# Stand-alone lighting control

Ex-Or was founded in 1984 when the first energy-saving **LightSpot** controls were brought to market. Over the years, **LightSpot** has grown both in the range of solutions it offers and in reputation.

### Savings

Switching lights off when no-one is there, dimming or switching them off when there is enough natural light - the savings are automatic and can be as high as 80% and they accrue year after year. Maintenance costs are reduced too - lamps are on less, they last longer and need replacing less often.

### Environmental Considerations

Saving energy also cuts $CO_2$ emissions. The installation of **LightSpot** controls can help meet the requirements of environmental legislation such as:

- Part L of the Building Regulations (Conservation of Fuel and Power)
- Carbon Reduction Commitment Energy Efficiency Scheme

### Experience

As our controls are designed in-house, we have been able to draw on our years of experience in the field to develop a range of products that delivers bottom-line energy savings to building owners and customised, convenient operation to building users.

### Comprehensive Range

Customer feedback and the understanding we have built up of the real-life operational requirements in the many and varied types of buildings we have installed, have resulted in a truly comprehensive product range.

**LightSpot** offers:

- Different technologies to suit different applications
- Control of different ballast types
- Switching and dimming options
- Different photocell modes
- Extensive programmable features
- Choice of mounting options for different construction types
- Straightforward installation (including plug-in connection centre option)
- Easy operational set-up

### Reliability

We've always understood the importance of reliability in operation. Not only are our products engineered for reliability but, with manufacturing taking place at our own state-of-the-art facilities, we can guarantee the quality of components and workmanship too.

### Expertise

We'll discuss your own particular requirements and can tell you which solution is best for you and why. We pride ourselves on having a solution for every application, so you can trust our advice – and it's free.

### Enhanced Capital Allowances

**LightSpot** controls qualify for the Energy Technology List and thereby attract ECAs whereby businesses can claim 100% first-year capital allowances. Further information can be found at www.eca.gov.uk and www.carbontrust.co.uk.

## Products and Systems

**MLS Digital**
Networked Managed Lighting System

**Connect**
Lighting control modules and plug-in connection centres

**FailSafe**
Emergency lighting testing systems

**LightSpot**
Stand-alone lighting control by presence detection and photocell

**SceneSelect II**
Architectural scene-setting and dimming system

## Complete Service

**Expert technical sales team**
- Field based with national coverage
- Solutions designed for specific project and client needs
- Design assistance for new-build projects
- Site visit and survey for existing-building retro-fit projects

**Expert sales support team**
- Technical drawings and schematics
- Installation guidance and advice
- Post-sales support

**Expert contracts management team**
- Project management
- Commissioning and on-site support

**Service and maintenance**
- A tailored solution to meet your needs, from extended on-site warranty to full, planned, preventative-maintenance programme.

# Case Studies

### Offices

**The Carbon Trust** practises what it preaches with **LightSpot** detectors installed in their offices at Clement's Inn, London.

### Schools

**LightSpot** controls are employed at **Lakeside Primary School**, one of five schools in a major PFI project with the lighting designed by building services consultants Pick Everard.

### Car Parks

Monitoring at **Southampton City Council Multi-storey Car Park** revealed a 35% cut in energy usage following the installation of Ex-Or lighting control systems including Long Range **LightSpot** presence detectors. The 170,000kW reduction equates to a saving of £15,000 per year.

### Hospitals

At **Southampton General Hospital**, **LightSpot** controls are employed in open-plan office areas, meeting rooms, corridors and patients' waiting areas. As well as dimming and switching off lighting when not required, the ventilation systems are switched in line with usage patterns.

### Residential

**Berkeley Homes** installed **LightSpot** controls in its prestigious Salamanca Square apartment development on the Albert Embankment in order to cut energy costs and ensure regulatory compliance with Part L of the Building Regulations.

### Universities

Environmental sustainability is a key objective for the **University of Essex** which has cut its total energy bill by 5%. As lights are on less, there are fewer lamp and control gear failures, so **LightSpot** is saving a further £2,000 per year on maintenance costs at The Quays, student accommodation complex.

