



ZYTECH LED SOLAR STREET LIGHTS



ENERGY SAVING LIGHTING

Solar powered LED street light offer a 'zero running costs' solution for public and private

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SOLAR STREET LIGHT

A new generation of solar powered systems for street lighting

Solar Street Lighting is becoming more popular by the day as people are becoming more environmentally conscious.

Zytech Solar Street Lighting basically as a source of power which can store energy and work by using the energy at night.

Zytech solar Powered Street light basically Works by producing electricity which is conducted via cables and a solar battery charger to the solar batteries placed at the base of the pole.



Zytech Solar Module

All high performance solar panels are made by efficient poly or mono solar cells with a rugged tempered glass face and aluminium frame.

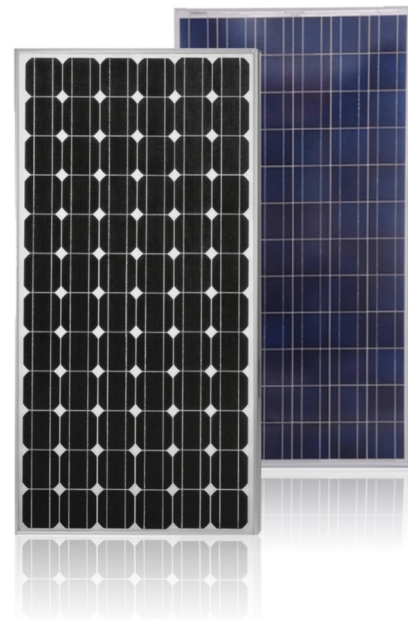
Zytech Solar warranty of a power output of 25 years ensures your lighting system will generate power for decades into the future. The LED street light has got one or two modules depending on the application.

Solar regulator

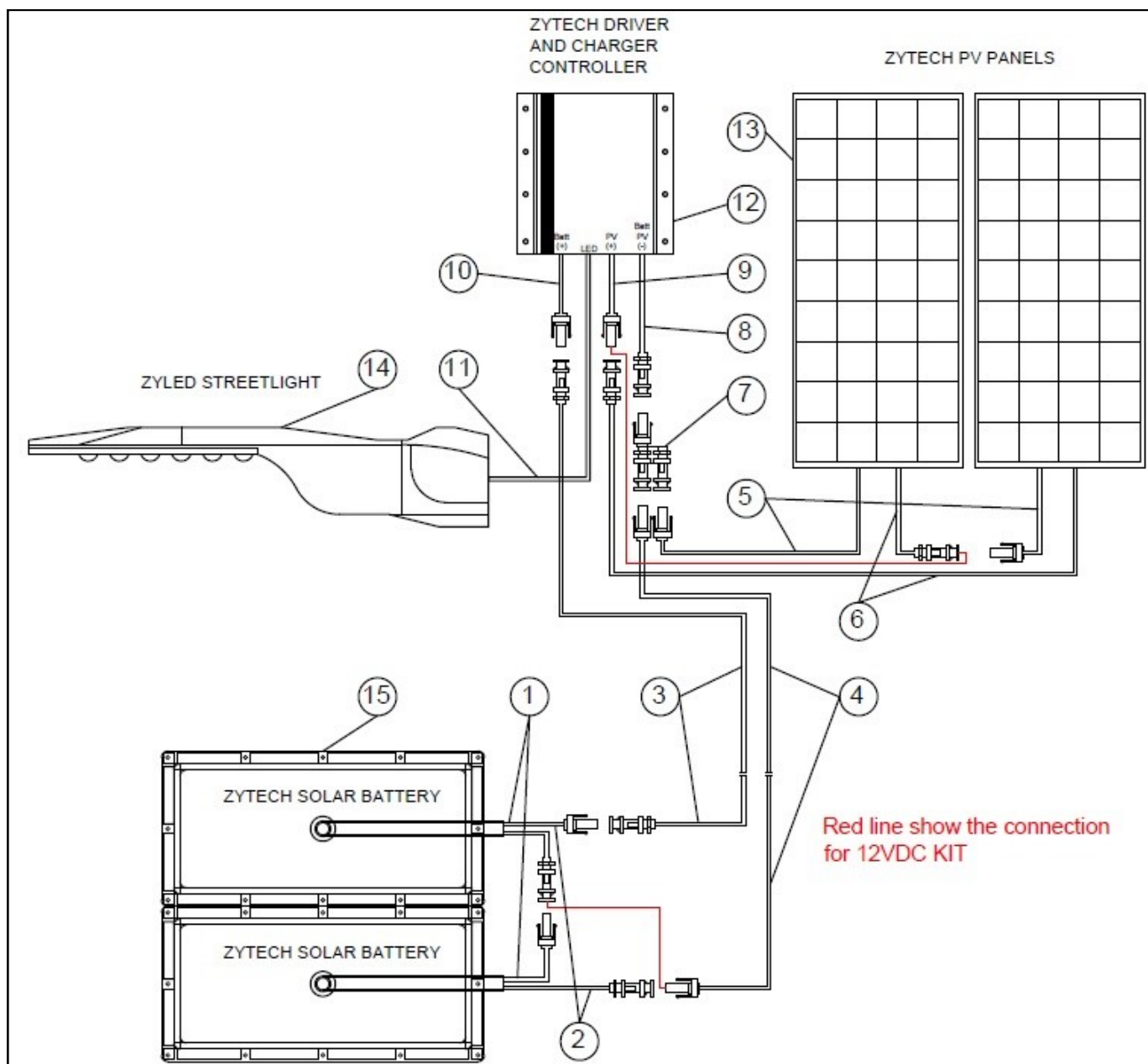
The solar regulator is designed according to the solar street light system. The regulator protects the battery from being overcharged by the solar panels and being deep discharged by the loads. The charging characteristics include several stages.

