



Generation II LED Tunnel Lights



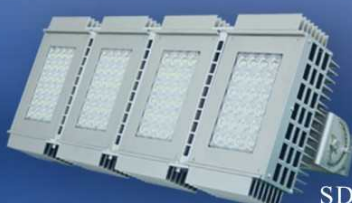
The second leap of Bang-Bell tunnel lights **LED TUNNEL LIGHT II**

— The Tunnel Lighting Complete Solution

Under the same brightness, can save power more than 80%



SD48



SD96



SD144

正坑隧道

SHENZHEN BANG-BELL ELECTRONICS CO., LTD.



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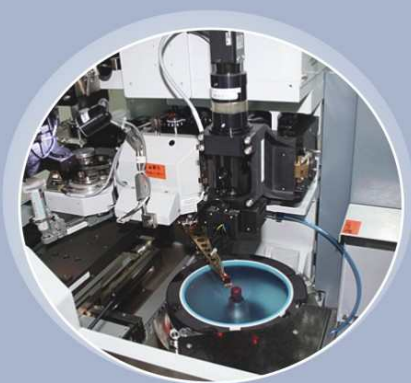


The member of the China Semiconductor Lighting Technology Standard Workgroup

Company Profile

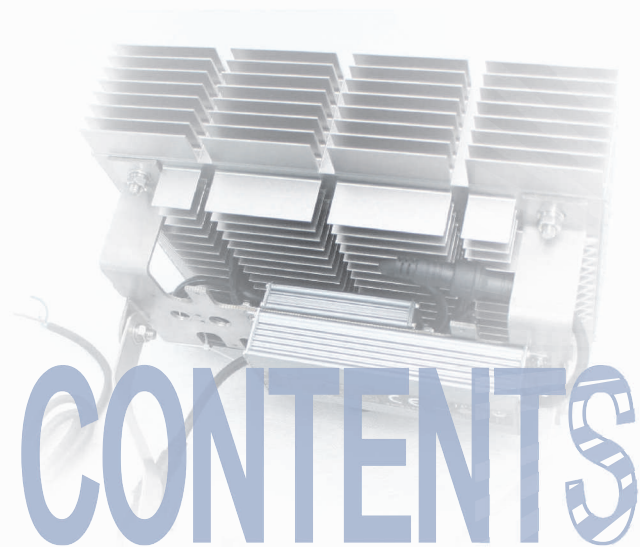
Shenzhen Bang-Bell Electronics Co., Ltd., We are one of the Shenzhen Hi-Tech enterprises, engaged in developing and manufacturing LED products since 1992. Now our products have sold to hundreds of countries or areas of five continents all over the world. Most of products have passed the UL and CE approvals. There are some optical, electrical, thermal and structural experts compose a powerful LED application products research & development team. We have invested tens of millions of dollars to build the fully automated LED packaging assembly lines. Through the exact Optical and Thermal design, our product and technology are in the leading level of the international LED industry.

Under the ISO9001:2000 quality management system, we are now at a stage of rapid development. We will take developing green urban lighting, building a harmonious society as our responsibility, work together with the people from the same industry, to create the Green Lighting storm.



In today's world, the gradual depletion of energy and the gradually deteriorated of environment is become a great challenge of us. LED is the most Green Lighting Source in 21 century, which is the criterion of the Energy saving and Environment protection. Most of country in the world has use policy and rule to map out the spread plan. A revolutionary war in the lighting field is coming.

In the past five years, we have invested a tremendous amount of manpower and resources. Committed to developing a new generation of semiconductor LED lighting products, these products have been published right now. They need only 20% of the power consumption of traditional bulbs, which can generate 80lm/w and has super long life up to 50,000 hours, also 10 times brightness than the traditional light bulb. Now, all this is no longer inconceivable, in our efforts, it has become a reality.

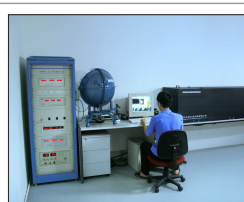


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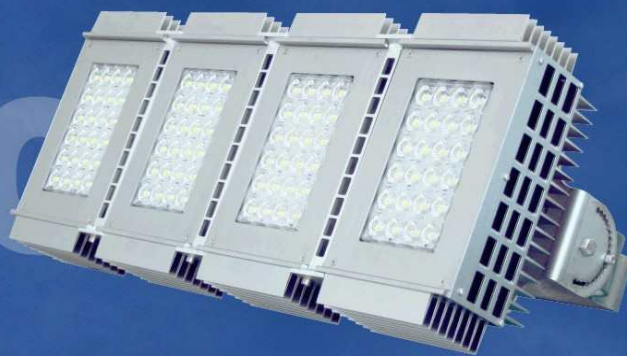
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introduce

Generation II

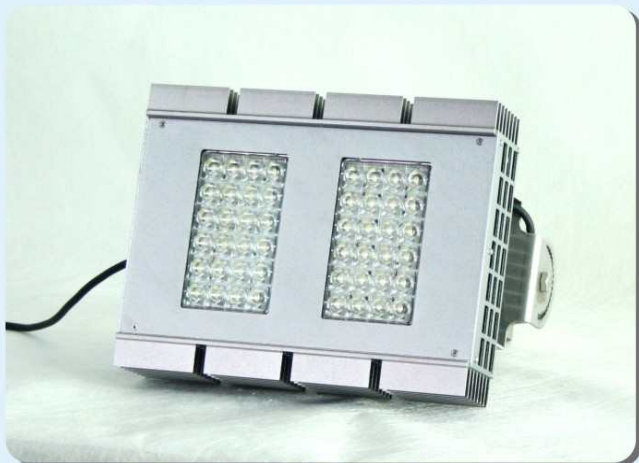
LED Tunnel Lights



The second leap of Bang-Bell tunnel lights

Three swords, Bang-Bell who in 2007 developed the first generation of LED tunnel lights, from the green of the LED lighting extends to new areas of tunnel lighting. In

2009, Bang-Bell once again demonstrated its strong research and development and successfully launches the second-generation LED tunnel lights. Compared with the first generation, the new tunnel lights have a qualitative leap in all aspects and to promote LED tunnel lighting another technological leap.



