



**LED LIGHTING**

**EX**



Company profile

The Company enjoys rich experiences in the planning and implementation of energy conservation projects in various plants, and has developed a number of energy-friendly illumination solutions for the domestic and overseas customers. Smart Solution Systems provides a whole set of technical support, project design, installation and after-sales services for customers in the areas of electric power, metallurgy, petrochemical and coal mine etc.

With the aim of contributing to the nation and shaping brand, and upholding the tenet of win-win situation among customers, employees and the company, Smart Solution Systems, Ltd is endeavouring to create an excellent platform for more and more elites who are to join Smart Solution Systems, and commonly establish a first class illumination enterprise.

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Range

Explosion-proof Mining Lights

MA

LED



P.01

Model: DGS10/127L(A)  
DGS24/127L(A)  
DGS35/127L(A)  
DGS48/127L(A)  
Power: 10,24,35,48W

MA

LED



P.03

Model: DGS45/127L(A)  
DGS60/127L(A)  
Power: 45W, 60W

MA

LED



P.05

Model: DGS40/127L(B)  
DGS60/127L(B)  
Power: 40W, 60W

MA

LED




P.07

Model: DGY18/36L(A)  
DGE18/48L(A)  
Power: 18W

Fixed Explosion-proof Lights

Ex

LED




P.09

Model: BC5401 Series  
Power: 2×20W,2×28W

Ex

LED




P.11

Model: BC9101 Series  
Power: 25,40,60,80W

Ex

LED




P.13

Model: BC9200 Series  
Power: 12W, 6W

Ex

LED




P.15

Model: BC9302 Series  
Power: 25W, 40W, 60W

Ex

LED




P.17

Model: BC9303 Series  
Power: 25W, 40W, 60W

Ex

LED




P.19

Model: BC9501 Series  
Power: 25W, 40W, 60W

Ex

LED




P.21

Model: BC9700 Series  
Power: 50-120W

Ex

MH  
HPS




P.23

Model: BC9100 Series  
Power: 70W, 100W, 150W

Ex

MH  
HPS




P.25

Model: BC9300 Series  
Power: 40,70,100,150W

Ex

MH  
HPS



P.27

Model: BC9500 Series  
Power: 35,70,100,150W

Fixed Professional Lights

LED



P.29

Model: ZY5301 Series  
Power: 10W, 25W, 40W

LED



P.31

Model: ZY8101 Series  
Power: 25,40,60,80W

LED



P.37

Model: ZY8301 Series  
Power: 25W, 40W, 60W

LED



P.39

Model: ZY8302 Series  
Power: 60,80,100,120W

LED



P.41

Model: ZY8501 Series  
Power: 60-120W

LED



P.43

Model: ZY8601 Series  
Power: 25W, 40W, 60W

LED



P.47

Model: ZY8800 Series  
Power: 6W, 12W

LED



P.49

Model: ZY9710 Series  
Power: 50-120W

MH  
HPS



P.51

Model: ZY8100 Series  
Power: 70W, 100W, 150W

MH  
HPS



P.53

Model: ZY8200 Series  
Power: 250W, 400W

MH  
HPS  
CFL



P.61

Model: ZY8600 Series  
Power: 40-150W

Fixed Emergency Lights

Ex

LED



P.63

Model: BC9101A / B  
Emergency Power: 15W, 25W

Ex

LED



P.65

Model: BC9302A / B  
Emergency Power: 15W, 25W

Ex

MH



P.67

Model: BC9110A / B  
Emergency Power: 35W, 70W

LED



P.69

Model: ZY8101A / B  
Emergency Power: 15W, 25W

LED



P.71

Model: ZY8810,ZY8820  
Emergency Power: 6W, 12W

MH



P.73

Model: ZY8110A / B  
Emergency Power: 35W, 70W

Mobile Explosion-proof Lights

Ex

LED



P.75

Spot Flood

Ex

LED



P.76

Model: BW3210  
Power: 30W

Ex

LED



P.77

Model: ZW4100A  
BW4100B

Ex

LED



P.78

Model: BW6200E  
Power: 3W

Ex

LED



P.79

Model: BW6210  
Power: 3W

Ex

LED



P.80

Model: BW6310A / B  
Power: 1W, 3W

Ex

LED



P.81

Model: BW6610A  
Power: 3x3W

Ex

LED



P.82

Model: BW7101  
Power: 3x3W

Ex

LED



P.83

Model: BW7300A / B  
Power: 1W, 3W

Ex

LED



P.84

Model: BW7500A / B / C  
Power: 1W, 3W, 5W

Mobile Professional Lights

MH



P.85

Model: ZW3100B / C  
Power: 35W, 100W

MH



P.86

Model: ZW3320A / B / C  
Power: 35W, 45W,100W

MH



P.87

Model: ZW35 Series  
Power: 2x1000,4x1000W

MH



P.88

Model: ZW3500C,3510C  
Power: 2x400,2x1000W

MH



P.89

Model: ZW3520B  
Power: 2x150W

MH



P.90

Model: ZW3520C  
Power: 2x150W

LED



P.92

Model: ZW7600  
ZW7600A

LED



P.93

Model: ZW7610  
Power: 3W

LED



P.94

Model: ZW7710,ZW7710A  
Power: 1W, 3W



## LED



Ex Code: Ex d I  
Standard: GB3836.1, GB3836.2, MT221



## Application

1. Approved for safe use in the explosive environment under the coal mine where the methane and the explosive dust exist.
2. It is the idea lighting solution for the underground tunnel in the underground chamber in the mining field.

## Characteristics

- Its reflector is specially designed for the tunnel. At the height of 3.5meters, 24W can reach 35Lux, 48W can reach 80Lux. The light distribution distance is more than 15meters. It can save 65% on energy than the metal halide lamp.
- It adopts American CREE LED as light source, service life reach 100,000 hours
- Equipment with world famous brand electrical appliance, has a highly stable performance.
- The LED is seamless connected to the heat sink, which help to heat dissipating, ensured the LED'S life span.
- Supplied with stainless chain which have hooks on the end and the chain's length is adjustable.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.

### Main specification

Input Voltage	90~264VAC / 127~370VDC
Output Voltage	28VDC
Frequency	50 / 60Hz
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4
Screw Thread	G3/4"
Cable Diameter	Φ 8mm - Φ 14mm
Dimension	424×177×77mm
Net Weight	4.1Kg

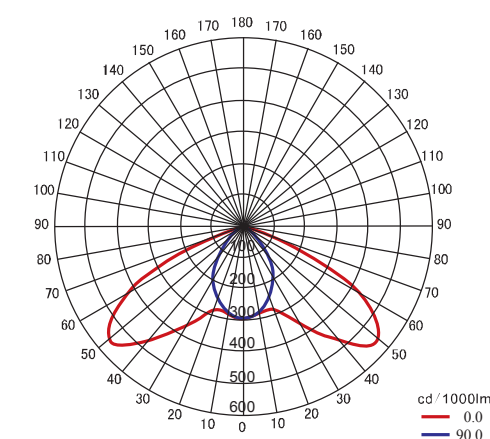
## DGS10/127L(A) , DGS24/127L(A) , DGS35/127L(A) , DGS48/127L(A) LED Explosion-proof Mining Tunnel Light

# EX

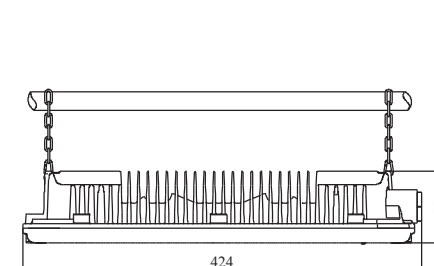
### Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to		
				Metal Halide Lamp	Electro less lamp	CFL
DGS10/127L(A)	LED	10	1,240	/	30W	40W
DGS24/127L(A)	LED	24	2,792	70W	60W	80W
DGS35/127L(A)	LED	35	4,620	100W	100W	120W
DGS48/127L(A)	LED	48	5,240	100~150W	120W	150W

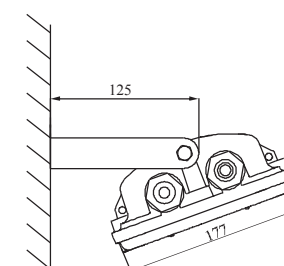
### Light distribution curve



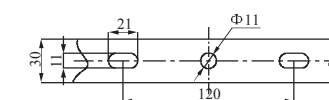
### Drawing of dimension (Dimensions in mm)



(G) (standard)



(B) (optional)



### Mounting hole drawing

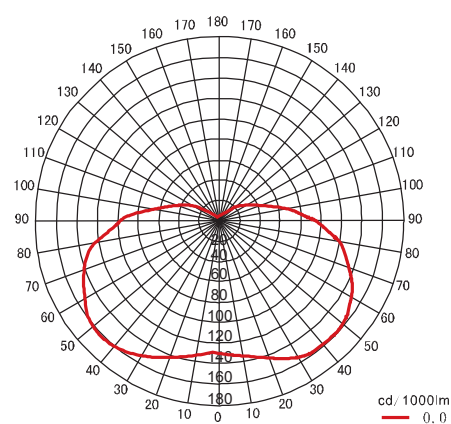
## LED



Ex Code: Ex d I  
Standard: GB3836.1, GB3836.2, Mt221



## Light distribution curve



## Application

- 1) Approved for safe use in the explosive environment under the coal mine where the methane and the explosive dust exist.
- 2) It is the idea lighting solution for the underground working area tunnel or construction tunnel.

## Characteristics

- The aluminium reflector with high gloss reflective finish and unique light distribution curve, enable the lamp to have different luminous effect on the ground, wall and the roof's different so that to efficiently use all the lights.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- Equipped with world famous brand electrical appliance, ensuring the lamp have a stable performance.
- The housing is especially designed to dissipate heat, which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- Multiple mounting options: wall mounting, ceiling mounting, pendant mounting etc. This lamp can be connected in parallel
- The lamp is flame proof type of protection, Ex d I certified, for safe use in potentially coal mine explosive places.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof, make the lamp an excellent option for all kinds of high stress environment.

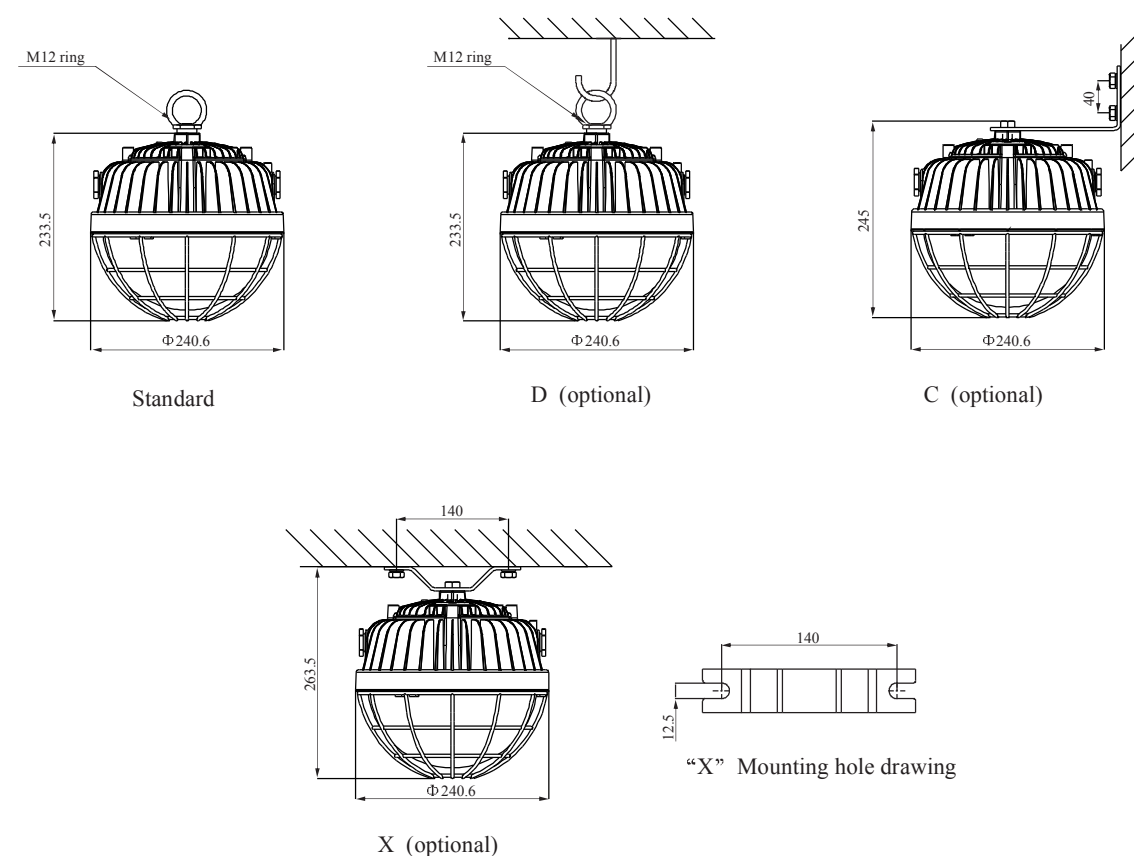
## Main specification

Input Voltage	90~264VAC / 127~370VDC
Output Voltage	48VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	3.5
Thread	G3/4"
Leading-in cable diameter	Φ8mm~Φ14mm
Dimension	Φ240×233.5mm
Net Weight	5.2Kg

## Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to	
				Metal Halide Lamp	Electro less lamp
DGS45/127L(A)	LED	45	6,372	70~100W	85W
DGS60/127L(A)	LED	60	7,128	100W	100W

## Drawing of dimension (Dimensions in mm)



LED



Ex Code: Ex d I

Standard: GB3836.1, GB3836.2, Mt221



Application

It provides operators with a powerful and energy efficient spotlight for the flammable area such as the coal mine, indoor and outdoor work task, the monitoring spot and other devices.

Characteristics

- Beam Angle: 25° or 80° is available.
- The housing is especially designed to dissipate heat, which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- The locking device on the bracket will keep the lamp from shift or trembling when harsh vibration.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Equipped with world famous brand electrical appliance, ensuring the lamp have a stable performance.
- The lamp is flame proof type of protection, designed for use in harsh environment or explosive application.

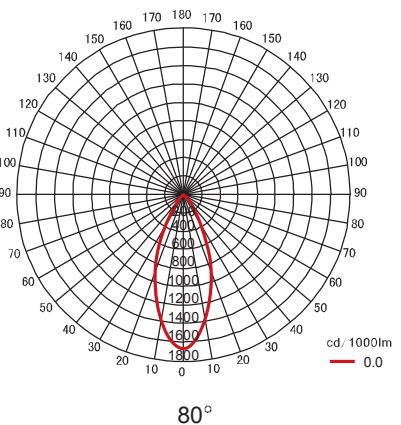
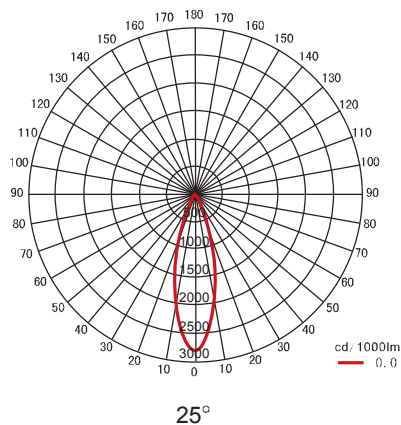
Main specification

Input Voltage	90~264VAC / 127~370VDC	
Output Voltage	38VDC	48VDC
Rated wattage	40W	60W
Frequency	50Hz / 60Hz	
Ingress Protection	IP66	
Anti Corrosion Grade	WF2	
Insulation Grade	I	
Thread	G3/4"	
Leading-in cable diameter	φ 8mm~ φ 14mm	
Dimension	φ 180 × 243mm	
Net Weight	3.8Kg	

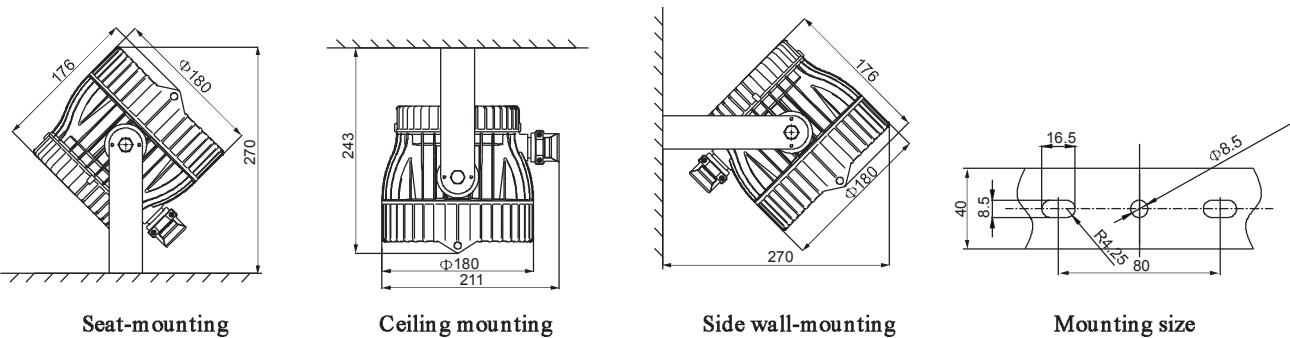
Ordering reference

Model Number	Beam Angle	Light source	Rated wattage (W)	Light output (lm)	Equivalent to		
					Metal Halide Lamp	Electrode less lamp	High pressure mercury lamp
DGS40/127L(B)-25°	25°	LED	40	5,508	100W	100W	125W
DGS40/127L(B)-80°	80°						
DGS60/127L(B)-25°	25°	LED	60	7,128	150W	135W	175W
DGS60/127L(B)-80°	80°						

Light distribution curve



Drawing of dimension (Dimensions in mm)





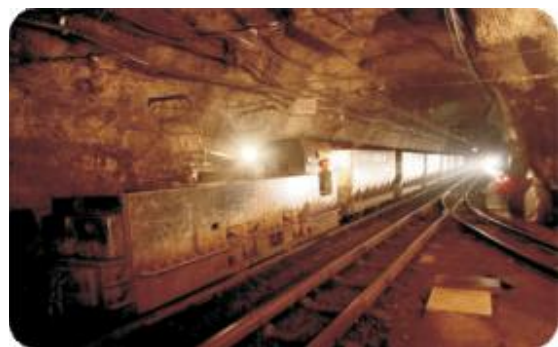
## DGY18/36L(A), DGE18/48L(A) LED Explosion Proof Mining Light

LED



Ex Code: Ex d I Mb

Standard: GB3836.1, GB3836.2, MT221



## Application

DGY18/48L(A) is approved to be safe used on the drill rig, the transportation equipment under the coal mine.

DGE18/48L(A) is approved to be safe used on the drill rig, the tunnelling assembly equipment under the coal mine.

## Characteristics

- Equipped with world famous brand LED driver, ensuring the lamp have a stable performance.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- The body is made of casting iron material, high intensity, able to withstand harsh impact expected from heavy industrial use.
- The lamp has a good electromagnetic compatibility performance, Which can avoid the interference to the other electrical appliance and electric power transmission network.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- The lamp is flame proof type of protection, designed for use in harsh environment or explosive application.