Battery system

The advantageous GEL type batteries allow free operation of the solar street light system. And the battery can be fully discharged without damage.



KIT CONFIGURATION DIAGRAM



- | | | |
|----------------------------|-------------------------|----------------------|
| ① Cable Batt (+) | ⑥ Cable PV (+) | ⑪ Cable LED(+ -) |
| ② Cable Batt (-) | ⑦ MC4 2-1 addapter | ⑫ Zytech CCD |
| ③ Cable Batt (+) extention | ⑧ Cable CCD Batt/PV (-) | ⑬ Zytech PV panels |
| ④ Cable Batt (-) extention | ⑨ Cable CCD PV (+) | ⑭ Zyled Streetlight |
| ⑤ Cable PV (-) | ⑩ Cable CCD Batt (+) | ⑮ Zytech Battery Box |

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ZT Series Polycrystalline

Solar Module

140P/145P/150P



Efficiency

High Module Conversion Efficiencies utilizing three or four bus bars per cell

Warranty

Peace of Mind Guaranteed with a twenty-five Year Linear Power Warranty and Product Quality Ensured for ten years

Certifications

IEC 61215:2005, IEC 61730:2004, UL 1703-3rd Ed: 2014, ULC/ORD C1703-01:2014, ISO 9001:2008, PSK 024:2008

Positive Tolerance

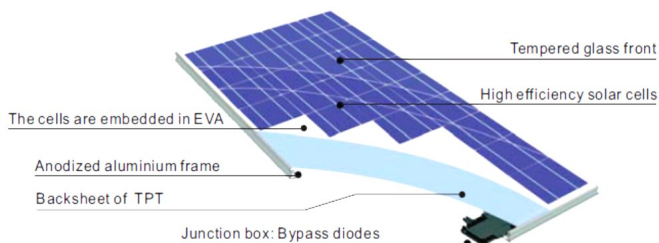
Strict quality control guarantees higher average power output according to tolerance -3% to +3% of maximum power

Optimized Strength

Minimum standard for wind 2400Pa to a Mechanical load capacity up to 5400Pa meet customer's needs for durability on high mountains, sea shores, & paths between buildings



Module Construction



EMPOWERING You
To Change The Future

Zytech was founded in Zaragoza (Spain) in 2005. Since then the group has progressively increased its infrastructure and production capacity to become a global power with offices and headquarters in Spain, Germany, France, Italy, BENELUX, Mexico, United States of America, Korea, Malaysia.

