YAHAM® Lighting

Shoebox™

LED Street Light

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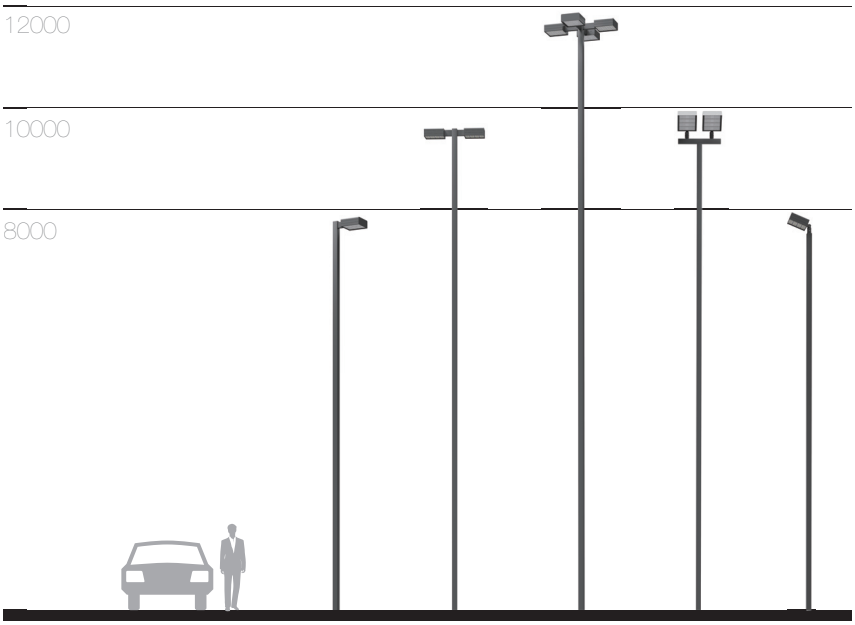
The Shoebox™ LED Street Light brings a new solution for area lighting . With optimized thermal and optical designs, the Shoebox Light offers a better solution to Parking Lots, airports, roadways, campuses and streetscapes.

One-piece aluminum heat sink brings a better performance of thermal management.New lens designed with a larger beam angle provide a wider range of lighting and produce superior photometrics.

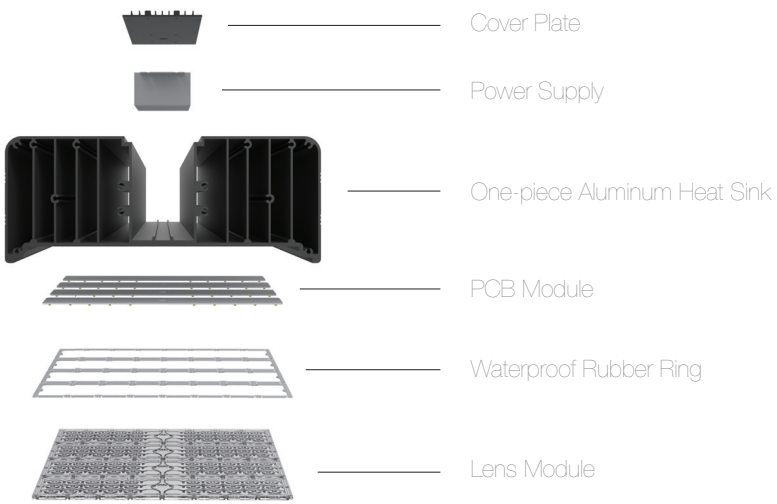
An independent electrical cavity provides double protection for power supply and electric wires.PCB model integrated with LED open protectors ensures long life and high reliability.

This product also provides intelligent expansion if the application calls for dimming solution.The Shoebox™ LED Street Light is carefully designed for parking lot lighting to offer a reduction in system energy.



