E2 Lighting International Inc.

Project Name: _____ Catalog Number: _____

Notes: _____ Fixture schedule: _____

Solar Street Light

Product Description:

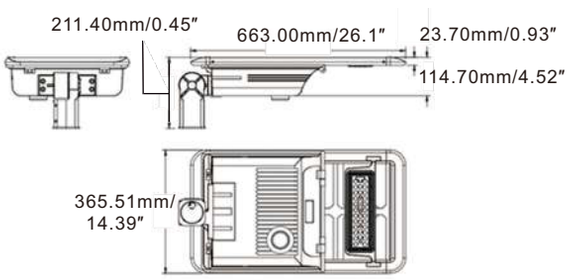
The E2 Solar LED Street light features an all-in-one design with a low profile, including a PIR/microwave motion sensor and a smart controller integrated into the design. it adopts the long life battery for storing energy. The battery can charge and discharge for over 2000 cycles, offer a safer and relatively minor size and longer lifespan. The solar panel design makes it suitable for use in remote regions and areas without electricity supply.

Features

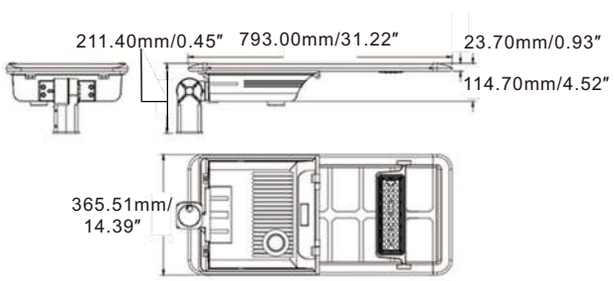
- Bifacial solar panels with an increased overall conversion efficiency of 30%.
- Ultra-high light efficiency.
- Over 2000 cycles charge and discharge of LifePO4 battery
- Rotatable LED module design
- Equipped with unique anti-theft technology on battery
- Lifespan: >50,000Hrs
- Built-in PIR/microwave motion sensor
- Warranty 5 year

Dimension

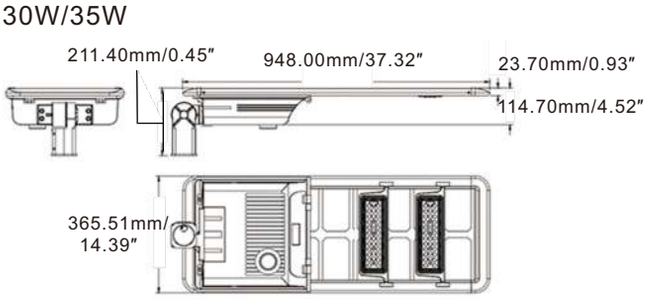
10W/15W



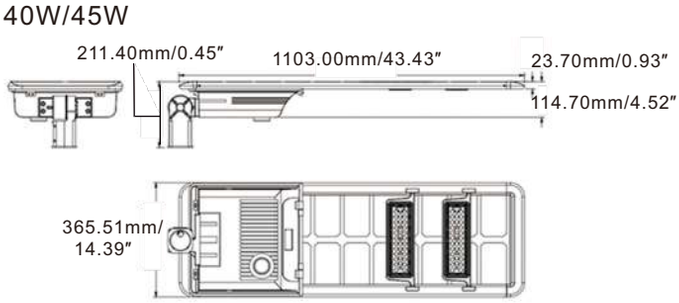
20W/25W



30W/35W



40W/45W



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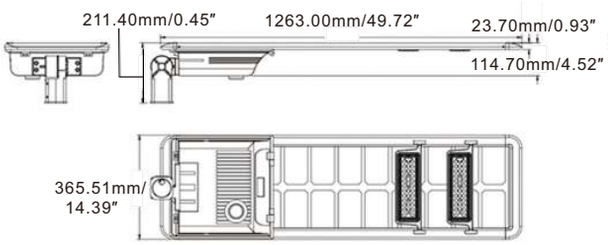
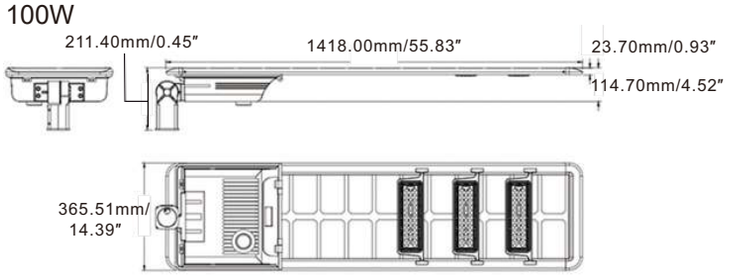
50W



