ATEX : TPS 22 ATEX 114950 0001 X  
- IECEx : IECEx TPS 22.0023X
- Application in hazardous area  
Zone 1 and Zone 2,  
Zone 21 and Zone 22
- Flame-proof (Type 'd'), Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Double seal for unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

- II 2 G Ex db IIC Gb
- II 2 G Ex eb IIC Gb
- II 3 G Ex nR IIC Gc
- II 2 D Ex tb IIIC Db

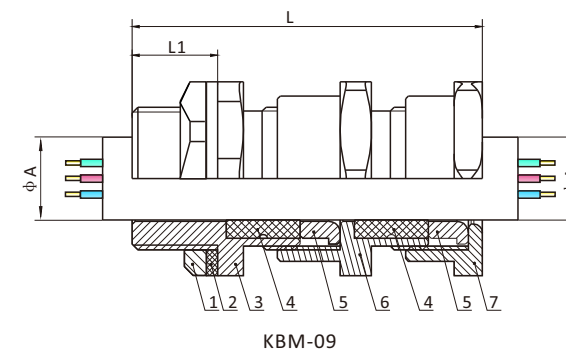
#### Product Definition

| K     | BM              | X                                                 | X/                               | X                                            | X/ | X                                                        | X                   | X               |
|-------|-----------------|---------------------------------------------------|----------------------------------|----------------------------------------------|----|----------------------------------------------------------|---------------------|-----------------|
| K-KHJ |                 | Product code<br>09-Cable wiring<br>10-Pipe wiring |                                  | D end thread<br>specification (Optional)     |    | 4-304(Optional)<br>6-316(Optional)<br>H-Brass (Optional) |                     | e/nR (Optional) |
|       | Ex cable glands |                                                   | Mounting thread<br>specification | O-With O-ring<br>F-With PTFE gasket(Default) |    |                                                          | S-Stripe (Optional) |                 |

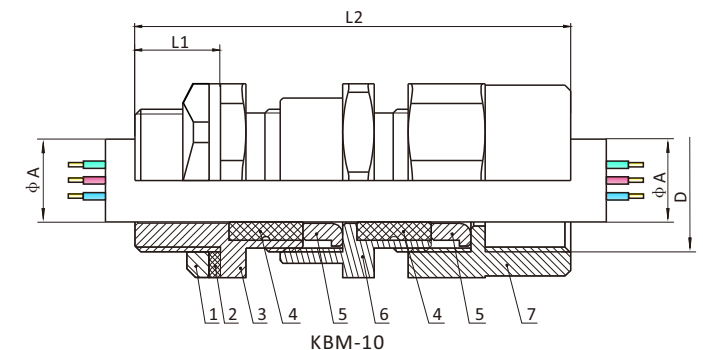
#### Technical Parameter

| Explosion protection | Ex marking |  II 2 G Ex db IIC Gb             | Ex db IIC Gb  |
|----------------------|------------|---------------------------------------------------------------------------------------------------------------------|---------------|
|                      |            |  II 2 G Ex eb IIC Gb             | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc             | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db            | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0,IEC60079-1,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-1, EN60079-7, EN60079-15, EN60079-31 |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                                   |               |
| Degree of protection |            | IP66, IP67, IP68(2m/72h)                                                                                            |               |
| Ambient temperature  |            | -43°C~+120°C                                                                                                        |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                                       |               |

## Outline and Installation(mm)



- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.Sealing ring 5.Washer 6.Middle connector  
7.Compression nut



- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.Sealing ring 5.Washer 6.Middle connector  
7.Compression nut

| Mounting thread |           | Cable outer diameter Φ A (mm) | Thread length L1(mm) | Length L (mm) | Length L2 (mm) | KBM-09 Weight (kg) | KBM-10 Weight (kg) |
|-----------------|-----------|-------------------------------|----------------------|---------------|----------------|--------------------|--------------------|
| M               | NPT       |                               |                      |               |                |                    |                    |
| M16X1.5A        | —         | 3~8.2                         | 15                   | 65            | 80             | 0.16               | 0.17               |
| M16X1.5         | —         | 6.5~12                        | 15                   | 66            | 81             | 0.15               | 0.16               |
| M20X1.5A        | NPT1/2A   | 3~8.2                         | 15                   | 65            | 80             | 0.16               | 0.18               |
| M20X1.5         | NPT1/2    | 6.5~12                        | 15                   | 65            | 80             | 0.15               | 0.17               |
| M20X1.5C        | NPT1/2C   | 10~14.5                       | 15                   | 63.5          | 78.5           | 0.19               | 0.21               |
| M25X1.5A        | NPT3/4A   | 6.5~12                        | 15                   | 65            | 80             | 0.19               | 0.21               |
| M25X1.5         | NPT3/4    | 10~14.5                       | 15                   | 61.5          | 76.5           | 0.24               | 0.26               |
| M25X1.5C        | NPT3/4C   | 12.5~20.2                     | 15                   | 68.5          | 83.5           | 0.26               | 0.28               |
| M32X1.5A        | NPT1A     | 10~14.5                       | 20                   | 66.5          | 81.5           | 0.32               | 0.35               |
| M32X1.5         | NPT1      | 12.5~20.2                     | 20                   | 71.5          | 86.5           | 0.35               | 0.38               |
| M32X1.5C        | NPT1C     | 19.5~26.5                     | 20                   | 75.5          | 90             | 0.52               | 0.55               |
| M40X1.5A        | NPT1 1/4A | 12.5~20.2                     | 20                   | 71.5          | 86.5           | 0.63               | 0.67               |
| M40X1.5         | NPT1 1/4  | 19.5~26.5                     | 20                   | 75.5          | 90.5           | 0.62               | 0.66               |
| M40X1.5C        | NPT1 1/4C | 25~32.5                       | 20                   | 80.5          | 95             | 0.86               | 0.90               |
| M50X1.5A        | NPT1 1/2A | 19.5~26.5                     | 20                   | 75.5          | 90.5           | 0.95               | 1.00               |
| M50X1.5         | NPT1 1/2  | 25~32.5                       | 20                   | 79.5          | 94.5           | 0.95               | 1.00               |
| M50X1.5C        | NPT1 1/2C | 31.5~44.5                     | 20                   | 95.5          | 110.5          | 1.26               | 1.31               |
| M63A            | NPT2A     | 29~34                         | 20                   | 79.5          | 94.5           | 1.08               | 1.14               |
| M63             | NPT2      | 41~46                         | 20                   | 95.5          | 110.5          | 1.25               | 1.31               |

#### Note:

1. Locknut and sealing washer (PTFE washer) are supplied for Ex e, n, t type products,  
Without lock nut when delivery for Ex d type. Above weight is based on nickel plated brass material.
2. Earth lug and shroud are on request.
3. The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.