Zytech takes pride in their R&D department which specializes in product enhancement, state-of-the-art machinery and rigorous quality control that guarantees an European quality product at the best price.



ZT Series Polycrystalline

Solar Module



140P/145P/150P

Cell Data

Technology	Polycrystalline Silicon
Number Per Module	36
Dimension	156 × 156mm (6 inches)
Orientation	4 × 9

Thermal Data

Nominal Operating Cell Temperature (NOCT)	45°C ± 2°C
Temperature Coefficient of Voc	-0.275% / °C
Temperature Coefficient of Isc	+0.023 % / °C
Temperature Coefficient of Power Pmax	- 0.40 % / °C

Electrical Data (STC)

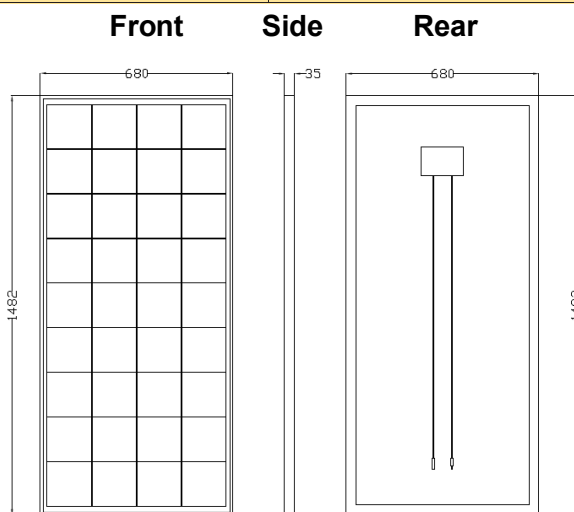
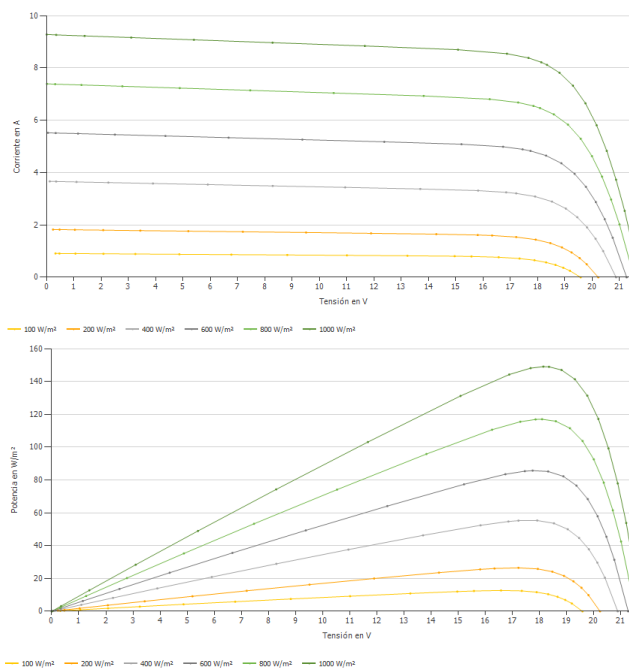
		ZT140P	ZT145P	ZT150P
Maximum power (W)	Pmax	140	145	150
Power Output Tolerance (%)		-3% to+ 3%		
Maximum Power Voltage (V)	Vmpp	17.60	17.80	18.23
Maximum Power Current (A)	Impp	7.95	8.15	8.22
Open Circuit Voltage (V)	Voc	21.96	21.96	21.87
Short Circuit Current (A)	Isc	8.41	8.50	9.28
Cell Efficiency (%)		16.46%	17.05%	17.64%

