Total Lighting Solutions Company.

Oversea Lighting & Electric (M) Sdn Bhd - established from humble beginnings in 1993, is today one of Malaysia's foremost lighting solutions Company.

Our Objectives: Providing Innovative & Cost Effective technologies in architectural, industrial and commercial lighting.


Our Aim: Malaysia's Total Lighting Solutions Company

Oversea Lighting & Electric (M) Sdn. Bhd. besides being manufacturers of exquisite and customized luminaries are exclusive distributors for several of the world's leading lighting manufacturers such as LAMP Lighting (Spain), INDALUX Technical Lighting (Spain), ATP Illumination (Spain) and Neo-Neon International Ltd (China).

We also provide lighting technical consultancy, installation as well as maintenance for other accredited manufacturer/s in outdoor facade, amenity and street lighting for both private & governmental projects in Malaysia.

Such products include LED (light emitting diode) based customized Solar Street Lighting, Festive Decorative Luminaries and Poles, exquisite luminaries for indoor and ingress protected luminaries for outdoor in domestic, amenity commercial & industrial applications.

Pioneering the LED design & development since 2004, the initiative won accolades for Majlis Perbandaran Kemaman Award for the LED Screen VMS Board in 2005. In 2007, the Dewan Bandaraya Kuala Lumpur (DBKL) Award for the Intelligent Vision Track System, setting the record for super sized display. In 2010, the Majlis Bandaraya Kuala Terengganu Award, for outdoor LED-based display.

We open new possibilities in lighting customizations with the efficiency, the beauty & the quality of lighting, and especially LED based, luminaries with the dependability you'd expect from Oversea Lighting.
INTRODUCTION

OVERSEA LIGHTING & ELECTRIC (M) SDN BHD

Associated company APS CONCEPT LIGHTING SDN BHD

No. D1-26-1&2, D1-28-1&2, D1-30-2,
Jln. Dutamas 1, Taman Dutamas,
43200 Balakong, Selangor Darul Ehsan, Malaysia.
Tel: 03-9818 8659
Assembly of LED Street Lantern

Assembly of LED Street Lantern

Current and Voltage Testing

Packing
POLE PROCESS

Spray Powder Coating

Pole Polishing

Bending Arm Pole

Oven

Signature Pole

Decorative Pole Address:
No 8, Jalan Sg Batu, 6/ku6, Kawasan Perindustrian Klang Utama, 42100 Klang, Selangor Darul Ehsan.
LED TRACK LIGHT PHOTO PROJECT

Dewan Bandaraya Kuala Lumpur
INTRODUCTION OF LED

Brief History of Lighting

1879  Edison Light Bulb
1901  Fluorescent Tube
1919  Sodium Vapor Lamp
1970  1st Red LED
1995  “High Brightness” Blue, Green LEDs
2000  White LED Lamp demonstrates incandescent efficacy (17 lm/W)
2005  White LED Lamp demonstrates fluorescent efficacy (70 lm/W)
2012  Production White LED Lamp Exceeds 161 lm/W

Current lighting technology is over 120 years old. LEDs began as just indicators, but are now poised to become the most efficient light source ever created.
INTRODUCTION OF LED

Lighting Class LED Efficacy & Light Output

Cool White (lumens/watt)

- Theoretical maximum for LED
- R&D Capability
- 208 LPW
- 186 LPW
- 161 LPW
- 131 LPW
- 3 yrs
- XM-L
- XT-E
- XB-D
- High Volume Production

Timeline:
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014

HID
Fluorescent
CFL
LED
Incandescent
OLE LED Lights Anatomy

Heat Sink
90% and above aluminum contain to ensure fast heat dissipation

Driver
High Efficiency with PF Control (PF0.9)
IP20, IP65, IP67 Rating
90% and above efficiency
RoHS Compliance

Thermal Transfer Tape
Thermally Conductive Interface Pads
UL94 V-0 certified
RoHS - comply with the requirements of EU Directive 2002/95/EC and 2005/618/EC

LED Lamps
Up to 1311 lumens per watts output
MCPCB mounts LED
RoHS Compliance
ANSI, Energy Star,
NEMA, UL E331816

Optical Components
Designed to improve lights output and control the lights angle for efficient coverage

Copyrights Reserved
LED’s Lighting Terminology

**Beam angle**
The beam angle refers to how focused the light is when emitted from the LED. The choice of viewing angle also affects the LED output intensity.

**Candela**
The candela is the SI base unit of luminous intensity; that is, power emitted by a light source in a particular direction. An ordinary wax candle generates one candela.

**CCT**
Correlated Color Temperature, CCT rating is an indication of how "warm" or "cool" the light source appears.

**CRI**
In easy terms CRI is the quality of light and is represented by a number from 1 (worse) to 100 (best). A CRI of 100 means the light has the same quality as sunlight, it is pleasant and all colors look natural. At CRI of 60 the light has an unpleasant feel and colors look unnatural (for example Skin appears less pink, and hence “unhealthy”)

**Driver**
A LED driver is a self-contained power supply that has outputs matched to the electrical characteristics of a LED or array of LEDs.

**Heat-dissipation**
The process of becoming cooler; a falling temperature.

**Heat-sink**
A heat sink is a term for a component or assembly that transfers heat, generated within a solid material, to a fluid medium, such as air or a liquid.

**LED**
Stands for Light Emitting Diode, it is an electronic semiconductor component. If current flows through the diode, it emits light with a wavelength that depends on the semiconductor material.

**Lens**
A lens is an optical device with perfect or approximate axial symmetry which transmits and refracts light, converging or diverging the beam.

**Lumen output**
A lumen is a unit of standard measurement used to describe how much light is contained in a certain area. The lumen is part of a group of standard measurements known as the photometry group, which measure different aspects of light.

**Lux**
Lux is lumen per square meter. The difference between the lux and the lumen is that the lux takes into account the area over which the luminous flux is spread.

**Wattage**
The watt (abbreviated W) is the International System of Units’ (SI) standard unit of power (energy per unit time), the equivalent of one joule per second. The watt is used to specify the rate at which electrical energy is dissipated, or the rate at which electromagnetic energy is radiated, absorbed, or dissipated.
LM79-08 Test

What is LM79-08?

It is the Illuminating Engineering Society of North America (IESNA) approved method for the Electrical and Photometric Measurement of Solid-State Lighting. It measures an LED luminaire or integral lamp as a whole system according to a standard process using specified equipment.

The testing report issued according to a standard format will provide
- Total Luminous Flux
- Luminous Intensity Distribution
- Electrical Power Characteristics
- Luminous Efficacy (calculated)
- Color Characteristics (CRI, CCT...)

LM80-08 Test

What is LM80-08?

It is the Illuminating Engineering Society of North America (IESNA) approved standard for measuring lumen maintenance of LED light sources. LM-80-80 apply to the LED package, array, or module alone, not a complete system, it is testing a component level. The standard does not provide guidance for extrapolation of testing results.

The testing report issued according to a standards format will provide luminous flux for a given current over a 6,000 hours period with interval measurements.

Luminous flux will be measure for 3 different LED case temperatures: 55o C, 85o C and a third temperature to be selected by manufacturer. Besides, the lumen maintenance, the chromaticity shifts over the measured period.
IEC Standard

What is IEC Standard?

The International Electrotechnical Commission (IEC) is the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

Over 10,000 experts from industry, commerce, government, test and research labs, academia and consumer groups participate in IEC Standardization work.

IEC Standard Reference for LED luminaires
(few example)

IEC 60598 - 1
Luminaires - Part 1: General requirements and tests.

IEC 60598 - 2 - 3
Luminaires - Part 2-3: Particular requirements - Luminaires for road and street lighting

IEC 62031
LED modules for general lighting - Safety specifications

IEC 62504
General lighting - LEDs and LED modules

IEC 61347 - 1
Lamp controlgear - Part 1: General and safety requirements

IEC 61347 - 2 - 13
Lamp controlgear - part 2-13: Particular requirements for DC or AC supplied electronic controlgear for LED modules

IEC 62384
DC or AC supplied electronic control gear for LED modules - Performance requirements
<table>
<thead>
<tr>
<th>Page Range</th>
<th>Description</th>
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<tbody>
<tr>
<td>1-7</td>
<td>LED SOLAR LIGHTING SERIES</td>
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<td>LED STREET LANTERN SERIES</td>
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<td>44-52</td>
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<tr>
<td>53-55</td>
<td>LED POWER DRIVER</td>
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<tr>
<td>56-58</td>
<td>ACCESSORIES</td>
</tr>
</tbody>
</table>
Efficiency + Performance + Projects = ✨ illuminating the right way...
Solar Lights

OLE solar lights are well-designed to illuminate areas with the highest intensity of light. It also offers a wide variety of configurations and styles to meet your specific needs. Specifications below are for reference only. The system will be configured according to the environmental conditions of the installation site as well as your specific requirements. Please contact us about customized lighting solutions, including requests for solar lights that last more than 10 hours per night

Applications
- Perimeter Security Lighting
- Campus Lighting
- Street Lighting (Non critical road)
- Private Road Lighting
- Park Lighting
- Boat Dock Lighting
- Roadway Lighting
- Farm & Ranch Lighting
- Gate Lighting
- Remote Area Lighting
- Pathway Lighting
- Wildlife Area Lighting
- Yard Lighting
- Military Base Lighting
- Ramp Lighting
- Perimeter Security Lighting
- Fence Lighting
- Jogging and Bike Path Lighting
- Sidewalk Lighting
- Promenades

Standard Features
- Solar Panel: over 10 years of power generation capacity, with a 5-year warranty
- LED Light: Solar Compatible LED or CREE LEDs as an optional range provide super-bright light from little power, need simple thermal management, and last up to 50,000 hours, with a 5-year warranty. LED wattage is equivalent to approximately half the wattage of high pressure sodium light.
- Controller: over 5 years of typical operating life, with a 2-year warranty, automatic operation from dusk to dawn or timed ON/OFF operation as an optional to conserve batter power, it also capable to dimmed the light from 25% up to 75% step by step after midnight till dawn
- Pole: up to 25 years of long life time
- Battery: 5~7 years of maximum life, with a 1-year warranty

Benefits
- No line voltage, trenching, or metering
- No power outages
- Battery backup for cloudy or rainy days
- Distributed light and power - no single point of failure for enhanced security
- Easy to install with quick connect plugs - less than 1 hour
- No scheduled maintenance for up to 5 years
- No cost of replacing concrete, asphalt or landscaping
- No cost of transformers or meters to be added for electric service
- Qualify for savings from various states and federal taxes and incentives
- No monthly electric bills
- Controlled charging to prolong battery service life
- Environmentally friendly - 100% powered by the sun, solar panels reduce fossil fuel consumption, eliminating pollution
- Self-contained solution - Light on/off controlled by automatic daylight sensing or hour preset, no running or maintenance cost
- Better light source - LED lights feature cool white light without flickering and higher brightness than sodium lights
- Safe 12 volt/24 volt circuit, no risk of electric shock
## LED SOLAR LIGHTING SERIES