KBM-13

KBM-14

## Explosion-proof Cable Glands (Double Seal, Armoured, Unarmoured)

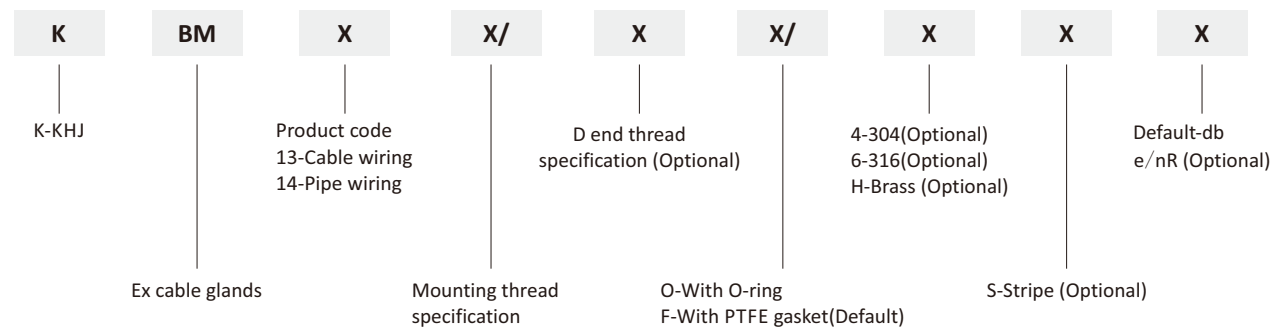
- **KBM - 13,14 Series**

### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0001
  - IECEx : IECEx TPS 22.0023X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Flame-proof (Type 'd'), Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Double seal for armoured and unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

- II 2 G Ex db IIC Gb
- II 2 G Ex eb IIC Gb
- II 3 G Ex nR IIC Gc
- II 2 D Ex tb IIIC Db

### Product Definition

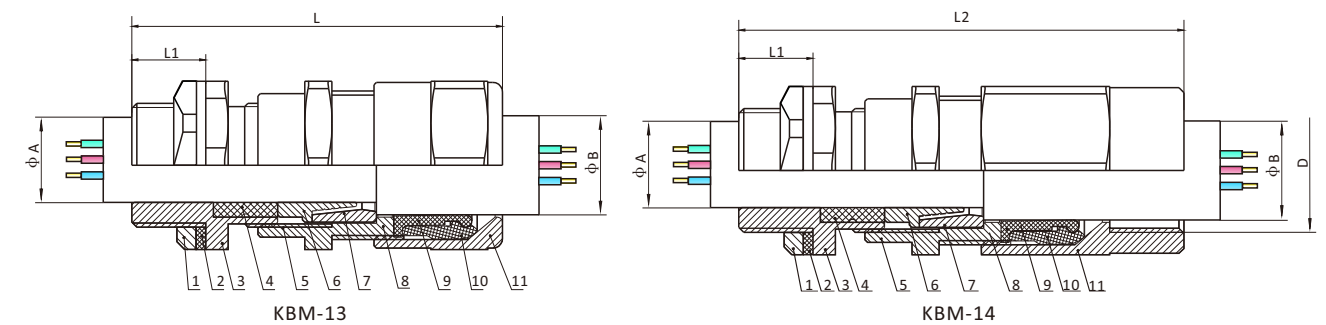


### Technical Parameter

| Explosion protection | Ex marking |  II 2 G Ex db IIC Gb             | Ex db IIC Gb  |
|----------------------|------------|---------------------------------------------------------------------------------------------------------------------|---------------|
|                      |            |  II 2 G Ex eb IIC Gb             | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc             | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db            | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0,IEC60079-1,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-1, EN60079-7, EN60079-15, EN60079-31 |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                                   |               |
| Degree of protection |            | IP66, IP67, IP68(2m/72h)                                                                                            |               |
| Ambient temperature  |            | -43°C~+100°C                                                                                                        |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                                       |               |



### Outline and Installation(mm)



| Mounting thread |          | Cable outer diameter (mm) |                | Thread length<br>L1(mm) | Length L<br>(mm) | Length L2<br>(mm) | KBM-13<br>Weight (kg) | KBM-14<br>Weight (kg) |
|-----------------|----------|---------------------------|----------------|-------------------------|------------------|-------------------|-----------------------|-----------------------|
| M               | NPT      | Outlet $\phi$ A           | Inlet $\phi$ B |                         |                  |                   |                       |                       |
| M16X1.5A        | —        | 3~8.2                     | 5.5~12         | 15                      | 75.5             | 90.5              | 0.16                  | 0.17                  |
| M16X1.5         | —        | 6.5~12                    | 9.5~16         | 15                      | 76.5             | 91.5              | 0.16                  | 0.17                  |
| M20X1.5A        | NPT1/2A  | 3~8.2                     | 5.5~12         | 15                      | 75.5             | 90.5              | 0.18                  | 0.20                  |
| M20X1.5         | NPT1/2   | 6.5~12                    | 9.5~16         | 15                      | 75.5             | 90.5              | 0.16                  | 0.18                  |
| M20X1.5C        | NPT1/2C  | 10~14.5                   | 12.5~20.5      | 15                      | 78.5             | 93.5              | 0.22                  | 0.24                  |
| M25X1.5A        | NPT3/4A  | 6.5~12                    | 9.5~16         | 15                      | 75.5             | 90.5              | 0.20                  | 0.22                  |
| M25X1.5         | NPT3/4   | 10~14.5                   | 12.5~20.5      | 15                      | 76.5             | 91.5              | 0.26                  | 0.28                  |
| M25X1.5C        | NPT3/4C  | 12.5~20.2                 | 17~26          | 15                      | 85.4             | 100.5             | 0.32                  | 0.34                  |
| M32X1.5A        | NPT1A    | 10~14.5                   | 12.5~20.5      | 20                      | 81.5             | 96.5              | 0.36                  | 0.39                  |
| M32X1.5         | NPT1     | 12.5~20.2                 | 17~26          | 20                      | 88.5             | 103.5             | 0.40                  | 0.43                  |
| M32X1.5C        | NPT1C    | 19.5~26.5                 | 22~33          | 20                      | 95.5             | 110.5             | 0.52                  | 0.55                  |
| M40X1.5A        | NPT11/4A | 12.5~20.2                 | 17~26          | 20                      | 88.5             | 103.5             | 0.76                  | 0.80                  |
| M40X1.5         | NPT11/4  | 19.5~26.5                 | 22~33          | 20                      | 95.5             | 110.5             | 0.72                  | 0.76                  |
| M40X1.5C        | NPT11/4C | 25~32.5                   | 28~41          | 20                      | 102.5            | 117.5             | 1.02                  | 1.06                  |
| M50X1.5A        | NPT11/2A | 19.5~26.5                 | 22~33          | 20                      | 95.5             | 110.5             | 1.17                  | 1.22                  |
| M50X1.5         | NPT11/2  | 25~32.5                   | 28~41          | 20                      | 101.5            | 116.5             | 1.11                  | 1.16                  |
| M50X1.5C        | NPT11/2C | 31.5~44.5                 | 36~46          | 20                      | 118              | 132.5             | 1.37                  | 1.42                  |
| M50X1.5D        | NPT11/2D | 31.5~44.5                 | 41~52.6        | 20                      | 118              | 132.5             | 1.35                  | 1.40                  |
| M63A            | NPT2A    | 25~32.5                   | 28~41          | 20                      | 101.5            | 116.5             | 1.28                  | 1.34                  |
| M63             | NPT2     | 31.5~44.5                 | 36~46          | 20                      | 118              | 132.5             | 1.44                  | 1.50                  |
| M63C            | NPT2C    | 31.5~44.5                 | 41~52.6        | 20                      | 118              | 132.5             | 1.36                  | 1.42                  |

#### Note:

- Locknut and sealing washer (PTFE washer) are supplied for Ex e, n, t type products, Without lock nut when delivery for Ex d type. Above weight is based on nickel plated brass material.
- Earth lug and shroud are on request.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.



