RESPONDALIGHT®

LED Lighting Technology

The Lighting Association
BEST NEW TECHNICAL PRODUCT




REAL WORLD DESIGNS

LED Lighting Products

RESPONDALIGHT®

LED Lighting Technology

LED Lighting Products 2009


Residential


Commercial


Leisure


Retail


Office

Real World Designs delivers high performance, high efficiency, long-lasting LED lighting products backed with a five year guarantee.

The core of our business is LED lighting technology combined with electronics expertise to provided solutions for commercial, industrial and residential environments.

Our products are simple to use and feature plug and play connectivity for ease of installation as well as modular design to suit a wide variety of applications.

We are proud to design and manufacture in the UK. This allows us to offer excellent service and prompt delivery.

To find out more visit

www.realworlddesigns.co.uk

Sales

01604 652000

fax: 01604 652001

LA The Lighting Association

Member of The Lighting Association

REAL WORLD DESIGNS

Respondalight LED Lamps

Features & Benefits

- High lumen output
- 5 year guarantee
- 50,000Hr life
- Genuine Halogen appearance in use
- Excellent thermal management
- Fits most GU10 and MR16 fittings
- Modular RJ45 connectivity
- Fully dimmable with appropriate driver

Product Description

The RESPONDALIGHT LED lamp, combines 7 high quality super bright LED's with an efficient aluminium heat sink to deliver high light output whilst maintaining a long life.

The unique optical assembly collimates the light to give a well controlled, even beam spread, with the true visual appearance of a halogen downlighter. Beam angles of 36 and 58 degrees are available.

The lamp is designed to be used with a wide range of GU10 and MR16 fittings for both new and retro-fit applications.

RJ45 connectivity allows rapid connection of lamps to individual non-dimmable or dimmable drivers or as part of the RESPONDALIGHT lighting control system which offers occupancy detection, remote control and digital step dimming.

Red, Green and Blue lamps are also available.

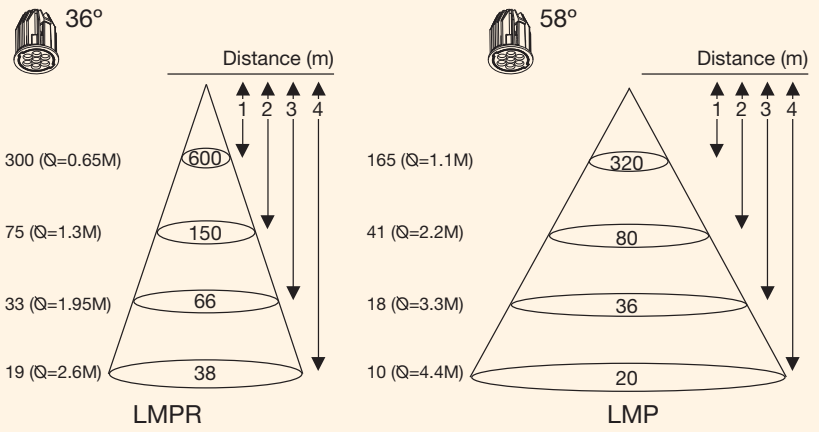
Ordering Information

Item	Order Code
LED Lamp 36° Beam	LMPR-36-WW
LED Lamp 58° Beam	LMP-58-WW
LED Lamp 36° Beam 24v Driver On Board	LMPR-36-WW-D24
LED Lamp 58° Beam 24v Driver On Board	LMP-58-WW-D24
Red LED Lamp 58° Beam	LMP-58-RD
Blue LED Lamp 58° Beam	LMP-58-BL
Green LED Lamp 58° Beam	LMP-58-GN

Specification (White Lamps)

	LMPR	LMP
Beam Angle	36	58
Lumen Output	330	300
Power Consumption including driver	9w	9w
Dimensions	50 x 50 x 60mm	
Weight	122g	120g
Operating Life (To 70%)	50,000 hrs	
Colour Temperature	2800K - 4400K	
Operating Temp	0°C - 40°C	
Case Temp (25°C)	60°C	
Operating Current	350mA MAX	

Photometrics



Respondalight Drivers & Dimming

Features & Benefits

- 5 year guarantee
- Mains dimmable
- 1-10V dimmable
- RJ45 modular connection
- Mains dimmer switches available

Product Description

A range of LED drivers featuring modular RJ45 connections for use in conjunction with RESPONDALIGHT LED lamps.