### SOLAR LED Lighting

#### Specification

**Battery type: Lead-Acid**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Lamp Power (W)</td>
<td>24W</td>
<td>30W</td>
<td>48W</td>
<td>72W</td>
</tr>
<tr>
<td>Solar Module</td>
<td>24V/65W</td>
<td>24V/90W</td>
<td>24V/130W</td>
<td>24V/190W</td>
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<tr>
<td>Solar Module Size</td>
<td>(1050x666x34)</td>
<td>(830x666x35)</td>
<td>(1050x666x34)</td>
<td>(1300x980x50)</td>
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<tr>
<td>Weight of Solar Module</td>
<td>9kg</td>
<td>15kg</td>
<td>19kg</td>
<td>25kg</td>
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<tr>
<td>Battery + Controller</td>
<td>24V/40AH</td>
<td>24V/60AH</td>
<td>24V/80AH</td>
<td>24V/120AH</td>
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<tr>
<td>Lumens</td>
<td>2,380 lm</td>
<td>2,975 lm</td>
<td>3,570 lm</td>
<td>4,760 lm</td>
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<tr>
<td>Lux</td>
<td>13LUX</td>
<td>12LUX</td>
<td>15LUX</td>
<td>18LUX</td>
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<tr>
<td>Lamp Height</td>
<td>6M</td>
<td>7M</td>
<td>8M</td>
<td>9M</td>
</tr>
<tr>
<td>Pole Distance</td>
<td>20M</td>
<td>25M</td>
<td>25M</td>
<td>30M</td>
</tr>
<tr>
<td>Lamp Life</td>
<td>50,000hrs</td>
<td>50,000hrs</td>
<td>50,000hrs</td>
<td>50,000hrs</td>
</tr>
</tbody>
</table>

**Battery type: Lithium-Polymer**

<table>
<thead>
<tr>
<th>Specification</th>
<th>OLE-LED-SL002</th>
<th>OLE-LED-SL002</th>
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</thead>
<tbody>
<tr>
<td>Lamp Power (W)</td>
<td>24W</td>
<td>30W</td>
</tr>
<tr>
<td>Solar Module</td>
<td>24V/80W</td>
<td>24V/135W</td>
</tr>
<tr>
<td>Solar Module Size</td>
<td>(1050x666x34)</td>
<td>2 x (1300x980x50)</td>
</tr>
<tr>
<td>Battery + Controller</td>
<td>500WH 24V/20AH</td>
<td>700WH 24V/30AH</td>
</tr>
<tr>
<td>Lumens</td>
<td>1700 lm</td>
<td>2975 lm</td>
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<tr>
<td>Lux</td>
<td>13LUX</td>
<td>12LUX</td>
</tr>
<tr>
<td>Lamp Height</td>
<td>5M</td>
<td>7M</td>
</tr>
<tr>
<td>Pole Distance</td>
<td>15M</td>
<td>25M</td>
</tr>
<tr>
<td>Lamp Life</td>
<td>50,000hrs</td>
<td>50,000hrs</td>
</tr>
</tbody>
</table>

**Polycrystalline Silicon**

**Mono-crystalline Silicon**

The OLE Solar LED Lighting system consist of:

1. Light Control
2. Warranty: LED 3 years, Solar controller 2 years, Solar panel 5 years and battery 1 years
3. Optional: Lithium Battery Warranty 4 years in 1500 cycle
SOLAR LIGHTING SERIES

SOLAR
OLE 2FSG020A (IP65) 12W

Solar Lights
1. Flexible solar cells which works even in cloudy/rainy days. Power: 27W+15%.
   Lifetime is more than 15 years.
2. Lead-acid rechargeable battery: 12V/40A, life span is 3 to 4 years.
3. CREE LED: 12W.
4. Color temperature: 4000K to 7500K.
5. Reflective type.
7. Lamp posts are made of aluminum and alloy and casted with moldings. The surfaces are with fluorocarbon and anodized, anti-salted, anti-acidic.
8. Working temperature: -20°C to 60°C.
9. Height: 4m, illuminance: 14Lx, Recommended distance between the 2 posts: 15 to 20m, Width: 3 to 5m.
10. Wind resistance: 27m/s, ie, 10 scale.
11. Intelligent remote control: Light on/off, brightness can be set and read. Current and voltage of the batteries, solar panels can be read. Switch on/off are remote-controlled.
12. The lights are light-controlled. It turns on in full-power in the first 4 hours and in half-power from the 5th hour till the next dawn. It can work for 5 to 7 rainy/cloudy days.

powered by CREE™ LEDS
RoHS

illuminating the right way...
Solar Lights

1. Flexible solar cells which works even in cloudy/rainy days.
   Power: 27W+15%.
   Lifetime is more than 15 years.

2. Lead-acid rechargeable battery: 12V/40A, life span is 3 to 4 years.

3. CREE LED: 12W.

4. Color temperature: 4000K to 7500K.

5. Reflective type.


7. Lamp posts are made of aluminum and alloy and casted with moldings. The surfaces are with fluorocarbon and anodized, anti-salted, anti-acided.

8. Working temperature: -20°C to 60°C.

9. Height: 4m, Illuminance: 12-161Lx, Recommended distance between the 2 posts: 12 to 15m, Width: 3 to 5m.

10. Wind resistance: 27m/s, ie, 10 scale.

11. Intelligent remote control: Light on/off, brightness can be set and read. Current and voltage of the batteries, solar panels can be read. Switch on/off are remote-controlled.

12. The lights are light-controlled. It turns on in full-power in the first 4 hours and in half-power from the 5th hour till the next dawn. It can work for 5 to 7 rainy/cloudy days.
Solar Lights

1. Flexible solar cells which works even in cloudy/rainy days.
   - Power: 4.5W+15%.
   - Lifetime is more than 15 years.
2. Ni-MH rechargeable battery: 2.4V/26A, life span is about 5 years.
3. CREE LED: 2.5W.
4. Color temperature: 4300K to 5500K.
5. Reflective type.
7. Lamp posts are made of aluminum and alloy and casted with moldings. The surfaces are with fluorocarbon and anodized, anti-salted, anti-acided.
8. Working temperature: -20°C to 60°C.
9. Height: 4m, Illuminance: 5-8Lx, Recommended distance between the 2 posts: 12 to 15m, Width: 3 to 5m.
10. Wind resistance: 27m/s, ie, 10 scale.
11. Intelligent remote control: Light on/off, brightness can be set and read. Current and voltage of the batteries, solar panels can be read. Switch on/off are remote-controlled.
12. The lights are light-controlled. It turns on in full-power in the first 4 hours and in half-power from the 5th hour till the next dawn. It can work for 5 to 7 rainy/cloudy days.
Solar Lights
1. Flexible solar cells which works even in cloudy/rainy days. Power: 13W+15%. Lifetime is more than 15 years.
2. Lead-acid rechargeable battery: 6V/39Ah, life span is 3 to 4 years.
3. CREE LED: 6W.
4. Color temperature: 4300K to 5500K.
5. Reflective type.
7. Lamp posts are made of aluminum and alloy and casted with moldings. The surfaces are with fluorocarbon and anodized, anti-salted, anti-acidied.
8. Working temperature: -20°C to 60°C.
9. Height: 4m, Illuminance: 5-8lx, Recommended distance between the 2 posts: 12 to 15m, Width: 3 to 5m.
10. Wind resistance: 27m/s, ie, 10 scale.
11. Intelligent remote control: Light on/off, brightness can be set and read. Current and voltage of the batteries, solar panels can be read. Switch on/off are remote-controlled.
12. The lights are light-controlled. It turns on in full-power in the first 4 hours and in half-power from the 5th hour till the next dawn. It can work for 5 rainy/cloudy days.
Solar Lights

2. Ni-MH rechargeable battery.
   4V/26Ah x 3 pieces.
3. Everlight RGB-LED colored lights+Lightbulb, 7.4W/3 holder, color temperature: 4300K to 5500K.
4. Controller: remote control, light control, timer control, antiovercharge, anti-overdischarge, anti-shortcircuit. Seven colors are changing all the time while it works. Protection level: IP65.
5. Lamp posts are made of aluminium and alloy and casted with moldings.
6. Working temperature: -20° C to 60° C.
7. Height: 4.8m.
8. Wind resistance: 27m/s, ie, fresh gale.
9. Intelligent remote control: Light on/off, brightness can be set and read. Current and voltage of the batteries, solar panles can be read. Switch on/off are remote-controlled.
10. The lights are light-controlled. The light will be turned off automatically in 5 hours. It can work for 3 to 5 rainy/cloudy days continously.
Efficiency + Performance + Projects = ✨ illuminating the right way...
LED STREET LANTERN SERIES

LED
OLE-LED-SL25 (IP65) (35W)

OLE-LED-SL25
A sleek and robust heat sink is just one part of the sophisticated thermal management system to remove damaging heat from the LEDs to ensure reliable performance over the life of the fixture. The OLE-LED-SL25 lantern offers more than 11 years of service life to significantly reduce maintenance frequency and expense, based on a 50,000 hour life and 12 hours of operation per day. This efficiency fixture can yield up to a 50-percent reduction in system energy compared with standard HID systems, depending on roadway applications.

Specification
* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class III
* Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCR Board specification: Aluminum T=1.6mm
  94V0 CU=1/oz AL[S052]=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal impedance = 0.48°C / w
  Break Down Voltage = 9.5KV

* Ambient operating temperature: -30°C to 50°C
* Voltage: 90 - 260V 50HZ
* Wattage: 35W
* Lumen: 3,457 lm
* Lens: 135° x 50°
**LED STREET LANTERN SERIES**

**LED OLE-LED-SL25**

**Specification**

**Features**
- Innovative & sustainable
  - Latest LED technology with high system efficacy (114-131lm/W, OLE-LED-SL25 achieving up to 50% energy saving compared with typical conventional SON solutions)
- 120° embedded lense default with 135° x 50° (135° x 50° and 120° x 50°)

**Color rendering index** > 75 - 95

**Power requirements** 220-240V 50Hz

**Optics**
- LED optics lense technology
  - Transparent impact resistant lenses
  - Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
  - Light Distribution optimised lenses for narrow, symmetrical distribution.

**LED**
- CREE

**Driver**
- Meanwell / Recom LED driver / Philips

**Material and finishing**
- Housing Die-cast Aluminium
- Cover: Tempered Glass

**Classifications**
- IP65

**Light color**
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

---

**OLE-LED-SL290A (CREE)**

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>100W</th>
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</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>30pcs</td>
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<tr>
<td>Voltage</td>
<td>AC 240V</td>
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<tr>
<td>Power</td>
<td>35W</td>
</tr>
<tr>
<td>Lumens</td>
<td>3,457 lm</td>
</tr>
</tbody>
</table>

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**Diagram**

- Dimensions: 636 x 270 x 174
- 30pcs

---

*illuminating the right way...*
OLE LED SL Series

A sleek and robust heat sink is just one part of the sophisticated thermal management system to remove damaging heat from the LEDs to ensure reliable performance over the life of the fixture. The OLE SL Series LED lantern offers more than 11 years of service life to significantly reduce maintenance frequency and expense, based on a 50,000 hour life and 12 hours of operation per day. This efficiency fixture can yield up to a 50-percent reduction in system energy compared with standard HID systems, depending on roadway applications.

Applications

* Designed to meet recommended luminance and illuminance requirements for local and collector roadway / street classifications.