### Main specification

Input Voltage	18-43VAC or 18-55VDC
Rated Wattage	18W
Lux at 40 meters	18 Lux
Ingress Protection	IP66
Leading-in Cable Diameter	φ 8mm - φ 14mm
Dimension	194 × 174 × 167mm
Net Weight	7Kg
Material	Casting Iron

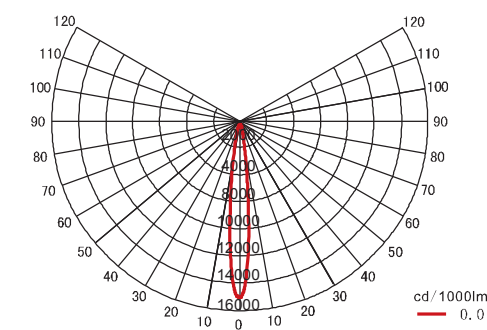
## DGY18/36L(A), DGE18/48L(A) LED Explosion Proof Mining Light

# EX

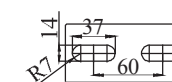
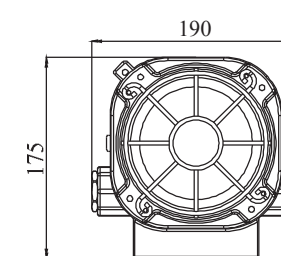
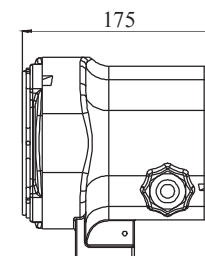
### Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to	
				Metal Halide Lamp	Electroless lamp
DGY18/36L(A)	LED	18	1,950	35W	30W
DGE18/48L(A)	LED	18	1,950	35W	30W

### Light distribution curve



### Drawing of dimension (Dimensions in mm)



### Mounting Hole Drawing

## BC5401 Series Explosion proof Fluorescent Light

LED



ATEX Ex Marking:

Ex II 2 GD

Ex de II B T6 Gb

Ex tb IIIC T80°C Db

Standard: GB3836.1, GB3836.2

EN60079-0:2009, EN60079-1:2007,

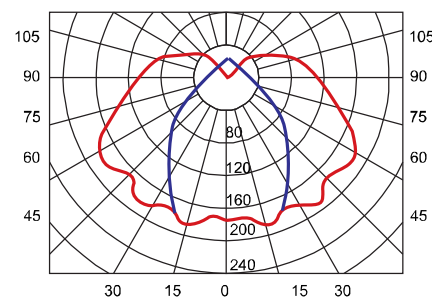
EN60079-31:2009

IEC60079-0:2007, IEC60079-1:2007,

IEC60079-31:2008



### Light distribution curve



### Application

- Can be widely used in petroleum, chemical, terminals, ports, aerospace, aviation, military, processing and other places.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

### Characteristics

- Support parallel connected, no need to use the junction box, support ceiling, pole, wall mounting type.
- Equipped with world brand light source, electrical appliance.
- Products using flameproof increased safety structure, easy to install with separate wiring chamber, meet the latest requirements of explosion proof lighting, safe and reliable operation in explosive hazardous areas.
- Light housing made of aluminum alloy, high strength, stainless steel exposed fasteners not color, not rust, can prevent rain

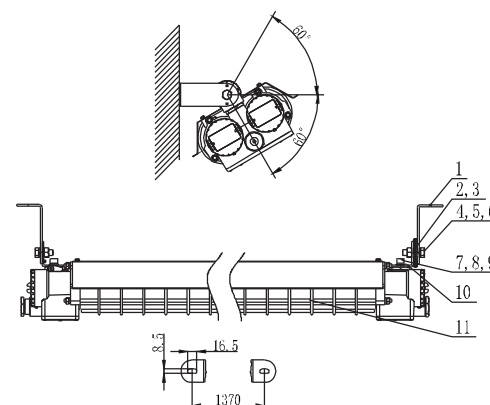
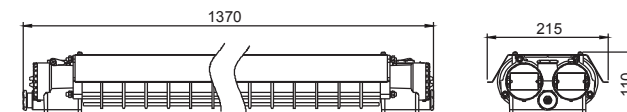
### Technical Specification

Model number	BC5401-L2×20	BC5401-Y2×28
Input voltage (V)	AC 100~240V	AC220~240V, AC110~130V
Rated voltage (V)	AC110V, AC115V, AC120V, AC127V AC220V, AC230V, AC240V	
Input frequency (Hz)	50/60	50/60
Rated power (W)	2×20	2×28
Light source	LED	T5 fluorescent lamp
Luminaire effect (lm/W)	>90	>70
Color temperature (K)	5300~6000	4000
Color rendering index (Ra)	>70	>70
Service life (h)	>50000	>20000
Ex code	Ex II 2 GD Ex de IIC T6 Gb Ex tb IIIC T80°C Db	
Anti corrosion grade	WF2	WF2
Protect grade	IP66	IP66
Factor	>0.95	>0.95
Total harmonic current	<15%	<15%
Housing highest surface temperature (°C)	<80	<80
Weight (kg)	12	12
Mounting angle	360°	360°

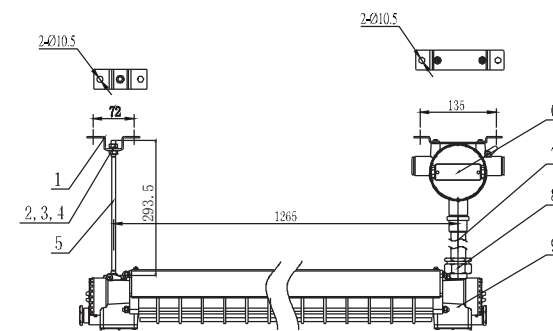
## BC5401 Series Explosion proof Fluorescent Light

# EX

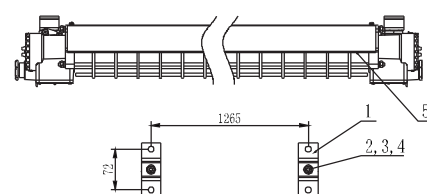
### Drawing of dimension (Dimensions in mm)



### Bracket mounting



### Pole mounting



### Ceiling mounting

#### Bracket mounting accessories list

Number	Name	Qty	Number	Name	Qty
1	Side mount bracket	2	7	Hex cylinder head screw M8X20	2
2	Positioning plate	2	8	Spring washer 8	2
3	Philips countersunk head screw M4X6	2	9	Flat washer 8	2
4	Hex head screw M10X30	2	10	Side mount bracket 2	2
5	Spring washer 10	2	11	BC5401 explosion proof fluorescent lamp	1
6	Flat washer 10	2	12		

#### Pole mounting accessories list

Number	Name	Qty	Number	Name	Qty
1	Bracket	1	6	Explosion proof junction box	1
2	Hex nut M8	2	7	Pole	2
3	Spring washer 8	2	8	Flat washer 8	2
4	Flat washer 8	2	9	BC5401 explosion proof fluorescent lamp	1
5	Double head pole	1			

#### Ceiling mounting accessories list

Number	Name	Qty	Number	Name	Qty
1	Bracket	1	4	Flat washer 8	1
2	Hex cylinder head screw M8X20 M8X	2	5	BC5401 explosion proof fluorescent lamp	2
3	Spring washer 8	2	6		2

LED

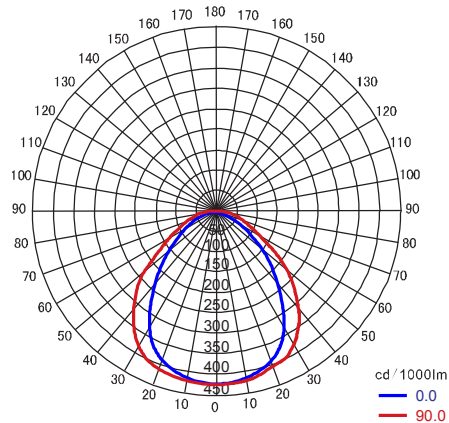


ATEX Ex Marking:

Ex d IIB T6 Gb,  
Ex tb IIC T80°C Db

Standard: GB3836.1, GB3836.2  
EN60079-0: 2009, EN60079-1: 2007,  
EN60079-31: 2009  
IEC60079-0: 2007, IEC60079-1: 2007,  
IEC60079-31: 2008

Light distribution curve



Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment: Group IIA; IIB.
- Zone 1, Zone2; Zone 21, Zone 22.
- Temperature class: T1 to T6.

Characteristics

- With its reflector which have different angles design, it efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- It adopts American CREE LED as light source, can save 60% or more on energy than metal halide lamp.
- The housing is especially designed to dissipate heat, which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- World top ranking Taiwan Meanwell LED Driver, power factor:0.98, has a highly stable performance.
- The adjustable locking device on the bracket can tightly fix the lamp to any desired angle, making the lamp resist to harsh vibration
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- Multiple mounting options including ceiling mounting, pendent mounting, wall mounting etc.
- The lamp can parallel connected , no need to use the junction box.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customer's requirement.

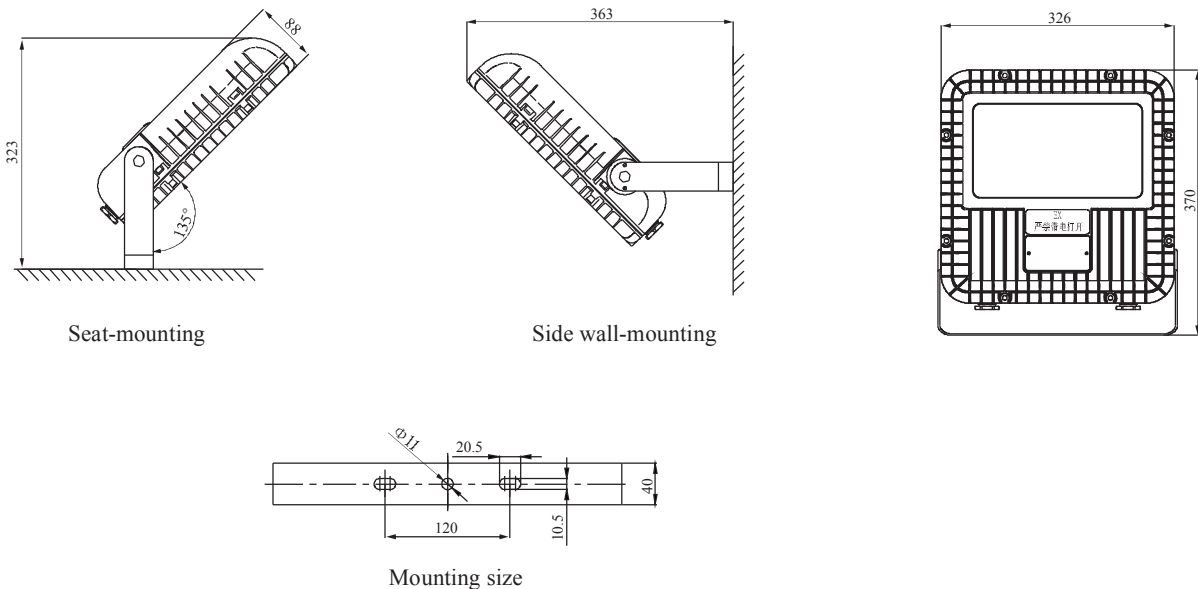
Technical Specification

Input Voltage	90~305VAC / 127~431VDC
Frequency	50Hz / 60Hz
Anti corrosion grade	WF2
Insulation Grade	I
Spacing height ratio	4.5
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	370 × 326 × 88mm
Net Weight	6.5Kg

Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	High Pressure Mercury Lamp
BC9101-L25	90~305VAC or 127~431VDC	LED	25	3,300	70W	60W	80W	80W
BC9101-L40		LED	40	5,508	100W	100W	130W	125W
BC9101-L60		LED	60	8,138	150W	135W	180W	175W
BC9101-L80		LED	80	9,168	175W	165W	/	250W
Optional								
BC9101-L25-D	18~43VAC or 18~55VDC	LED	25	3,300	70W	60W	80W	80W
BC9101-L40-D		LED	40	5,508	100W	100W	130W	125W

Drawing of dimension (Dimensions in mm)





LED



Ex Code: Ex de II C T6

Standard: GB3836.1, GB3836.3

IEC60079-7:2007,MOD



Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment: Group IIA; IIB.
- Zone 1, Zone2; Zone 21, Zone 22.
- Temperature class: T1 to T6.

Characteristics of performance

- Light Source: American CREE LED, save almost 90% on energy than the incandescent lamp and 60% on energy over the energy saving lamp.
- Long Service Life: with the average service life as long as 100,000 hours, maintenance free.
- Multi-voltage: 90 to 264VAC or 18 to 55VDC
- Feature: LED anti-dazzle lens, making the light more gentle, glare free. It will not cause weariness to the operators' eyes.
- The housing is made of aluminium alloy. With the surface electrostatic spraying treatment, it is anti corrosion.
- Multi-mounting options: Ceiling mounted, wall mounted etc.
- The PC transparency has a high light transmittance, perfect impact resistance, designed to withstand the harsh industrial applications.

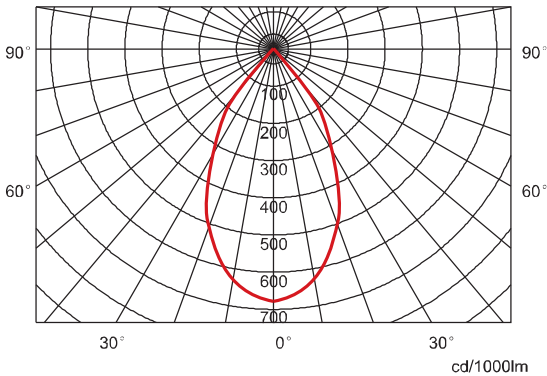
Main specification

Input Voltage	90~264VAC (18-43VAC / 18-55VDC optional)
Output Voltage	14VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	1.2
Leading-in cable diameter	φ 6mm - φ 8mm
Dimension	φ 147×140mm
Net Weight	1.3Kg

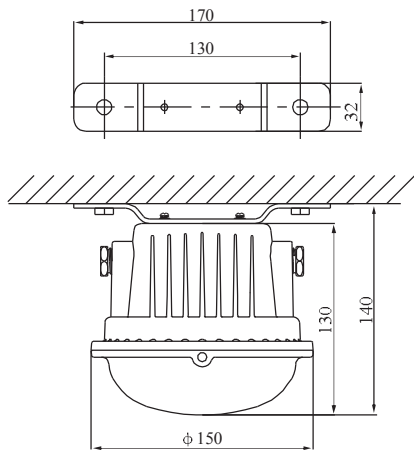
Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to
				Compact fluorescent lamp
BC9200A	LED	4×3W	1,144	28W
BC9200B	LED	2×3W	572	18W

Light distribution curve



Drawing of dimension (Dimensions in mm)



## BC9302 Series LED Explosion proof Platform Light

LED



Pole mounting Ceiling mounting

ATEX Ex Marking:

Ex II 2 GD

Ex d IIB T6 Gb,

Ex tb IIC T80°C Db

Standard: GB3836.1, GB3836.2

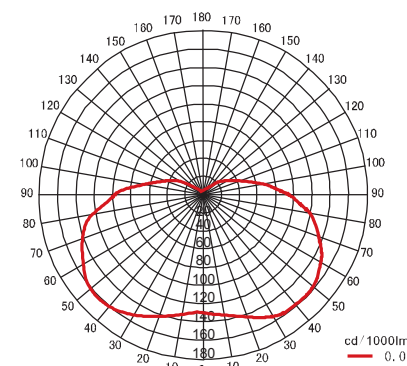
EN60079-0:2009, EN60079-1:2007,

EN60079-31:2009

IEC60079-0:2007, IEC60079-1:2007,

IEC60079-31:2008

### Light distribution curve



### Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

### Characteristics

- With the unique light distribution design, make the light well-distributed. Its beam angel can reach 220°. It efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- Equipped with American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Taiwan Meanwell LED driver, high efficiency, more stable performance.
- The housing is especially designed to dissipate heat. Besides, it uses the thermal transmission to accelerate the heat conduction which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- The lamp is made to the highest explosion proof protection grade: flame proof, so that ensure the lamp can safely used in all kinds of inflammable and explosive places.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customer's requirement.

### Technical Specification

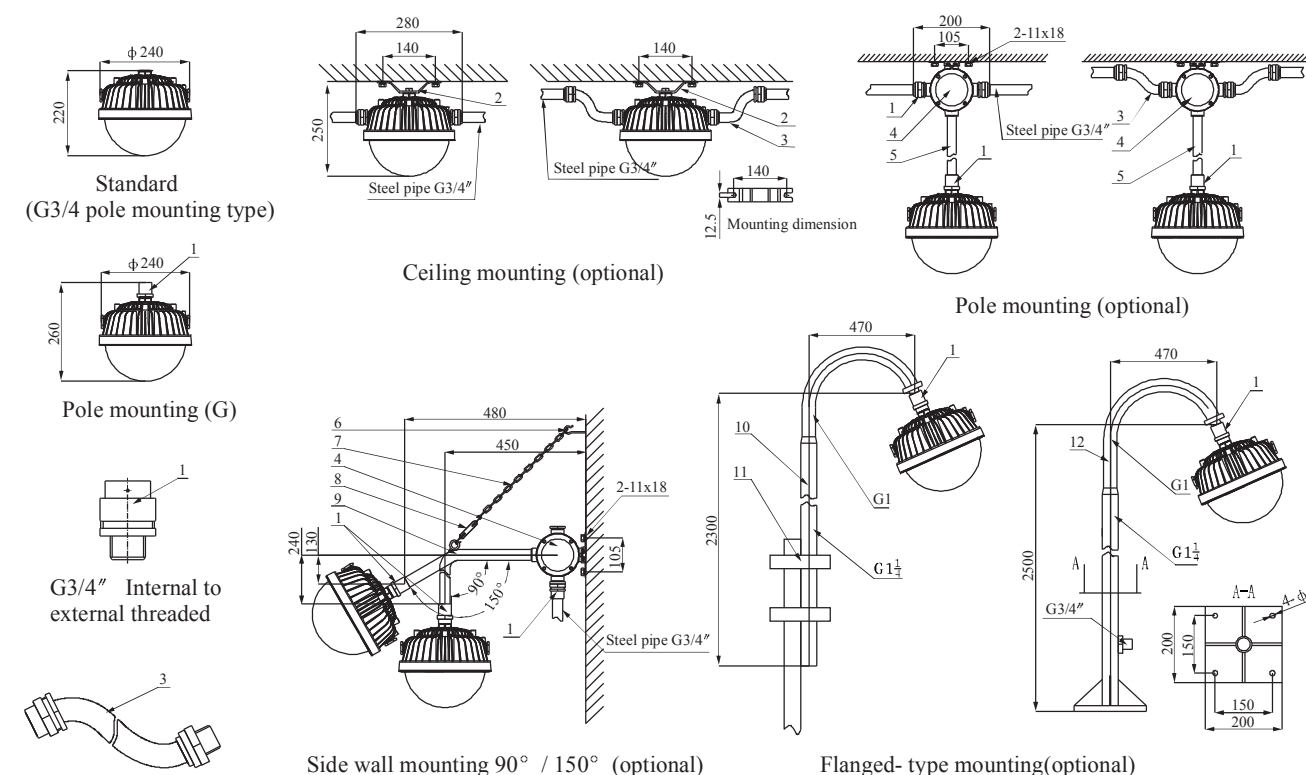
Input Voltage	90~264VAC / 127~370VDC
Frequency	50Hz / 60Hz
Anti corrosion grade	WF2
Insulation Grade	I
Spacing height ratio	3.5
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	φ 240 × 220mm
Net Weight	5Kg

## BC9302 Series LED Explosion proof Platform Light

### Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	High pressure mercury lamp
BC9302-L25	90~264VAC or 127~370VDC	LED	25	3,300	50~70W	50W	60W	80W
BC9302-L40		LED	40	5,508	100W	85W	120W	125W
BC9302-L60		LED	60	7,128	150W	120W	180W	175W
Optional								
BC9302-L25-D	18~43VAC or 18~55VDC	LED	25	3,300	50~70W	50W	60W	80W
BC9302-L40-D		LED	40	5,508	100W	85W	120W	125W

### Drawing of dimension (Dimensions in mm)



G3/4" Internal to external  
Connecting pipe

Side wall mounting 90° / 150° (optional)

Flanged-type mounting (optional)

### Accessories list (optional)

Number	Name	Quantity	Remark
1	Explosion proof connector		G3/4" internal to external
2	Mounting bracket	1	
3	Connecting pipe	2	G3/4" internal to external
4	Explosion proof junction box	1	G3/4"
5	G3/4" pole	1	The length in accordance with the request of the customer
6	Screw hook	1	
7	Chain	1	
8	Turn buckle	1	
9	G3/4" bend pipe	1	90 degrees and 150 degrees are optional
10	Light pole	1	
11	U-bolts	2	
12	Flanged type pole	1	

## LED



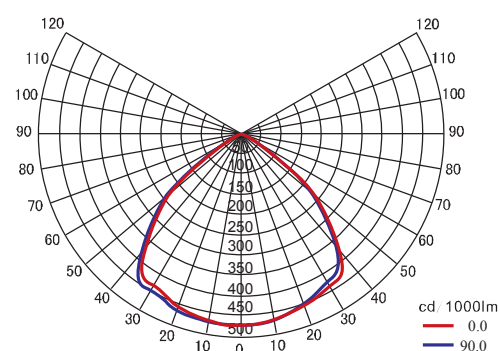
ATEX Ex Marking:

Ex d IIB T6 Gb,  
Ex tb IIC T80°C Db

Standard: GB3836.1, GB3836.2

EN60079-0:2009, EN60079-1:2007,  
EN60079-31:2009  
IEC60079-0:2007, IEC60079-1:2007,  
IEC60079-31:2008

## Light distribution curve



## Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

## Characteristics

- The light distribution and its mounting types are especially designed for the platform.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- The housing is designed to dissipate heat, which increase the efficiency and the lifespan of the LED, so that to ensure the 100,000 hours led lifespan.
- Supplied with the world top ranking Taiwan Meanwell LED driver, ensure the lamp of high performance, more efficient.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customer's requirement.

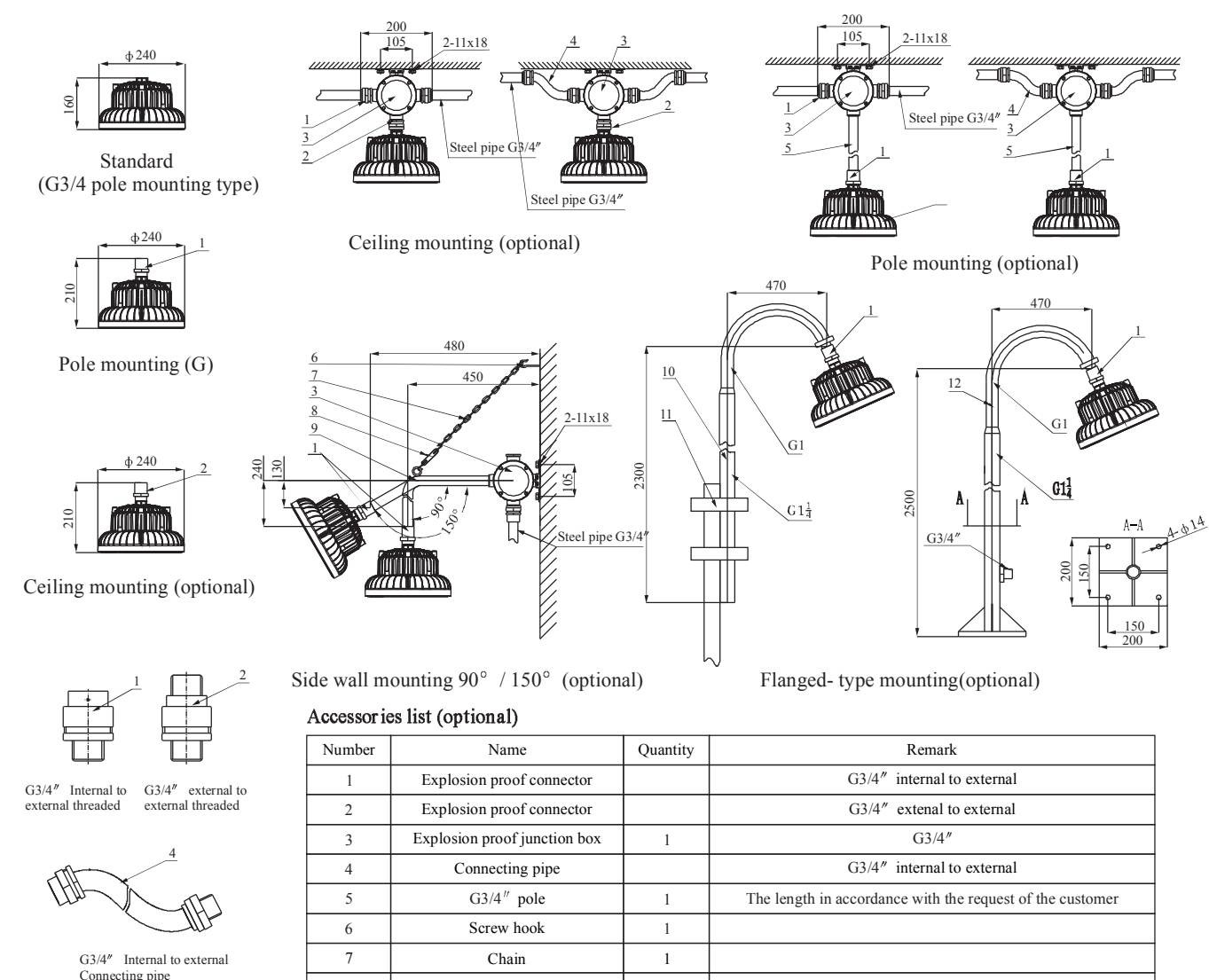
## Technical Specification

Input Voltage	90~264VAC / 127~370VDC
Frequency	50Hz / 60Hz
Anti corrosion grade	WF2
Insulation Grade	I
Spacing height ratio	2
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	φ 240 × 160mm
Net Weight	4Kg

## Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	High pressure mercury lamp
BC9303-L25	90~264VAC or 127~370VDC	LED	25	3,300	50~70W	50W	60W	80W
BC9303-L40		LED	40	5,508	100W	85W	120W	125W
BC9303-L60		LED	60	7,128	150W	120W	180W	175W
Optional								
BC9303-L25-D	18~43VAC or 18~55VDC	LED	25	3,300	50~70W	50W	60W	80W
BC9303-L40-D		LED	40	5,508	100W	85W	120W	125W

## Drawing of dimension (Dimensions in mm)



Side wall mounting 90° / 150° (optional)

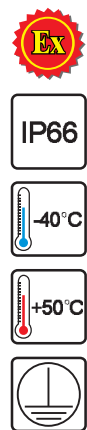
Flanged-type mounting (optional)

## Accessories list (optional)

Number	Name	Quantity	Remark
1	Explosion proof connector		G3/4" internal to external
2	Explosion proof connector		G3/4" external to external
3	Explosion proof junction box	1	G3/4"
4	Connecting pipe		G3/4" internal to external
5	G3/4" pole	1	The length in accordance with the request of the customer
6	Screw hook	1	
7	Chain	1	
8	Turn buckle	1	
9	G3/4" bend pipe	1	90 degrees and 150 degrees are optional
10	Light pole	1	
11	U-bolts	2	
12	flanged type pole	1	



LED

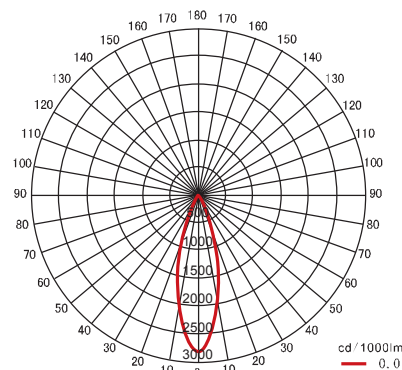


Ex Code: Ex d II C T6 Gb

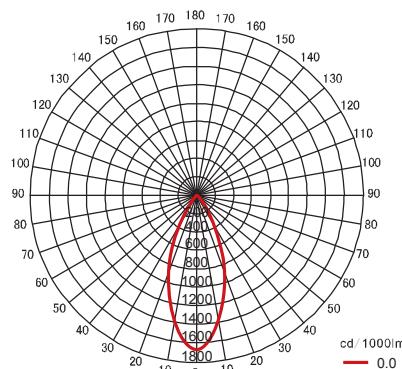
Standard: GB3836.1, GB3836.2

IEC60079-1:2007,MOD

Light distribution curve



25°



80°

Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment: Group IIA; IIB.
- Zone 1, Zone2; Zone 21, Zone 22.
- Temperature class: T1 to T6.

