

LRMI070/00,LRMI080/00 Occuswitch movement detector

1/7



General description

The Occuswitch is a movement detector with a built-in switch. It will switch the lights off in a room or area when it is vacated and thus save up to 30% of electrical energy. The Occuswitch can switch any load up to 6 A. and control an office area of around 20m². A detachable mains connector enables easy installation and mounting of the Occuswitch in the ceiling. A separate Wieland cable is available for easy, fast and trouble-free installation.

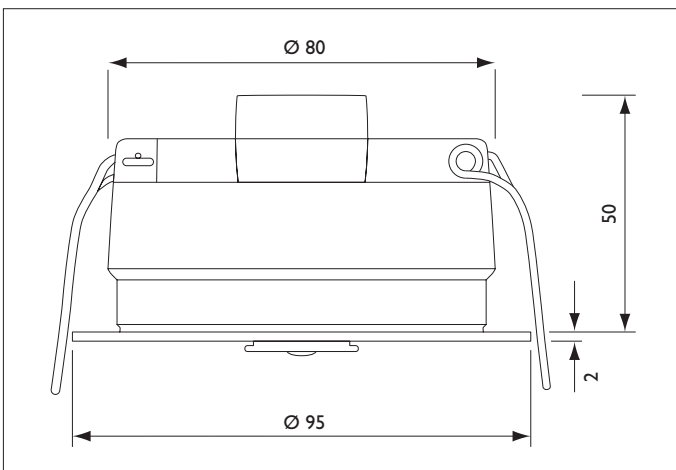
The Occuswitch family exists of:

- LRMI070 Basic Occuswitch
- LRMI080 Advanced Occuswitch
- LCC1070 Wieland cable
- LRH1070 Ceiling mounting box

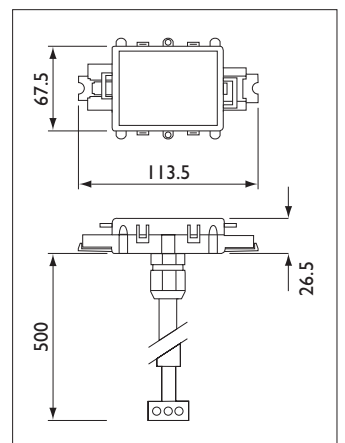
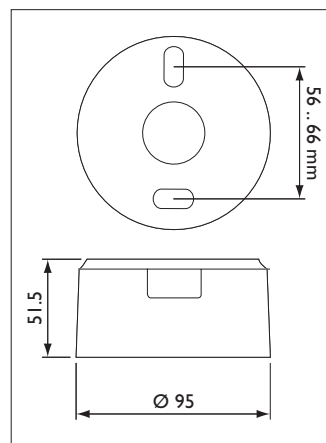
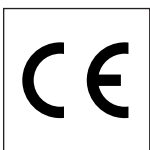
Applications

The Occuswitch is designed for use in offices and similar applications, including toilets, storage rooms, etc. It is optimized for recessed ceiling mounting and for mounting heights between 2.5 and 3.5 meter. The surface box allows surface mounting as well, with either recessed wiring or surface mounted ducts.

The advanced Occuswitch can be connected in parallel (max 10) to cover larger areas like open plan offices. The use of different mains groups or even phases is no problem.



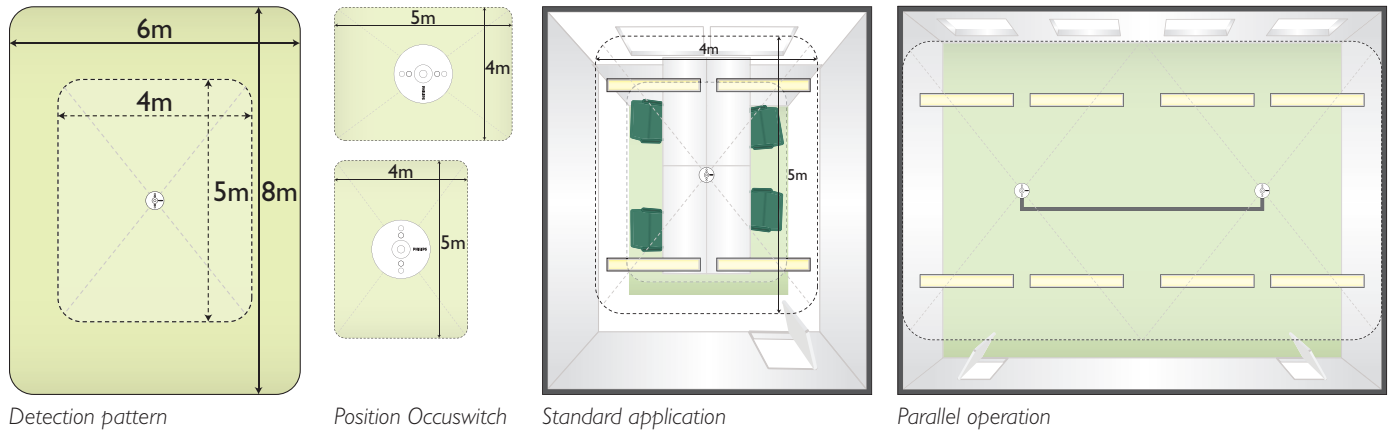
Dimensions in mm



PHILIPS

Applications (continued)