Specification

* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class III
* MPCB Board specification: Aluminium $T = 1.6 \text{mm}$
  
  $94V0 \text{CU}=1/\text{oz} \text{AL(5052)}=1.5 \text{m} / \text{m}$
  
  Thermal conductivity $= 2.0 \text{w} / \text{mk}$
  
  Thermal Impedence $= 0.48 \text{C} / \text{w}$
  
  Break Down Voltage $= 9.5 \text{KV}$

* EMAL - Electrical Material Approved List (www.ictjkr.gov.my)
LED STREET LANTERN SERIES

LED
OLE-LED-SL001

Specification

Features

- Innovative & sustainable
- Latest LED technology with high system efficacy (114-131lm/W, OLE SL Series) achieving up to 50% energy saving compared with typical conventional SON solutions

- 120° embedded lense default with 135° x 50° (135°x 50’and 120°x 50°)

Color rendering index > 75 - 95

Power requirements 220-240V 50Hz

LED CREE

Driver Meanwell / Recom LED driver

Material and finishing

- Housing Die-cast Aluminium
- Cover: Tempered Glass
- Extruded aluminium heatsink

Classifications IP65

Light color

- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

LED optics lense technology

- Transparent impact resistant lenses
- Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

OLE-LED-SL001 (CREE)

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>150W</th>
<th>250W</th>
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<tbody>
<tr>
<td>No. of LED</td>
<td>54pcs</td>
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</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
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<tr>
<td>Power</td>
<td>62W</td>
<td>125W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>700mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>6,257 lm</td>
<td>8,102 lm</td>
</tr>
</tbody>
</table>

![Diagram of LED Street Lantern](image-url)
OLE LED SL Series

A sleek and robust heat sink is just one part of the sophisticated thermal management system to remove damaging heat from the LEDs to ensure reliable performance over the life of the fixture. The OLE SL Series LED lantern offers more than 11 years of service life to significantly reduce maintenance frequency and expense, based on a 50,000 hour life and 12 hours of operation per day. This efficiency fixture can yield up to a 50-percent reduction in system energy compared with standard HID systems, depending on roadway applications.

Applications
* Designed to meet recommended luminance and illuminance requirements for local and collector roadway / street classifications.

Specification
* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class III
* Certification: IES LM-79-08, LM80 Lumen maintenance
  - IEC 62384, 61347-2-13 0.95 power factor
  - Safety construction test compliance IEC 60598
  - EMC-EN 61000
* MPCEO Board specification: Aluminium T =1.6mm
  - 94V0 CU=1/oz AL(5052)=1.5m / m
  - Thermal conductivity = 2.0w / mk
  - Thermal Impedence = 0.48°C / w
  - Break Down Voltage = 9.5KV
LED STREET LANTERN SERIES

LED OLE-LED-SL002

Specification

Features
- Innovative & sustainable
  - Latest LED technology with high system efficacy (114-131lm/W, OLE SL Series) achieving up to 50% energy saving compared with typical conventional SON solutions

- 120° embedded lens default with 135° x 50° (135° x 50° and 120° x 50°)

Color rendering index > 75 - 95

Driver
- Meanwell / Recom LED driver

LED
- CREE

Material and finishing
- Housing Die-cast Aluminium
- Cover: Tempered Glass
- Extruded aluminium heatsink

Power requirements 220-240V 50Hz

Classifications IP65

Optics
- LED optics lens technology
  - Transparent impact resistant lenses
  - Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
  - Light Distribution optimised lenses for narrow, symmetrical distribution.

Light color
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

OLE-LED-SL002 (CREE)

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>70W</th>
<th>100W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>18pcs</td>
<td>36pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>32W</td>
<td>41W</td>
</tr>
<tr>
<td>LED Current</td>
<td>525mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>2,940 lm</td>
<td>4,171 lm</td>
</tr>
</tbody>
</table>

18pcs

36pcs

635

height 155

width 270
LED STREET LANTERN SERIES

LED
OLE-LED-SL290A (IP65) (120W / 176W)

Report No. JKR EMAL : QAV: QAV0512-418, QAV0312-237 / DEKRA: 2149362.52

OLE-LED-SL290A
A sleek and robust heat sink is just one part of the sophisticated thermal management system to remove damaging heat from the LEDs to ensure reliable performance over the life of the fixture. The OLE-LED-SL290A lantern offers more than 11 years of service life to significantly reduce maintenance frequency and expense, based on a 50,000 hour life and 12 hours of operation per day. This efficiency fixture can yield up to a 50-percent reduction in system energy compared with standard HiD systems, depending on roadway applications.

Specification
* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class II
* MPCR Board specification : Aluminium T =1.6mm
  94V0 CU=1/oz Al(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal impedance = 0.48°C / w
  Break Down Voltage = 9.5KV
* Ambient operating temperature: -30°C to 50°C
* Voltage: 90 - 260V 50HZ
* Wattage: 120W / 180W

* EMAL - Electrical Material Approved List (www.ictjkr.gov.my)
LED STREET LANTERN SERIES

LED
OLE-LED-SL290A

Specification

Features
Innovative & sustainable
- Latest LED technology with high system efficacy (114-131lm/W, OLE-LED-SL290A) achieving up to 50% energy saving compared with typical conventional SON solutions

- 120° embedded lense default with 135° x 50° (135°x 50’and 120°x 50’)

Color rendering index > 75 - 95

Driver
Meanwell / Recom LED driver / Philips

Power requirements 220-240V 50Hz

Material and finishing
Housing Die-cast Aluminium
Cover: Tempered Glass

Classifications IP65

Optics
LED optics lense technology
- Transparent impact resistant lenses
- Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

Light color
Cool white 4500-6500K
Neutral white 3800-4200K
Warm white 2700-3000K

OLE-LED-SL290A (CREE)

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>No. of LED</th>
<th>Voltage</th>
<th>Power</th>
<th>Lumens</th>
</tr>
</thead>
<tbody>
<tr>
<td>250W</td>
<td>90pcs</td>
<td>AC 240V</td>
<td>120W</td>
<td>11,500 lm</td>
</tr>
<tr>
<td>400W</td>
<td>120pcs</td>
<td>AC 240V</td>
<td>176W</td>
<td>14,656 lm</td>
</tr>
</tbody>
</table>

90pcs
120pcs

illuminating the right way...
OLE Smart Lantern

The use of LEDs for solid-state lamps also provides a variety of sustainability benefits that facilitate compliance with ‘green’ initiatives. Among them:

* Low LED power consumption yields energy savings of 40% to 60% over high pressure sodium and mercury vapor luminaires at today’s levels, as indicated earlier. This energy efficiency is expected to increase with ongoing advances in solid state technology.
* LEDs’ ability to minimize wasted light lowers power demands even further by reducing the lumen requirements for a given street fixture. Since light distribution can be controlled on an LED-by-LED basis, engineers can effectively light the target zone without the light pollution created by a single-beam solution.
* Mercury-free LED construction makes solid state lamps safe for landfills while also complying with mercury bans such as the European Union’s RoHS directive.
* Long LED life lengthens replacement cycles and associated fuel usage by maintenance crews, while also extending fixture life and thereby reducing the burden on the waste stream.
* LED lights reduce pollution and carbon footprint via energy savings that lowers carbon dioxide and mercury emissions from coal-burning plants, as well as reduced fuel consumption by maintenance crews dispatched for bulb replacement.

**Specification**

* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class I
* Certification: IES LM-79-08  
  LM80 Lumen maintenance  
  IEC 62384, 61347-2-13  0.95 power factor  
  Safety construction test compliance IEC 60598  
  EMC-EN 61000
* MPCI Board specification: Aluminium T =1.6mm  
  94V0 CU=1/oz AL(5052)=1.5m / m  
  Thermal conductivity = 2.0w / mk  
  Thermal Impedence = 0.48°C / w  
  Break Down Voltage = 9.5KV
LED STREET LANTERN SERIES

LED Smart Lantern

**Specification**

**Features**
- Innovative & sustainable
- Latest LED technology with high system efficacy (114-131lm/W, OLE Smart lantern) achieving up to 50% energy saving compared with typical conventional SON solutions

**Color rendering index**
> 75 - 95

**Power requirements**
220-240V 50Hz

**Optics**
- LED optics design technology
- Transparent impact resistant lenses
- Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

- 120° embedded lense default with 135° x 50° (135° x 50°and 120° x 50°)

**OLE Smart Lantern (CREE)**

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>150W</th>
<th>250W</th>
<th>400W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>81pcs</td>
<td>108pcs</td>
<td>162pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>93W</td>
<td>125</td>
<td>187W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>350mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>9,386 lm</td>
<td>12,515 lm</td>
<td>18,773 lm</td>
</tr>
<tr>
<td>Length of Heatsink</td>
<td>400mm</td>
<td>500</td>
<td>750mm</td>
</tr>
</tbody>
</table>

**LED**
- Meanwell / Recom LED driver

**Material and finishing**
- Housing Die-cast Aluminium
- Cover: Tempered Glass
- Extruded aluminium heatsink

**Classifications**
- IP65

**Light color**
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

Adjustable arm ranging to 45° rotation
LED STREET LANTERN SERIES

LED
OLE-LED-CL32 (IP65) (30W)

Feature:
1. Use the imported high power LED source 1W or 5W module, efficient performance ≥ 120 lumens/watt, wide color temperature range (2600K - 6200K), CRI ≥ 70
2. Unique designed optical structure and cooling device to ensure the high efficient and reliable performance.
3. Easily and safety maintenance, Superior life over other lamp sources,
4. No light pollution. No dark belt and shadow due to mounting bracket or lighting pole.

Specification
* Construction : Pressure die-casting aluminium with sand casting mounting bracket.
* Reflector: Anodized and sealed single piece high purity aluminium plate.
* Lens: High transparent 5mm toughened glass and optical grade PMMA
* Protection: IP65
* Insulation: Class I
* Certification : IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCB Board specification : Aluminium T =1.6mm
  94VO CU=1/oz AL(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV
* Ambient operating temperature: -30°C to 50°C
* Voltage: 90 - 260V  50HZ
* Wattage: 30W

powered by CREE LEDs

RoHS

Illuminating the right way...
LED STREET LANTERN SERIES

LED
OLE-LED-CL99 (IP65) (20W / 30W)

Feature:
1. Use the imported high power LED source 1W module, efficient performance ≥ 120 lumens/watt, wide color temperature range (2600K - 6200K), CRI ≥ 70
2. LED light radiation angle accurately controlled, no upward light pollution, improve the luminous flux utilization factor.
3. The irradiation radius can be 10M.
4. Easily and safety maintenance, Superior life over other lamp sources.

Specification
* Construction: Pressure die-casting aluminium.
* Reflector: Anodized and sealed single piece high purity aluminium plate.
* Lens: High transparent PMMA
* Protection: IP65
* Insulation: Class I
* Certification: IES LM-79-08
LM80 Lumen maintenance
IEC 62384, 61347-2-13 0.95 power factor
Safety construction test compliance IEC 60598
EMC-EN 61000
* MPCB Board specification: Aluminium T=1.6mm
94V0 CU=1/oz Al(5052)=1.5m / m
Thermal conductivity = 2.0W / mk
Thermal Impedence = 0.48°C / w
Break Down Voltage = 9.5KV

* Ambient operating temperature: -30°C to 50°C
* Voltage: 90 - 260V 50HZ
* Wattage: 20W / 30W
LED STREET LANTERN SERIES

LED
OLE-LED-CL998 (IP65) (20W / 30W)

Feature:
1. Use the imported high power LED source 1W module, efficient performance > 120 lumens/watt, wide color temperature range (2600K - 6200K), CRI ≥ 70
2. LED Light radiation angle accurately controlled, no upward light pollution, improve the luminous flux utilization factor.
3. The irradiation radius can be 10M.
4. Easily and safety maintenance, Superior life over other lamp sources.