Characteristics

- Customer can choose the 25° or 80° as the beam angle according to the application.
- The housing is especially designed to dissipate heat, so that to prolong lifespan of the LED, ensure 100,000hours service life.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Equipped with Taiwan Meanwell top brand LED driver, ensuring the lamp have a stable performance.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- The lamp is flame proof type of protection, designed to be used in all kinds of explosive application.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customer's requirement.

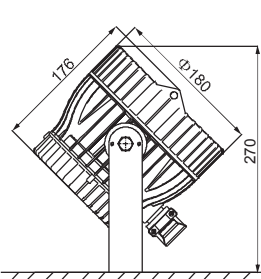
Technical Specification

Input Voltage	90~264VAC / 127~370VDC
Frequency	50Hz / 60Hz
Anti corrosion grade	WF2
Insulation Grade	I
Spacing height ratio	4.5
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	370 × 326 × 88mm
Net Weight	6.5Kg

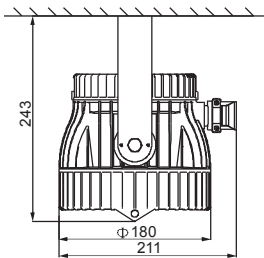
Ordering reference

Model Number	Beam Angle	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to		
						Metal Halide Lamp	Electrode less lamp	High pressure mercury lamp
BC9501-L25-25°	25°	90~264VAC or 127~370VDC	LED	25	3,300	70W	60W	80W
BC9501-L25-80°	80°		LED	40	5,508	100W	100W	125W
BC9501-L40-25°	25°							
BC9501-L40-80°	80°		LED	60	7,128	150W	135W	175W
BC9501-L60-25°	25°							
BC9501-L60-80°	80°							
Optional								
BC9501-L25-25° -D	25°	18~43VAC or 18~55VDC	LED	25	3,300	70W	60W	80W
BC9501-L25-80° -D	80°		LED	40	5,508	100W	100W	125W
BC9501-L40-25° -D	25°							
BC9501-L40-80° -D	80°							

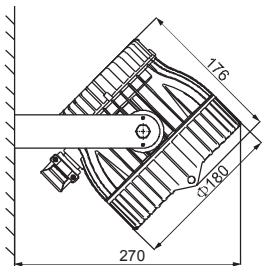
Drawing of dimension (Dimensions in mm)



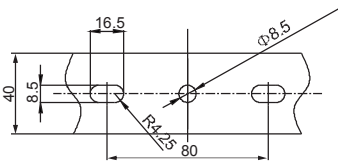
Seat-mounting



Ceiling mounting



Side wall-mounting



Mounting size

## LED



Floodlight lens

Streetlight lens

ATEX Ex Marking:

II 2 GD

Ex d IIC T5 or T6 Gb,

Ex tb IIC T95°C or T80°C Db

Standard: GB3836.1, GB3836.2

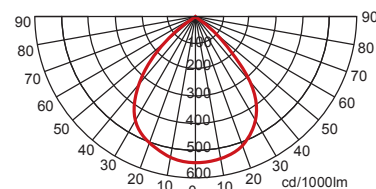
EN60079-0: 2009, EN60079-1: 2007,

EN60079-31: 2009

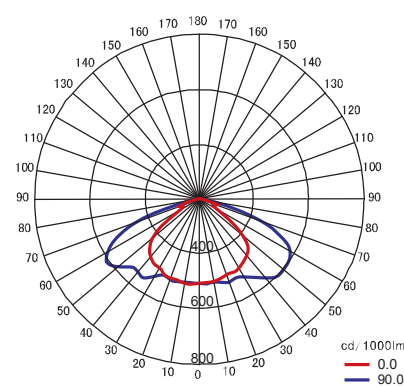
IEC60079-0: 2007, IEC60079-1: 2007,

IEC60079-31: 2008

## Light distribution curve



Floodlight



Streetlight

## Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

## Characteristics

- Adopts America BridgeLux LED light source, can save 60% on energy than metal halide lamp.
- The blade-shape housing and heat sink on back cover ensure the lamp to efficiently dissipate heat so that prolong LED life.
- Taiwan Meanwell LED driver, power factor >0.98, more stable performance.
- Adjustable position-locking device on the bracket can tightly fix the lamp to any desired angle, keep the lamp from moving in harsh vibration area.
- The anti corrosion aluminum alloy body is powder coated, anti corrosion, dust proof, water proof. Suitable to be used in harsh environment.
- Flame proof type of protection, safe for use in all kinds of inflammable and explosive area.
- The lamp can parallel connected , no need to use the junction box.
- Beam angle: 90° (standard), 60° , 120° and streetlight beam angle is optional.

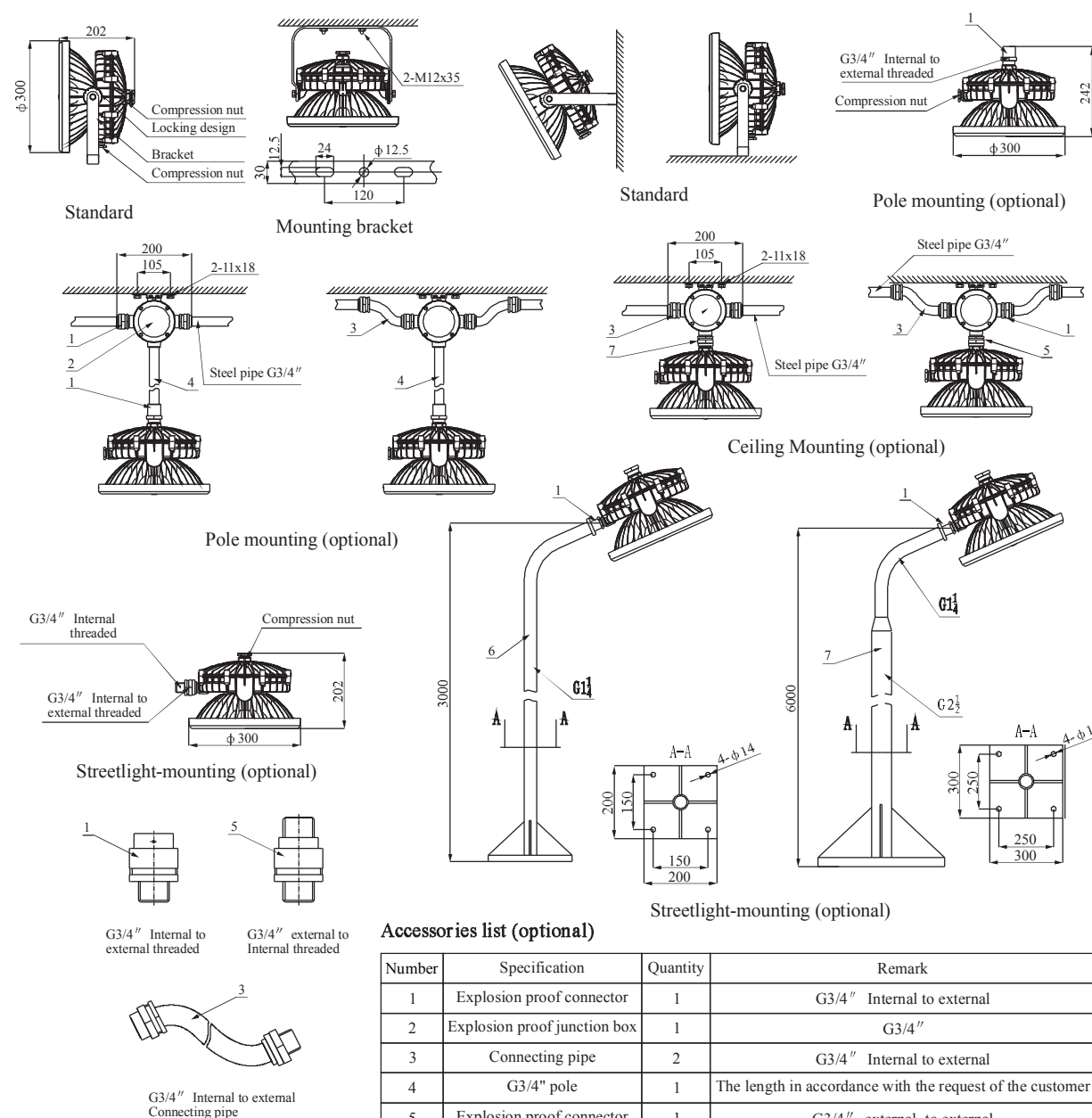
## Technical Specification

Input Voltage	90~305VAC / 127~431VDC
Frequency	36VDC
Anti corrosion grade	50Hz / 60Hz
Insulation Grade	WF2
Spacing height ratio	I
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	φ 300×202×332mm
Net Weight	6.3Kg

## Ordering reference

Model Number	Light Source	Rated wattage (W)	Light output (lm)	Temperature Class	Equivalent to		
					Metal halide lamp	Induction lamp	Mercury lamp
BC9700-L50	LED	50	>4,500	T6	100W	100W	125W
BC9700-L60	LED	60	>5,400	T6	150W	135W	175W
BC9700-L80	LED	80	>7,200	T6	175W	165W	250W
BC9700-L100	LED	100	>9,000	T6	250W	200W	250~400W
BC9700-L120	LED	120	>10,800	T5	250~400W	250W	400W

## Drawing of dimension (Dimensions in mm)



## Accessories list (optional)

Number	Specification	Quantity	Remark
1	Explosion proof connector	1	G3/4" Internal to external
2	Explosion proof junction box	1	G3/4"
3	Connecting pipe	2	G3/4" Internal to external
4	G3/4" pole	1	The length in accordance with the request of the customer
5	Explosion proof connector	1	G3/4" external to external
6	Flange mounted type pole	1	3 meters
7	Street light pole	1	6 meters

## BC9100 Series Explosion proof Floodlight



IP65

-40°C

+60°C



E27

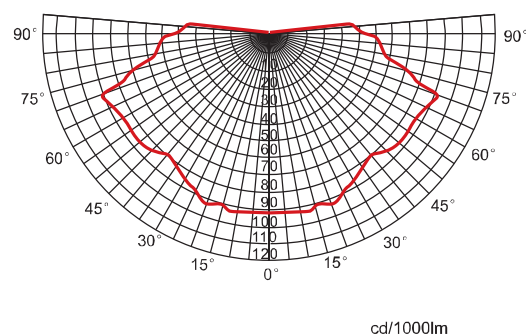


Explosion proof ballast box

Ex Code: Ex de II B T6  
Ex de II B T4  
Standard: GB3836.1, GB3836.2, GB3836.3  
IEC60079-1:2007,MOD  
IEC60079-7:2006,MOD



### Light distribution curve



### Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB.
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

### Characteristics

- Equipped with international famous brand light source and electrical appliance, more stable performance and gives approximately 20% more light over the other manufacturer's.
- The average life span of the light source is more than 10000 hours. Therefore it is low maintenance .
- Two Explosion-proof cavities structure. The wiring cavity is separated from the main flameproof cavity, enhancing safety.
- Made of aluminium alloy, high strength. The spray coating treatment ensure the lamp waterproof, anti corrosion.

### Main specification

Input Voltage	220VAC 50Hz (110V 60Hz Option)
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	2.6
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 10mm
Dimension	Lamp 400 × 266 × 170mm
	Ballast 340 × 220 × 88mm
Net Weight	Lamp 5Kg
	Ballast 5.2Kg

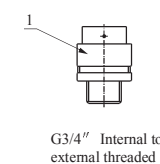
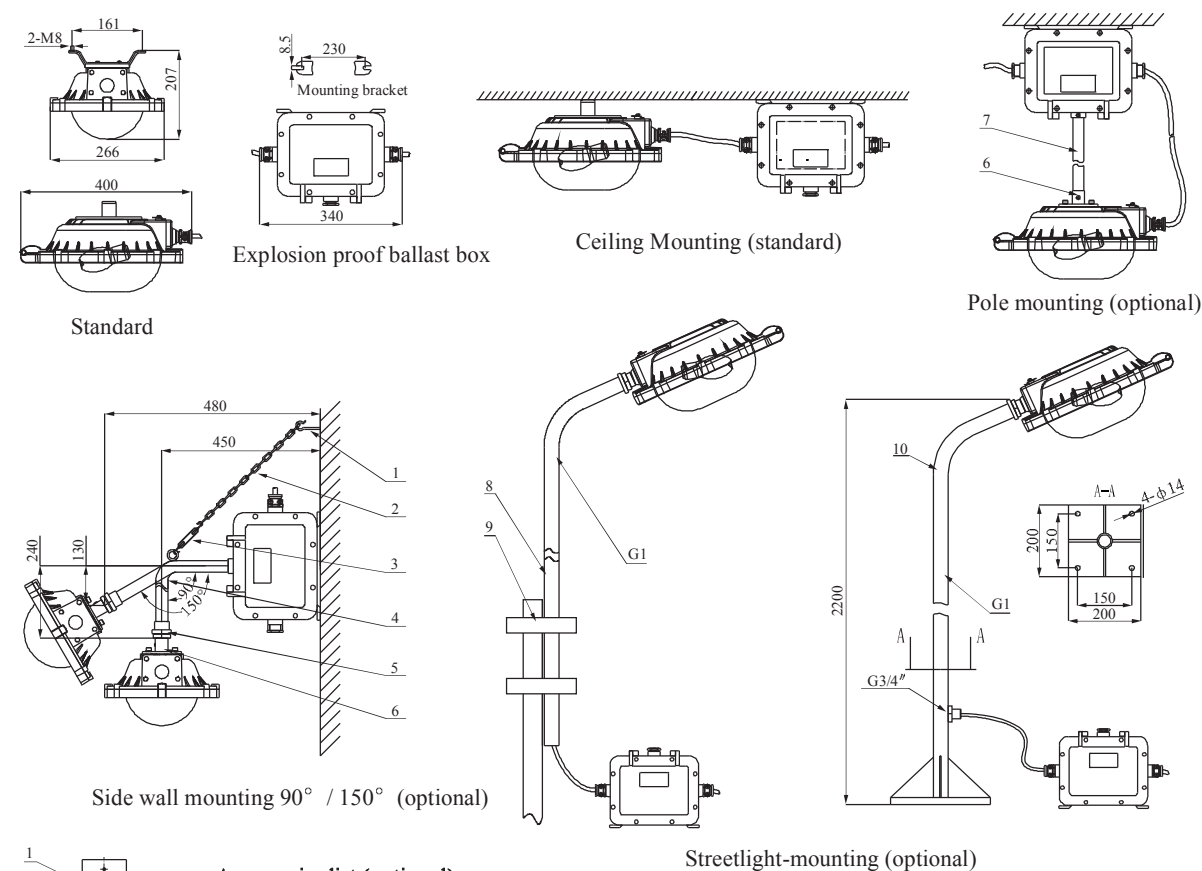
## BC9100 Series Explosion proof Floodlight

# EX

### Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Lamp Average Life (h)	Temperature
BC9100-J70	Metal halide lamp	70	5,500	10,000	T6
BC9100-J100	Metal halide lamp	100	9,000	10,000	T4
BC9100-J150	Metal halide lamp	150	13,000	10,000	T4
BC9100-N70	High pressure sodium lamp	70	6,000	28,500	T6
BC9100-N100	High pressure sodium lamp	100	9,600	28,500	T4
BC9100-N150	High pressure sodium lamp	150	16,000	28,500	T4

### Drawing of dimension (Dimensions in mm)



### Accessories list (optional)

Number	Name	Quantity	Remark
1	Screw hook	1	
2	Chain	1	
3	Turn buckle	1	
4	G3/4" pole	1	90 degrees and 150 degrees are optional
5	Explosion proof connector	1	G3/4" internal to external
6	Mounting bracket	1	
7	G3/4" pole	1	The length in accordance with the request of the customer
8	Light pole	1	
9	U-bolts	2	
10	Flanged type pole	1	



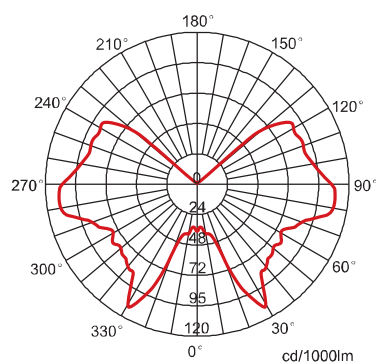


Explosion proof ballast box

Ex Code: Ex d II C T5  
 Ex d II C T4  
 Standard: GB3836.1, GB3836.2  
 IEC60079-1:2007,MOD



### Light distribution curve



### Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC.
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T5

### Characteristics

- World famous brand light source and electrical appliance, with stable performance. It can give more 20% light over the other manufacturers.
- The average service life of the bulb is over 10,000 hours .Therefore it is low maintenance.
- It uses dual-cavity explosion-proof design, making it safer in explosive and flammable places.
- The housing is made of aluminium alloy and have strong resistant to corrosion, water and dust, suitable to various harsh environments. The surface is subjected to the electro static treatment ,that enhance the anti corrosion performance.
- The protective guard is available.

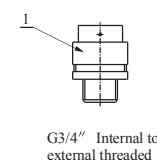
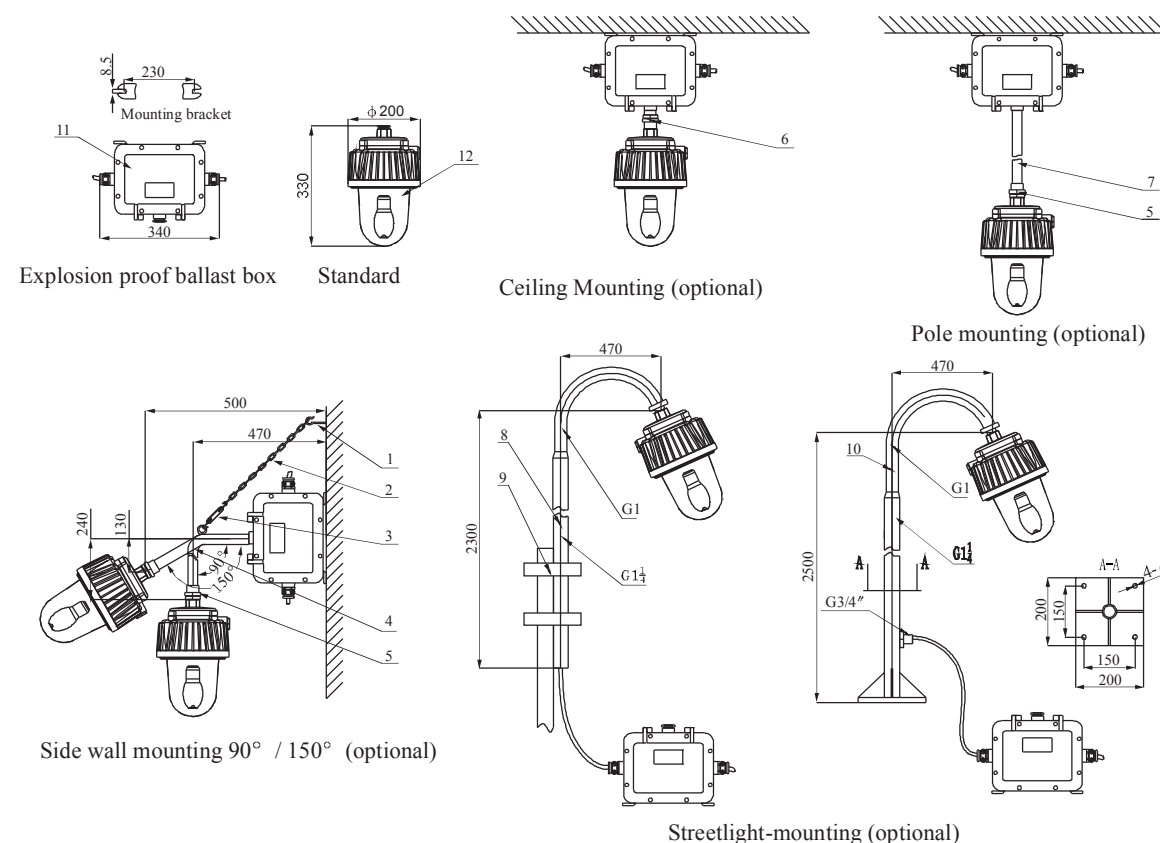
### Main specification

Input Voltage	220VAC 50Hz (110V 60Hz Option)
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	2.5
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 14mm
Dimension	Lamp φ200 × 330mm
	Ballast 340 × 220 × 88mm
Net Weight	Lamp 5.2Kg
	Ballast 5.3Kg

### Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Lamp Average Life (h)	Temperature
BC9300-J70	Metal halide lamp	70	5,500	10,000	T5
BC9300-J100	Metal halide lamp	100	9,000	10,000	T4
BC9300-J150	Metal halide lamp	150	13,000	10,000	T4
BC9300-N70	High pressure sodium lamp	70	6,000	28,500	T5
BC9300-N100	High pressure sodium lamp	100	9,600	28,500	T4
BC9300-N150	High pressure sodium lamp	150	16,000	28,500	T4

### Drawing of dimension (Dimensions in mm)



### Accessories list (optional)

Number	Name	Quantity	Remark
1	Screw hook	1	
2	Chain	1	
3	Turn buckle	1	
4	G3/4" pole	1	90 degrees and 150 degrees are optional
5	Explosion proof connector	1	G3/4" internal to external
6	Mounting bracket	1	
7	G3/4" pole	1	The length in accordance with the request of the customer
8	Light pole	1	
9	U-bolts	2	
10	Flanged type pole	1	



Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC.
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

Characteristics

- Light Source: Imported famous brand light source and ballast with high efficient long life span. The average service life of the bulb is over 10,000 hours. Low maintenance.
- World famous brand light source and electrical appliance, with stable performance. It can give more 20% light over the other manufacturers.
- Material: aluminium alloy, tempered glass.
- Surface treatment: electro static spraying treatment
- With strong resistant to corrosion. Water and dust, applicable to various harsh environments.