Three Advantages of BBE LED

I. Super-rate high-power LED to replace the traditional light source, green, energy efficient, it is green, environmental protection and energy efficiency;

II. Rectangular beam pattern design, realized high intensity, high uniformity and eliminate glare;

III. Slide-shell heat dispatching design , long life, easy to maintain.



We always insist on hard exploration, with persistent pursuit and innovative spirit, extraordinary refined design concepts, constantly surpassing ourselves; we developed the prominent quality and excellence extraordinary performance, bringing you a new lighting experience.

SD 144 LED SD96 LED



- LED Tunnel Light, Saving Energy and Money!
- Saving up to 80% Energy than the traditional light sources!
- Every lamp can save USD 4,500 in 10 years!
- 100,000 lamps can save USD 450,000,000 in ten years!

Application

The LED light may be installed in variety of applications like-any kind of **Tunnels, Toll Gates, Elevated bridge, Square, Playing field/area, advertise-ment/billboards & building lighting etc.** Please contact us for any special illumination requirements.



Featured Functions

1. Adopt High-efficiency light source, with professional optical lens design, successfully implement rectangular light beam pattern, with super-light intensity angle, high illumination, high-uniformity, non-glare light effect.
2. Parallel ventilated fin design Radiator, rationally use natural wind environment, so that LED light fixture to achieve the ultimate cooling performance
3. Use of efficient external power supply, a complete solution to the cooling problem of power supply, and further improve the performance and reliability of the lamp and expanding life expectancy.
4. Convenient to adjust the Lighting angle, adjustable fixed-pitch bolts make it easier to install and reconstruct.
5. Modular design Light and maintenance easy; with efficient external power supply, abandon internal heat source, so that lamps stable performance, long service life.
6. The perfect waterproof structure design, so that water levels to achieve IP65, completely solve the problem of water proof.
7. Support intelligent control, can be extended to intelligent control lighting system.
8. Has a lot of invention patents and utility model patents.

Technical Parameters

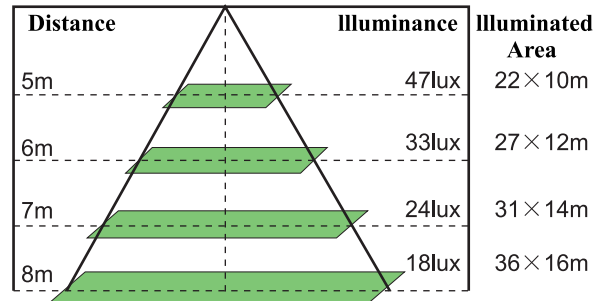
Item	Mode	SD48	SD96	SD144
Input Voltage		100 - 240VAC		
Frequency Range		50 - 60 Hz		
Power Factor		> 0.95		
Total Harmonic Distortion(THD)		< 15%		
Power Efficiency		≥ 90%		
LED Working Voltage		48 VDC		
LED Consumption		50W	100W	150W
Total Power Consumption		60W	120W	180W
LED Luminous Efficiency		≥ 100 lm/w		
LED Initial Flux		5,000 lm (Tj=25℃)	10,000 lm (Tj=25℃)	15,000 lm (Tj=25℃)
LED Maintain Flux		4,800 lm (Tj=60℃ ,Ta=25℃)	9,600 lm (Tj=60℃ ,Ta=25℃)	14,400 lm (Tj=60℃ ,Ta=25℃)
Lamp's Flux		4,600 lm (Tj=60℃ ,Ta=25℃)	9,400 lm (Tj=60℃ ,Ta=25℃)	14,200 lm (Tj=60℃ ,Ta=25℃)
Lamp's Efficiency(%)		>90 %		
Light fixture Luminous Efficiency(lm/w)		70lm/w		
IIIumination(E)		(height=5 m): ≥ 47 LUX (height=6 m): ≥ 33 LUX (height=7 m): ≥ 24 LUX (height=8 m): ≥ 18 LUX	(height=5 m): ≥ 89 LUX (height=6 m): ≥ 61 LUX (height=7 m): ≥ 45 LUX (height=8 m): ≥ 34 LUX	(height=5 m): ≥ 130LUX (height=6 m): ≥ 90 LUX (height=7 m): ≥ 65 LUX (height=8 m): ≥ 50 LUX
Effective Illuminated Area		(height=5 m): 22×10 m (height=6 m): 27×12 m (height=7 m): 31×14 m (height=8 m): 36×16 m		
Color Temperature(CCT)		PureWhite: 5 , 000 ~ 7 , 000 K, WarmWhite:3 , 000 ~ 4 , 000K		
Color Index(CRI)		> 65		
Light Source		BBE Emitter (1 Watt)		
Light Distribution Curve/Beam Pattern		Asymmetric(Bat Wing)/Rectangular Beam		
The Maximum Light Intensity Angle		The Horizontal Axis: 130℃ , The Vertical Axis: 45°		
Light Beam Angle		The Horizontal Axis: 140°, The Vertical Axis: 60°		
Junction Temperature(Tj)		60 ℃ ± 1 0% (Ta= 25℃)		
System Resistance(Rja)		0.40℃/ W	0.23℃/ W	0.16℃/ W
Working Temperature		- 30 ℃~ 50℃		
Working Humidity		10 % ~ 90 % RH		
Storage Temperature		10 ℃~ 85 ℃		
Working Life		>50,000 Hrs		
Light Body & Lampshade Material		Aluminum Alloy and PC		
Dimensions(mm)		320x320x250mm	600x320x250mm	910x345x250mm
Net Weight(includes accessories)		9.2kg	15kg	20kg
IP Rating		IP 65		
(For detail spec., please refer to the specification)				

