

# LPCLRPIRM

## Ceiling microwave presence/absence detector

### Overview



The LPCLRPIRM microwave presence detector provides automatic control of lighting loads with optional manual control.

The LPCLRPIRM detects movement using a highly sensitive microwave detector. This works by emitting low power microwave signals and measuring the reflections as the signals bounce off moving objects.

The output channel comprises a mains voltage relay capable of simple on/off switching.

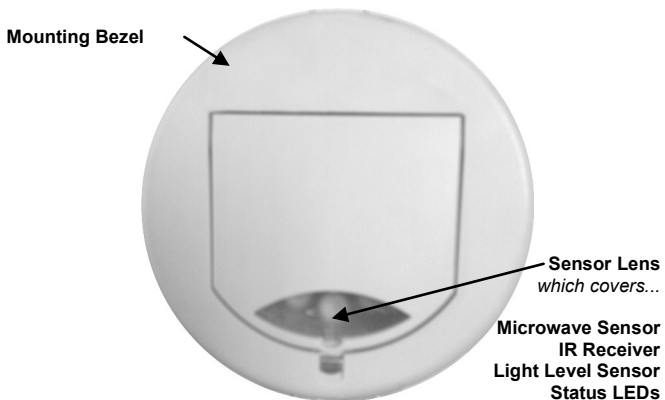
Functioning as a presence detector, the unit can turn lights on when a room is occupied and off when the room is empty. Optional settings allow lights to be turned off in response to ambient daylight.

The LPCLRPIRM has a unique adjustable sensor head that allows the area of detection to be optimised for the application.

All functionality is fully programmable using an IR handset.

### Features

#### Front features



#### Microwave Sensor

Detects movement within the unit's detection range, allowing load control in response to changes in occupancy.

#### IR Receiver

Receives control and programming commands from an IR (infrared) handset.

#### Light Level Sensor

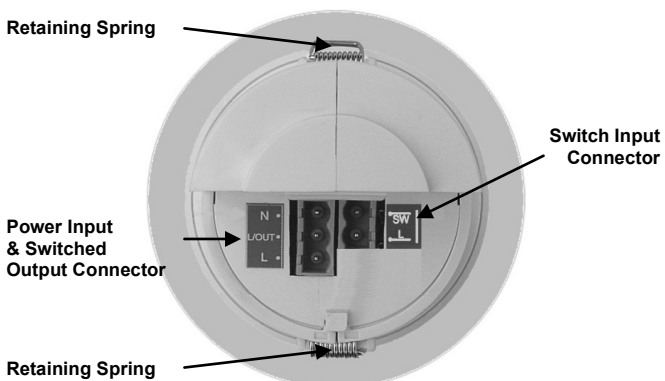
Measures the overall light level in the detection area

#### Status LEDs

The LED flashes Red to indicate the following:

|                               |                           |
|-------------------------------|---------------------------|
| <b>Walk Test LED active</b>   | when movement is detected |
| <b>Valid setting received</b> |                           |

#### Back features



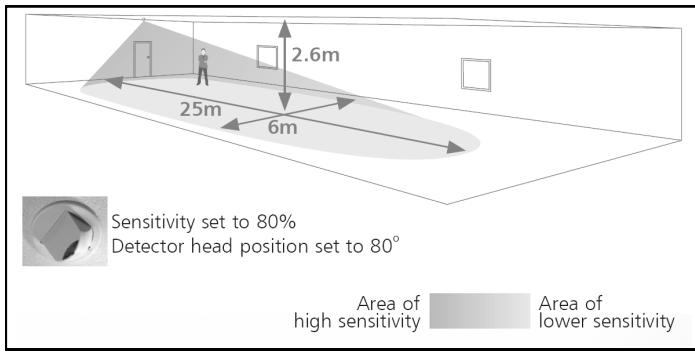
#### Power Input & Switched Output Connector

Used to connect mains power to the unit and to connect a switched load.