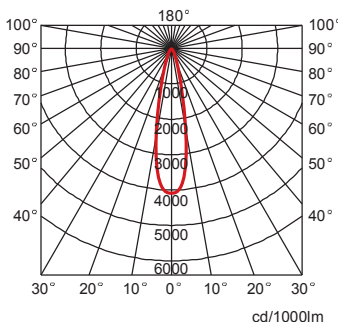
Ex Code: Ex d II C T5

Ex d II C T4

Standard: GB3836.1, GB3836.2

IEC60079-1:2007,MOD

Light distribution curve



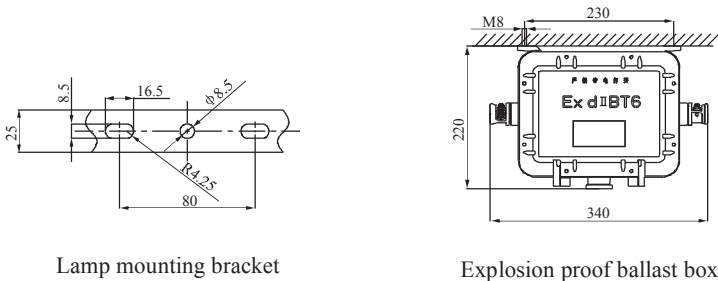
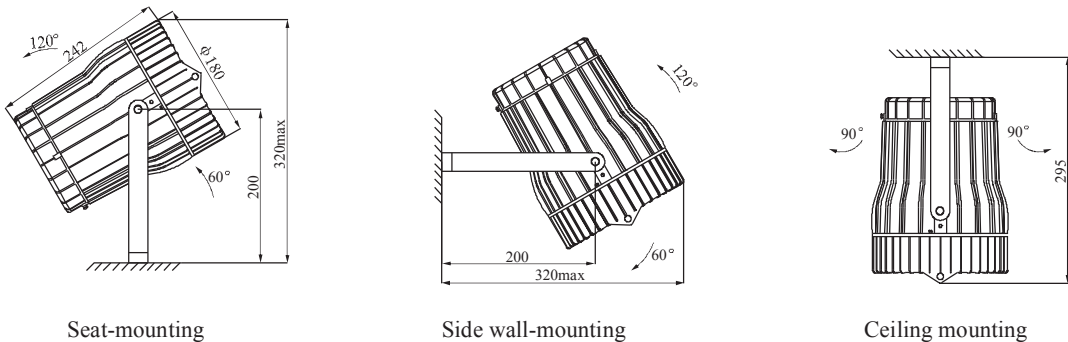
Main specification

Specification		Unit	BC9500
Rated Voltage		V	220VAC
Cable Diameter	Lamp	mm	φ8~φ10
	Ballast box		φ8~φ10
Dimension	Lamp Head	mm	φ180
	Length of Lamp Head		242
	Total Height		295
Weight	Lamp	Kg	3.8
	Ballast box		4.2

Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Rated Voltage	Luminous Flux (lm)	Lamp Average Life (h)	Temperature
BC9500-J70	Metal halide lamp	70	220VAC	5,500	10,000	T5
BC9500-J100	Metal halide lamp	100	220VAC	9,000	10,000	T4
BC9500-J150	Metal halide lamp	150	220VAC	13,000	10,000	T4

Drawing of dimension(Dimensions in mm)



## ZY5301 Series LED Low Bay Light

### LED

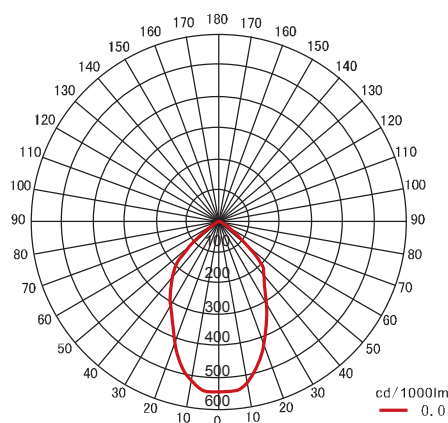
IP66

-40°C

+50°C



### Light distribution curve



### Application

It is an ideal lighting solution for the factory, station, tunnel, control room, transformer room and some other indoor places with low bay roof.

### Characteristics

- The unit efficiently utilize the light, utilization rate can reach 97%. Besides, it has a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- Vane type structure housing accelerate the heat dissipation, so that to ensure the LED service life.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- Equipped with world top ranking brand electrical appliance, make the lamp's performance more stable and efficient.
- The unit have excellent electromagnetic compatibility, will not cause interference to the other device or the electric power transmission network.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof, make the lamp an excellent option for all kinds of high stress environment.
- 10W、25W with input voltage 18~43VAC / 18~55VDC is available.

### Main specification

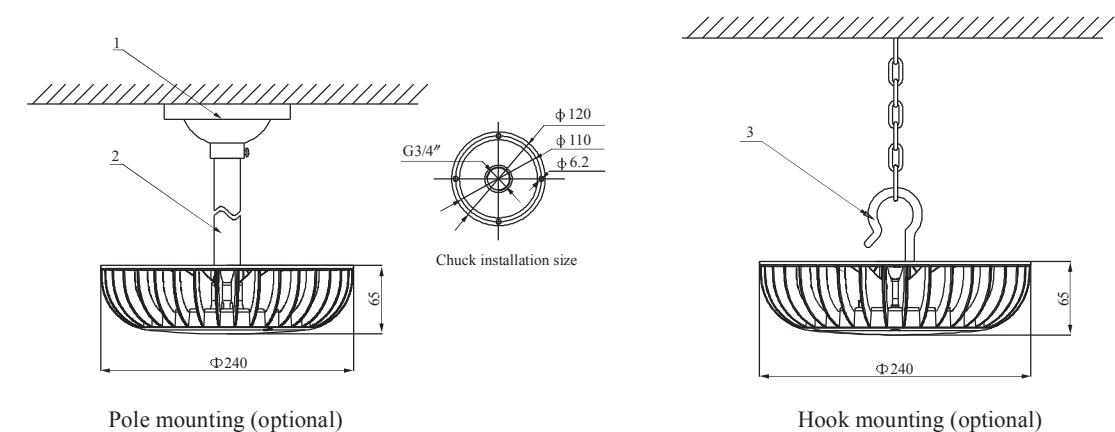
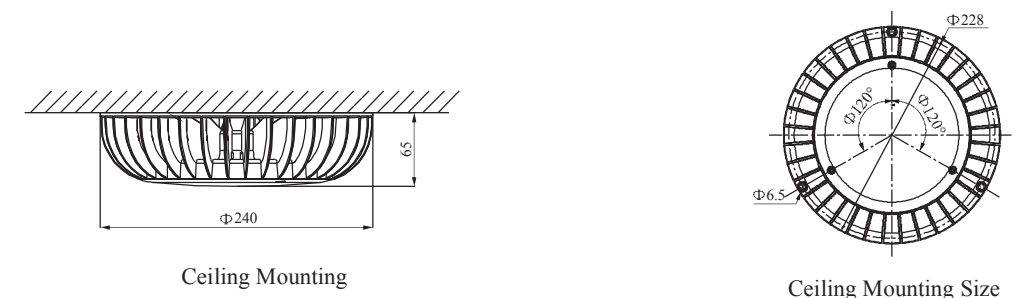
Input Voltage	90~264VAC / 127~370VDC
Output Voltage	24VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	2
Leading-in cable diameter	φ 6mm - φ 8mm
Dimension	φ 240 × 65mm
Net Weight	1.4Kg

## ZY5301 Series LED Low Bay Light

### Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	Fluorescent lamp
ZY5301-L10	90~264VAC or 127~370VDC	LED	10	1,356	/	30W	36W	1×36W
ZY5301-L25		LED	25	3,378	70W	60W	2×36W	2×36W
ZY5301-L40		LED	40	4,890	100W	100W	120W	2×36W
Optional								
ZY5301-L10-D	18~43VAC or 18~55VDC	LED	10	1,356	/	30W	36W	1×36W
ZY5301-L25-D		LED	25	3,378	70W	60W	2×36W	2×36W

### Drawing of dimension (Dimensions in mm)

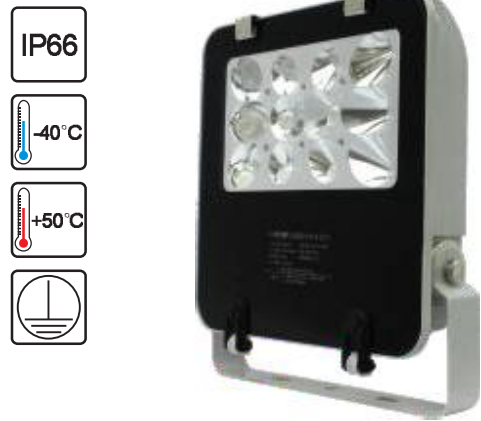


### Accessories list (optional)

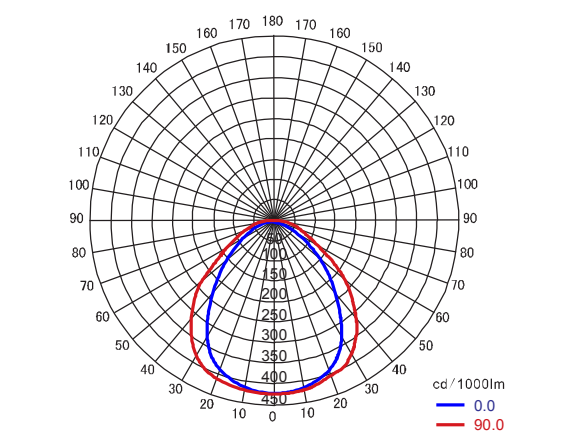
Number	Name	Quantity	Remark
1	Chuck	1	G3/4"
2	G3/4" pole	1	The length in accordance with the request of the customer
3	Hook	1	



LED



Light distribution curve



Application

It is an ideal lighting solution for the factory, station, tunnel, control room, transformer room and some other indoor places with low bay roof.

Characteristics

- With its reflector which have different angles design, it efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Efficient radiator effective solve the LED light failure caused by temperature rising, so as to ensure that LED life up to 100,000hrs.
- Equipped with world top ranking brand, Taiwan Meanwell electrical appliance with power factor 0.98, make the lamp's performance more stable and efficient.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- The housing adopts high-tech surface spraying technology, abrasion resistance corruption, waterproof, dustproof, suitable to be used in all kinds of environments.
- 25W、40W with input voltage 18~43VAC / 18~55VDC is available.

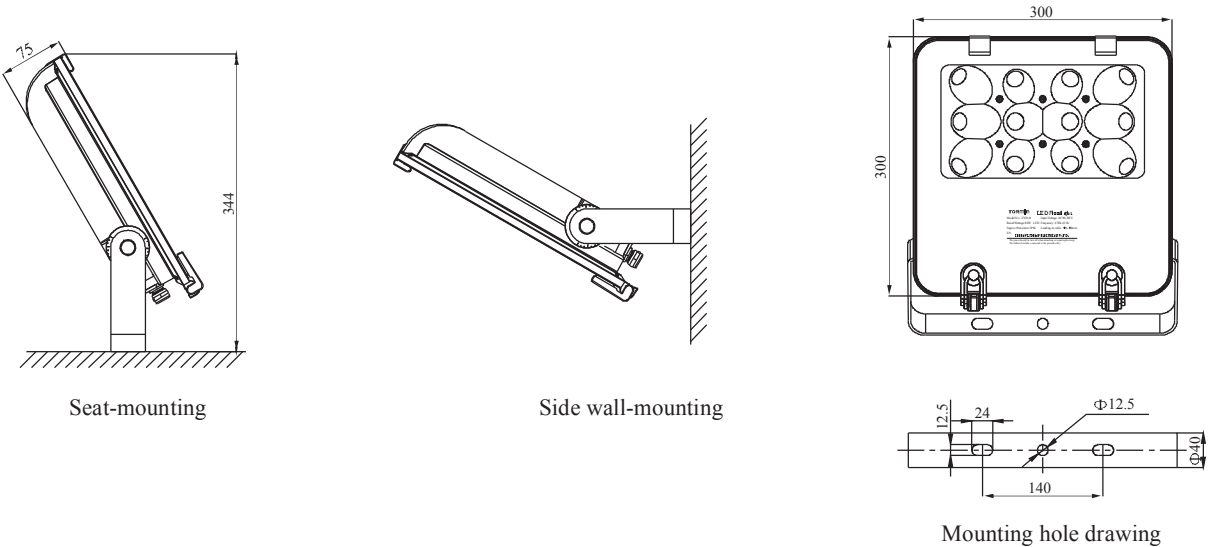
Main parameter

Input Voltage	90~305VAC / 127~431VDC
Output Voltage	42VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4.5
Leading-in cable diameter	φ 6mm - φ 8mm
Dimension	300 × 300 × 75mm
Net Weight	4.7Kg

Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	Mercury lamp
ZY8101-L25	AC90~305V or DC127~431V	LED	25	3,300	70W	60W	80W	80W
ZY8101-L40		LED	40	5,508	100W	100W	130W	125W
ZY8101-L60		LED	60	8,138	150W	135W	180W	175W
ZY8101-L80		LED	80	9,168	175W	165W	/	250W
Optional								
ZY8101-L25-D	AC18~43V or DC18~55V	LED	25	3,300	70W	60W	80W	80W
ZY8101-L40-D		LED	40	5,508	100W	100W	130W	125W

Drawing of dimension(Dimensions in mm)



ZY8301 Series

LED Spotlight

LED



Application

This product is ideal to use as floodlighting in factory, construction site, engineering machinery and other indoor and outdoor site.

Characteristics

- Customer can choose the 25° or 80° as the beam angle according to the application.
- The housing is especially designed to dissipate heat, so that to prolong lifespan of the LED, ensure 100,000hours service life.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Equipped with Taiwan Meanwell top brand LED driver, ensuring the lamp have a stable performance.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customers' requirement.

Technical Specification

Input Voltage	90~264VAC / 127~370VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti corrosion grade	WF2
Insulation Grade	I
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	φ 180 × 243mm
Net Weight	3.8Kg

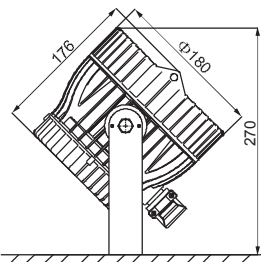
ZY8301 Series

LED Spotlight

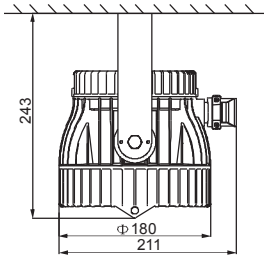
Ordering reference

Model Number	Beam Angle	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to		
						Metal Halide Lamp	Electrode less lamp	High pressure mercury lamp
ZY8301-L25-25°	25°	90~264VAC or 127~370VDC	LED	25	3,300	70W	60W	80W
ZY8301-L25-80°	80°							
ZY8301-L40-25°	25°		LED	40	5,508	100W	100W	125W
ZY8301-L40-80°	80°							
ZY8301-L60-25°	25°		LED	60	7,128	150W	135W	175W
ZY8301-L60-80°	80°							
Optional								
ZY8301-L25-25° -D	25°	18~43VAC or 18~55VDC	LED	25	3,300	70W	60W	80W
ZY8301-L25-80° -D	80°							
ZY8301-L40-25° -D	25°		LED	40	5,508	100W	100W	125W
ZY8301-L40-80° -D	80°							

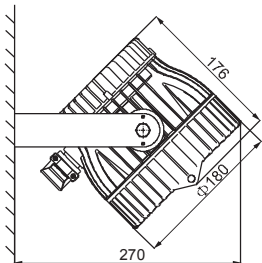
Drawing of dimension (Dimensions in mm)



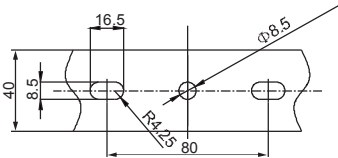
Seat-mounting



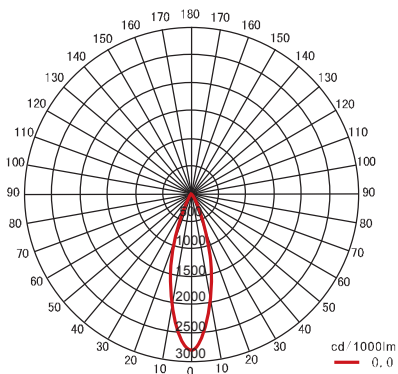
Ceiling mounting



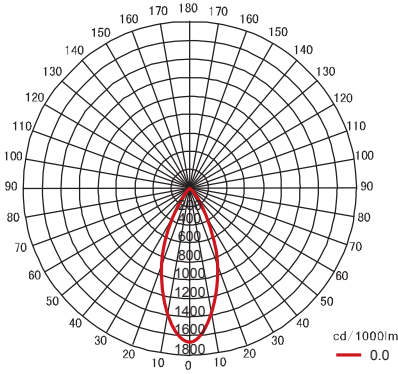
Side wall-mounting



Mounting size



25°



80°

## ZY8302 Series LED Spotlight

### LED

IP66

-40°C

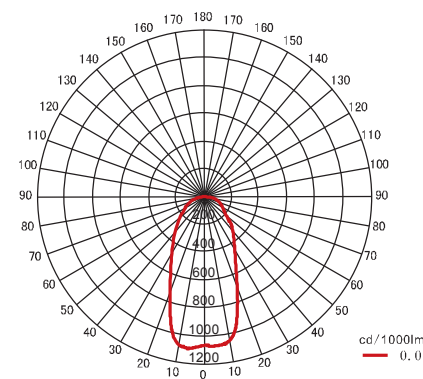
+50°C



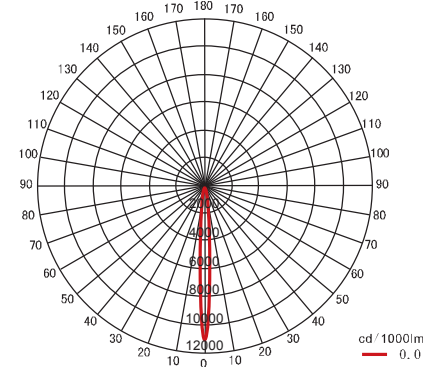
Spot (Standard)

Flood

### Light distribution curve



Flood



Spot

### Application

It can be used as spotlight in factory, construction site and some other indoor or outdoor places.

### Characteristics

- It efficiently utilize the light to 95%.Glare free, have a good performance of illuminance uniformity. Operator can choose the beam angle according to the application.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- The light source is separated from the electrical appliance. This split style with the high efficiency radiator have solved the heating-up problem so that ensure the 100,000 hours LED lifespan.
- Equipped with world top ranking brand, Taiwan Meanwell electrical appliance with power factor 0.98, make the lamp's performance more stable and efficient
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- The housing adopts high-tech surface spraying technology, abrasion resistance corruption, waterproof, dustproof, suitable to be used at all kinds of environments.
- Quick opening lid, easy to maintain.
- Floodlight beam angle is available according to customers' requirement.