100W



Specifications

Model	E2-10WsE	E2-20WsE	E2-30WsE	E2-40WsE	E2-50WsE	E2-100WsE
Power(W)	10W/15W	20W/25W	30W/35W	40W/45W	50W	100W
Control Option	Photocell sensor, timing, dimming, intelligent pow er saving, microw ave sensor. 4G, Zigbee, Smart Lighting Control optional.					
LED Manufacturer	Seoul					
LED model	Seoul 5050					
Lens	Polycarbonate					
Efficacy	200lm/W	190lm/W	196lm/W	192lm/W	192lm/W	190lm/W
Luminous flux	2000lm	3800lm	5880lm	7680lm	9600lm	19000lm
ULOR	= 0%, @ Luminaire inclination 0°					
CCT	3000K, 4000K, 5000K, 5700K, 6500K					
CRI	70Ra, 80Ra, 90Ra optional					
Beam angle	T2/T3/T5					
IP Rating	IP 65, according to standard EN 60529					
Scx	Front: 0.3465m²; Front-side: 0.0535 m²; Side: 0.0622 m²;	Front: 0.3465 m²; Front-side: 0.0535 m²; Side: 0.0622 m²;	Front: 0.4143 m ; Front-side: 0.0535 m ; Side: 0.0669 m ;	Front: 0.4831 m ; Front-side: 0.0535 m ; Side: 0.0706 m ;	Front: 0.5537 m ; Front-side: 0.0535 m ; Side: 0.0743 m ;	Front: 0.6215 m ; Front-side: 0.0535 m ; Side: 0.0790 m ;
Housing	Heavy-duty die-cast aluminum (EN AC-46100)					
Surface treatment	Anti-UV thermosetting polyester / 80 micron epoxy primer + Anti-UV thermosetting polyester (for extremely corrosive environments).					
Painting	Black, custom color on request, C5-grade painting.					
Mounting	Universal/Wall mount/Round pole/Square pole					
Photovoltaic panel	Bifacial monocrystalline solar panel					
Solar Panel	18V/30W	18V/40W	18V/50W	18V/60W	18V/70W	18V/80W
Li-ion Battery	153.6WH	230.4WH	307.2WH	384.0WH	460.8WH	537.6WH
	12.8V12AH	12.8V18AH	12.8V24AH	12.8V30AH	12.8V36AH	12.8V42AH
Charing Time	5.12Hrs	5.76Hrs	6.14Hrs	6.40Hrs	6.58Hrs	6.72Hrs
Battery lifespan	>2000 times cycle					
Run Time	15hrs / 10hrs	11.5hrs / 9hrs	10hrs / 8.5hrs	9.5hrs / 8.5hrs	9hrs	9hrs
Ambient Temperature	-10°C to 50°C (14°F to 122°F)					
Storage Temperature	-20°C to 45°C (-4°F to 113°F)					
Control system	PWM / MPPT / complementary solution, custom IOT and remote control on request					
Maximum Autonomy	Operate 5~7 rainy days under intelligent model.					
Lifespan	L90B10 - 100000 hrs, @Tq 25°C					
Warranty	3 years as standard (Warranty extension to 5 years on request)					
Certification	FCC CE RoHS, the company is ISO 9001 and ISO 14001 certified,For other certificates please request					
Application field	Road & street, residential area, garden, parks, parking lot, industrial and commercial parks, railw ay & station side, riverside & jogging track					
Important note!	The provided information is solely for reference; the official measurement report holds higher authority.					

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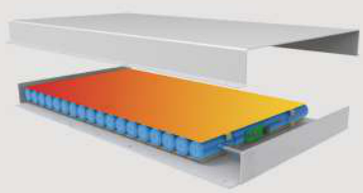
Features of E2 Series

- The E2 solar LED street light features an all-in-one design with a low profile, including a PIR/microwave motion sensor and a smart controller integrated into the design.
- The bilateral solar panel design makes it suitable for use in remote regions and areas without electricity supply.
- Using LiFePO4 batteries, which can charge and discharge for over 2000 cycles, over a safer and relatively minor size and longer lifespan.
- Operating time: With the intelligent model enabled, it can operate for 5 to 7 days during rainy weather.
- The controller features an intelligent energy-saving mode with selectable levels, extending the lighting duration and automatically adjusting brightness.

