

DMX HIGH POWER LED STREETLIGHT MANUAL

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Road Lighting Complete Solution
Under the same brightness, can save power more than 80%

DMX TECNOLOGIAS SA DE CV

Number One in High Power LED Streetlights in Latin America and European Markets

DMX Tecnologias SA de CV is a high tech enterprise that is involved in developing, manufacturing and distributing on large scale LED products like LED Displays, LED lamps and high power LED streetlights. Located in Mexico City, Monterrey Mexico, China and Hong Kong, our products are sold in over 80 countries and 5 continents all over the world.

Most of our products have passed the UL and CE approvals. We have invested tens of millions of dollars in research and development of our high power LED streetlights and also fully automated LED packing assembly lines. Through the exact Optical and Thermal design, our products 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 people from the same industry, to create the Green Lighting Storm.



In today's world, the gradual depletion and the gradually deteriorated environment is becoming a great challenge for us. LED lights are the most Green Lighting Source in the 21st century, which is the criterion of the Energy Saving and environmental protection. Most of the countries in the world use policies and rules to map out the wide spread plan. A revolutionary war in the lighting field is coming up.

In the past three 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 light bulbs, which can generate 80 lumens/watt and has super long life, upto 50,000 hours and more, also 10 times more brightness than the traditional light bulb. Now, all this is no longer inconceivable, in our efforts, it has become reality.

Let's Light The World and Light your Future with Green LED Light, Bring you Fresh Illumination Experience!

DMX Tecnologias takes "Save Energy, Reduce Consumption" as our responsibility to answer the government's call of "save energy, reduce release". Engage in the high-tech green light, work for the well-being of the people. The new generation LED green light has been in the leading position to this industry!

Our Target: Make the serious pollution made by the conventional light and the power plant disappear to repay our green and clear world.

Our Slogan: "Build green cities, and create an abstemious and harmonious society!"

Our Service: Wherever our products were sold, there you will have our service.

Our Tenet: "Technology works for the people".



Our Pride

Our LED light products of DMX Tecnologias are global originated products with patents, it characterizes universal advanced photometric technology and other excellent features. Achieving distinction, saving energy, and reducing power consumption. In the meantime we pay great attention to the spirit of "Technology works for the people". Promoting the successful wave of energy and the illuminative revolution in the 21st century by the new concept of "Technological and Green Illumination". And it will be the global lighting mainstream. DMX Tecnologias will sail to every corner of the world with great passion and rapidly like a giant warship!



DMX LED Streetlights - DMX LED Tunnel Lamps - DMX LED Illumination Light Source



Catalogue DMX High Power LED Streetlights and Street Lamps



High Power LED Integrated Streetlights Model LU2/LU4/LU6

Product Brief Introduction	1-2
Functions and Features	3-5
Technical Parameters	6
Photometric Performance	7-8
Application Projects Display	9-10
Integrated High Power LED Streetlight Installation Method	11-12
Common Installation (Recommended) and Illumination Contrast	13
Troubleshooting Methods and Maintenance Guide	14
Product Packaging	14

High Power LED Streetlight Model SP90

Product Brief Introduction	15
Functions and Features	16-17
Technical Parameters	18
Photometric Performance	19-20
Application Projects Display	21
Installation Method	22
Maintenance and Troubleshooting Methods	23
Product Packaging	23

High Power LED Streetlight Additional Information

Comparison Analysis between DMX LED Streetlight and Traditional Streetlight Lighting Sources	24-28
LED Streetlight Cost Benefit Analysis	29-30
LED Streetlight Project Display	31-32
LED Streetlight's Contribution of Reducing Energy Consumption and Protecting the Environment	33

Introduction

Product Brief Introduction

DMX Technologies High Power LED Streetlights, The Way Light Connects!

After tireless efforts and struggles, we have finally developed a world leading High Power LED Streetlight. This indicated that the prevalence of LED lighting times has arrived.

DMX High Power LED Streetlights comes with 3 revolutionary and innovative technologies which will be creating a new era of LED Lights!

- ▶ Super rate high power LED to replace the traditional light source. Green energy efficient, it is green environmental protection and energy efficient.
- ▶ Rectangular beam pattern design, realized high intensity, high uniformity and eliminate glare.
- ▶ Module integrated design, long life, easy to maintain.



DMX LED Streetlights, with rich revolutionary and creative ideas, is the perfect combination of rechnology, creativity and light. Let the DMX LED release the maximum brightness; Design for road and street lighting, it is a total subversion of the traditional concept of road and street lighting. Creating a new concept of road lighting, guiding the new road lighting trends, it is an epoch-making milestone in the road lighting field. It must rise a rapturous revolution in the LED lighting industry... DMX LED Streetlights!

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.

LU2



LU4



LU6





- **DMX LED Streetlights save energy and expenses**
- **Save more than 80% power consumption than traditional streetlights**
- **Each DMX LED Streetlight saves \$5,237.82 USD per 10 years**
- **100,000 DMX Streetlights will save \$523.78 million USD in 10 years**

With generous appearance, novel and unique, DMX Integrated LED Streetlights LU2, LU4, and LU6 was designed for the road lighting demand and fully meet the special requirements of road lighting. This product adopts the High Power LED as the light source, using dozens of DMX Emmitter high power 1 watt LED. With the world's leading optical allocation, advanced thermal structural and circuit design, it is a highly cost -effective product.

Application concourse

Apply to install: expressway, highway, roads, sub-roads, ramps roads, residential areas, sidewalk lighting, squares, and sports fields..

DMX LED Streetlights adopt the high reliability eutectic welding DMX LED packaging process, the thermal conductivity, thermal expansion, and mechanical soundness standard is higher than the ordinary silver epoxy packaging.

Excellent heat dissipation design, LED function temperature can be controlled in an ideal temperature ($T_J < 60^\circ\text{C}$). Fully guarantees the long life of the LED. High power factor and low harmonic distortion reduce the power loss on transmission lines. Avoids the high frequency interference contamination on the public power networks. Lampshade (lens) using engineering plastics PC, with resisting acid corrosion, smoke corrosion, ultraviolet aging characteristics.

DMX High Power LED Streetlights - LU2/LU4/LU6

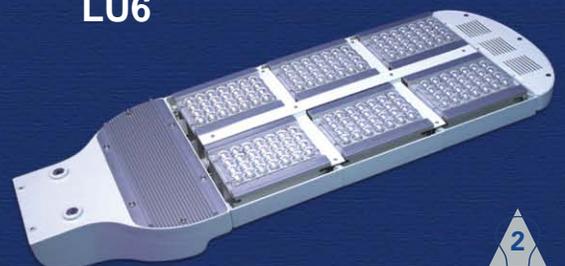
LU2



LU4



LU6



Functions and Features

1 Revolutionary Photometric Design

The world's first dedicated optical system (rectangular beam focusing lens). Reasonable control of the light distribution, spot rectangular beam pattern, and ensure an ideal uniformity of brightness on the road surface;

2 Unique Integrated Lens and Lampshade Design

Array Lens play a protective and spot light role, avoid wasteful duplication of light and reduce the loss of light, also reduce the weight of the product and enable simplified structure;

3 Creative Design of the Radiator and Lamp holder Integration

Fully protect LED life and heat dissipation requirements, satisfied with the structure and design of LED Lights fundamentally, with the most distinctive features of LED Lights(see attached picture);

4 Unique Thermal slide-shell design, disassembled with simple and convenient combination

Slide lights with composite shells, the installation forms dynamic, simple and convenient combination lamps. Easy for dismantle and maintenance, save costs and the job has become much easier;

5 Ethereal Appearance

Reduce wind resistance and weight efficiently, lighten the pressure of the lamp pole to ensure safety;

6 Intelligent Current Control

Each LED module can implement intelligent current control, whatever power network how to wave, it is able to achieve the precision constant current, ensure the LED can work under the secure current;

7 No Adverse Glare

Eliminate the glare caused by the adverse ordinary lights glare and visual fatigue sight interference, improve driving safety, reduce the incidence of traffic accidents, fully embodies the spirit of "People-oriented Technology" in this product;

8 No Light Pollution

Light Distribution designed for road lighting, in addition to illuminate the path and will not illuminate the road outside the region. Eliminate the interference signal by the residents of the light into the rest room;

9 No High-voltage, No Dust Adsorption

Eliminate the high-voltage adsorb the dust cause the lampshade become dark, reduce the brightness;

10 No High-temperature, No Aging Yellow Lampshade

Eliminate baking the traditional lampshade which cause aging yellow, shortened life expectancy and decrease the brightness;

11 Widest Working Voltage

The traditional sodium lights working voltage wave is over $\pm 7\%$ which will decline the life and brightness, while DMX LED Streetlights working voltage is $\pm 20\%$ wave, the life and brightness keep still;

12 Start Without Delay

Reach the normal brightness and do not have to wait when switch on, eliminate a long process of starting of the traditional street lights;

13 No Strobe Flashing

Eliminate the visual fatigue which caused by the strobe lights of the traditional street lamps;

14 Impact Resistance, Shock-proof, Without Ultraviolet (UV) and Infrared (IR) Radiation

No filament and glass frames, avoid break of the traditional lamp, without harm to the human body;

15 High Color Index, Nice Coloration

To show the true colors and more brighter;

16 Multiple Color Temperature Options

Color temperature to meet the needs of different occasions, eliminated the low color temperature of the sodium lamp which cause the hypnotic mood and high color temperature of the mercury lamp which cause the depressed mood, observers will feel more comfortable;

Functions and Features

17 Tremendous Energy Saving

Used the ultra high power, high brightness LED light source, together with the high power efficiency power supply, which can save energy 50%-80% than the conventional sodium and mercury lamps;

18 Long Life, Up To 50,000 Hours

Working for 10 hours a day, can be used for more than 13 years, is 5-10 times working life than a traditional sodium or mercury lamp;

19 Green and Environmental Protection

No lead, no mercury, no environmental pollution;

20 Universal Input Voltage

85-264VAC full voltage range constant, constant-current PWM (Pulse Width Modulation) technology, high efficiency, low-heat, high-precision constant current;

21 No Pollution to Power Network

Power factor ≥ 0.9 , THD $\leq 20\%$, EMI apply with the global universal index, reduce the power loss and transmission lines to avoid contamination of the network of high frequency interference;

22 Work Under Low-voltage and Low-Heat, Safe and Reliable

LED junction temperature can be controlled under an ideal temperature ($T_J < 60$ °C $T_a = 25$ °C ambient temperature);

23 Perfect Combination with Solar Energy

Fully exert the advantage of the LED work under low voltage and environmental work, according to the local solar energy resources, electricity and solar power can also be combined. To achieve the best cost performance and high reliability customers;

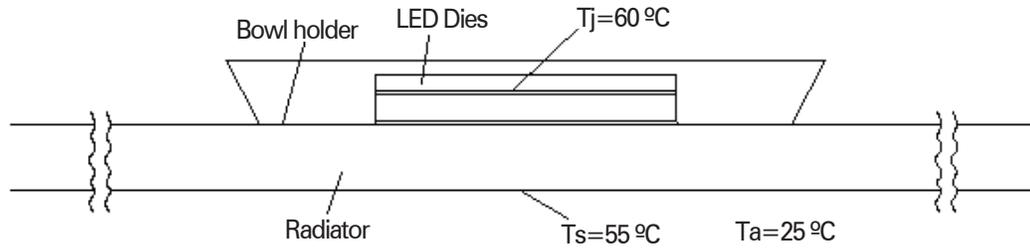
24 High Luminous Efficiency

LED luminous efficiency of the existing conditions is ≥ 65 lm/w, with the rapid increase LED brightness, when the luminous efficiency reach 150lm/w, the 400W sodium lamp will be replace by the 100W LED lamp, the luminous efficiency will reach 300lm/w eventually;