# Examples of product specification

### Conference Room
**Mid Range Regulating Microwave**
Dual-circuit control allows luminaires by windows to regulate whilst the remainder of the lights are set up as switching only.
**Range:** Up to 20m
**Typical Off Delay:** 10-35 mins

### Storage Cupboard
**BattenFit PIR**
Easily fitted to batten-style luminaires for cost-effective control.
**Range:** 6m diameter approx
**Typical Off Delay:** 5-15 mins

### Short Corridor
**Standard Series Ultrasonic**
Switching lights on and off in response to movement.
**Range:** Up to 13m in corridor application
**Off Delay:** 5-15 mins

### Canteen
**Gold Series Microwave**
Microwave detectors are not activated by heat or air movement so are ideal for kitchen area.
**Range:** 7m diameter
**Typical Off Delay:** 5-35 mins

### Cellular/Small Offices with Air Conditioning
**Multi-Function PIR**
Configured here to control air conditioning as well as lighting.
**Range:** 6m diameter
**Typical Off Delay:** Lighting 5-35 mins; Air conditioning 5 min start delay with 5-35 mins run on.

### Open-Plan Office
**Integral PIR within each Luminaire**
Gives full control of larger area and control of regulating luminaires.
**Range:** 6m diameter per detector
**Typical Off Delay:** 5-20 mins

### Long Corridor
**Mid Range Microwave**
Switching lights on and off in response to movement.
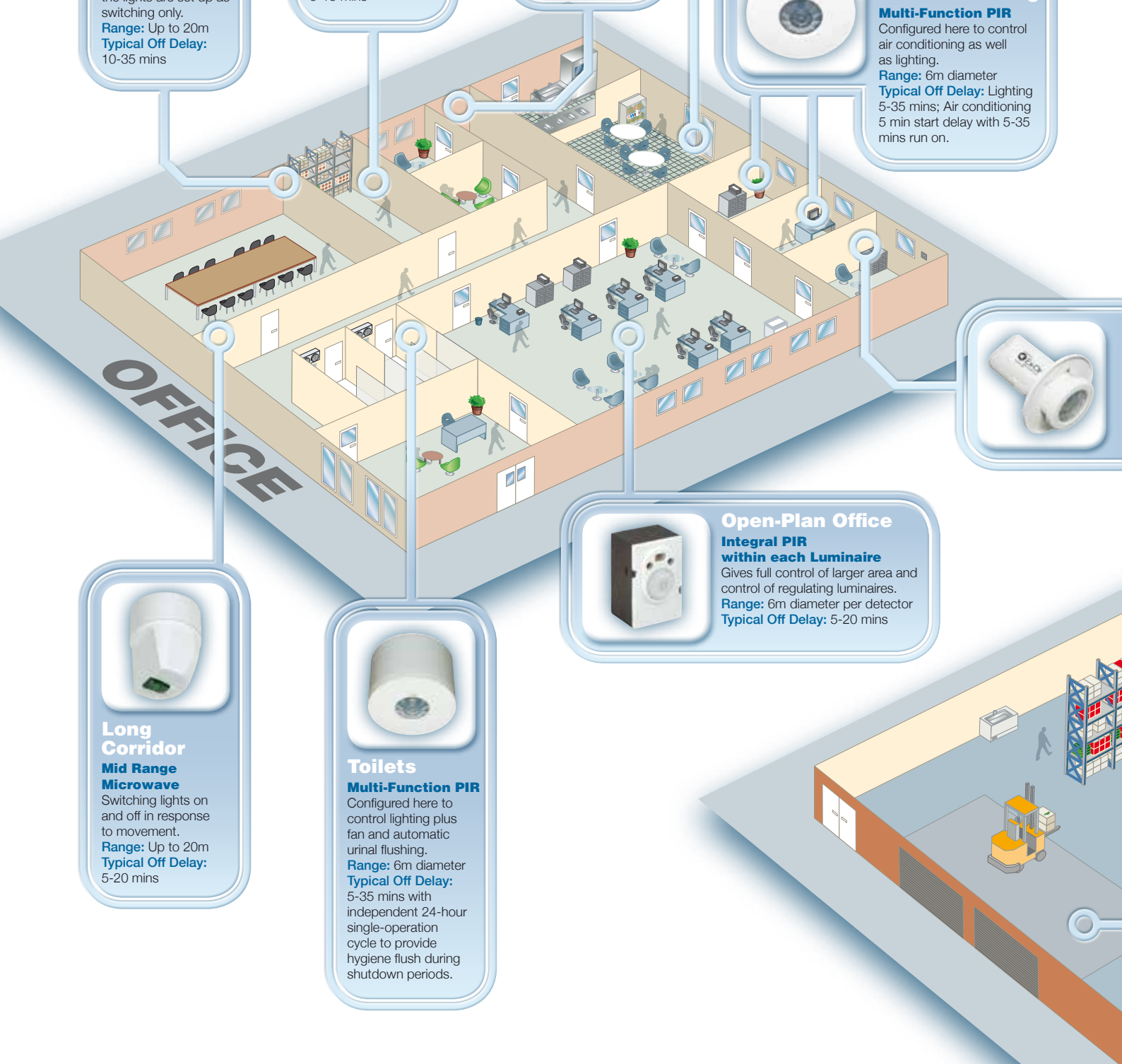**Range:** Up to 20m
**Typical Off Delay:** 5-20 mins