Photometric Performance

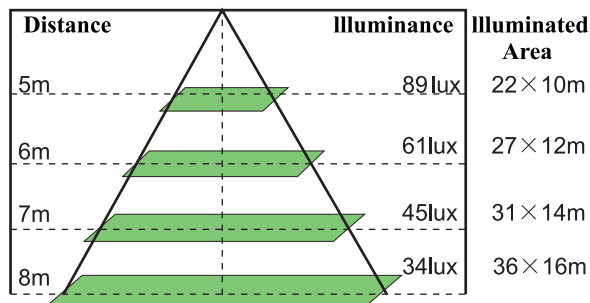
Bat-wing beam pattern of the distribution curve, also can be changed by different section's demand. Rationally control the distribution to be a rectangular beam pattern. When the installation height=6m, the beam pattern is 20×8 rectangular, and the radiation-efficiency is more than 70% in the effective region, the total transparency is more than 90%, the greatest extent possible to reduce the loss of light, the LED light has been fully utilized. The illumination uniformity is very good in the effective irradiation region, even better than 0.7, higher than the highest grades of 0.4 of the state road's standards. The edge of the beam pattern is very clear and slide, no adverse glare out of the effective radiation region, will not cause any light pollution, it is an idea cut-lighting lamp. Satisfy the requirements of the road lighting or other special lighting, which can be widely used in the special requirements such as street lighting, advertising lighting, etc.; it is a green, energy-saving, environmentally friendly lighting product.

I 、 Illuminance Distribution at different heights

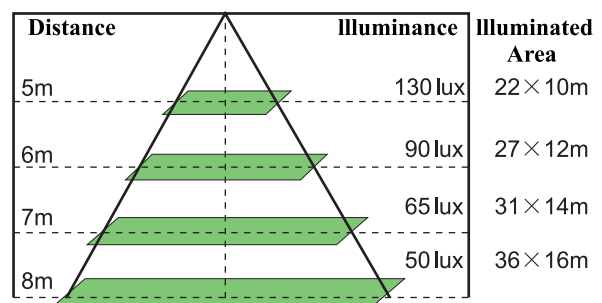
SD48 Illuminance Distribution



SD 96 Illuminance Distribution

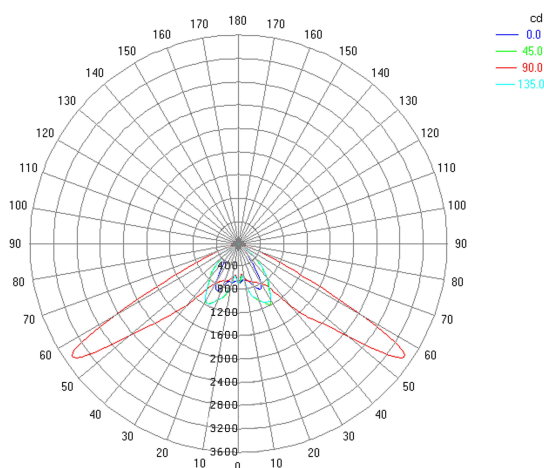


SD 144 Illuminance Distribution

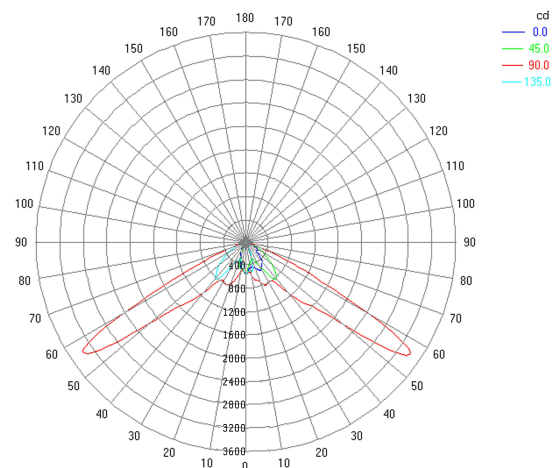


II 、 Distribution Curve Flux Map

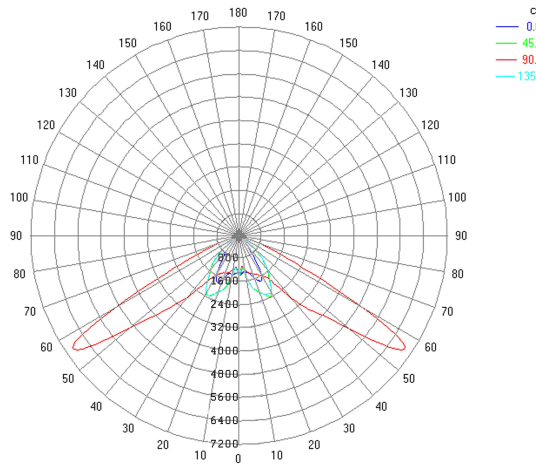
◆ Lamp's Plane Installation(SD48)