Drivers are available for non-dimming and dimming applications including trailing and leading edge solutions as well as 1-10 Volts systems.

Wall mounted single and dual gang trailing edge dimmers are also available to complete the system.

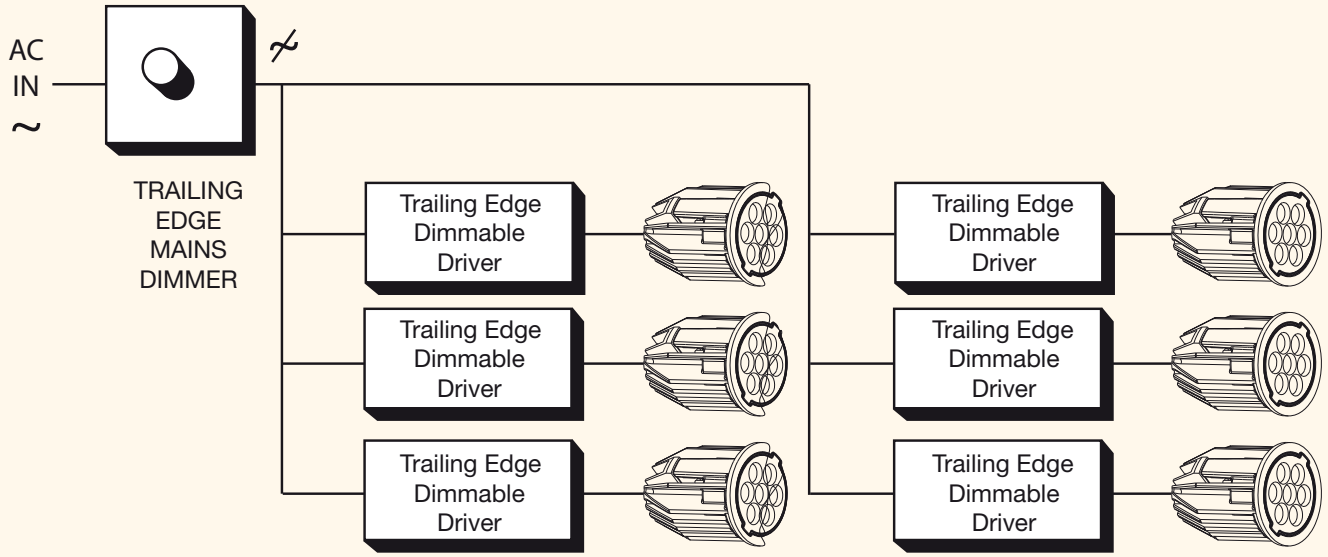
Real World Designs has extensive experience in LED driver design. Ask our technical team for advice on dimming solutions and drivers.

Ordering Information

Item	Order Code
240v Non Dimmable Driver 350mA	DRI-350-PFC
240v Trailing Edge Dimmable Driver 350mA	DRI-350-DIM
* 240v Universal Dimmable Driver 350mA	DRI-350-UNI
240v Driver 1-10v Control 2 x 350mA	DRI-2350-110
Single Gang Face Plate 1G 1W Trailing Edge Dimmer 250W	DIM-1-1-WH
Single Gang face Plate 1G 2W Trailing Edge Dimmer 250W or 400W	DIM-1-2-WH

* Available Q4 2009.