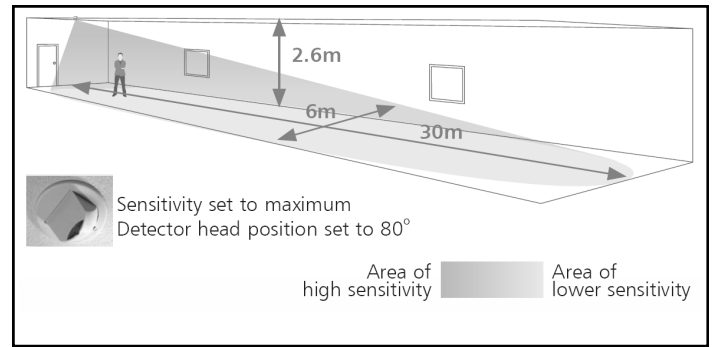
#### Switch Input Connector

Two input terminals can be used to manually override the lights on or off.

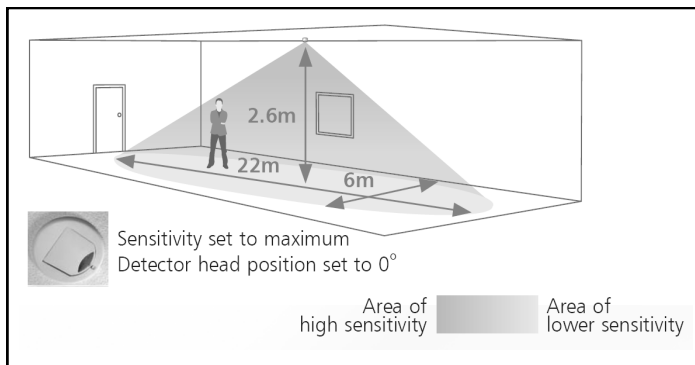
## Detection diagrams



Ideal for large office or classroom



Ideal for corridor or aisle applications



Ideal for open plan areas and offices

*Note. If the range is compromised by the ceiling construction / material. Add the supplied 20mm spacer ring. See page 4 for fitting details.*

## Sensor functionality

### Detection Mode

The Detection Mode can be set to behave in Presence or Absence mode:

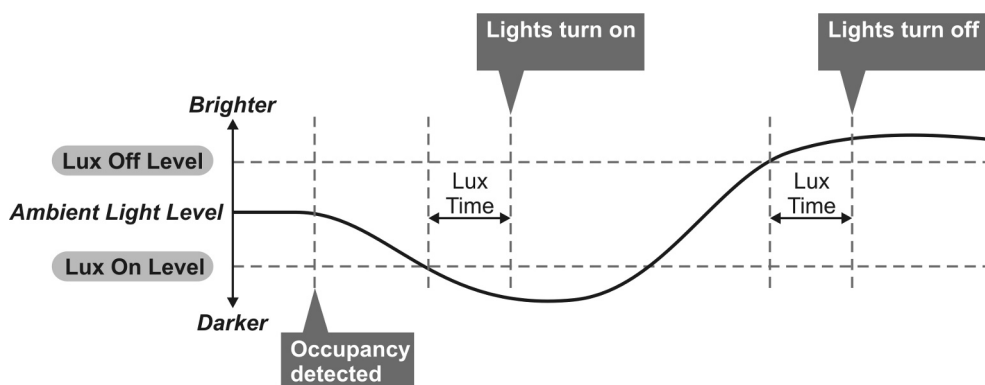
- **Presence** When movement is detected the load will automatically turn on. When the area is no longer occupied the load will automatically switch off after an adjustable time period.
- **Absence** The load is manually switched on. When the area is no longer occupied the load will automatically switch off after the adjustable time period has elapsed.

In either case, sensitivity to movement of the microwave sensor can be adjusted using the Sensitivity parameter.

*HINT: To assist in setting the Sensitivity, turn on the Walk Test LED which will flash red when movement is detected.*