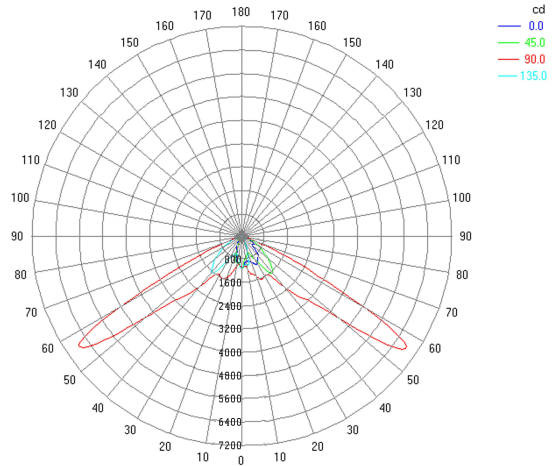
◆ Lamp's Inclined Installation(SD48)



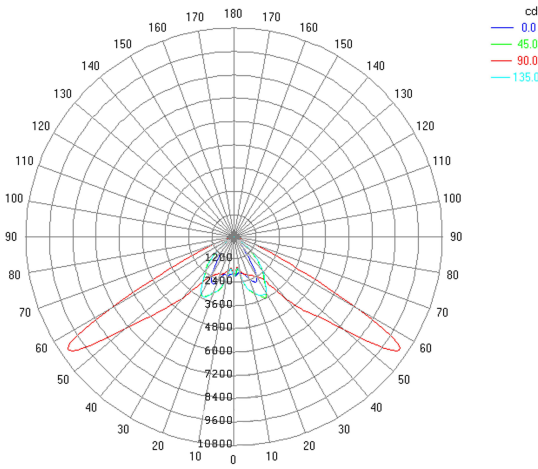
Lamp's Plane Installation(SD96)



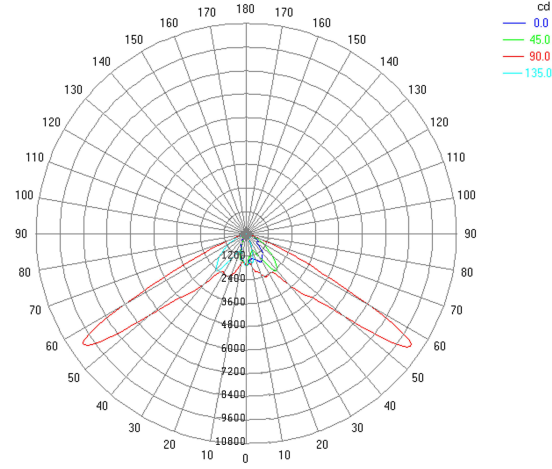
Lamp's Inclined Installation(SD96)



Lamp's Plane Installation(SD144)

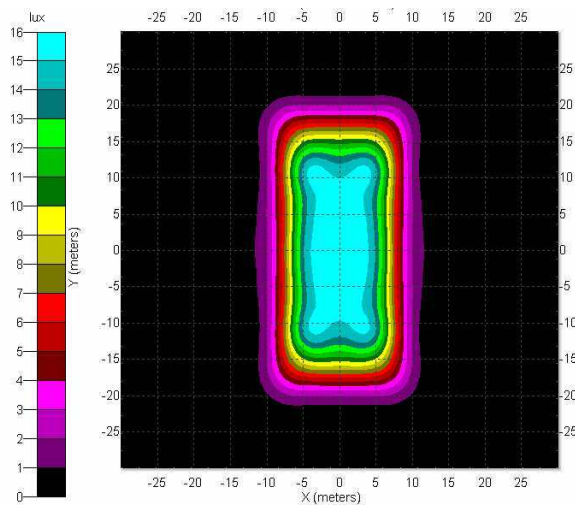


Lamp's Inclined Installation(SD144)