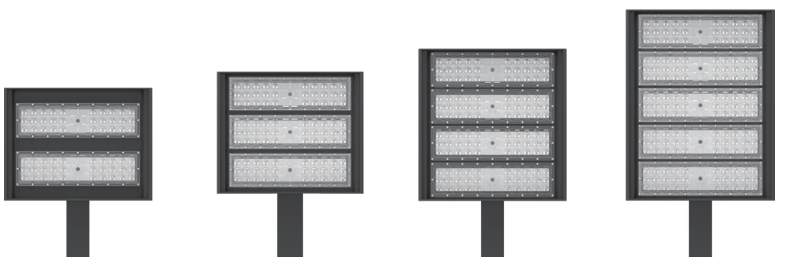
Structure

Simple appearance and unique cubic shape. Every detail is carefully designed to create a more simpler and more powerful light.



Green | IP65 | Power Saving | 50000 hrs Long Life | 5 Year Warranty

Product Line



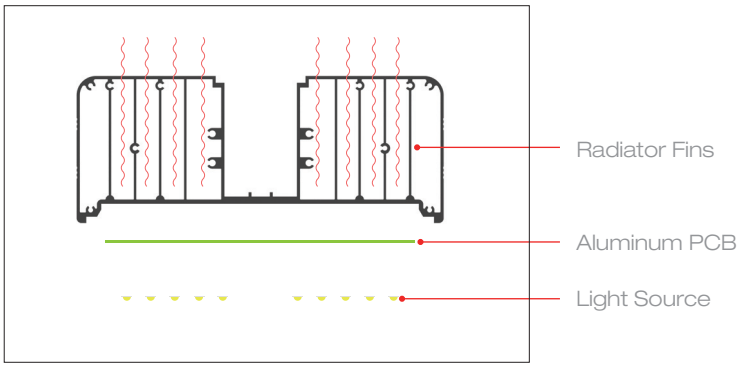
SHOE BOX 90/ 120W | SHOE BOX 150W/180W | SHOE BOX 200/240W | SHOE BOX 300W

Thermal Management

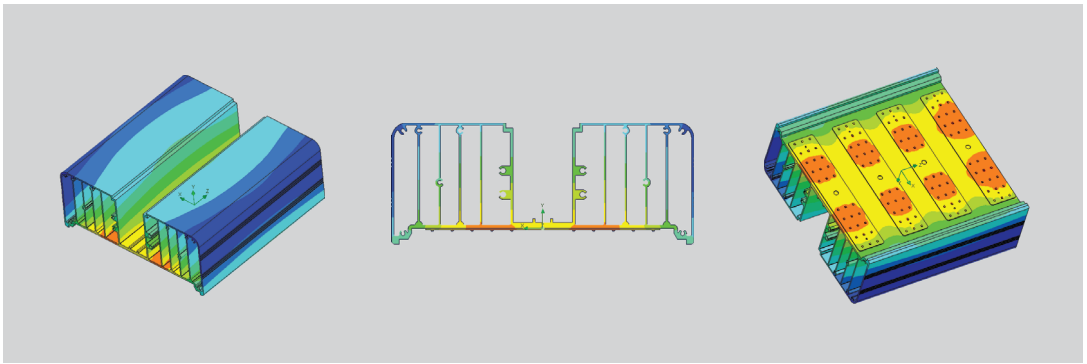
For pursuing a better performance of thermal management and protection level, the whole heat sink is completely redesigned. Shoebox Light uses integrated heat sink instead of conventional modular design.

Main radiator fins provide the most directes heat dissipation channel to make heat flow away as efficiently as possible and guarantee the high lifetime performance for LEDs.