KBM-15



KBM-16

## Explosion-proof Cable Glands (Compound Barrier, Unarmoured)

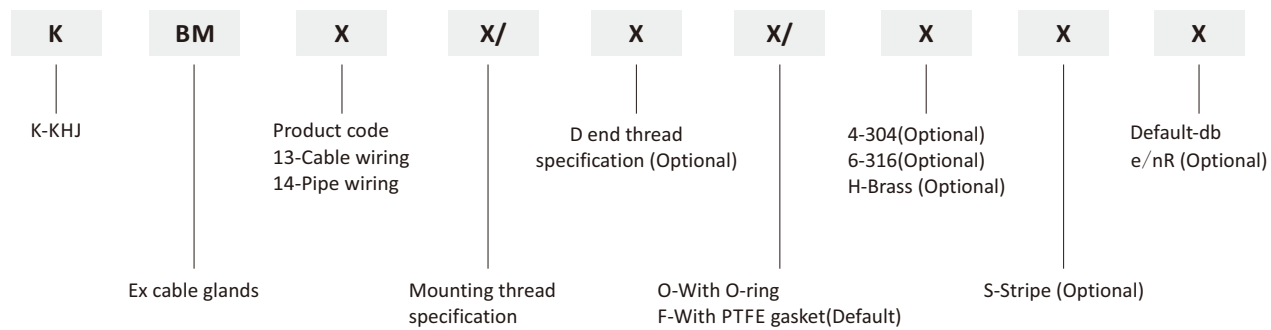
- KBM - 15,16 Series

### Application and Features

- Explosion proof certificates
  - ATEX : TPS 22 ATEX 114950 0001
  - IECEx : IECEx TPS 22.0023X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Flame-proof (Type 'd'), Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Double seal for armoured and unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

- Ex II 2 G Ex db IIC Gb
- Ex II 2 G Ex eb IIC Gb
- Ex II 3 G Ex nR IIC Gc
- Ex II 2 D Ex tb IIIC Db

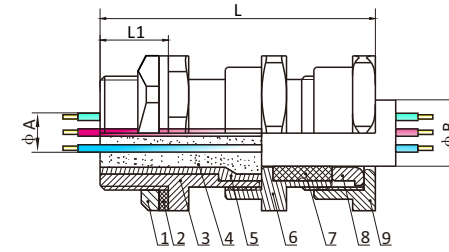
### Product Definition



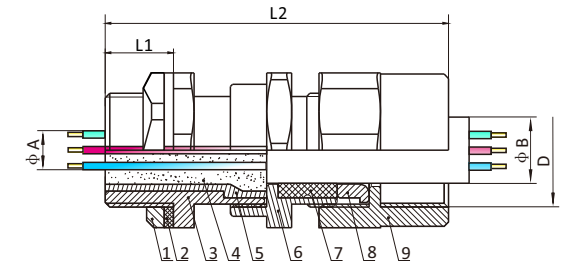
### Technical Parameter

|                      |            |                                                                                                                         |               |
|----------------------|------------|-------------------------------------------------------------------------------------------------------------------------|---------------|
| Explosion protection | Ex marking |  II 2 G Ex db IIC Gb                 | Ex db IIC Gb  |
|                      |            |  II 2 G Ex eb IIC Gb                 | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc                 | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db                | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0, IEC60079-1, IEC60079-7, IEC60079-15, IEC60079-31<br>EN60079-0, EN60079-1, EN60079-7, EN60079-15, EN60079-31 |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                                       |               |
| Degree of protection |            | IP66, IP67, IP68(2m/72h)                                                                                                |               |
| Ambient temperature  |            | -43°C~+100°C                                                                                                            |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                                           |               |

### Outline and Installation(mm)



KBM-15



KBM-16

- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.AB Type cement 5.Flame-proof sleeve 6.Middle connector  
7.Sealing ring 8.Washer 9.Compression nut

- 1.Locknut 2.Sealing washer 3.Inlet connector  
4.AB Type cement 5.Flame-proof sleeve 6.Middle connector  
7.Sealing ring 8.Washer 9.Compression nut

| Mounting thread |         | Cable outer diameter (mm) |           | Thread length<br>L1(mm) | Length L<br>(mm) | Length L2<br>(mm) | KBM-15<br>Weight (kg) | KBM-16<br>Weight (kg) |
|-----------------|---------|---------------------------|-----------|-------------------------|------------------|-------------------|-----------------------|-----------------------|
| M               | NPT     | Outlet A                  | Inlet B   |                         |                  |                   |                       |                       |
| M16X1.5A        | —       | 3~8                       | 3~8.2     | 15                      | 59.5             | 74.5              | 0.14                  | 0.16                  |
| M20X1.5A        | NPT1/2A | 3~8                       | 3~8.2     | 15                      | 59.5             | 74.5              | 0.17                  | 0.19                  |
| M20X1.5         | NPT1/2  | 4~10                      | 6.5~12    | 15                      | 59.5             | 74.5              | 0.16                  | 0.18                  |
| M25X1.5A        | NPT3/4A | 4~10                      | 6.5~12    | 15                      | 59.5             | 74.5              | 0.20                  | 0.22                  |
| M25X1.5         | NPT3/4  | 6.5~13                    | 10~14.5   | 15                      | 60.5             | 75.5              | 0.22                  | 0.24                  |
| M32X1.5A        | NPT1A   | 6.5~13                    | 10~14.5   | 20                      | 65.5             | 80.5              | 0.30                  | 0.33                  |
| M32X1.5         | NPT1    | 12~18.5                   | 12.5~20.2 | 20                      | 67               | 82                | 0.36                  | 0.39                  |
| M40X1.5A        | NPT11/4 | 12~18.5                   | 12.5~20.2 | 20                      | 67               | 82                | 0.66                  | 0.70                  |
| M40X1.5         | NPT11/4 | 16~24.5                   | 19.5~26.5 | 20                      | 68.5             | 83.5              | 0.62                  | 0.66                  |
| M50X1.5A        | NPT11/2 | 16~24.5                   | 19.5~26.5 | 20                      | 68.5             | 83.5              | 0.95                  | 1.00                  |
| M50X1.5         | NPT11/2 | 20.2~30                   | 25~32.5   | 20                      | 72               | 87                | 1.00                  | 1.05                  |
| M63A            | NPT2A   | 20.2~30                   | 25~32.5   | 20                      | 72               | 87                | 1.02                  | 1.08                  |
| M63             | NPT2    | 30~37                     | 31.5~44.5 | 20                      | 83               | 98                | 1.35                  | 1.41                  |

#### Note:

- Locknut and sealing washer (PTFE washer) are supplied for Ex e, n, t type products, Without lock nut when delivery for Ex d type. Above weight is based on nickel plated brass material.
- Earth lug and shroud are on request.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.