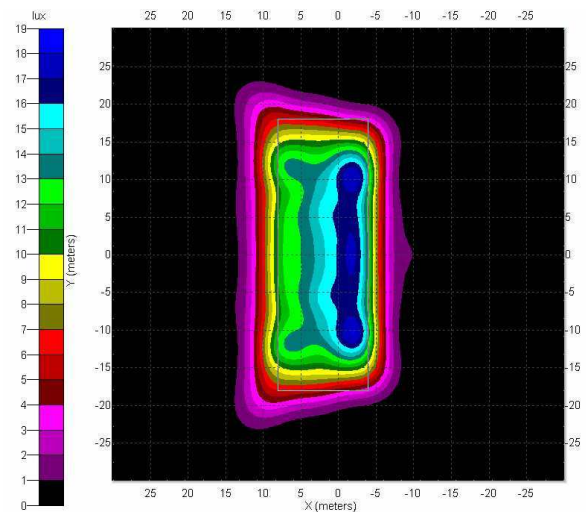


III、Plane Equal Illuminance Distribution Map

Lamp's Plane Installation

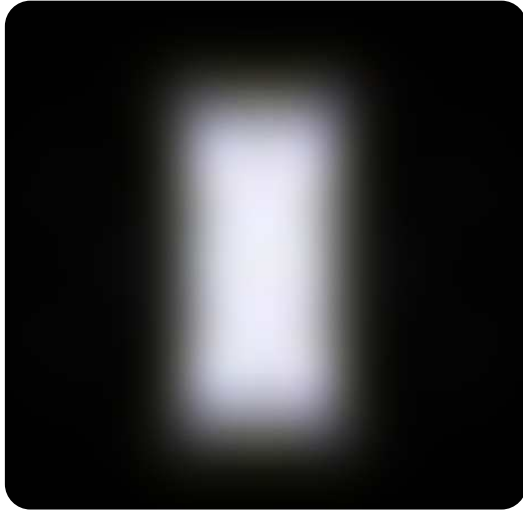


Lamp's Inclined Installation

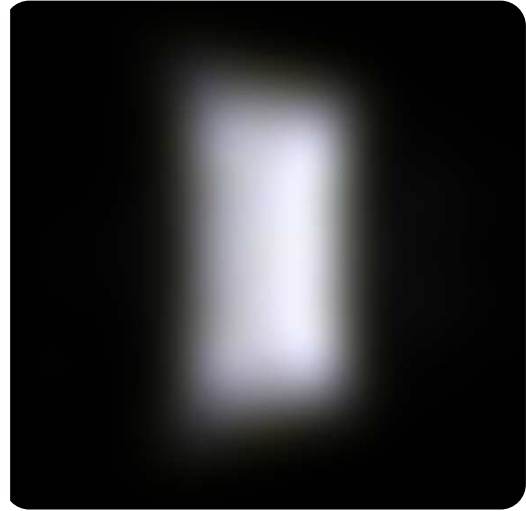


IV、Actual Lighting Effects (Beam Pattern)

◆ Lamp's Plane Installation



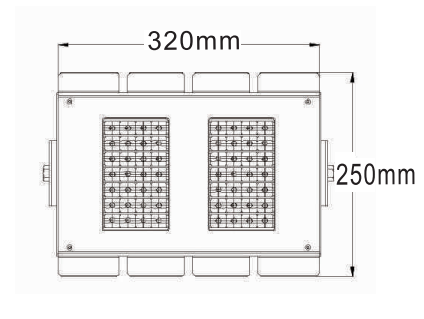
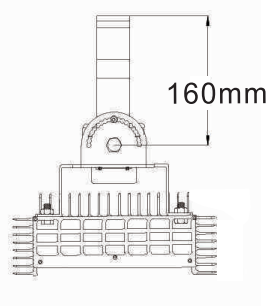
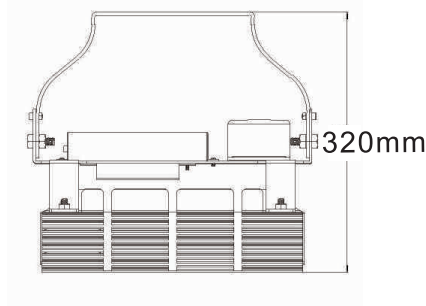
◆ Lamp's Inclined Installation



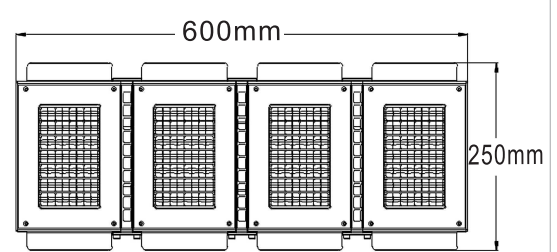
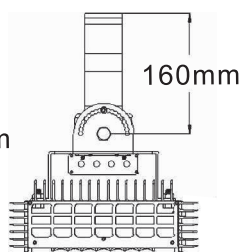
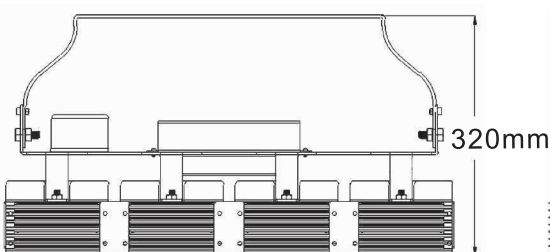
The Beam pattern is rectangular (rectangle), illumination uniformity, and the difference of brightness is very little between the spot of center and periphery. It is in the direction of the road extension, fully consistent with the road for the extended, reached the ideal road lighting effects. It is the ideal lighting lamps for Tunnel Illuminance.

