



ENGLISH VERSION



# 公司簡介

## COMPANY PROFILE

世品綠能科技股份有限公司為台灣最優質的LED研發公司之一，由2012年十大傑出青年得獎人潘宇翔博士領軍，結合一群專注於整合LED應用技術領域近二十年之研發團隊。主力於提供高功率LED照明、大尺寸LED電視背光源，及CIGS與太陽能照明上。

Ledder Technologies is one of the top LED R&D based company in Taiwan, and was established by a group of engineers with over 20 years of research experience. Team members consist of world class researcher from USA, Japan and Taiwan which covers electronics, material, mechanical, chemistry, automation, heat research, micro optical studies and software. With above technologies, we are able to provide a total solution for high power General lightings, large size LED TV backlighting and solar system. Our main LED lighting products are street lights, wall washer, tunnel light, indoor down Light, and also ODM LED light bulbs, mining lights for other companies. With rapidly development on the high power LED lighting product, thermal problem has cause lots of trouble, such as accelerate brightness decay, or even LED burnt out. However, the conventional thermal dissipation devices can not completely solved LED over-heat problem. Build In Concave, known as BIC, is one of our core patented technology in LED heat conduction. Its heat cycling technology can effectively conduct heat from the LED chip substrate to the Metal Core PCB



USA



Korea



Japan



Turkey



China

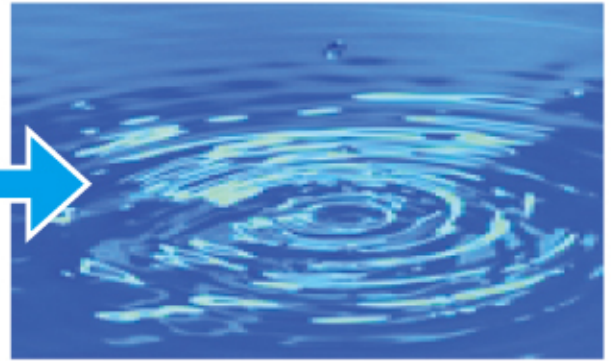


EU



Taiwan

## Our Patented LED Package Technique BIC Concepts

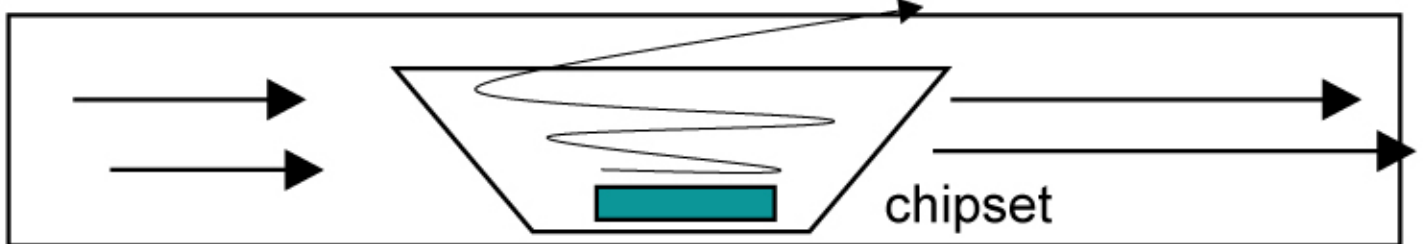


Assume:

- the speed of water stands for the currency
- the rocks stands for loading (LED + Driver)