KBM-17



KBM-18

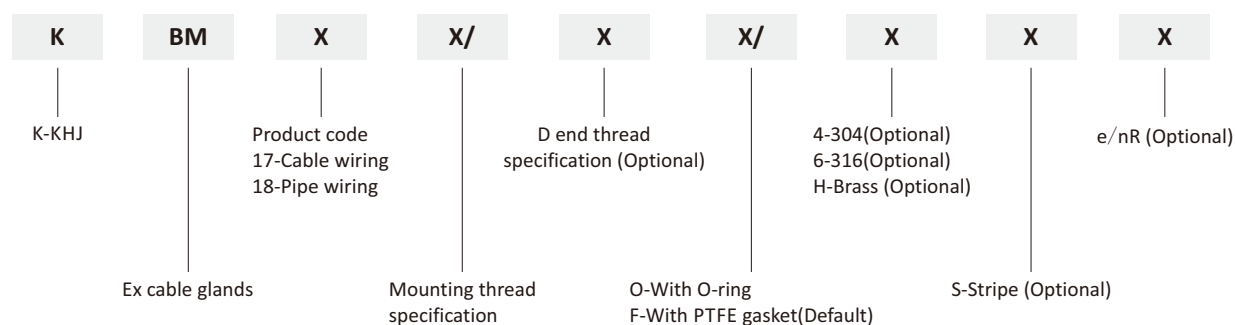
## Explosion-proof Cable Glands (Compound Barrier, Armoured, Unarmoured) - KBM - 17,18 Series

### Application and Features

- Explosion proof certificates
  - ATEX: TPS 22 ATEX 114950 0001 X
  - IECEx: IECEx TPS 22.0023X
- Application in hazardous area
  - Zone 1 and Zone 2,
  - Zone 21 and Zone 22
- Flame-proof (Type 'd'), Increased safety (Type 'e'), restricted breathing (Type 'nR'), combustible dust (Type 'tb') structure.
- Single seal compound barrier for unarmoured cables.
- Can be installed on Ex i (intrinsic safety type) equipment.

- II 2 G Ex db IIC Gb
- II 2 G Ex eb IIC Gb
- II 3 G Ex nR IIC Gc
- II 2 D Ex tb IIIC Db

### Product Definition

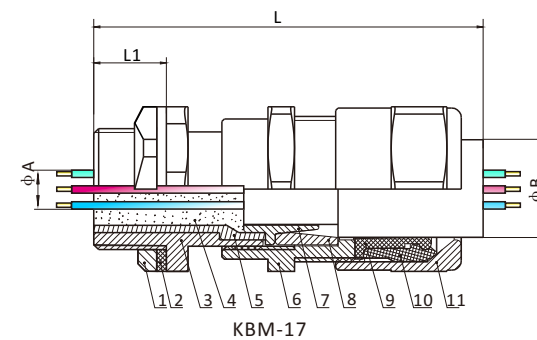


### Technical Parameter

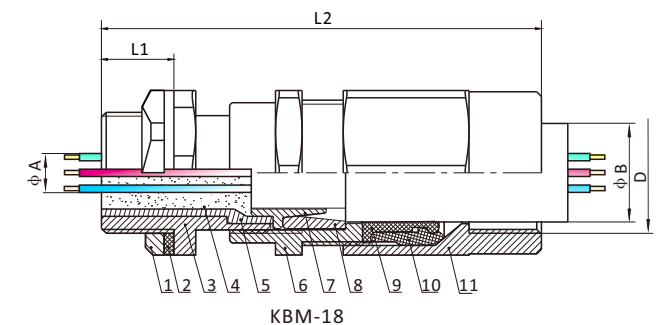
|                      |            |                                                                                                                     |               |
|----------------------|------------|---------------------------------------------------------------------------------------------------------------------|---------------|
| Explosion protection | Ex marking |  II 2 G Ex db IIC Gb             | Ex db IIC Gb  |
|                      |            |  II 2 G Ex eb IIC Gb             | Ex eb IIC Gb  |
|                      |            |  II 3 G Ex nR IIC Gc             | Ex nR IIC Gc  |
|                      |            |  II 2 D Ex tb IIIC Db            | Ex tb IIIC Db |
| Exectutive standards |            | IEC60079-0,IEC60079-1,IEC60079-7,IEC60079-15,IEC60079-31<br>EN60079-0, EN60079-1, EN60079-7, EN60079-15, EN60079-31 |               |
| Material             |            | Stainless steel, nickel plated brass, brass, etc.                                                                   |               |
| Degree of protection |            | IP66                                                                                                                |               |
| Ambient temperature  |            | -43°C~+100°C, -60°C~+100°C (Please specify when ordering)                                                           |               |
| Connection thread    |            | NPT thread, Metric thread (M)                                                                                       |               |



### Outline and Installation(mm)



- Locknut
- Sealing washer
- Inlet connector
- AB Type cement
- Flame-proof sleeve
- Middle connector
- Armour cone
- Clamping ring
- Sealing ring
- Sealing ring loop
- Compression nut



- Locknut
- Sealing washer
- Inlet connector
- AB Type cement
- Flame-proof sleeve
- Middle connector
- Armour cone
- Clamping ring
- Sealing ring
- Sealing ring loop
- Compression nut

| Mounting thread |          | Cable outer diameter (mm) |           |         | Thread length<br>L1(mm) | Length L<br>(mm) | Length L2<br>(mm) | KBM-17<br>Weight (kg) | KBM-18<br>Weight (kg) |
|-----------------|----------|---------------------------|-----------|---------|-------------------------|------------------|-------------------|-----------------------|-----------------------|
| M               | NPT      | Outlet                    | A         | Inlet B |                         |                  |                   |                       |                       |
| M16X1.5         | —        | 3~8                       | 5.5~12    |         | 15                      | 71.5             | 86.5              | 0.18                  | 0.19                  |
| M20X1.5A        | NPT1/2A  | 3~8                       | 5.5~12    |         | 15                      | 71.5             | 86.5              | 0.18                  | 0.19                  |
| M20X1.5         | NPT1/2   | 6.5~10                    | 9.5~16    |         | 15                      | 71.5             | 86.5              | 0.18                  | 0.20                  |
| M25X1.5A        | NPT3/4A  | 6.5~10                    | 9.5~16    |         | 15                      | 71.5             | 86.5              | 0.22                  | 0.24                  |
| M25X1.5         | NPT3/4   | 10~13                     | 12.5~20.5 |         | 15                      | 76.5             | 91.5              | 0.28                  | 0.30                  |
| M32X1.5A        | NPT1A    | 10~13                     | 12.5~20.5 |         | 20                      | 81.5             | 96.5              | 0.36                  | 0.39                  |
| M32X1.5         | NPT1     | 12.5~18.5                 | 17~26     |         | 20                      | 84.5             | 99.5              | 0.40                  | 0.43                  |
| M40X1.5A        | NPT11/4A | 12.5~18.5                 | 17~26     |         | 20                      | 84.5             | 99.5              | 0.78                  | 0.82                  |
| M40X1.5         | NPT11/4  | 19~24.5                   | 22~33     |         | 20                      | 88.5             | 103.5             | 0.72                  | 0.76                  |
| M50X1.5A        | NPT11/2A | 19~24.5                   | 22~33     |         | 20                      | 88.5             | 103.5             | 1.15                  | 1.20                  |
| M50X1.5         | NPT11/2  | 25~30                     | 28~41     |         | 20                      | 94               | 109               | 1.09                  | 1.14                  |
| M63A            | NPT2A    | 25~30                     | 28~41     |         | 20                      | 94               | 109               | 1.24                  | 1.30                  |
| M63             | NPT2     | 31~37                     | 36~46     |         | 20                      | 105.5            | 120.5             | 1.44                  | 1.50                  |
| M63C            | NPT2C    | 31~37                     | 41~52.6   |         | 20                      | 105.5            | 120.5             | 1.42                  | 1.48                  |