Wiring Diagram



Respondalight Multiway Driver Kits

Features & Benefits

- 5 year guarantee
- 4 or 6 way driver
- Low driver cost per port
- Plug and play installation
- 240V AC or 12-30V DC versions
- Complete kits available

Product Description

Multi-Way Drivers can operate 4 or 6 LED lamps and are available in kits with lamps and power supplies. The standard 4 and 6 way drivers operate from a 240v mains supply.

Multi-Way Drivers feature plug and play RJ45 installation and reduced driver cost per port (when compared to single drivers).

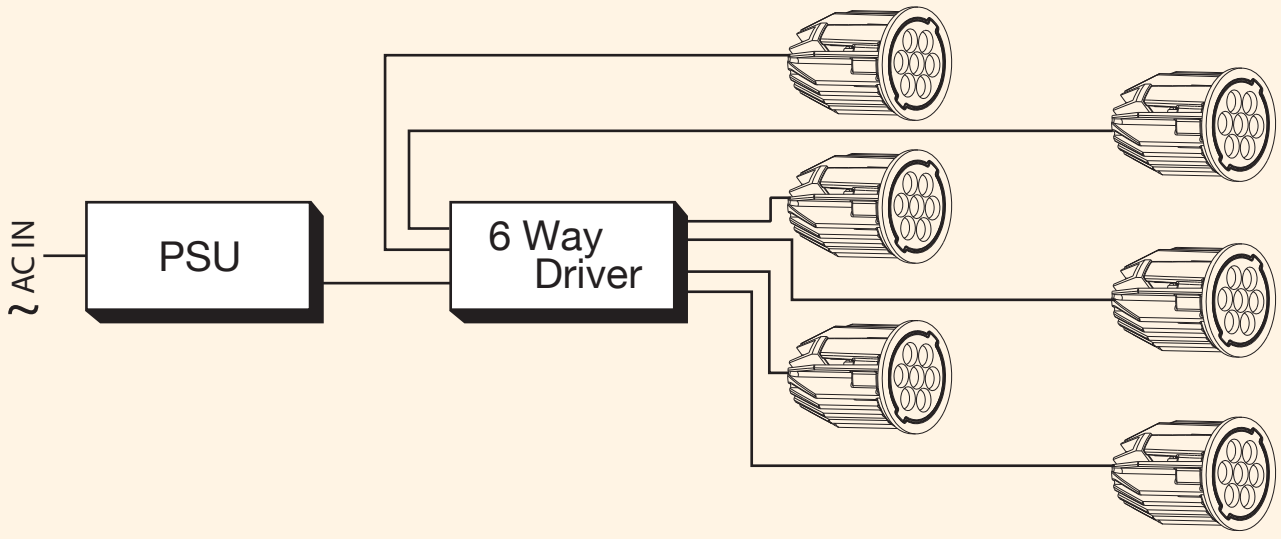
Also available is a variable input voltage unit which is suitable for battery operated systems such as boats and caravans.

Available Q4 2009.

Ordering Information

Item	Order Code
4 Way Non Dimmable Driver 350mA & PSU	DRI-4-350-PSU
6 Way Non Dimmable Driver 350mA & PSU	DRI-6-350-PSU
4 Way Lamp and Driver Kit	4W-KIT-WW(R)
6 Way Lamp and Driver Kit	6W-KIT-WW(R)
4 Way Driver - Multi Voltage	DRI-4-MV
4 Way Driver & Lamp Kit - Multi Voltage for boats and caravans	4W-KIT-MV(R)

Wiring Diagram



Respondalight Systems

Features & Benefits

- Low energy consumption
- Occupancy detection
- Remote control
- Scalable dual zone system
- Wall controller option
- Range of fittings available

Product Description

The RESPONDALIGHT SYSTEM is a low energy lighting controller with integral four way LED driver. The system is available as a MASTER KIT with occupancy detector, Infra-Red remote control and four RESPONDALIGHT LED Lamps.