* At Standard Conditions (STC) Irradiance 1000 watt/m², spectrum AM 1,5 at a cell temperature of 25°C

System Integrated Parameters

Maximum System Voltage SCII	1000 VDC (UL1000V)
Maximum Reverse Current	Do not apply external voltages larger than Voc to the module
Operating Temperature	-40~+85°C
Max Series Fuse Rating	10A

IU and PU



Physical Characteristics

Module Dimension (L×W×H)	1482×680×35mm. Code: PV30026-ZT150P
Weight	12 kg
J-Box	IP67 rated, 2 diodes
Connector	MC4 or MC4 Compatible IP67
Glass	3.2mm, High Transmission, AR Coated Tempered Glass
Cable	4 mm ² PV cable, 900mm
Frame	Silver/ Black Anodized Aluminum Alloy

Packing Configuration

Modules Per Pallet	26
Pallet Per 40'HQ Container	28 (784pcs)
Packing Orientation	Side

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*Dimension tolerance: ±5mm per each side

DRIVER CONTROLLER SUB-SYSTEM

Solar Charge Controller with LED Driver



Specifications

Specifically developed for rough environments and especially for the requirements of users of solar LED lamps and solar LED street lights: the CIS-LEDx. The highlight of the CIS-LEDx is that it combines three functions in one fully protected case: charge controller + flexible timer + LED-driver.

The current required to power LEDs is directly delivered by the charge controller. Customers get three solutions included in one single product, with many advantages:

The built-in LED driver, timer and charge controller are harmonically combined and protected in one fully encapsulated housing (IP68), increasing system reliability, lifetime and lowering investment costs.

An on/off timer combined with an adjustable dimming function renders flexibility extending operation time and furthermore, saves energy.

The CIS-LEDx also offers an auto-protect function: by means of its two low voltages disconnect levels, the LEDs light will automatically be dimmed when the charge of the battery is getting low. The levels can be programmed by means of remote control CIS-CU.

Functions

Combines three functions in one

Charge Controller + Flexible Timer + LED-driver

Developed especially for rough environments, solar LED lamps, and solar LED street lights.

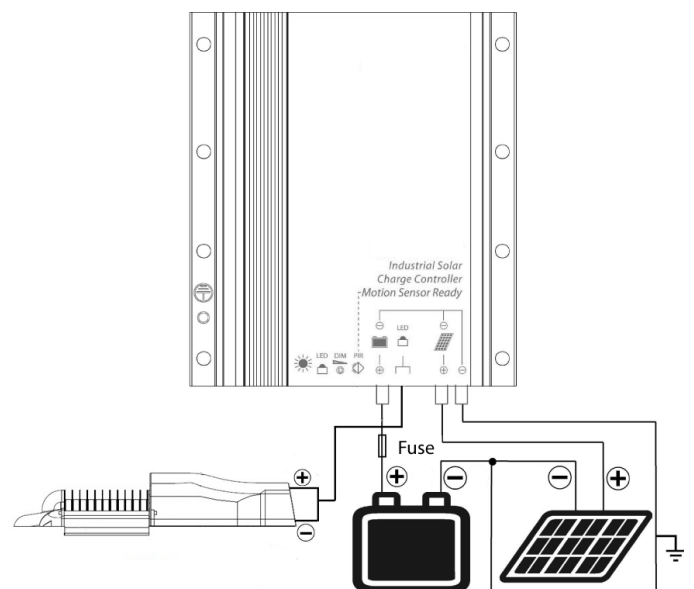
Fully protected by the encapsulated case (protection class IP68): increased lifetime and reliability, reduced costs Flexible dimming functions: renders ambient, pleasant light and extends operation time.

Auto-protect function: two voltages disconnects extend system operation time and reliability.