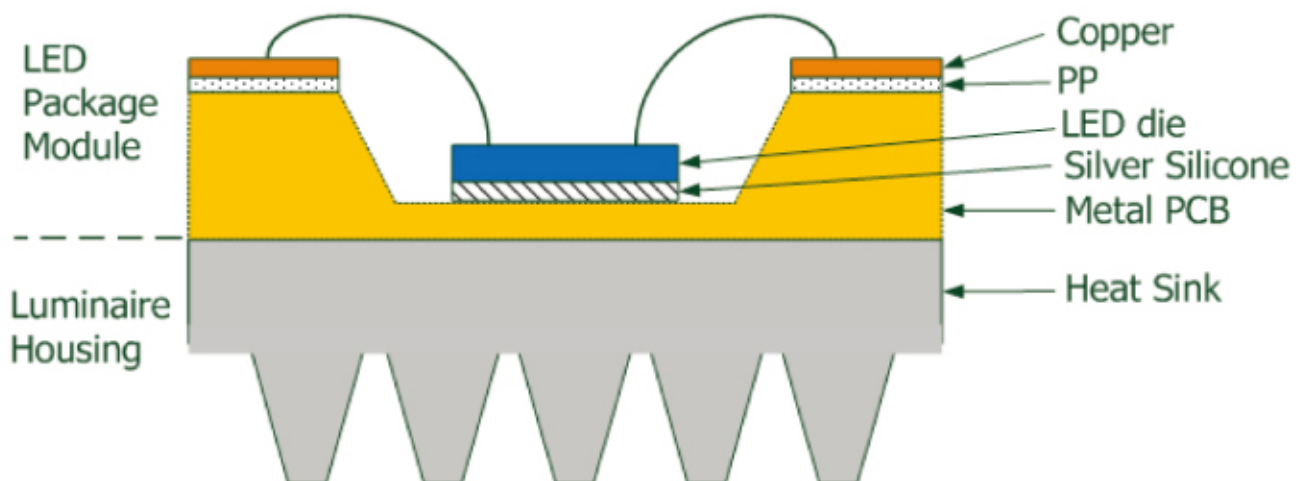
When the water hits rocks, whirlpool occurs.

## Electric Current



Assume the current speed of water is 1, when it hits the rocks, whirlpools created. The current inside the whirlpool must be larger than 1. Our BIC is using this kind of concept to conduct the heat quickly comparing with other package methods.

## Thermal Dissipation Mechanism on LED Street Light

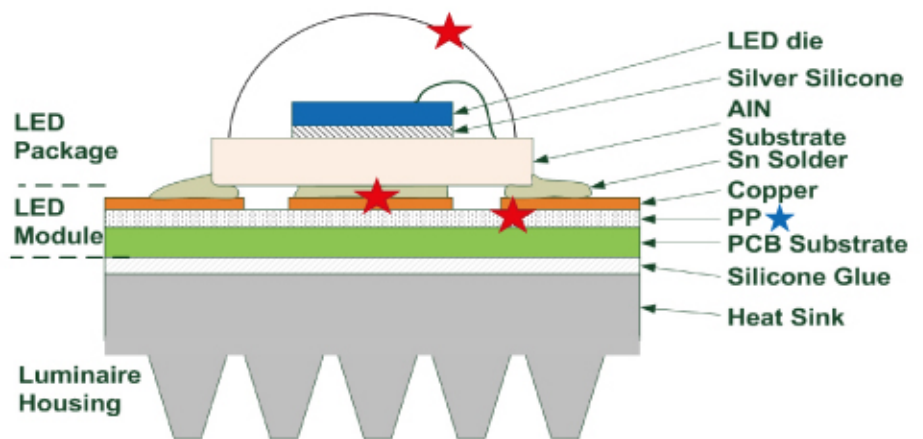


Vertical heat dissipation structure reduce heat Ceramic resistance.

MCPCB direct touch with luminaire thermal system

## Emitter LED

- LED substrate
- Silver silicone
- AlN Substrate
- Solder
- PCB Conductor
- Prepreg
- PCB Substrate
- Silicone glue