The Occuswitches detection pattern (see drawing) is 4 by 5 meters for small movements (desk work) and 6 by 8 meters for larger movements like walking.



Functions (both versions)

Automatic control

The Occuswitch switches the lights on automatically when presence is detected and switches the lights off 1..30 minutes after the area is vacated.

Daylight override

It is possible to prevent the automatic switch on when sufficient daylight is available in order to create additional savings.

Daylight switching

When daylight switching is active, the lights will automatically be switched off when sufficient daylight becomes available. And turned back on when the light level drops below the required level.

Features (both versions)

Smart timer

The smart timer will extend the delay time by 10 minutes if movement is detected shortly after switch off, assuming that the area is still in use, but very little movement is made.

Shield

The Occuswitch has a retractable shield that can be used to shield off areas like corridors, adjacent to the area the Occuswitch is controlling.

Functions advanced version

Parallel operation

It is possible to connect up to 10 Occuswitches in parallel via a separate bus signal. When one of the Occuswitches detects movement all units will switch the lights on. The bus signal is fully isolated, so each Occuswitch can be used on any mains group or phase, allowing the use of several mains groups in an area and easy wiring.

Local override

With a remote control it is possible to override the automatic operation of the Occuswitch, for instance to switch off the lights during occupancy.

Absence mode

When a remote control is used it is also possible to disable the automatic switch on when people enter the area the Occuswitch is controlling.

Features advanced version

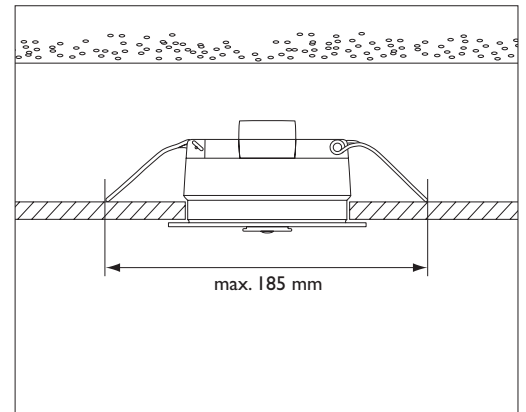
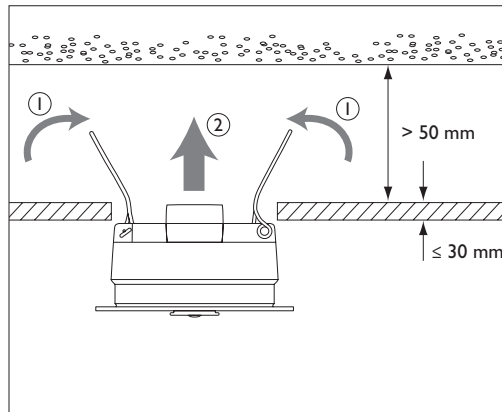
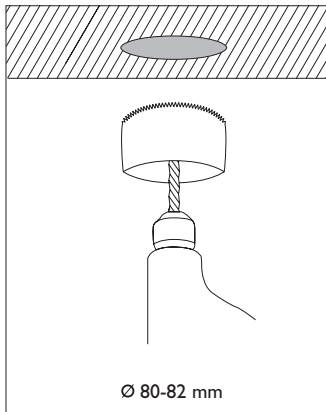
Remote tool

With a remote control tool (IRT8099) it is possible to change the light level settings without the need to reach for the Occuswitch itself. Using the tool it is possible to change the power-up setting from it's default (switch on). The Occuswitch will not switch on at power-up and start detection 30 seconds later.

