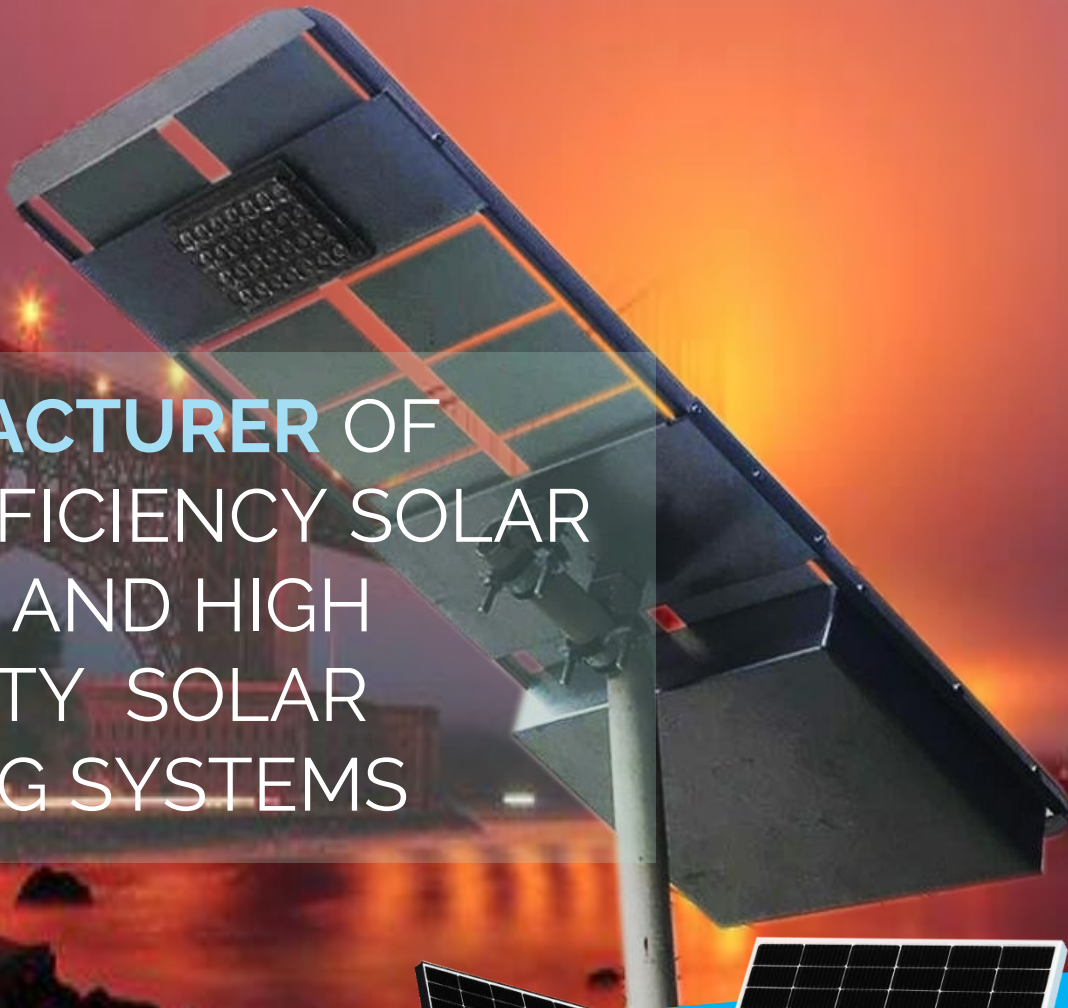




DR LUX
Solar System

**MANUFACTURER OF
HIGH EFFICIENCY SOLAR
PANELS AND HIGH
INTENSITY SOLAR
LIGHTING SYSTEMS**



INNOVATIVE TECHNOLOGY OF SOLAR LED LIGHTING SYSTEM

WWW.DRLUXENERGY.COM



WHOE WE ARE

DRLUX is an engineering company with innovative technology based on US Patent No. 10,563,827 B2 for off-grid and hybrid AC/DC solar lighting system.

We cooperate with renowned manufacturers in different countries for making our designed batteries, solar panels, charge controller, pole, arm, bracket, enclosure, housing, frame, and other accessories, with highest global standards, as well as assembling companies, to ensure the best quality for our tailor made end product to respond to each of our customers' demands and needs. Its known that the traditional Street lighting requires significant infrastructure, engineering, and costly installation, including trenching of cabling. As a result, power from the grid is required to utilize the lights, causing a long-term ongoing cost.

