PHILIPS

Outdoor Lighting

ONROADLED

Markers

Product guide

ONROADLED guides you in a safe way

Safe guidance with LED road markers

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Roundabouts

About ONROADLED

By combining revolutionary Inductive Power Transfer (IPT) with tough and intelligent LED markers, ONROADLED incorporates an active road guidance technology that is set to establish a new lighting standard.

ONROADLED is inherently resilient. The system relies on power supplies that can be up to 2.5 kilometer apart, a shallow cable, nodes to separate the cable at road-marker sites, and high-impact UV-stable polycarbonate markers incorporating LED markers.

ONROADLED markers exploit the unique characteristics of IPT, drawing their power wirelessly from the recessed cable. Additionally, IPT provides communication functionality to individual markers as well as receiving diagnostic data from each marker.

The power supplies interface with a range of standards and can be monitored remotely. They are available in mains and 24 V versions and can be customized.

ONROADLED - Road guidance

The perfect solution for outdoor lighting needs

In these times of budgetary and other pressures, city authorities are looking to reduce energy costs and light output, but at the same time want to create a safe and secure environment for residents and visitors.

Active on-road LED guidance systems are being used in an increasingly wide range of traffic applications, as municipal authorities worldwide seek to improve traffic flows, reduce accidents and improve safety. With cities becoming increasingly busy, the need for traffic safety is a major trend in outdoor lighting. The presence of on-road LED guidance can help create a safe feeling for all traffic participants, making it easier, faster and safer to negotiate crowded spaces.

Another major trend in outdoor lighting is the increasing need to reduce light pollution. The world needs more light to help people feel safer, but the downside is increased night-time light disturbance for people and wild life. Active on-road LED guidance systems can help reduce light pollution by means of focused light beams.

ORM

LvL

ORM with snowcap

Some advantages of ONROADLED guidance

- **High visibility** — markers emitting their own light can be seen from a greater distance than passive reflectors, thereby giving drivers advance warning of bends or hazards.
- **Delivery of intense, focused beams of light** — delineate roads in rain or fog and during the night and the day.
- **Clear guidance** — markers are positioned directly in the drivers' line of sight, with the result that they instinctively follow the line of lights.
- **Programmable** — markers can be controlled so they remain invisible until activated, or they can be made to flash to increase driver awareness.

Family range

ONROADLED - a robust, intelligent road marker system

ONROADLED is a complete marker system. As well as a wide variety of markers, a wide range of power supplies and accessories are also available. This complete portfolio allows you to create any marker system needed to enhance safety.

Portfolio overview

Inductively Powered Markers

SST
Inductively powered, intelligent, directional LED off-road marker

360
Inductively powered, intelligent, omni-directional LED pedestrian marker

Levellight
Inductively powered, intelligent, omni-directional LED pedestrian marker

***ORM & OR+**
Inductively powered, intelligent, directional LED road marker (OR+ adds vertical light)

*ORM & OR+ have Department for Transport Type Approval for use on UK public highways and roads

Additional items

Nodes (IPH/IPL)
Nodes for inductively powered markers

Cabling (IPH/IPL)
Cabling and "inline" capacitors for inductively powered markers

Power Supply
Power supplies for inductively powered markers, standard or intelligent

Accessories
Various accessories (snow-cap and flange/ base)

Installation materials
Adhesives and marker adhesive application stamp

Installation tools
Coring bits and various installation tools (Air Dual Applicator)

ONROADLED features

Safety

Inductive power is spark-free and there is no danger of electrocution. This makes it suitable for installation and maintenance of the markers themselves by non-electrical specialists and much safer to use than traditional wiring systems.

High performance and system longevity

Few lighting applications are more demanding than road guidance. The LED markers are made from specially formulated UV-stable polycarbonate that is scratch-resistant and able to withstand extreme conditions and temperatures. The shell face is designed to concentrate light at the desired intensity — markers are visible from a distance of up 800 meters — and to facilitate self-cleaning. The markers are designed to meet three main criteria: they can withstand high volumes of traffic, they are cost-effective to install or replace, and they are sustainable in order to ensure a low total cost of ownership.

Water tightness

Markers can be completely sealed and therefore they are corrosion-free and more resilient than hard-wired products.

Intelligent control and diagnostics

The same cables that generate the magnetic field to light up the LED markers are used to communicate with microprocessors in each light. This makes them individually programmable, allowing dimming, flashing, sequencing and changes in the color of the light. Each marker has the capability for independent diagnostic tests and can provide system evaluation reports. IPT power supplies are compatible with a range of interface protocols and can be controlled remotely.

