

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

## Long Range Series LightSpot

Long Range LightSpot is a high performance presence detection system for use in almost any internal space. It was conceived to bring effective energy-saving control to large areas such as warehouses, sports halls, workshops, hangars, classrooms etc. The system offers many outstanding features and user options, making it the natural choice for large and prestigious situations. Long Range LightSpot is designed to the highest quality standards and performance criteria to ensure efficient and trouble-free operation in the most exacting locations.

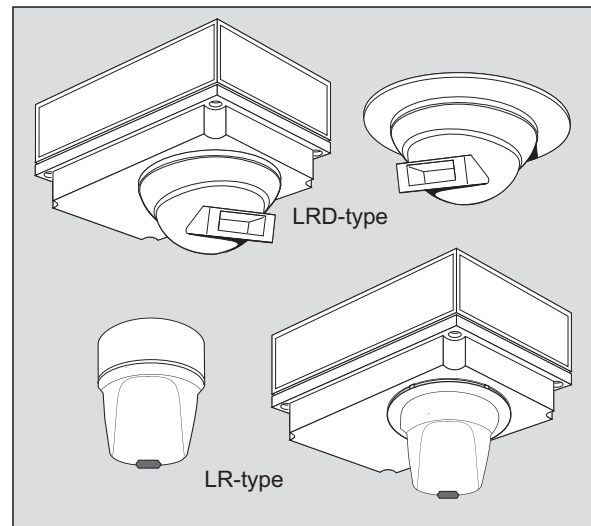
Long Range LightSpot systems comprise two components

- 230-volt control units with single or dual volt-free output relays, rated to switch any type of load up to 10 amps
- low-voltage microwave detectors for surface or flush mounting. LR-type detectors are available in 15 and 30 metre versions; LRD-type detectors in 30 and 60 metre versions.

System design and installation is extremely simple, requiring no special tools or training. Installation is confined to the lighting circuits being controlled. Detectors and control units may be combined to form self-contained controls or separated for more convenient electrical connection and commissioning. The low-voltage detectors do not contain any adjustment controls and may be fitted at high level and in public areas. Typical mounting height is 3-4 metres. Do not mount LR-type detectors above 3.5m or LRD-type above 6m without seeking technical advice.

### Fully or Semi-automatic Operation

In larger areas it is often good practice for all or part of the load to be in semi-automatic operation, whereby a start button is provided to switch ON. The load is automatically reset OFF once the area is vacated. This feature is useful where activation from adjacent spaces might occur or where the existing light level is adequate



for visiting access. Dual-circuit control units allow for low-level safety lighting to be provided automatically with the remaining load in semi-automatic operation.

### Remote Photocell

Photocells can be configured to control all, or part, of the controlled load. They may be adjusted over a wide range and the various operating modes are selected by an internal switch.

### Wide Polar Response

LRD-type detectors are located in a unique spherical diecast housing which incorporates an antenna. This unit, specially developed by Ex-Or, is secure against accidental damage, eg by sports balls, without external protection and gives an extremely wide coverage pattern.

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## Modes of Operation

### Auto ON with auto OFF

#### Fully automatic

#### Fully automatic with photocell

C1  
One circuit

Walk in and lights come ON. Lights go OFF automatically when the area is vacated and there has been no movement for the selected interval (usually 5 minutes).

Lights only come ON when someone is present and conditions are dull.

This is the routine application for areas where basically one type of activity takes place.

C2  
Two circuits

Walk in and both circuits are activated. After no movement has been detected for a selected interval, circuit 1 opens, followed, after a further delay, by circuit 2.

Photocell may be set to control one or both relays. The start button (if fitted) may be set to override the photocell. (Ask for application sheet.)

This option is used when a sequenced shutdown is desirable, eg with SON lighting.

### Manual ON with auto OFF

#### Semi-automatic

#### Semi-automatic with photocell

Walk in and nothing happens until a start button is pressed. Lights then come ON and remain ON until the area is vacated and no movement has been detected for the selected interval.

Photocell is not needed when semiautomatic operation is specified.

This is an excellent way to provide lights very conveniently for all who need them without casual waste.

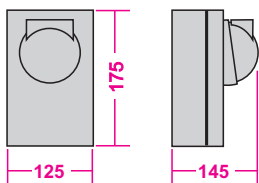
Walk in and circuit 2 is activated. Circuit 1 will only come ON if the start button is pressed. When no movement has been detected for a selected interval, circuit 1 opens, followed, after a further delay, by circuit 2. The system resets to fully/semi-automatic operation.