Our professional R&D team are developing and upgrading the best solutions for renewable solar energy for different indoor and outdoor applications. Our innovating LED modules can reduce power consumption. By substituting our innovative LED modules in on-grid traditional LED lightings, power consumption would be diminished 30-50%. Our mission is to provide high quality, high performance, cost-effective solutions for on-grid LED lights and off-grid solar lighting systems in private and governmental applications.

DRLUX Energy is leader in the practical application of solar high intensity lights, on/off-grid installations and solutions. **DRLUX ENERGY** is a privately owned company with headquarters based in Dortmund, Germany. **DRLUX ENERGY** is a progressive, inventive company and is committed to reducing carbon emissions. **DRLUX ENERGY** brings durable, reliable and affordable lighting to a wide range of clients, each having a unique demand for their often-harsh operating environment.

**UNITED STATES
PATENT AND TRADEMARK OFFICE**

uspto



HIGH EFFICIENCY POLY AND MONO CRYSTALLINE SOLAR PANEL

Detail of Solar Panel

Solar Cell-A Grade

- *Canadian cell or Longi cell
- *5 lines solar cell efficiency can get to 23%
- *Stable performance under weak light conditions
- *PID free treatment upon request
- *100% In-line Electrical Luminance tested

Glass

- *Antireflective coating to increase the module efficiency up to 2%
- *Light transmittance improvement above 3%
- *self-cleaning function

EVA Film

- *Light transmittance more than 92%
- *High resistance to heat and moisture
- *UV resistance against ageing

Aluminum Frame

- *Strong mechanical load resistance up to 5400 Pa
- *Anodic oxidation layer resistant chemical corrosion
- *Silver and black color optional

Junction box and MC4

- *IP 68 protection grad
- *High quality diodes for electric safety
- *1500V system voltage available
- *Reliable by-pass diodes assure surge protection

Back sheet

- *Low moisture permeability against snail trail defect
- *Excellent electric insulation for high system voltage up to 1500V
- *Outstanding weatherproof performance



RANG OF HIGH EFFICIENCY POLY AND MONO CRYSTALLINE SOLAR PANELS

Rang of products
Production according to customer request

Model	DL-350W	DL-360W	DL-370W	DL-380W
Nominal Power	350W	360W	370W	380W
Maximum Power Voltage(Vmp)	36V	36V	36V	36V
Maximum Power current(Imp)	9.72A	10A	10.42A	10.56A
Open-circuit Voltage (Voc)	44.2V	44.2V	44.2V	44.2V
Module Efficiency [%]	18.03%	18.55%	19.06%	19.58%
Power Tolerance	±3%			
Maximum System Voltage	1000V / 1500V DC(IEC)			



HIGH EFFICIENCY GLASS SOLAR PANELS

Drlux produce glass solar panel to used in budling, caravan ,...





NEW TECHNOLOGY

LIVE **DRLUX** THE MOST ROBUST SOLAR LIGHTING SYSTEM IN THE MARKET

We have invented a new technology for off-grid solar LED lighting systems.

Traditional street lighting requires significant infrastructure, engineering, and costly installation, including trenching and cabling. Power from the grid is also required to utilize the lights, causing long-term recurring cost.

The following illustrates as to why other manufacturers in the world are not able to deliver powerful solar lighting systems for roads, highways, freeways, stadiums and commercial complexes:



Active days in cloudy weather for the other systems are very limited (most systems have only 1-3 days back-up capacity without dimming).



The pole structure cannot withstand the weight of solar panels and batteries.



Very high final price & Very high maintenance costs.



There is no economic justification for an investment.

Our engineers have solved the above problems as follows:

- ✓ Reducing the total cost (the total number of batteries and solar panels used in our system is almost halved as compared to other solutions).
- ✓ The weight and volume of our system is much lower than comparable solar lighting systems, which is due to the smaller number of solar panels and batteries required by our system.
- ✓ Back up: 7 to 10 cloudy or rainy days (subject to the specific geographical and regional conditions)
- ✓ Offering high intensity solar flood/spot light towers.
- ✓ Very low and favorable maintenance cost.
- ✓ Increasing system's overall lifespan and hence its total cost of ownership.



GLASS ALL IN ONE SOLAR STREET LIGHT



All In One Solar Street Lights with different designs oriented to customer needs with 100% of brightness.

With integrated design to assemble all components (solar panel, battery, led module, solar charger controller etc.) in one unit, making the installation procedure simple and smart!