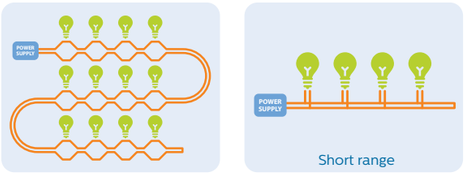
ONROADLED features

Safer

No exposed wires, no electrocution danger, no sparks, double insulation.

Long range

Power 2500 meters of cable maximum from one power supply. A wired system is typically less than 800 meters.

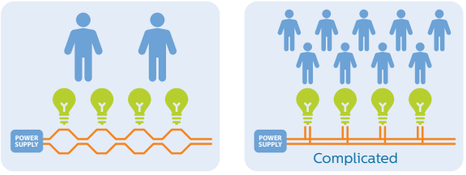


Durable

Completely sealed lights. No connections means no corrosion. High performance in high traffic applications. High performance in extreme temperatures.

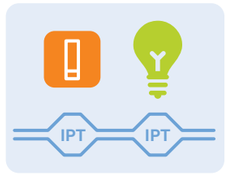
Simple

Easy installation and maintenance. Faster fault detection. Easier to maintain.



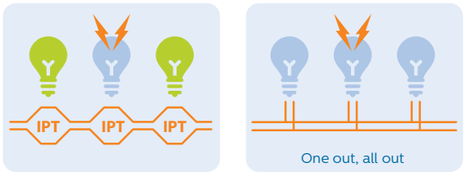
Wireless control

Wireless controllers control the lights individually. Inductive communication transfer, no wires.



Independent power transfer

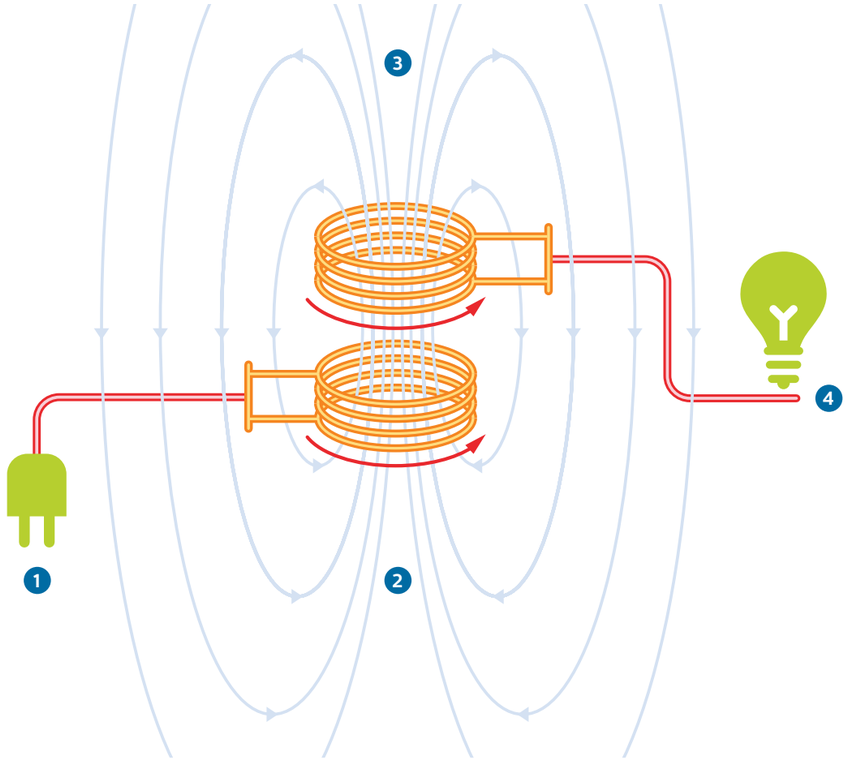
All units powered independently. There is no risk of a failure affecting the remaining markers



ONROADLED features

Inductive power

Inductive Power Technology (IPT) represents a breakthrough in product durability, control and electrical safety. IPT's wireless transfer of electricity using magnetic induction means that there is no need for a physical wire connection between power source and light. The inductive system is very simple to use and install, with a minimum number of components. A single power supply can power and control up to 250 markers over a distance of 2.5 kilometers. The use of induction power reduces the total cost of ownership and enhances the return on the investment in LED lighting solutions.