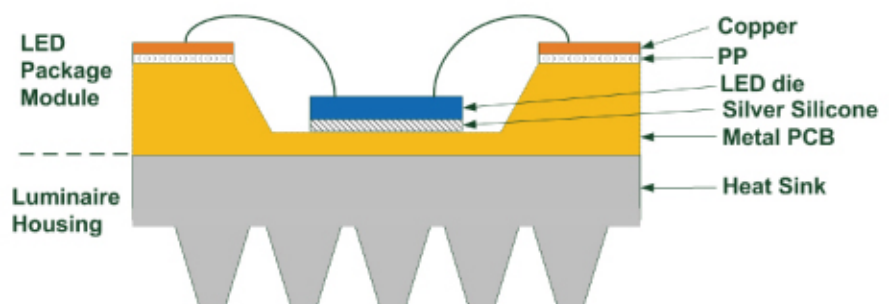


Package/normal packaging

Heat Sink is from 8 layers to 3 layers, so the raising of temperature is 15°C/W

## BIC LED

- LED Substrate
- Silver silicone
- Metal PCB



Ledder packaging

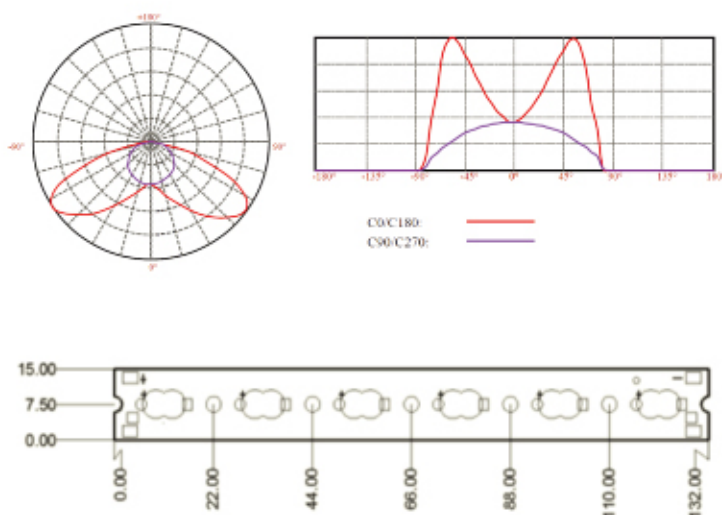
## BIC heat conduction and advantages

1. The heat from the LED chip will be effectively conducted out from the LED substrate to the Metal Core PCB.
2. Packaging and PCB combination. No prepreg or silicon glue materials will be needed.
3. Chip in the PCB reduces the risk of chip disconnected during vibration.



## 132-60-6 High Power BIC Light Bar

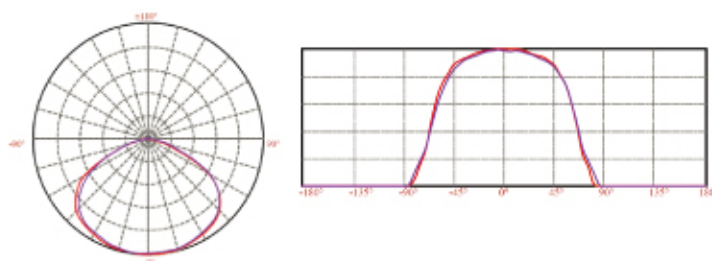
### Radiation Pattern



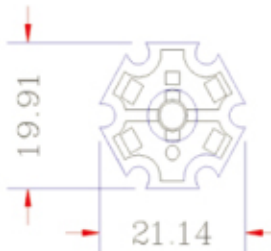
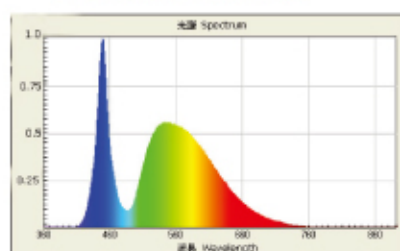
Dimension (L x W x H)	132mm X 15mm X 1.2mm
Weight	7g
PCB	Al MCPCB
Color Temperature(K)	5500K±500K (Customized)
Ra/CRI	>70
Luminous flux Typical(lm)	800 lm ~ 1100 lm
Operating Voltage(Vdc)	19V ± 1Vdc
Current(mA)	350mA ~ 500mA
Input Wattage (W)	7W ~ 10W
Operation Temperature (°C)	-20°C ~ 65°C
Thermal Resistance (°C/W)	< 7°C/W

## 1921-60-1 High Power BIC Light Board(Vertical Chip)

### Radiation Pattern



### Color Spectrum



Dimension (L x W x H)	19.9mm X 21.1mm X 1.2mm
Weight	1.5g
PCB	Al MCPCB
Color Temperature(K)	5500K±500K (Customized)
Ra/CRI	>70
Luminous flux Typical(lm)	150 lm ~ 250 lm
Operating Voltage(Vdc)	2.9~3.5Vdc
Current(mA)	350mA
Input Wattage (W)	1W~3W
Operation Temperature (°C)	-20°C ~ 65°C
Thermal Resistance (°C/W)	< 7°C/W

# VENUS SERIES

## LED Street Light

### Patented LED package, BIC

No fan, cooling tube or any heat dispersion devices will be needed.