Photocell may be set to control one or both relays. The start button (if fitted) may be set to override the photocell. (Ask for application sheet.)

This is a convenient way to give safe through passage whilst retaining the advantages of semi-automatic operation.

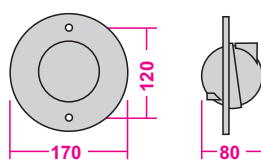
## Technical Data

### LRD-type Surface Detector



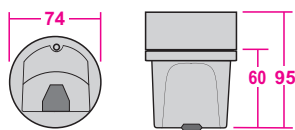
VOLTAGE: 12V dc  
FREQUENCY: 10.7GHz low power microwave  
WEIGHT: approx. 800g  
FLUSH FIXING: to 2-gang sinking box  
RANGE: adjustable (specified to one-half step target)

### LRD-type Flush Detector



RANGE REDUCTION: adjustable  
CONSTRUCTION: zinc & polycarbonate  
IP RATING: 53  
MAX MOUNTING HEIGHT: 6m  
OPERATING TEMPERATURE: 0°C to 40°C

### LR-type Detector



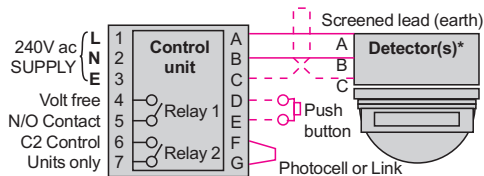
WEIGHT: 250g  
COLOUR: White  
HOUSING MATERIAL: Flame-retardant ABS  
IP RATING: 4X  
MAX MOUNTING HEIGHT: 3.5m  
OPERATING TEMPERATURE: 0°C to 40°C

### Control Units

OPERATING VOLTAGE: 230V 50 Hz  
SWITCH: 10 Amp x 230V (volt-free)  
Incandescent lamps: 1500W max (at 230V)  
TERMINALS: 1 x 6mm or 2 x 2.5mm  
WEIGHT: approx 850g  
POWER SUPPLY: transformer isolated 12V  
SEMI-AUTOMATIC: using low voltage switch

SEGREGATION: none  
TIME-OUT: 0 - 16 minutes per channel  
POWER-UP CONDITION: select ON or OFF  
PHOTOCELL: remote operation  
DIMENSIONS: 175 x 125 x 75 mm  
IP RATING: 65  
OPERATING TEMPERATURE: 0°C to 40°C

## Electrical connection diagram

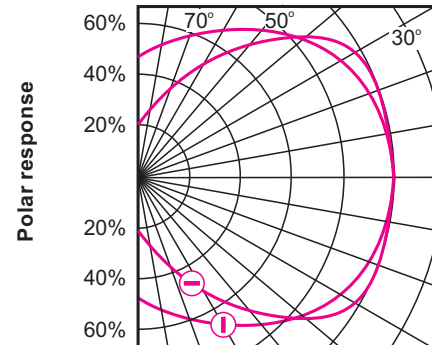


Note: phases should not be mixed in enclosure.

\* Maximum number of detectors per Control Unit:  
3 x LR-type  
2 x LRD-type

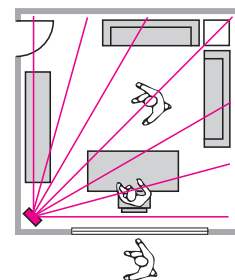
## Polar response

The diagram shows the range of the detectors at various positions, indicating the ideal orientation to give optimum width or depth of coverage. Note that detectors can "see" behind themselves so, in open ended aisles for example, they should be inset.



## Positioning

The detector can see through glass and should be pointed away from thin partitions and windows which view spurious movement sources.



For operation in racking aisles, see Application Note: AN4010.

## Part Numbers

**LR15SM, LR30SM** Detectors - surface mounted: 15m, 30m range  
**LR15F, LR30F** Detectors - flush mounted: 15m, 30m range  
**LR15B, LR30B** Detectors - box mounted: 15m, 30m range  
**LRD30B, LRD60B** Detectors - box mounted: 30m, 60m range  
**LRD30F, LRD60F** Detectors - flush mounted: 30m, 60m range

### Control Units:

**LRC1L** Control unit with single switch relay

**LRC2L** Control unit with dual switch relay

Combined units (detector fitted within lid of a control unit - surface mounted) may be ordered by combining the above part numbers eg **LR15C1, LRD30C2**

**LRP1** Photocell for remote mounting

**WMK** Wall-mounting kit for LR15SM and LR30SM

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