### Toilets
**Multi-Function PIR**
Configured here to control lighting plus fan and automatic urinal flushing.
**Range:** 6m diameter
**Typical Off Delay:** 5-35 mins with independent 24-hour single-operation cycle to provide hygiene flush during shutdown periods.

OFFICE

**LightSpot** detectors operate on the basis of presence/absence detection. For areas where natural light is good, there are versions incorporating photocells to regulate light output accordingly.

## Sports Hall
**Long Range Microwave**
Ideal for control of a large, open area with a single detector. Robust die-cast housing offers protection against accidental damage from sports balls etc.
**Range:** Up to 60m
**Typical Off Delay:** 10-15 mins

## Classroom 1
**MLS2401CDR Microwave Detector connected to CDW12U5 Programmable LCM**
Six hard-wired channels can be independently switched, dimmed or 'bound together' in any configuration using a hand-held infrared programmer for an incredibly flexible lighting control solution.
**Range:** 7m diameter
**Typical Off Delay:** 5-20 mins

## Classroom 2
**2 x MLS2001CDR PIR Detectors connected to CDW12U5 Programmable LCM**
With this modular approach, all the luminaires are independently plugged into the LCM which can be programmed (via infrared programmer) to give different SELV switching arrangements. Here the window-row lights regulate in response to daylight detection.
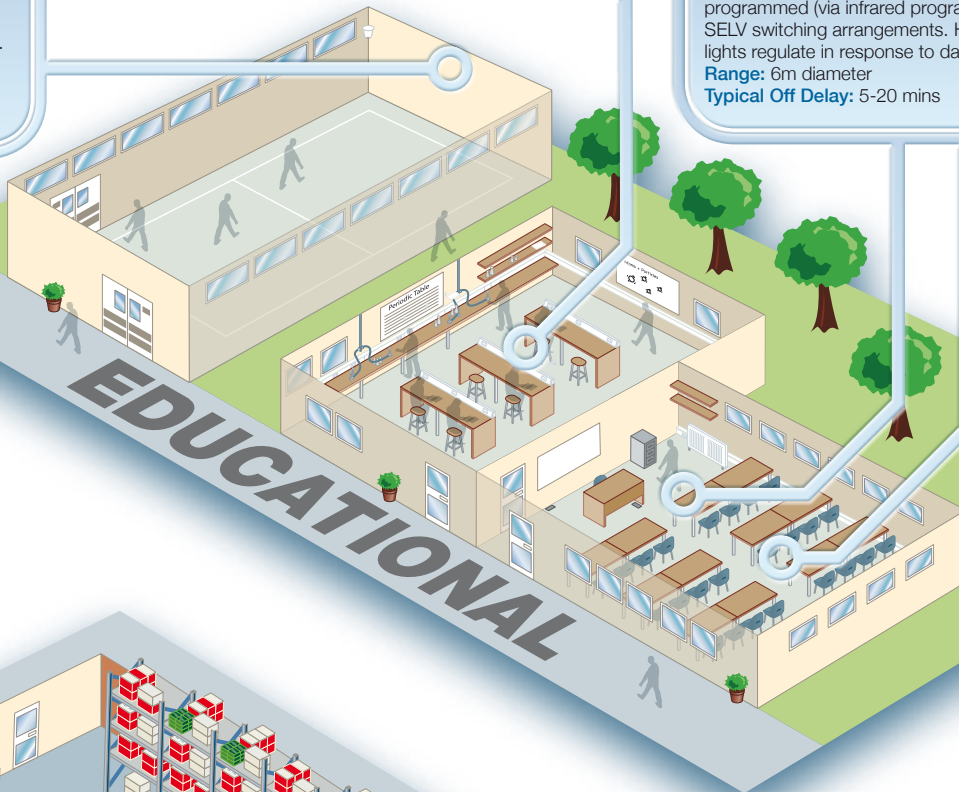**Range:** 6m diameter
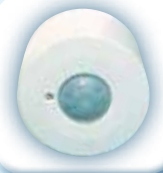**Typical Off Delay:** 5-20 mins