### Main specification

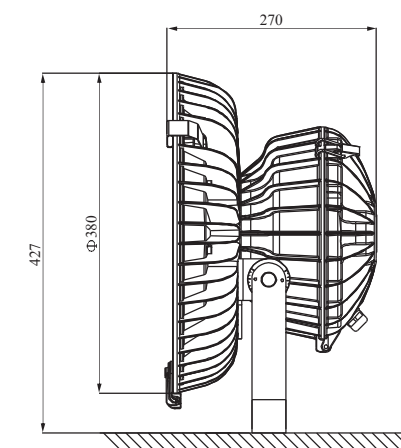
Input Voltage	90~305VAC / 127~431VDC
Output Voltage	54VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	1.8
Thread	G3/4"
Leading-in cable diameter	φ 10mm - φ 12mm
Dimension	φ 380 × 270mm
Net Weight	8Kg

## ZY8302 Series LED Spotlight

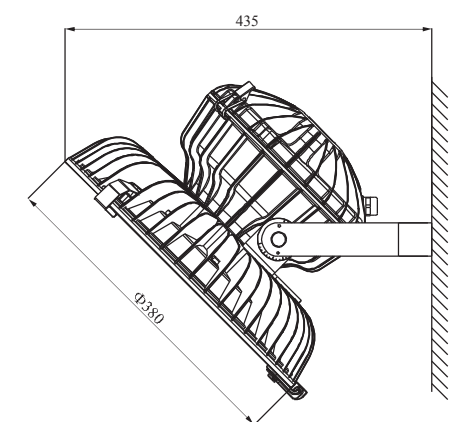
### Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to		
				Metal Halide Lamp	Electrode Less Lamp	Mercury lamp
ZY8302-L60	LED	60	8,194	150W	135W	175W
ZY8302-L80	LED	80	10,016	175~250W	165W	250W
ZY8302-L100	LED	100	11,568	250W	200W	250~400W
ZY8302-L120	LED	120	13,310	250~400W	250W	400W

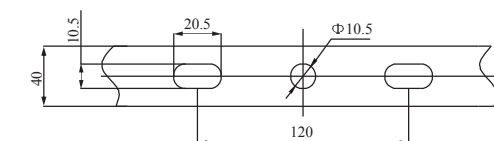
### Drawing of dimension(Dimensions in mm)



Seat-mounting



Side wall-mounting



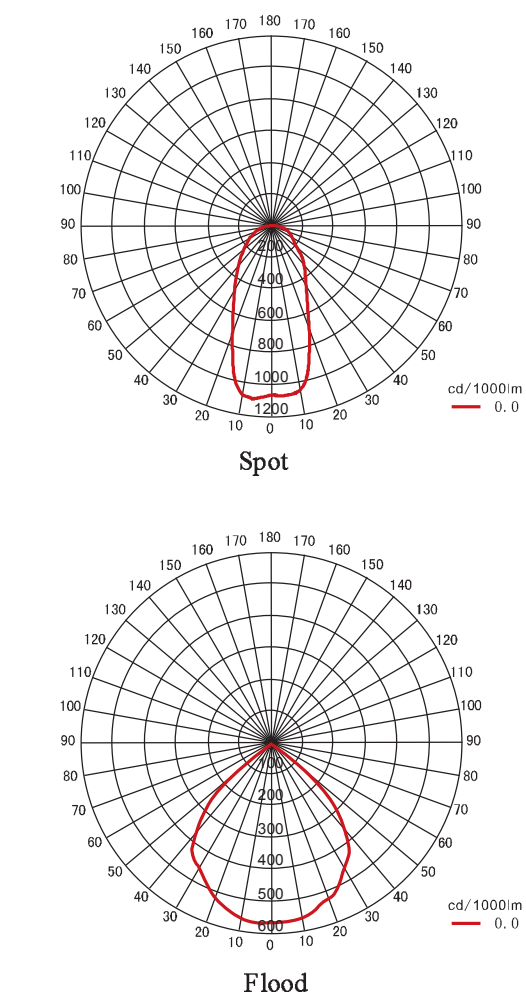
Mounting hole drawing



LED



Light distribution curve



Application

The product is suitable for use in power station, petrochemical industry, metallurgy and other indoor and outdoor places.

Characteristics

- Especially designed for high bay, tall roof, It efficiently utilize the light to 95%.Glare free, have a good performance of illuminance uniformity.
- Floodlight or spotlight is both available according to mounting height. (8-15meters: floodlight, >15meters: spotlight)
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- The light source is separated from the electrical appliance. This split style with the high efficiency radiator have solved the heating-up problem so that ensure the 100,000 hours LED lifespan.
- Equipped with world top ranking brand, Taiwan Meanwell electrical appliance with power factor 0.98, make the lamp's performance more stable and efficient.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- The shell adopts high-tech surface spraying technology, abrasion resistance and corruption, waterproof, dustproof, suitable to be used in all kinds of environments
- Quick opening lid, easy to maintain.

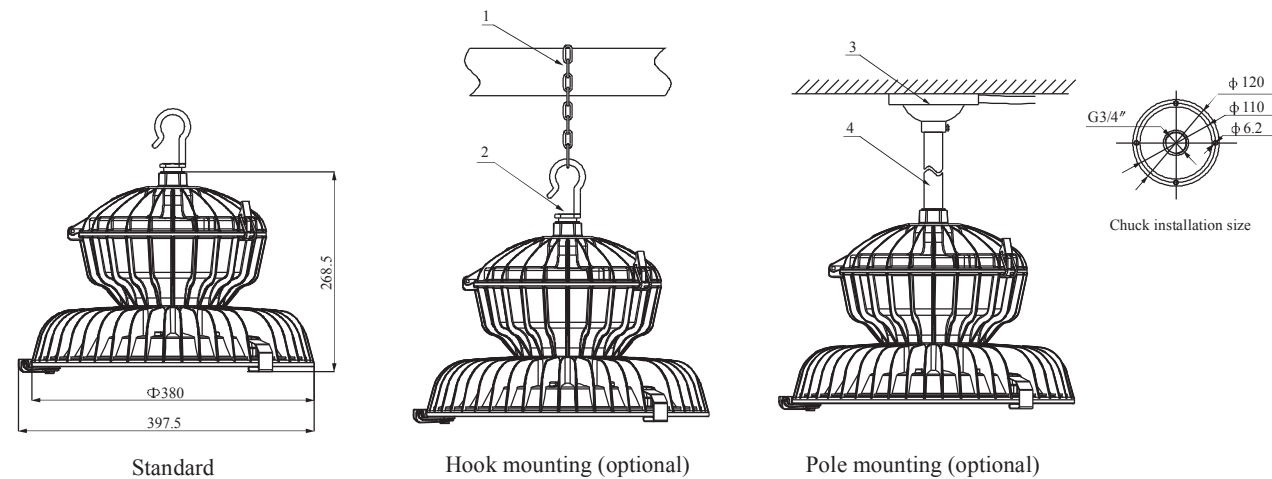
Main specification

Input Voltage	90~305VAC / 127~431VDC
Output Voltage	54VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	1.8(Spotlight), 3(Floodlight)
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 14mm
Dimension	φ 380 × 268.5mm
Net Weight	7.5Kg

Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to		
				Metal Halide Lamp	Electrode Less Lamp	Mercury lamp
ZY8501-L60	LED	60	8,194	150W	135W	175W
ZY8501-L80	LED	80	10,016	175~250W	165W	250W
ZY8501-L100	LED	100	11,568	250W	200W	250~400W
ZY8501-L120	LED	120	13,310	250~400W	250W	400W

Drawing of dimension(Dimensions in mm)



Accessories list (optional)

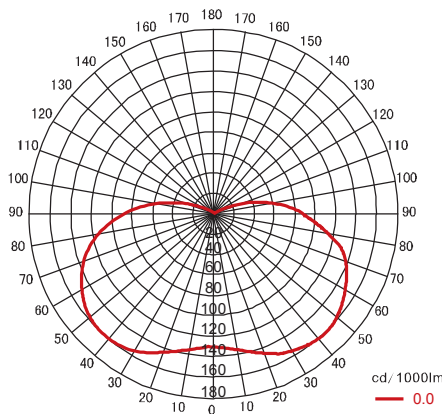
Number	Name	Quantity	Remark
1	Chain	1	
2	G3/4" Hook	1	Standard
3	G3/4" Chuck	1	
4	G3/4" Pole	1	The length in accordance with the request of the customer

ZY8601 Series  
LED Floodlight

LED



Light distribution curve



Application

This product is applicable to fixed lighting in various power distribution chambers, main plants, water pump centers, boiler rooms, passages, catwalks, coal storage, etc.

Characteristics

- With the unique light distribution design, make the light well-distributed. Its beam angel can reach 220 degree performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- The housing is especially designed to dissipate heat. Besides, it uses the thermal transmission to accelerate the heat conduction which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Equipped with world top ranking electrical appliance, ensure the lamp's performance more stable and efficient.
- Easy to install. The chain on the cover make it more safe when maintenance.
- The housing adopts high-tech surface spraying technology, abrasion resistance and resistance to corrosion, waterproof, dust-proof, suitable to be used in all kinds of environments.
- 18~43VAC or 18~55VDC is optional for 25W and 40W as customers' requirement.

Main specification

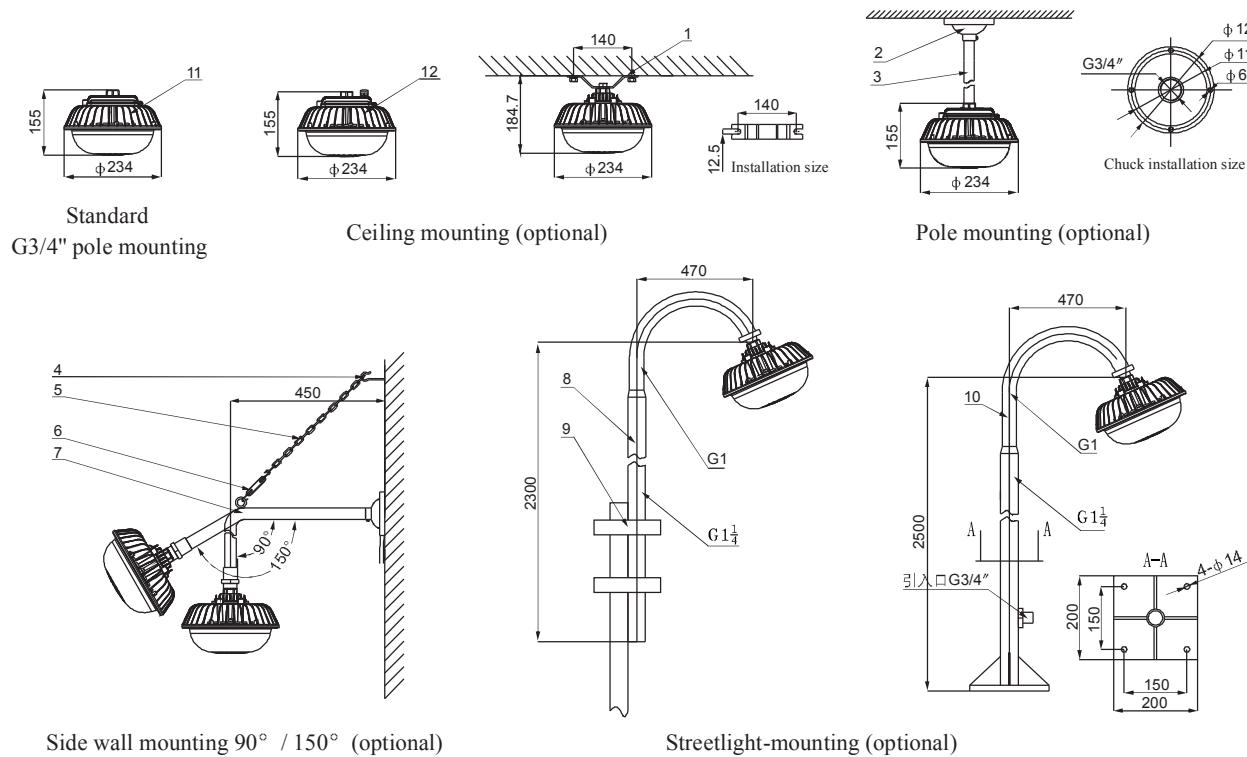
Input Voltage	90~264VAC / 127~370VDC
Frequency	50Hz / 60Hz
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	3.5
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 14mm (Ceiling Mounting φ 6mm - φ 8mm )
Dimension	φ 232 × 185mm
Net Weight	2.2Kg

ZY8601 Series  
LED Floodlight

Ordering reference

Model Number	Input Voltage	Light source	Rated wattage (W)	Light output (lm)	Equivalent to			
					Metal Halide Lamp	Electrode Less Lamp	Energy Saving Lamp	High pressure mercury lamp
ZY8601-L25	90~264VAC or 127~370VDC	LED	25	3,300	50~70W	50W	60W	80W
ZY8601-L40		LED	40	5,508	100W	85W	120W	125W
ZY8601-L60		LED	60	7,128	150W	120W	180W	175W
Optional								
ZY8601-L25-D	18~43VAC or 18~55VDC	LED	25	3,300	50~70W	50W	60W	80W
ZY8601-L40-D		LED	40	5,508	100W	85W	120W	125W

Drawing of dimension(Dimensions in mm)



Accessories list (optional)

Number	Name	Quantity	Remark
1	Mounting bracket	1	
2	Chuck	1	G3/4"
3	G3/4" pole	1	The length in accordance with the request of the customer
4	Screw hook	1	
5	Chain	1	
6	Turn buckle	1	
7	G3/4" bend pipe	1	90 degrees and 150 degrees are optional
8	Light pole	1	
9	U-bolts	2	
10	Flanged type pole	1	

ZY8800A, ZY8800B

LED Lamp

LED



Application

This product is applicable to flood lighting in warehouses, trenches, tunnels and some other public places.

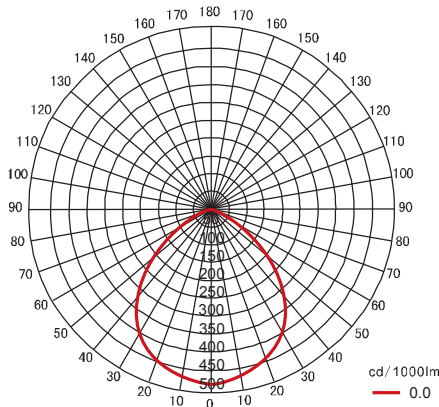
Characteristics

- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- The light source service life can reach 100, 000 hours. Low maintenance.
- World famous brand Electronic Component, provide with more stable performance and high efficient.
- The unit has perfect electromagnetic compatibility feature, can avoid the interference caused to the other device and electric power transmission network.
- Light weight aluminum alloy with latest spray coating treatment. Anti rust, corrosion resistant and waterproof.
- The transparent part is made of the imported PC materials. It enjoys a higher light transmission, and can endure impact. Ideal for all kinds of harsh environment.
- 18~43VAC or 18~55VDC is optional as customers' requirement.

Main parameter

Specification	Unit	ZY8800A	ZY8800B
Input voltage	V	AC90~264	
Frequency	Hz	50 / 60	
Output voltage	V	DC14	
Light power	W	12	6
Luminous flux	lm	1,144	680
High space ratio		2	
Service life	h	100,000	
Size	mm	180 × 130 × 66	
Net weight	Kg	1	

Light distribution curve



ZY8800A, ZY8800B

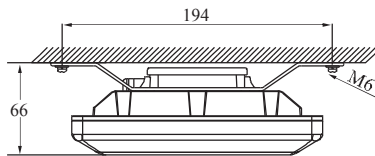
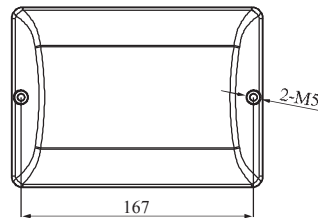
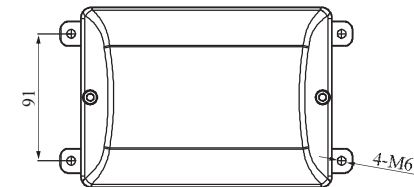
LED Lamp

Ordering reference

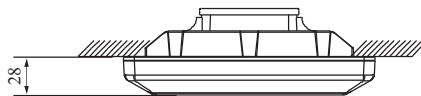
Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Equivalent to	
				Fluorescent lamp	Energy Saving Lamp
ZY8800A	LED	12	1,144	36W	28W
ZY8800B	LED	6	680	18W	18W

Drawing of dimension

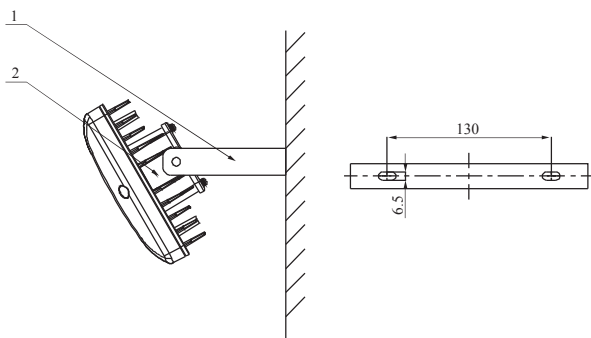
Dimensions in mm



Ceiling mounting (Standard)



Embedded mounting



Side wall-mounting (optional)

Accessories list (optional)

Number	Name	Quantity
1	Mounting bracket	1
2	Positioning plate	2



ZY9710 Series

High Power LED Floodlight

LED

IP66

-40℃

+50℃

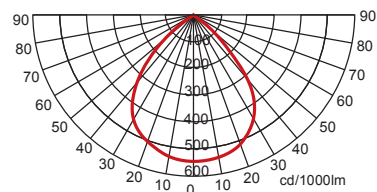


Floodlight lens

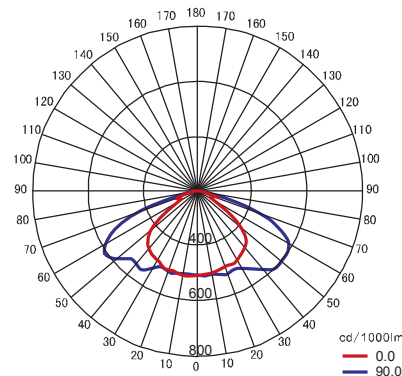


Streetlight lens

Light distribution curve



Floodlight



Streetlight

Application

It is ideal to be used as floodlight at the large workshop, plant, stations and anywhere a highly durable and efficient light source is needed.

Characteristics

- It adopts American BridgeLux LED as light source, which is lead in integrated light source technology and performance in the world.
- Vane type structure housing accelerate the heat dissipation, so that to ensure the LED service life.
- Equipped with world top ranking brand Taiwan Meanwell electrical appliance, make the lamp's performance more stable and efficient.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- The housing is made of light aluminium alloy, with sealing, spraying treatment, and shock proof design, strong resistant to corrosion, water and high temperature, applicable to various harsh environments.
- Parallel connection is available, no need to use junction box.
- Beam angle: 90° (standard), 60° , 120° and streetlight beam angle is optional.

Main specification

Input Voltage	90~305VAC / 127~431VDC
Frequency	36VDC
Anti corrosion grade	50Hz / 60Hz
Ingress Protection	IP66
Insulation Grade	WF2
Spacing height ratio	1
Space Height Ratio	2
Screw Thread	G3/4"
Cable Diameter	φ 8mm~ φ 14mm
Dimension	φ 300×202mm
Net Weight	6.3Kg

ZY9710 Series

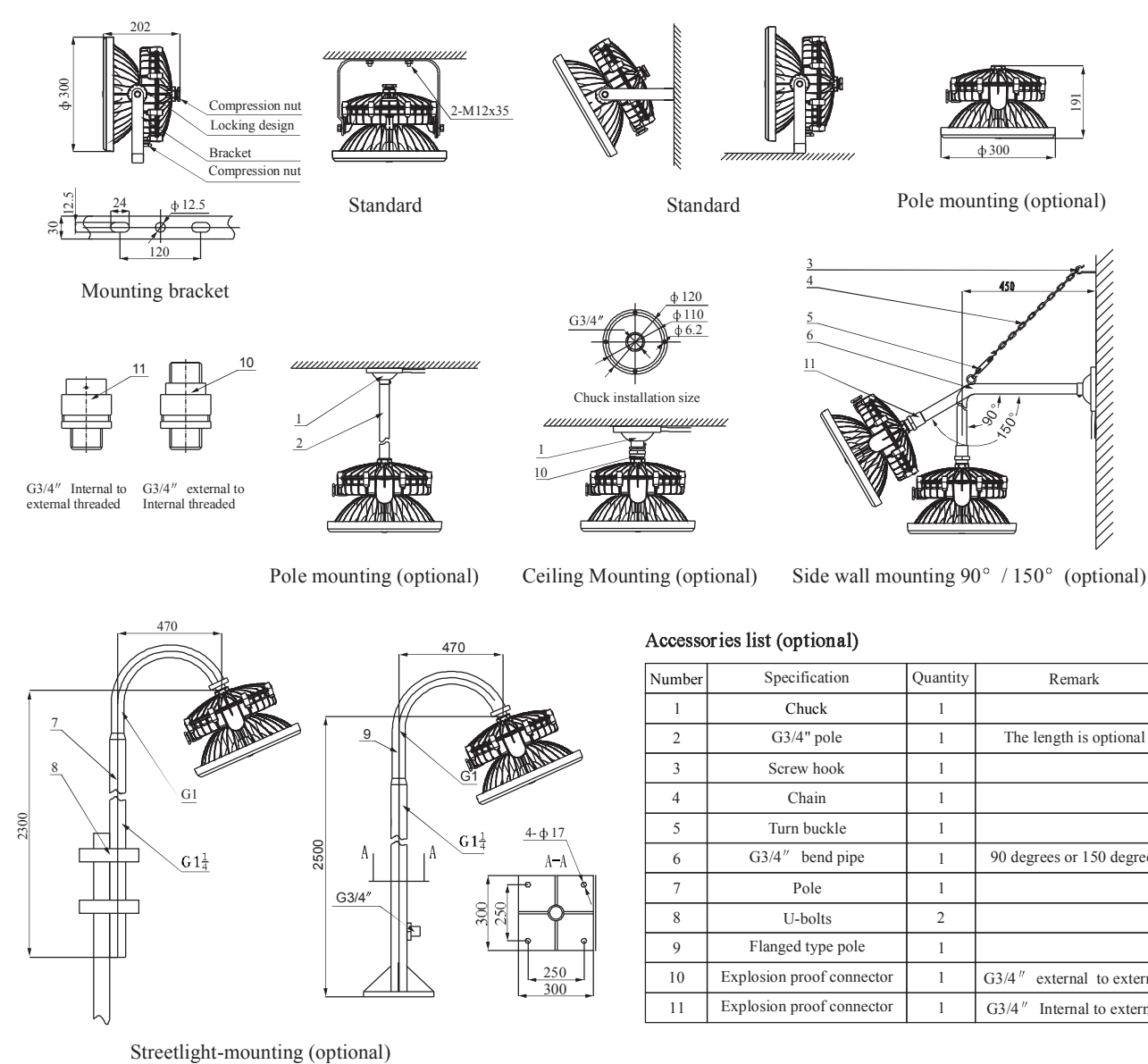
High Power LED Floodlight

Ordering reference

Model Number	Light Source	Rated wattage (W)	Light output (lm)	Temperature Class	Equivalent to		
					Metal halide lamp	Induction lamp	Mercury lamp
ZY9710-L50	LED	50	4,500	T6	100W	100W	125W
ZY9710-L60	LED	60	5,400	T6	150W	135W	175W
ZY9710-L80	LED	80	7,200	T6	175W	165W	250W
ZY9710-L100	LED	100	9,000	T6	250W	200W	250~400W
ZY9710-L120	LED	120	10,800	T5	250~400W	250W	400W

Drawing of dimension

Dimensions in mm



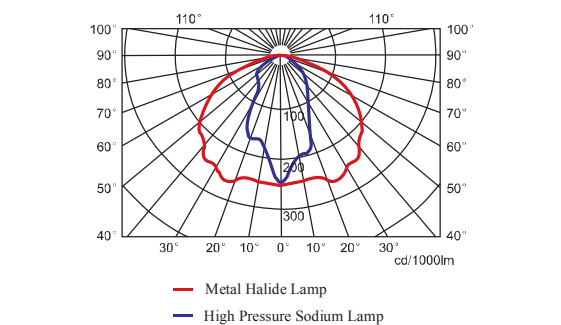
Accessories list (optional)

Number	Specification	Quantity	Remark
1	Chuck	1	
2	G3/4" pole	1	The length is optional
3	Screw hook	1	
4	Chain	1	
5	Turn buckle	1	
6	G3/4" bend pipe	1	90 degrees or 150 degrees
7	Pole	1	
8	U-bolts	2	
9	Flanged type pole	1	
10	Explosion proof connector	1	G3/4" external to external
11	Explosion proof connector	1	G3/4" Internal to external

ZY8100 Series  
Anti Glare Floodlight



Light distribution curve



Application

It is ideal to use in the factory, railway station, workshop, large storage, gym, large scale building area, tunnel, and laneway as floodlight illumination.

