

LPCMPIRM65 & LPCMPIRDSI65

Luminaire high mount PIR detectors

Overview



The LPCMPIR PIR (passive infrared) presence detector provides automatic control of lighting loads with optional manual control. The LPCMPIR is a high sensitivity PIR detector suitable for high mount applications, such as warehouses and factories, and where high detection sensitivity is needed. It is specifically designed for mounting onto a batten style luminaire.

Two models are available: LPCMPIRM65 and LPCMPIRDSI65 both of which will switch incandescent, fluorescent, compact fluorescent and LED lighting. The LPCMPIRDSI65 variant controls DALI or DSI digital dimming ballasts.

The unit detects movement using a PIR sensor and turns the load on. When an area is no longer occupied the load will switch off after an adjustable time out period.

The units are IP65 rated as standard and are therefore suitable for outdoor use as well as wet and wash-down areas.

A selection of fixing washers are supplied to aid fixing to a variety of luminaires.

All functionality is fully programmable using the IR handset.

Features

Front view



PIR 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

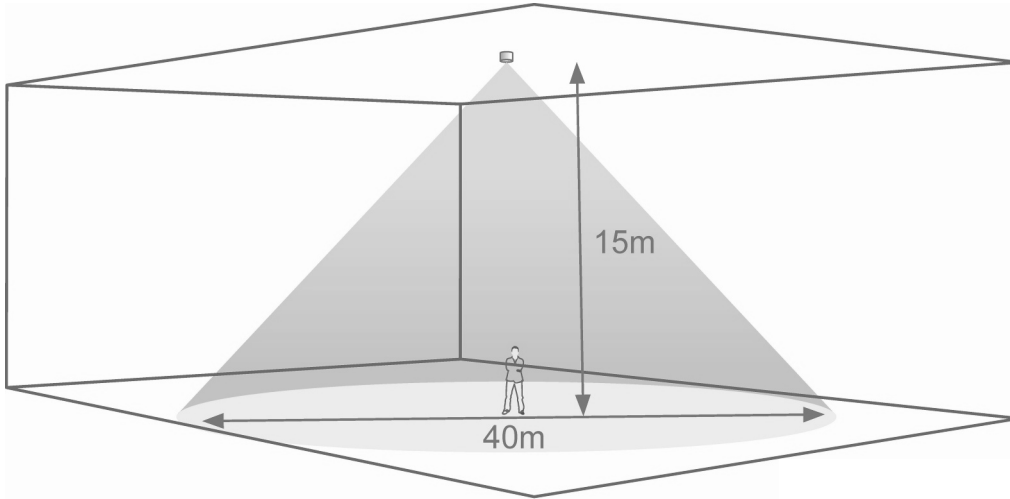
Status LED

The LED flashes **Red** to indicate the following:

Walk Test LED active	 when movement is detected
Valid setting received	

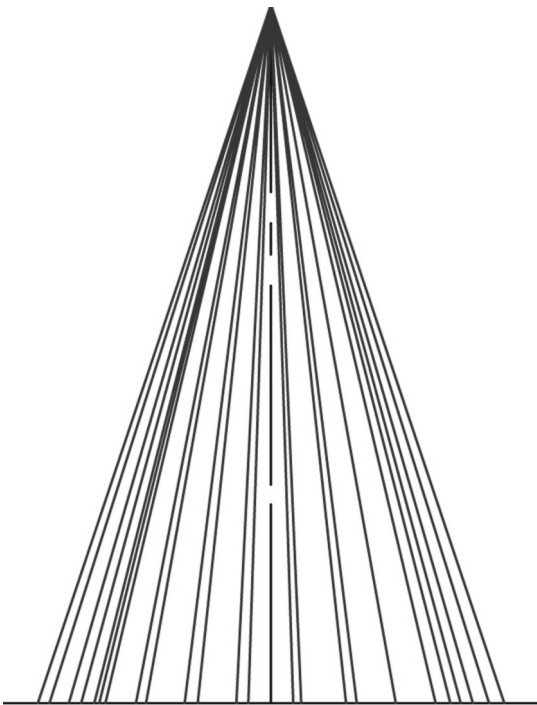
Detection diagrams

Range

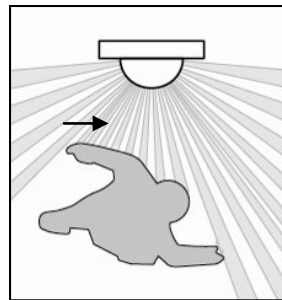


Maximum mounting height 20m

Detection pattern

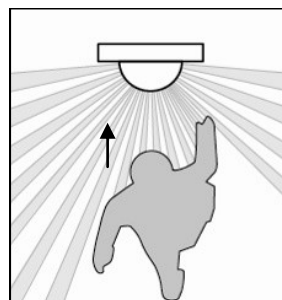


Walk across



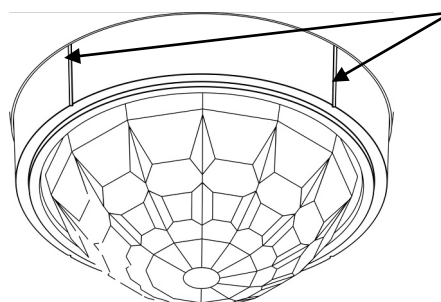
Height	Range Diameter
15m	40m
10m	26m
6m	16m
3m	9m

Walk towards



Height	Range Diameter
15m	30m
10m	20m
6m	12m
3m	8m

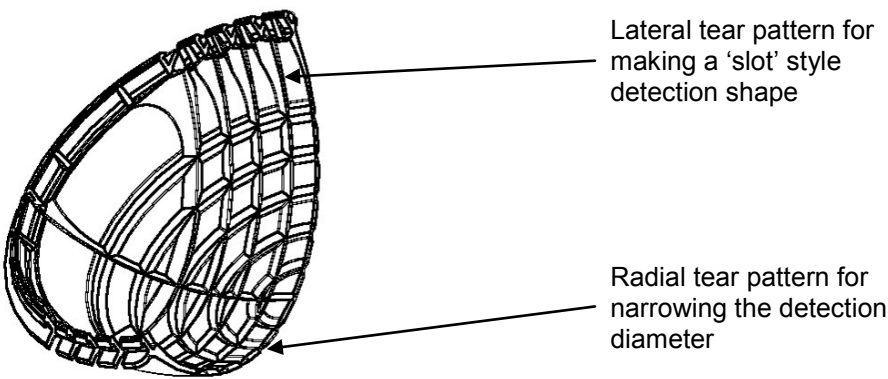
Alignment marks



The sensor head has 4 alignment marks. These correspond to the 4 outer passive infrared sensors under the lens. Use these marks to align with aisles and corridors to ensure the best detection characteristics. See example overleaf.

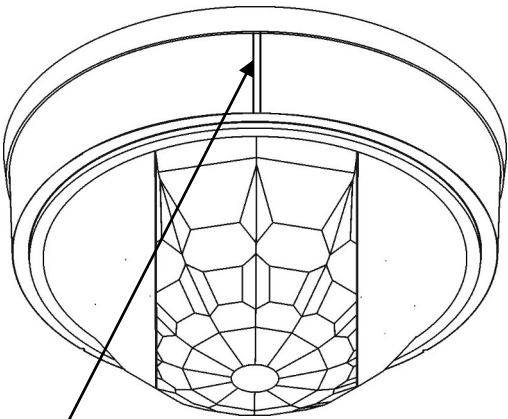
Masking

The LPCMPIR includes two clip-on masking shields to allow for precise masking of the detection shape. The masks can be easily shaped to produce detection patterns suitable for applications such as aisles and corners and for narrowing the detection diameter.

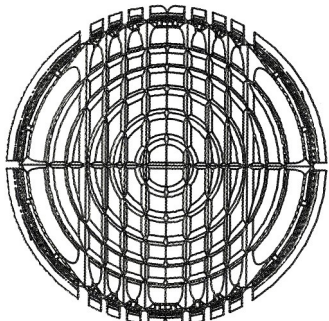


Aisles

Masking shields trimmed for aisle shaped detection



Align trimmed shields with sensor head alignment marks and aisle.