Integral Monocrystalline Silicon Solar Panel

Conversion Rate up to 30%

25 Years Lifespan



>2000 times

Lifespan Cycle

High quality LI-ion battery

Intelligent temperature control

Accessories

Mounting Options

Type A
Universal Bracket

Type B
Wall Mount

Type C
Round Pole

Type D
Square Pole

Bird Spikes

PIR/microwave
Motion Sensor

Programmable
Remote Control

MPPT
4G/Zigbee-IoT

Safety Rope

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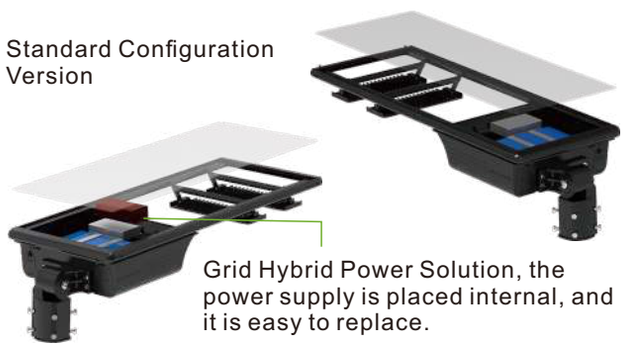
Application

- Road & street lighting
- Residential area lighting
- Garden, parks & perimeter lighting
- Parking lot lighting
- Industrial and commercial park lighting
- Railway & station side lighting
- Riverside & jogging track lighting

Key advantages

Grid Hybrid Power Solution Optional

Standard Configuration Version



Grid Hybrid Power Solution, the power supply is placed internal, and it is easy to replace.

When the battery voltage is lower than the set value, the power supply will switch to mains power, and when the voltage is higher than the set value, it will switch to battery power. The standard configuration does not include hybrid mains power function.

Ultra-high light efficiency. 10 watts equivalent to at least 20 watts of others.

Equipped with unique anti-the technology on the battery door for added security. Designed for easy battery replacement.

Multiple installation methods available to suit various applications, such as light poles, wall surfaces, and more.

Over 30 different road optical designs available to accommodate various road conditions while ensuring efficient use of light.

Bifacial solar panels with an increased overall conversion efficiency of 30%.

Rotatable LED module for ease of installation and optimal solar panel angle adjustment to follow the sun's path.

Designed to replace traditional 35-400 watt lighting systems. With options from 10W to 60W, it can meet all road lighting requirements.

Featuring a built-in PIR/microwave motion sensor and smart controller, as well as complementary AC and DC capabilities (Optional).

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Photometrics Design

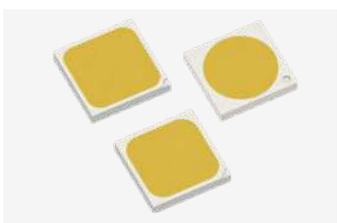
Lumen efficiency >200lm/W
achieve higher illumination