Small size: fits everywhere

True color PWM dimming

Connection diagram



DRIVER CONTROLLER SUB-SYSTEM

Solar Charge Controller with LED Driver

Type	CIS-LEDx 700 mA	CIS-LEDx 1400 mA
System voltage	12/24 V auto recognition	
Max. charge current	10 A	20 A
Float charge	13.8/27.6 V (25 °C)	
Main charge	14.4/28.8 V (25 °C), 30 min. (daily)	
Boost charge	14.4/28.8 V (25 °C), 2 h Activation: battery voltage < 12.3/24.6 V	
Equalization	14.8/29.6 V (25 °C), 2 h Activation: battery voltage < 12.1/24.2 V (at least every 30 days)	
Deep discharge protection Cut-off voltage Reconnect level	11.00 – 12.02/22.00 - 24.04 V by SOC 11 – 11.9/22 - 23.8 V by voltage (adjustable step 0.1/0.2 V) 12.8/25.6 V	
Overvoltage protection	15.5/ 31.0 V	
Undervoltage protection	10.5/21.0 V	
Max. panel voltage (Overvoltage protection by varistor)	50 V	
Temperature compensation (Charge voltage)	-4.2 mV/K per cell	
Max. self consumption	5 – 8 mA	
Grounding	Positive grounding	
Ambient temperature	-40 to +60 °C	
Max. altitude	4,000 m above sea level	
Battery type	Lead acid (GEL, AG ooded)	
Adjustment range: Evening/morning hours timer Night PV panel level detection Day PV panel level detection	0 – 15 h / 0 – 14 h 2.5 – 10.0 V / 5.0 – 20.0 V (adjust step 0.5/1.0 V) 4.0 – 11.5 V / 8.0 – 23.0 V (adjust step 0.5/1.0 V)	
Connection wire length	10 cm	
Dimensions (W x H x D)	82 x 94 x 20 mm	
Weight	210 g	
Wire cross section	2.5 mm ² (AWG 13)	
Type of protection	IP68 (1.5 m, 72 h)	
LED driver data	CIS-LEDx 700 mA	CIS-LEDx 1400 mA
Output voltage	15 V to 49 V for 12 V system (5 to 15 LEDs in series) 30 V to 49 V for 24 V system (10 to 15 LEDs in serie)	
Nominal output current per sting	700 mA	1400 mA
Max. load power	30 W	60 W
Dimming level	0 – 100% (adjust step 10%)	

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CABLE SUB-SYSTEM

Plug and play PV and battery cables



Specifications

The cable sub-system is for connecting the PV panels and battery to the charges controller with Plug and play MC4 connectors ensure the easy wiring IP67 protection

The cable sub-system conformed by PV and battery cables allows the connection from Charge Controller to the PV panels and to the battery sub-system.

The cables were specially designed to protect the system against hard environmental conditions, protected with IP67.

Cable	4 mm ²
Maximum working voltage	DC 1000V
Rated current	30A
Flame class	UL94-B2
Shell protection degree	IP67
Ambient temperature range	-40 to +85 °C
Safety level	Class II
Insertion force	≤50N
Withdrawal force	≤50N

Battery extentions cables



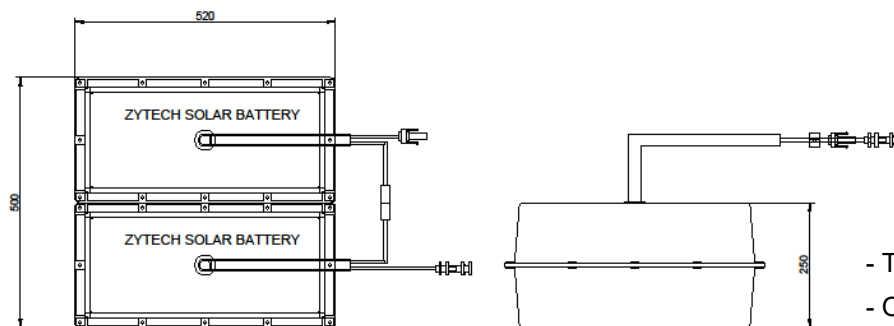
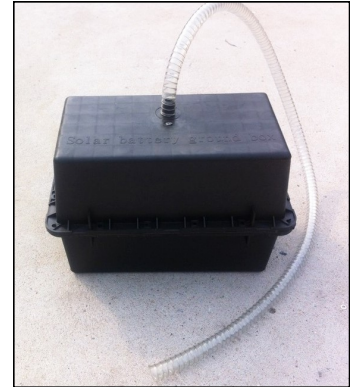
Cable dimmension