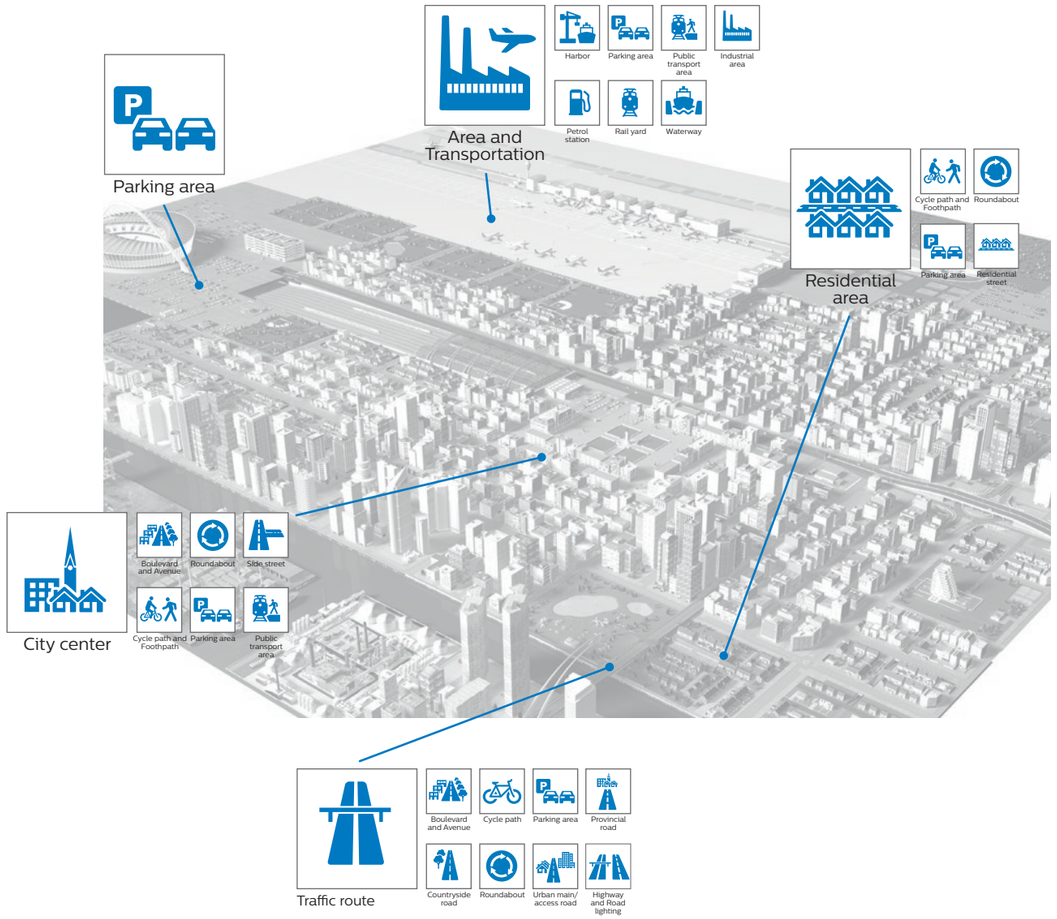


Power transmission by way of electromagnetic induction

1. ONROADLED Power supply – Electricity is applied to the wires around the node
2. ONROADLED Node – A magnetic field occurs from the node in the ground
3. 4. ONROADLED Marker – The magnetic field passes through the marker-coil and creates an electric current that powers the LEDs.

Applications

The ONROADLED product range provides a solution for all sorts of applications of on-road and off-road guidance.



Application examples

Bus lanes

To discourage drivers from incorrectly using the bus lanes, local traffic authorities issue heavy fines to eligible vehicles for non-compliance. ONROADLED can reduce the amount of incorrect bus lane usage considerably.

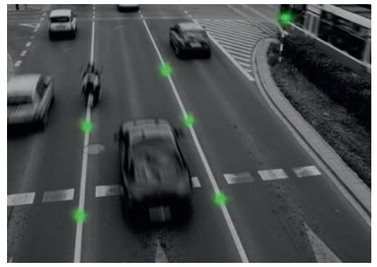
Cycle paths

The ONROADLED solution combines road markers and an input signal from the traffic controller. As the cyclist rides along, a running green light indicates that by keeping up with the light the rider will reach the next set of traffic lights during the green phase.

Dangerous curves

The ONROADLED solution warns drivers of an upcoming dangerous corner or series of bends. A detection tool analyzes a vehicle's speed when approaching the dangerous curve and the ONROADLED markers provide warnings if the driver is going too fast.

Roads



The ONROADLED Smart Mobility Vehicle application calibrates each vehicle on the road. Each passing vehicle will be given an advisory speed by matrix signs, plus their own unique LED on-road markers to follow that will form a green wave. If the advised speed is respected, a green light at the next traffic light in the through direction is guaranteed. Note – this was a special concept proposal subject to further validation.

Tidal flows

The presence of lane controls allows authorities to close or reverse lanes when circumstances require the use of fewer or more lanes to maintain an orderly flow of traffic.