Dimension Specification

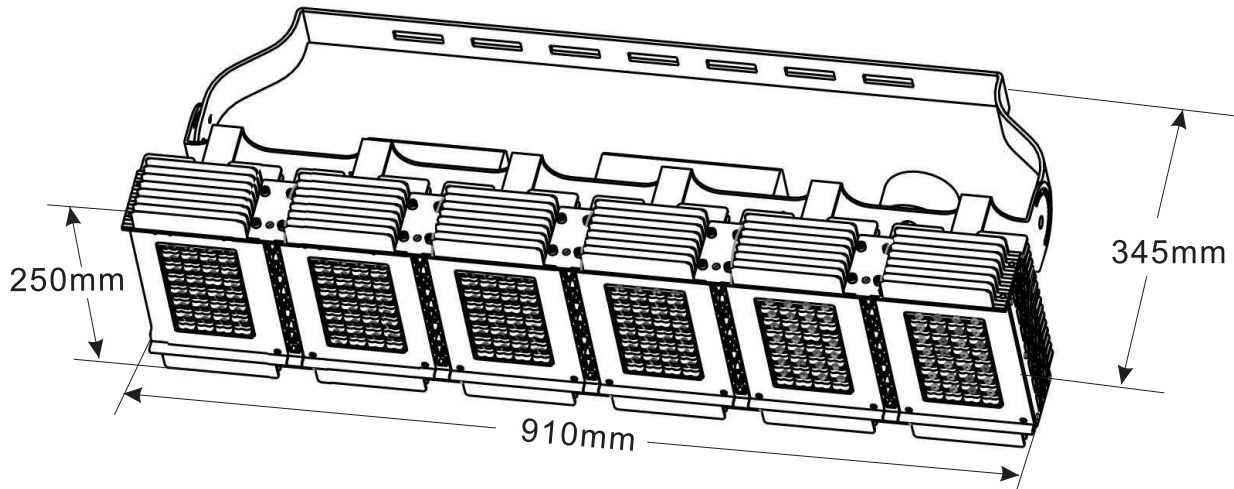
(1) SD48 dimension: 320×320×250mm.



(2) SD96 dimension: 600×320×250mm.



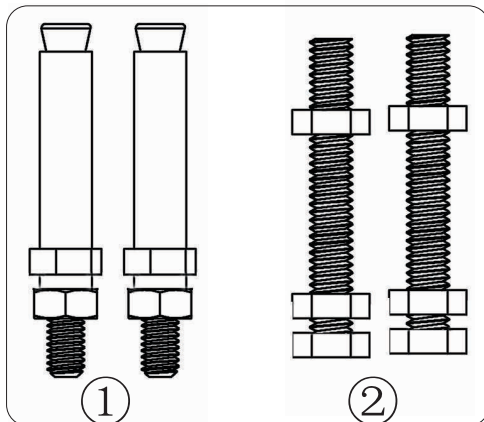
(3) SD144 dimension: 910×345×250mm.



Installation Manual

◆ I 、 Options for Lamp Accessories

Options for tap bolt

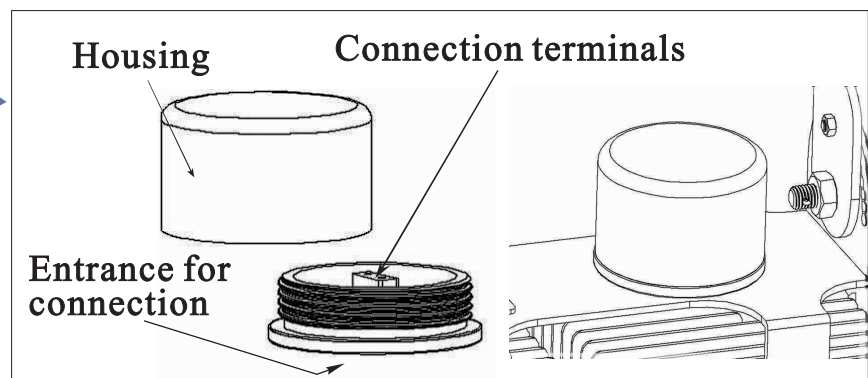


①Expansion Bolts: Apply to fixing Light on the wall

②M12*18 Bolts: Apply to fixing light on metallic bracket

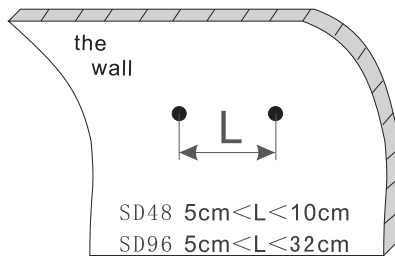
Options for Junction boxOptional

Junctional Boxes may be used for specific installation requirement. Please refer the connection method as detailed.

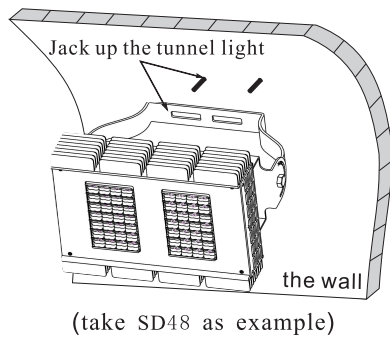


II. Installation of SD48, SD96

- A1** Punch in the wall as L size shown on the right and Lock M8 Expansion Bolts.

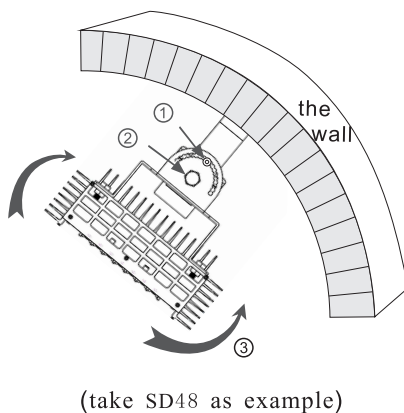


- A2** Take out the light and adjust the bracket, fix the expansion bolt in the installation hole with a spring, screw and lock it.