Characteristics

- Light source and electrical appliance adopts world's top brand, high efficiency and stability. It gives 20% more light than the other manufactures'.
- The glass of the lamp is glare free which avoid eyestrain caused to the workers .
- Quick opening lid, easy to maintain.
- Multiple anti corrosion structure and the high strength aluminium alloy housing ensure the lamp can work for a long time in the high frequency vibration atmosphere.
- The housing adopts high-tech surface spraying technology, abrasion resistance corruption, waterproof, dustproof, applicable to all kinds of harsh environments.
- Multiple mounting options: seated mounted, ceiling mounted, wall mounted etc. The lamp's illumination angle can be adjusted within 180° according to the application.

Main specification

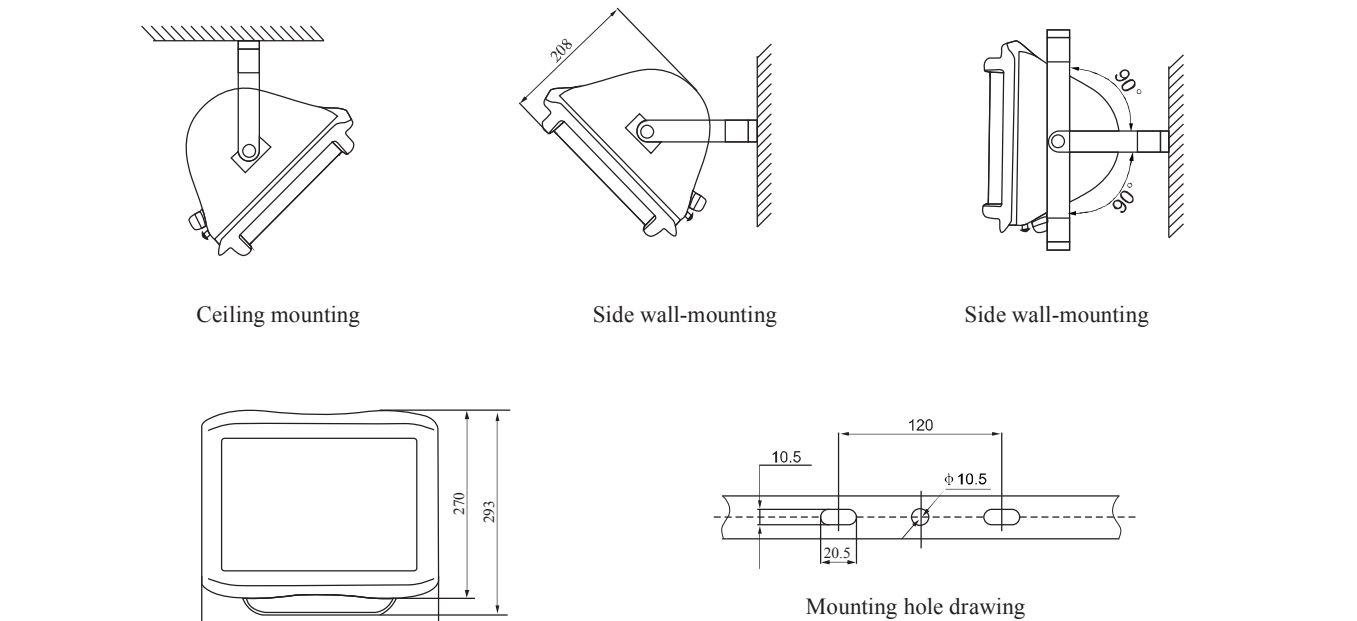
Input Voltage	220VAC 50Hz (110V 60Hz Optional)
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4.5
Leading-in cable diameter	Φ 6mm - Φ 8mm
Dimension	340 × 293 × 208mm
Net Weight	4Kg

ZY8100 Series  
Anti Glare Floodlight

Ordering reference

Ordering Reference	Light Source	Rated wattage (W)	Light output (lm)	Lamp life(h)
ZY8100-J70	Metal Halide Lamp	70	5,500	10,000
ZY8100-J100	Metal Halide Lamp	100	9,000	10,000
ZY8100-J150	Metal Halide Lamp	150	13,000	10,000
ZY8100-N70	High Pressure Sodium Lamp	70	6,000	28,500
ZY8100-N100	High Pressure Sodium Lamp	100	9,600	28,500
ZY8100-N150	High Pressure Sodium Lamp	150	16,000	28,500

Drawing of dimension(Dimensions in mm)



## ZY8200 Series Glare Free Floodlight

IP65



E40



## Application

This product is ideal to use as floodlighting in pathway, electric power, gas station, rail way, large plant, workshop, and any other public places.

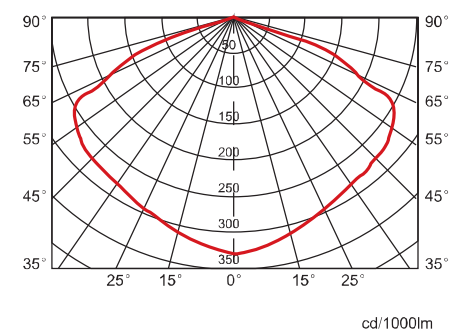
## Characteristics

- Adopts famous international brand light source with stable performance, gives 20% more light over the other manufacturers.
- Long service life comes to 12,000 hours and low maintenance.
- The special device on the bottom of the lamp can allow the air get inside so that to balance the internal and external pressure differential and eliminate the water vapor condensation inside the lamp.
- The reflector with diffuse reflection function can make the light beam more gentle and, glare free.
- Mounting bracket can be adjusted to the desired angle.
- The lock screws on the lamp makes it more easy for the operator to open the cover.
- The mounting rack is optional according to customers' requirements.

### Main specification

Input Voltage	220VAC 50Hz (110V 60Hz Optional)
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	2.2
Leading-in cable diameter	φ 8mm - φ 10mm
Dimension	520 × 400 × 175mm
Net Weight	14Kg

### Light distribution curve

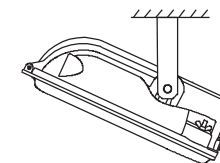


## ZY8200 Series Glare Free Floodlight

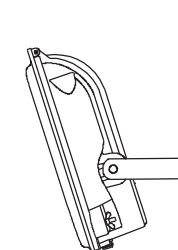
### Ordering reference

Ordering Reference	Light Source	Rated Wattage (W)	Light Output (lm)	Lamp Average Life (h)
ZY8200-J250	Metal Halide Lamp	250	25,000	12,000
ZY8200-J400	Metal Halide Lamp	400	36,000	12,000
ZY8200-N250	High Pressure Sodium Lamp	250	27,500	30,000
ZY8200-N400	High Pressure Sodium Lamp	400	50,000	30,000

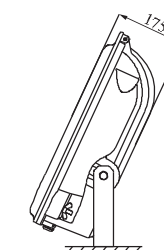
### Drawing of dimension(Dimensions in mm)



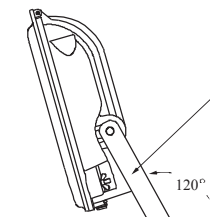
### Ceiling mounting



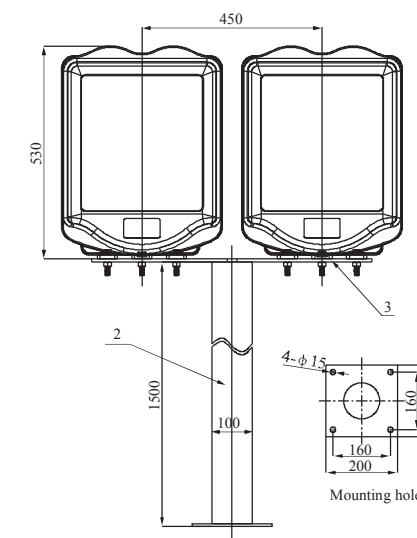
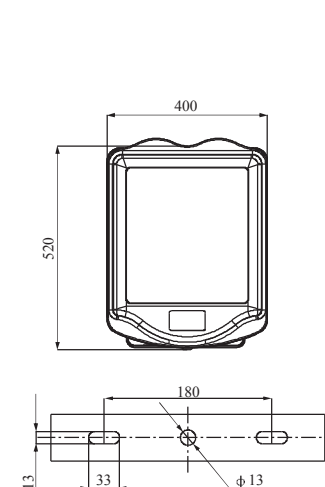
Side wall-mounting



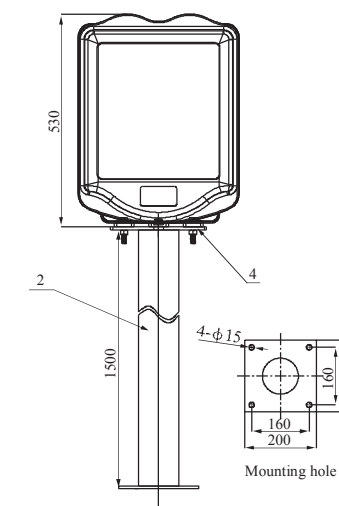
### Seat-mounting



Seat-mounting (optional)



Pole mounting (optional)



Pole mounting (optional)

### Accessories list (optional)

Number	Specification	Quantity	Remark
1	120° bracket	1	
2	Mounting bracket	1	The length is optional
3	Double slotted rod	1	
4	Single slotted rod	1	



LED



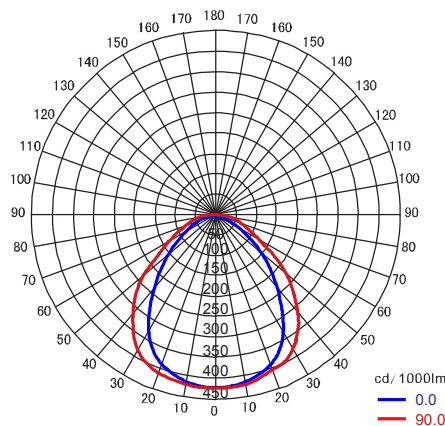
Ex Code: Ex d IIB T6 Gb

Standard: GB3836.1, GB3836.2

IEC60079-1:2007,MOD



Light distribution curve



Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment: Group IIA; IIB.
- Zone 1, Zone2; Zone 21, Zone 22.
- Temperature class: T1 to T6.

Characteristics

- With its reflector which have different angles design, it efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- The housing is especially designed to dissipate heat, which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- It uses Taiwan Meanwell electrical appliance which's lifespan is top ranking in the world, power factor:0.98, has a highly stable performance.
- The adjustable locking device on the bracket can tightly fix the lamp to any desired angle, making the lamp resist to harsh vibration
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof , make the lamp an excellent option for all kinds of high stress environment.
- Multiple mounting options including ceiling, pendent, wall etc.
- Adjustable mounting bracket enable the operator to choose mounting angle within 90° .
- The lamp can parallel connected , no need to use the junction box.

Main specification

Input Voltage	90~264VAC / 127~370VDC
Output Voltage	42VDC
Frequency	50Hz / 60Hz
Recharge Time	>5 hours
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4.5
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 14mm
Dimension	370 × 326 × 75mm
Net Weight	5.5Kg

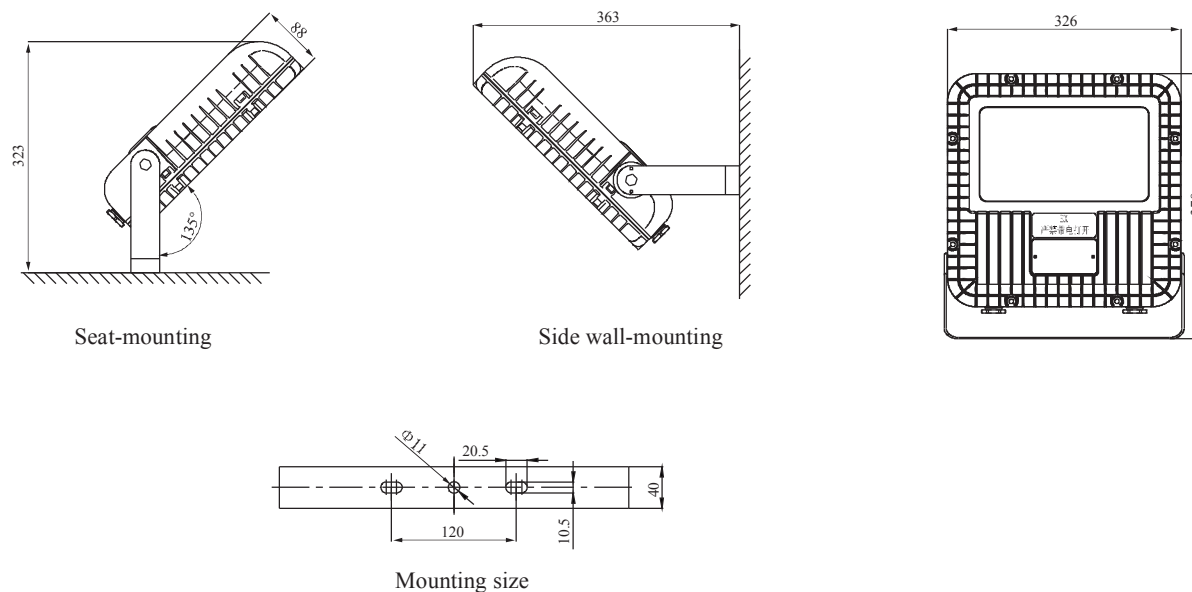
Ordering reference

Model No.	Type	Light Source	Normal illuminate Wattage (W)	Emergency Wattage (W)	Emergency Duration (minute)	Emergency Luminous Flux(lm)	Replace MH
BC9101A-L25-L15	Normal illuminate + Emergency	LED	25	15	120	2,134	35W
BC9101A-L40-L15			40	15	120	2,134	35W
BC9101A-L60-L15			60	15	120	2,134	35W
BC9101B-L15	Only Emergency	LED	/	15	120	2,134	35W
BC9101A-L25-L25	Normal illuminate + Emergency	LED	25	25	70	3,300	70W
BC9101A-L40-L25			40	25	70	3,300	70W
BC9101A-L60-L25			60	25	70	3,300	70W
BC9101B-L25	Only Emergency	LED	/	25	70	3,300	70W

**Remark:** BC9101A: Under normal condition, BC9101A will use normal external power to illuminate (its rated power can be made to 25W / 40W / 60W). In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup ( lamp wattage can be made to 15W / 25W under emergency mode) which will power the unit for 120 or 70 minutes (15W: 120minutes, 25W: 70minutes).

BC9101B is only applied for emergency lighting when power outage, and on normal condition it is off.

Drawing of dimension(Dimensions in mm)



\* MH: Metal halide lamp

## BC9302A, BC9302B

### Emergency LED Explosion proof Platform Light

LED

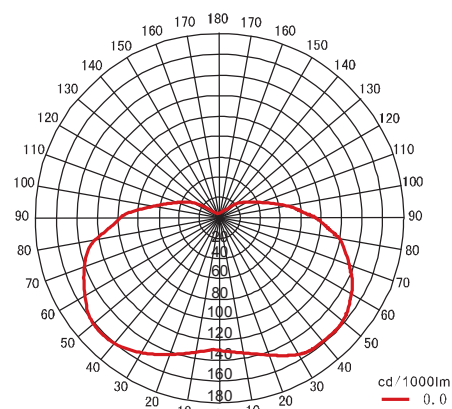


Pole mounting      Ceiling mounting

Ex Code: Ex d II C T6 Gb  
Standard: GB3836.1, GB3836.2  
IEC60079-1:2007.MOD



## Light distribution curve



## Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB, IIC
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

## Characteristics

- With the unique light distribution design, make the light well-distributed. Its beam angle can reach  $220^{\circ}$ . It efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp.
- Equipped world top ranking electrical appliance, ensure the lamp's performance more stable and efficient.
- The housing is especially designed to dissipate heat. Besides, it uses the thermal transmission to accelerate the heat conduction which increase the efficiency and lifespan of the LED, so that to ensure the 100,000 hours LED lifespan.
- The lamp is made to the highest explosion proof protection grade: flame proof, so that ensure the lamp can safely used in all kinds of inflammable and explosive places.
- The lamp can be parallel connected, no need to use the junction box.
- The anti corrosion, abrasion proof, power coated cover which is dust proof, water proof, make the lamp an excellent option for all kinds of high stress environment.

### Main specification

Input Voltage	90~264VAC / 127~370VDC
Output Voltage	42VDC
Frequency	50Hz / 60Hz
Recharge Time	>5 hours
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	3.5
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 14mm
Dimension	φ 240 × 220mm
Net Weight	5Kg

## BC9302A, BC9302B

### Emergency LED Explosion proof Platform Light

# EX

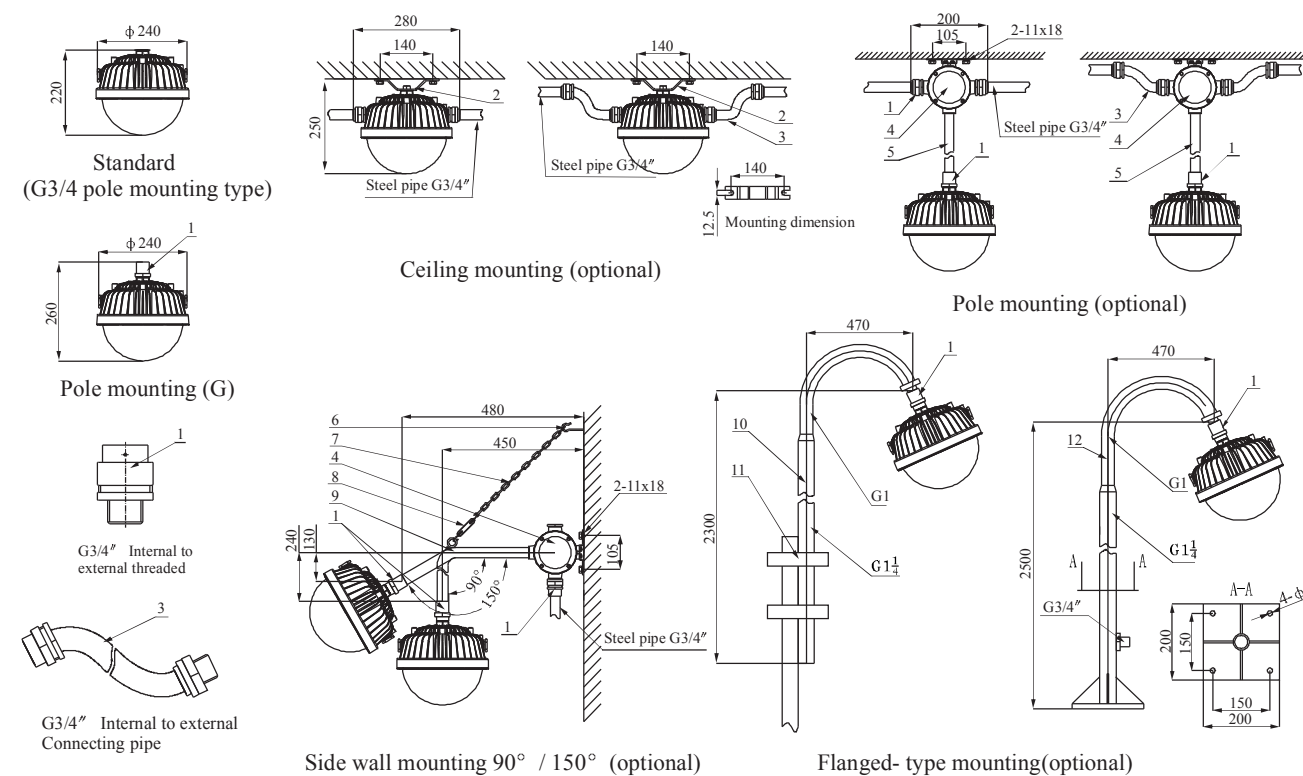
### Ordering reference

Model No.	Type	Light Source	Normal illuminate Wattage (W)	Emergency Wattage (W)	Emergency Duration (minute)	Emergency Luminous Flux(lm)	Replace
							MH
BC9302A-L25-L15	Normal illuminate + Emergency	LED	25W	15W	120	2,134	35W
BC9302A-L40-L15			40W	15W	120	2,134	35W
BC9302A-L60-L15			60W	15W	120	2,134	35W
BC9302B-L15	Only Emergency	LED	/	15W	120	2,134	35W
BC9302A-L25-L25	Normal illuminate + Emergency	LED	25W	25W	70	3,300	70W
BC9302A-L40-L25			40W	25W	70	3,300	70W
BC9302A-L60-L25			60W	25W	70	3,300	70W
BC9302B-L25	Only Emergency	LED	/	25W	70	3,300	70W

**Remark:** BC9302A: Under normal condition, BC9302A will use normal external power to illuminate (its rated power can be made to 25W / 40W / 60W). In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup ( lamp wattage can be made to 15W / 25W under emergency mode) which will power the unit for 120 or 70 minutes (15W: 120minutes, 25W: 70minutes).

BC9302B is only applied for emergency lighting when power outage, and on normal condition it is off.