The system can be expanded by the addition of up to 10 SLAVE KITS each with up to 4 lamps. Each master and slave unit requires a power supply which is included in the kits.

A SLAVE KIT can also be used as a four way non-dimmable driver.

Two separate master units can be operated independently from one handset to give dual zone operation for applications such as kitchen/dining rooms.

A wall mounted push button dimmer switch version is also available instead of remote control. This version does not have occupancy detection.

A range of fittings are available to complement the system.

Ordering Information

Item	Order Code
Master Kit	MA-KIT
Master Kit - Wall Controlled	WMA-KIT
Slave Kit	SL-KIT

Ordering With Fittings

MA - KIT - WHT - F

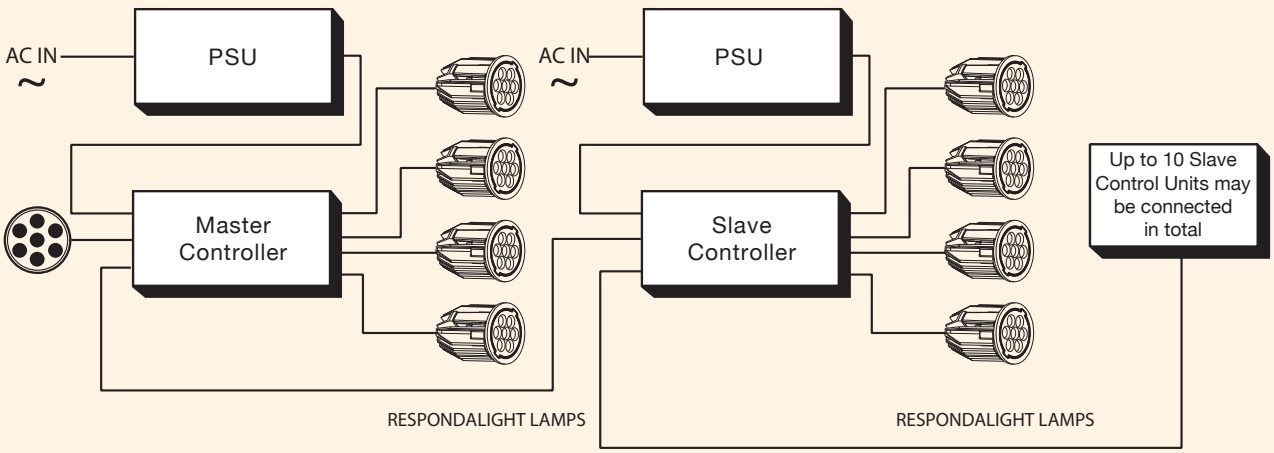
Kit Type
MA - Master
SL - Slave
WMA - Wall Controlled

Fitting Colour
WHT - White
CHM - Chrome
SAT - Satin Nickel

Fitting Type
F - Fixed
T - Tilting
FIR - Fire Rated

Check Price List For Available Combinations

Wiring Diagram



Respondalight Sensor Solutions

Features & Benefits

- Multiple sensor solutions
- Ideal for corridors and stairwells
- Further reductions in energy consumption
- Scalable system
- Easy to install RJ45 modular connectivity
- Options to control other non-LED lighting types

Product Description

The RESPONDALIGHT system can be used with multiple sensors to allow the control of lighting in corridors, stairwells and other areas with multiple access points. This allows the majority of lights to be switched off when not required. Up to 10 Sensors can be grouped together. The integral hubs allow for daisy chain or star wiring configurations.