## Small Offices
**Silver Series PIR**
Offers regulating or photocell hold off.
**Range:** 6m diameter
**Typical Off Delay:** 5-35 mins

EDUCATIONAL

WAREHOUSE

## Racking Aisles
**Hi-Bay PIR**
Delivers effective presence detection at height. Infrared programmable from ground level reducing costs of commissioning/re-commissioning. Programmable options include reduced-light-output exit scenes.
**Range:** 1:1 height to diameter ratio (e.g. at 12m mounting height, coverage is 12m diameter)
**Typical Off Delay:** 5-15 mins

## Open Storage Area
**Long Range Microwave**
Ideal for control of a large, open area with a single detector. Very sensitive to movement of fork-lift trucks.
**Range:** Up to 60m
**Typical Off Delay:** 5-15 mins

# LightSpot product range

## Bronze Series PIR

- Simple, cost-effective PIR detector
- 360° movement detection
- Rapid payback
- Ideal solution for simple retrofit
- Optional passive photocell (inhibits switch-on if there is sufficient daylight)

**Mounting options:**
- Slimline Flush
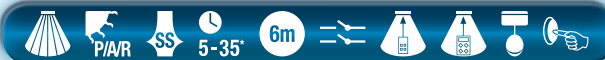- Flush
- Surface

P  20  6m

## Silver Series PIR

- High-performance, programmable PIR detector
- Ideal for offices and open-plan workstations
- 360° movement detection
- Programmable photocell mode
- Dual-circuit versions: either switching, or switching and dimming (useful where just the perimeter lights require photocell operation)
- Single-circuit analogue output version
- Dimming versions incorporate terminals for optional OneSwitch Dimming

**Mounting options:**
- Slimline Flush    • Flush    • Surface

P/A/R  SS  5-35*  6m

## Gold Series Microwave

- Superior performance, programmable microwave detector
- Ideal for offices, open-plan workstations, classrooms etc
- 360° movement detection
- Programmable photocell mode
- Dual-circuit versions: either switching, or switching and dimming (useful where just the perimeter lights require photocell operation)
- Single-circuit analogue output version
- Dimming versions incorporate terminals for optional OneSwitch Dimming

**Mounting options:**    • Flush    • Surface

P/A/R  SS  5-60*  7m

## Multi-function PIR

Offers dual control for:
- Lighting and emergency test
- Lighting and air conditioning
- Lighting and water/fan
- Two-channel lighting

**Mounting options:**
- Flush
- Surface

P/A  5-35*  6m

## Hi-Bay PIR

Programmable PIR presence detector for use at high level
- Can be mounted at up to 16m height
- Programmable with infrared programmer from ground level
- 360° movement detection
- Lens mask available for end-of-aisle applications

**Mounting options:**
- Slimline Flush    • Flush    • Surface

P/A/R  SS  1 min -96 hrs  up to 16m  1:1
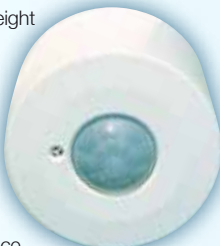
## Standard Series Ultrasonic

- High-performance, ultrasonic presence detector
- Directionally adjustable
- Passive photocell
- Ideal for offices, classrooms, corridors and other medium-range applications

**Mounting options:**
- Semi-flush
- Surface

P  5-15*  6m  13m in corridors

## Mid Range Microwave

- Superior performance, microwave presence detector
- Directionally adjustable
- 20 x 20m coverage
- Ideal for larger classrooms, longer corridors, conference rooms, storage aisles etc
- Either passive photocell, or regulating
- Dimming versions incorporate terminals for optional OneSwitch Dimming
- Infrared programmable (dimming version)

**Mounting options:**
- Semi-flush • Surface • Wall mounting kit available

*Icons: P/R | SS | 0-60 | 20m*

## Long Range Microwave

- Powerful, versatile microwave presence detection system
- Ideal for sports halls, stadia, warehouses and other large areas
- Ranges of 15m, 30m and 60m
- Directionally adjustable
- Two types of detector housing: LRD-type particularly robust and secure against accidental damage
- Detectors and control units can be combined, or separated for more convenient electrical connection and commissioning
- Optional remote photocell