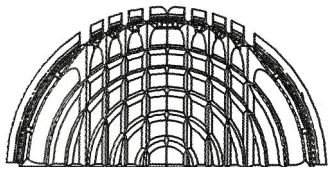
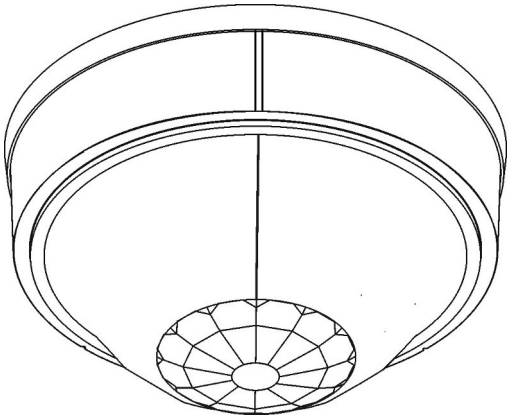
Slot number	Masking shield % coverage
1	45%
2	32%
3	22%
4	11%

Slot number 1 2 3 4 4 3 2 1

Example
 Mounting height 6m
 Trimmed to slots 2
 Aisle detection width 16m x 32% = 5.1m walk across
 12m x 32% = 3.8m walk towards

Narrow detection

Masking shields trimmed for a narrow beam of detection



Diameter number 1 2 3 4 5 5 4 3 2 1

Diameter number	Masking shield % coverage
1	89%
2	63%
3	45%
4	32%
5	22%

Example
 Mounting height 15m
 Trimmed to diameter 3
 Detection diameter 40m x 45% = 18m walk across
 30m x 45% = 13.5m walk towards

Installation

The product is designed to be mounted directly to the outside of a luminaire. The detector should be sited so that the occupants of the room fall inside the detection pattern (shown opposite), at a recommended ceiling height of 2.8m. Note that the lower the sensor is installed the smaller the detection range will be, subject to the parameters shown on the detection diagram.

- For optimum operation of the lux sensor, the lens must be shielded as much as possible from the light source.
- Avoid direct sunlight entering the sensor.
- Do not site within 1m of forced air heating or ventilation.
- Do not fix to a vibrating surface.

Sensor functionality

Detection mode

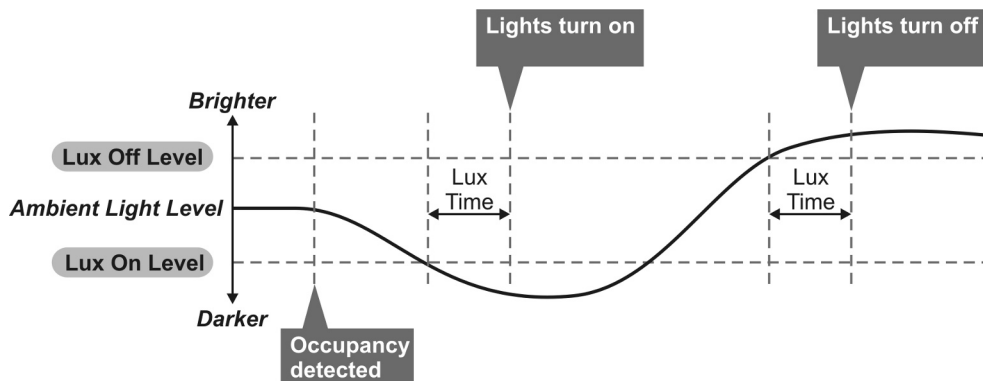
- **Presence** When movement is detected the load will automatically turn on. When the area is no longer occupied the load will automatically switch off after an adjustable time period.

Sensitivity to movement of the PIR 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.



Maintained Illuminance (daylight harvesting) - LPCMPIRDSI65 variant only

The detector measures the overall light level in the detection area and calculates the correct output for the luminaires, to achieve a preset lux level (maintained illuminance or daylight harvesting).