Item	Name	Description	Lengh (m)	Terminals
①	Cable Batt (+)	To connect positive screw in the battery to the outside on battery box.	1	Screw/MC4
②	Cable Batt (-)	To connect negative screw in the battery to the outside on battery box.	1	Screw/MC4
③	Cable Batt (+) extention	To connect from Battery Box positive MC4 plug to positive MC4 plug in the CCD	7	MC4/MC4
④	Cable Batt (-) extention	To connect from Battery Box negative MC4 plug to MC4 2-1 addapter	7	MC4/MC4
⑤	Cable PV (-)	To connect from PV panels to the negative MC4 2-1 addapter. (Connected to the PV panel from factory)	1,8	-/MC4
⑥	Cable PV (+)	To connect from PV panels to the positive MC4 plug in the CCD (Connected to the PV panel from factory)	1,8	-/MC4
⑦	MC4 2-1 addapter	To fix negative cable from PV panels and batery system	-	MC4/MC4
⑧	Cable CCD Batt/PV (-)	To connect from MC4 2-1 addapter to positive and negative CCD cable	0,3	-/MC4
⑨	Cable CCD PV (+)	To connect from PV MC4 positive plug to positive PV CCD cable	0,35	-/MC4
⑩	Cable CCD Batt (+)	To connect from Battery MC4 positive plug to positive battery CCD cable	0,4	-/MC4
⑪	Cable LED(+ -)	To connect from LED output CCD to the LED streetlight (connected from factory)	-	-/-

BATTERY SUB-SYSTEM

Features & advantages

Battery sub-system is GEL deep cycle battery, with 12 years floating design life, superiorly designed for frequent cyclic discharge applications under extreme temperature. By using strong grid to insure reliable performance under frequent cyclic discharge use. 400 cycles could be available at 100% DOD. Offering extra-durable cyclic performance, high efficiency of recovery, that is more suitable for solar street lights.



- Two boxes for 24VDC
- One box for 12VDC

Specifications

Cells Per Unit	6
Voltage Per Unit	12
Capacity	105Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 30Kg
Max. Discharge Current	1000A (5 sec)
Internal Resistance	Approx. 5mΩ
Operating Temperature Range	Discharge:-40°C~60°C Charge:-20°C~50°C Storage:-40°C~60°C
Normal Operating Temperature range	25°C±5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum charging current limit	30A
Equalization and Cycle Service	14.2 to 14.4VDC/unit Average at 25°C
Self Discharge	Apollo Sealed Lead Acid Rechargeable AGM batteries can be stored for more tan 6 months at
Terminal	Terminal F18
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.

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LED STREET LIGHT(SOLAR)