### Patented housing design

Patented aerospace alloy exterior cover with heatsink has the best heat dispersion capability to adapt to any climate.

### Long life span

Over 30,000 hours of working life, and require minimum maintenance.

### Environmental protection and energy saving

With power efficiency over 90%, Venus series LED street light can save about 50% of power consumption compares to High Pressure Sodium (HPS) Light. Instantly start up without flicker or warm up.

### No over lapping optic design

Using anti-UV ray Boron glass provides longer life span, and with the special twin-lens design which will overcome the issue of shadow over lapping and dizzy effect to secure the safety of the moving vehicles.

### Safety protection

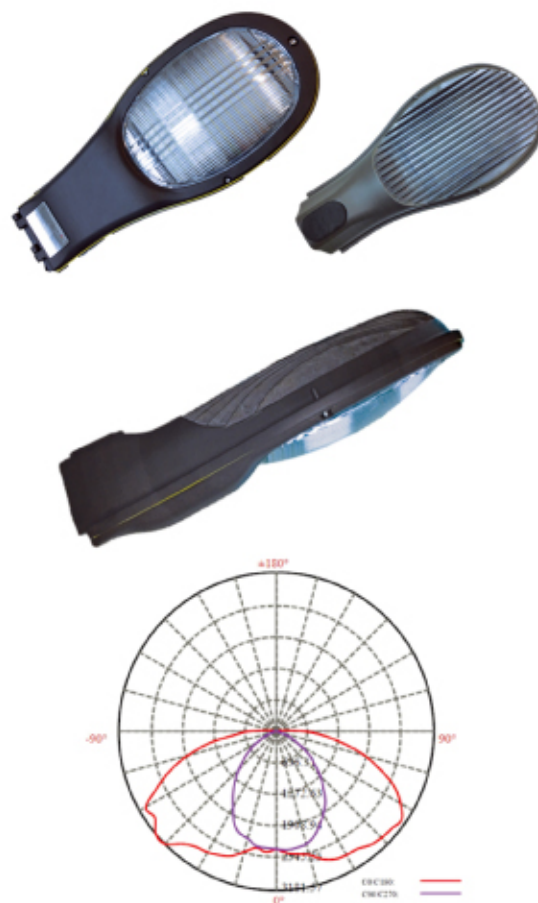
Unlike traditional HPS light needs 1200V alternating current (AC) to activate, Venus series only requires low voltage direct current (DC), and it will not cause any danger for people passing by.

### The best surface finishing

In order to adopt to different atmosphere, anodization, sandblasting, painting / partial painting will be applied to ensure the best durability and heat dispersion.



Model	Venus One	Venus Ten
Input Voltage (VAC)	220V - 265V	
Input Frequency (Hz)	50/ 60 Hz	
Input Current (I <sub>in</sub> )	0.54A/0.28A	
Input Wattage (W)	115W ± 5W	55W ± 5W
LED Operating Voltage (V <sub>o</sub> )	80V	
LED Operating Current (I <sub>o</sub> )	0.35A	
Average Luminous flux (lm/W)	≥ 95lm/W	
Power Factor (PF)	≥ 0.98	
Power efficiency (PE)	≥ 92%	≥ 89%
Ra/CRI	≥75%	
Illuminate Angle	30° to 150° according to customer's need	
Luminous flux (lm)	≥ 11,400lm	≥ 5,700lm
Color Temperature (K)	5500K ± 500K	
Operation Temp. (°C)	-40°C to 55°C	
IP Level	IP66	
Replace model	250W HPS	150W HPS
Luminous decay (%)	≤ 5%/ 10,000Hrs ; ≤ 30%/ 30,000Hrs	
Weight (kg)	6.8 ± 0.5Kg	6.5 ± 0.5Kg
Dimension (mm)	590*255*120mm	



## GK SERIES LED WALL WASHER

- GK series wall washer uses Aluminum alloy integrally mold with exterior cover anodized which can conduct heat better and also corrosion resistance.
- Unlike the conventional LED wall washer, GK series uses metal PCB, and patented heat conducting technique which ensure the heat is properly conducted and longer lifespan.
- Energy saving: consume 30% of power compare with the Halogen lamp. Instant start, no delay.
- Easy Installation
- Customized color temperature.
- Very suitable for outdoor sign board, park lighting, car park, wall washer for buildings.
- IP 65 rating.