Burn-in - LPCMPIRDSI65 variant only

Overview


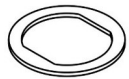



It is a requirement of many fluorescent lamp manufacturers to have the lamps on at maximum output for a period of time to guarantee lamp life (refer to the manufacturer's datasheet for details). As the LPCMPIRDSI65 is able to dim the lamps using DALI/DSI, the product provides a facility to disable this for a given period of time.

Operation

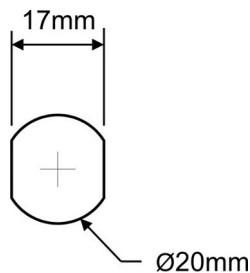
By setting the "Burn in" parameter, you can select a time during which the lamps are not allowed to deviate from maximum output. The unit counts the time, and even remembers how long has elapsed in the event of a power failure. To cancel the burn in function, simply select a time of 0. Note that when the lamps are changed, the burn in time should be set again.

Do not grip unit at the lens end. Hold the square body near the threaded end when installing and tightening the nut. Care must be taken to prevent damage to the lens and surrounding IP seal.

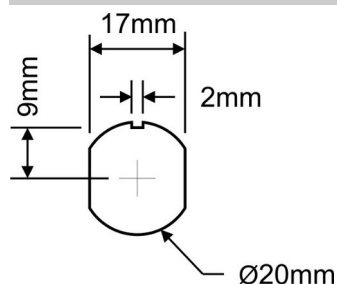
Components

Part	Quantity Supplied
 IP Spacer with silicone coating	1
 Silicone washer	1
 5° washer	1
 5° spacer	1
 M20 nut	1