4500-30000LM
LED Brand IS PHILIPS/ LUMILEDS/ Bridgelux
Life-span > 100,000 HRS
2700~6500K Full Range Available
CRI >80
LiFePO₄ Battery Pack/ lead acid battery

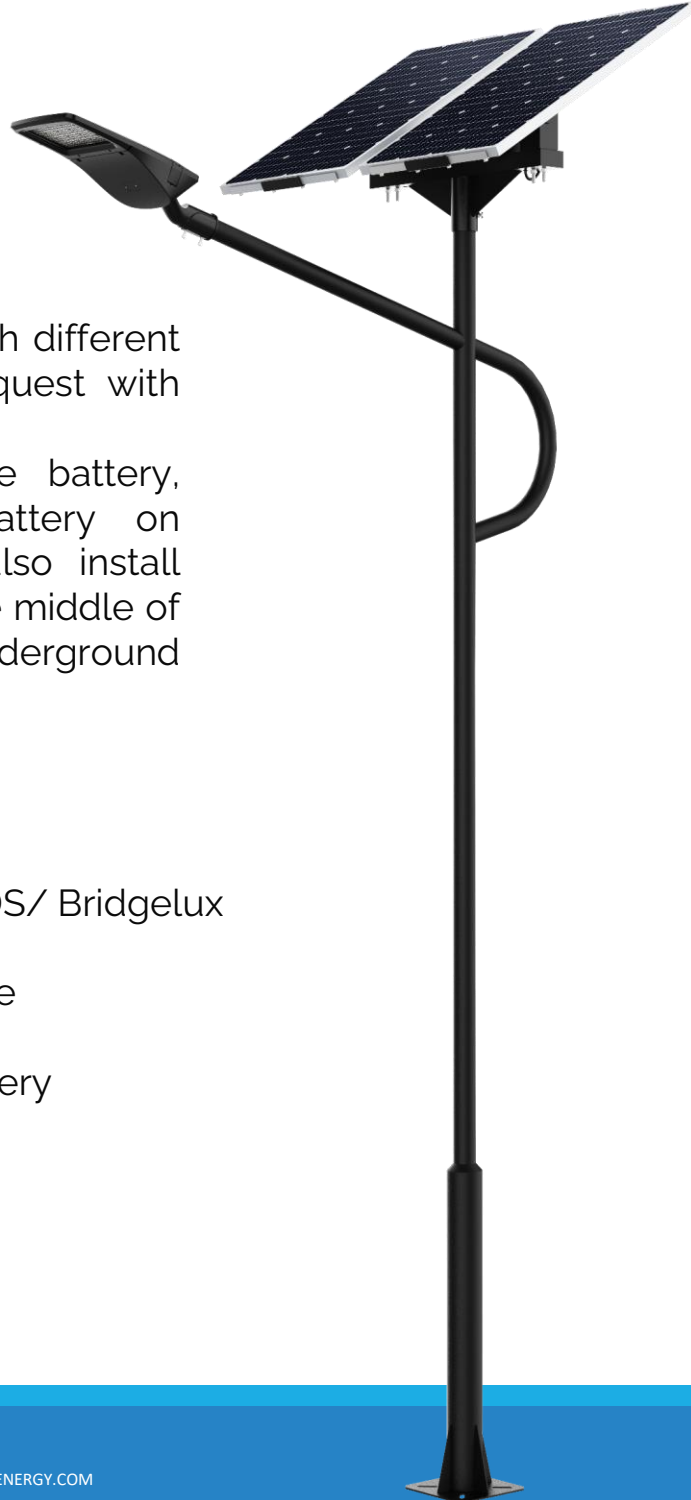


SPLIT TYPE SOLAR STREET LIGHT WITH FLAT SOLAR PANEL

Split type solar street lights with different design based on customer request with 100% of brightness.

We can use Gel deep cycle battery, LiFePO₄ battery or LTO battery on customer demand. We can also install battery on top of the pole, in the middle of the pole or can install battery underground in burial box.