#### Note:

- Locknut and sealing washer (PTFE washer) are supplied for Ex e, n, t type products, Without lock nut when delivery for Ex d type. Above weight is based on nickel plated brass material.
- Earth lug and shroud are on request.
- The standard pitch of metric thread products is 1.5mm, other pitches can be customized, please specify when ordering.

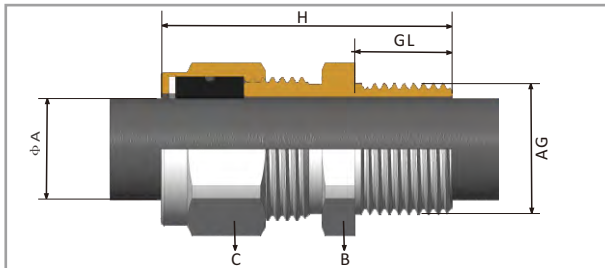


Explosion - Unarmoured cable glands

- KUG Series

Technical Details

- Type : KUG (Un-ar) Unarmoured gland
- Protection code : I M2 Ex db I Mb / I M2 Ex eb I Mb  
II 2G Ex db IIC Gb / II 2G Ex eb IIC Gb  
II 2D Ex tb IIIC Db
- Certificate : IEP 20 ATEX 0755 X
- Material : MS58 Brass with nickel plated  
Stainless steel AISI316L / Aluminium
- Standards : EN 60079-0:2012, 60079-7:2007, 60079-1:2007  
60079-31:2009
- Protection class : IP66
- Temperature : -60 °C +180 °C
- Application area : ZONE1, ZONE2, ZONE21, ZONE22,  
Gas Group IIA, IIB, IIC
- Cable type : Unarmoured



Product Definition

| K     | UG                         | X                                                                             | X                 | X            | X                 |
|-------|----------------------------|-------------------------------------------------------------------------------|-------------------|--------------|-------------------|
| Brand | Series                     | Material Type                                                                 | Seal type         | Product Size | Entry Thread size |
| K-KHJ | UG(Un-ar) Unarmoured gland | N-MS58 Brass with nickel plated<br>Ss-AISI316L Stainless Steel<br>A-Aluminium | 4-Silicone Washer |              | AG                |
|       |                            |                                                                               |                   | 16           | M16               |
|       |                            |                                                                               |                   | 20s          | M20               |
|       |                            |                                                                               |                   | 20           | M20               |
|       |                            |                                                                               |                   | ...          | ...               |

Cable gland Selection Table

| Product<br>Size | Product<br>Code | Entry Thread size |           | φA   |      | Thread length<br>"GL"<br>min.(mm) | H<br>mm |    |    |
|-----------------|-----------------|-------------------|-----------|------|------|-----------------------------------|---------|----|----|
|                 |                 | Metric"AG"        | NPT"AG"   | Min  | Max  |                                   |         |    |    |
| 16              | KUGX4-16-X      | M16               | NPT 1/2   | 6,1  | 11,6 | 15                                | 44,5    | 20 | 24 |
| 20s             | KUGX4-20s-X     | M20               | NPT 1/2   | 6,1  | 13,2 | 15                                | 44,5    | 24 | 24 |
| 25              | KUGX4-25-X      | M25               | NPT 3/4   | 12,5 | 20,5 | 15                                | 47,5    | 30 | 30 |
| 25s             | KUGX4-25s-X     | M25               | NPT 3/4   | 9,5  | 15,9 | 15                                | 47,5    | 30 | 30 |
| 32              | KUGX4-32-X      | M32               | NPT 1     | 18,2 | 26,2 | 15                                | 52,5    | 38 | 38 |
| 40              | KUGX4-40-X      | M40               | NPT 1 1/4 | 23,7 | 33,9 | 15                                | 53,5    | 45 | 45 |
| 50              | KUGX4-50-X      | M50               | NPT 1 1/2 | 27,9 | 40,4 | 15                                | 55,5    | 55 | 55 |
| 63s             | KUGX4-63s-X     | M63               | NPT 2     | 40,4 | 51   | 15                                | 58,5    | 70 | 70 |
| 63              | KUGX4-63-X      | M63               | NPT 2 1/2 | 47,2 | 55,9 | 15                                | 58,5    | 70 | 80 |
| 75s             | KUGX4-75s-X     | M75               | NPT 2 1/2 | 52,8 | 59   | 15                                | 72      | 80 | 80 |
| 75              | KUGX4-75-X      | M75               | NPT 3     | 59,1 | 67,9 | 15                                | 73      | 90 | 90 |

Remark: ★ Stand for this specification is a standing stock .

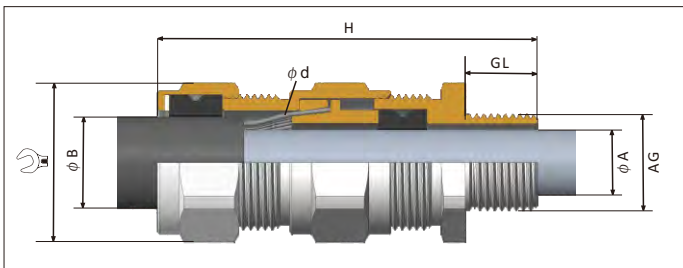


Explosion - Armoured Cable Glands

- KDCG Series

Technical Details

- Ttype : KDCG (Double compression gland)
- Protection code : I M2 Ex db I Mb/II 2G Ex db IIC Gb/II 2D Ex tb IIIC Db
- Certificate : IEP 20 ATEX 0754 X
- Material : MS58 Brass with nickel plated  
Stainless steel AISI316L / Aluminium
- Standards : EN 60079-0:2012, 60079-1:2007, 60079-31:2009
- Protection class : IP66
- Temperature : -60 °C +180 °C
- Application area : ZONE1, ZONE2, ZONE21, ZONE22,  
Gas Group IIA, IIB, IIC
- Cable type : SWA (Single wire armour)  
(STA & other cables optional)