Specification
* Construction: Pressure die-casting aluminium.
* Reflector: Anodized and sealed single piece high purity aluminium plate.
* Lens: High transparent PMMA
* Protection: IP65
* Insulation: Class I
* Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCB Board specification: Aluminium T =1.6mm
  94V0 CU=1/oz AL(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV
* Ambient operating temperature: -30°C to 50°C
* Voltage: 90 - 260V 5OHZ
* Wattage: 20W / 30W
OLE LED LIGHTING CATALOGUE

Efficiency + Performance + Projects = illuminating the right way...
OLE LED FL Series

OLE LED FL floodlights series is a basic model of LED floodlights but not compromising the performance with the same LED module from streetlighting, the lumen output produce is perfect for lighting up signboards, billboards, parks, building facade etc.

Specification

* Construction: Injection Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class I
* Certification: IES LM-79-08

LM80 Lumen maintenance
IEC 62384, 61347-2-13 0.95 power factor
Safety construction test compliance IEC 60598
EMC-EN 61000

* MPCB Board specification: Aluminium T =1.6mm
94V0 CU=1/oz AL(5052)=1.5m / m
Thermal conductivity = 2.0w / mk
Thermal Impedence = 0.48°C / w
Break Down Voltage = 9.5KV
**LED**

**OLE-LED-FL307**  
**OLE-LED-FL308**

### Specification

**Features**
- Innovative & sustainable
- Latest LED technology with high system efficacy (114-131 lm/W, OLE-LED-FL307/308) achieving up to 50% energy saving compared with typical conventional SON/HID solutions

**Color rendering index** > 75 - 95

**Power requirements** 220-240V 50Hz

**Optics**
- LED optics lens technology
- Transparent impact resistant lenses
- Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

**LED**
- CREE

**Driver**
- Meanwell / Recom LED driver

**Material and finishing**
- Housing Die-cast Aluminium
- Cover: Tempered Glass
- Extruded aluminium heatsink

**Classifications**
- IP65

**Light color**
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

---

**OLE-LED-FL307 Floodlight (CREE)**

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>50W</th>
<th>150W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>18pcs</td>
<td>36pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>21W</td>
<td>52W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>430mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>2,086 lm</td>
<td>4,981 lm</td>
</tr>
</tbody>
</table>

**OLE-LED-FL308 Floodlight (CREE)**

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>70W</th>
<th>150W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>27pcs</td>
<td>36pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>42W</td>
<td>52W</td>
</tr>
<tr>
<td>LED Current</td>
<td>466mA</td>
<td>430mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>3,990 lm</td>
<td>4,981 lm</td>
</tr>
</tbody>
</table>
OLE LED FL Series
LED Flood Light offers a versatile solution to many applications, including architectural wall washing and facade lighting, sports court area lighting, flag poles and bulletin/billboard lighting. With three optimized design, there is a solution to fit virtually any flood application. The sleek modern design minimizes size while maximizing application efficiency for many outdoor flood applications. OLE’s optical design efficiency directs the light and produces superior lumen output.

The LED Flood Light offers a reduction in system energy compared with standard HID systems, depending on applications. This reliable system also offers more than 11 years of service life to significantly reduce maintenance frequency and expense, based on a 50,000 hour life and 12 hour of operation per day.

Applications
General flood requirements, roadway underpasses and pedestrian tunnels utilizing advanced refractive LED optical system providing high uniformity, excellent light distribution.

Specification
* Construction: Extruded cast aluminium housing.
* Mounting: Steel bracket mounting for surface of pole mount.
* Diffuser: Tempered glass.
* Protection: IP65
* Insulation: Class I
* Certification : IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13  0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCR Board specification : Aluminium T =1.6mm
  94V0 CU=1/oz AL(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV
LED
OLE-LED-FL401
OLE-LED-FL403

Specification

Features
- Innovative & sustainable
  - Latest LED technology with high system efficacy (114-131lm/W, OLE-LED-FL401/403) achieving up to 50% energy saving compared with typical conventional SON/HID solutions.

Color rendering index > 75 - 95

Power requirements 220-240V 50Hz

Optics
- LED optics lens technology
  - Transparent impact resistant lenses
  - Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
  - Light Distribution optimised lenses for narrow, symmetrical distribution.

- 120° embedded lense default with 135° x 50° (30°, 60°, 90°, 120° x 50°)

LED
CREE

Driver
Meanwell / Recom LED driver

Material and finishing
- Housing Extruded
- Cover: Tempered Glass
- Extruded aluminium heatsink

Classifications
IP65

Light color
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

OLED-FL401 Floodlight (CREE)

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>150W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>54pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>62W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>7,764 lm</td>
</tr>
</tbody>
</table>

OLED-FL403 Floodlight (CREE)

<table>
<thead>
<tr>
<th>Replacement HPSV (Watt)</th>
<th>200W</th>
<th>250W</th>
<th>400W</th>
<th>600W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>81pcs</td>
<td>108pcs</td>
<td>162pcs</td>
<td>189pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>93W</td>
<td>125W</td>
<td>187W</td>
<td>218W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>350mA</td>
<td>350mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>9,386 lm</td>
<td>12,151 lm</td>
<td>18,773 lm</td>
<td>21,901 lm</td>
</tr>
<tr>
<td>Length</td>
<td>500mm</td>
<td>700mm</td>
<td>900mm</td>
<td>1200mm</td>
</tr>
</tbody>
</table>
LED
OLE PCFL80 / 100 / 120 / 150 (IP65) (80W / 100W / 120W / 150W)

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>OLEPCFL80(CODE)</th>
<th>OLEPCFL100(CODE)</th>
<th>OLEPCFL120(CODE)</th>
<th>OLEPCFL150(CODE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>100V-240V AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>80W</td>
<td>100W</td>
<td>120W</td>
<td>150W</td>
</tr>
<tr>
<td>No. of LED</td>
<td>72pcs</td>
<td>72pcs</td>
<td>72pcs</td>
<td>72pcs</td>
</tr>
<tr>
<td>Lumens @ 5000K</td>
<td>7,650 lm</td>
<td>9,163 lm</td>
<td>10,435 lm</td>
<td>12,317 lm</td>
</tr>
<tr>
<td>Power Factor</td>
<td>min 0.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver Certification</td>
<td>CE Tested, ETL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rendering Index</td>
<td>Min 75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimming</td>
<td>OPTIONAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 - +70 Degrees Celcius</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30 - +65 Degrees Celcius</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlate Color Temperature</td>
<td>2700K-5000K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium Housing Color</td>
<td>Aluminium Alloy Stacked Fins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LED Operating Life</td>
<td>50,000 Hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Features:

OLE Floodlight series uses the most advanced technology in the lighting industry. OLE Floodlight proprietary driver with both CE and UL certified, in combination with high efficiency LEDs creates uncompromising lumen output and delivers as much 70 percent savings.
LED
OLE-LED-SP32,35,36 and 38 (IP65) (150W / 200W / 250W / 300W)

Feature:
1. Use the imported high power LED source 1W module, efficient performance ≥ 120 lumens/watt, wide color temperature range (2600K-6200K), CRI ≥ 70;
   The fitting efficient performance ≥95 lumens/watt.
2. Unique designed optical structure and cooling device to ensure the high efficient and reliable performance.
3. Easily and safety maintenance; Superior life over other lamp sources;

Specification
* Construction: Pressure die-casting aluminium, high quality extruded aluminium profile.
* Lens: High transparent 5mm toughened glass and optical grade PMMA.
* Protection: IP65
* Insulation: Class II
* Certification : IES LM-79-08

LM80 Lumen maintenance
IEC 62384, 61347-2-13 0.95 power factor
Safety construction test compliance IEC 60598
EMC-EN 61000

* MPCB Board specification : Aluminium T =1.6mm
  94V0 CU=1/oz Al(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal impedance = 0.48°C / w
  Break Down Voltage = 9.5KV

Photometric Data

OLE-LED-SP32 (150W)

Intensity (cd/10000m)

Intensity (cd/10000m)

OLE SP-LED-35 (200W)

Intensity (cd/10000m)

Intensity (cd/10000m)
### LED

**OLE-LED-SP32 / 35 / 36 / 38**

**Specification**

**Features**
- Innovative & sustainable
  - Latest LED technology with high system efficacy (114-131lm/W, OLE-LED-SP32 /35 / 36 / 38) achieving up to 50% energy saving compared with typical conventional SON/HID solutions

**Color rendering index**  > 75 - 95

**Power requirements**  220-240V 50Hz

**Optics**
- LED optics lense technology
  - Transparent impact resistant lenses
  - Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
  - Light Distribution optimised lenses for narrow, symmetrical distribution.

- 120° embedded lense default with 135° x 50° (30°, 60°, 90°, 120° x 50°)

**LED**
- CREE

**Driver**
- Meanwell / Recom LED driver

**Material and finishing**
- Housing Extruded
- Cover: Tempered Glass
- Extruded aluminium heatsink

**Classifications**
- IP65

**Light color**
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

---

**OLE-LED-SP32 / 35 / 36 / 38 Floodlight (CREE)**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE-LED-SP32</th>
<th>OLE LED-SP35</th>
<th>OLE-LED-SP36</th>
<th>OLE-LED-SP38</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>120pcs</td>
<td>160pcs</td>
<td>200pcs</td>
<td>240pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>150W</td>
<td>200W</td>
<td>250W</td>
<td>300W</td>
</tr>
<tr>
<td>LED Current</td>
<td>400mA</td>
<td>400mA</td>
<td>400mA</td>
<td>400mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>15,078 lm</td>
<td>20,104 lm</td>
<td>25,131 lm</td>
<td>33,878 lm</td>
</tr>
</tbody>
</table>

---

![OLE-LED-SP32 / 35 / 36 / 38](image-url)
LED
OLE-LED-SP50 (IP65) (18W / 54W)

**Specification**
- Construction: Pressure die-casting aluminium.
- Reflector: Anodized high purity aluminium plate.
- Lens: PMMA Aluminium and PMMA optic.
- Protection: IP65
- Insulation: Class III / Class I
- Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
- MPCB Board specification: Aluminium T =1.6mm
  94V0 CU=1/o2 AL(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV

- Ambient operating temperature: -30°C to 50°C
- Voltage: AC220V
- Wattage: 18W / 54W
- Light Source: 18 LEDs
- Color: Single color / RGB
- Lighting Projection Distance: 20 meter
- Lumen: 2128 lm
LED
OLE-LED-SP51 (IP65) (60W)

Specification
- Construction: Pressure die-casting aluminium.
- Reflector: Anodized high purity aluminium plate.
- Lens: PMMA Aluminium and PMMA optic.
- Protection: IP65
- Insulation: Class III / Class I
- Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
- MPBC Board specification: Aluminium T = 1.6mm
  94V0 CU=1/oz AL(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV
- Ambient operating temperature: -30°C to 50°C
- Voltage: AC220V
- Wattage: 60W
- Light Source: 60 LEDs
- Color: Single color / RGB
- Lighting Projection Distance: 20 meter
- Lumen: 5911 lm
LED Lighting Products are now more efficient than traditional lighting technologies when compared across the high-volume applications of recessed downlighting. Moreover, LED technology is projected to advance at a rapid rate, increasing the gap between it and traditional lighting. The life-cycle energy comparisons for these applications demonstrate that LEDs offer clear advantages in terms of energy cost and environmental impact.