High Efficiency

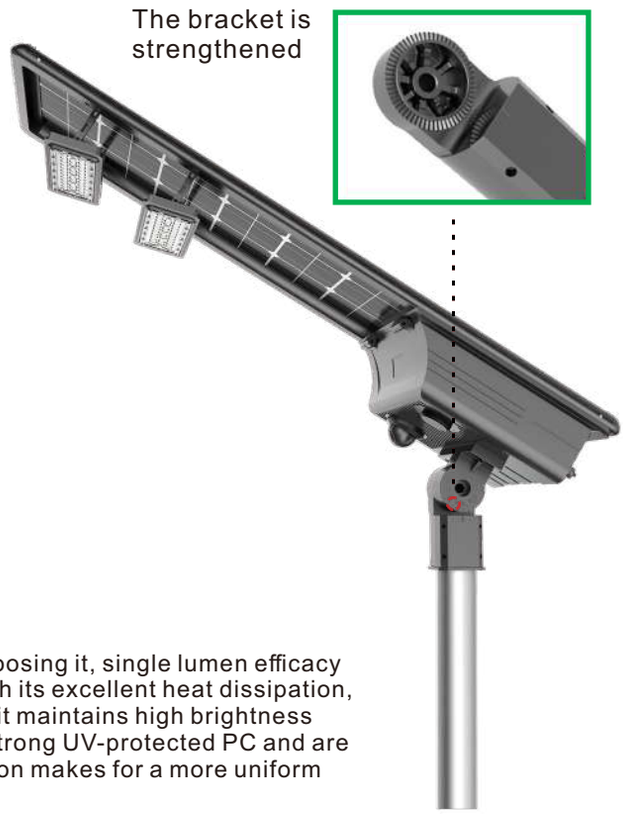
Long Lifespan

Less Calorific Value

Low Light Decay

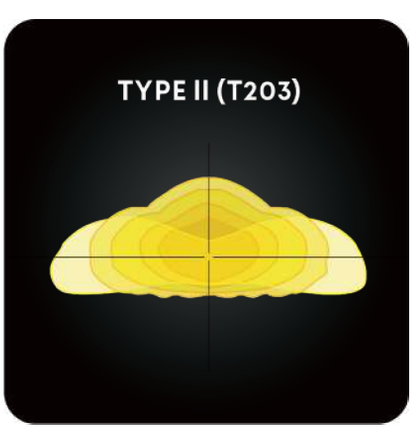


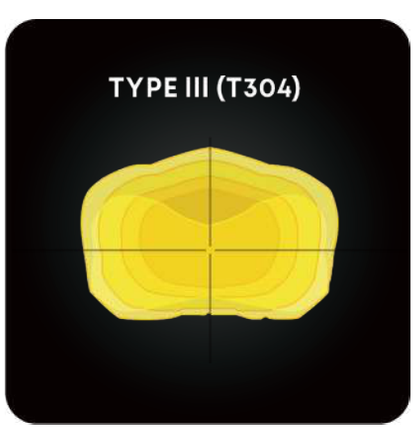
The bracket is strengthened



Seoul 5050 LED chip creates a first-class light source. By choosing it, single lumen efficacy >200lm/W, with the aluminum lamp base and sealed lens, with its excellent heat dissipation, it is as if the LED chip has been placed in a sealed unit. Thus it maintains high brightness levels with very little fading. The sealed lenses are made of strong UV-protected PC and are aging and shock-resistant; The well-optimized light distribution makes for a more uniform and wider lighting area.

Distribution





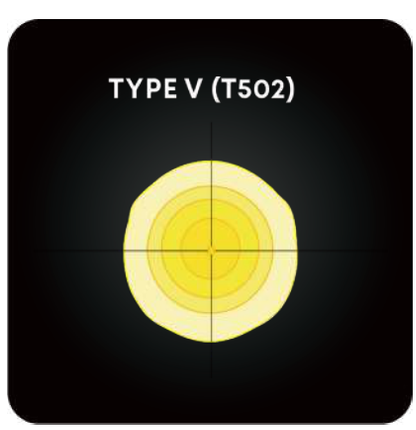
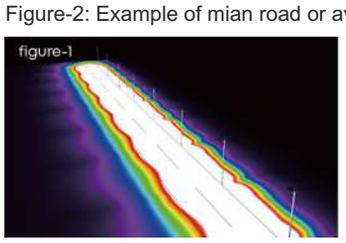
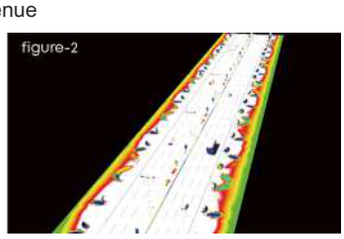


Figure-1: Example of rural branch road
Figure-2: Example of mian road or avenue





Planning and analysis of street lights can be done by using lighting simulation & design software, which allows the lighting effect a more intuitive display. It uses rendering, the process of generating an image from a model, by means of computer programs resulting in different tools for measuring the simulated light levels.

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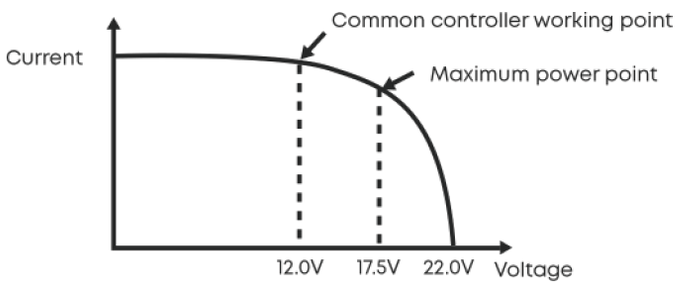
Advantages of controller

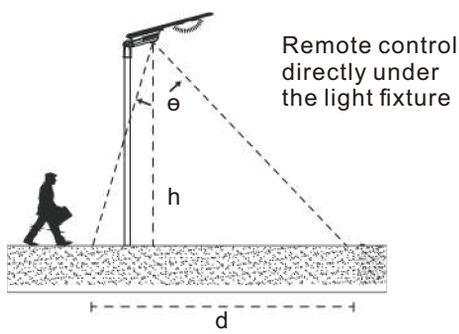


(take 12V battery system as an example)

