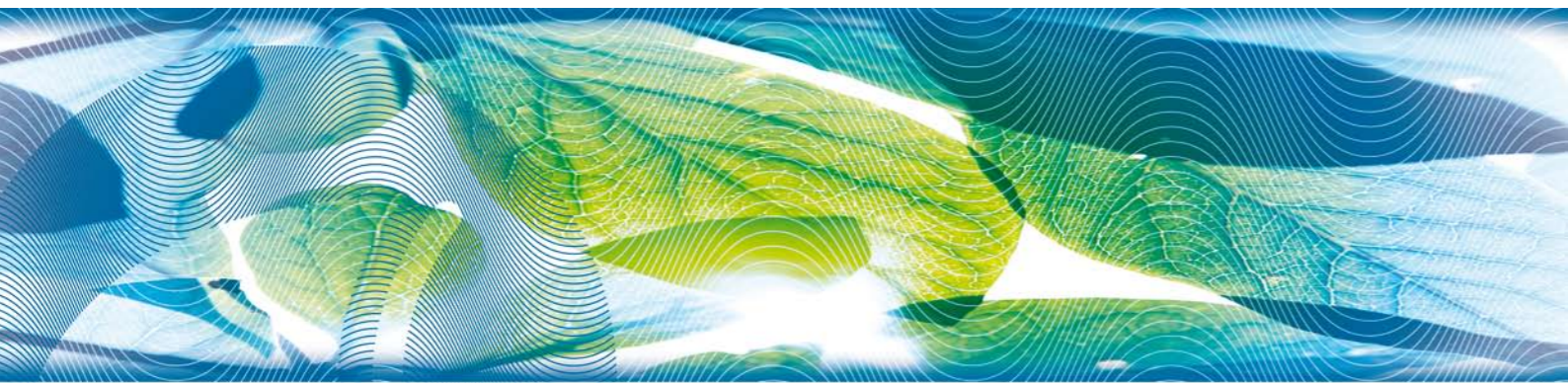


LightSpot

Stand-alone lighting control by presence detection and photocell





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 CO₂ 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

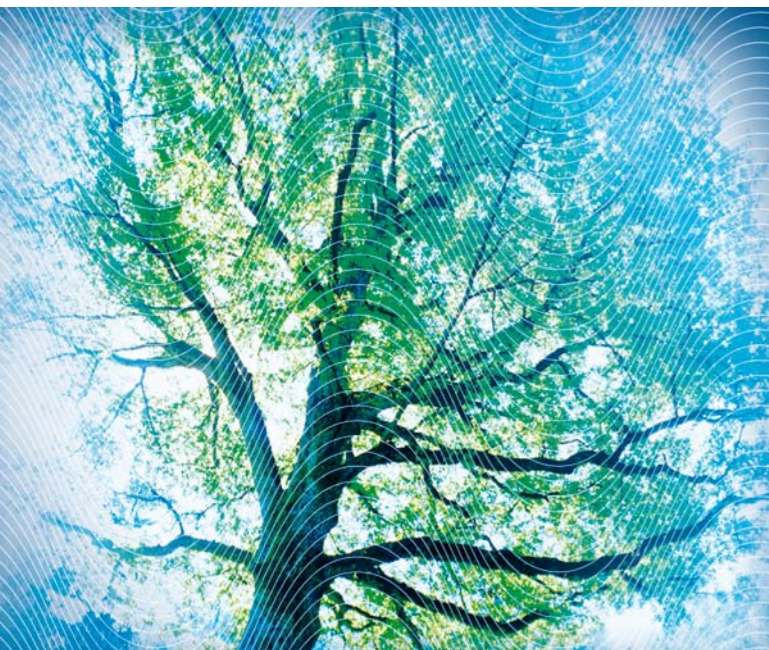
We've always understood the importance of reliability in operation. Our products are engineered for reliability and, as they are all made at our own state-of-the-art manufacturing facility on Merseyside, we can guarantee the quality of components and workmanship too.

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 control 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.



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.



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.

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.