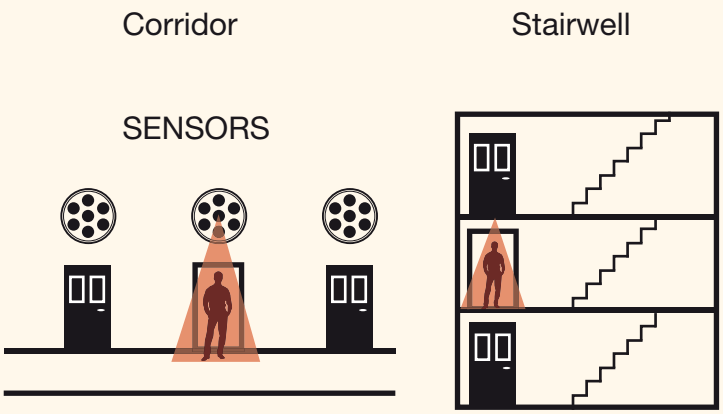
The system can also be used to control other types of lighting including CFL, tungsten and larger LED arrays by means of a 10amp RELAY controller, which interfaces with the system controller via an RJ45 connection.

The combination of RESPONDALIGHT system controllers, multiple sensors and relay controllers allow designers to create sophisticated scalable systems for a broad range of energy saving solutions. Please contact Technical Support for more info.

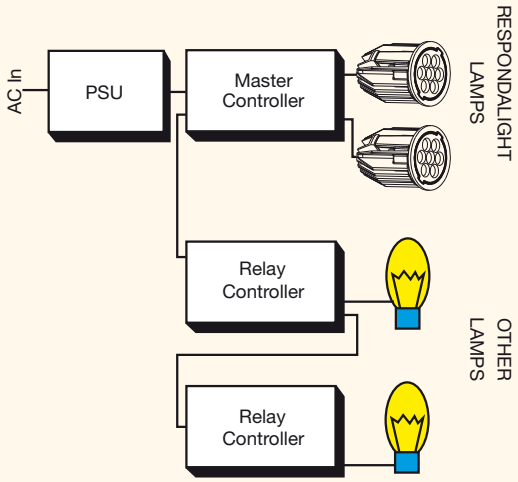
Ordering Information

Item	Order Code
Slave Sensor For RESPONDALIGHT	SL-SENSOR
Relay Controller For RESPONDALIGHT	RL-10A
Mounting Bracket For Relay Kits	RL-MTB
RESPONDALIGHT Master Kit with Relay Pack	MA-RL

Multiple Sensor Applications



External Relay Control



Respondalight Emergency Lighting

Features & Benefits

- Complies with BS EN 60598-2-22
- Minimum 3hr backup time
- Low energy consumption
- High temperature NiMH battery pack
- Easy to install RJ45 modular connectivity
- Very long lamp life 50,000Hrs
- Dimmable driving options

Product Description

An Emergency Lighting System compliant with EN 60598-2-22. The central component is an integrated control system which incorporates a mains Power Supply Unit, Light Emitting Diode (LED) Driver and Smart Battery Charger.

The charger is used to charge a high temperature rated, Nickel Metal Hydride battery pack and automatically detects when the cells are fully charged. The system also gives visual indication that the batteries are being charged.

The RESPONDALIGHT emergency lamp can be driven by a mains non dimmable, dimmable or 1-10 dimmable driver. The driver requires a separate power supply circuit but this can be omitted if the lamps are only required when the mains supply fails.

The controller requires a maintained power supply. This provides power for battery charging. In the event of power failure, a relay within the unit connects the batteries to the lamp via an integral driver operating at 165mA. Minimum run time in emergency mode is three hours.

Available Q4 2009.