### Drawing of dimension (Dimensions in mm)



### Accessories list (optional)

Number	Name	Quantity	Remark	Number	Name	Quantity	Remark
1	Explosion proof connector		G3/4" internal to external	7	Chain	1	
2	Mounting bracket	1		8	Turn buckle	1	
3	Connecting pipe	2	G3/4" internal to external	9	G3/4" bend pipe	1	90 degrees or 150 degrees
4	Explosion proof junction box	1	G3/4"	10	Light pole	1	
5	G3/4" pole	1	The length is optional	11	U-bolts	2	
6	Screw hook	1		12	Flanged type pole	1	





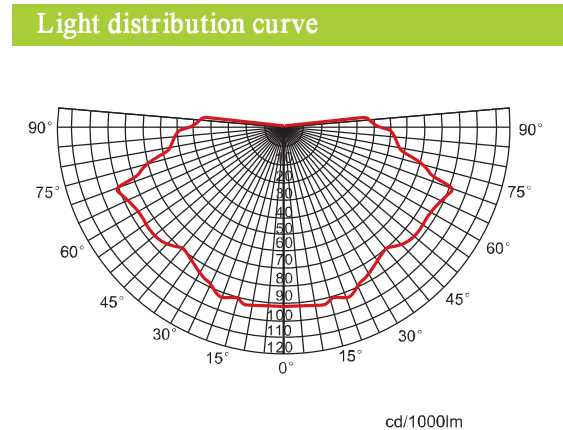
Ex Code: Ex de II B T5

Ex de II B T4

Standard: GB3836.1, GB3836.2, GB3836.3

IEC60079-1:2007,MOD

IEC60079-7:2006,MOD



Application

- Ideal to be used in the oilfield, chemical industry, steel industry, power, port, Petroleum etc.
- Harsh environment, moist area.
- Gas explosive environment : Group IIA, IIB.
- Zone 1, Zone2; Zone 21, Zone 22
- Temperature class: T1 to T6

Characteristics

- Under normal condition, BC9110A will use normal external power to illuminate.
- In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup which will power the unit for 80 or 40 minutes. (BC9110A-J35:80 minutes, BC9110A-J70:940minutes)
- BC9110B is only applied for emergency lighting when power outage, and on normal condition it is off.
- 70w Equipped with international famous brand light source and electrical appliance, more stable performance and gives approximately 20% more light over the other manufacturer's.
- The average life span of the light source is more than 10,000 hours. Therefore it is low maintenance .
- Two Explosion-proof cavities structure. The wiring cavity is separated from the main flameproof cavity, enhancing safety.
- Made of aluminium alloy, high strength. The spray coating treatment ensure the lamp waterproof, anti corrosion.

Main specification

Input Voltage	220VAC 50Hz
Recharge Time	>12 hours
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	2.6
Thread	G3/4"
Leading-in cable diameter	φ 8mm - φ 10mm
Dimension	Lamp 400 × 266 × 170mm
	Ballast 325 × 246 × 120mm
Net Weight	Lamp 5Kg
	Ballast 5.5Kg

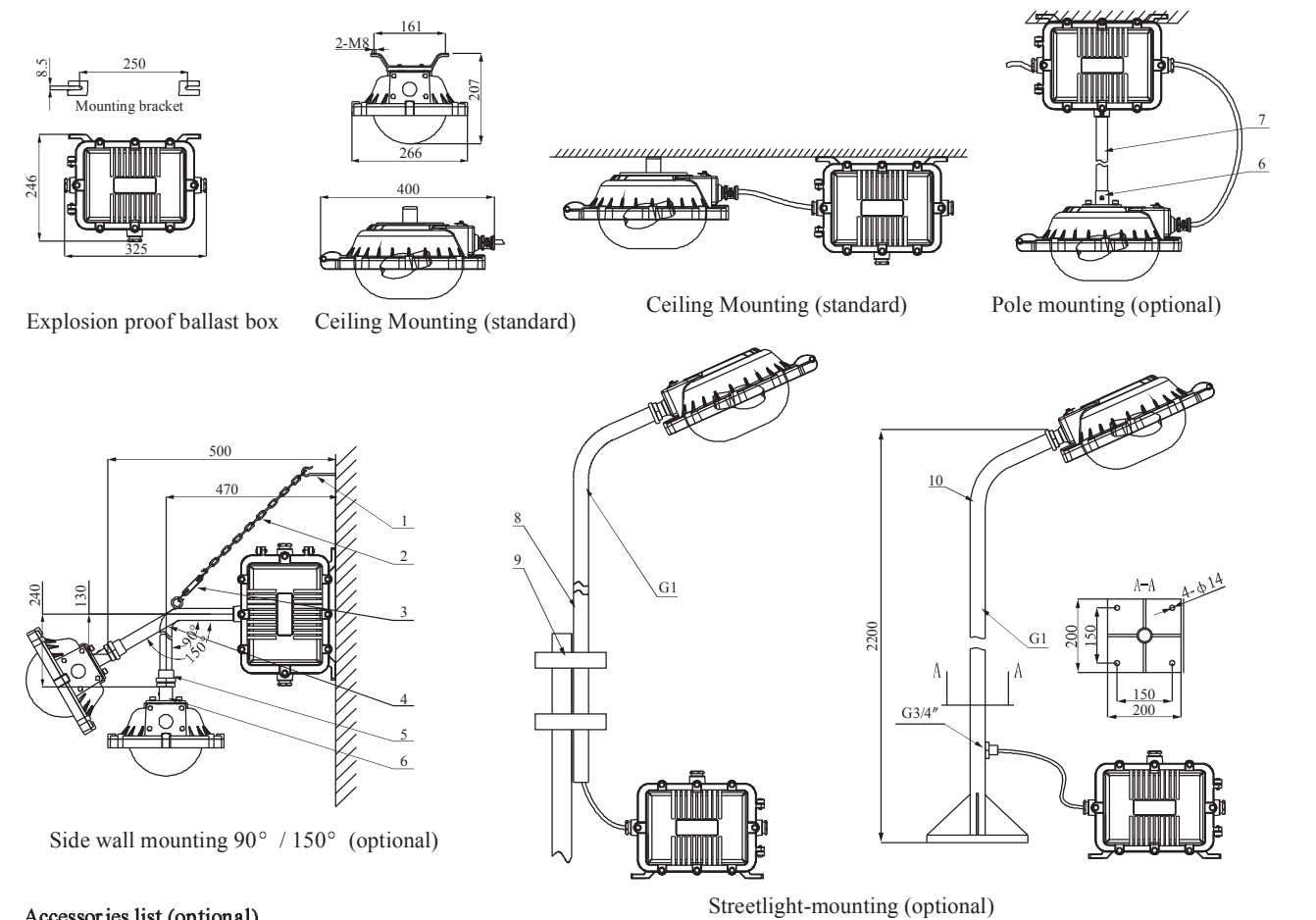
Ordering reference

Model No.	Type	Light Source	Normal illuminate Wattage (W)	Emergency Wattage (W)	Emergency Duration (minute)	Emergency Luminous Flux(lm)
BC9110A-J35	Normal illuminate + Emergency	Metal Halide Lamp	35W	35W	80	2,500
			35W	35W	80	2,500
BC9110B-J35	Only Emergency	Metal Halide Lamp	/	35W	80	2,500
BC9110A-J70	Normal illuminate + Emergency	Metal Halide Lamp	70W	70W	40	5,500
			70W	70W	40	5,500
BC9110B-J70	Only Emergency	Metal Halide Lamp	/	70W	40	5,500

**Remark:** BC9110A: Under normal condition, BC9110A will use normal external power to illuminate. In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup which will power the unit for 80 or 40 minutes.

BC9110B is only applied for emergency lighting when power outage, and on normal condition it is off.

Drawing of dimension(Dimensions in mm)



Accessories list (optional)

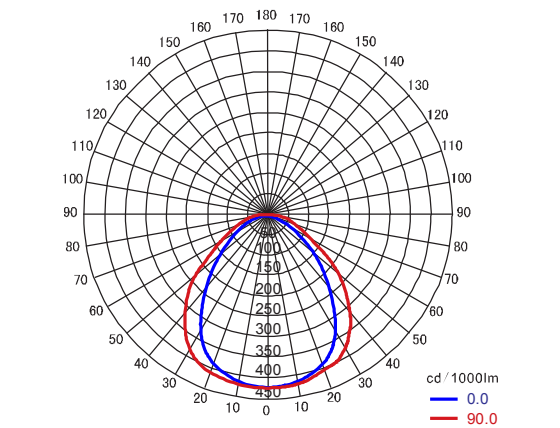
Number	Name	Quantity	Remark	Number	Name	Quantity	Remark
1	Screw hook	1		6	Mounting bracket	1	
2	Chain	1		7	G3/4" pole	1	The length is optional
3	Turn buckle	1		8	Light pole	1	
4	G3/4" pole	1	90 degrees or 150 degrees	9	U-bolts	2	
5	Explosion proof connector	1	G3/4" internal to external	10	Flanged type pole	1	



LED



Light distribution curve



Application

It is ideal to use in the factory, railway station, workshop, large storage, gym, large scale building area, tunnel and laneway as emergency illumination.

Characteristics

- With its reflector which have different angles design, it efficiently utilize the light. Have a good performance of illuminance uniformity, glare free, can avoid eyestrain to the worker.
- It adopts American CREE LED as light source, can save 60% or more on energy than the metal halide lamp
- Efficient radiator effective solve the LED light failure caused by temperature rising, so as to ensure that LED life up to 100,000hrs.
- Equipped with world top ranking brand, Taiwan Meanwell electrical appliance with power factor 0.98, make the lamp's performance more stable and efficient.
- The locking device on the bracket will keep the lamp from shift or trembling during harsh vibration.
- The housing adopts high-tech surface spraying technology, abrasion resistance corruption, waterproof, dustproof, suitable to be used in all kinds of environments
- Easy to install and maintenance.

Main specification

Input Voltage	90~264VAC / 127~370VDC
Output Voltage	42VDC
Frequency	50Hz / 60Hz
Recharge Time	>5 hours
Ingress Protection	IP66
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4.5
Thread	G3/4"
Leading-in cable diameter	φ 6mm - φ 8mm
Dimension	300 × 300 × 75mm
Net Weight	4.7Kg

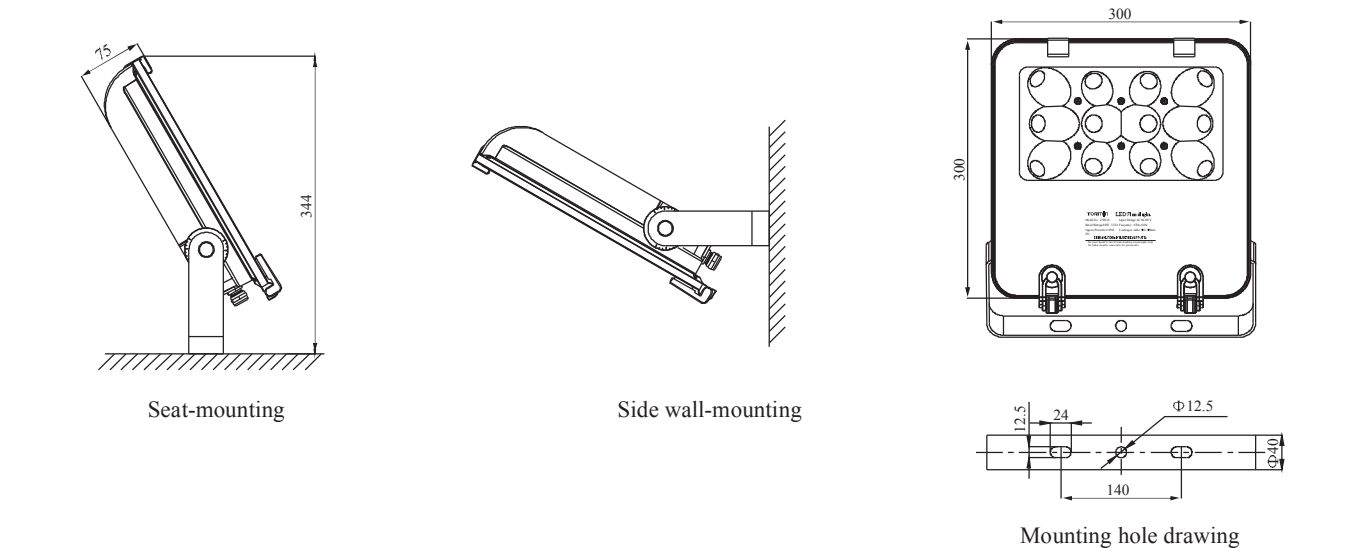
Ordering reference

Model No.	Type	Light Source	Normal illuminate Wattage (W)	Emergency Wattage (W)	Emergency Duration (minute)	Emergency Luminous Flux(lm)	Replace MH
ZY8101A-L25-L15	Normal illuminate + Emergency	LED	25W	15W	120	2,134	35W
ZY8101A-L40-L15			40W	15W	120	2,134	35W
ZY8101A-L60-L15			60W	15W	120	2,134	35W
ZY8101B-L15	Only Emergency	LED	/	15W	120	2,134	35W
ZY8101A-L25-L25	Normal illuminate + Emergency	LED	25W	25W	70	3,300	70W
ZY8101A-L40-L25			40W	25W	70	3,300	70W
ZY8101A-L60-L25			60W	25W	70	3,300	70W
ZY8101B-L25	Only Emergency	LED	/	25W	70	3,300	70W

**Remark:** ZY8101A: Under normal condition, ZY8101A will use normal external power to illuminate (its rated power can be made to 25W / 40W / 60W). In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup ( lamp wattage can be made to 15W / 25W under emergency mode) which will power the unit for 120 or 70 minutes (15W: 120minutes, 25W: 70minutes).

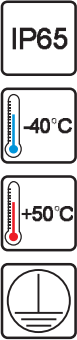
ZY8101B is only applied for emergency lighting when power outage, and on normal condition it is off.

Drawing of dimension(Dimensions in mm)

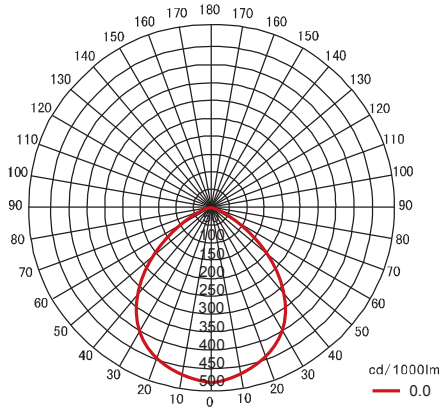


\*MH: Metal halide lamp

LED



Light distribution curve



Application

This product is ideal to use as floodlight or emergency lighting in workshops, warehouses, trenches, tunnels and some other public places.

Characteristics

- Has tested function, can quickly test lamps installed function is normal or not.
- The light source adopts the world's most bright LED, the United States CREE brand, power consumption for only 40% of the metal halide lamp.
- Efficient radiator effective solution the LED failure which because of temperature rise, so as to ensure the life to 100,000 hours.
- The transparent part is made of the imported PC materials, with anti-dazzle design. Featuring gentle light, even lighting and no dazzle, it can effectively avoid visual fatigue caused to operators during the operation.
- Emergency power using lithium-ion polymer battery, safe and effective long service life.

Main specification

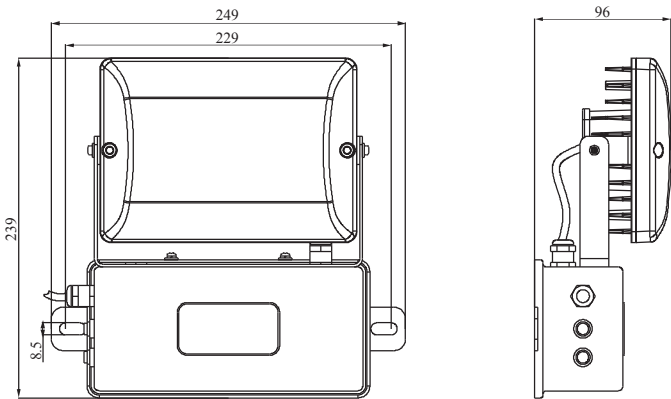
Parameter	Unit	ZY8810A / ZY8820A	ZY8810B / ZY8820B
Output Voltage	VAC	90~264	
Frequency	Hz	50Hz / 60Hz	
Output Voltage	VDC	14	
Light power	W	12	6
Luminous	lm	920	640
LED adverage life	h	100,000	
Emergency time	h	10	10
Charging time	h	7	
Battery life		Cycle 1000	
Space Height Ratio		2	
Dimension	mm	180×130×65	
Net Weight	Kg	2	

Ordering reference

Ordering Reference	Type	Light Source	Emergency Wattage (W)	Emergency Duration (hours)	Luminous flux (lm)	Replace	
						Fluorescent lamp	CFL *
ZY8810A	Normal illuminate + Emergency	LED	12	10	1,144	36W	28W
ZY8810B		LED	6	10	572	18W	18W
ZY8810C		LED	6	6	572	18W	18W
ZY8820A	Only Emergency	LED	12	10	1,144	36W	28W
ZY8820B		LED	6	10	572	18W	18W
ZY8820C		LED	6	6	572	18W	18W

**Remark:** ZY8810series: Under normal condition, ZY8810series will use normal external power to illuminate. In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup which will power the unit for 10 or 6 hours.  
ZY8820series is only applied for emergency lighting when power outage, and on normal condition it is off.

Drawing of dimension(Dimensions in mm)

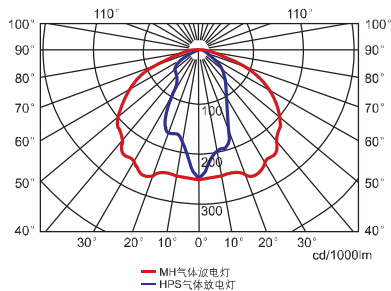


ZY8110A, ZY8110B

Emergency Floodlight



Light distribution curve



Application

It is ideal to use in the factory ,railway station, workshop, large storage, gym, large scale building area , tunnel ,and laneway as floodlight illumination or emergency lighting.

Characteristics

- 70W light source adopts famous international brand with performance stable. It gives 20% more light over the other manufacturers'.
- The glass of the lamp is glare free which avoid the eyestrain caused to the operator.
- Multiple anti corrosion structure and the high intensity aluminium alloy material ensure the lamp can work for a long time in the high frequency vibration atmosphere.
- The surface is subjected to spraying treatment .It can be used in the humid and high temperature and any other extreme atmosphere .
- Multiple mounting options: seated mounted, ceiling mounted, wall mounted etc. The lamp's illumination angle can be adjusted within 180° according to the application.

Main specification

Input Voltage	220VAC 50Hz
Recharge Time	>12 hours
Ingress Protection	IP65
Anti Corrosion Grade	WF2
Insulation Grade	I
Space Height Ratio	4.5
Leading-in cable diameter	φ 6mm - φ 8mm
Dimension	Lamp 340 × 293 × 208mm
	Ballast 325 × 215 × 150mm
Net Weight	Lamp 4Kg
	Ballast 5.5Kg

ZY8110A, ZY8110B

Emergency Floodlight

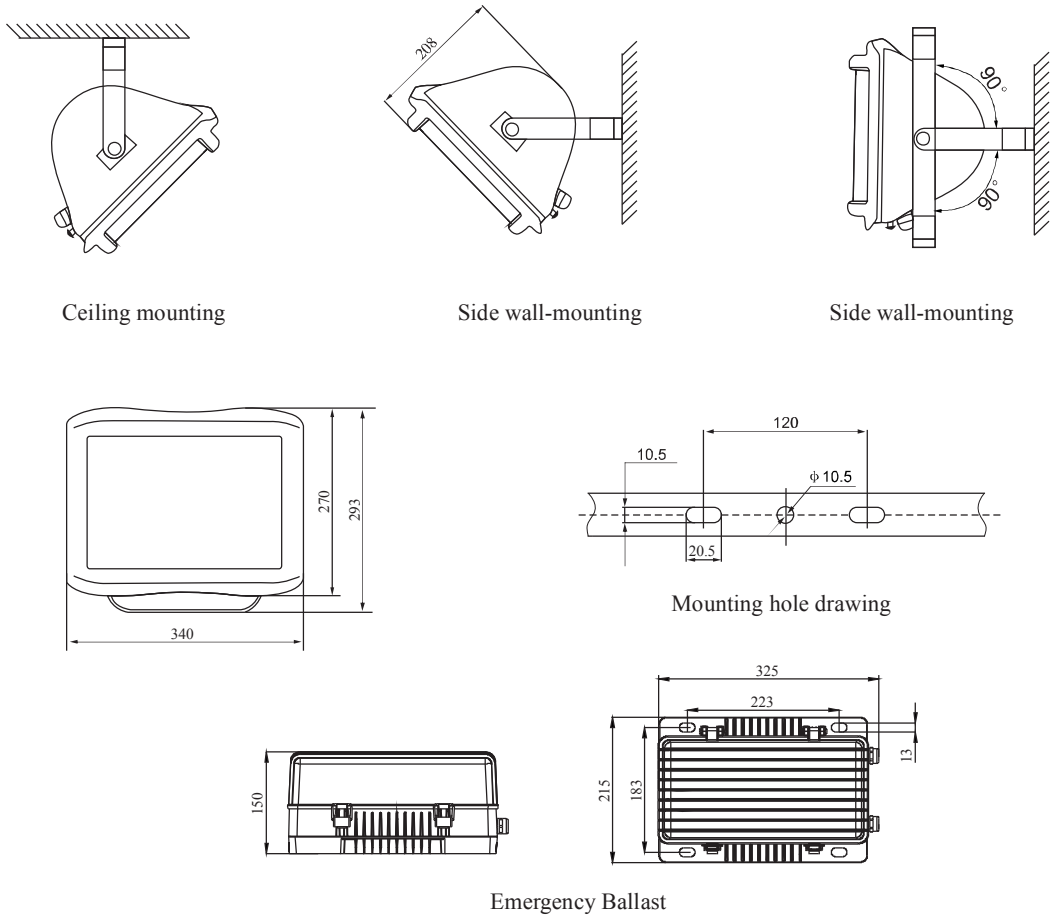
Ordering reference

Model No.	Type	Light Source	Normal illuminate Wattage (W)	Emergency Wattage (W)	Emergency Duration (minute)	Emergency Luminous Flux(lm)
ZY8110A-J35	Normal illuminate + Emergency	Metal Halide Lamp	35W	35W	80	2,500
			35W	35W	80	2,500
ZY8110B-J35	Only Emergency	Metal Halide Lamp	/	35W	80	2,500
ZY8110A-J70	Normal illuminate + Emergency	Metal Halide Lamp	70W	70W	40	5,500
			70W	70W	40	5,500
ZY8110B-J70	Only Emergency	Metal Halide Lamp	/	70W	40	5,500

**Remark:** ZY8110A: Under normal condition, ZY8110Awill use normal external power to illuminate. In the case of power outage or in any situation where power is interrupted, this unit will automatically switch to battery backup which will power the unit for 80 or 40 minutes.