Product Definition

| K     | DCG                          | X                                                                             | X                 | X            | X                 |
|-------|------------------------------|-------------------------------------------------------------------------------|-------------------|--------------|-------------------|
| Brand | Series                       | Material Type                                                                 | Seal type         | Product Size | Entry Thread size |
| K-KHJ | DCG-Double compression gland | N-MS58 Brass with nickel plated<br>Ss-AISI316L Stainless Steel<br>A-Aluminium | 4-Silicone Washer |              | AG                |
|       |                              |                                                                               |                   | 16           | M16 x 1,5         |
|       |                              |                                                                               |                   | 20ss         | M20ss x 1,5       |
|       |                              |                                                                               |                   | 20s          | M20s x 1,5        |
|       |                              |                                                                               |                   | ...          | ...               |

Cable gland Selection Table

| Product<br>Size | Product<br>Code | Entry Thread size |         | Inner Sheath "A" |       | Outer Sheath "B" |       | Ø d (Armour) |      | Thread length<br>"GL"<br>min.(mm) | H<br>mm |     |
|-----------------|-----------------|-------------------|---------|------------------|-------|------------------|-------|--------------|------|-----------------------------------|---------|-----|
|                 |                 | Metric"AG"        | NPT"AG" | Min              | Max   | Min              | Max   | Min          | Max  |                                   |         |     |
| 16              | KDCGX4-16-X     | M16x1,5           | 1/2"    | 3,1              | 8,6   | 6,1              | 13,2  | 0,8          | 1,0  | 15                                | 74      | 24  |
| 20ss            | KDCGX4-20ss-X   | M20ssx1,5         | 1/2"    | 3,1              | 8,6   | 6,1              | 13,2  | 0,8          | 1,0  | 15                                | 74      | 24  |
| 20s             | KDCGX4-20s-X    | M20sx1,5          | 1/2"    | 6,1              | 11,6  | 9,5              | 15,9  | 0,8          | 1,25 | 15                                | 74      | 24  |
| 20              | KDCGX4-20-X     | M20x1,5           | 1/2"    | 6,5              | 13,9  | 12,5             | 20,9  | 0,8          | 1,25 | 15                                | 80      | 30  |
| 25s             | KDCGX4-25s-X    | M25sx1,5          | 3/4"    | 11,1             | 19,9  | 14               | 22    | 1,25         | 1,60 | 15                                | 89      | 38  |
| 25              | KDCGX4-25-X     | M25x1,5           | 3/4"    | 11,1             | 19,9  | 18,2             | 26,2  | 1,25         | 1,60 | 15                                | 92      | 38  |
| 32              | KDCGX4-32-X     | M32x1,5           | 1"      | 18,2             | 26,2  | 23,7             | 33,9  | 1,6          | 2,0  | 15                                | 95      | 45  |
| 40              | KDCGX4-40-X     | M40x1,5           | 1 1/4"  | 23,7             | 33,9  | 27,9             | 40,4  | 1,6          | 2,0  | 15                                | 100     | 55  |
| 50s             | KDCGX4-50s-X    | M50sx1,5          | 1 1/2"  | 29,5             | 38,1  | 35,2             | 46,7  | 2,0          | 2,5  | 15                                | 102     | 60  |
| 50              | KDCGX4-50-X     | M50x1,5           | 2"      | 35,6             | 44,0  | 40,4             | 53,1  | 2,0          | 2,5  | 15                                | 107     | 70  |
| 63s             | KDCGX4-63s-X    | M63sx1,5          | 2"      | 40,1             | 49,9  | 45,6             | 59,4  | 2,0          | 2,5  | 15                                | 110     | 75  |
| 63              | KDCGX4-63-X     | M63x1,5           | 2 1/2"  | 47,2             | 55,9  | 54,6             | 65,9  | 2,0          | 2,5  | 15                                | 113     | 80  |
| 75s             | KDCGX4-75s-X    | M75sx1,5          | 2 1/2"  | 52,8             | 61,9  | 59               | 72,1  | 2,0          | 2,5  | 15                                | 134     | 90  |
| 75              | KDCGX4-75-X     | M75x1,5           | 3"      | 59,1             | 67,9  | 66,7             | 78,5  | 2,5          | 3,0  | 15                                | 135     | 100 |
| 90              | KDCGX4-90-X     | M90x2             | 3"      | 66,6             | 79,9  | 76,2             | 90,4  | 3,0          | 3,5  | 15                                | 157     | 115 |
| 100             | KDCGX4-100-X    | M100x2            | -       | 76               | 90    | 86,1             | 101,5 | 3,15         | 4,0  | 15                                | 158     | 123 |
| 115             | KDCGX4-115-X    | M115x2            | -       | 86               | 97,9  | 101,5            | 110,3 | 3,15         | 4,0  | 15                                | 159     | 133 |
| 130             | KDCGX4-130-X    | M130x2            | -       | 97               | 114,9 | 114,2            | 123,3 | 3,15         | 4,0  | 15                                | 170     | 146 |

Remark: ★ Stand for this specification is a standing stock .





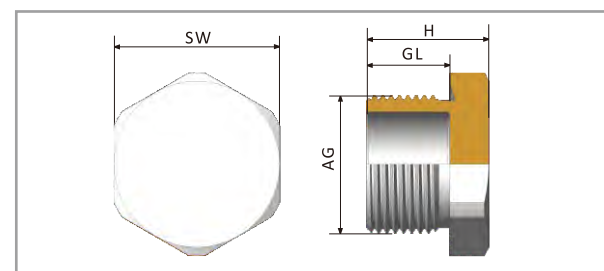
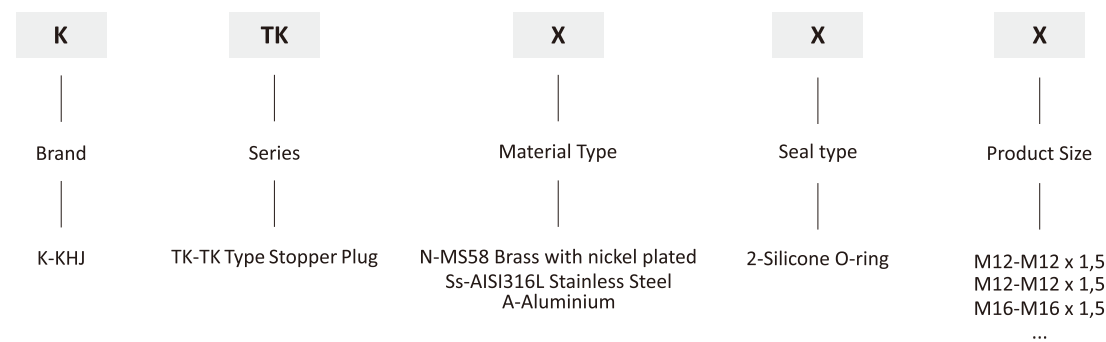
## Explosion - Stopper Plug