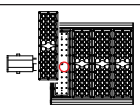
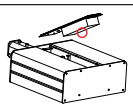
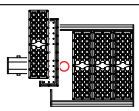
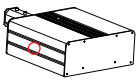
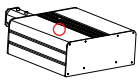
Heat Dissipation Channel



Thermal Simulation Analysis



Temperature Test Report

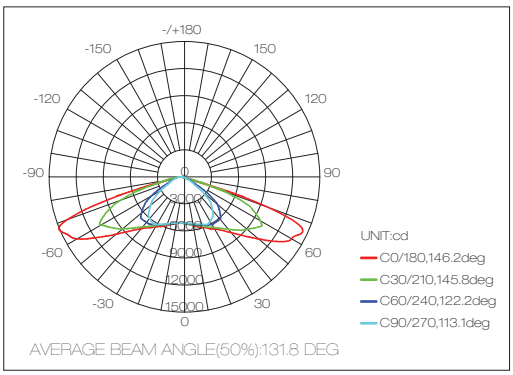
Lighting Time	3 hrs				
Environment Temperature	27.6℃				
Test Point	Aluminium PCB	Driver	Heat Sink (Front)	Heat Sink (Side)	Heat Sink (Back)
					
Temperature	73.1℃	63.1℃	63.6℃	53.2℃	57.2℃

Optical System

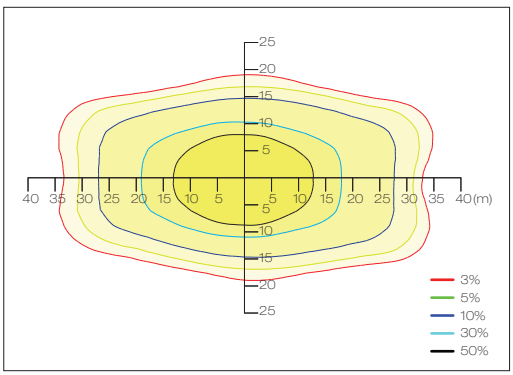
For wide area lighting applications, the light distribution shall be carefully designed to ensure a wider illumination zone and better illuminance uniformity .

After investigation and simulation, the Shoebox™ LED Street Light is designed with 110°/150° beam angle to achieve the best area lighting performance.

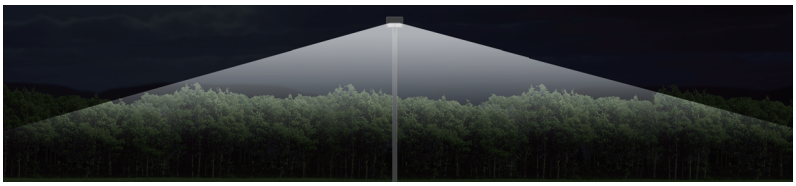
LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