**Specification**

- **Construction:** Die-cast aluminium.
- **Diffuser:** Tempered glass.
- **Protection:** IP20
- **Insulation:** Class I
- **Certification:** IES LM-79-08
  - LM80 Lumen maintenance
  - IEC 62384, 61347-2-13 0.95 power factor
  - Safety construction test compliance IEC 60598
  - EMC-EN 61000
- **MPCB Board specification:** Aluminium T =1.6mm
  - 94V0 CU=1/oz AL(5052)=1.5m / m
  - Thermal conductivity = 2.0w / mk
  - Thermal Impedence = 0.48°C / w
  - Break Down Voltage = 9.5KV
LED
OLE-LED-209P / 230P, OLE-LED-902 and OLE-LED-903

Specification

Features
- Innovative & sustainable
- Latest LED technology with high system efficacy
  (114-131lm/W, OLE-LED-209P / 230P, OLE-LED-902
  and OLE-LED-903) achieving up to 50% energy
  saving compared with typical conventional
  energy saving bulb solutions

- Optional selectable lenses:-
  (90°, 60°, 30°)

LED
- CREE

Driver
- Meanwell / Recom LED driver

Material and finishing
- Housing Die-cast Aluminium
  Cover: Tempered Glass
  Extruded aluminium heatsink

Classifications
- IP20

Light color
- Cool white 4500-6500K
  Neutral white 3800-4200K
  Warm white 2700-3000K

Color rendering index	> 75 - 95

Power requirements	220-240V 50Hz

Optics
- LED optics lens technology
  - Transparent impact resistant lenses
  - Identical lense for each LED guarantee in the
    original light distribution also incase of
    incidental LED failure
  - Light Distribution optimised lenses for narrow,
    symmetrical distribution.

ÖLE-Led-209P / 230P Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>OLE-LED-209P</th>
<th>OLE-LED-230P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>2 x PLC18W</td>
<td>2 x PLC26W</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>14W</td>
<td>21W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>1,598 lm</td>
<td>2,397 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

ÖLE-Led-902 Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>OLE-LED-209P</th>
<th>OLE-LED-230P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>2 x PLC18W</td>
<td>2 x PLC26W</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>14W</td>
<td>21W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>1,598 lm</td>
<td>2,397 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

ÖLE-Led-903 Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>OLE-LED-209P</th>
<th>OLE-LED-230P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>2 x PLC18W</td>
<td>2 x PLC26W</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>14W</td>
<td>21W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>1,598 lm</td>
<td>2,397 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>
LED
OLE-LED-DL12, OLE-LED-DL18 and OLE-LED-DL24 (IP20)

DIMMABLE (optional)

Quality Product

OLE-LED-DL12

OLE-LED-DL18

OLE-LED-DL24

High Power Downlight

Lobbies
Displays
Lecture-rooms
Shops

OLE-LED-DL12/18/24
Compared to traditional heatsink, our dissipating area is bigger, air convection is better.
With hook up connecting structure, it is easy to assemble the components together, very efficient for mass production or DIY users.
The cooling structure is under patent protection (included the appearance.)

Specification

* Body: Die-cast aluminium.
* Diffuser: Tempered glass.
* IP Standard: IP20
* Insulation: Class I
* Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCB Board specification: Aluminium T = 1.6mm
  94V0 CU=1/oz AI(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV

powered by
CREE™

RoHS

illuminating the right way...
# COMMERCIAL LIGHTING SERIES

## LED

OLE-LED-DL12, OLE-LED-DL18 and OLE-LED-DL24

### Specification

<table>
<thead>
<tr>
<th>Features</th>
<th>Innovative &amp; sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Latest LED technology with high system efficacy (114-131lm/W, OLE-LED-DL12/18/24) achieving up to 50% energy saving compared with typical conventional energy saving bulb solutions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color rendering index</th>
<th>&gt; 75 - 95</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Power requirements</th>
<th>220-240V 50Hz</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Optics</th>
<th>LED optics lens technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Transparent impact resistant lenses</td>
</tr>
<tr>
<td></td>
<td>- Identical lens for each LED guarantee in the original light distribution also incase of incidental LED failure</td>
</tr>
<tr>
<td></td>
<td>- Light Distribution optimised lenses for narrow, symmetrical distribution.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LED</th>
<th>CREE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Driver</th>
<th>Meanwell / Recom LED driver</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Material and finishing</th>
<th>Structure of the whole lamp: Heatsink+ALuminium plate+Lens+Power Supply+Lighting source</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Classifications</th>
<th>IP20</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Light color</th>
<th>Cool white 4500-6500K</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neutral white 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Warm white 2700-3000K</td>
</tr>
</tbody>
</table>

---

### OLE-LED-DL12 Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>2 x PLC13W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>12pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>14W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>1,390 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### OLE-LED-DL18 Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>2 x PLC18W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>18pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>21W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>2,085 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### OLE-LED-DL24 Downlight (CREE)

<table>
<thead>
<tr>
<th>Replacement PLC Tube (Watt)</th>
<th>2 x PLC26W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>24pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>28W</td>
</tr>
<tr>
<td>LED Current</td>
<td>350mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>2,781 lm</td>
</tr>
<tr>
<td>Dimmable</td>
<td>Optional</td>
</tr>
</tbody>
</table>
Cree® LMH2 2000-Im and 3000-Im LED Modules with TrueWhite® Technology

Cree LED modules provide lighting designers and manufacturers with simple, easy-to-adopt LED lighting solutions that reduce luminaire development time and speed time-to-market. The Cree LMH2 2000-Im and 3000-Im LED modules are the ideal choice for enabling rapid luminaire development where bright, beautiful, long-life lighting is required. The LMH series of modules incorporates Cree’s award-winning TrueWhite LED technology into a system of driver electronics, optics and primary thermal management for use in residential and commercial lighting applications. This versatile LED lighting module jump-starts the design process for recessed downlights, wall sconces or pendant lights in demanding end markets such as retail, museums, hospitality and restaurants.

### With Flat lens

<table>
<thead>
<tr>
<th>Angle</th>
<th>2000</th>
<th>3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>1043</td>
<td>1563</td>
</tr>
<tr>
<td>5°</td>
<td>1034</td>
<td>1551</td>
</tr>
<tr>
<td>15°</td>
<td>967</td>
<td>1456</td>
</tr>
<tr>
<td>25°</td>
<td>840</td>
<td>1263</td>
</tr>
<tr>
<td>35°</td>
<td>661</td>
<td>987</td>
</tr>
<tr>
<td>45°</td>
<td>464</td>
<td>688</td>
</tr>
<tr>
<td>55°</td>
<td>293</td>
<td>433</td>
</tr>
<tr>
<td>65°</td>
<td>166</td>
<td>245</td>
</tr>
<tr>
<td>75°</td>
<td>73</td>
<td>110</td>
</tr>
<tr>
<td>85°</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>90°</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### With Dome lens

<table>
<thead>
<tr>
<th>Angle</th>
<th>2000</th>
<th>3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>635</td>
<td>937</td>
</tr>
<tr>
<td>5°</td>
<td>633</td>
<td>933</td>
</tr>
<tr>
<td>15°</td>
<td>608</td>
<td>897</td>
</tr>
<tr>
<td>25°</td>
<td>560</td>
<td>827</td>
</tr>
<tr>
<td>35°</td>
<td>490</td>
<td>726</td>
</tr>
<tr>
<td>45°</td>
<td>404</td>
<td>600</td>
</tr>
<tr>
<td>55°</td>
<td>310</td>
<td>461</td>
</tr>
<tr>
<td>65°</td>
<td>221</td>
<td>329</td>
</tr>
<tr>
<td>75°</td>
<td>147</td>
<td>220</td>
</tr>
<tr>
<td>85°</td>
<td>94</td>
<td>142</td>
</tr>
<tr>
<td>90°</td>
<td>74</td>
<td>112</td>
</tr>
</tbody>
</table>
LED
OLE-LED-DLLMH2

CHARACTERISTICS
Cree TrueWhite technology is a revolutionary way of generating white light with LEDs. It delivers high efficacy with beautiful light characteristics and color accuracy, while maintaining color consistency over the life of the product.

LMH2 Light Source

<table>
<thead>
<tr>
<th>Luminous Flux (m²)</th>
<th>CCT (K)</th>
<th>CRI</th>
<th>Light Source Efficacy (lm/W)</th>
<th>LMD300 230 V DALI + Touch</th>
<th>LMD300 120-277 V 0/1-10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>4000</td>
<td>95</td>
<td>29</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3500</td>
<td>95</td>
<td>30.5</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3000</td>
<td>95</td>
<td>32</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2700</td>
<td>95</td>
<td>29</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>3000</td>
<td>4000</td>
<td>95</td>
<td>30</td>
<td>30.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3500</td>
<td>95</td>
<td>32.5</td>
<td>30.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3000</td>
<td>95</td>
<td>35</td>
<td>33.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2700</td>
<td>95</td>
<td>29</td>
<td>25.5</td>
</tr>
</tbody>
</table>

LMD300 Driver

<table>
<thead>
<tr>
<th>Input Voltage (V)</th>
<th>Max. Rated Input Power (W)</th>
<th>Frequency (Hz)</th>
<th>Power Factor 2000 lm²</th>
<th>Power Factor 3000 lm²</th>
<th>Dimming</th>
</tr>
</thead>
<tbody>
<tr>
<td>220-240</td>
<td>40</td>
<td>50/60</td>
<td>.95</td>
<td>.96</td>
<td>DALI + Touch (0/1-10 V dimming)</td>
</tr>
<tr>
<td>120-277</td>
<td>40</td>
<td>50/60</td>
<td>.95</td>
<td>.96</td>
<td>DALI + Touch (0/1-10 V dimming)</td>
</tr>
</tbody>
</table>

1. ±10% variance
2. Measured at steady state, Tc = 55 °C
3. Includes LMD300 driver losses
4. Dome lens may increase luminous flux by up to 5%.

The operating temperature at the case temperature (Tc) point is 0-70 °C.