Mounting hole without key

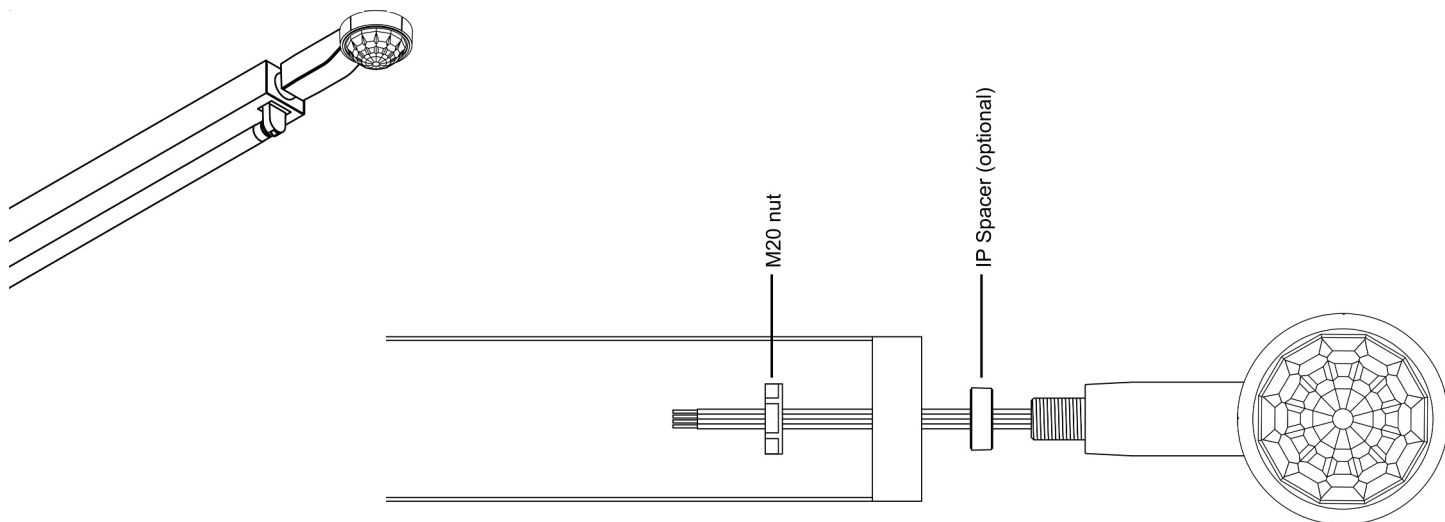


Mounting hole with key

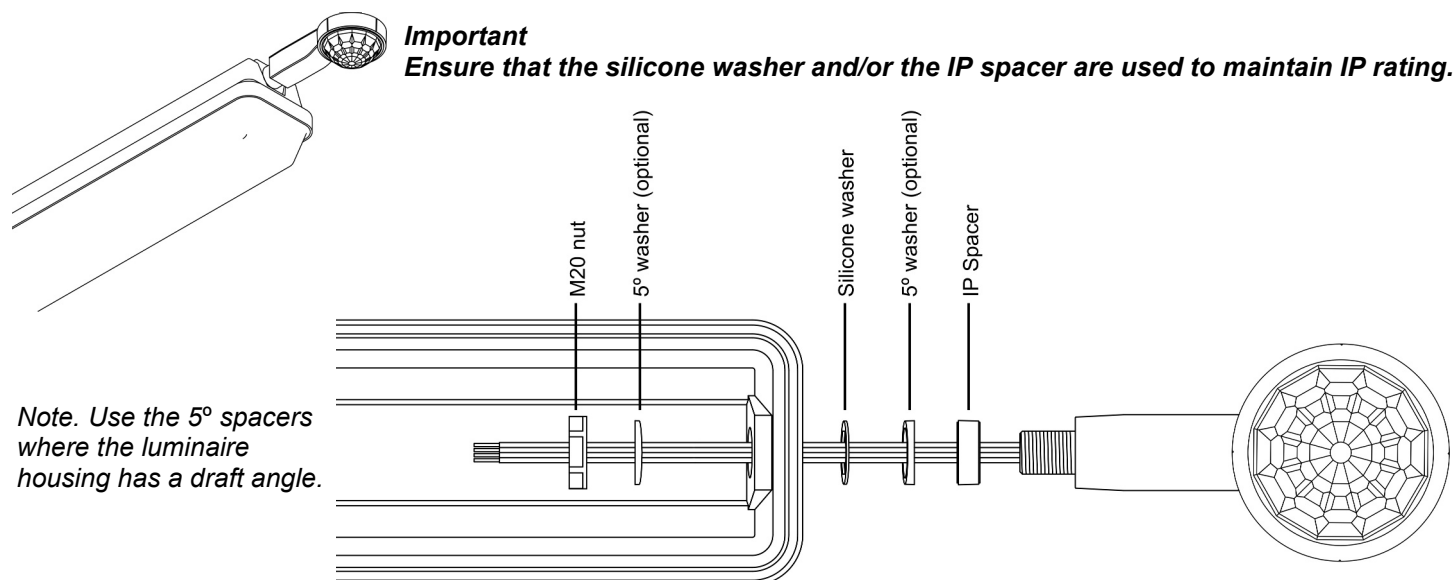


Note. Key to be at top of sensor.