### Switch Level On/Off

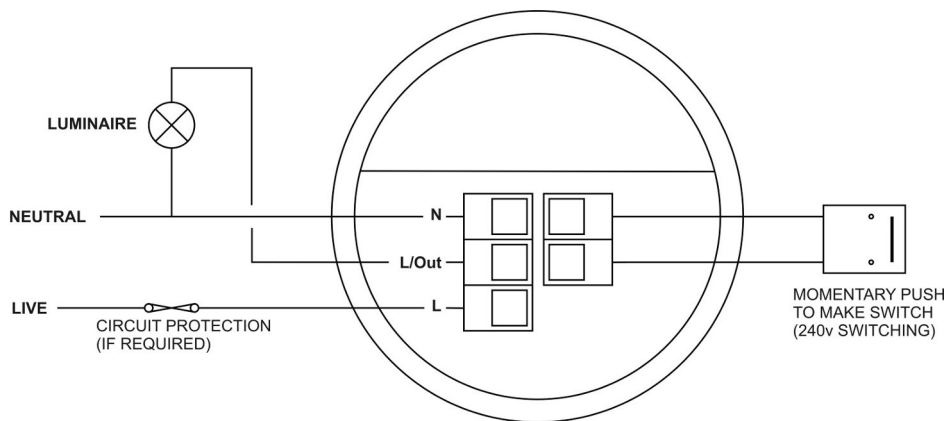
Occupancy detection can be made dependant on the ambient light level using the Lux On Level and Lux Off Level parameters.



## Choosing a Suitable Location

The detector should be sited so that the occupants of the room fall inside the detection pattern shown opposite).

- Avoid positioning the unit where direct sunlight may enter the sensor element.
- Do not site the sensor within 1m of any lighting, forced air heating or ventilation.
- Do not fix the sensor to an unstable or vibrating surface.
- Avoid metallic objects directly in front of the sensor head.



## Absence detection

- To use absence detection a retractive (momentary) switch must be connected between the 2 terminals on the diagram. Note that this will be switching mains voltage.
- The unit ships with presence detection as default. To change to absence detection, press and release the external switch 5 times within the first minute of power up. The LED will turn on solid for 30 seconds to indicate absence mode has been selected.
- To change back to presence detection, repeat the above procedure—the LED will flash for 30 seconds to indicate presence mode has been selected.

**Note:** the above adjustments can also be made using the LPCUHC handset. See Programming section.

## Power-up test procedure

When power is applied to the unit, the load will turn on immediately.

Set the timeout to 10 seconds, vacate the room or remain very still and wait for the load to switch off .

Check that the load switches on when movement is detected.

The unit is now ready for programming.

# Installation

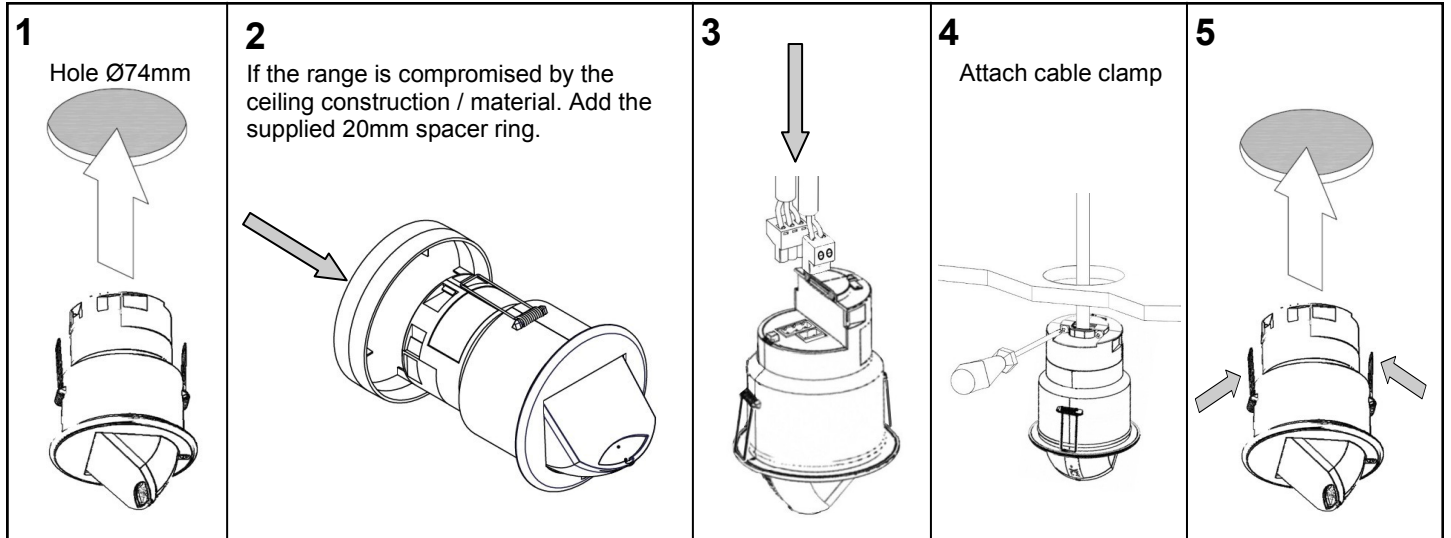
The LPCLRPIRM is designed to be mounted using either:

- Flush fixing, or
- Surface fixing, using the optional Surface Mounting Box (part no. LPCLRBOX).