1) Moving Track MPPT maximum power tracking technology is adopted to improve the tracking efficiency and speed by more than 20%;
2) UltraGreen power control technology with extremely low static power consumption and sleep current;
3) 10 time-periods programmable load power/time control;
4) Multiple intelligent power modes can be selected, and the load power can be automatically adjusted according to the battery power;
5) Multiple protection functions such as battery /PV reverse connection protection, LED short circuit/open circuit/power limit protection;
6) Aluminum metal housing, IP67 waterproof rating, can be used in a variety of harsh environments
7) Extensible IoT remote communication monitoring function;

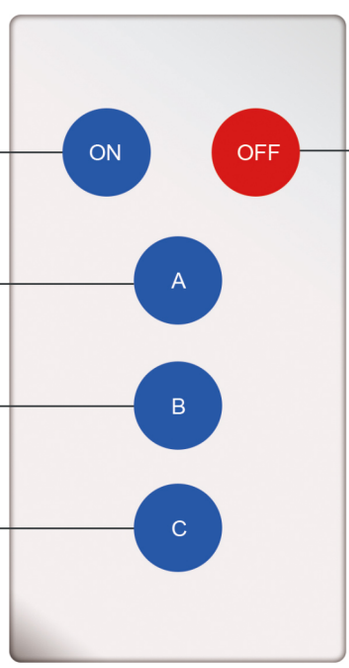
Detection distance

Remote control distance 5-8 meters, installation height and environment and other factors will affect the controller sensitivity, please refer to the actual field.
Note: Please do not place 2 or more lights within 12 meters at the same time while using the remote controller, receiving or sending may fail.



Inductive Type (alternative)	e-Angle (X-axis rotation: 360")	h (Height of lamp rod)	d (Inductive width)
IR(Infrared)	60°	6-8m	6-10m
WB	65°	6-10m	7-10m

Remote control



. Turn on the anti-theft module

. Time contro+ PIR mode
4 hours 100% and 30%
3 hours 70% and 30%
3 hours 50% and 20%
4 hours 30% and 10%

.PIR mode
Human sensed.100%
No sensed, 30%

. Time control mode
2 hours 100%
2 hours 70%
4 hours 50%
6 hours 10%

. Turn off the anti-theft module

Note:
. Default output setting as Mode A.

. 5 buttons on controler:
"NO""OFF""A""B"and"C"The remote control should aim at the sensor head on the fixture and press the corresponding key to send the signal. If it is written & received successfully, the indicator light will flash accordingly, else failed.

. Energy-saving description:
Mode A: optimal
Mode B: medium
Mode C: best
Please select the mode according to the condition of installation site.

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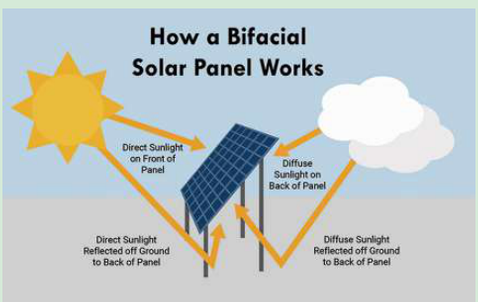
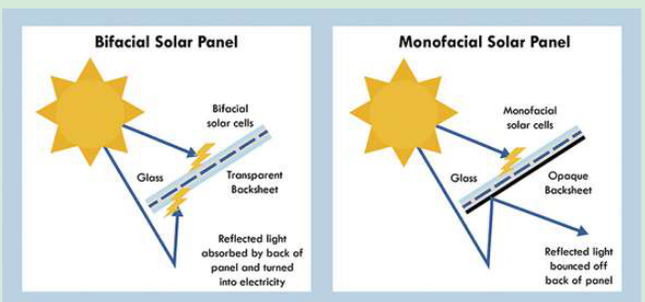
Bifacial Solar Panel

Cost is one of the biggest factors a big factor - particularly in the case of monofacial modules. The cost of bifacial modules has fallen precipitously over the last two decades. Notably, as costs have decreased, so too has the cost gap between mono - and bifacial modules.

There is no doubt bifacial modules will increase power production. Results and studies have shown that bifacial modules can produce additional power between 10-20% over monofacial panels. If conditions are optimized and single - axis trackers adopted, the additional power can be as high as 30-40%.





Site selection:

The site selection of the bifacial panels can be optimized. For places where land is less electricity supply and expensive, monofacial panels should be laid in the right direction to ensure maximum energy collection. However, bifacial modules can have optimal spacing and therefore higher yields. Also, bifacial yields are greater where the diffuse light energy is greater, which means at higher latitudes the bifacial yield will be greater than at lower latitudes.

High Albedo:

The environment has a high albedo that is great for bifacial panels compared with monofacial panels. Desert sand is even a better option. The best option is white concrete or highly reflective roof foil. Snow and ice also have a very high albedo.