Standard luminaire fitting



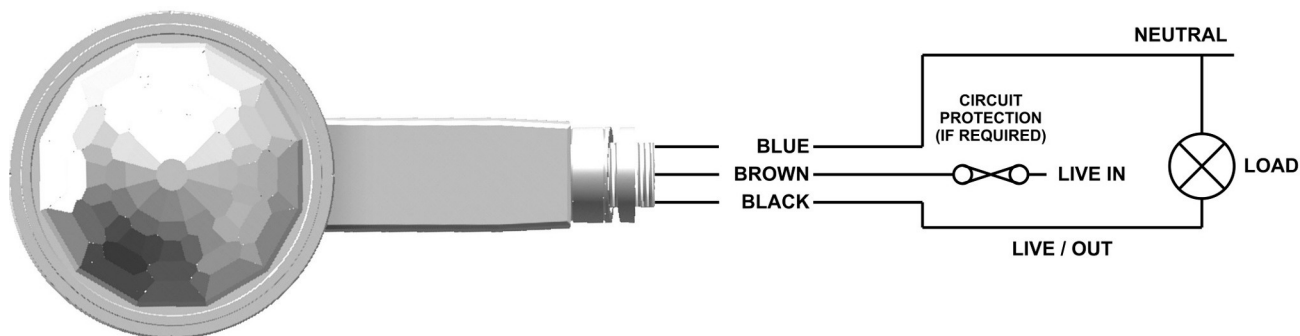
IP luminaire fitting



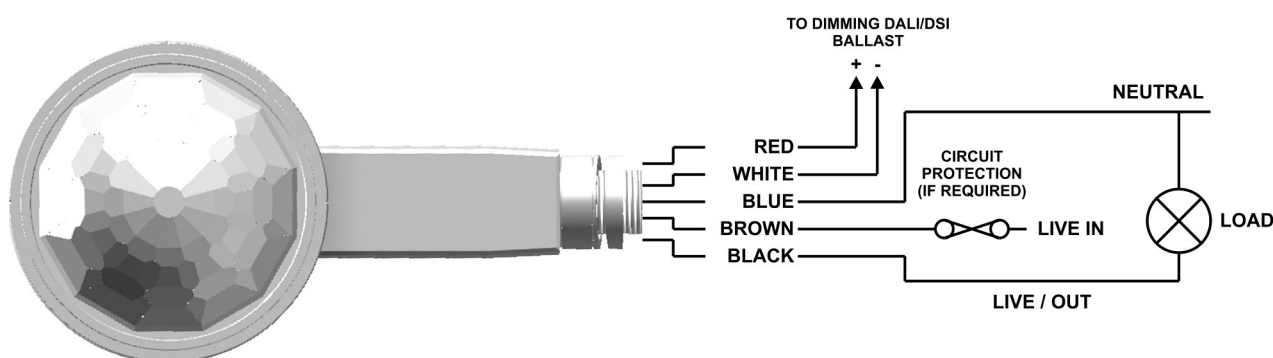
Wiring diagrams

Wire the products as shown in the diagrams.

LPCMPIRM65



LPCMPIRDSI65



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.

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 **L** and **L/ Out**).

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.
- Ensure that the sensor is not adjacent to circulating air, heaters or lamps.
- If the unit “false triggers” reduce the sensitivity using the sensitivity settings




























The functionality of the LPCMPIR range 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.

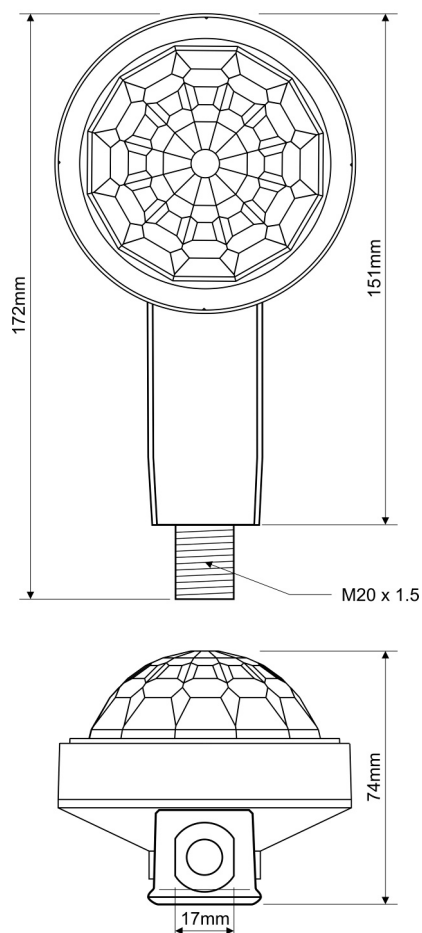
Valid commands will be indicated by a red LED flash. See page 1 for details of other LED responses.

Note: other functions on the LPCUHC which are not shown below are not applicable to this product.