LED to Conventional light replacement table

<table>
<thead>
<tr>
<th>LED Model</th>
<th>21W CFL</th>
<th>26W CFL</th>
<th>32W CFL</th>
<th>42W CFL</th>
<th>2x26W CFL</th>
<th>2x32W CFL</th>
<th>50W HID</th>
<th>70W HID</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMH2-2000 (24W)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>LMH2-3000 (37W)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

illuminating the right way...
## LED Downlight (IP20)

### Specifications

**LED Downlight (IP20) Series**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLDL-001 Edison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>85 - 240V</td>
</tr>
<tr>
<td>Working Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Emitting Color</td>
<td>Warm White 2700-3000K</td>
</tr>
<tr>
<td></td>
<td>Neutral White 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Cool White 4500-6500K</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>2700 - 6500K</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>24° / 45°</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLDL-004 Edison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>85 - 240V</td>
</tr>
<tr>
<td>Working Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Emitting Color</td>
<td>Warm White 2700-3000K</td>
</tr>
<tr>
<td></td>
<td>Neutral White 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Cool White 4500-6500K</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>2700 - 6500K</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>24° / 45°</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLDL-014 Edison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>85 - 240V</td>
</tr>
<tr>
<td>Working Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Emitting Color</td>
<td>Warm White 2700-3000K</td>
</tr>
<tr>
<td></td>
<td>Neutral White 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Cool White 4500-6500K</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>2700 - 6500K</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>60°</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLDL-020 Edison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>85 - 240V</td>
</tr>
<tr>
<td>Working Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Emitting Color</td>
<td>Warm White 2700-3000K</td>
</tr>
<tr>
<td></td>
<td>Neutral White 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Cool White 4500-6500K</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>2700 - 6500K</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>24° / 45°</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLDL-021 Edison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>85 - 240V</td>
</tr>
<tr>
<td>Working Frequency</td>
<td>50 / 60Hz</td>
</tr>
<tr>
<td>Emitting Color</td>
<td>Warm White 2700-3000K</td>
</tr>
<tr>
<td></td>
<td>Neutral White 3800-4200K</td>
</tr>
<tr>
<td></td>
<td>Cool White 4500-6500K</td>
</tr>
<tr>
<td>Color Temperature</td>
<td>2700 - 6500K</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>60°</td>
</tr>
</tbody>
</table>

---

*RoHS, UL, CE*
LED
Custom Outdoor LED Strip (IP68)

Material and characteristic
* Material: Aluminium extrusion housing with raisin coating
* Color: Red, yellow, green, white
* Power for 1PC LED: 1W/350mA / 42V
* Lens: 15° / 45° / 60° / 120°
* IP grade: IP68
* Working environment temperature: -25°C to 50°C
* Effects: Steady color / RGB
* Lifetime: 50000hrs

Specifications
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Custom Outdoor LED Strip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>DC12</td>
</tr>
<tr>
<td>Power</td>
<td>0.6W / 1.1W / 1.4W / 1.8W</td>
</tr>
<tr>
<td>Color</td>
<td>Single Color/Full color</td>
</tr>
<tr>
<td>Control/Power Supply</td>
<td>Constant Power Supply / DMX512Protocol</td>
</tr>
<tr>
<td></td>
<td>240V / 12V / 24V</td>
</tr>
</tbody>
</table>
# LED Vivid Wash (IP65)

**Specifications**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>LW-320x130-WP-UB-240V-4W-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Aluminium Die-cast</td>
</tr>
<tr>
<td>Light Source</td>
<td>12LED 1W red, 12LED 1W green, 12LED 1W blue</td>
</tr>
<tr>
<td>Rating voltage</td>
<td>AC90~264V</td>
</tr>
<tr>
<td>Rating power</td>
<td>36Watts</td>
</tr>
<tr>
<td>Weight</td>
<td>3.9Kg</td>
</tr>
<tr>
<td>Control available</td>
<td>DMX512 console, SRC-WASHER-100-A</td>
</tr>
<tr>
<td>Lighting projection distance</td>
<td>20 meter</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C ~ +40°C</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP65</td>
</tr>
</tbody>
</table>

![Diagram of LED Vivid Wash](image)

![Neo-Neon™](image)

![RoHS](image)

![cUL US](image)

![CE](image)

**Lobbies**

**Industrial areas**

**Monument**

**Shops**

*1st Avenue, Penang*
Efficiency + Performance + Projects = illuminating the right way...
Industrial Lighting Series

LED

OLE LED Permata (IP20) (122W / 185W)

High quality lighting meets long life and controllability with the OLE LED Permata High Bay. This fixture features an advanced LED optic specifically designed for applications such as aprking decks with low mounting heights to provide high uniformity and excellent vertical light distribution with reduced glare and effective security light levels. It enables the instant-on capabilities needed to make the most of parking area.

The OLE LED Permata High Bay significantly reduces energy and maintenance expenses over the life of the system and also RoHS compliant, giving you a lead mercury free lighting solution.

Specification

* Construction: Die-cast aluminium.
* Diffuser: Tempered glass.
* Protection: IP20
* Insulation: Class I
* Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPDCB Board specification: Aluminium T =1.6mm
  94V0 CU=1/oz Al(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal Impedence = 0.48°C / w
  Break Down Voltage = 9.5KV
LED
OLE LED Permata

Specification

Features
- Innovative & sustainable
- Latest LED technology with high system efficacy (114-131lm/W, OLE LED Permata) achieving up to 50% energy saving compared with typical conventional SON/MBI solutions

- 120° embedded lens
- Optional selectable lenses: (145°/40°)

LED
CREE

Driver
Meanwell / Recom LED driver

Material and finishing
- Housing: Die-cast Aluminium
- Cover: Tempered Glass
- Extruded aluminium heatsink

Classifications
IP20

Color rendering index
> 75 - 95

Power requirements
220-240V 50Hz

Optics
LED optics lens technology
- Transparent impact resistant lenses
- Identical lens for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

Light color
- Cool white 4500-6500K
- Neutral white 3800-4200K
- Warm white 2700-3000K

OLE LED Permata High Bay (CREE)

<table>
<thead>
<tr>
<th>Replacement (Watt)</th>
<th>250W</th>
<th>400W</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of LED</td>
<td>20pcs</td>
<td>51pcs</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 240V</td>
<td>AC 240V</td>
</tr>
<tr>
<td>Power</td>
<td>122W</td>
<td>185W</td>
</tr>
<tr>
<td>LED Current</td>
<td>1.8A</td>
<td>1.2A</td>
</tr>
<tr>
<td>Lumens</td>
<td>10,000 lm</td>
<td>18,500 lm</td>
</tr>
</tbody>
</table>

Ø 457

20 LED’s
51 LED’s
INDUSTRIAL LIGHTING SERIES

LED
OLE PCHB120 and OLE PCHB 180 (IP65) (120W / 180W)

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>OLE PCHB120 (CODE)</th>
<th>OLE PCHB180 (CODE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>100V-240V AC</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>120W</td>
<td>180W</td>
</tr>
<tr>
<td>No. of LED</td>
<td>72pcs</td>
<td>72pcs</td>
</tr>
<tr>
<td>LED Current</td>
<td>500mA</td>
<td>700mA</td>
</tr>
<tr>
<td>Lumens</td>
<td>14,000lm</td>
<td>20,859lm</td>
</tr>
<tr>
<td>Power Factor</td>
<td>≥0.92</td>
<td></td>
</tr>
<tr>
<td>Driver Certification</td>
<td>CE Tested, ETL</td>
<td></td>
</tr>
<tr>
<td>Rendering Index</td>
<td>Min 75</td>
<td></td>
</tr>
<tr>
<td>Dimming</td>
<td>OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 - +70 Degrees Celcius</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30 - +65 Degrees Celcius</td>
<td></td>
</tr>
<tr>
<td>Correlate Color Temperature</td>
<td>2700K-5000K</td>
<td></td>
</tr>
<tr>
<td>Aluminium Housing Color</td>
<td>Aluminium Alloy Stacked Fins</td>
<td></td>
</tr>
<tr>
<td>LED Operating Life</td>
<td>50,000 Hrs</td>
<td></td>
</tr>
</tbody>
</table>

Features:
OLE Highbay series uses the most advanced technology in the lighting industry. OLE Highbay proprietary driver with both CE and UL certified, in combination with high efficiency LEDs creates uncompromising lumen output and delivers as much 70 percent savings.
LED
OLE-LED-HBL120 (IP65) (60W / 100W / 120W / 180W / 200W)

POWER FACTOR >0.9
CRI >65
INSTANT LIGHT UP
SHATTER PROOF

OPTICAL SPECIFICATIONS
Model: OLE-LED-HBL120
Power: 60W/100W/120W/180W/200W
LED: CREE LED - XML
Correlate Color Temperature: 3000K-5000K
Luminous Flux (Lm): 8,000 - 22,000 Lm

ELECTRICAL SPECIFICATIONS
Input Voltage: 100V ~ 260V
50 / 60 Hz

OTHERS SPECIFICATIONS
Operating Temp.: -30 ºC ~ 60 ºC
Dim. (mm): Ø225 x H420
Weight (g): 4600
IP Rating: IP65
Certification: CE, ROHS, PSE
Lifespan (hrs): 50,000
Base Type: E40

Application: Factories, Commercial, Restaurants, Hospitals and etc.

RoHS
CE

lluminating the right way...
# INDUSTRIAL LIGHTING SERIES

## LED

### OLE LED 500

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>BS/BRS00-S1-40L8</th>
<th>BS/BRS00-S1-60L8</th>
<th>BS/BRS00-S1-80L8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength (type*)</td>
<td>6000 - 7000K</td>
<td>6000 - 7000K</td>
<td>6000 - 7000K</td>
</tr>
<tr>
<td>Voltage Input</td>
<td>90 - 305Vac</td>
<td>90 - 305Vac</td>
<td>90 - 305Vac</td>
</tr>
<tr>
<td>System Power</td>
<td>95</td>
<td>140</td>
<td>150</td>
</tr>
<tr>
<td>Forward Current</td>
<td>500mA</td>
<td>500mA</td>
<td>500mA</td>
</tr>
<tr>
<td>Luminous Flux (Hot lumen)</td>
<td>6311 lm</td>
<td>9482 lm</td>
<td>12781 lm</td>
</tr>
<tr>
<td>Low Mode (motion sensor: 90 second, radius 5m at 4.5m height)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luminous (Hot lumen)</td>
<td>3700lm</td>
<td>5600lm</td>
<td>7540lm</td>
</tr>
<tr>
<td>Number of LEDs</td>
<td>48</td>
<td>72</td>
<td>96</td>
</tr>
<tr>
<td>Beam angle</td>
<td>80 deg</td>
<td>80 deg</td>
<td>80 deg</td>
</tr>
<tr>
<td>Power Factor</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>&lt;20%</td>
<td>&lt;20%</td>
<td>&lt;20%</td>
</tr>
<tr>
<td>Class Insulation</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 2</td>
</tr>
<tr>
<td>Color Rendering Index (CRI)</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30 °C to 50°C</td>
<td>-30 °C to 50°C</td>
<td>-30 °C to 50°C</td>
</tr>
<tr>
<td>Dimension</td>
<td>360mm x 360mm x 150mm</td>
<td>360mm x 360mm x 150mm</td>
<td>360mm x 360mm x 150mm</td>
</tr>
<tr>
<td>Weight</td>
<td>8kg</td>
<td>9kg</td>
<td>9kg</td>
</tr>
</tbody>
</table>

### OSRAM

#### LED Module Circuit Temperature Control Feature

The product operates under extreme operation conditions. A built-in electronic circuit monitors the PCB temperature continuously and varying the current load accordingly. If the PCB temperature rises, the current is automatically reduced to avoid an overheating process that affecting LED junction temperature. This feature allows the lighting fixtures operate under extreme environment conditions.
Efficiency + lm + Projects = illuminating the right way...
LED
OLE-LED-BL01 (IP65) (21W / 32W)

Feature:
OLE LED BL 01 can be specified for use on roads with or without pedestrian traffic. Without pedestrians, the optical design directs light entirely onto the road. Where pedestrians are present, OLE BL 01 is available with an luminaire, enabling drivers to detect a pedestrian's entire body. This option also allows for facial recognition by other pedestrians.