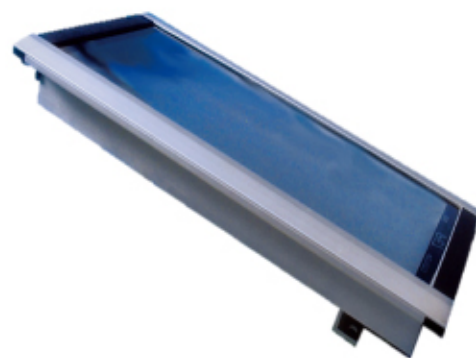
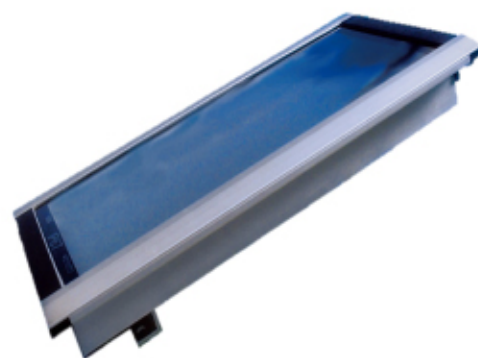
Model	GK-1	GK-2
Input Voltage(VAC)	100-240VAC	
Input Frequency(Hz)	50/60Hz	
Input Current(I <sub>AC</sub> )	0.6A	0.4A
Power Consumption(W)	60W± 3W	40W± 2W
Light source	48PCS	36PCS
Power Factor(PF)	≥ 0.9	
Power efficiency(PE)	≥ 85%	
Opcration Temp(°C)	-20°C ~ 55°C	
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave(BIC) package	
Color Temperature(K)	5500K± 500K	
Luminous flux(lm)	≥ 5,500lm	≥ 3,600lm
Ra/CRI	≥ 70	
Weight(kg)	4.0Kgs	3.6Kgs
Dimension(mm)	328*198*236mm	
Luminous decay(%)	≤ 30% / 25,000Hrs	
Power	External Power Supply	
Warranty	2 years	



## GE SERIES LED TUNNEL LIGHT

- GE series High Power LED Tunnel light uses integral aluminum 6063 alloy housing, with patented BIC light source and heat sink design to ensure the longest life span.
- GE series is suitable for place with special light distribution requirement such as tunnel, subway, highway, culvert and as well as advertising signboard and stadium.
- Energy Saving: consume 70% less power than traditional tunnel light
- Patented heat conduction structure, longer life span
- Easy Installation
- IP 65 Rating
- Optical light distribution lens to ensure uniform illuminance and lower glare
- Customized color temperature and color rendering index for different surface

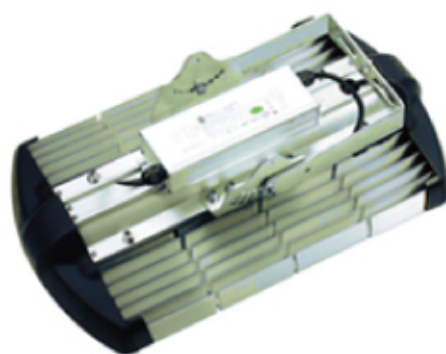
Model	GE-1	GE-2
Input Voltage(VAC)	110-240VAC	
Input Frequency(Hz)	50/60Hz	
Input Current(I <sub>AC</sub> )	1.8A@110VAC	1.5A@110VAC
Power Consumption(W)	174W± 3W	145W± 2W
Light source	144PCS	120PCS
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave(BIC) package	
Power Factor(PF)	≥ 0.9	
Power efficiency(PE)	≥ 85%	
Ra/CRI	≥ 70	
Luminous flux(lm)	15,600lm	13,000lm
Color Temperature(K)	5500K ± 500K	
Operation Temp(°C)	-20°C ~ 55°C	
Luminous decay(%)	≤ 30%/ 25,000HrsHrs	
Weight(kg)	8Kg	
Power	External Power Supply	
Dimension(mm)	590*255*120mm	
Warranty	2 years	





## LC Series LED Wall Washer

- A bargain series wall washer adopts Modulized light source design, and can be expandable for customized.