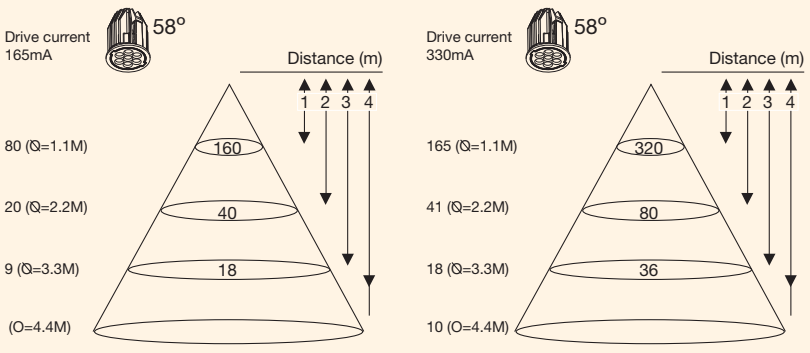
Ordering Information

Item	Order Code
Emergency Light Pack 3Hr Run	EM-KIT
System Compounds	
Emergency Power Supply Unit	EM-PSU
Emergency Controller Driver Unit	EM-CU
Emergency Battery Pack	EM-BP

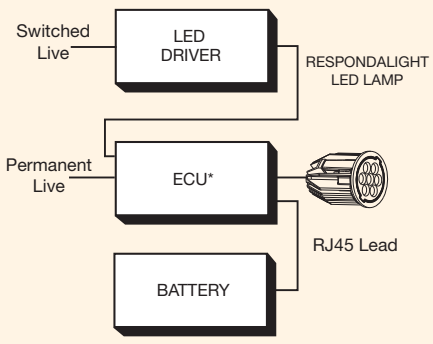
Lamps and Drivers One Supplied Separately

Lamps can be any Standard LMP-36
Drivers can be:
Trailing Edge Dimming
Leading Edge Dimming
1-10v Dimming
Non Dimming

Photometrics (58º Lamp)



Wiring Diagram



Respondalight Fittings

Features & Benefits

- Tested with RESPONDALIGHT lamps
- Variety of decorative finishes
- Fixed, twist lock or tilting
- Fire rated version
- IP rated version
- Easy to install

Product Description

A range of downlighter fittings to complement the RESPONDALIGHT LED lamps. Each fitting is simple to install and has been tested with the lamps.

The fittings are available in a range of decorative finishes including white, polished chrome and satin nickel.

Fixed, twist lock and tilting fittings, are also in either Standard, Fire Rated* and IP 65* rated versions.

* Fire Rated and IP65 Rated version will slightly de-rate lamp life. Please contact Technical Support for info - Northampton 01604 654 102

Ordering Information

***FTG - WHT - 1 - F**

*Check Price List or contact Sales for available combinations

Fitting Colour
WHT - White
CHM - Chrome
SAT - Satin Nickel

Fitting Type
F - Fixed
T - Tilting
TL - Twist Lock
FR - Fire Rated
IP - IP65 Rated

Twist-Lock White

Fixed Chrome

Tilting Chrome

Tilting Adjustable also available

Fire Rated White

IP65 Rated
Fire Rated White

Respondalight LED FAQ's

The field of LED technology is full of terms and definitions relating to the characteristics of Light Emitting Diodes. This short list of questions and answers is designed to help to understand some of the more common terminology.

How do LED's work?

When a junction of specially doped, P and N type, semi-conducting material is excited by a voltage, so as to cause a flow of electrons and holes, the electrons fall into the lower energy 'holes' and releases energy in the form of photons which we see as light.

What causes the light to be different colours?

The colour of light emitted when the electron falls into the hole, is related to the band gap energy of the P-N junction. The smaller the gap, the higher the frequency, to produce white light, a blue ultra violet diode semiconductor material is used, in conjunction with a coating of yellow phosphor, or by combining the light from three different semi conducting materials, that produce Red, Green and Blue light.

LED's are graded in two ways, intensity of light output and colour. The two parameters are linked together and by way of example quoted as P2 8A, this identifies the BIN (Batch Identification Number) P2 for instance defines the efficacy of the lamp 'X' Lumens per watt, and 8A defines where the colour sits in the colour temperature scale. IE 3A, 3B is 5300 degrees Kelvin cool white and 8C, 8D is 2600 degrees Kelvin warm white.

What is Chromaticity?