25 Have a number of patents for inventions and utility model patents.

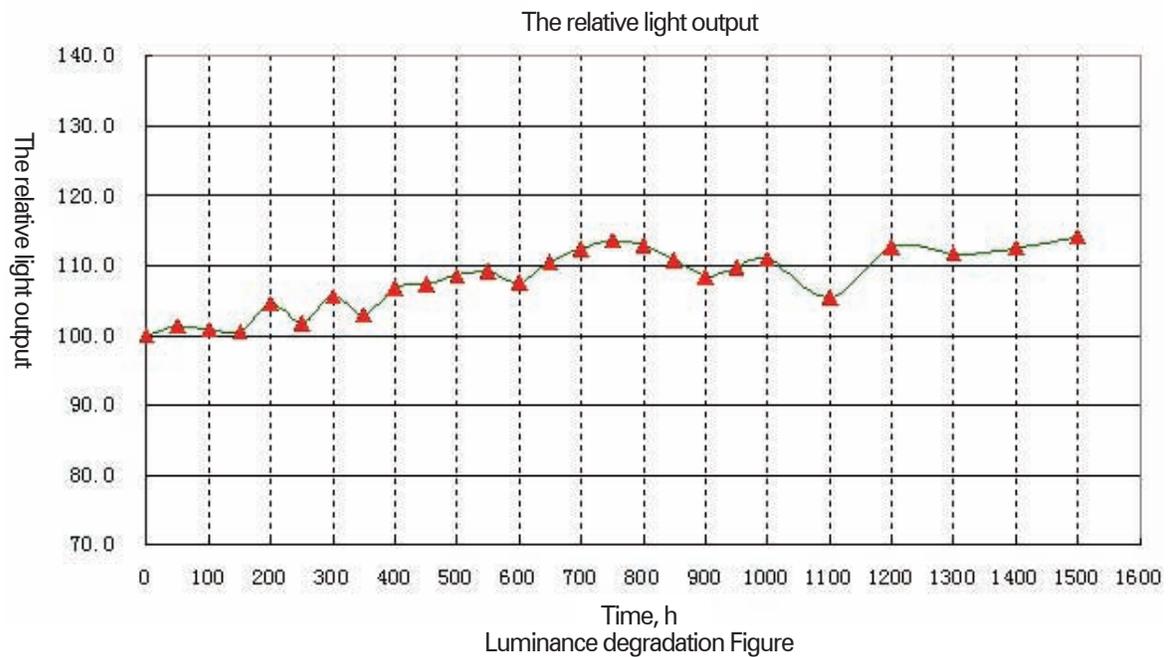
Functions and Features

Chip PN junction temperature and radiator temperature distribution



Above test data was measured by no wind conditions

1,500 hours degradation test figure



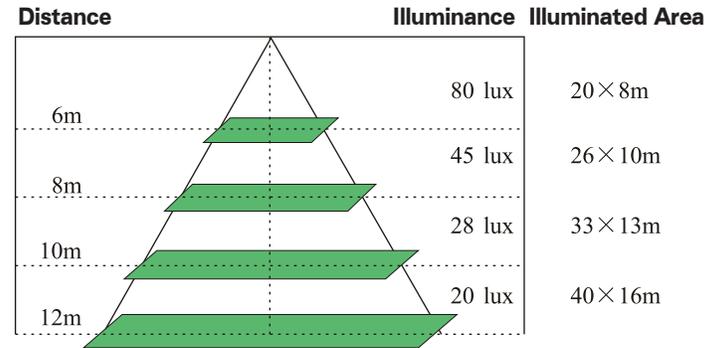
Technical Parameters

Item	LU2 Street Lights	LU4 Street Lights	LU6 Street Lights
Input Voltage	85 ~ 264 VAC		
Frequency Range	47 ~ 63 Hz		
Power Factor	> 0.9		
Total Harmonic Distortion (THD)	< 20%		
Power Efficiency	85%		
LED Working Voltage	24 VDC		
LED Consumption	56 Watt	112 Watt	168 Watt
Power Supply Consumption	10 Watt	20 Watt	30 Watt
LED Luminous Efficiency	≥ 80 lm/w		
LED Initial Flux	5,000 lm (Tj=25°C)	10,000 lm (Tj=25°C)	15,000 lm (Tj=25°C)
LED Maintain Flux	4,600 lm (Tj=60°C, Ta=25°C)	9,300 lm (Tj=60°C, Ta=25°C)	14,000 lm (Tj=60°C, Ta=25°C)
Lamp's Flux	4,200 lm (Tj=60°C, Ta=25°C)	8,400 lm (Tj=60°C, Ta=25°C)	12,600 lm (Tj=60°C, Ta=25°C)
Lamp's Efficiency (%)	> 90%		
Illumination (E)	(Height=6m): ≥26 LUX (Replaced Sodium Light of 65 LUX)	(Height=6m): ≥53 LUX (Replaced Sodium Light of 132 LUX)	(Height=6m): ≥80 LUX (Replaced Sodium Light of 200 LUX)
	(Height=8m): ≥15 LUX (Replaced Sodium Light of 38 LUX)	(Height=8m): ≥30 LUX (Replaced Sodium Light of 75 LUX)	(Height=8m): ≥45 LUX (Replaced Sodium Light of 113 LUX)
	(Height=10m): ≥9 LUX (Replaced Sodium Light of 20 LUX)	(Height=10m): ≥18 LUX (Replaced Sodium Light of 45 LUX)	(Height=10m): ≥28 LUX (Replaced Sodium Light of 70 LUX)
	(Height=12m): ≥6 LUX (Replaced Sodium Light of 15 LUX)	(Height=12m): ≥13 LUX (Replaced Sodium Light of 33 LUX)	(Height=12m): ≥20 LUX (Replaced Sodium Light of 50 LUX)
Effective Illuminated Area	(height=6m): 20 x 8m (height=10m): 33x13m (height=8m): 26 x 10m (height=12m): 40x60m		
Color Temperature (CCT)	Pure White: 5,000 ~ 7,000 K, Warm White: 3,000 ~ 4,000 K		
Color Index (CRI)	Ra > 75		
Light Source	DMX Emmiter (1 Watt)		
Light Distribution Curve/Beam Pattern	Asymetric (Bat Wing) / Rectangular Beam		
Maximum Light Intensity Angle	120°: Horizontal Axis: 110°, The Vertical Axis: 45°; 140°: The Horizontal Axis: 130°, The Vertical Axis: 45°		
Light Beam Angle	120°: Horizontal Axis: 120°, The Vertical Axis: 60°; 140°: The Horizontal Axis: 140°, The Vertical Axis: 60°		
Juntion Temperature (Tj)	60°C ± 10% (Ta=25°C)		
System Resistance (Rja)	0.56°C/W	0.28°C/W	0.19°C/W
Working Temperature	-30°C ~ 50°C		
Working Humidity	10% ~ 90% RH		
Storage Temperature	10°C ~ 85°C		
Working Life	> 50,000 Hrs		
Light Body & Lampshade Material	Aluminium Alloy and PC		
Dimensions (mm)	540(L)X315(W)X90(H)	715(L)X315(W)X90(H)	890(L)X315(W)X90(H)
Net Weight	7 Kg	10 Kg	13 Kg
IP Rating	IP65		

Photometric Performance

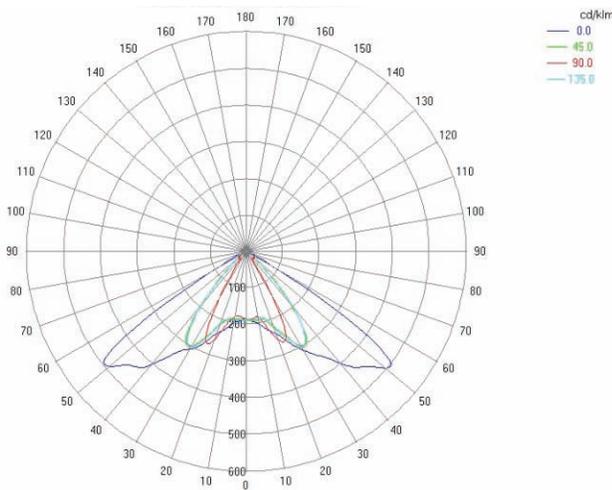
Bat-wing beam pattern of the distribution curve, also can be changed by different section's demand. Rationally control the distribution to be a rectangular beam pattern. When the installation height is equal to 12 meters, the beam pattern is 40x16 meters rectangular, and the radiation efficiency is more than 70% in the effective region, the total transparency is more than 90%, the greatest extent possible to reduce the loss of light, and the LED light has been fully utilized. The illumination uniformity is very good in the effective radiation region, even better than 0.5, 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 any 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.

Illuminance Distribution at different heights

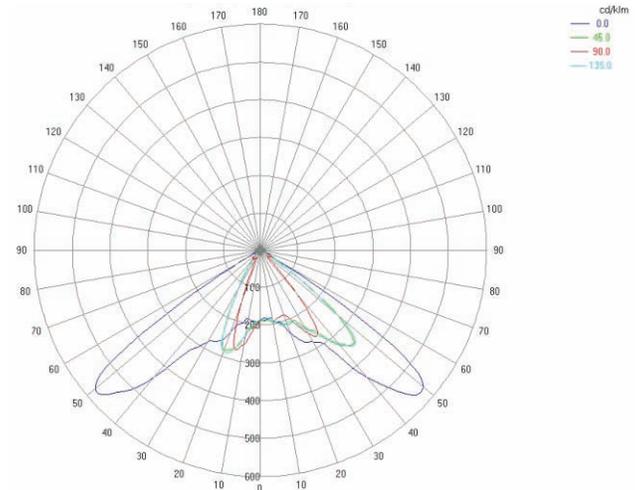


Light Distribution Curve

1 Lamp's Plane Installation



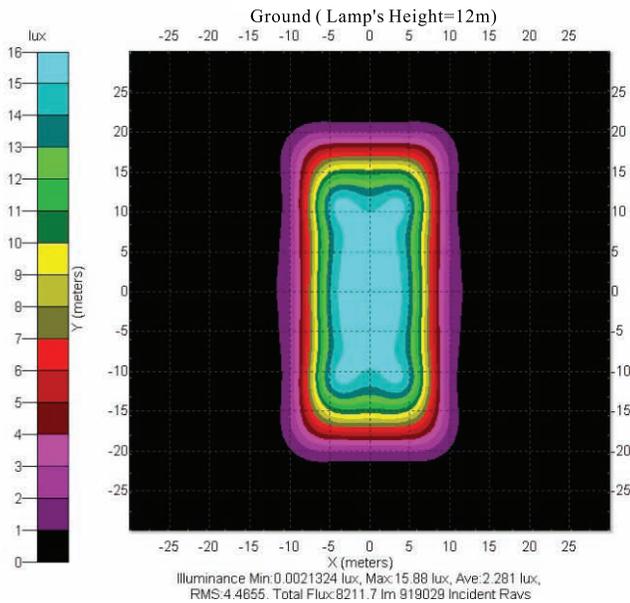
2 Lamp's Inclined Installation



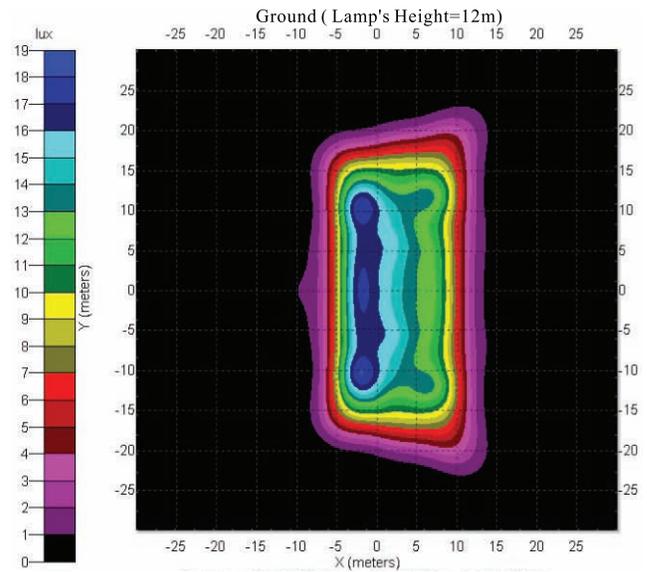
Integrated Streetlight Beam Pattern

Plane Equal illuminance Distribution Map

1 Lamp's Plane Installation

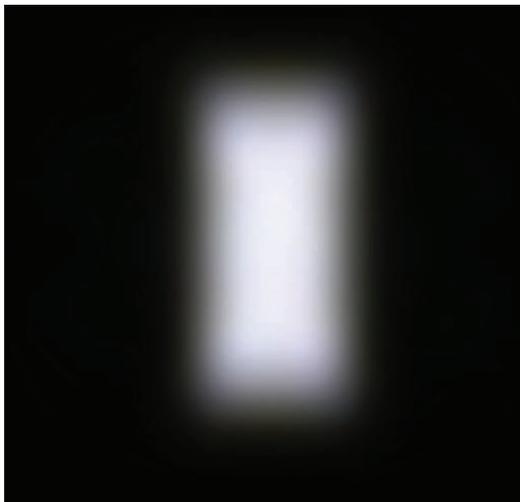


2 Lamp's Inclined Installation



Actual Lighting Effects (Beam Pattern)