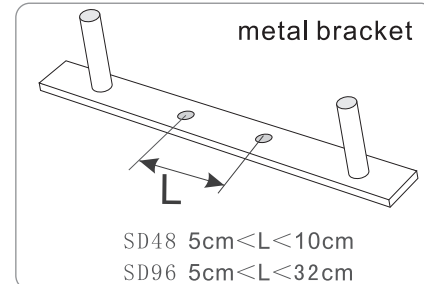


- A3** Angle adjustment

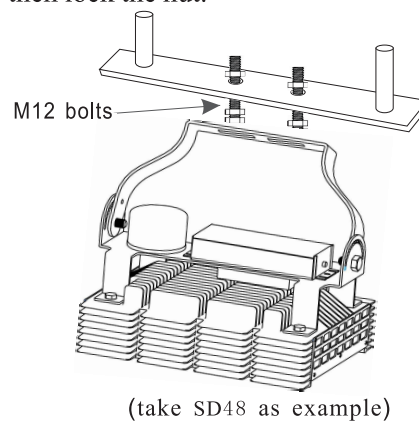
- ① Jack up lamp, loosen the adjustable bolt
- ② Loosen bolts, turn the lamp body
- ③ If need to adjust the angle, lock the nuts.



- B1** Punch a hole in the metal bracket as L size shown by left.

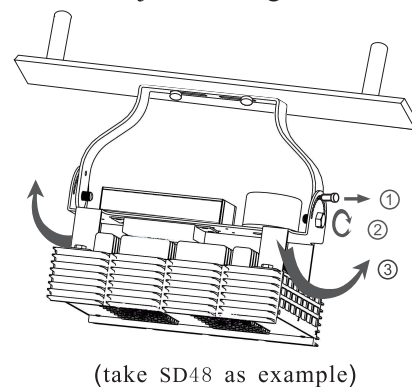


- B2** Penetrate M12 bolts from the fixed-hole of the bracket bolts to connected with metal bracket and then put on string gasket and plain gasket, then lock the nut.



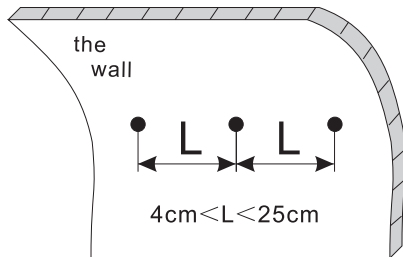
- B3** Angle adjustment

- ① Jack up lamp, loosen the adjustable bolt
- ② Loosen bolts, turn the lamp body
- ③ If need to adjust the angle, lock the nuts.

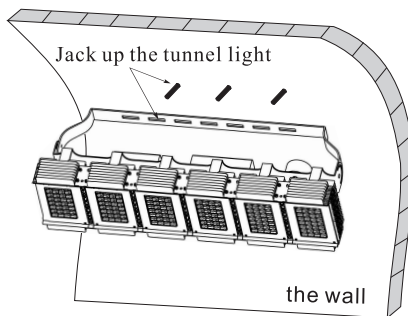


◆ III. Installation of SD144

- A1** Punch in the wall as L size shown on the right and Lock M8 Expansion Bolts.

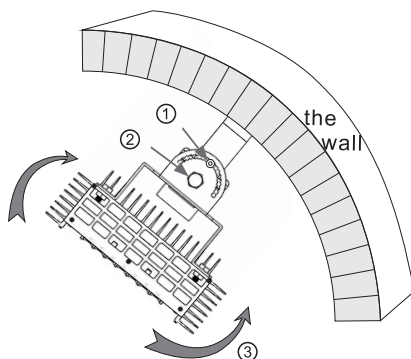


- A2** Take out the light and adjust the bracket, fix the expansion bolt in the installation hole with a spring, screw and lock it.

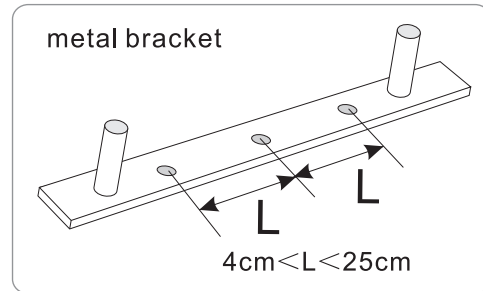


- A3** Angle adjustment

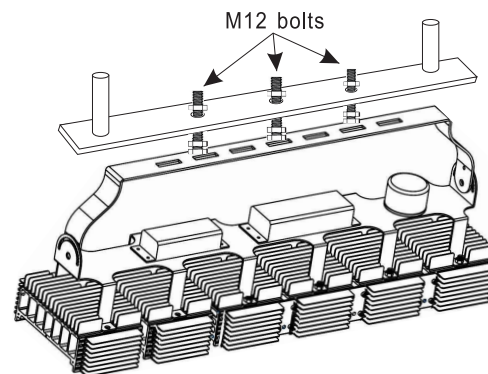
- ① Jack up lamp, loosen the adjustable bolt
- ② Loosen bolts, turn the lamp body
- ③ If need to adjust the angle, lock the nuts.



- B1** Punch a hole in the metal bracket as L size shown by left.

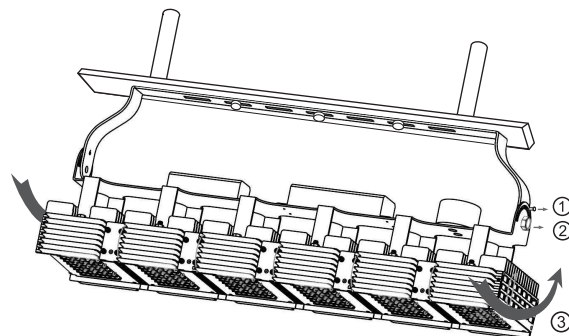


- B2** Penetrate M12 bolts from the fixed-hole of the bracket bolts to connected with metal bracket and then put on string gasket and plain gasket, then lock the nut.