ZYLED SLAC4 SERIES

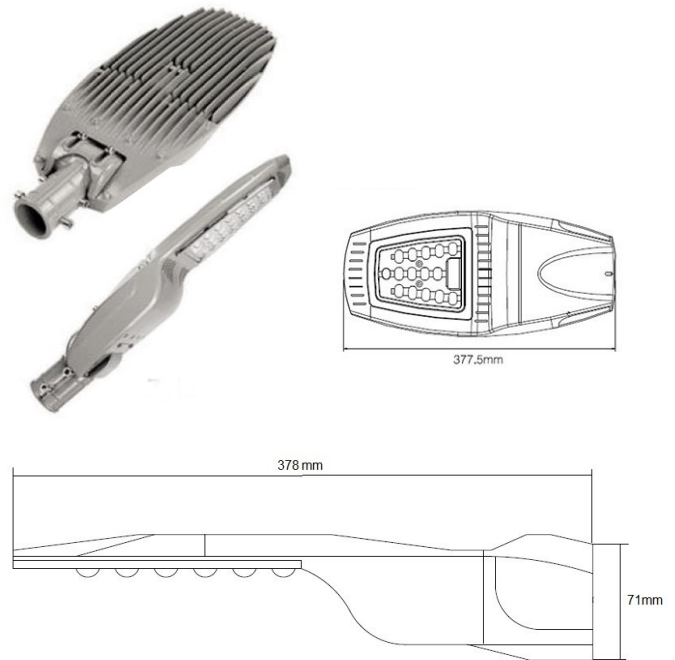
Led Lamps are perfect for track and recessed lighting. Their performance provides more light where you need it.

Typical Applications

- Road Lighting
- Street lighting
- Park and Garden Lighting



ZYLED-SLAC4-45W



Features

- Extra long life rating of 60.000 hours.
- High efficiency: Up to 120lm/W, 50% higher than ordinary street light, compared with Sodium lamp, 80% energy saved.
- Long Lifespan: 5-8 times than the ordinary lamp, save maintenance cost.
- Super Thermal Dissipation: Great heat sink made of aluminum alloy with high thermal conductivity, significantly reduce the temperature rise, junction temperature rise will be less than 10 degree, effectively extending the lamp life.
- Great Reliability: No start-up delay, constant current drive, no flicker.
- Perfect light Distribution Solution: Adoption of integrated peanut shell optic lens, meet the photometric requirements of park and garden lighting solution design standards, enhances the brightness and illumination uniformity.



LED STREET LIGHT(SOLAR)

ZYLED-SLAC4-45W Specifications

Electrical and Technical Data

Model	Voltage	W.	IP Grade	Efficiency	PF	Light Distribution
ZYLED-SLAC-45W	12/24VDC	45	IP65	105Lm/W	>0.90	Type I / II / III Short

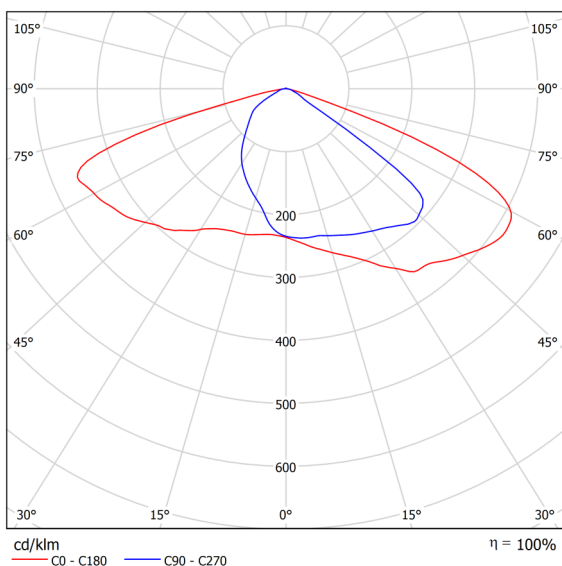
Light Source Data

Model	Color Temperature	IRC	Beam Angle	Working Temperature and Humidity	Storage temperature	Available options
ZYLED-SLAC4-45W	3000K 4000K 6000K	>75	140°x70°	-40°C~~+55°C/10~90RH	-40°C~+60°C	12VDC & 24VDC Solar Systems

Package Data

Model	Carton Dimmensions	Qtyy Pcs	Weight
ZYLED-SLAC4-45W	480*280*135	1pcs	3.00 KG

Polar Diagram



Additional Notes

LED Spec Quantity: 30*1.3W Lamp Efficiency:
>105Lm/W Lumens @ Tj 66°C: 4200Lm

CE5 Illumination Class

Luxes on the Road 6M: 11Lux*20m*7m Luxes
on the Road 8M: 8Lux*25m*7m



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