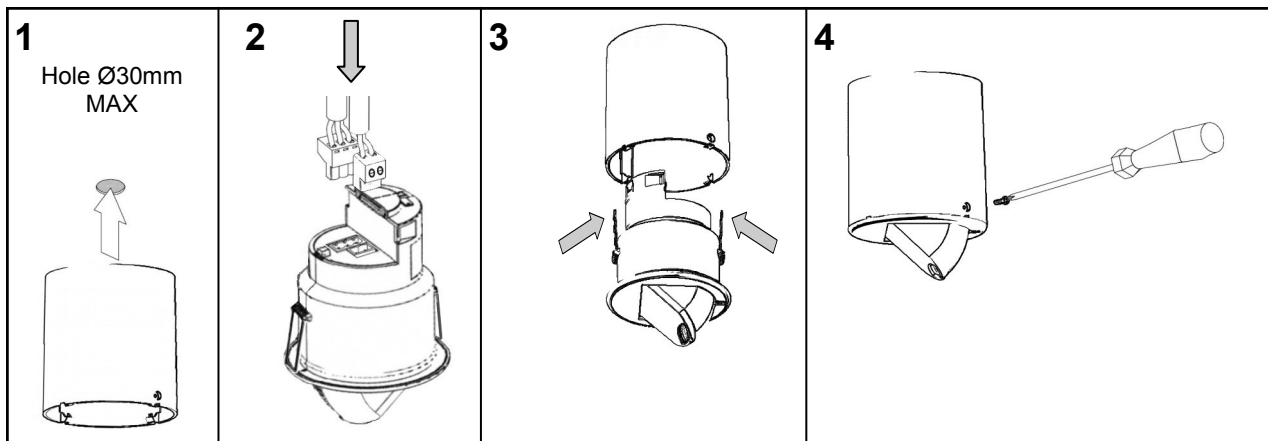
Both methods are illustrated below.