Mode no.	LC-11	LC-12	LC-13	LC-14	LC-15	LC-16
Input Voltage (VAC)	100-240VAC					
Power Consumption(W)	30W	60W	90W	120W	150W	180W
Luminous flux (lm)	3,600 lm	7,200 lm	10,800 lm	14,400 lm	18,000 lm	21,600 lm
Color Temperature (°K)	2700-6500K					
Illuminate Angle	140~45° (according to customer's need)					
Power Factor (PF)	≥ 0.95					
IP	IP65					
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave (BIC) package					
Luminous decay (%)	≤ 30%/ 30,000 hrs					

## DL SERIES LED DOWN LIGHT

- DL series has great coloring rendering index and higher brightness with less power consumed. We provide full ranges of size for selection. The series are suitable for household, hypermarkets, restaurants, hotels, main entrance, offices, airport, bus station...etc.

### Feature:

- Integral Heat Sink Design
- Compact design for easy installation and transport
- Instant light up and No blink
- Patented heat conduction structure, longer life span
- No Infrared / UV ray
- Compatible with RoHS, No Mercury, lead and other toxic substance
- Customized color temperature
- Dali Power Driver option



## DL-1 series



Inch	8 inch
Input Voltage(VAC)	100-240VAC
Input Frequency(Hz)	50/60Hz
Input Current(IAC)	0.4A@110VAC
Power Consumption(W)	40W
Light source	36pcs
Power Factor(PF)	$\geq 0.95$
Power efficiency(PE)	$\geq 85\%$
Opcration Temp( $^{\circ}$ C)	-20 $^{\circ}$ C ~ 55 $^{\circ}$ C
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave(BIC) package
Color Temperature(K)	5500K $\pm$ 500K
Luminous flux(lm)	3,800lm
Ra/CRI	$\geq 70$
Weight(kg)	1.5Kgs
Ceiling cutout (mm)	$\varnothing$ 200mm
Dimension (mm)	$\varnothing$ 225mm x H80
Luminous decay(%)	$\leq 30\%$ / 25,000Hrs
Power	External Power Supply
Warranty	2 years

## DL SERIES LED DOWN LIGHT

### DL-2 series



Model	DL-23	DL-24	DL-26
Inch	3 inch	4 inch	6 inch
Input Voltage (VAC)	100-240V		
Input Frequency (Hz)	50/60Hz		
Input Current (IAC)	0.06A@110VAC	0.15A@110VAC	0.3A@110VAC
Power Consumption (W)	5W	15W	30W
Light source	4pcs	6pcs	12pcs
Power Factor (PF)	≥ 0.95		
Power efficiency (PE)	≥ 85%		
Operation Temp. (°C)	-20°C ~ 55°C		
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave (BIC) package		
Color Temperature (°K)	5500K ± 500K		
Luminous flux (lm)	400 lm	1,200 lm	2,300 lm
Ra/CRI	≥ 70	≥ 70	≥ 70
Weight (kg)	0.2kg	0.4kg	0.7kg
Ceiling cutout (mm)	Ø 80mm	Ø 120mm	Ø 140mm
Dimension (mm)	Ø 110x H40	Ø 135 x H65	Ø 182 x H76
Luminous decay (%)	≤ 30%/ 25,000Hrs		
Power	External Power Supply		
Warranty	2 years		

### DL-3 series



Model	DL-23	DL-34	DL-36
Inch	3 inch	4 inch	6 inch
Input Voltage (VAC)	100-240V		
Input Frequency (Hz)	50/60Hz		
Input Current (IAC)	0.06A@110VAC	0.15A@110VAC	0.3A@110VAC
Power Consumption (W)	5W	14W	20W
Light source	4pcs	6pcs	12pcs
Power Factor (PF)	≥ 0.95		
Power efficiency (PE)	≥ 85%		
Operation Temp. (°C)	-20°C ~ 55°C		
Heat dispersion	Patent PCB process MCPCB/ flat bottom round concave (BIC) package		
Color Temperature (°K)	5500K ± 500K		
Luminous flux (lm)	400 lm	1,200 lm	2,300 lm
Ra/CRI	≥ 70	≥ 70	≥ 70
Weight (kg)	0.18kg	0.35kg	0.6kg
Ceiling cutout (mm)	Ø 70mm	Ø 100mm	Ø 125mm
Dimension (mm)	Ø 90x H45	Ø 121x H42	Ø 147x H44
Luminous decay (%)	≤ 30%/ 25,000Hrs		
Power	External Power Supply		
Warranty	1 years		