ZY8110B is only applied for emergency lighting when power outage, and on normal condition it is off.

Drawing of dimension(Dimensions in mm)





## BW3210A-4 LED Oil Industry Vehicle Mounted Lighting System

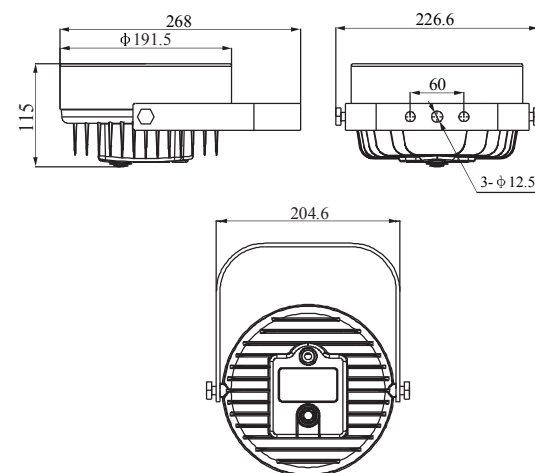
### LED



Ex Code: Ex d IIC T6  
Standard: GB3836.1, GB3836.2  
IEC60079-1:2007,MOD



### Drawing of dimension(Dimensions in mm)



### Application

This products is designed for use on the well serving unit, tractor hoist, oil derrick and other vehicles in the explosive area.

### Characteristics

- The lighting system consists of increased safety control box,, lamp and cable.
- The generator on the tractor hoist will power the units when the vehicle is working, and it is also recharging the units at the same time.
- Good illuminate effect: The four lamps are mounting on the oil derrick. The floodlight can provide large area illuminating. The spotlight can mount on the wellhead. We can provide more lamps according to customers' requirements.
- When the vehicle starts, it will charge the units automatically. The extra energy will be saved to the control box.
- Two discharge switches. When the tractor hoist starts, operator should use the regular discharge switch. Or the battery switch should be turn on.
- When blowout happens, the battery in the control box can power the units for 10 hours. Meeting the emergency lighting requirement.

### Components

- Increased safety control box: battery, explosion proof switch, explosion junction box, control circuit.
- Lamp: 2-spotlight; 2-floodlight.
- The lamps are mounting on the derrick, the illuminating direction is adjustable. The lamps are connected to the control box by cables (15meters length)

### Main specification

Specification	BW3210A-4	
Rated voltage	24VDC	
Rated power	4 × 30W	
Continuous Working Time	≥ 10h	
Dimension	Lamp	φ 191.5 × 115cm
	Control box	396 × 332 × 344cm
Weight	83Kg	

## BW3210 LED Explosion-proof Work Light

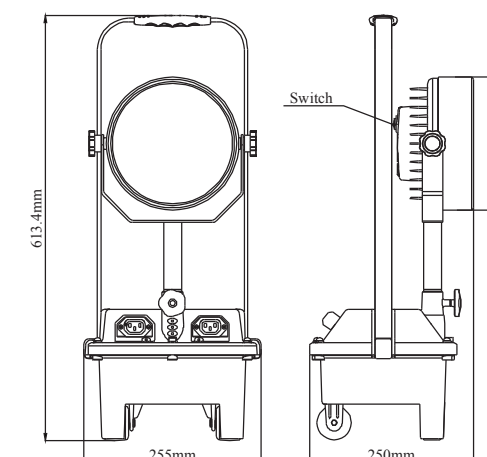
### LED



Ex Code: Ex de IIC T6  
Standard: GB3836.1, GB3836.2, GB3836.3  
IEC60079-1:2007,MOD  
IEC60079-7:2006,MOD



### Drawing of dimension(Dimensions in mm)



### Application

This product is widely used as mobile lighting for all kinds of night work tasks, repairing, inspection and accident relief etc.

### Characteristics

- Spot light beam or Flood light beam is available according to the application.
- Safe and reliable: flame proof type of protection. Suitable to be used in various flammable and explosive environment.
- Efficient&Energy-saving: It adopts CREE LED light source, high intensity, and 100,000 hours service life. It has battery level indication function. Operator can check the energy left at any time.
- Waterproof & Durability: The housing is made of aluminium alloy, insure the unit enable to stand the strong impact. It is sealed to IP66 preventing the ingress of dust and water. Suitable to be used in all kinds of harsh environment.
- Flexible & Convenient : The lamp head has 360° rotation and 135° tilt.
- The extendable pole is optional, with 1.2 to 1.7 meters extendable height. The wheels on the bottom make the transportation more easy.
- Intelligent charging : The charger is controlled by the chip . It protect against over-charging, over discharge and short circuit. When battery is fully charged. It will switch to trickle charging automatically.

### Main specification

Specification	Unit	BW3210
Rated Voltage	VDC	24
Rated Capacity	Ah	12
Charging Voltage	VAC	100-240
LED	working Voltage	VDC
	Rated Power	W
	Light Output (high/low)	lm
	Average Service Life	h
Continuous Runtime	High	h
	Low	h
Recharge Time	h	12
Effective Beam Distance	m	800
Service Life Of Battery	Recycled	≈ 1,000
Dimension	L×W×H	mm
Net Weight	Kg	14



Charging socket



Charger

## ZW4100A Tracker Light BW4100B Explosion proof Tacker Light

LED



IP68

-60°C

+150°C



Ex Code: Ex ia IIC T6  
Standard: GB3836.1, GB3836.4  
IEC60079-11:2006,MOD



Magnetic base



Arm mounting



Insurance clip

### Application

It is ideal as a personal indicator to identify the position of workers, it also can serve as signal communication tools in all kinds of hazardous area such as construction, fire fighting, rescue etc.

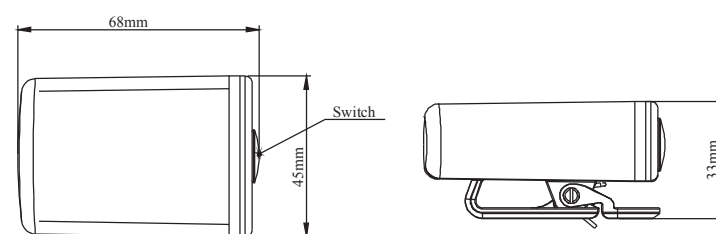
### Characteristics

- Intrinsically safe type of protection, can be safely used in various flammable and explosive fields (including Zone 0).
- Waterproof & Drop Resistant: Made of PC material, drop resistant to 1 meter.
- Runtime: Powered by two AAA battery. Continuous runtime can exceed 500 hours.
- Flexible&Convenience: Small size, Light weight, easy to operation. It is magnetic, can be attached to the iron surface.
- Ambient Temperature: -60°C-150°C.
- Colour Available: The tracker light is available in the following five different colours according to customers requirements: red, blue, yellow, green, white.

### Main specification

Specification	Unit	ZW4100A / BW4100B
Rated Voltage	VDC	3
Current	μ A	<3
Flashing Frequency	Hz	2.7
Max Impulse Current	mA	80
Dimension	mm	70×47×39
Net Weight	Kg	0.1

### Drawing of dimension (Dimensions in mm)



## BW6200E LED Explosion proof Work Light

**EX**

LED



IP67

-20°C

+50°C



Ex Code: Ex ic IIC T6 Gc  
Standard: GB3836.1, GB3836.4  
IEC60079-11:2006,MOD



Portable



Head mounting

### Application

It is widely used as mobile lighting in the inflammable and explosive places such as petrochemical, power generation, mining, fire-fighting and metallurgy area etc.

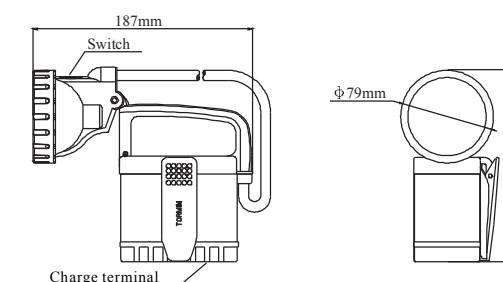
### Characteristics

- Adopts LED light source, which has a higher light efficacy and long service life. It is environment friendly.
- High intensity light and low intensity light is switchable.
- Small size and light weight. It is portable. The lamp can also be fixed onto the helmet. It is sealed to IP66, waterproof, dust resistant.
- The charging and discharging processes are controlled by the chip and provided with multi-protection, ensuring safety and high efficiency.

### Main specification

Specification	Unit	BW6200E
Rated Voltage	VDC	3.7
Charging Voltage	VAC	100-240
Rated Power	W	3
Rated Capacity	Ah	4.4
Illuminance (high / low)	At 1m	Lux 10,600 / 3,200
	At 3m	Lux 1,600 / 500
	At 5m	Lux 550 / 140
Runtime (high)	h	12
Runtime (low)	h	25
Service Life Of Bulb	h	100,000
Recharge Time	h	8-10
Effective Beam Distance	m	130
Battery Recharge Cycle	Times	≈1,000
Dimension	mm	185×185×75
Net Weight	Kg	0.85

### Drawing of dimension (Dimensions in mm)





## BW6210 LED Explosion Proof Multifunction Searchlight

### LED



IP66

-20°C

+50°C



Ex Code: Ex ib IIC T5  
Standard: GB3836.1, GB3836.4  
IEC60079-11:2006,MOD



### Application

It is widely used as mobile lighting in the power station, oil filed, chemical industry, fire fighting, police, military and some other flammable and explosive or high stress environment.

### Characteristics

- It adopt CREE LED light source with high luminous efficiency, 100,000 hours service life. Powered by rechargeable lithium battery, no memory effect, low discharge rate and environment friendly.
- Press the button for 2 seconds, the lamp will switch to flood beam mode which runtime can reach 55 hours.
- Equipped with magnetic base on the bottom, available adsorb to all kinds of iron material equipment
- The head of the searchlight is adjustable, within 120° according to the operator requirement.
- Small size and light weight, easy to carry.
- Light mode: High intensity light and low intensity light are switchable.
- Battery status indication and lower battery warning function. Operator can check the battery status at any time.
- The searchlight design has a large size handle and large button switch, easy to operate even with gloved hands.
- It is made of PC material, high strength body, have a good impact resistant performance. The searchlight is sealed to IP66.

### Main specification

Specification		Unit	BW6210
Rated Voltage		VDC	3.7
Charging Voltage		VAC	100-240
Rated Capacity		Ah	4.4
Light Source	Luminous flux	lm	190
	Average Service Life	h	100,000
Continuous Runtime	High	h	≥8
	Low	h	≥40
	Floodlight	h	≥55
Recharge Time		h	8~10
Battery Recharge Cycle		Times	≈1, 000
Net Weight		Kg	0.35
Dimension		mm	193×74×115



Magnetic



Head of the lamp  
tilt:120°

## BW6310A, BW6310B LED Explosion Proof Mini Headlight

### LED



IP65

-20°C

+50°C



Ex Code: Ex ib IIC T4  
Standard: GB3836.1, GB3836.4  
IEC60079-11:2006,MOD



### Application

It is used as safety helmet head light explosive gas, vapour and mist places. It is the ideal lighting solution for workers in power station, oil filed, chemical industry, fire fighting, railway station, military etc.

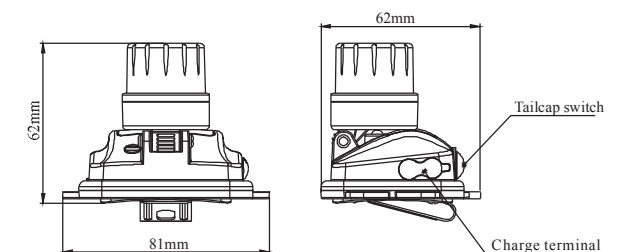
### Characteristics

- It not only can be fixed onto the helmet with the screws provided, but also can be fixed onto the helmet or head by the elastic headband. The head of the light is adjustable within 90°, operator can rotate the head of light to the desired direction.
- The red strobe light design to suit numerous application where indication is critical during emergency. Press the button and switch to the red strobe light mode, It can let others identify the position of the worker.
- This product has battery status indication and low battery warning function. Operator can check the battery status at any time. Towards the end of discharge, the beam flashes off repeatedly, warning recharging is required.
- Adopts CREE LED light source with high light efficacy and 100,000 hours service life. Use of the latest safety increased lithium-ion battery technology improves reliability and environment friendly.
- The charger is controlled by intelligent chip, with various protection.

### Main specification

Specification			Unit	BW6310A	BW6310B
Rated Voltage			VDC	3.7	3.7
Charging Voltage			VAC	100-240	100-240
Rated Capacity			Ah	1.4	1.4
Light source	Light Output	High	lm	148	83
		Low		83	55
	Flux (1 meter)	High	Lux	1,750	980
		Low		950	550
	Service Life Of Bulb		h	100,000	100,000
	Runtime	High	h	4	8
Low		8		16	
Time Of Charging			h	4	4
Battery Recharge Cycle			Times	≈1,000	≈1,000
Dimension			mm	50×65×60	50×65×60
Net Weight			g	85	85

### Drawing of dimension (Dimensions in mm)



Head mounting



Helmet mounting



Head mounting



Buckle



## BW6610A Multifunction LED Explosion Proof Work Light

LED



IP66

-20°C

+50°C



Ex Code: Ex de IIC T6  
Standard: GB3836.1, GB3836.2, GB3836.3  
IEC60079-1:2007,MOD  
IEC60079-7:2006,MOD



Magnetic base



LED light source(CREE)



Charger

### Application

This product is ideal for use in patrol, inspection, repairing and other night work tasks in explosive and flammable atmosphere.

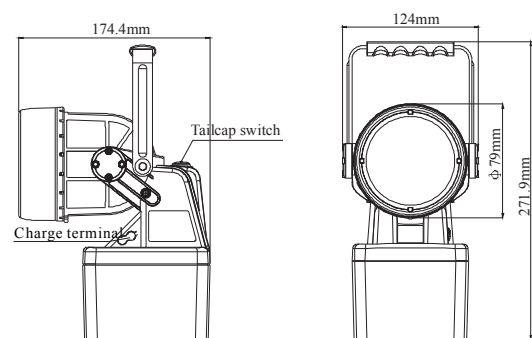
### Characteristics

- Flame proof type of protection, approved for safe use in Potentially explosive gas, vapour and mist atmospheres. The head of the searchlight can give 135° vertical tilt so that operator can adjust the light to the desired location. Small size, light weight, easy to carry. It is portable, beside the magnetic base on the bottom, making the lamp can adsorb to all kinds of iron material equipment.
- The housing is made of imported PC material, drop resistant to 1 meter. It is sealed to IP66, suitable to be used in all kinds of high stress environment.
- Adopts CREE LED light source with high light efficacy and 100,000 hours service life. Use of the latest safety increased lithium-ion battery technology improves reliability and environment friendly.
- This product has battery status indication and low battery warning function, Operator can check the battery status at any time. Towards the end of discharge, the beam flashes off repeatedly, warning recharging is required.
- The charger is controlled by intelligent chip, with various protection function.

### Main specification

Specification	Unit	BW6610A
Rated Voltage	VDC	10.8
Charging Voltage	VAC	100-240
Rated Power	W	3×3W
Rated Capacity	Ah	4.4
Light Output (high/low)	lm	810 / 465
Effective Range	m	600
Runtime (high)	h	7
Runtime (low)	h	13
Recharge Time	h	6
Service Life Of Bulb	h	100,000
Battery Recharge Cycle	Times	≈1,000
Dimension	mm	151×131×272
Net Weight	Kg	1.5

### Drawing of dimension (Dimensions in mm)



## BW7101 Portable LED Explosion Proof Searchlight

LED



IP68

-20°C

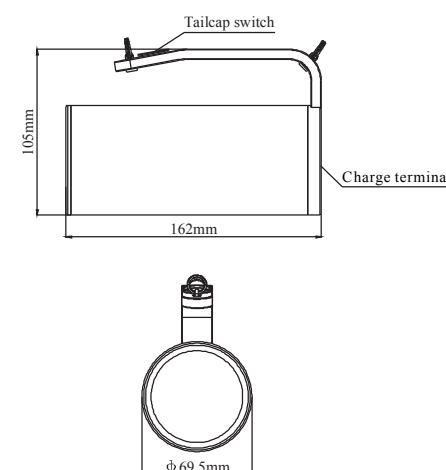
+50°C



Ex Code: Ex dia IIC T6  
Standard: GB3836.1, GB3836.2, GB3836.4  
IEC60079-1:2007,MOD  
IEC60079-11:2006,MOD



### Drawing of dimension



### Application

It is an efficient lighting tools to be used at the military, petrochemistry , oil field, customs inspection, police, patrol, rescue relief, railway, fire fighting and any other night work tasks.

### Characteristics

- Certified by National authority. Flame proof type of protection, designed according to explosion proof standard for safe use potentially explosive atmosphere.
- 3X3W CREE LED light source, 100,000 hrs service life. It uses CREE LED light source, with 100,000hours service life. The reflector adopts hi-tech surface finishing technology, make sure a high light reflectivity and no light shadow. Its effective beam range is about 1,500meters.
- Use of the latest high capacity lithium-iron battery with long service life improves reliability and eliminates ' memory ' affect. The strobe light can use as signal communication and personal indicator to identify the position of the workers.
- The body of the searchlight has treated with anodic oxidation technology. The flashlight is portable, also carried by the shoulder strap.
- The high strength aluminium alloy body can stand harsh impact. It is well sealed to IP67.
- It has battery status indication function, Operator can check the battery status at any time. The recharging is controlled by chip with quick recharging, over charged protection, short circuit protection and battery recharge level indication etc.

### Main specification

Specification			Unit	BW7101
Rated Voltage			VDC	12
Charging Voltage			VAC	100-240
Rated Capacity			Ah	4.4
Light source	Working Voltage		VDC	12
	Current	High Light	A	0.9
		Working Light		0.35
	Light output	High Light	lm	975
		Working Light		465
	Avertage Service Life		h	100,000
Runtime	High Light		h	8
	Working Light			16
	Frequency Light			20
Recharging Time			h	8
Battery Recharge Cycle			Time	1,000
Dimension	Length		mm	191
	Diameter φ			68.5
Net Weight			Kg	0.8

## BW7300A, BW7300B LED Explosion proof Flashlight

### LED



Ex Code: Ex d IIC T6  
Standard: GB3836.1, GB3836.2  
IEC60079-1:2007,MOD



### Application

1. It is applicable to mobile lighting in Zone 1 and Zone 2 explosive and flammable places.
2. This product is used in the fields of electric power, fire fighting, petrol, petrochemical, metallurgy, etc. It can also be used for signal communication and personal indicator to identify the position of the workers.

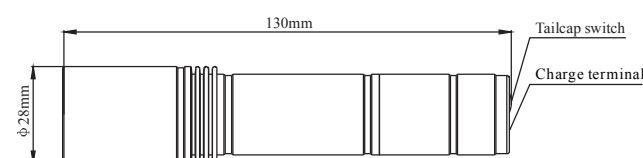
### Characteristics

- It adopts CREE LED light source. BW7300A's effective beam range is 130meters. Its flashing beam can reach 6,000meters.
- It is sealed to Ip67, water proof to 1 meter. Powered by lithium battery which provide a long service life and low discharge performance.
- Light mode: high, low, strobe light.
- This product has battery status indication and low battery warning function. Operator can check the battery status at any time. Towards the end of discharge, the beam flashes off repeatedly, warning recharging is required.
- The flashlight can also fixed onto the helmet by the buckle. Its light beam angle is adjustable.
- The flashlight is supplied with a short strap. And it is designed for easy storage in pocket.
- The recharging and discharging is controlled by the chip with multiple protection.

### Main specification

Specification	Unit	BW7300A	BW7300B
Rated Voltage	VDC	3.7	3.7
Charging Voltage	VAC	100-240	100-240
Rated Power	W	3	1
Rated Capacity Of Battery	Ah	2.2	2.2
Light Output (high/low)	lm	290 / 105	170 / 75
Effective Beam Range	m	200	120
Runtime (high)	h	4	8
Runtime (low)	h	10	18
Recharging Time	h	6	6
Service Life	h	100,000	100,000
Dimension	mm	φ 28×130	φ 28×130
Net Weight	g	125	125

### Drawing of dimension (Dimensions in mm)



## BW7500A, BW7500B, BW7500C LED Explosion Proof Flashlight

### LED



Ex Code: Ex d IIC T6  
Standard: GB3836.1, GB3836.2  
IEC60079-1:2007,MOD



### Application

It is ideal for the night work tasks in explosive area such as fire fighting, gas station, power station, chemical industrial, police, inspection and some other high stress environment.

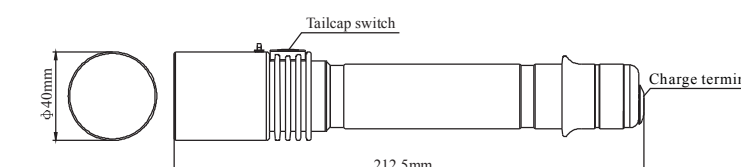
### Characteristics

- It adopts CREE LED light source with high efficiency. BW7500A's effect beam range can reach 700meters. High intensity light and low intensity light are switchable.
- This product has battery status indication and low battery warning function. Operator can check the battery status at any time. Towards the end of discharge, the beam flashes off repeatedly, warning recharging is required.
- It is sealed to IP67, water proof to 1 meter. Powered by lithium battery which provide a long service life and low discharge performance.
- The flashlight surface adopts anti skidding treatment. Easy to carry.
- The charging, discharging, constant current controlled by the chip with multiple protection.

### Main specification

Specification	Unit	BW7500A	BW7500B	BW7500C
Rated Voltage	V	3.7	3.7	3.7
Charging Voltage	V	100-240	100-240	100-240
Rated Power	W	5	3	1
Rated Capacity Of Battery	mAh	4,400	4,400	4,400
Light Output (high)	lm	432	285	149
Light Output (low)	lm	250	130	70
Effective Beam Range	m	400	250	150
Runtime (high)	h	3	6	12
Runtime (low)	h	10	10	20
Recharge Time	h	8-10	8-10	8-10
Service Life Of Bulb	h	100,000	100,000	100,000
Battery Recharge Cycle	Times	≈1,000	≈1,000	≈1,000
Dimension	mm	φ 40×210	φ 40×210	φ 40×210
Net Weight	Kg	0.3	0.3	0.3

### Drawing of dimension (Dimensions in mm)



Tailcap switch



LED light source(CREE)



Charger



Portable



Tail switch



Package



Angle adjustable buckle



LED light source(CREE)



Charger