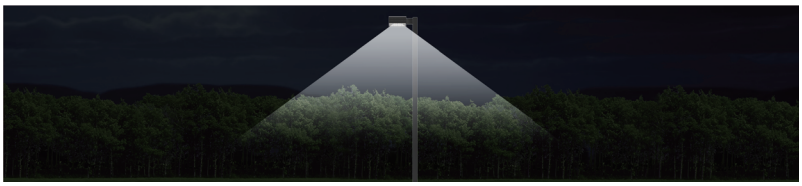
MOUNTING HEIGHT: 10.0 m, 0 Tilt

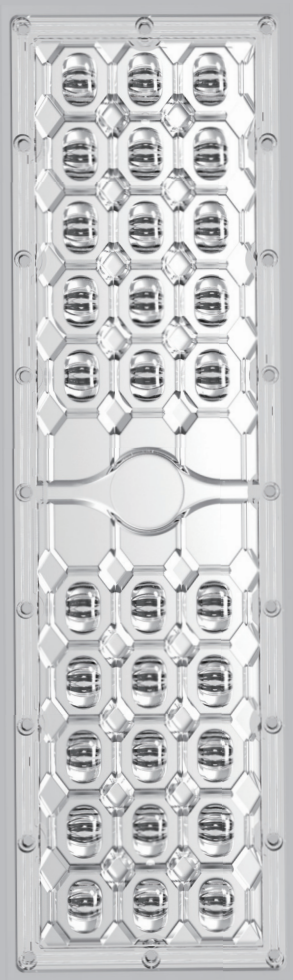


Horizontal: 150°



Vertical: 110°





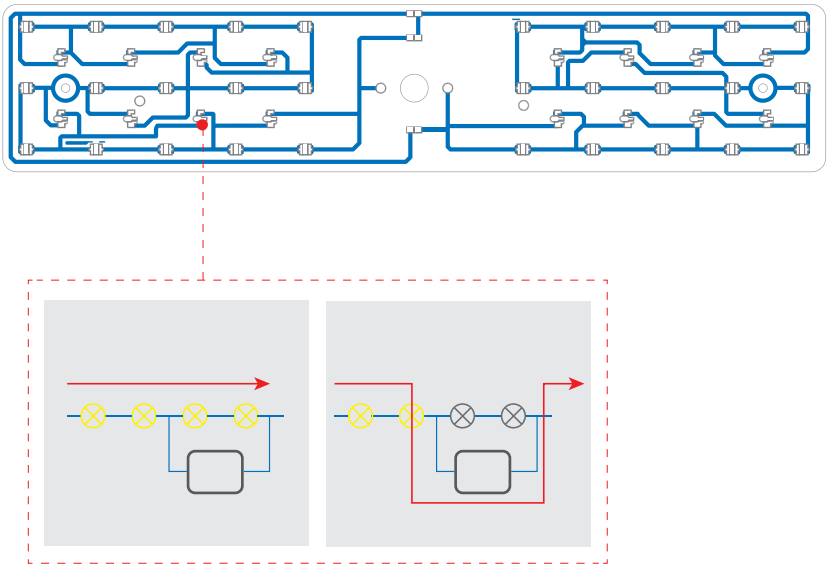
Multiple Protection System

LED Open Protection

An independent electrical cavity keeps the power supply from the outer space, provides double protection for power supply and electric wires. The power supply is installed on the back shroud. A gap is formed between power and heat sink to ensure the performance of driver.

LED Open Protection

PCB module is integrated with LED Open Protector, which provides a switching electronic shunt path when a LED chip in a string fails as an open circuit. This ensures that the remaining LEDs of the string will continue to function if a single LED does not. Greatly improves the reliability.



Quality Control

Shoebox Light incorporates the latest LED application technology to create a excellent product. We have a strict quality control system during the development and production stage. The main components such as Driver and LED Chips all are coming from the world's top suppliers. A strict surface treatment processing is conducted towards all metal parts.

Power Supply

MEAN WELL power supply. Lifetime is more than 50,000 hours, and 5 years warranty offered. Installation and connection is plug type, which is very convenient to assembly and maintenance.

- Good Electric Specification

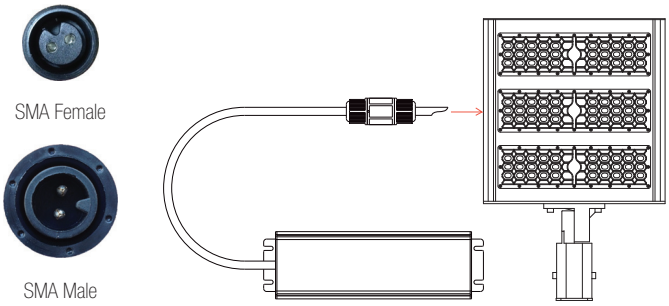
  Possess superior working efficiency that up to 94% can be reached in field applications

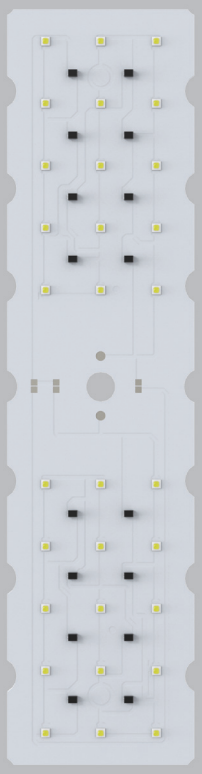
  Power Factor Characteristic can reach more than 95%

  Total Harmonic Distortion less than 15%

- Convenient Installation and Maintenance

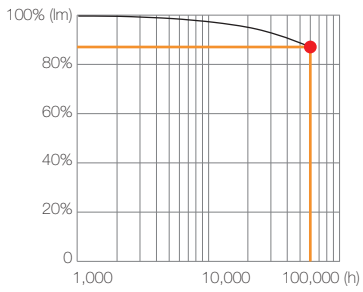
  Waterproof Connector: Bring more convenient.