1 Lamp's Plane Installation



2 Lamp's Inclined Installation



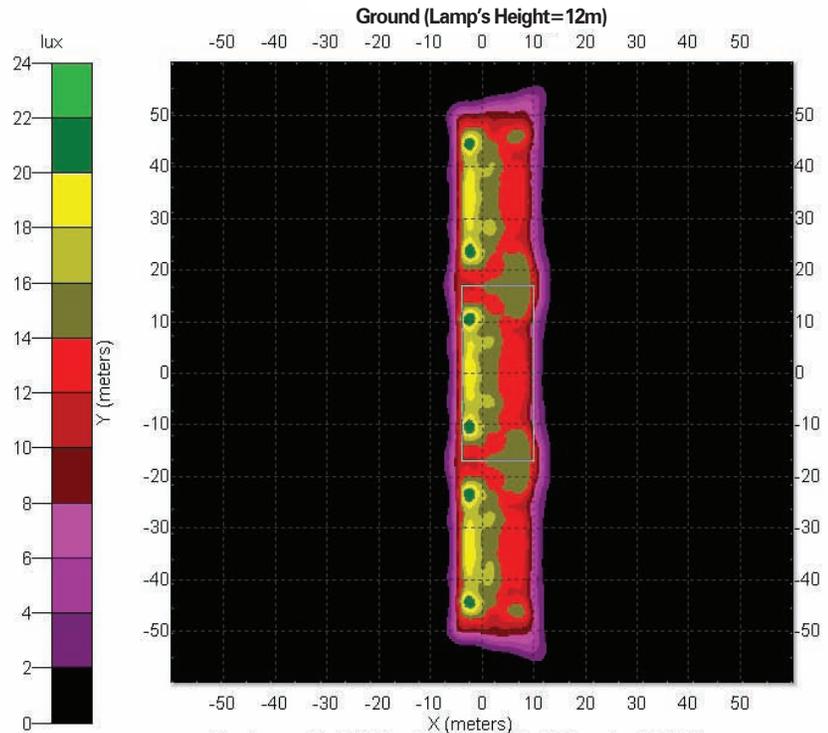
The beam pattern is rectangular (rectangle), good illumination uniformity, brightness difference is very little between the spot of the center and the periphery. There is almost no difference in the direction of extending the road completely with the continuous extension of the road, it is the ideal lighting lamp for road lighting.

The Actual Effects On The Road

1 Unilateral Road Layout

1. Lamp Model: LU6
2. Lamp Power Consumption: 168W
3. Lamp Height: 12m
4. Lamp Pole Space: 32m
5. Lamp Elevation: $10^\circ \sim 15^\circ$
6. Lamp Pole Arm Length: 3 ~ 4 m
7. Road Width: 14m (two-way, 4 lanes)

Equal Illuminance Distribution



Actual Lighting Effects (Beam Pattern)

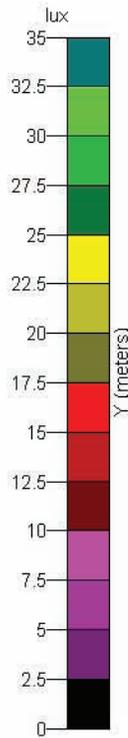


As shown on the above picture, we have installed the lamps on each side of the road, each 3 lamps illumination map and the beam pattern, in a single lamp's effective are covered regional (panel area) and is a very uniform: 10m (3 lanes) width intensity values: 19 LUX maximum, 14 LUX minimum; 14m (4 lanes) 19 maximum, 10 LUX minimum, uniformity value >0.5 . The brightness difference is very little between the center of the beam pattern and the edge. There is almost no difference in the direction of the road extension, they are fully consistent with the road for the extended, and reached the ideal lighting effects.

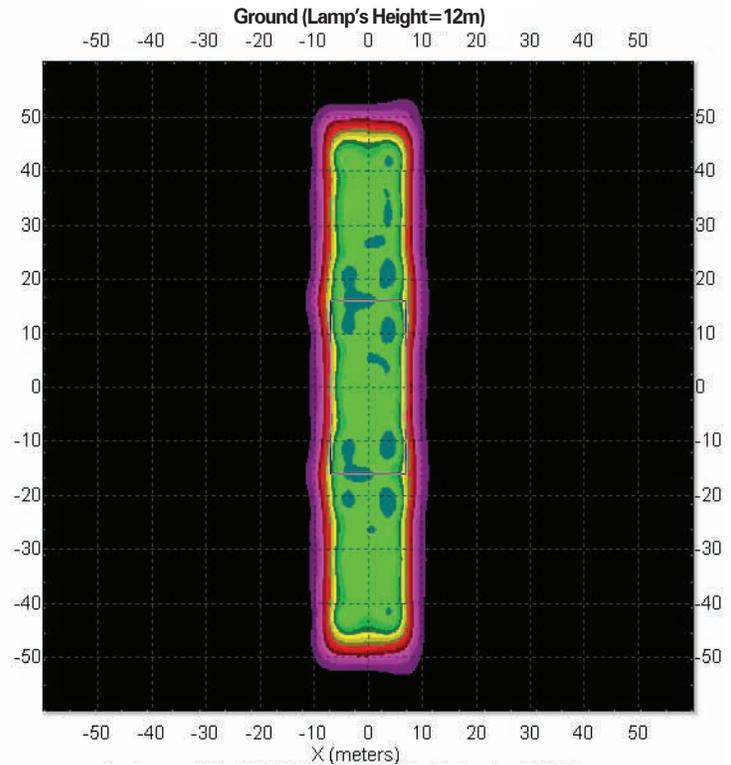
The Actual Effects On The Road

2 Symmetrically on Both Sides of the Road

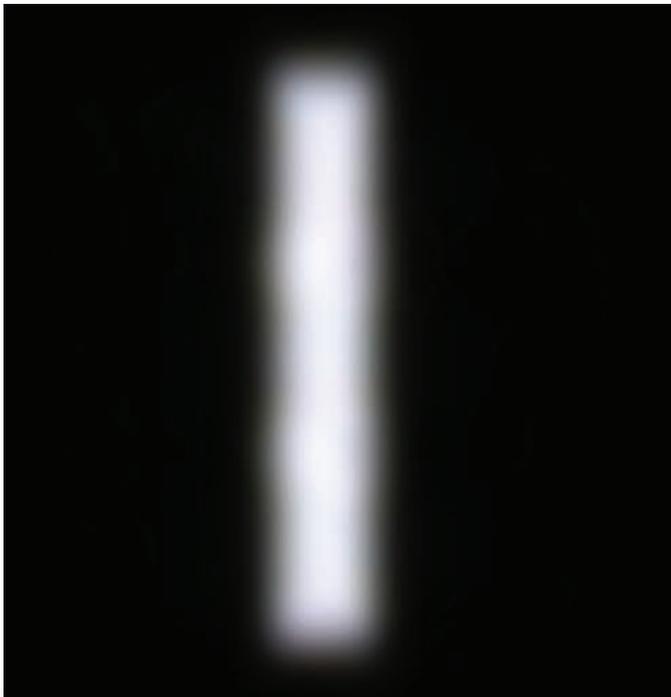
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Equal Illuminance Distribution



Actual Lighting Effects (Beam Pattern)

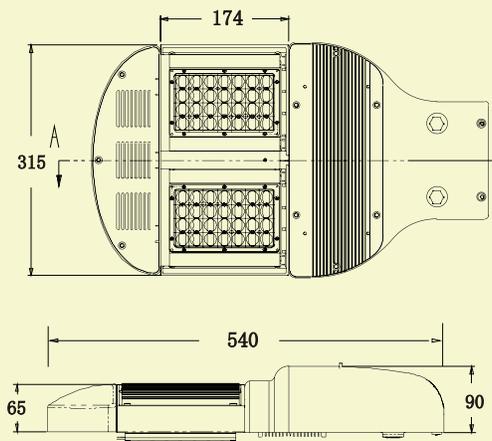


As shown on the above picture, we have installed the lamps on each side of the road, each 3 lamps illumination map and the beam pattern, in a single lamp's effective are covered regional (panel area) and is a very uniform: 14m (3 lanes) width intensity values: 35 LUX maximum, 25 LUX minimum, uniformity value >0.7 . The brightness difference is very little between the center of the beam pattern and the edge. There is almost no difference in the direction of the road extension, they are fully consistent with the road for the extended, and reached the ideal lighting effects

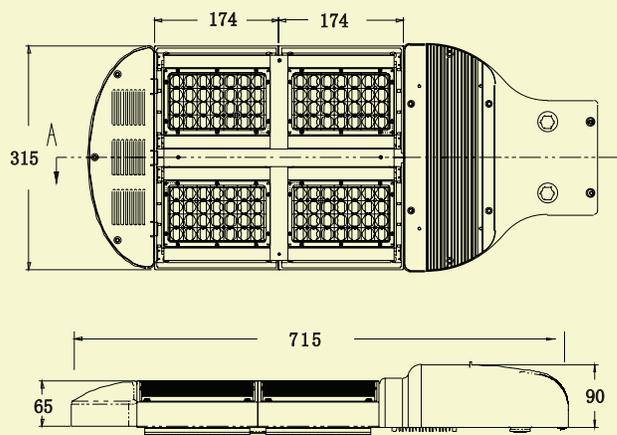
Integrated High Power LED Streetlight Installation Method