Tilt:

More flexible than monofacial panel. Bifacial panels can receive light even at sunset. This will vary from site to site, but generally, 2-15 degrees more than the monofacial tilt has been shown to be effective.

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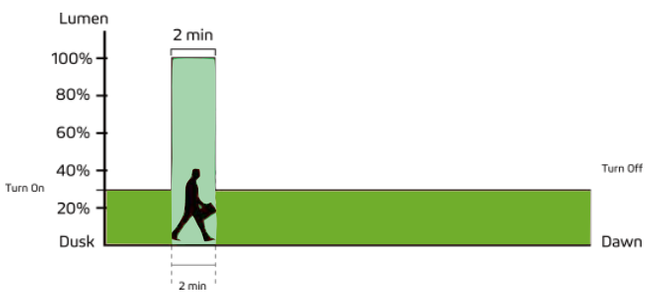
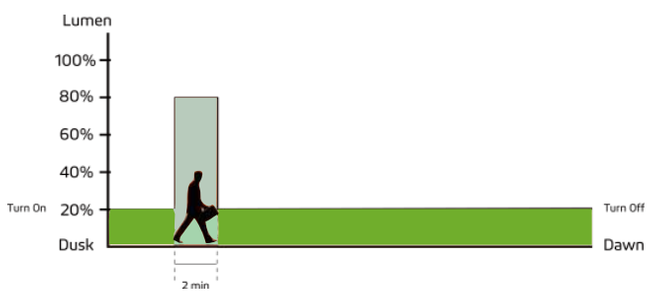
Smart City Starts with Smart Lighting

autonomy control reference

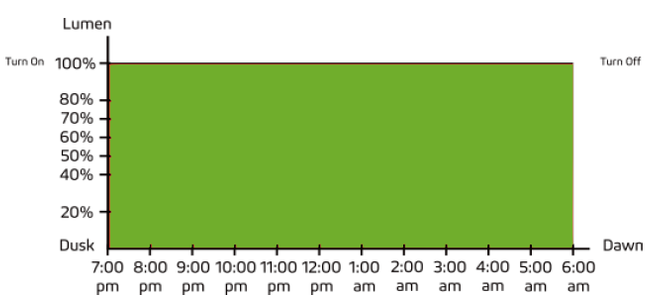
30%-100% MOTION SENSOR MODE
Constant 30% brightness (turns on at dusk, turns on at dawn);
100% brightness turns on for 2 minutes when motion is



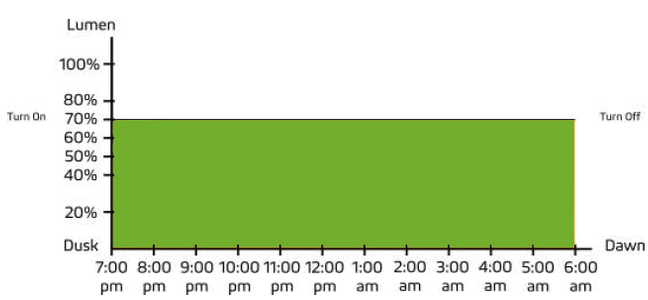
20%-80% MOTION SENSOR MODE
Constant 20% brightness (turns on at dusk, turns on at dawn);
80% brightness turns on for 2 minutes when motion is



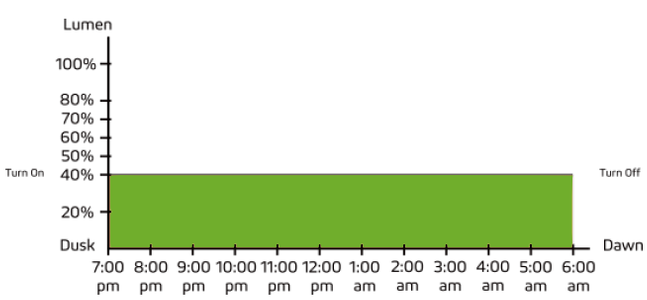
100% CONSTANT MODE
100% brightness from dusk to dawn.



70% CONSTANT MODE
70% brightness from dusk to dawn.



40% CONSTANT MODE
40% brightness from dusk to dawn.



PROGRAMABLE CONTROLLER OPTIONAL

A programmable remote control is used to adjust the appropriate plan according to the different periods of daylight and road conditions in each area and season.

Default mode
1) 4H-Detected 100%, None 30%;
2) 3H-Detected 70%, None30%;
3)3H-Detected 50%, None 20%;
4)4H-Detected 30%, None 10%;
5) Subject to specific order.