OLE LED BL 01 is also an excellent solution where obtrusive light has to be reduced. For example, it can be specified in certain residential areas, or in areas where the surrounding buildings are illuminated and road lighting should therefore be unobtrusive.

Specification
* Construction: Pressure die-casting aluminium.
* Reflector: Pure aluminium with high purity aluminium plate.
* Protection: IP65
* Insulation: Class I
* Certification: IES LM-79-08
  LM80 Lumen maintenance
  IEC 62384, 61347-2-13 0.95 power factor
  Safety construction test compliance IEC 60598
  EMC-EN 61000
* MPCB Board specification: Aluminium T =1.6mm
  94VO CU=1/oz Al(5052)=1.5m / m
  Thermal conductivity = 2.0w / mk
  Thermal impedance = 0.48°C / w
  Break Down Voltage = 9.5KV
* Ambient operating temperature: -30°C to 50°C
* Voltage: 110-220V 50HZ
* Color rendering index: >75
* Wattage: 21W / 32w
LED
OLE-LED-BL01

Specification

Features
Innovative & sustainable
- Latest LED technology with high system efficacy (114-131lm/W, OLE BL Series) achieving up to 50% energy saving compared with typical conventional SON solutions

Color rendering index  > 75 - 95

Power requirements  220-240V 50Hz

Optics
LED optics lense technology
- Transparent impact resistant lenses
- Identical lense for each LED guarantee in the original light distribution also incase of incidental LED failure
- Light Distribution optimised lenses for narrow, symmetrical distribution.

OLE-LED-BL01 (CREE)

| No. of LED | 18pcs | 27pcs |
| Voltage | AC 240V | AC 240V |
| Power | 21W | 32W |
| LED Current | 350mA | 350mA |
| Lumens | 2,086 lm | 3,129 lm |

LED
CREE

Driver Meanwell / Recom LED driver

Material and finishing
Housing Die-cast Aluminium
Cover: Tempered Glass
Extruded aluminium heatsink

Classifications IP65

Light color
Cool white 4500-6500K
Neutral white 3800-4200K
Warm white 2700-3000K
Traditional Lighting System

Safety Guards Lighting System

Illuminance Design

Intensity (cd/1000Lm)

Gamma
# LED Buried Light (IP68)

**Specifications**

<table>
<thead>
<tr>
<th>Application</th>
<th>Indoor and outdoor areas, garden, landscape, fountain and pool areas, and others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Cover</td>
<td>Polished stainless steel / die cast aluminium</td>
</tr>
<tr>
<td>Material</td>
<td>8-10mm toughened glass</td>
</tr>
<tr>
<td>Diffuser</td>
<td>IP68</td>
</tr>
<tr>
<td>IP Standard</td>
<td>Various color compounding-form as single color (red, yellow, green, blue and white) and double color</td>
</tr>
<tr>
<td>Functions</td>
<td>double color</td>
</tr>
<tr>
<td>LED</td>
<td>Osram / CREE / Dominant</td>
</tr>
</tbody>
</table>

## Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE GY-4045</th>
<th><strong>Size</strong></th>
<th>Ø 100 x 45mm</th>
<th><strong>Wattage</strong></th>
<th>3 / 5W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52035-ST</th>
<th><strong>Size</strong></th>
<th>Ø 88 x 85 x 105mm</th>
<th><strong>Wattage</strong></th>
<th>3W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52036-ST</th>
<th><strong>Size</strong></th>
<th>Ø 85 x 85 x 76mm</th>
<th><strong>Wattage</strong></th>
<th>3W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52038-110</th>
<th><strong>Size</strong></th>
<th>Ø 110 x 140mm</th>
<th><strong>Wattage</strong></th>
<th>3 / 5 / 10W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52036-120</th>
<th><strong>Size</strong></th>
<th>Ø 120 x 70mm</th>
<th><strong>Wattage</strong></th>
<th>3W / 5W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52034-100</th>
<th><strong>Size</strong></th>
<th>Ø 100 x 100mm</th>
<th><strong>Wattage</strong></th>
<th>3 / 5W</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 52035-65</th>
<th><strong>Size</strong></th>
<th>65 x 85mm</th>
<th><strong>Wattage</strong></th>
<th>3W</th>
</tr>
</thead>
</table>
# LANDSCAPE LIGHTING SERIES

## LED

### LED Stone Light (IP67)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Material</th>
<th>Wattage</th>
<th>Protection IP</th>
<th>Color</th>
<th>Avg. Lifespan(h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLE W 55</td>
<td>Polymersin</td>
<td>0.8W</td>
<td>67</td>
<td>R, G, B, Y</td>
<td>50000</td>
</tr>
<tr>
<td>OLE W 75</td>
<td>Polymersin</td>
<td>0.8W</td>
<td>67</td>
<td>R, G, B, Y</td>
<td>50000</td>
</tr>
<tr>
<td>OLE SL 67</td>
<td>Polymersin</td>
<td>0.8W</td>
<td>67</td>
<td>R, G, B, Y</td>
<td>50000</td>
</tr>
<tr>
<td>OLE SLP 95</td>
<td>Polymersin</td>
<td>1W</td>
<td>67</td>
<td>R, G, B, Y</td>
<td>50000</td>
</tr>
<tr>
<td>OLE W 201</td>
<td>Polymersin</td>
<td>1W</td>
<td>67</td>
<td>R, G, B, Y</td>
<td>50000</td>
</tr>
</tbody>
</table>
LED Fountain Lamp - Submersible grade (IP68)

Specifications

Item No. | Fountain Lamp (Dia 119mm)
---|---
Voltage | DC12
Power | 6W
Color | Single Color/Full color
LED Qty. | 3 / 6pcs (RGB)
Control/Power Supply | Constant Power Supply / DMX512 Protocol

Specifications

Item No. | Fountain Lamp (Dia 74mm)
---|---
Voltage | DC12
Power | 3W / 6W
Color | Single Color/Full color
LED Qty. | 3 / 6pcs (RGB)
Control/Power Supply | Constant Power Supply / DMX512 Protocol

Specifications

Item No. | Fountain Lamp (Dia 168mm)
---|---
Material | Aluminium
Dimension | Ø 168 x 63mm
Light Source | 12pcs x 1W
Lighting Angle | 25°
Color | RGB
LED Power | 12W
LED Chip | EDISON LED
Input Voltage | DC24V
Control Mode | Internal Control AC Synchronous

Specifications

Item No. | Fountain Lamp (Dia 152mm)
---|---
Material | Aluminium
Dimension | Ø 152 x 78mm
Light Source | 12pcs x 1W
Lighting Angle | 25°
Color | RGB
LED Power | 12W
LED Chip | EDISON LED
Input Voltage | DC24V
Control Mode | Power Switch Control (homochromy)
# LANDSCAPE LIGHTING SERIES

## LED
### LED Fountain Light (IP68)

![Image of LED Fountain Light](image)

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 53003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Dimension</td>
<td>Ø 110 x 90 x 140 mm</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED MR 16 7W/ 5W</td>
</tr>
</tbody>
</table>

![Diagram of LED Fountain Light](image)

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE 53006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Dimension</td>
<td>Ø 120 x 104 x 220 mm</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED PAR 30 10 - 13W</td>
</tr>
</tbody>
</table>

![Diagram of LED Fountain Light](image)

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE SDL05-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Dimension</td>
<td>Ø 212 x 195 x 156 mm</td>
</tr>
<tr>
<td>Power (W)</td>
<td>18W</td>
</tr>
<tr>
<td>LED Quantity</td>
<td>18 pcs</td>
</tr>
</tbody>
</table>

![Diagram of LED Fountain Light](image)
LED Wall Embedded Light Series are designed to be outdoor 'in wall' mounted. The LED Wall Embedded Light Series is part of the WLED "white light LED" family and incorporates High Power 1-3 Watt LED’s.

The fixture cover of the LED Wall Embedded Light Series is made of injected Die Cast Aluminium and specially strip stain treated which produces an even grain appearance. The treated surface appears elegant, refined, and timeless. The housing is constructed of pure die-cast aluminium which is double powder coated for protection from the elements.

The LED Wall Embedded Light Series are designed for outdoor application for the illumination of exterior walkway and pathways.

The LED Wall Embedded Light Series are IP65 rated and are manufactured to CE and UL standards.

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE A14028</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>225x125x80</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE A14028S-12×LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>160x100x70</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE A14030-18×LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>100x160x70</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE A14029-27×LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>160x160x100</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLW-001 1.6W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>90x90x60</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>OLE JTLW-002 1.5W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>93x93x30</td>
</tr>
<tr>
<td>Lamp</td>
<td>LED</td>
</tr>
</tbody>
</table>
# LED Lighting Series

**LED Step Light (IP65)**

**OLE A13043**

**Specification**
- Aluminium die-cast housing and frame, beautifully crafted and durable
- The housing is coated with outdoor used powder, smooth, acid and alkaline resistant, aging resistant
- Opal PC diffuser
- Protection class: IP65
- Suitable places: Interior decoration, outdoor corridor, garden

**OLE A14043**

**Specification**
- Aluminium die-cast housing, beautifully crafted and durable
- Stainless steel front cover, matt finish
- Plastic recessed housing can be included
- The housing is coated with outdoor used powder, smooth, acid and alkaline resistant, aging resistant
- Glass diffuser, frosted or clear
- Protection class: IP65
- Suitable places: Interior decoration, outdoor corridor, garden

**OLE A14048S**

**Specification**
- Aluminium die-cast housing, beautifully crafted and durable
- Stainless steel front cover, matt finish
- The housing is coated with outdoor used powder, smooth, acid and alkaline resistant, aging resistant
- Glass diffuser, frosted or clear
- Seal with silicone rubber gasket
- Protection class: IP65
- Suitable places: Interior decoration, outdoor corridor, garden

**OLE A14048L**

**Specification**
- Aluminium die-cast housing, beautifully crafted and durable
- Stainless steel front cover, matt finish
- The housing is coated with outdoor used powder, smooth, acid and alkaline resistant, aging resistant
- Glass diffuser, frosted or clear
- Seal with silicone rubber gasket
- Protection class: IP65
- Suitable places: Interior decoration, outdoor corridor, garden

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Lamping</th>
<th>Wattage</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLE A13043</td>
<td>LED</td>
<td>1 / 3W</td>
<td>R,Y,B,G,W</td>
</tr>
<tr>
<td>OLE A14043</td>
<td>LED</td>
<td>1 / 3W</td>
<td>R,Y,B,G,W</td>
</tr>
<tr>
<td>OLE A14048S</td>
<td>LED</td>
<td>1 / 3W</td>
<td>R,Y,B,G,W</td>
</tr>
<tr>
<td>OLE A14048L</td>
<td>LED</td>
<td>1 / 3W</td>
<td>R,Y,B,G,W</td>
</tr>
</tbody>
</table>
# LED POWER DRIVER

## LED DRIVER

### CEN-60 Series (60W Single Output LED Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEN-60-30</td>
<td>22.5 ~ 30V, 2A</td>
<td>90 ~ 295VAC 47 ~ 63Hz</td>
<td>90%</td>
<td>IP67</td>
</tr>
<tr>
<td>CEN-60-54</td>
<td>40.5 ~ 54V, 1.15A</td>
<td>90 ~ 295VAC 47 ~ 63Hz</td>
<td>91%</td>
<td></td>
</tr>
</tbody>
</table>