## LB Series

### High Power LED Bulb

Alternative to popular incandescent bulb. 12W LED light bulb is approximately equal to a 60 watt incandescent bulb, and 15W is approximately equal to a 90 watt incandescent bulb. The LED light source consumes up to 80% less energy and lasts 20 times longer than incandescent bulbs. It contains no mercury & emits virtually no UV/IR light in the beam.

#### LB-1 series



Input Wattage (w)	12W		15W	
Input Voltage (VAC)	100-240V			
Input Frequency (Hz)	50/60Hz			
Power Factor (PF)	≥ 0.9			
Color (K)	3,000K ± 300K / 5,500K ± 500K			
Typical Luminous (lm)	890 lm	1000 lm	1200 lm	1400 lm
Ra/CRI	80			
Weight/ Unit (g)	150g		160g	
Dimension(mm)	Ø73 x H135			
Life Time	25,000Hrs			
Warranty	1 years			

#### LB-2 series



Input Wattage (w)	12W		15W	
Input Voltage (VAC)	100-305V			
Input Frequency (Hz)	50/60Hz			
Power Factor (PF)	≥ 0.9			
Color (K)	3,000K ± 300K / 5,500K ± 500K			
Typical Luminous (lm)	900 lm	1050 lm	1200 lm	1350 lm
Ra/CRI	80			
Weight/ Unit (g)	130g		135g	
Dimension(mm)	Ø65 x H129			
Life Time	25,000Hrs			
Warranty	1 years			



## PL SERIES LED PENAL LIGHT

- Excellent thermal performance
- No UV or RF interference
- Super bright by edge-lighting with high quality light-guide plate, glare-free
- Ultra-slim and low-profile design
- Constant current driver with short-circuit and open-circuit protection
- Can be ceiling or wall surface-mounted, recessed mounted

### PL-ZR-2 series



Model	PL-ZR-21	PL-ZR-22
Input Wattage (w)	23W	60W
Input Voltage (VAC)	100 ~ 240VAC	
Average Luminous flux (lm/W)	2070 lm	5400 lm
Color Temperature (°K)	2700 ~ 6500K	
Ra/CRI	≥ 70	
Luminous decay (%)	20,000Hrs	
Dimension (mm)	300 x 600mm	600 x 1200mm
IP	IP20	

### PL-ZR-3 series



Model	PL-ZR-31	PL-ZR-32
Input Wattage (w)	18W	36W
Input Voltage (VAC)	100 ~ 240VAC	
Average Luminous flux (lm/W)	1620 lm	3240 lm
Color Temperature (°K)	2700 ~ 6500K	
Ra/CRI	≥ 70	
Luminous decay (%)	20,000Hrs	
Dimension (mm)	300 x 300mm	600 x 600mm
IP	IP20	

## LT SERIES LED Police FLASHLIGHT

- Patented LED package, BIC No fan, cooling tube or any heat dispersion devices will be needed.
- Longer life span.
- Best safety protection.
- Very suitable for police, firefighter and outdoor activities...etc.
- IP68.



Model	LT-935A
Dimension (mm)	74mm X 38.5mm X 314.7mm
LED Operating Voltage (VDC)	DC5.5-12V
LED Light Source	LEDDER BIC LED
Color Temperature (K)	7000K $\pm$ 1000K
Power efficiency (PE)	$\geq$ 85%
Luminous flux (lm)	$\geq$ 3,500lm $\pm$ 5.5%
Current (mA)	Battery Output:2.8A/pcs
Levels of Output	100%,40% brightness, strobe
Switch	Press the button to dim the flashlight
Lighting Distance	346m
Battery Type	3*26650(4000mAH)Li-ion Battery
Weight	without batteries & base, 605g
Power Source	Rechargeable Battery
Working time	100%:90 minutes /40%: 5 hours

## High Power LED Traffic Signals

- Patented LED package, BIC No fan, cooling tube or any heat dispersion devices will be needed.
- Longer life time to reduce maintenance fee and labor.
- Easy to install with existing signal enclosure.
- IP53.
- Operating temperature range:-40°C to +80°C.