		<div><div></div><div>SHIFT</div><div>Number of Shift key presses</div></div>					
Parameter Name	Default Value	0 <div><div>○</div><div>○</div><div>SHIFT 1 SHIFT 2</div></div>	1 <div><div>☀</div><div>○</div><div>SHIFT 1 SHIFT 2</div></div>	2 <div><div>○</div><div>☀</div><div>SHIFT 1 SHIFT 2</div></div>	3 <div><div>☀</div><div>☀</div><div>SHIFT 1 SHIFT 2</div></div>	UHS5 Handset Graphics	Description
		Button Activation					
On / Raise		On	Raise			<div><div></div><div>ON/RAISE</div></div>	Turn lights on or to raise lights.
Off / Lower		Off	Lower			<div><div></div><div>OFF/LOWER</div></div>	Turn lights off or to lower lights.
Walk test	Off	On	Off			<div><div></div><div>WALKTEST</div></div>	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 (Time adjustment)	20 mins	1, 10 & 20 minutes	5, 15 & 30 minutes	10 seconds		<div><div></div><div></div><div></div><div>TIMEOUT MINUTES</div></div>	Once the detector is turned on, this value sets how long the lights will stay on once movement has ceased.
Lux on level (Switch level on)	9	2, 5 & 7	4, 6 & 9			<div><div></div><div></div><div></div><div>LUX ON LEVEL / LIGHT LEVEL</div></div>	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.
Light Level (LPCMPIRDSI65 only)	6 (600)			2 (200) 5 (500) 7 (700)	4 (400) 6 (600) 9 (999)	<div><div></div><div></div><div></div><div>LUX ON LEVEL / LIGHT LEVEL</div></div>	Sets a target light level to be maintained by the lighting system. 9 (999) = disabled.
Lux off level (Switch level off)	9	2, 5 & 7	4, 6 & 9			<div><div></div><div></div><div></div><div>DALI LUX OFF LEVEL DSI</div></div>	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". <i>Note: the Lux Off Level value must always be greater than the Lux On Level value.</i>
Load Type (LPCMPIRDSI65 only)	DALI			2-DALI 7-DSI	2-DALI on	<div><div></div><div></div><div></div><div>DALI LUX OFF LEVEL DSI</div></div>	Sets the ballast control protocol to be used by the output channel.
Sensitivity	9	1, 5 & 9	3, 6 & 8			<div><div></div><div></div><div></div><div>SENSITIVITY</div></div>	Sensitivity level for detecting movement. 1 = low sensitivity 9 = high sensitivity
Defaults				D		<div><div></div><div>DEFAULTS</div></div>	Returns the unit to the default settings.
Burn-in (LPCMPIRDSI65 only)	0	0	50	100		<div><div></div><div>BURN-IN</div></div>	Determines how long the output will be at 100% so that lamps 'burn-in'. The 'burn-in' time is not affected by power supply interruptions.
Shift						<div><div></div><div>SHIFT</div></div>	Use this button to select the settings in red and blue signified by the 'Shift 1' and 'Shift 2' LEDs

Technical data

Dimensions	See diagrams opposite.
Weight	0.15kg
Supply Voltage	230VAC +/- 10%
Frequency	50Hz
Dimming output	Basic insulation only. Although low voltage, this is not an SELV output and should be treated as if mains potential. Use mains rated wiring.
Maximum Switching Load	2 Amps fluorescent and incandescent lighting. 2 Amps compact fluorescent lighting. 2 Amps low energy lighting. 2 Amps low voltage lighting (switch primary of transformer). Switch SON lighting loads via a contactor.
Number of ballasts	LPCMPIRDSI65 - up to 10 dimming ballasts.
Power consumption	LPCMPIRM65 On 565mW, Off 249mW LPCMPIRDSI65 On 577mW, Off 253mW
Cable specification	1m 1/1.13 solid core cable 105°C
Temperature	-10°C to 35°C LT30 versions -30°C to 35°C
Humidity	5 to 95% non-condensing
Material	Flame retardant ABS/PC
IP rating	Type Class 2 IP65
Compliance	EMC-2004/108/EC LVD-2006/95/EC



Part numbers

	Part number	Description
Detectors	LPCMPIRM65	Luminaire high mount PIR detector PRM
	LPCMPIRDSI65	Luminaire high mount PIR detector DALI/DSI
Accessories	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