Safety standards: UL879, UL8750, CSA C22.2 No. 207-M89, CSA C22.2 No. 250.0-08, TUV EN61347-1, EN61347-2-13, IP66, J61347-1, J61347-2-13 approved

EMC standards: Compliance to EN55015, EN61000-3-2 Class C (≥ 75% load); EN61000-3-3

### HLG-60H Series (60W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-60H-30A</td>
<td>18 ~ 30V, 2A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>90%</td>
<td>IP67</td>
</tr>
<tr>
<td>HLG-60H-54A</td>
<td>32.4 ~ 54V, 1.15A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>90.5%</td>
<td></td>
</tr>
</tbody>
</table>

Safety standards: UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V), EN61347-1, EN61347-2-13 independent, IP65 or IP67, J61347-1, J61347-2-13 approved; design refer to UL60950-1, TUV EN60950-1, EN60335-1

EMC standards: Compliance to EN55015, EN61000-3-2 Class C (≥ 60% load); EN61000-3-3

### HLG-100H Series (100W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-100H-30A</td>
<td>30V, 3.2A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>93%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent IP65 or IP67, J61347-1, J61347-2-13 approved; design refer to UL60950-1, TUV EN60950-1

EMC standards: Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 60% load); EN61000-3-3

### HLG-120H Series (120W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-120H-54A</td>
<td>54V, 2.3A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>93.5%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent IP65 or IP67, J61347-1, J61347-2-13 approved; design refer to UL60950-1, TUV EN60950-1

EMC standards: Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 50% load); EN61000-3-3

---

*Warranty: LED Driver 2 years Optional for 5 years*
### LED POWER DRIVER

**LED DRIVER**

*Warranty: LED Driver 2 years
Optional for 5 years*

---

**HLG-150H Series (150W Single Output Switching Power Supply)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-150H-30A</td>
<td>30V, 5A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>93.5%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent IP65 or IP67, J61347-1, J61347-2-13 approved; design refers to UL60950-1, TUV EN60950-1

EMC standards: Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 50% load); EN61000-3-3

---

**HLG-185H Series (185W Single Output Switching Power Supply)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-185H-30</td>
<td>30V, 6.2A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>93.5%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent IP65 or IP67, J61347-1, J61347-2-13 approved; design refers to UL60950-1, TUV EN60950-1

EMC standards: Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 50% load); EN61000-3-3

---

**HLG-240H Series (240W Single Output Switching Power Supply)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLG-240H-30A</td>
<td>15 ~ 30V, 8A</td>
<td>90 ~ 305VAC 47 ~ 63Hz</td>
<td>93%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL1012, CAN/CSA-C22.2 No. 107.1-01, UL8750, CSA C22.2 No. 250.0-08, TUV EN61347-1, EN61347-2-13 independent (except for HLG-240H C type), UL60950-1, UL8750, TUV EN60950-1, IP65 or IP67, J61347-1, J61347-2-13 approved

EMC standards: Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 50% load); EN61000-3-3

---

**LPHC-18 Series (18W Single Output Switching Power Supply)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPHC-18-350</td>
<td>6 ~ 48V, 350mA</td>
<td>180 ~ 264VAC 47 ~ 63Hz</td>
<td>80%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: IP67 approved; design refers to UL 1310 Class 2, TUV EN60950-1, CAN/CSA C22.2 No. 223-M91

EMC standards: Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3
# LED POWER DRIVER

## LED DRIVER

### LPC-20 Series (20W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC-20-700</td>
<td>9 ~ 30V, 700mA</td>
<td>90 ~ 264VAC 47 ~ 63Hz</td>
<td>83%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL879, UL1310, CSA C22.2 No. 207-M89 (except for LPC-20-350), CAN/CSA C22.2 No. 223-M91 (except for LPC-20-350), IP67 approved; design refer to TUV EN60950-1

EMC standards: Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3

### LPC-35 Series (35W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC-35-700</td>
<td>9 ~ 48V, 700mA</td>
<td>90 ~ 264VAC 47 ~ 63Hz</td>
<td>85%</td>
<td>IP67</td>
</tr>
<tr>
<td>LPC-35-1050</td>
<td>9 ~ 30V, 1050mA</td>
<td>90 ~ 264VAC 47 ~ 63Hz</td>
<td>85%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL1310, CAN/CSA C22.2 No. 223-M91 (except for LPC-35-700), IP67 approved; design refer to TUV EN60950-1

EMC standards: Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3

### LPC-60 Series (60W Single Output Switching Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC-60-1050</td>
<td>9 ~ 48V, 1050mA</td>
<td>90 ~ 264VAC 47 ~ 63Hz</td>
<td>87%</td>
<td>IP67</td>
</tr>
<tr>
<td>LPC-60-1400</td>
<td>9 ~ 42V, 1400mA</td>
<td>90 ~ 264VAC 47 ~ 63Hz</td>
<td>85%</td>
<td>IP67</td>
</tr>
</tbody>
</table>

Safety standards: UL1310, CAN/CSA C22.2 No. 223-M91 (for LPC-60-1750 only), IP67 approved; design refer to TUV EN60950-1

EMC standards: Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3

### PCD-25 Series (25W Single Output AC Dimmable LED Power Supply)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Voltage</th>
<th>Efficiency</th>
<th>IP Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCD-25-700</td>
<td>24 ~ 36V, 700mA</td>
<td>180 ~ 295VAC 47 ~ 63Hz</td>
<td>81%</td>
<td>IP30</td>
</tr>
</tbody>
</table>

Safety standards: IP67 approved; design refer to UL 1310 Class 2, TUV EN60950-1, CAN/CSA C22.2 No. 223-M91

EMC standards: Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3
### LED PAR30, PAR38, MR16 and AR111

#### Specification

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Base</th>
<th>LED Qty</th>
<th>Power</th>
<th>Emitting angle</th>
<th>Color/ Lumen</th>
<th>CRI</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-PAR30-C4</td>
<td>90-265V AC</td>
<td>E26/E27</td>
<td>7 pcs</td>
<td>12W</td>
<td>30° 45° 60°</td>
<td>2700K-6500K 725-925 lm</td>
<td>RA&gt;75</td>
<td>Dia: 95mm x H: 95mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Base</th>
<th>LED Qty</th>
<th>Power</th>
<th>Emitting angle</th>
<th>Color/ Lumen</th>
<th>CRI</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-PAR38-C4</td>
<td>90-265V AC</td>
<td>E26/E27</td>
<td>12 pcs</td>
<td>18W</td>
<td>30° 45° 60°</td>
<td>2700K-6500K 1109-1501 lm</td>
<td>RA&gt;75</td>
<td>Dia: 125mm H: 125mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Base</th>
<th>LED Qty</th>
<th>Power</th>
<th>Emitting angle</th>
<th>Color/ Lumen</th>
<th>CRI</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-MR16-C2</td>
<td>12V AC/DC</td>
<td>GU5.3</td>
<td>1 pcs</td>
<td>6.84W</td>
<td>30° 45° 60°</td>
<td>2700K-6500K 413-520 lm</td>
<td>RA&gt;75</td>
<td>Dia: 50mm H: 56mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Base</th>
<th>LED Qty</th>
<th>Power</th>
<th>Emitting angle</th>
<th>Color/ Lumen</th>
<th>CRI</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-AR111-C4</td>
<td>12V AC/DC</td>
<td>G53</td>
<td>7 pcs</td>
<td>11W</td>
<td>30° 45° 60°</td>
<td>2700K-6500K 970 lm</td>
<td>RA&gt;75</td>
<td>Dia: 111mm H: 67mm</td>
</tr>
</tbody>
</table>

#### Features:
- CREE LED chip high lumen
- New Fin style aluminium housing, better cooling
- Low power consumption
- Easy installation, using existing socket
- Solid-state, fast turn on
- Save energy and maintenance cost, reduce of electricity costs by up to 90%
- Low heat generation. Durability over incandescent & Halogen bulbs
ACCESSORIES

LED
Smart Line Light T8

High Lumen Low Power CRI 80

Lobbies
Displays
Lecture-rooms
Shops
Indoor Parking

OSRAM
Opto Semiconductors

RoHS
PSE

T8 10W
VL-T8-OS-10W-(CODE)-600(OPT)-V1

T8 20W
VL-T8-OS-20W-(CODE)-1200(OPT)-V1
**LED Smart Line Light T8**

**Specifications**

<table>
<thead>
<tr>
<th>T8 Parameter</th>
<th>SMART-T8-OS-10W-(CODE)-600(OPT)-V1</th>
<th>SMART-T8-OS-20W-(CODE)-1200(OPT)-V1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Type</td>
<td>G13</td>
<td>G13</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>100V ~ 240V AC</td>
<td>100V ~ 240V AC</td>
</tr>
<tr>
<td>Polarity</td>
<td>Bipolar Protection</td>
<td>Bipolar Protection</td>
</tr>
<tr>
<td>Input Power</td>
<td>10W</td>
<td>20W</td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.94</td>
<td>0.94</td>
</tr>
<tr>
<td>THD</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>System Efficiency</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Driver Certification</td>
<td>CE, TUV, PSE</td>
<td>CE, TUV, PSE</td>
</tr>
<tr>
<td>Luminous Flux Output</td>
<td>&gt;850 lumens (Frosted Cover)</td>
<td>&gt;1800 ~ 2000 lumens (Frosted Cover)</td>
</tr>
<tr>
<td></td>
<td>&gt;950 lumens (Clear Cover)</td>
<td>&gt;2000 ~ 2100 lumens (Clear Cover)</td>
</tr>
<tr>
<td>Color Rendering Index</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Total Size</td>
<td>L588xW26xH29±1mm (not including pins)</td>
<td>L1198xW26xH29±1mm (not including pins)</td>
</tr>
<tr>
<td>Beam Angle</td>
<td>120 degrees (not including pins)</td>
<td>120 degrees (not including pins)</td>
</tr>
<tr>
<td>LED Type</td>
<td>Osmal 103lm/W</td>
<td>Osmal 103lm/W</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 ~ 45 Degree Celcius</td>
<td>-20 ~ 45 Degree Celcius</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-25 ~ 80 Degree Celcius</td>
<td>-25 ~ 80 Degree Celcius</td>
</tr>
<tr>
<td>Correlate Color Temperature</td>
<td>3000K, 5000K, 6500K</td>
<td>3000K, 5000K, 6500K</td>
</tr>
<tr>
<td>Aluminium Housing Color</td>
<td>Silver Aluminium Body</td>
<td>Silver Aluminium Body</td>
</tr>
<tr>
<td>LED Operating Life</td>
<td>50,000 Hrs</td>
<td>50,000 Hrs</td>
</tr>
<tr>
<td>Weight</td>
<td>210±5g</td>
<td>388±5g</td>
</tr>
</tbody>
</table>

**Correlate Color Temperature**

- **Daylight** (Dl): 6500K
- **Warm White** (WW): 3000K

**Optic (OPT)**

- **Frosted** (F)
- **Clear** (C)

**Luminous Intensity Distribution Diagram**

- **T8 1200mm clear 2000lm**: Average Beam Angle (30%) = 135.8°
- **T8 1200mm Frosted 1800lm**: Average Beam Angle (30%) = 155.5°
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