**Warning - be careful bending springs when mounting unit.**

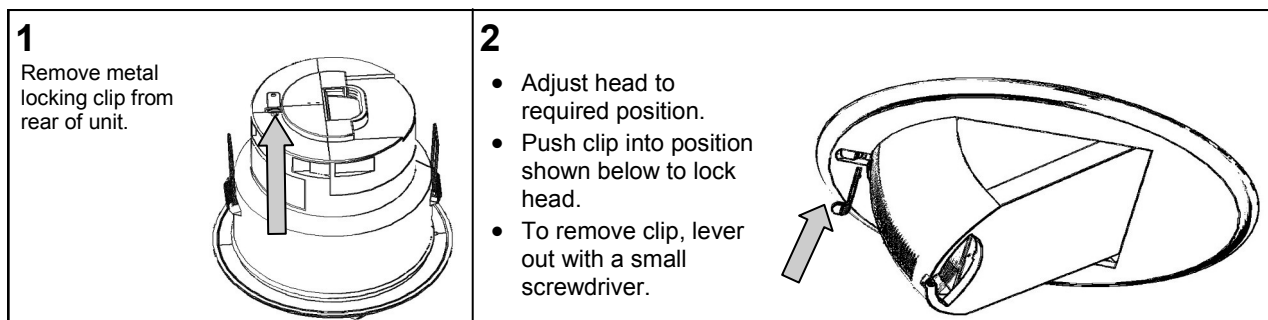
## Flush fixing



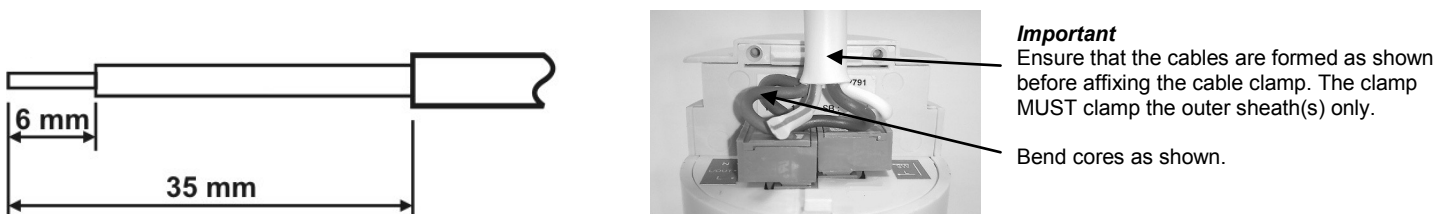
## Surface fixing

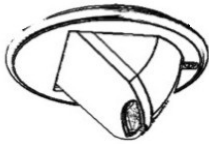


## Head locking



## Wire stripping details





The functionality of the LPCLRPIRM is controlled by a number of parameters which can be changed or programmed. For most basic programming operations the LPCUHC handset can be used and the following procedures are based on using this device.

Point the handset at the Sensor and send the required programming commands to the unit as shown below.

Valid commands will be indicated by a red LED flash. See page 1 for details of other LED responses.  
*Note: other functions on the LPCUHC which are not shown below are not applicable to this product.*



| Parameter Name                      | Default Value | Number of Shift key presses |                      |                      |                      | LPCUHC Handset Graphics | Description  |
|-------------------------------------|---------------|-----------------------------|----------------------|----------------------|----------------------|-------------------------|--|
|                                     |               | 0<br>SHIFT 1 SHIFT 2        | 1<br>SHIFT 1 SHIFT 2 | 2<br>SHIFT 1 SHIFT 2 | 3<br>SHIFT 1 SHIFT 2 |                         |  |
| <b>Button Activation</b>            |               |                             |                      |                      |                      |                         |  |
| On                                  |               | On                          |                      |                      |                      |                         | Turn lights on.  |
| Off                                 |               | Off                         |                      |                      |                      |                         | Turn lights off.   |
| Walk test                           | Off           | On                          | Off                  |                      |                      |                         | When set to On this causes a red LED to flash on the sensor when it detects movement. Use this feature to check for adequate sensitivity levels.   |
| Time Out<br>(Time adjustment)       | 20 mins       | 1, 10 & 20 minutes          | 5, 15 & 30 minutes   | 10 seconds           |                      |                         | Once the detector is turned on, this value sets how long the lights will stay on once movement has ceased.   |
| Lux on level<br>(Switch level on)   | 9             | 2, 5 & 7                    | 4, 6 & 9             |                      |                      |                         | Lux level setting to prevent the luminaires being switched on if the ambient light level is sufficient (adjustable between 1 and 9). The luminaires will always be switched on at level 9.   |
| Lux off level<br>(Switch level off) | 9             | 2, 5 & 7                    | 4, 6 & 9             |                      |                      |                         | Lux level setting to switch the luminaires off during occupancy if the ambient light level goes above the setting (adjustable between 1 and 9). Level 9 will always keep the lights on. This setting can be used for "window row switching".<br><i>Note: the Lux Off Level value must always be greater than the Lux On Level value.</i> |
| Sensitivity                         | 9             | 1, 5 & 9                    | 3, 6 & 8             |                      |                      |                         | Sensitivity level for detecting movement.<br>1 = low sensitivity<br>9 = high sensitivity   |
| Defaults                            |               |                             |                      | D                    |                      |                         | Returns the unit to the default settings.  |
| Presence / Absence                  | Presence      | Presence                    | Absence              |                      |                      |                         | Presence mode allows the output to turn on when movement is detected and off when movement ceases. Absence mode allows the output to turn off when movement ceases, but must be manually turned on first.  |
| Shift                               |               |                             |                      |                      |                      |                         | Use this button to select the settings in red and blue signified by the 'Shift 1' and 'Shift 2' LEDs   |

## Fault finding

### What if the load does not turn ON?

- Check that the live supply to the circuit is good.
- Check that the load is functioning by bypassing the sensor (e.g. link terminals **L** and **L/ Out** on Channel1).
- If the detection range is smaller than expected, check the diagram on page 2. Adjusting the angle of the sensor head slightly may improve the detection range. If still reduced it may be compromised by the ceiling construction / material. Add the supplied 20mm spacer ring. See page 4 for fitting details.