Light Source

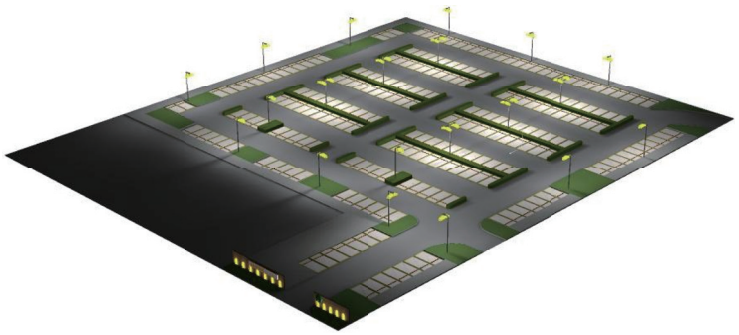
Original LED chips are used to ensure the higher efficiency and longer lifetime. According to the ISTMT report from RTPO and LM-80 report from Nichia, the TM-21 shows that the lumen maintenance of the Shoebox LED Street Light is more than 86.94% at 60,000 hours.

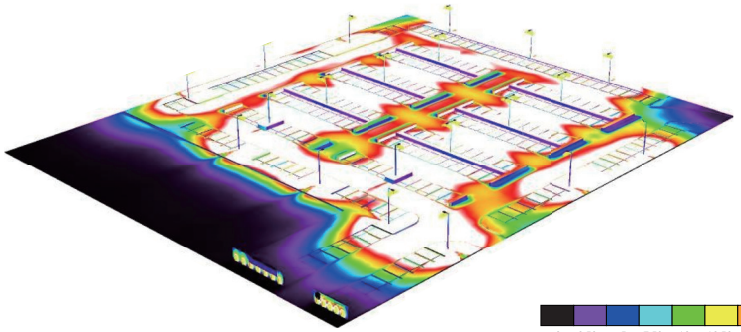


Application Case

Illumination simulation

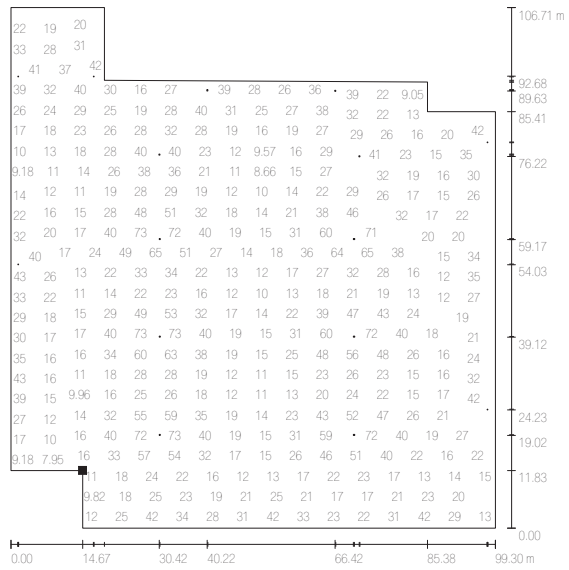
Parking lot lighting is a typical application of Shoebox Light. According to the simulation by Dialux, Shoebox Light have a good performance in area Lighting. We use 26 pcs 150W Shoebox Light to create a lighting system for a 10,000 square meters parking lot . The report shows that the horizontal illumination and uniformity all can meet the design standards.