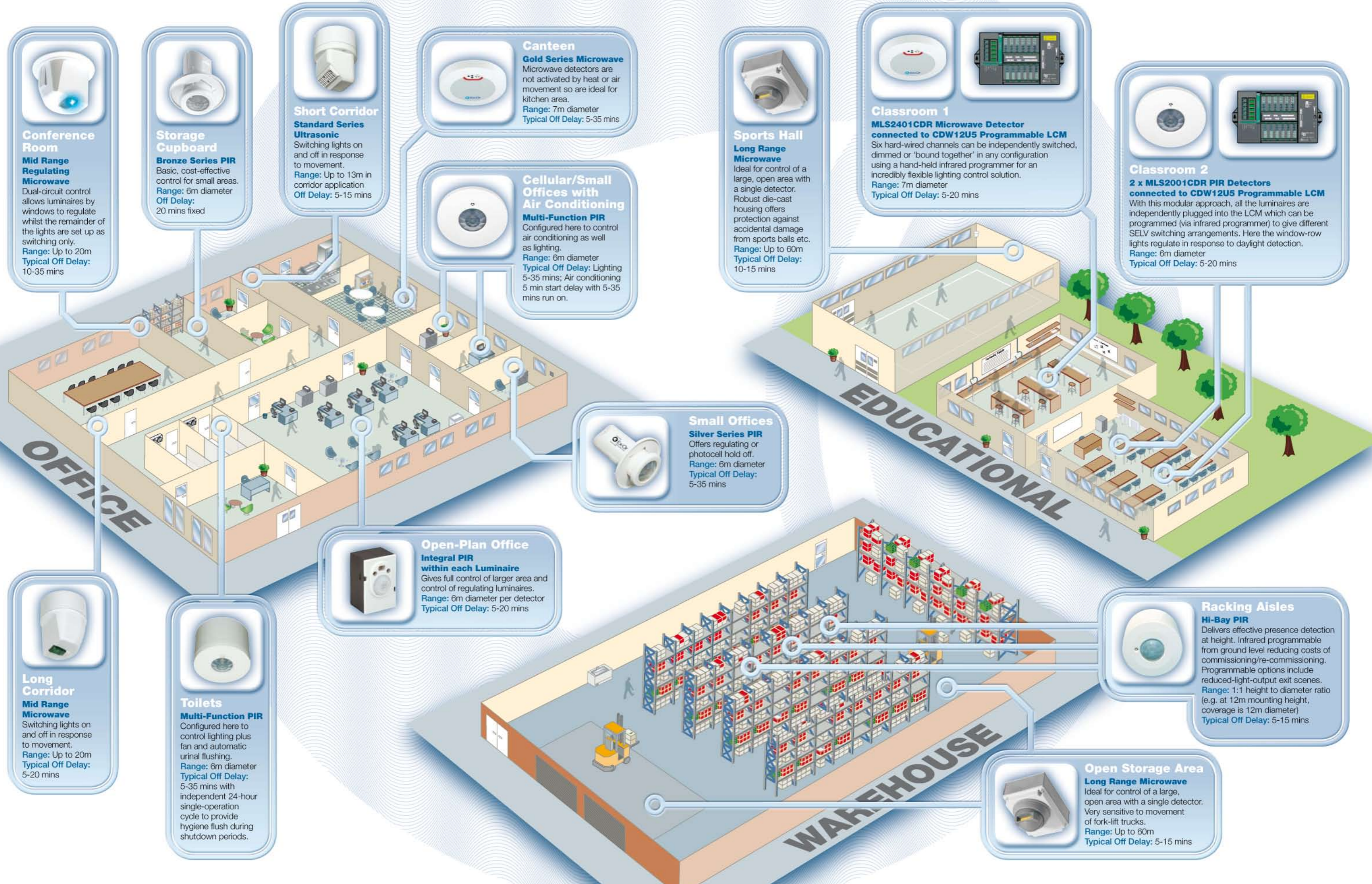
Universities

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

LightSpot detectors operate on the basis of presence detection; lights switch on automatically when they are needed and off when they are not. For areas where natural light is good, there are versions incorporating photocells to regulate light output accordingly.



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
Bronze Series PIR
 Basic, cost-effective control for small areas.
 Range: 6m diameter
 Off Delay: 20 mins fixed

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.

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

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.

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

The following provides an overview of the LightSpot range. Comprehensive technical details can be found on the appropriate technical data sheets.

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



Silver Series PIR

- High-performance, programmable PIR detector
- Ideal for offices and open-plan workstations
- 360° movement detection
- **For fixed-output ballasts** with passive photocell and dual-circuit option (useful for applications where just the perimeter lights require dimming).
- **For dimming ballasts (analogue or digital)** with light-level setting for maintained illuminance and pre-set levels for scene-setting.

Mounting options:

- Slimline Flush
- Flush
- Surface



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:

- Surface
- Semi-flush
- Wall mounting kit available



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:

- Surface
- Flush
- Box-mounted
- Wall mounting kit available for LR-type detectors



Gold Series Microwave

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

Mounting options:

- Surface
- Flush



Multi-function PIR

Offers dual control for:

- Lighting and emergency test
- Lighting and air conditioning
- Lighting and water/fan
- Two-channel lighting

Mounting options:

- Surface
- Flush



Standard Series Ultrasonic

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

Mounting options:

- Surface
- Semi-flush



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:

- Flush
- Surface



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).



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



Integral PIR Detector

- 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



Actual size



Icons Key

- Advanced presence detection by passive infrared (PIR) technology
- Active presence detection by ultrasonic or microwave technology
- Passive photocell holds lights off when area becomes occupied in bright ambient conditions
- Active photocell switches lights on and off according to ambient conditions
- Regulating photocell adjusts luminaire output to maintain constant light levels
- Incorporates simple scene setting - up to 6 scenes can be set via user remote
- Off delay: Time in minutes from last observed movement until lights switch off *up to 96 hours with HP2000
- Detection pattern and range in metres under normal operating conditions
- Dual circuit option (switching or switching and dimming) available
- Remote control for temporary user-override on/off and light level adjustment
- Infrared programming 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

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 analogue regulating ballasts - flush
MS2001ASM	for 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
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
MS2001DALHBF	for DALI ballasts - flush
MS2001DALHBSM	for DALI ballasts - surface
MS1201PHBF	with digital passive/active photocell - flush
MS1201PHBSM	with digital passive/active photocell - 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

Programmings 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

Reference No: A4002

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Telephone: **1300 731 392** Fax: (03) 8807 4601
 40 Albert Road, South Melbourne, Victoria 3205
 www.ecsaustralia.com info@ecsaustralia.com



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