High Power LED Streetlights Figures

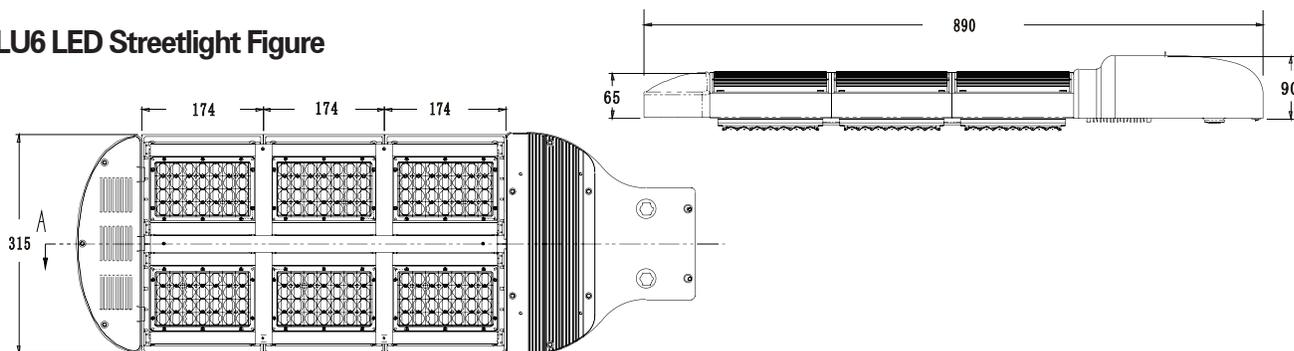
LU2 LED Streetlight Figure



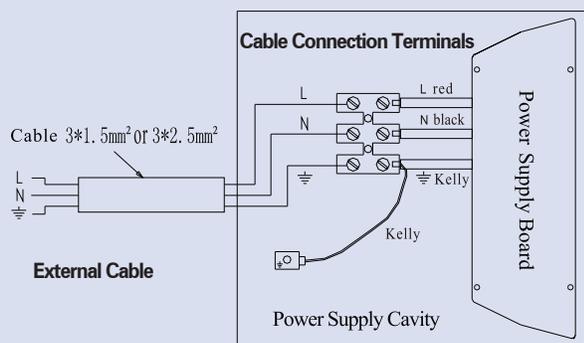
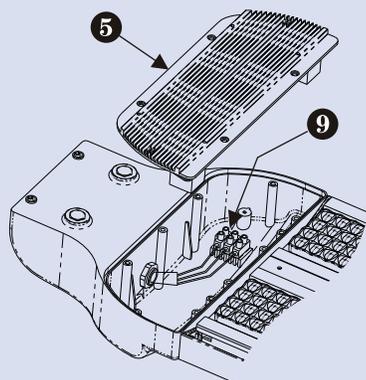
LU4 LED Streetlight Figure



LU6 LED Streetlight Figure



Integrated High Power LED Streetlight Power Supply Cavity Structure and Connection Diagrams



Connection Sketch Map

Integrated High Power LED Streetlight Installation Method

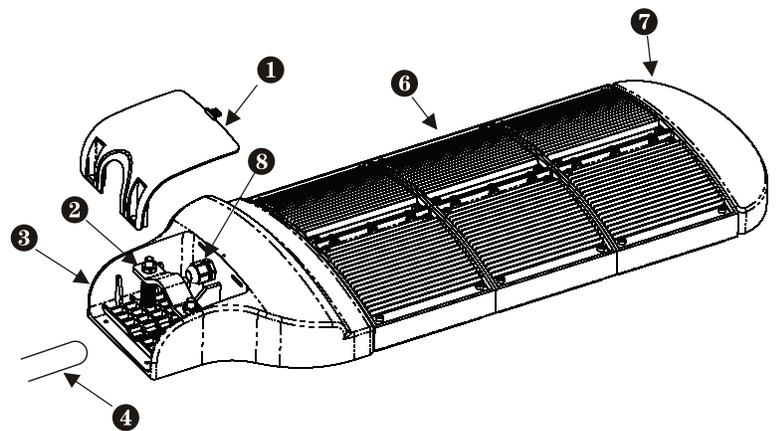
Installation of Streetlights and Lamp Pole (take LU6 for Example)

1. Demount the black rubber cover **1** ;
2. Adjust the hoop **2** to the suitable place according to the lamp pole's diameter, and then put the streetlight on the lamp pole **4** ;
3. Locking the two M10 nut on the hoop **2** , fastening the lamp on the lamp pole **4** pay attention to adjust the angle of the lamp when locking;
4. Demount the six screws on the board, **5** M5 inside six angles, and take out the board of the power supply **5** ;
5. Put the cable in the power supply cavity through the cable fixture **8** ;
6. Locking the cable fixture head **8** (The cable should have sufficient length to prevent break off);
7. Shell the cable head about 6mm, connect the juncture **9** , with live wire and cathode wire, mount screws;
8. Mount the board on the power supply **5** in order to reach the target of waterproof (note: make sure that the sealed loop is unrugated and steady);
9. Mount the back rubber cover **1** at last, and fix the screws.

Sketch Map for Streetlight and Lamp Pole Installation

- 1 Rubber Cover
- 2 Hoop
- 3 Tailstock
- 4 Lamp Pole
- 5 Board of Power Supply
- 6 Module & Framework
- 7 Frame
- 8 Cable Fixing Head
- 9 Juncture

The diameter area for the lamp pole is: $\Phi 40\text{mm} - \Phi 60\text{mm}$



Installation and Demount Method (For example LU6)

Integrated High Power LED Streetlight Module Demount Diagram

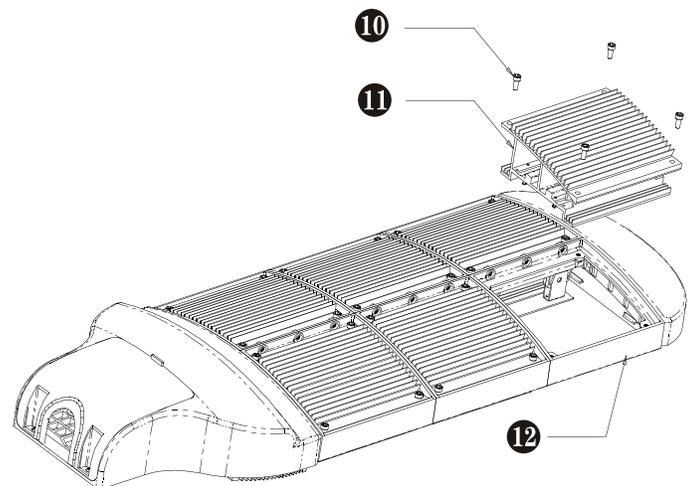
- 10 Fixed Screws (5 angles)
- 11 LED Module
- 12 Frame

LED Streetlight Module Demountingf

1. Demount the 4 screws **10** isation from the radiator;
2. Pick up the LED Module **2** slightly, and then slight it to the outside;
3. Turn the LED Module **2** and take the LED module **2** out to a certain position;
4. Unplug the power supply cable, and remove the entire LED Module **2** .

LED Streetlight Module Mounting

1. Put the LED Module on a suitable position on the framework **3** and connect the power plug;
2. Put the outside of the module **2** on the available place first;
3. Note: there should not be a cable drop or block on the bottom of the framework **3** which can cause a decorative plate deformation;
4. Put the screws on the right place of the module and then tight the 4 fixed screws **10** .



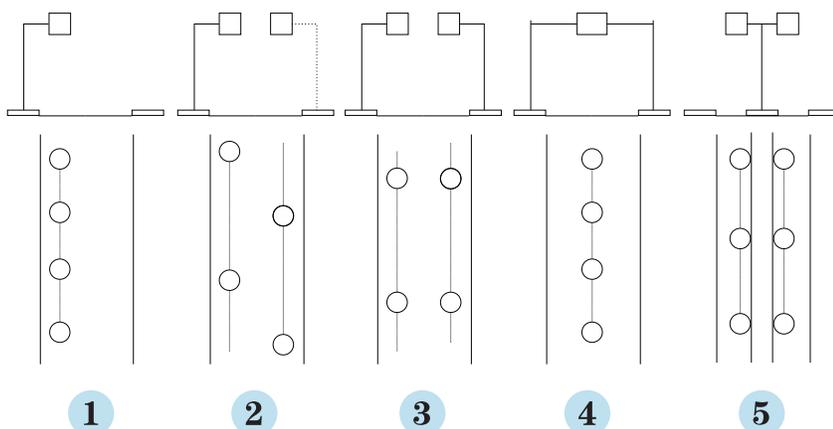
Common LED Streetlight Installation and Illumination

Recommended Installation and Illumination Comparison List

Installation Style	Installation Angle	Road Angle	Lamp Height	Lamp Distance	Ground Illumination						Luminance Uniformity	Vertical Uniformity	Remark
					LU2 (56W)		LU4 (112W)		LU6 (168W)				
					Max.	Average	Max.	Average	Max.	Average			
Unilateral Installation (No central buffer zone)	10°~15°	Two-way 2 Lanes (7m)	6m	15 ~ 18m	26	17	53	35	80	53	0.66	0.75	The uniformity is good, the illumination on the lane of lamp pole is better than other lanes (please see page 8)
		Two-way 4 Lanes (14m)	12m	32 ~ 36m	6	4	13	9	20	13			
Center Symmetrical Installation / Bilateral Installation	10°~15°	Two-way 2 Lanes (14m)	6m	15 ~ 18m	26	17	53	35	80	53			
			8m	20 ~ 24m	15	10	30	20	45	30			
		Two-way 6 Lanes (21m)	10m	25 ~ 30m	9	6	18	12	28	18			
Two-way 8 Lanes (28m)	12m	32 ~ 36m	6	4	13	9	20	13					
Horizontal Suspension Installation (Height Uniformity)	0°	Two-way 2 Lanes (7m)	8m	20 ~ 24m	15	11	30	23	45	34	0.75	0.75	The uniformity is very good, the illumination on each lane is the same (please see page 9)
		Two-way 4 Lanes (14m)	14m	36 ~ 42m	5	4	10	8	15	11			
Bilateral Installation (height Uniformity)	10°~15°	Two-way 2 Lanes (14m) (No Central Buffer Zone)	12m	32 ~ 36m	12	10	26	21	40	30	0.75	0.85	

- Remark:**
- If it is necessary to increase brightness, we can do the following measures:
A. Install 2 lamps on the same pole; B. Narrowing the gap between the lamp poles.
 - If comparing sodium light with LED, the LUX of the LED illumination multiplied by 2.5 gives the LUX for sodium light illumination. For example: 20 LUX LED Streetlight wins 50 LUX sodium light.

5 Common Formats to Install High Power LED Streetlights



- Unilateral Installation
- Bilateral Staggered Installation
- Bilateral Symmetry Installation
- Horizontal Suspension Installation
- Center Symmetry Installation

LED Streetlight Troubleshooting Methods and Maintenance Guide

Troubleshooting Methods

LED Streetlight Failures	Possible Reasons	Troubleshooting Methods
LEDs do not light up / LEDs do not turn on	The power input connector is not well connected.	Please use the “-” shape screwdriver to connect the cable on the input connectors.
	The fuse of the power supply is damaged.	Please change the 5A/250V glass tube fuse, if it still doesn't light up please change the power supply.
	The power supply output plug is not well connected.	Please connect the 12P connector on the power supply output correctly and then tighten the screws.
LED Flashing	Malfunction of the power supply.	Please change the power supply.
One of the LED modules is darker or doesn't light up	One of the power supplies is broken.	Please change the power supply.
Few individual LEDs do not light up or stay dark	LED is broken.	Please replace it with the same type of LED.

LED Streetlight Maintenance and Repairing

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

LED Streetlight Product Packaging

Model	Q'ty (pcs)	N.W. (Kg)	G.W. (Kg)	Dimension (mm)	Volume (m ³)
LU2	1	7	7.5	610X390X180	0.043
LU4	1	10	10.5	780X390X180	0.055
LU6	1	13	13.5	960X390X180	0.067

DMX LED Streetlight SP90



DMX LED Streetlights, 3 major revolutionary and innovative technologies have created a new times of LED Lighting!

- Super rate high power LED streetlights to replace the traditional light source: green environmental protection and energy efficient;
- Rectangular beam pattern design, realizing high intensity, high uniformity, and eliminates glare;
- 360 degree rotation lamp holder design, replace the conventional lamp directly, save costs, and easy maintenance.

DMX High Power LED Streetlight Model SP90

With generous appearance, novel and unique, the high power streetlight SP90 was designed for the road lighting demand and fully meets the special requirements of road lighting. This product adopt the high power LED as the light source, using dozens of high power DMX Emitters of 1 watt LED. With the world's leading optical allocation, advanced thermal, structural and circuit design, it is a highly cost-effective product.

DMX LED adopts the high reliable eutectic welding LED packaging process, the thermal conductivity, electrical conductivity, thermal expansion, and mechanical soundness standard is higher than the ordinary silver epoxy packaging. Excellent heat dissipation design, LED junction temperature can be controlled in an ideal temperature ($T_j < 70^\circ\text{C}$). Fully guarantee and long life of the LED. High power factor and low harmonic distortion reduce the power loss on transmission lines, avoid the high frequency interference contamination for the power network. Adopting surface anodization lampshade (lens) using engineering plastics PC, with resisting acid corrosion, smoke corrosion, ultraviolet aging characteristics.