- B3** Angle adjustment

- ① Jack up lamp, loosen the adjustable bolt
- ② Loosen bolts, turn the lamp body
- ③ If need to adjust the angle, lock the nuts.

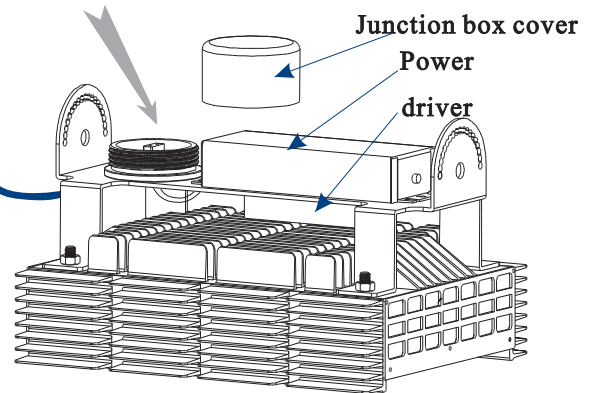
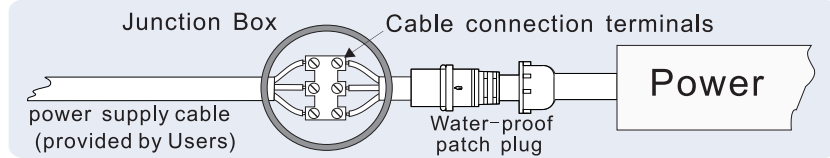


IV. Connection method



A. Usage of junction box

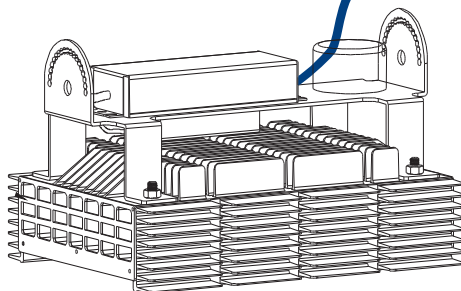
Live wire
Null line
Earth line



Demount the junction box cover, The power input line put through the bottom of the junction box, the same color ca-bles correspondingly connect to the cable connection terminals, and finally lock the screw.

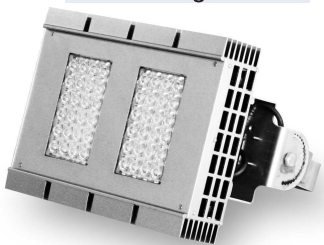


B. No usage of junction box



When the junction box is not needed, please unplug the power cable access, and connect with external cable. Then insulate and waterproof the connection. Check and switch on the power to finally light can work.

Tunnel Light SD48



Tunnel Light SD96



Tunnel Light SD144



Troubleshooting Methods, Maintenance

I、Troubleshooting Methods

Fault	Possible Reasons	Troubleshooting Methods
All the LED can not Light on	The power cord is not well connected	Plug again.If the LED is not bright, please place the power supply
LED Flashing	Malfunction of the powerSupply.	Please change the power supply.
One of the LED Modules is darker or not light on	One of Power supply broken	Please change the power supply.
Few individual LED not Light on or dark	LED was broken	Please replace the same type of LED

Only trained and experience personnel should undertake installation and start up. Please read the installation manual prior installation. The company holds no responsibility for damages and accidents caused due to failure to adhere to the operating procedure, attentions and warnings.

II、Maintenance and Repairing

In order to ensure the normal use of lights, enhance light flux rate, you should map out the maintain plans, clean the lamp regularly, cleaning period should be determined according to the local environment and climate.

Product packaging

Model	Q'ty(pcs)	N.W.(kg)	G.W.(kg)	Dimension(mm)	Volume (m ³)
SD48	1	9.2kg	10kg	420×340×275	0.039
SD96	1	15kg	16kg	675×340×275	0.063
SD144	1	20kg	21kg	990×340×295	0.099

Let our LED green light source illuminate the world,
brighten the future, bring a new lighting experience for you!

BBE put Energy revolution "Energy saving and consumption reducing" as target, response to the "Energy saving and reduce emissions" of our country as call, keep operating high-tech green light source as the spirit, create benefit for human as purpose. Our new generation LED green illumination product is the leader of the LED Field.

Our Goal: "Let the serious pollution of lighting source and power station far away from our world; give back a green and cleaning earth to us".

Our Call: "Operating green city light source, establish a saving harmonious society".

Our Service: "Where is our product, there is our service".

Our Tenet: "People-oriented technology".

BBE-LED Tunnel Light

BBE-LED street light

BBE-LED illumination light source



RoHS



Our Pride

The world's first patented technology **BBE - LED**, It is the world's Most advanced optical technology and all kinds of excellent performances, it is remarkable, under saving and reducing consumption, we even pay more attention to the spirit of "people-oriented technology", as "technology illumination, green illumination" for new idea to promote energy revolution and illumination revolution of victory wave in 21c. it will become mainstream in the world's light source. **BBE-LED**, this energy saving ships which full of our passion goes forward to every corner of the world with fast speed.





Operating the City Green Lighting ■ Building the Harmonious Society

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