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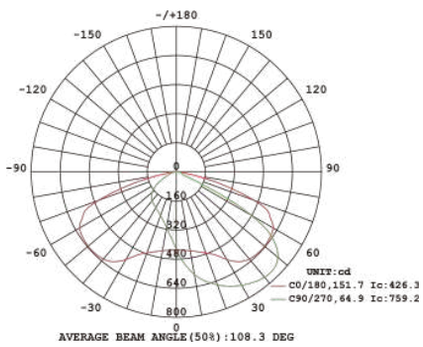
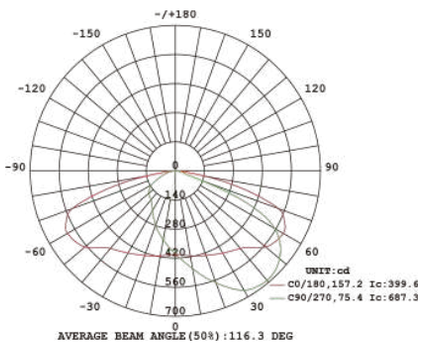
Photometry

Type II



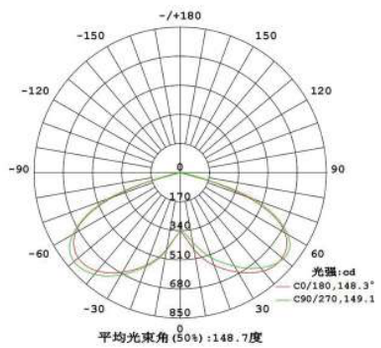
AVERAGE BEAM ANGLE(50%):108.3 DEG

Type III



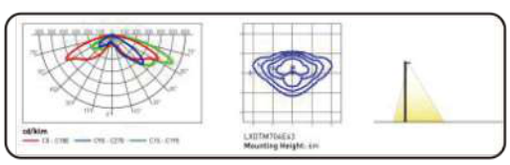
AVERAGE BEAM ANGLE(50%):116.3 DEG

Type V

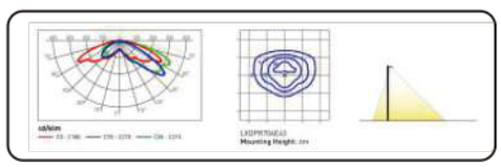


平均光束角(50%):148.7度

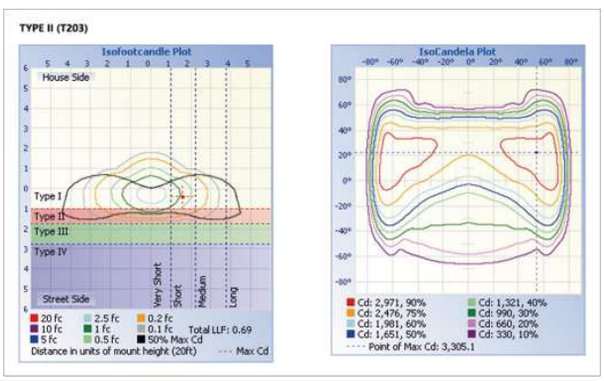
Type 2 for street lighting, cycle paths and footpaths