Apply to replace: High-pressure mercury lamps, high pressure sodium lamps, metal halide lamps, energy-saving lamps.

Aplicaciones para instalar: Expressway, highway, roads, sub-roads, sidewalks, square sport grounds, industrial plants, and other advertising lights.

Functions and Features

1 Revolutionary Photometric Design

The world's first dedicated optical system (rectangular beam focusing lens). Reasonable control of the light distribution, spot rectangular beam pattern, and ensure an ideal uniformity of brightness on the road surface;

2 Unique Integrated Lens and Lampshade Design

Array Lens play a protective and spot light role, avoid wasteful duplication of light and reduce the loss of light, also reduce the weight of the product and enable simplified structure;

3 Creative Design of the Radiator and Lamp holder Integration

Fully protect LED life and heat dissipation requirements, satisfied with the structure and design of LED Lights fundamentally, with the most distinctive features of LED Lights (see attached picture);

4 Standard E40, 360-degree Rotation Lamp Holder

The LED lamp can still rotate after full tightening the lamp's holder, you can adjust it to ensure the best direction face to the ground.;

5 Direct Replacement Light Source Design

Directly replace the existing high-pressure mercury lamp, high-pressure sodium lamp, and metal-halide lamps, no need to change the original lamp shell;

6 Intelligent Current Control

Each LED module can implement intelligent current control, whatever power network how to wave, it is able to achieve the precision constant current, ensure the LED can work under the secure current;

7 No Adverse Glare

Eliminate the glare caused by the adverse ordinary lights glare and visual fatigue sight interference, improve driving safety, reduce the incidence of traffic accidents, fully embodies the spirit of "People-oriented Technology" in this product;

8 No Light Pollution

Light Distribution designed for road lighting, in addition to illuminate the path and will not illuminate the road outside the region. Eliminate the interference signal by the residents of the light into the rest room;

9 No High-voltage, No Dust Adsorption

Eliminate the high-voltage adsorb the dust cause the lampshade become dark, reduce the brightness;

10 No High-temperature, No Aging Yellow Lampshade

Eliminate baking the traditional lampshade which cause aging yellow, shortened life expectancy and decrease the brightness;

11 Widest Working Voltage

The traditional sodium lights working voltage wave is over $\pm 7\%$ which will decline the life and brightness, while DMX LED Streetlights working voltage is $\pm 20\%$ wave, the life and brightness keep still;

12 Start Without Delay

Reach the normal brightness and do not have to wait when switch on, eliminate a long process of starting of the traditional street lights;

13 No Strobe Flashing

Eliminate the visual fatigue which caused by the strobe lights of the traditional street lamps;

14 Impact Resistance, Shock-proof, Without Ultraviolet (UV) and Infrared (IR) Radiation

No filament and glass frames, avoid break of the traditional lamp, without harm to the human body;

15 High Color Index, Nice Coloration

To show the true colors and more brighter;

16 Multiple Color Temperature Options

Color temperature to meet the needs of different occasions, eliminated the low color temperature of the sodium lamp which cause the hypnotic mood and high color temperature of the mercury lamp which cause the depressed mood, observers will feel more comfortable;

Functions and Features

17 Tremendous Energy Saving

Used the ultra high power, high brightness LED light source, together with the high power efficiency power supply, which can save energy 50%-80% than the conventional sodium and mercury lamps;

18 Long Life, Up To 50,000 Hours

Working for 10 hours a day, can be used for more than 13 years, is 5-10 times working life than a traditional sodium or mercury lamp;

19 Green and Environmental Protection

No lead, no mercury, no environmental pollution;

20 Universal Input Voltage

85-264VAC full voltage range constant, constant-current PWM (Pulse Width Modulation) technology, high efficiency, low-heat, high-precision constant current;

21 No Pollution to Power Network

Power factor ≥ 0.9 , THD $\leq 20\%$, EMI apply with the global universal index, reduce the power loss and transmission lines to avoid contamination of the network of high frequency interference;

22 Work Under Low-voltage and Low-Heat, Safe and Reliable

LED junction temperature can be controlled under an ideal temperature ($T_j < 60^\circ\text{C}$, $T_a = 25^\circ\text{C}$ ambient temperature);

23 Perfect Combination with Solar Energy

Fully exert the advantage of the LED work under low voltage and environmental work, according to the local solar energy resources, electricity and solar power can also be combined. To achieve the best cost performance and high reliability customers;

24 High Luminous Efficiency

The LED luminous efficiency of the existing conditions is $\geq 65\text{lm/w}$, with the rapid increase LED brightness, when the luminous efficiency reach 150lm/w , the 400W sodium lamp will be replace by the 100W LED lamp, the luminous efficiency will reach 300lm/w eventually;

25 Have a number of patents for inventions and utility model patents.

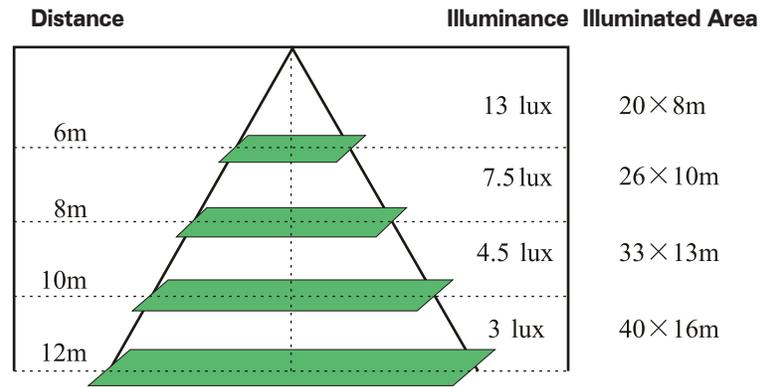
SP90 Technical Parameters

Item	Mode	High Power LED Streetlight Model SP90
Input Voltage		85 ~ 264 VAC
Power Factor		47 ~ 63 Hz
Frequency Range		> 0.9
Total Harmonic Distortion (THD)		< 20%
Power Efficiency		83%
LED Working Voltage		24 VDC
LED Consumption		28 Watt
Power Supply Consumption		7 Watt
LED Luminous Efficiency		≥ 80 lm/w
LED Initial Flux		2,500 lm (Tj=25°C)
LED Maintain Flux		2,300 lm (Tj=60°C, Ta=25°C)
Lamp's Flux		2,100 lm (Tj=60°C, Ta=25°C)
Lamp's Efficiency (%)		> 90%
Illumination (E)		(Height=6m): ≥ 13 LUX (The equivalent of Sodium Light of 33 LUX) (Height=8m): ≥ 7.5 LUX (The equivalent of Sodium Light of 19 LUX) (Height=10m): ≥ 4.5 LUX (The equivalent of Sodium Light of 11 LUX) (Height=12m): ≥ 3 LUX (The equivalent of Sodium Light of 7.5 LUX)
Effective Illuminated Area		(height=6m): 20x8m (height=8m): 26x10m (height=10m): 33x13m (height=12m): 40x16m
Color Temperature (CCT)		Pure White: 5,000 ~ 7,000 K, Warm White: 3,000 ~ 4,000 K
Color Index (CRI)		Ra > 75
Light Source		DMX Emmiter (1 Watt)
Light Distribution Curve/Beam Pattern		Asymetric (Bat Wing) / Rectangular Beam
Maximum Light Intensity Angle		120°: Horizontal Axis: 110°, The Vertical Axis: 45°; 140°: The Horizontal Axis: 130°, The Vertical Axis: 45°
Light Beam Angle		120°: Horizontal Axis: 120°, The Vertical Axis: 60°; 140°: The Horizontal Axis: 140°, The Vertical Axis: 60°
Juntion Temperature (Tj)		70°C ± 10% (Ta=25°C)
System Resistance (Rja)		0.56°C/W
Working Temperature		-30°C ~ 40°C
Working Humidity		10% ~ 90% RH
Storage Temperature		10°C ~ 85°C
Working Life		> 50,000 Hrs
Light Body & Lampshade Material		Aluminium Alloy and PC
Lamp Base		E40
Dimensions (mm)		90 (Φ) x 275 (L)
Net Weight		1 Kg
IP Rating		IP60

SP90 Photometric Performance

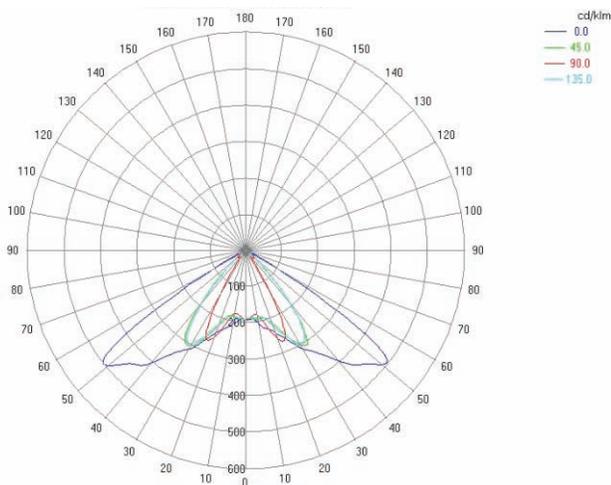
The bat-wing beam pattern of the distribution curve, also can be changed by different section's demand. Rationally control the distribution to be a rectangular beam pattern. When the installation height is equal to 6 meters, the beam pattern is 20x8 meters rectangular, and the radiation efficiency is more than 70% in the effective region, the total transperance is more than 90%, the greatest extent possible to reduce the loss of light, and the LED light has been fully utilized. The illumination uniformity is very good in the effective radiation region, even better than 0.5, 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 any 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.

Illuminance Distribution at different heights

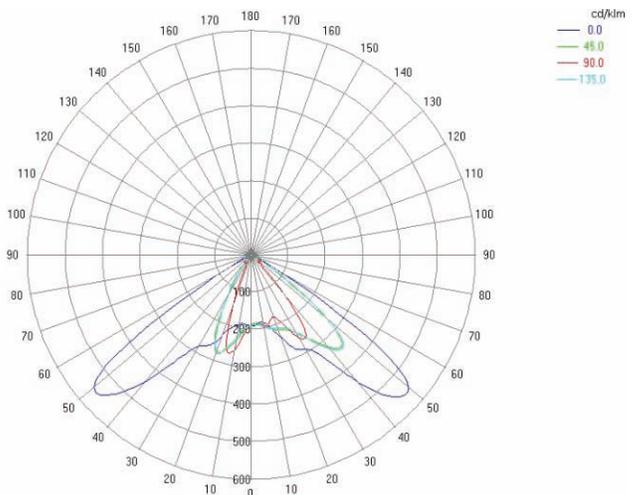


Light Distribution Curve High Power LED Streetlight Model SP90

1 Lamp's Plane Installation

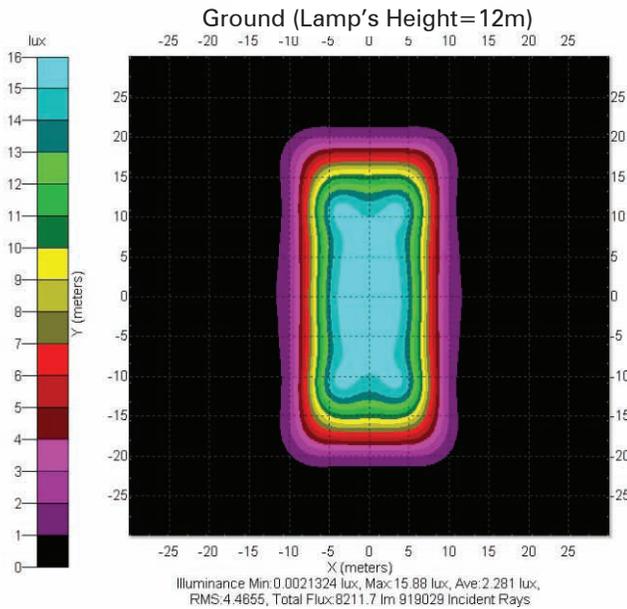


2 Lamp's Inclined Installation

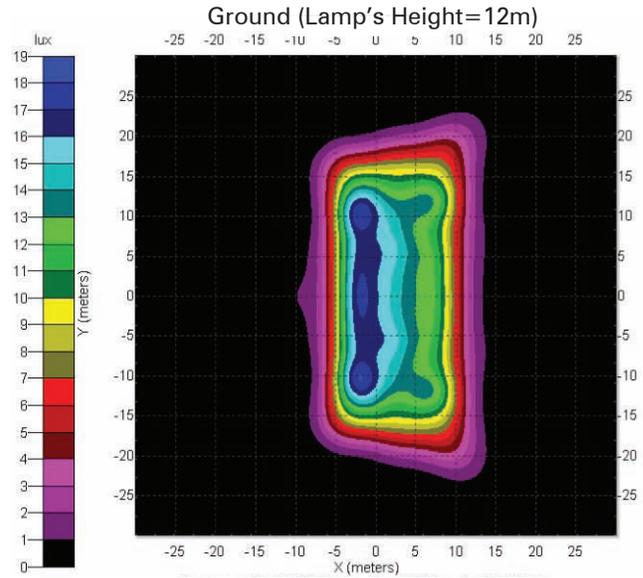


Plane Equal illuminance Distribution Map

1 Lamp's Plane Installation



2 Lamp's Inclined Installation



Actual Lighting Effects (Beam Pattern)