7500-48000LM
LED Brand IS PHILIPS/ LUMILEDS/ Bridgelux
Life-span > 100,000 HRS
2700~6500K Full Range Available
CRI >80
Pure Gel Battery/ lead acid battery



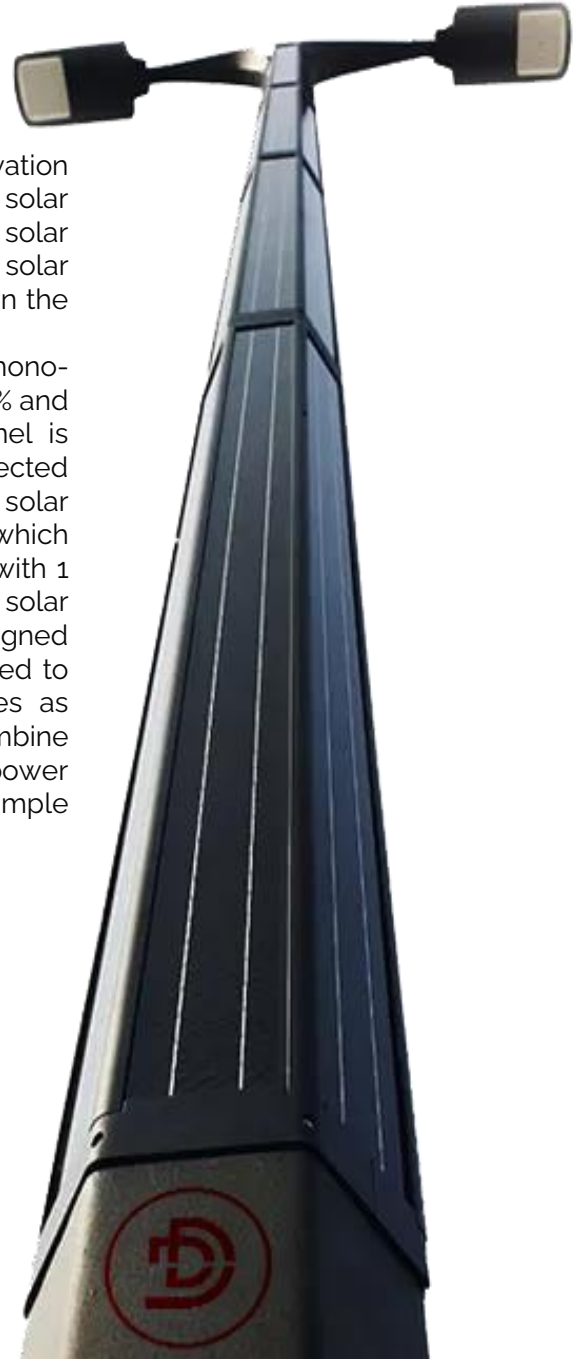


VERTICAL SOLAR LED STREET LIGHT

Vertical solar LED street light poles are a great innovation with the latest technology. It adopts the vertical solar modules by surrounding the pole instead of regular solar panels installed on top. Compared with traditional solar led street light, it has a very cosmetic appearance in the same look as traditional street light.

Each vertical solar module adopts 6 pieces of slim monocrystalline solar panel with high efficiency up to 21.2% and more than 20 years lifetime. Each slim solar panel is 18V/36V and 6 pieces of slim solar panels are connected together in parallel connection. Each vertical solar module contains two modules as a master module which has 2 pairs of MC4 connectors and a sub-module with 1 pair of MC4 connectors. As the big part of vertical solar led street light, the vertical solar module is designed based on the modular conception which is supposed to be installed on any shape and new or old poles as customers require. And customers can freely combine different powers of solar panel according to the power consumption by series connection. For example 280W,300W,420W,500W,700W etc.

7500-48000LM
LED Brand IS PHILIPS/ LUMILEDS/ Bridgelux
Life-span > 100,000 HRS
2700~6500K Full Range Available
CRI >80
Pure Gel Battery/ lead acid battery





HIGH POWER SOLAR FLOOD SPOT LIGHT TOWER DRLUX HAS NO LIMITS

One of the only manufacturers of Solar Light towers up to 480,000 luminous flux with 100% of brightness.
Up to 7 days back-up in inclement weather.

150000-480000LM
LED Brand IS PHILIPS/ LUMILEDS/ Bridgelux
Life-span > 100,000 HRS
2700~6500K Full Range Available
CRI >80
Pure Gel Battery/ lead acid battery





PORTABLE SOLAR LIGHT MAST

DRLUX designs cost-effective and efficient floodlight towers (in comparison with the lighting produced by diesel generators) in range of 150,000 to 360,000 luminous flux (up to 36 hours back up in inclement weather with 100% of brightness). The height of mast adjustable from 2.5 m to 12 m according to the project's requirements and its area.