### - KTK Series

#### Technical Details

- Type : KTK TYPE STOPPER PLUG
- Protection code : I M2 Ex db I Mb / I M2 Ex eb I Mb  
II 2G Ex db IIC Gb / II 2G Ex eb IIC Gb  
II 1D Ex ta IIC Da
- Certificate : IEP 20 ATEX 756 U
- Material : MS58 Brass with nickel plated  
Stainless steel AISI316L / Aluminium
- Standards : EN 60079-0:2012, 60079-7:2007, 60079-1:2007  
60079-31:2009
- O-ring : Silicone
- Protection class : IP66
- Temperature : -40 °C +100 °C
- Application area : ZONE1, ZONE2, ZONE21, ZONE22,  
Gas Group IIA, IIB, IIC

#### Product Definition

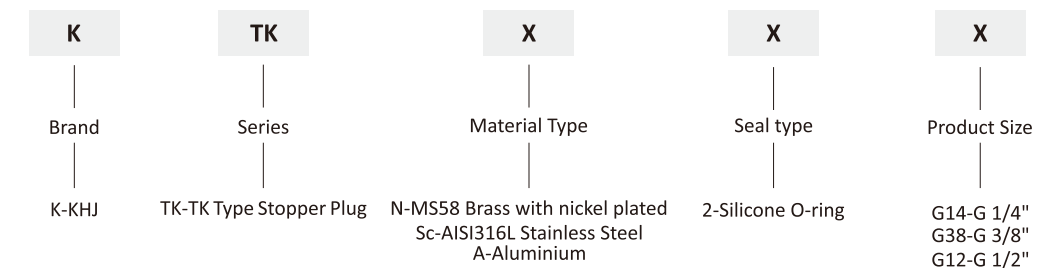


#### Cable Gland Selection Table

| Product Size | Product Code | Thread length "GL" min. (mm) | H mm | SW mm |
|--------------|--------------|------------------------------|------|-------|
| M12 x 1,5    | KTK-X2-M12   | 15                           | 22   | 17    |
| M16 x 1,5    | KTK-X2-M16   | 15                           | 22   | 22    |
| M20 x 1,5    | KTK-X2-M20 ★ | 15                           | 22   | 24    |
| M25 x 1,5    | KTK-X2-M25 ★ | 15                           | 22   | 30    |
| M32 x 1,5    | KTK-X2-M32   | 15                           | 22   | 36    |
| M40 x 1,5    | KTK-X2-M40   | 15                           | 22   | 45    |
| M50 x 1,5    | KTK-X2-M50   | 15                           | 22   | 55    |
| M63 x 1,5    | KTK-X2-M63   | 15                           | 22   | 70    |
| M75 x 1,5    | KTK-X2-M75   | 15                           | 22   | 80    |
| M90 x 2      | KTK-X2-M90   | 20                           | 27   | 95    |
| M100 x 2     | KTK-X2-M100  | 20                           | 27   | 110   |
| NPT 1/4"     | KTK-X-N1/4   | 15                           | 22   | 15    |
| NPT 3/8"     | KTK-X-N3/8   | 15                           | 22   | 20    |
| NPT 1/2"     | KTK-X-N1/2   | 15                           | 22   | 24    |
| NPT 3/4"     | KTK-X-N3/4 ★ | 15                           | 22   | 27    |
| NPT 1"       | KTK-X-N100   | 15                           | 22   | 35    |
| NPT 1 1/4"   | KTK-X-N1 1/4 | 18                           | 25   | 45    |
| NPT 1 1/2"   | KTK-X-N1 1/2 | 18                           | 25   | 50    |
| NPT 2"       | KTK-X-N200   | 18                           | 25   | 65    |
| NPT 2 1/2"   | KTK-X-N2 1/2 | 28                           | 35   | 75    |
| NPT 3"       | KTK-X-N300   | 28                           | 35   | 90    |
| NPT 4"       | KTK-X-N400   | 28                           | 35   | 115   |

Remark: ★ Stand for this specification is a standing stock .

#### Product Definition



#### Stopper Plug Selection Table

| Product Size | Product Code | Thread length "GL" min. (mm) | H mm | SW mm |
|--------------|--------------|------------------------------|------|-------|
| G 1/4"       | KTK-X2-G14   | 15                           | 22   | 18    |
| G 3/8"       | KTK-X2-G38   | 15                           | 22   | 22    |
| G 1/2"       | KTK-X2-G12   | 15                           | 22   | 25    |
| G 3/4"       | KTK-X2-G34   | 15                           | 22   | 32    |
| G 1"         | KTK-X2-G100  | 15                           | 22   | 38    |
| G 1 1/4"     | KTK-X2-G114  | 15                           | 22   | 45    |
| G 1 1/2"     | KTK-X2-G112  | 15                           | 22   | 55    |
| G 2"         | KTK-X2-G200  | 15                           | 22   | 65    |
| G 2 1/2"     | KTK-X2-G212  | 20                           | 27   | 85    |
| G 3"         | KTK-X2-G300  | 20                           | 27   | 95    |
| G 4"         | KTK-X2-G400  | 20                           | 27   | 120   |
| PG7          | KTK-X2-P7    | 15                           | 22   | 17    |
| PG9          | KTK-X2-P9    | 15                           | 22   | 20    |
| PG 11        | KTK-X2-P11   | 15                           | 22   | 25    |
| PG 13,5      | KTK-X2-P13   | 15                           | 22   | 25    |
| PG16         | KTK-X2-P16   | 15                           | 22   | 27    |
| PG21         | KTK-X2-P21   | 15                           | 22   | 35    |
| PG29         | KTK-X2-P29   | 15                           | 22   | 42    |
| PG36         | KTK-X2-P36   | 15                           | 22   | 55    |
| PG42         | KTK-X2-P42   | 15                           | 22   | 60    |
| PG48         | KTK-X2-P48   | 15                           | 22   | 65    |

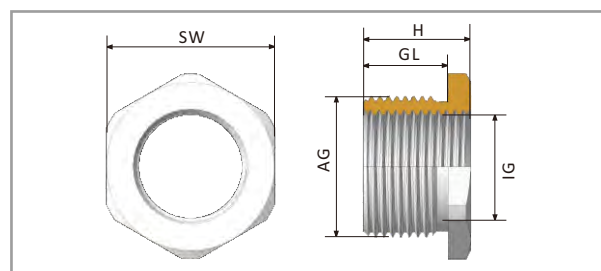


## Explosion - Reducer

### - KRC Series

#### Technical Details

- Type : KRC TYPE REDUCER
- Protection code : I M2 Ex db I Mb / I M2 Ex eb I Mb  
II 2G Ex db IIC Gb / II 2G Ex eb IIC Gb  
II 1D Ex ta IIC Da
- Certificate : IEP 20 ATEX 756 U
- Material : MS58 Brass with nickel plated  
Stainless steel AISI316L / Aluminium
- Standards : EN 60079-0:2012, 60079-7:2007, 60079-1:2007  
60079-31:2009
- O-ring : Silicone
- Protection class : IP66
- Temperature : -40 °C +100 °C
- Application area : ZONE1, ZONE2, ZONE21, ZONE22,  
Gas Group IIA, IIB, IIC