**Mounting options:**
- Flush • Surface • Box-mounted
- Wall mounting kit available for LR-type detectors

*Icons: P | 0-16 | 15m | 30m | 60m*

## LightSpot Photocells

- **Universal Photocell -** programmable for either switching or regulating ballasts, ideal for higher specification projects
- **Digital Dimming Photocell -** high-performance, regulating photocell
- **Two-part Switching Photocell -** monitors ambient daylight, can be mounted inside or outside

*Icons: P/A/R*

## BattenFit PIR

- Simple-to-fit control solution for batten-style luminaires
- Infrared programmable
- Switching and regulating versions
- IP65 versions

*Icons: P/A/R | SS | 1 min -96 hrs | 6m*

## Integral PIR Detector

Actual size

- Two types of small, discreet luminaire controller
- Suitable for integration in most luminaire designs
- Rear or side cable entry options
- Moulded-in features to assist in mounting
- Versions for on/off switching of fixed-output ballasts and for dimming analogue and digital ballasts

*Icons: P/R | SS | 5-35" | 6m*

## Programmers and Controllers

Most LightSpot controls feature a range of programmable parameters. By using an infrared programmer you can tailor operation to your exact requirements. The HP10 offers basic programming while the HP2000 allows access to the full range of options. For temporary on/off user override and light-level adjustment, there is the HC6 or the HC5 which offers further functionality. Dedicated hand-held controllers are available for air conditioning (HC7) and emergency lighting testing (HC8).

HP2000    HC5

## Icons Key

**Advanced presence detection** by passive infrared (PIR) technology

**Active presence detection** by ultrasonic or microwave technology

**P** – Passive photocell holds lights off when area becomes occupied in bright ambient conditions

**A** – Active photocell switches lights on and off according to ambient conditions

**R** – Regulating photocell adjusts luminaire output to maintain constant light levels

**SS** – Incorporates simple scene setting - up to 6 scenes can be set via user remote

**5-35"** – Off delay: Time in minutes from last observed movement until lights switch off *up to 96 hours with HP2000

**6m / 20m** – Detection pattern and range in metres under normal operating conditions

Dual circuit option (switching or switching and dimming) available

Analogue dimming with relay on/off

Remote control for temporary user-override on/off and light level adjustment

Infrared progamming for easy commissioning and re-commissioning. HP10 and HP2000 used depending on product and requirements.

**OneSwitch Dimming:** Manual input to adjust light level or turn luminaires on or off

**Dual Sensitivity:** Sensitivity to movement is greater when lighting is on than when it is off, eliminating nuisance switching in larger areas

**Washroom Mode:** Controls urinal flushing/extractor fan

**Air-conditioning Control:** Connection and programmable features

**Emergency test control:** Connection and programmable features for test procedures

# LightSpot Part Numbers

### BattenFit PIR

| | |
|---|---|
| MSB1000T | 2A switching |
| MSB1000PT | 2A switching with photocell |
| MSB1000DT | with regulating photocell for DSI ballasts |
| MSB1000DALIT | with regulating photocell for DALI ballasts |
| MSB1001T | IP65 2A switching |
| MSB1001PT | IP65 2A switching with photocell |
| MSB1001DT | IP65 with regulating photocell for DSI ballasts |
| MSB1001DALIT | IP65 with regulating photocell for DALI ballasts |

### Bronze Series PIR

| | |
|---|---|
| MS1000F | - slimline flush |
| MS1001F | - flush |
| MS1001SM | - surface |
| MS1100PF | with digital passive photocell - slimline flush |
| MS1101PF | with digital passive photocell - flush |
| MS1101PSM | with digital passive photocell - surface |

### Silver Series PIR

| | |
|---|---|
| MS1200PF | with digital passive/active photocell - slimline flush |
| MS1201PF | with digital passive/active photocell - flush |
| MS1201PSM | with digital passive/active photocell - surface |
| MS2000DF | for DSI ballasts - slimline flush |
| MS2001DF | for DSI ballasts - flush |
| MS2001DSM | for DSI ballasts - surface |
| MS2000DALIF | for DALI ballasts - slimline flush |
| MS2001DALIF | for DALI ballasts - flush |
| MS2001DALISM | for DALI ballasts - surface |
| MS2001AF | for 1-10V analogue regulating ballasts - flush |
| MS2001ASM | for 1-10V analogue regulating ballasts - surface |
| MS1221PF | dual output & digital passive/active photocell - flush |
| MS1221PSM | dual output & digital passive/active photocell - surface |
| MS1224UF | ELV for analogue/DSI/DALI ballasts - slimline flush |