1 Lamp's Plane Installation



2 Lamp's Inclined Installation

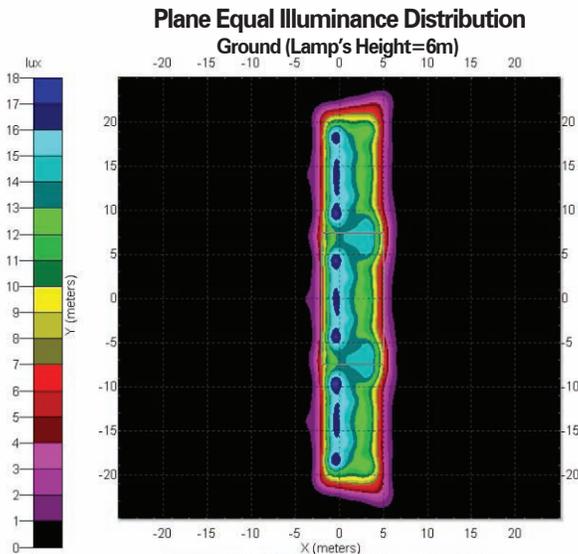


The beam pattern is rectangular (rectangle), good illumination uniformity, brightness difference is very little between the spot of the center and the periphery. There is almost no difference in the direction of extending the road completely with the continuous extension of the road, it is the ideal lighting lamp for road lighting.

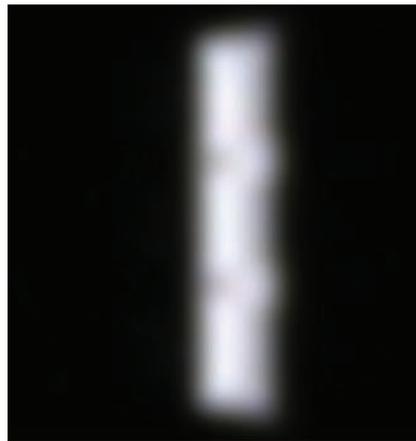
Actual Effects on the Road - High Power LED Streetlight Model SP90

Unilateral Road Layout

On the picture below we have installed the high power LED streetlights SP90 on one side of the road, each 3 lamp's illumination map and beam pattern in one single high power LED streetlight model SP90 effective covered regional (pane area) has a very uniform illumination, 7m width (2 lanes) intensity values: 18 lux maximum and a 7 lux as a minimum, with a uniformity value of > 0.5 . The brightness difference is very little between the center of the beam pattern and the edge, almost no difference in the direction of the road extension, fully consistent with the road for the extended, reached the ideal road lighting effect.



Actual Lighting Effects (Beam Pattern)

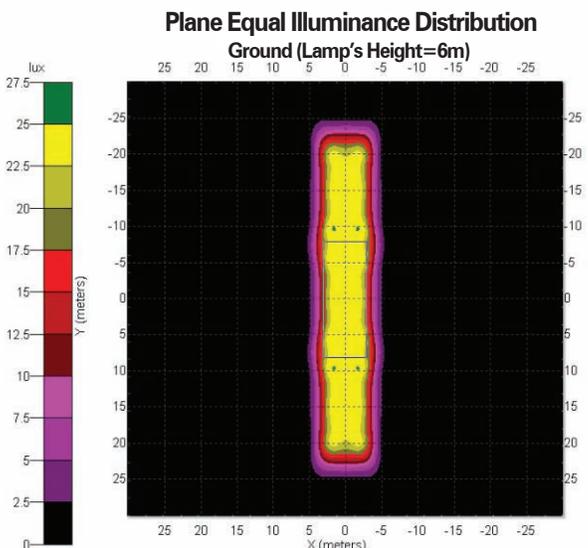


Unilateral Road Layout Related Parameters

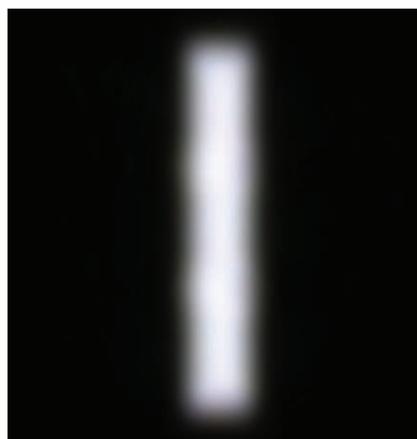
1. Lamp Model: SP90
2. 1 lamp power consumption: 28w
3. Lamp height: 6m
4. Lamp pole space: 15m
5. Lamp elevation: $10^{\circ} \sim 15^{\circ}$
6. 1 road width: 7m (2 way 2 lanes)
7. 1 lamp pole arm length: 1.5~2m

Symmetrical on both sides of the road

On the picture below we have installed the high power LED streetlights SP90 on one side of the road, each 3 lamp's illumination map and beam pattern in one single high power LED streetlight model SP90 effective covered regional (pane area) has a very uniform illumination, 7m width (2 lanes) intensity values: 25 lux maximum and a 15 lux as a minimum, with a uniformity value of > 0.7 . The brightness difference is very little between the center of the beam pattern and the edge, almost no difference in the direction of the road extension, fully consistent with the road for the extended, reached the ideal road lighting effect.



Actual Lighting Effects (Beam Pattern)

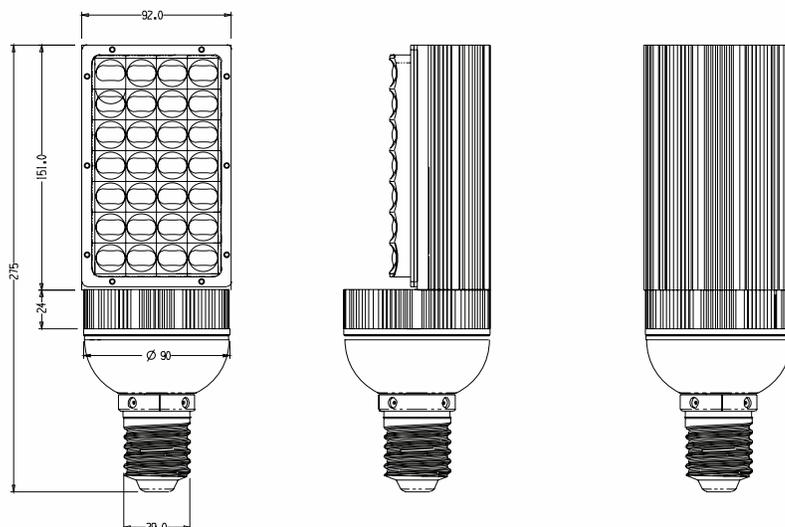


Symmetrical Road Layout Related Parameters

1. Lamp Model: SP90
2. 1 lamp power consumption: 28w
3. Lamp height: 6m
4. Lamp pole space: 15m
5. Lamp elevation: $10^{\circ} \sim 15^{\circ}$
6. 1 road width: 7m (2 way 2 lanes)
7. 1 lamp pole arm length: 1.5~2m

SP90 Installation Method

High Power LED Streetlight SP90 Figure



High Power LED Streetlight SP90 Installation



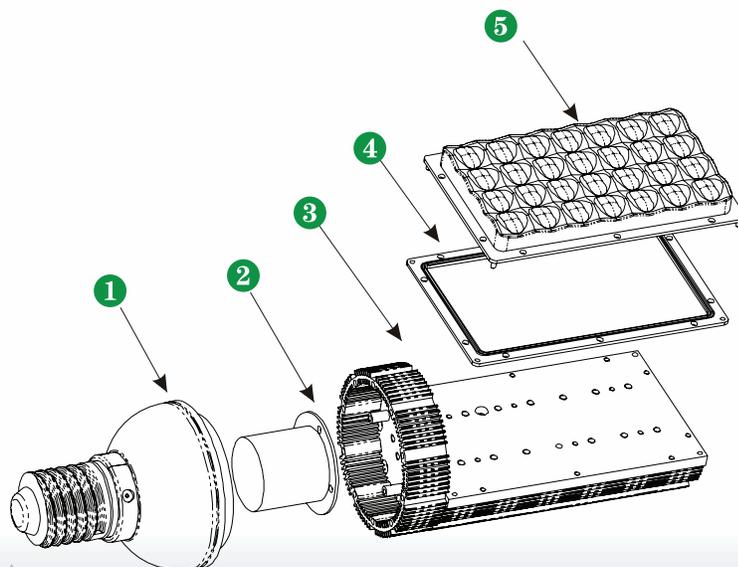
The left picture shows the effect of a high power LED streetlight which replaced the conventional high pressure sodium lamp in the existing lamp shade with the SP90 model.