HINT: *The Walk Test LED function can be used to check that the unit is detecting movement in the required area.*

### What if the load does not turn OFF?

- Ensure that the area is left unoccupied for longer than the Time Out Period.
- Make sure that the sensor is not adjacent to vibrating surfaces or objects (e.g. ventilation equipment).
- The unit may pick up movement through glass, thin partitions or walls. Reduce the sensitivity.

This page intentionally left blank

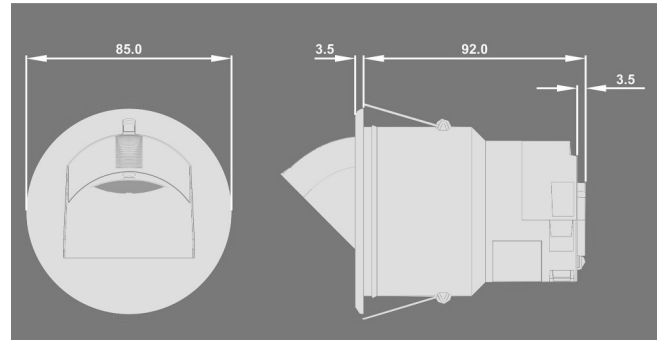
This page intentionally left blank

## Technical data

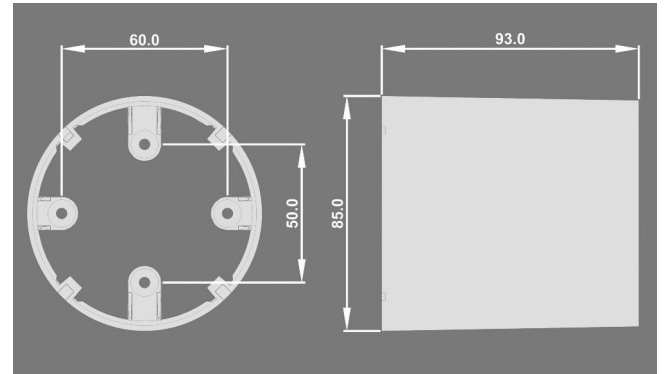
|                   |   |
|-------------------|---|
| Dimensions        | See diagrams opposite   |
| Weight            | 0.15kg  |
| Supply Voltage    | 230VAC +/- 10%  |
| Frequency         | 50Hz  |
| Maximum Load      | 10A of lighting and/or ventilation including incandescent, fluorescent, compact fluorescent, low voltage (by switching the primary of transformer).   |
| Power consumption | On 1500mW, Off 910mW  |
| Terminal Capacity | 2.5mm <sup>2</sup>  |
| Temperature       | -10°C to 50°C   |
| Humidity          | 5 to 95% non-condensing   |
| Material (casing) | Flame retardant ABS and PC/ABS  |
| Classifications   | Insulation Class II   |
|                   | Purpose Sensing control   |
|                   | Construction Independently mounted control for flush mounting.  |
|                   | Type of action Type 1.B action (micro disconnection).   |
|                   | Pollution Degree 2  |
|                   | Software Class A  |
|                   | Rated impulse voltage, 4000V  |
| Safety            | The microwave radiation emitted by these units is extremely low power and complies with ANSI standard "IEEEC95.1-1999 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields 3kHz 300GHz." |
| IP rating         | IP40  |
| Compliance        | EMC-2004/108/EC<br>LVD-2006/95/EC   |



### LPCLRPIRM



### LPCLRBOX



## Part numbers

|                    | Part number | Description                         |
|--------------------|-------------|-------------------------------------|
| <b>Detector</b>    | LPCLRPIRM   | Ceiling microwave presence detector |
| <b>Accessories</b> | LPCLRBOX    | Surface mounting box                |
|                    | LPCUHC      | Programming IR handset              |

### **IMPORTANT NOTICE!**

This device should be installed by a qualified electrician in accordance with the latest edition of the IEE Wiring Regulations and any applicable Building Regulations.

# LUCECO

Stafford Park 1  
Telford  
Shropshire  
TF3 3BD  
United Kingdom  
Tel: +44 (0)1952 238 100  
Fax: +44 (0)1952 238 180  
www.luceco.co.uk  
sales@luceco.co