ROI (Return On Investment)

Comparison Items	LED Luminaire	Traditional Luminaire
Type	LED Shoebox Light	MH
Power	150W	250W
Lifespan	50,000 h	12,000 h
Unit-price	$280	$150
Quantity	1000 pcs	
Purchasing Cost	$280,000	$150,000
Lighting Time	10 h / day	
Power Consumption (kw•h / year)	547,500	1,003,750
Power Saving Ratio	45.4%	45.4%
Electricity Price	$0.1	
Electricity Consumption	$54,750	$100,375
Annual Maintenance Cost	$0	$50,000
Annual Operating Cost	$54,750	$150,375
Reduce Cost Per Year	$95,625	
Payback Period	3 years	



Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
28	7.53	85	0.267	0.088

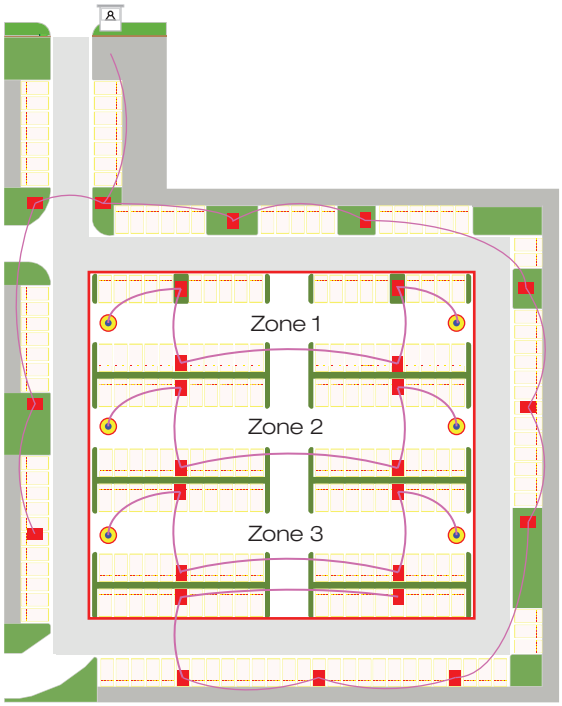
Intelligent Control System

LED Shoebox Light supports intelligent expansion to offer a more economical lighting system.

Using zone control system, the main road area keeps lighting normally, while other parking area are integrated with motion sensor and dimming system.

The Light with motion sensor will work at a lower lighting level as you set, and the low light is maintained until motion sensor is detected when a car driving into the control area.

As a standard system below , a simple system can bring 30% energy saving than normal system.



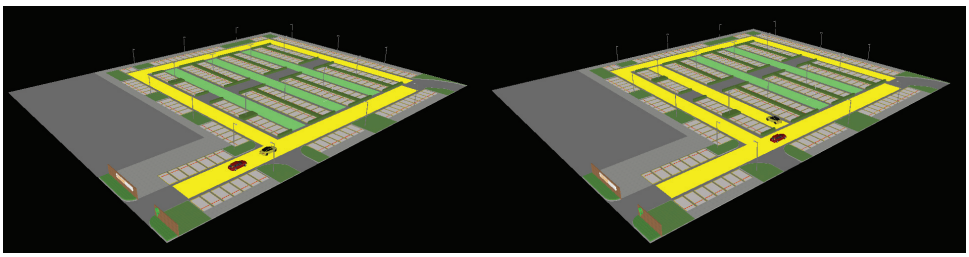
LED Shoebox Light

Motion Sensor

Control Room

Always Lighting Area

Dimming Area



Power Save Mode

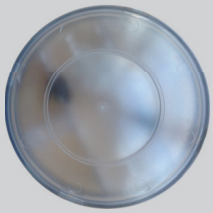
Area Activate Mode

50% Lighting Area (The lighting level can be set from 10% to 100%)

100% Lighting Area

Dimmable Driver

Microwave Sensor



IP65 Protective Cover

Parameters

AC	Hz	PF	THD
100-277V	47 / 63	≥93%	≤15%
Input Voltage	Power Frequency	Power Factor	Total Harmonic Distortion

Optical

All parameters are measured at 25℃ ambient temperature, 35% humidity exprimental enviroment.