Chromaticity is the definition of where the colour of the light emitted from a source sits in an x,y coordinate chart defined by CIE 1931. White light is defined as 0.3127, 0.3290 on the CIE 1931 chart.

What is the Colour Rendering Index (CRI)?

The CRI is a relative measure of the accuracy of the colour of an object when viewed with reflected light from a given source, when compared to that of a pre-defined colour source, and gives an indication of the objects colour appearance in that light. A CRI of 1.0 indicates that the light source will give a perfectly true representation of that colour, LED's have a CRI of 0.6 - 0.9.

How efficient are white light LED's?

The latest LED chip materials coated with suitable phosphors can achieve efficacies of 140 Lumens per watt, although efficacies of nearer 60 Lumens per watt are readily available at commercially viable prices.

This compares very favourably with incandescent and fluorescent lamps but offers massive advantages with respect to life expectancies.

Respondalight LED FAQ's

What is efficacy?

Efficacy=L (Lumens)/Power (Amps X Volts) when expressing the efficacy of a lamp and driver, the total power consumption of both items should also be taken into account.

What voltage and current supplies do LED lamps require?

LED's require a certain minimum forward excitation voltage, before they emit light.
The preferred method of driving LED's in series is constant current.

Single, white light, 'die chips', usually require a forward voltage per of around 2.5-3.9Volts, and will consume energy according to the impedance of the P-N junction. The greater the surface area of the junction, the greater the power consumption, and hence, greater light output. If 350mA of current, are allowed to flow through a high quality semi conductor, light emitting junction, then around 55 Lumens of light will be generated.

What is One Lumen?

One Lumen is the amount of radiated, electromagnetic energy emitted from a source of 1 candela, which is equivalent to 1.46 milliwatt of radiated power at a frequency of 540 THz. One Terahertz is 1 x 10 to the power of 12 (Hz). (This is the frequency of light in the middle of the visible spectrum)

What is One Lux?

One Lux is the amount of light energy measured at a distance of one metre from a source radiating energy at one Lumen. (Our eyes require approximately 100 Lux of light reflected from a surface, to read comfortably, at arms length.)

What power are high powered white LED's?

High power white LED's emit between 30 and 140 Lumens of electromagnetic energy per watt, this means that if an LED, rated at 1 watt, is energised by the appropriate voltage and limited to a given current, typically a few hundred milliamps, then it will generate 30-140 Lumens of measured light per watt of electrical energy consumed.
Current LED lamp technology can produce white light lamps, in the order of 350 to 500 Lumens for energy consumption of around 10 watts electrical power. LED lamps lose a percentage of their rated Lumens per Watt due to thermal and optical losses. The skill in designing efficient white light lamps, revolves around thermal management, and focussing optics for beam control.

What are the applications for high power LED Lamps?

LED lamps are currently particularly suited to general lighting, downlighter or spot light applications, but can also be used in many other lighting applications and have even been used on traffic lights, car head lamps, RGB displays, back lighting for advertising displays, gaming machines and dashboards on vehicles. As the power and efficacy improves, LED lamps will become the preferred option for most lighting applications.

RESPONDALIGHT®

LED Lighting Technology

Less CO_2

More Lumens per watt means less carbon dioxide, reducing the impact on global warming. It also helps in compliance with building regulations and may have tax benefits.

Reduce Costs

Consumes 80% less energy than tungsten halogen lamps and payback in as little as 12 months with a five year guarantee on every lamp.

A Genuine Replacement

Our LED lamps deliver light output comparable to halogen tungsten lamps with high brightness and warm white colour.

Reduced Maintenance

50,000 hour lamp life significantly reduces maintenance time.

Run Cooler

LED lamps are safer to operate and reduce air-conditioning costs.

Occupancy Detection

The RESPONDALIGHT system offers occupancy detection which switches the lights off when not in use.

Rapid Installation

Plug and play connection for speedy installation and less labour time on site.

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