Every solution can be implemented in different industrial, development and construction projects such as: Water pipeline repairs, oil and gas projects, road construction, projects related to dams, mining, excavation and generally to all in which the electrical grid network is not accessible. These portable products of the company can be manufactured based on the customers' needs solar LED street light poles are a great innovation

150000-360000LM
LED Brand IS PHILIPS/ LUMILEDS/ Bridgelux
Life-span > 100,000 HRS
2700~6500K Full Range Available
CRI >80
Pure Gel Battery/ lead acid battery



BASED ON OUR KNOW-HOW, TECHNOLOGY, AND OUR CONTROLLER INTEGRATED WITH THE LED MODULE, POWER MANAGEMENT SYSTEM, OUR PRODUCTS HAVE FOLLOWING COMPETITIVE ADVANTAGES COMPARING WITH OTHER SOLAR LIGHTING SYSTEMS:

1. Global leader in offering tailor-made solutions, based-on geographical location;
2. Increasing the system reliability in terms of the LOLP;
2. Reducing costs considerably in terms of innovation of products;
3. Durable products compared to those of other competitors;
4. Lower installation and maintenance costs;
5. No electric bills, reduced investments and quick ROI (less than 24 months in 90% of applications);
6. Without risk of electric shock;
7. Turning on and off automatically with ambient light;
9. Water and dust resistant; (By using Nano coating)
10. Significant energy savings for industrial/commercial applications such as roadways, public areas, etc;
11. Light structural design, smaller panels and lower battery capacity;
12. Up to 10+ years LED module lifespan;
13. Fewer LED replacements;
14. Making Flood/Spot light mast with luminous flux in range of 50,000-300,000Lm, portable flood light tower on trailer in range of 25,000-200,000Lm, as well as solar streetlight in range of 3,000 to 100,000Lm.
15. Programmable Charge controller and motion sensors are merely implemented in the geolocations near earth poles where the daylight is too short to increase the cloudy day backup;
16. Providing luminous flux and LUX based on customer demand;
17. Engineering design with different configuration for solar panel and battery capacity based on geographical locations with 3 -10 days (36-120 hours) back up in inclement weather.



THE CORE OF OUR TECHNOLOGY

1. All manufacturer have technical limitations for producing high power solar street lights, whereas we have the capability of producing solar street lights with a light intensity rating of up to 100,000 lumens. Most manufacturers have limitations to produce solar lights with a back-up capability of more than 2 cloudy days. We have the capability to produce solar lights with a back-up capability of between two to ten days.
2. In other systems, once the light hits the panels, the voltage of the panel starts to increase, and once the voltage reaches 12V, the battery starts to charge. We are using a controller to start charging the battery in overcast weather conditions. The controller charges the battery with as little as 6V, which provides 30% to 45% of the overall energy consumption. This also increases the battery lifetime by as much as three times. This clearly means that with inclement weather conditions prevailing, our system charges batteries 30% to 45% more as compared to the competition, whereas conventional systems are not charging during these weather conditions, which ultimately yields an increased back-up capacity.
3. We have designed a separate direct feed for every LED. This means that if one LED is burnt, only that one LED will be out of service, which will ultimately not impact the output of the other LEDs. This is clearly not the case with all of the other systems, where one burnt LED causes a series of other LEDs to go out of service, leading to an increase of the overall voltage and current of the system that is fed to the other LEDs, hence reducing their overall lifespan.
4. In low-battery situations, most competitive systems cut- off completely. Based on our innovation, LED modules have demonstrated lower power consumption in the range of 20% to 30%, as compared to other systems.
5. Due to our innovative technology, the actual power of our solar street light is 40% lower than nominal power. However, this will have an inconsiderable effect on our luminous flux.

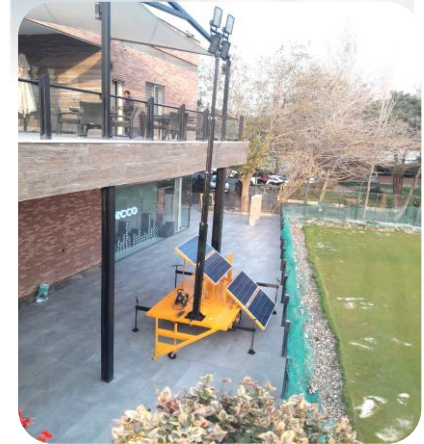


EXAMPLES OF COMPLETED PROJECTS





EXAMPLES OF COMPLETED PROJECTS





EXAMPLES OF COMPLETED PROJECTS





DR LUX SOLAR SYSTEM

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