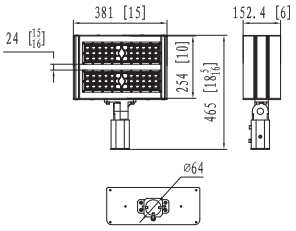
	YHL-ST-90(XH2) 90W	YHL-ST-120(XH2) 120W	YHL-ST-150(XH2) 150W	YHL-ST-180(XH2) 180W	YHL-ST-200(XH2) 200W	YHL-ST-240(XH2) 240W	YHL-ST-300(XH2) 300W
LED Chip Quantity	60 pcs	60 pcs	90 pcs	90 pcs	120 pcs	120 pcs	150 pcs
Color Temperature	4500～5500K(2500～5500K optional)						
Light Efficiency	≥95 lm/W						
Luminous Flux	>8500 lm	>11500 lm	>14500 lm	>17000 lm	>19000 lm	>23000 lm	>29000 lm
Color Rendering Index	≥70						
Beam Angle	110° * 150°						

Physical

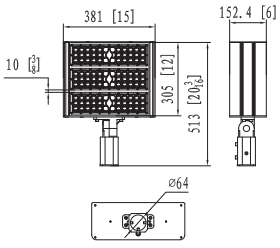
All parameters are measured at 25℃ ambient temperature, 35% humidity exprimental enviroment.

	YHL-ST-90(XH2) 90W	YHL-ST-120(XH2) 120W	YHL-ST-150(XH2) 150W	YHL-ST-180(XH2) 180W	YHL-ST-200(XH2) 200W	YHL-ST-240(XH2) 240W	YHL-ST-300(XH2) 300W
Working Humidity	15% ~ 90% RH						
Working Temperature (Environment)	-30 ~ +55℃						
HID Replacment	150 W	250 W	400 W	400 W	400 W	700 W	700 W
Lifetime	≥ 50000 Hrs						
Fixture Material	Aluminum Alloy+PC Lens						
IP Level	IP65						
Net Weight	9.0kg±0.2 kg		11.2kg±0.5kg		13.0kg±0.2kg		16.3kg±0.5kg
Package Dimensions	L520mm * W440mm * H215mm		L580mm * * W440mm * H215mm		L680mm * W440mm * H215mm		L780mm * W440mm * H210mm

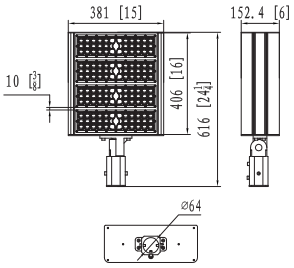
YHL-ST-90(XH2)
YHL-ST-120(XH2)



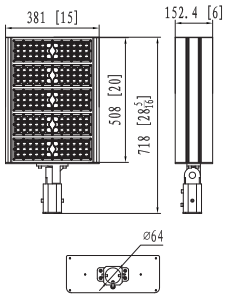
YHL-ST-150(XH2)
YHL-ST-180(XH2)



YHL-ST-200(XH2)
YHL-ST-240(XH2)



YHL-ST-300(XH2)



Installation and Maintenance

Installation Methods

Recommended

- Round Pole Mounting
- Angle-adjustable
- Equipped with socket

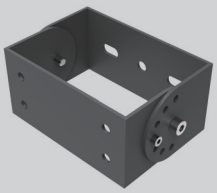
Optional

- Wall Mounting
- Angle-adjustable
- Equipped with bracket

Optional

- Square Pole Mounting
- Angle-unadjustable
- None accessories

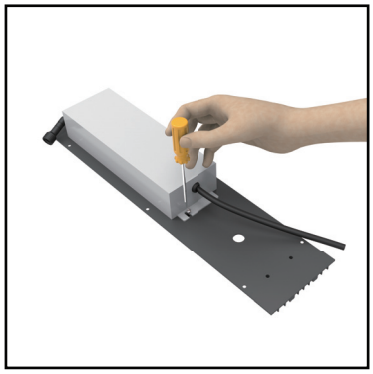
Socket



Bracket

Driver Replacement

- Open the cover plate, and separate the waterproof connector.



- Replace the new power supply, and connect the waterproof connector, then install the cover plate back.

YAHAM® Lighting

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