Left-hand turns

During the permitted-left-turn green phase at intersections on divided highways, the vehicles turning simultaneously in the opposite left-turn lane frequently block drivers' view. ONROADLED can provide clear guidance to position your car in the correct lane.

Highways

The system provides the best guidance and visibility levels for on/off ramps. The light units can be switched on or set in flashing mode as well as sequencing mode according to the individual situation.

Harbours

Harbour traffic safety requires high visibility and guidance systems. ONROADLED markers have features that combine vertical and horizontal LED lights in one unit. It warns drivers in the line of sight, either on the road or up in the driver seat on cranes.

Bridges

The ONROADLED system provides the best guidance and visibility levels on bridges. The light units can be switched on or set in flashing mode as well as sequencing mode according to the individual situation. Tidal flow applications on bridges are easily controllable.

Obstacles

ONROADLED provides intelligent LED marker solutions for the delineation of obstacles. The driver will have increased awareness of potential danger, reducing accidents and saving lives.

Railway platforms and crossings

Intersections where roads and rail tracks cross are a relic of a bygone era when both rail and road transport operated at much lower speeds, and lower volumes of traffic, than they do today. ONROADLED can provide extra security and awareness on these crossings. Rail applications may be subject to specific local planning regulations and approvals.

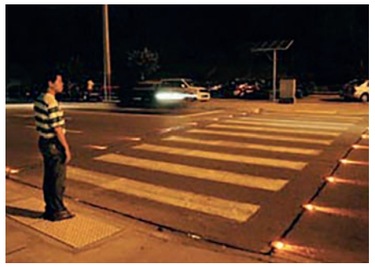
Roudabouts

Drivers may get confused when approaching a roundabout – thus creating the potential for a traffic accident. The ONROADLED system provides increased safety for drivers navigating roundabouts.

School zones

The ONROADLED lighting system warns drivers about high-risk school zones. The driver is more aware of potential danger and will reduce speed.

Crosswalks



The ONROADLED markers provide high-contrast guidance to protect pedestrians by acting as a warning system both at night and during the day.

Overhead light replacement

Overhead light replacement may be desirable in various situations, e.g. for environmental reasons or in areas where blind spots are caused by the overhead lighting.

ONROADLED in control

The ONROADLED system is compatible with most standard control systems. The power supplies feature a potential-free I/O system which can be integrated with a control system such as SCADA, PLCs, timer relays, light sensors, push buttons, etc.

The inputs on the power supply I/O control panel all relate to different ONROADLED marker states. Each input will result in a different function, for example flashing or a preset dimming level for the markers. Once an input is triggered, for example by a push of a button, the power supply will send out a signal to all the markers to update their state.

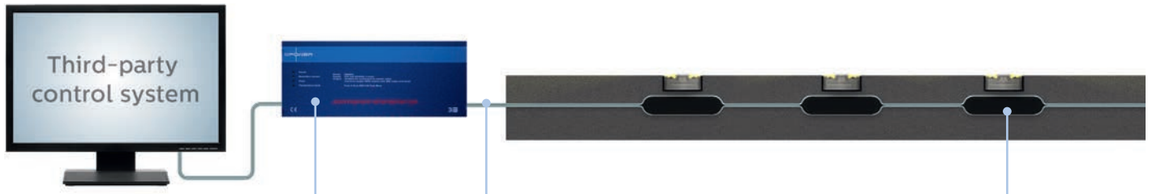
Philips can provide customized interfaces for most applications, including custom software to communicate with the ONROADLED markers via the RS232 serial port on the power supply.

Typical applications and control systems:

- **Pedestrian crosswalk lighting systems:** controlled via push buttons or camera pedestrian detectors for example.
- **Bus lane or school zone lighting systems:** controlled via PLCs, clocks or timer relays.
- **General outdoor lighting systems:** controlled via light sensors.
- **Intersection lighting systems:** controlled via relays connected to the existing traffic signals or overhead lights.
- **Dangerous curve lighting systems:** controlled via inductive loops, radar or other vehicle detectors.
- **For complex remote control applications:** a third party systems integrator may be required.

Bridges

ONROADLED system



Power supplies for inductively powered ONROADLED systems

- Intelligent control or manual control.
- Switching and dimming capabilities.
- Fully programmable light sequencing.
- Capable of powering up to a maximum 2500 meters of cable and up to 250 markers.

IPL/IPH cable

Dual-core, stranded copper wire, special PE insulated (halogen-free) flat cable.

IPL/IPH Node/Nodex

Plastic cable separator at ONROADLED marker location. Each marker requires a node/nodex to separate the cable wires to inductively couple the power from cable to LED marker.

Document order number: 3222 635 69708
11/2020
Data subject to change.

www.philips.co.uk/ledmarkers