Remove the existing light source, connect the 220VAC or 110VAC input terminal directly with the lampholder. **Do not use the original rectifier, otherwise the high voltage will burn the LEDs.**

Anatomical Drawings of the High Power LED Streetlight SP90 Model

Part Names

- 1 Lamp Holder Parts
- 2 Power Supply
- 3 Radiator
- 4 Sealing Gasket
- 5 LED Modules and Lens



SP90 Troubleshooting & Maintenance

Troubleshooting Methods of the High Power LED Streetlight Model SP90

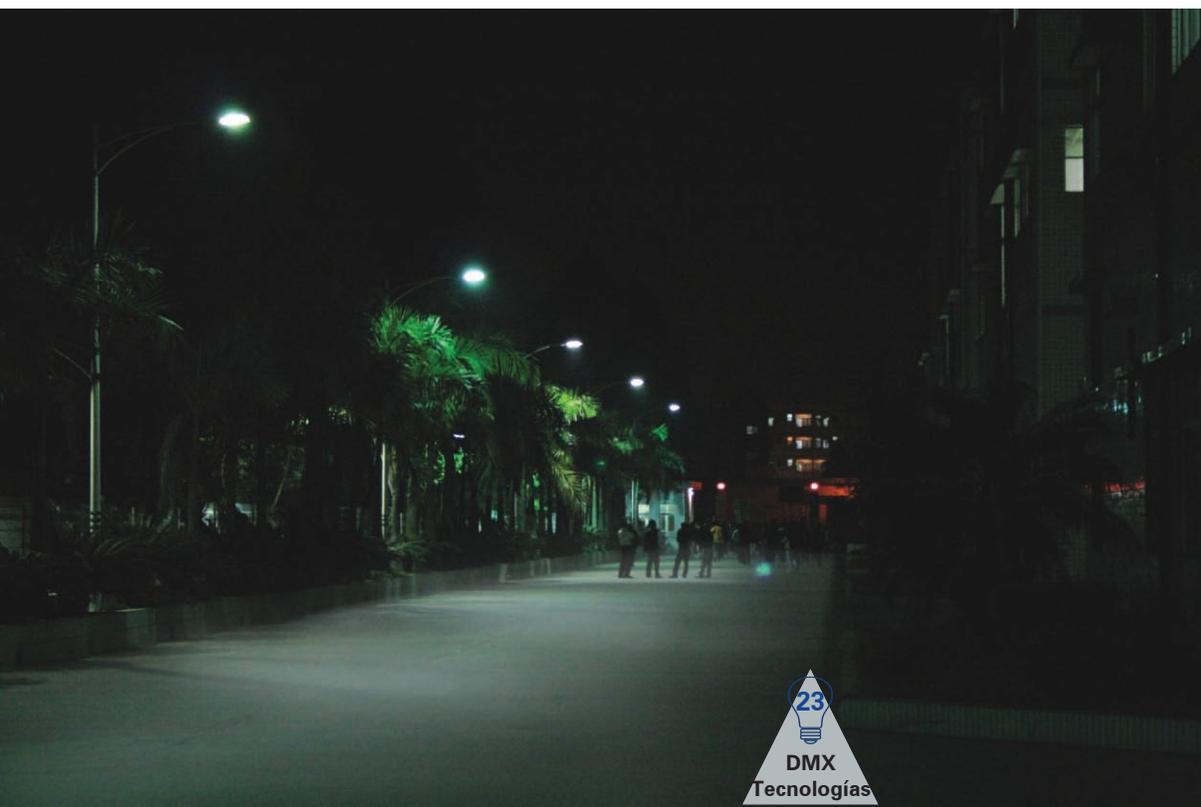
LED Streetlight Failures	Possible Reasons	Trouble Shooting Methods
LEDs do not light up	The lamp holder is not tightened enough Malfunction of the power supply	Put the lamp in the socket and then tighten it again. Please change the power supply.
LED flashing or darker LEDs	Malfunction of the power supply	Please change the power supply.
Few individual LEDs do not light up or stay dark	LED is damaged	Please replace the same type of LED.

Maintenance and Repairing High Power LED Streetlight SP90

In order to ensure the normal use of the high power LED streetlights and enhanced light flux rate, you should develop the maintenance plans and clean the lamp regularly. The cleaning cycle should be determined according to the local environment and climate.

Product Packaging High Power LED Streetlight SP90

Model	Q'ty (pcs)	N.W. (Kg)	G.W. (Kg)	Dimension (mm)	Volume (m ³)
SP90	10	13.5	10	678x330x300	0.067



Comparison Analysis between DMX LED Streetlight and Conventional Streetlight

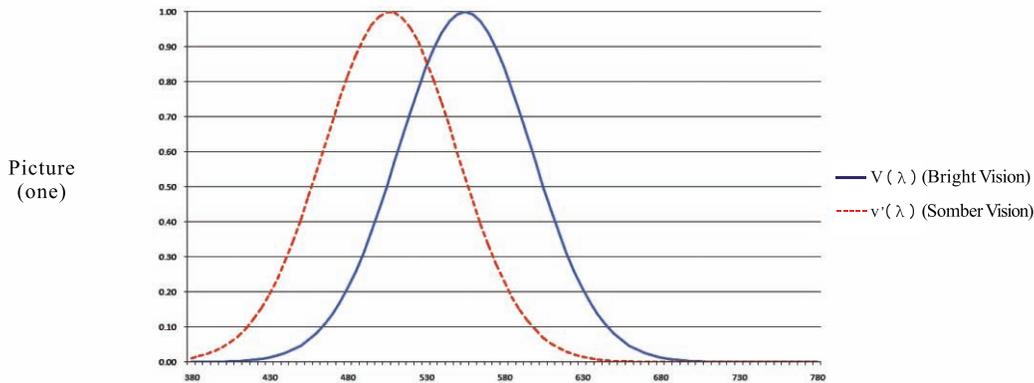


Streetlight Integrated Performance Comparison

Item	High Pressure Sodium Lamp	DMX LED Streetlight
Photometric Performance	Bad	Excellent
Radiator Performance	Bad	Excellent
Electrical Performance	Electrical Shock Easy (High Voltage)	Safe (Low Voltage)
Working Life	Short (5,000 Hours)	Very Long (>50,000 Hours)
Working Voltage Range	Narrow ($\pm 7\%$)	Wide ($\pm 20\%$)
Power Consumption	Quite High	Quite Low
Startup Speed	Quite Slow (Over 10 Minutes)	Rapid (2 seconds)
Strobe	Yes (Alternating Current Drive)	No (Direct Current Drive)
Optical Efficiency	Low (< 60%)	High (> 90%)
Color Index/Distinguish Feature	Bad, Ra < 50 (The color of the object Is not fresh, Boring, Hypnosis)	Bad, Ra > 75 (The color of the object Is Fresh, Veritable and Comfortable)
Color Temperature	Quite Low (Yellow or Ambar, Uncomfortable)	Ideal Color Temperature (Comfortable)
Bad Glare	Strong Glare	No Glare
Light Pollution	Serious	No
Heat Generation	Serious (>300°C)	Serious (<60°C)
Lampshade Turn Dark	Easy (Dust Absorption)	No (Static Proof)
Lampshade Aging Turn Yellow	Very Fast	Not
Shockproof Performance	Bad (Frangibility)	Good (No Filament Nor Glass)
Environment Pollution	Lead Pollution, etc.	None
Maintenance Cost	High	Quite Low
Product Cubage	Very Large	Small (Slim Appearance)
Product Weight	Heavy	Light
Cost-Effective	Bad	High
Integrated Performance	Bad	Excellent

Photometric Comparison SP90

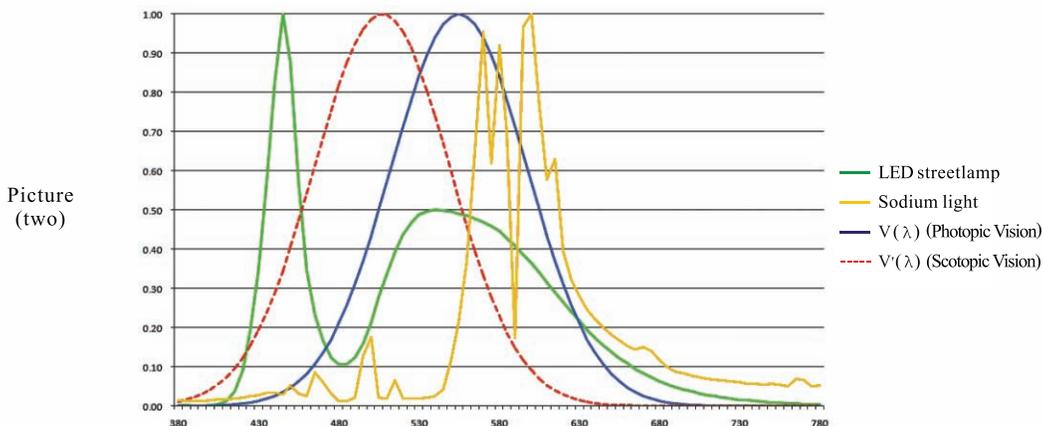
As far as eyes: DMX LED streetlight SP90 is 2.5 times brighter than sodium light, in the same altitude.



Spectra-Effect Function

Man's retina is a radiate receiver which is made up to subulate and bacilliform cells. Each cell has different character and function completely. The sensitization ability of bacilliform cells is much worse than the subulate cells, but they have different sensitivity to the light. When illuminate (daytime), subulate cells operate on the vision, when illuminate at dark, bacilliform cells operate on the vision. To different wavelength spectrum, the sensitivity for man depends on the function of the wavelength called spectrum effect function.

Experiments show, depending on that the observation field is different, that the spectrum efficiency function is different. The international lighting commission determined the spectrum efficiency function as shown on Picture (one) On Picture (one) we can see that the corresponding peak value wavelength of the Photopic Vision $V(\lambda)$ and the Scotopic Vision $V'(\lambda)$ is different, the peak value of $V(\lambda)$ is 555 N·m, while $V'(\lambda)$ is 507 N·m.



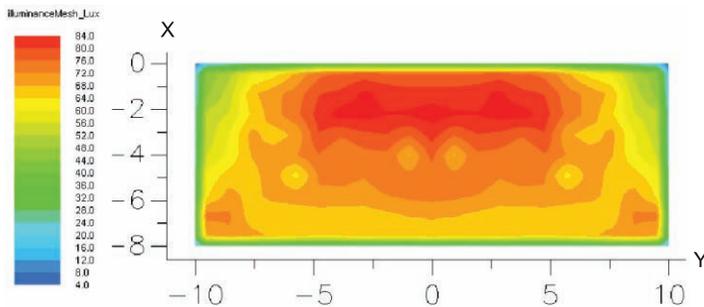
With the same spectrum distribution, the brightness is quite different between bright vision and dark vision. See Picture (two), the LED light dark vision is 2.35 times the bright vision, while the dark vision is of sodium light is 0.94 times brighter. Usually, photics meterage equipment sense light in bright vision condition, while streetlight is more effective at night (dark vision), so the common illuminate data gets to be revised. The revised coefficient of LED Streetlight is 2.35, and the revised coefficient of sodium light is 0.94.

So in the same condition (the same meterage instrument) LED streetlights are 2.5 times brighter than sodium light. Accordingly, to reach the same brightness, for LED Streetlights 40% of the illumination is needed to reach the sodium light brightness.

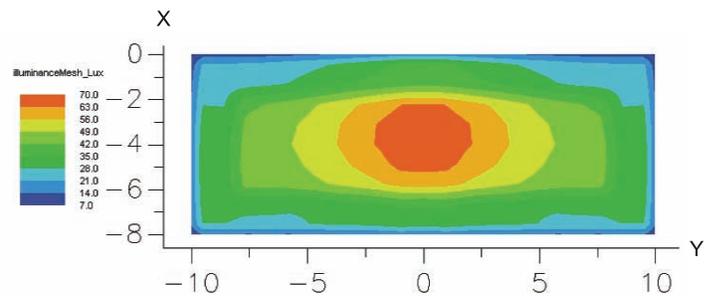
Comparison Illumination Effect for Single Light (Practical Data)

Lamp	Item	Lamp Height (m)	Lamp Pole Space (m)	Illumination				Electric Parameter						Measure Instrument
				Maximum	Minimum	Average	Uniformity	Working current(A)	Working Voltage (V)	Power consumption	System consumption	Power factor	Tunel Wave distortion	
112W LED Street Lamp	Measurement	7.5	20	40	22.6	33.2	0.7	0.66	AC85-264	143	145	0.99	15%	Illumination Calculation Parameter List
	Revised	\	\	94	53.1	78	\	\	\	\	\	\	\	
250W Sodium Lamp	Measurement	7.5	20	68.3	21.6	40.4	0.45	3.05	AC210-230	302	670	0.45	\	
	Revised	\	\	64.2	20.3	37.9	\	\	\	\	\	\	\	
250W Metal Halide Lamp	Measurement	7.5	20	34.6	2	12.6	0.15	2.8	AC210-230	308	616	0.5	\	
	Revised	\	\	73	4.2	26	\	\	\	\	\	\	\	

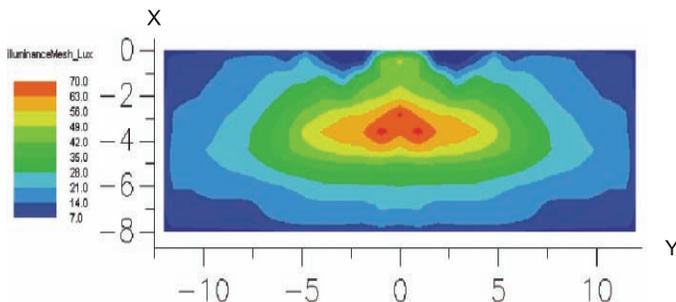
A. Lamp represents the road illumination effect for 112 W Streetlight (lamp height = 7.5)



B. Lamp represents the road illumination effect for 250 W sodium light (lamp height = 7.5)



C. Lamp represents the road illumination effect for 250W halogen light (lamp height = 7.5)



Conclusion:

1. The 112W DMX-LED high power streetlights saves 79% and 77% of energy, compared with a 250W sodium and halogen lights, and the equal illumination distribution is 2 times or even 3 times higher than the sodium halogen lamp. In the same conditions, **DMX-LED streetlights saves upto 90% energy and above;**
2. **The illumination uniformity of DMX-LED streetlights exceeds the illumination uniformity of sodium light.**
3. **The humorous distortion is far lower than sodium lights and halogen lights;**
4. The working voltage wave of sodium lights and halogen lights is over $\pm 7\%$, which shortens the working live and brightness way faster; while the working voltage wave for **DMX-LED Streetlights is $\pm 20\%$, it keeps its long life and the brightness will never change.**

Note: As there is another light 4 meters rearward, so it will be lighter, the actual illumination is lower.