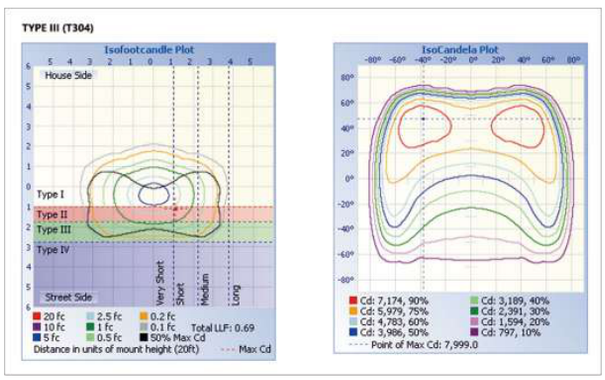


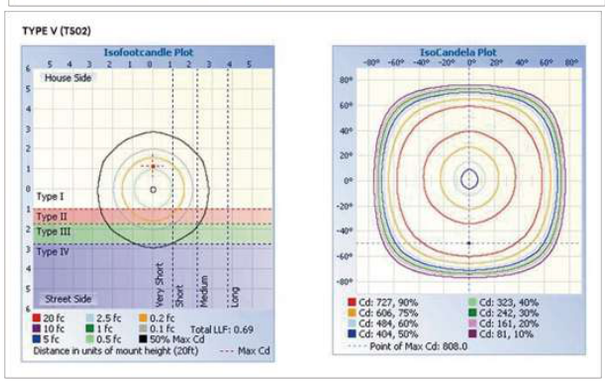
Type 3 for street light and car parks



Illuminance Diagram







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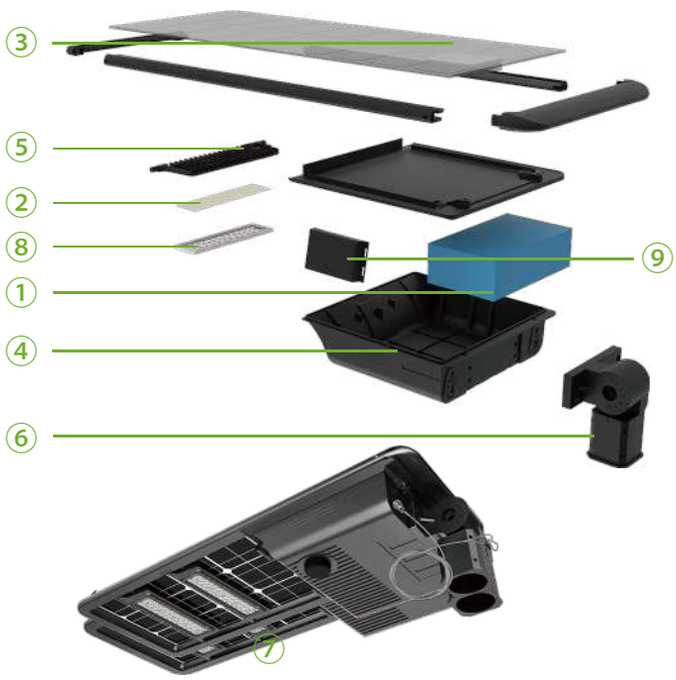
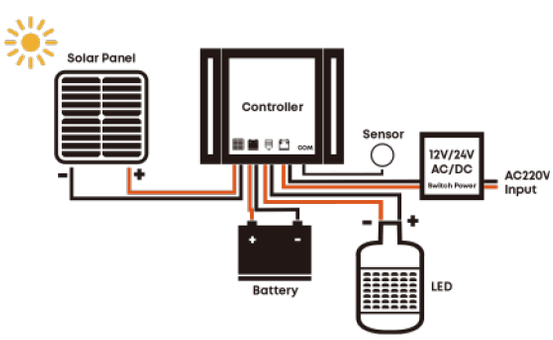
E2 Lighting International Inc.

Construction Features



1.Easy battery replacement design, can be renewed for 7 years.
2. Ultra-high light efficiency, 10 watts equivalent to 20 watts of others at least.
3. Bilateral solar panels, the overall conversion efficiency is increased by 30%.
4. Unique anti-the technology on battery door.
5. Rotatable LED module, worry-free installation, best solar panel angle adapt to the sun.
6. The various installation methods suit for any application likes light poles, wall surface and etc.
7. From 10 to 60 watts, can replace the traditional 35-240 watts, meeting all road application conditions.
8. Customizable optical road lighting designs, adapt to various road conditions but no waste of light.
9. Controller, system charging and charging intelligent control center.

Working Way



The solar panel receives solar radiation energy and converts it into electricity, which is stored in the battery by the photovoltaic controller, At night, when the illumination gradually decreases to about 10 LUX and the solar panel voltage is 5V, the charge and discharge controller detects this voltage value, and controls the battery to discharge for the LEDs to complete the process of daytime charging and evening discharge.
When the battery voltage is lower than the set value, the power supply will switch to mains power, and when the voltage is higher than the set value, it will switch to battery power. The standard configuration does not include mains complementary function.

Ordering Information

E2 -	-	-	-	-	-	-	-
Watts	Voltage	LED Chips	Type of Sensor	CCT & CRI	Distribution	Mount	Color
10WSE 15WSE 20WSE 25WSE 30WSE 35WSE 40WSE 45WSE 50WSE 100WSE	DC=Solar NV=Grid	S5=Seoul 5050	00=Without Sensor SN=Motion Sensor (up to 9M) PIR=PIR Sensor (up to 7M) DV=Dimmable	3070=3000K 70CRI 4070=4000K 70CRI 5070=5000K 70CRI 5770=5700K 70CRI 6570=6500K 70CRI 3080=3000K 80CRI 4080=4000K 80CRI 5080=5000K 80CRI 5780=5700K 80CRI 6580=6500K 80CRI	T2=TYPE II T3=TYPE III T5=TYPE V	Type A Type B Type C Type D	BK=Black

Accessories (Order separately)

Intelligent APP control
IOT Management
AC & DC complementary

Phone: 469-638-3592 Fax: 213-477-2257 Web: www.e2lightingusa.com E-mail: sales@e2lightingusa.com