### LBS Ball Signals series

- Product dimensions(mm):1300 x 588 x 180
- Operating Voltage Range(VAC):AC85V-265V,60Hz/50Hz



Model Number	Color	Power Consumption (Watt)(Typ.)	Dominant Wavelength (nm)(Typ.)	Maintained Luminance (cd/m2)
LBS-R11	Red	≤10W	625~630nm	570cd
LBS-A11	Amber	≤13W	590~595nm	425cd
LBS-G11	Green	≤15W	500~505nm	950cd

### LPS Pedestrian Signals series

- Product dimensions(mm):700 x 350 x 100
- Description:Man
- Operating Voltage Range(VAC):AC176V-265V,60Hz/50Hz



Model Number	Color	Power Consumption (Watt)(Typ.)	Dominant Wavelength (nm)(Typ.)	Maintained Luminance (cd/m2)
LPS-R21	Red	≤ 7W	625 ± 5nm	3500~5000mcd
LPS-G21	Green	≤ 7W	505 ± 5nm	7000~10000mcd

## System Design Concept

- Highest Solar power stalled into ISO container (Tank) and meet with DNI conditional design.
- Installation free (No screw) just need to set up on site less than 3 person within one hours.
- Can be allocated and reallocated by container size base.
- Modulated design can be extended
- 10KW system with 220V AC and 12/24 DC output.
- Environmental protection design.
- Lighting / thunder protection design.
- Strong wind protection design.
- Lower cost design.
- Plug & Play with user friendly design
- Power generation monitoring system.
- Mobile monitoring system as optional.

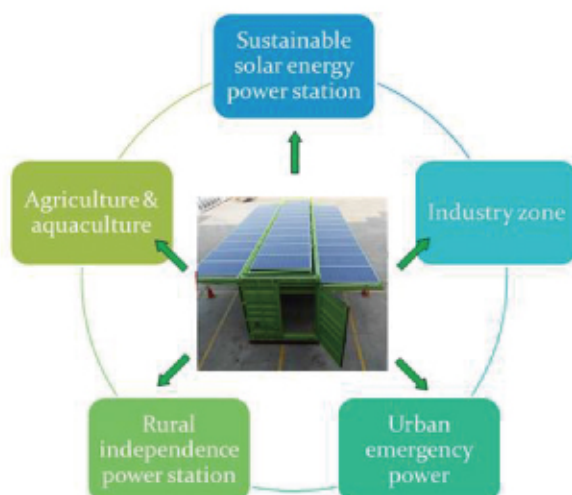
## Specification

- System:  
Inputs : 10KW solar power.  
Output : AC 220-230 50Hz, DC 12 / 24 V

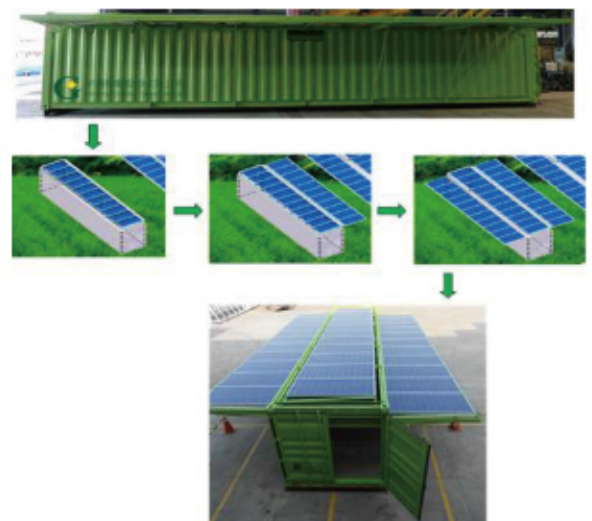
## Optional Features

- Water Pumping system  
PV, Solar charger, Battery , DC Pump
- Lighting system  
PV, Solar charger, Battery , DC LED
- Battery backup power system  
PV, Solar charger, Battery, DC / AC inverter
- Monitoring system  
NVR + 4 IPCam
- Wireless network system  
Repeater + Antenna

## Applications



## Process of deployment







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