### Gold Series Microwave

| | |
|---|---|
| MS2421PF | dual output & digital passive/active photocell - flush |
| MS2421PSM | dual output & digital passive/active photocell - surface |
| MLS2421DF | dual output for DSI/fixed-output ballasts - flush |
| MS2421AF | for 1-10V analogue regulating ballasts - flush |
| MS2421ASM | for 1-10V analogue regulating ballasts - surface |
| MLS2421DSM | dual output for DSI/fixed-output ballasts - surface |
| MLS2421DALIF | dual output for DALI/fixed-output ballasts - flush |
| MLS2421DALISM | dual output for DALI/fixed-output ballasts - surface |

### Hi-Bay PIR

| | |
|---|---|
| MS2001DHBF | for DSI ballasts - flush |
| MS2001DHBSM | for DSI ballasts - surface |
| MS2001DALIHBF | for DALI ballasts - flush |
| MS2001DALIHBSM | for DALI ballasts - surface |
| MS2001AHBF | for 1-10V analogue regulating ballasts - flush |
| MS2001AHBSM | for 1-10V analogue regulating ballasts - surface |
| MS1200PHBF | with digital passive/active photocell - slimline flush |
| MS1201PHBF | with digital passive/active photocell - flush |
| MS1201PHBSM | with digital passive/active photocell - surface |
| MS2021PHBF | Multi-function Hi-Bay - flush |
| MS2021PHBSM | Multi-function Hi-Bay - surface |

### Multi-Function PIR

| | |
|---|---|
| MS2021PF | - flush |
| MS2021PSM | - surface |

### Standard Series Ultrasonic

| | |
|---|---|
| MS1500P | with photocell - surface |
| MS1500PF | with photocell - semi-flush |

### Mid Range Microwave

| | |
|---|---|
| MR1500P | with passive photocell - surface |
| MR1500PF | with passive photocell - semi-flush |
| MR2500D | with photocell for DSI ballasts - surface |
| MR2500DF | with photocell for DSI ballasts - semi-flush |
| MR2500DALI | with photocell for DALI ballasts - surface |
| MR2500DALIF | with photocell for DALI ballasts - semi-flush |

### Long Range Microwave

| | |
|---|---|
| LR15SM | 15m Detector - surface mounted |
| LR15F | 15m Detector - flush mounted |
| LR15B | 15m Detector - box mounted |
| LR15C1 | 15m Detector with C1 control unit |
| LR15C2 | 15m Detector with C2 control unit |
| LR30SM | 30m Detector - surface mounted |
| LR30F | 30m Detector - flush mounted |
| LR30B | 30m Detector - box mounted |
| LR30C1 | 30m Detector with C1 control unit |
| LR30C2 | 30m Detector with C2 control unit |
| LRD30F | 30m Robust Detector - flush mounted |
| LRD30B | 30m Robust Detector - box mounted |
| LRD30C1 | 30m Robust Detector with C1 control unit |
| LRD30C2 | 30m Robust Detector with C2 control unit |
| LRD60F | 60m Robust Detector - flush mounted |
| LRD60B | 60m Robust Detector - box mounted |
| LRD60C1 | 60m Robust Detector with C1 control unit |
| LRD60C2 | 60m Robust Detector with C2 control unit |
| LRC1L | Control unit with single switch relay |
| LRC2L | Control unit with dual switch relay |
| LRP1 | Photocell for remote mounting |

### LightSpot Photocells

| | |
|---|---|
| MP102 | Two-part mains photocell |
| MP2000UF | Universal photocell for all ballast types - slimline flush |
| MP2000DF | Digital photocell - slimline flush |

**Integral PIR Detectors** - please contact Ex-Or for details

### Programmers and Controllers

| | |
|---|---|
| HP2000 | MLS Digital Programmer |
| HP10 | LightSpot Programmer |
| HC5 | Universal Hand-held Controller |
| HC6 | Two-button Hand-held Controller |
| HC7 | Hand-held Controller for lighting and air conditioning |
| HC8 | Hand-held Controller for emergency test and lighting control |

ANDROID APP ON
Google play

Available on the
App Store

ESTA
energy services and technology association

listed in
LUCKINSlive

Ex-Or
by Honeywell