Comparison Metal Halide Lamps & High Power LED Streetlights

7.5-meter-high 250W Metal Halide Lamp

Rear 4-meter-high 250W Metal Halide Lamp
(Increased Ground Illumination)

7.5-meter-high 112W LED
Street Light

250 Watt Metal Halide Lamp

Lamp Power: 285W, Rectifier Power: 23W,
Power Factor: 0.5

Actual Total Consumption: 616W

1. The brightness is lower than the next LED streetlamp significantly;
2. Highest Intensity: 34 lux, average intensity: 15 lux (there is another metal halid lamp, otherwise, the brightness will be lower);
3. When the lamp is on 8 meters high, the beam pattern is 18x9m oval and fuzzy;
4. The illumination uniformity is not good, the center of the beam pattern is high and edge is low, which does not conform to the road lightning extension.

112 Watt LED Streetlight (LU4)

LED Consumption: 125W,
Power supply consumption: 20W,
Power factor: 0.99

1. The brightness is higher than the next metal halid lamp significantly;
2. Highest intensity: 40 lux, average intensity: 30 lux;
3. When the lamp is on 8m high, the beam pattern is 26x10 rectangle and very clear;
4. The brightness difference is very little between the center of the beam and edge, almost no difference in the direction of the road extension, fully conform to the road lightning extension.

Conclusion:

Our 150W LU4 High Power Street Lamp can save upto 60% of energy in comparison of the 250 Metal Halide Lamp. The average brightness is more than double, and under taht same brightness it can save upto 80% of energy in comparison of the metal halide lamp.

Glare, Color Temperature and Color Index for DMX High Power LED Street Lamps and the Conventional Street Lamps



A. DMX High Power LED Lamp

No glare, the color temperature is comfortable, the objects are irradiated are colorful and are true, people feel more comfortable;

B. Metal Halide Lamp

Strong glare, the color temperature is too high (close to cyan), the objects were irradiated and are untrue, people feel irritable, and depressed;

C. Sodium Lamp

Strong glare, the color temperature is too low (very yellow or orange). the objects were irradiated and are untrue, people feel boring and hypnotized.

LED Streetlight Cost-Benefit Analysis

DMX High Power LED Streetlight & HPS Streetlight Cost-Benefit Analysis (1 light, working life is 10 years)

Lamp Source		HPS Streetlight	DMX LED Streetlight	Remark	
Item					
Light Source		400 Watt	168 Watt		
Cable Expense	Cross-Sectional Area	4 x 25 + 1 x 16mm ²	4 x 6 + 1 x 4mm ²	Calculated by 30m Lamp Distance, 50 Streetlight, That's 1.5km Cable. (All amounts are in USD)	
	Unit Price	\$12.98 / m	\$2.26 / m		
	Quantity (Length)	30m	30m		
	Amount (Subtotal)	\$389.40	\$67.72		
	Save Expense (Subtotal)	\$0.00	\$321.68		
	Cable Expense (Total)	\$389.40	\$67.72		
	Save Cable Expense (Total)	\$0.00	\$321.68		
Power Consumption	Lamp Power Consumption	400 Watt	168 Watt		
	Electrical Distribution	Rectifier	Switching Power		
		120 Watt	30 Watt		
	Comprehensive Cable Loss (6%)	24 Watt	10 Watt	International Standard: 5%	
	Transformer Loss (3%)	12 Watt	5 Watt	The Lowest Level for 100kva Transformer is 3%	
	Reactive Power Compensation	Power Factor: 0.45	Power Factor: 0.99		
	Subtotal Lamp Power Consumption	1302 Watt	215 Watt		
	Daily Consumption	16 Kw/h	3 Kw/h	Calculated by 12 Hours per Day	
10 Year Consumption (Subtotal)	15,037 Kw/h	9,429 Kw/h			
Electric Fee	Monthly Electric Fee	\$46.16	\$7.65	USD \$0.099/Kwh	
	Annual Electric Fee	\$563.31	\$93.12		
	10 Years Electric Fee	\$5,366.10	\$931.22		
	10 Years Electric Fee Saving	\$0.00	\$4,701.88		
Maintenance Expenses	Light Source	Working Life	< 1 Year	10 Years	
		Replacement Times	10 Times	0 Times	
		Unit Price	\$11.29	\$0.00	
		Subtotal	\$112.87	\$0.00	
	Electrical Distribution	Working Life	Rectifier: 5 Years	N/A	
		Replacement Times	1 Time	N/A	
		Unit Price	\$28.22	N/A	
		Subtotal	\$28.22	\$0.00	
	Man Power	Manpower Price	\$70.54/Lamp/Time	N/A	
		Replacement Times	10 Times	N/A	
		Subtotal	\$70.54	\$0.00	
	10 Years Maintenance Expense (Total)		\$211.63	\$0.00	
	10 Years Expense Saving (Total)		\$0.00	\$211.63	

10 Years Expense (Total)		\$6,234.13	\$998.94	
10 Years Savings Expense (Total)		\$0.00	\$5,235.19	
Investment Return	Annual Electric Fee Saving	\$0.00	\$470.19	
	Annual Maintenance Expense Saving	\$0.00	\$21.16	
	10 Years Net Profit	\$0.00	\$5,023.56	Not Including the Maintenance Expenses
		\$0.00	\$5,235.19	Including the Maintenance Expenses

Conclusion of the above table:

- A. DMX LED Streetlight saves 83.5% compared with the conventional light;
- B. At initial stages, we have economical benefit, saving \$321.68 USD in cable expenses for every single light;
- C. Every year one single light saves \$470.11 USD compared with the conventional light. In ten years, we have an economical effect on our expenses of \$4,701.76 USD (Not included the maintenance expenses);
- D. We will save \$21.16 USD on labor costs, material and maintenance costs: supposing the maintenance costs of sodium light in 10 years is appended, then we will have an economical benefit of \$5,235.19 USD;
- E. In addition, the power consumption of DMX LED streetlights is only 20% of high pressure sodium lights, the capacity of the transformer could be reduced, whose costs also will reduce;
- F. DMX LED working life will last for 10 years. In these 10 years the expenses of traditional high pressure sodium light is 6 times the cost of DMX LED Streetlights.

Supposing 100,000 units of DMX LED street lights are installed in a capital city, we will save 0.52 billion USD in ten years, and save 52.34 million in one year.

- Supposing 100,000 units of DMX LED streetlight lamps are installed in a capital city, we will save 0.52 billion USD in ten years, and save 52.34 million USD in one year.
- DMX LED Streetlights save 80% of energy comparing to conventional streetlights.
- 1 DMX LED Streetlight can save \$523.44 USD annually, and save \$5,234.37 USD in 10 years.
- 100,000 DMX LED Streetlights can save 52.34 million USD in 10 years.

LED Streetlight Project Display

SP90, High Power LED Streetlight Installation View - The State Streetlight replacement project in Mexico

Lamp Installation Method	Model No.	Lamp Consumption	Lamp Height	Lamp Pole Space	Lamp Elevation
Unilateral Installation	SP90	28 Watt	7 Watt	14 Watt	10°
Road Width	Lamp Pole Arm Length	Maximum Illumination	Minimum Illumination	Average Illumination	Uniformity
7M (Two Lanes)	1.5m	12 lux (Equal to 30 lux Sodium Light)	6 lux (Equal to 15 lux Sodium Light)	9 lux (Equal to 23 lux Sodium Light)	0.7



Integrated LED Streetlight Installation View - The Streetlight Replacement Project From Nanshan District, Shenzhen City (Photo Taken in Shenzhen, China)



LED Streetlight Project Display

Integrated LED Streetlight Installation Scene-Lights --- The Streetlight Replacement Project From Nanshan District, Shenzhen City (Photo taken in Shenzhen, China)

Lamp Installation Method	Model No.	Lamp Consumption	Lamp Height	Lamp Pole Space	Lamp Elevation
Unilateral Installation	LU4	112 Watt	9 Watt	25 Watt	10°
Road Width	Lamp Pole Arm Length	Maximum Illumination	Minimum Illumination	Average Illumination	Uniformity
7M (Two Lanes)	2m	26 lux (Equal to 65 lux Sodium Light)	16 lux (Equal to 40 lux Sodium Light)	23 lux (Equal to 58 lux Sodium Light)	0.7



The LED contribution on energy saving and environmental protection streetlights



1. Economical Benefit

Compared with conventional light:

Each DMX High Power LED lamp saves \$470.11 USD in expenses annually, and we will save \$4,698.23 USD, in 10 years.

2. Energy Saving Benefit

DMX-LED saves above 80% power, plays an important role in the trend of "reduce 4% power" which is advocated currently, that is power to which we take advantage to establish an abstemious society and to create circular economy. Each DMX High Power LED Streetlight lamp saves 47,608 Kwh power in 10 years.

3. Consumption Saving Benefit

Based on the coal consumption in an electrical factory 369g/Kwh as a standard;

DMX High Power LED Streetlight lamps:

Each light will save $(369g * 4,760.80 Kwh) / 1000 = 1,885.29 Kg$

Each DMX LED streetlight will save 18.85 tons.

4. Environmental Protection Benefits

Based on the coal discharge 175.4 CO₂/Kwh and 8g SO₂/Kwh / 1000 = 1,885.29Kg in an electrical factory.

CO₂ and SO₂ discharged by DMX High Power LED Streetlights listed as below:

	Reducing Release CO ₂	Reducing Release SO ₂
Annual	835.05 Kg	38.09 Kg
10 Years	8.35 Tons	0.38 Tons

Mexico for example pays extremely for the expenses caused by the environmental pollution each year. According to the reports of 2004 of the "Mexican Green Civil Economic Calculation" (PIB Verde or Green GDP), it shows that Mexico pays \$41,455.8 Million USD on the expenses for the environmental pollution in 2004, which is about 4.4% of the total GDP of 2004.

So that replacing conventional streetlight by advanced energy saving LED streetlights is an exigent demand for human survival, environmental protection, civil economical prorogation and profitable to our next generation!

Each streetlight can save \$4,698.23 USD energy in 10 years;
 Each streetlight can save power of 47,608 Kwh in 10 years;
 Each streetlight can save 18 tons of coal;
 Each streetlight reduces 8.35 tons of CO₂ and 0.38 tons of SO₂ in 10 years;

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100,000 streetlights can save \$0.47 billion USD in 10 years;
 100,000 streetlights can save 4.76 billion Kwh in 10 years;
 100,000 streetlights can save 1,880,000 tons of coal;
 100,000 streetlights reduce release of 835,000 tons of CO₂ and 38,000 tons of SO₂ in 10 years.





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