#### Product Definition

| K     | RC                 | X                                                                             | X                 | Xm                                                        | Xf                                                        |
|-------|--------------------|-------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Brand | Series             | Material Type                                                                 | Seal type         | Product Size(Male)                                        | Cable Gland Connection Size(Female)                       |
| K-KHJ | RC-RC Type Reducer | N-MS58 Brass with nickel plated<br>Ss-AISI316L Stainless Steel<br>A-Aluminium | 2-Silicone O-ring | M16m-M16 x 1,5<br>M20m-M20 x 1,5<br>M20m-M20 x 1,5<br>... | M12f-M12 x 1,5<br>M12f-M12 x 1,5<br>M16f-M16 x 1,5<br>... |

## Cable gland Selection Table

| Product Size | Product Code     | Cable Gland Connection Size "IG"(F) | Thread length "GL" min. (mm) | H mm | SW mm |
|--------------|------------------|-------------------------------------|------------------------------|------|-------|
| M16 x 1,5    | KRCX2-M16m-M12f  | M12 x 1,5                           | 15                           | 19   | 22    |
| M20 x 1,5    | KRCX2-M20m-M12f  | M12 x 1,5                           | 15                           | 19   | 25    |
| M20 x 1,5    | KRCX2-M20m-M16f  | M16 x 1,5                           | 15                           | 19   | 25    |
| M25 x 1,5    | KRCX2-M25m-M16f  | M16 x 1,5                           | 15                           | 19   | 30    |
| M25 x 1,5    | KRCX2-M25m-M20f  | M20 x 1,5                           | 15                           | 19   | 30    |
| M32 x 1,5    | KRCX2-M32m-M20f  | M20 x 1,5                           | 15                           | 19   | 36    |
| M32 x 1,5    | KRCX2-M32m-M25f  | M25 x 1,5                           | 15                           | 19   | 36    |
| M40 x 1,5    | KRCX2-M40m-M25f  | M25 x 1,5                           | 18                           | 22   | 45    |
| M40 x 1,5    | KRCX2-M40m-M32f  | M32 x 1,5                           | 18                           | 22   | 45    |
| M50 x 1,5    | KRCX2-M50m-M32f  | M32 x 1,5                           | 18                           | 23   | 55    |
| M50 x 1,5    | KRCX2-M50m-M40f  | M40 x 1,5                           | 18                           | 23   | 55    |
| M63 x 1,5    | KRCX2-M63m-M40f  | M40 x 1,5                           | 18                           | 23   | 70    |
| M63 x 1,5    | KRCX2-M63m-M50f  | M50 x 1,5                           | 18                           | 23   | 70    |
| M75 x 1,5    | KRCX2-M75m-M50f  | M50 x 1,5                           | 18                           | 24   | 85    |
| M75 x 1,5    | KRCX2-M75m-M63f  | M63 x 1,5                           | 18                           | 24   | 85    |
| M90 x 1,5    | KRCX2-M90m-M63f  | M63 x 1,5                           | 21                           | 29   | 100   |
| M90 x 1,5    | KRCX2-M90m-M75f  | M75 x 1,5                           | 21                           | 29   | 100   |
| M110 x 1,5   | KRCX2-M110m-M75f | M75 x 1,5                           | 21                           | 31   | 120   |
| M110 x 1,5   | KRCX2-M110m-M90f | M90 x 1,5                           | 21                           | 31   | 120   |

## Product Definition

| K     | RC                 | X                                                                             | X                 | Xm                                                     | Xf                                                     |
|-------|--------------------|-------------------------------------------------------------------------------|-------------------|--------------------------------------------------------|--------------------------------------------------------|
| Brand | Series             | Material Type                                                                 | Seal type         | Product Size(Male)                                     | Cable Gland Connection Size(Female)                    |
| K-KHJ | RC-RC Type Reducer | N-MS58 Brass with nickel plated<br>Ss-AISI316L Stainless Steel<br>A-Aluminium | 2-Silicone O-ring | N38m-NPT 3/8"<br>N12m-NPT 1/2"<br>N12m-NPT 1/2"<br>... | N14f-NPT 1/4"<br>N14f-NPT 1/4"<br>N38f-NPT 3/8"<br>... |

## Reducer Selection Table

| Product Size | Product Code      | Cable Gland Connection Size "IG"(F) | Thread length "GL" min. (mm) | H mm | SW mm |
|--------------|-------------------|-------------------------------------|------------------------------|------|-------|
| NPT 3/8"     | KRCX2-N38m-N14f   | NPT 1/4"                            | 15                           | 19   | 22    |
| NPT 1/2"     | KRCX2-N12m-N14f   | NPT 1/4"                            | 15                           | 19   | 25    |
| NPT 1/2"     | KRCX2-N12m-N38f   | NPT 3/8"                            | 15                           | 19   | 25    |
| NPT 3/4"     | KRCX2-N34m-N38f   | NPT 3/8"                            | 15                           | 19   | 30    |
| NPT 3/4"     | KRCX2-N34m-N12f   | NPT 1/2"                            | 15                           | 19   | 30    |
| NPT 1"       | KRCX2-N100m-N12f  | NPT 1/2"                            | 15                           | 19   | 36    |
| NPT 1"       | KRCX2-N100m-N34f  | NPT 3/4"                            | 15                           | 19   | 36    |
| NPT 1 1/4"   | KRCX2-N114m-N12f  | NPT 1/2"                            | 18                           | 22   | 45    |
| NPT 1 1/4"   | KRCX2-N114m-N34f  | NPT 3/4"                            | 18                           | 22   | 45    |
| NPT 1 1/4"   | KRCX2-N114m-N100f | NPT 1"                              | 18                           | 22   | 45    |
| NPT 1 1/2"   | KRCX2-N112m-N12f  | NPT 1/2"                            | 18                           | 23   | 55    |
| NPT 1 1/2"   | KRCX2-N112m-N34f  | NPT 3/4"                            | 18                           | 23   | 55    |
| NPT 1 1/2"   | KRCX2-N112m-N100f | NPT 1"                              | 18                           | 23   | 55    |
| NPT 1 1/2"   | KRCX2-N112m-N114f | NPT 1 1/4"                          | 18                           | 23   | 55    |
| NPT 2"       | KRCX2-N200m-N114f | NPT 1 1/4"                          | 18                           | 23   | 65    |
| NPT 2"       | KRCX2-N200m-N112f | NPT 1 1/2"                          | 18                           | 23   | 65    |
| NPT 2 1/2"   | KRCX2-N212m-N112f | NPT 1 1/2"                          | 28                           | 34   | 75    |
| NPT 2 1/2"   | KRCX2-N212m-N200f | NPT 2"                              | 28                           | 34   | 75    |
| NPT 3"       | KRCX2-N300m-N200f | NPT 2"                              | 28                           | 36   | 95    |
| NPT 3"       | KRCX2-N300m-N212f | NPT 2 1/2"                          | 28                           | 36   | 95    |
| NPT 4"       | KRCX2-N400m-N212f | NPT 2 1/2"                          | 28                           | 38   | 120   |
| NPT 4"       | KRCX2-N400m-N300f | NPT 3"                              | 28                           | 38   | 120   |