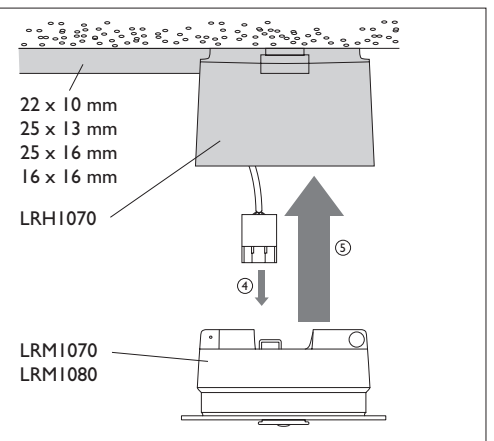
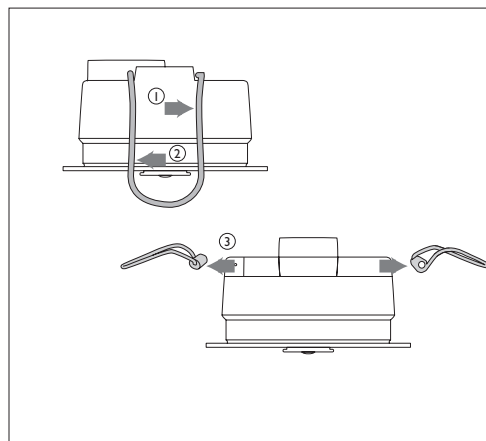
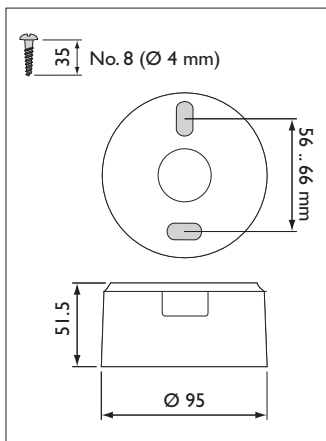
Fixing

The Occuswitch can be mounted in two ways; recessed in the ceiling or surface mounted using the ceiling box.
 The ceiling box (LRH1070) has breakout ports for cable ducts and a breakout centrepiece.

When selecting a location for the Occuswitch avoid obvious cold spots so that condensation does not occur.



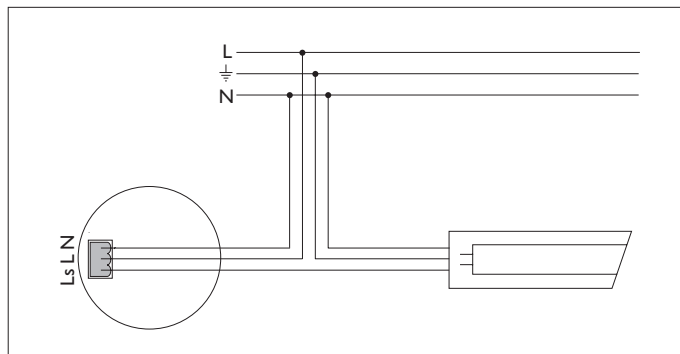
Fixing the Occuswitch in a ceiling (recessed)



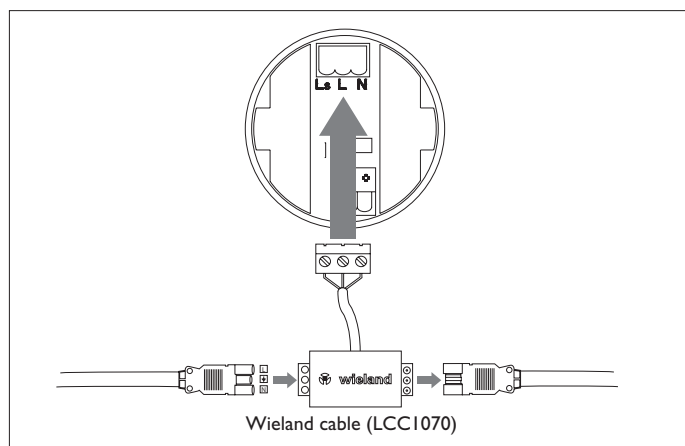
Fixing the Occuswitch on a ceiling (surface mounted)

Electrical installation

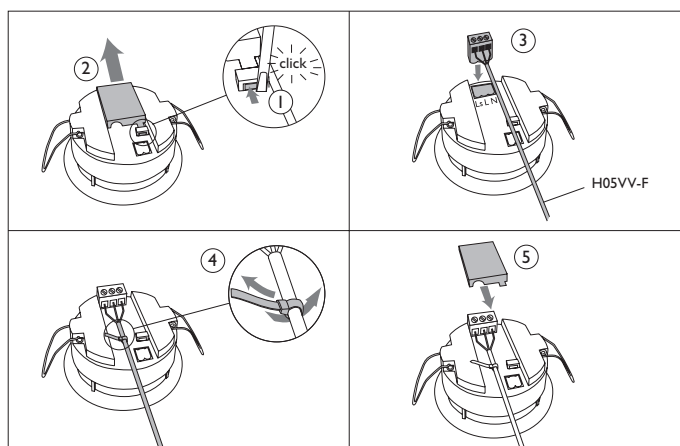
The Occuswitch can be installed with either conventional wiring or Wieland connectors. For the last option the Wieland cable (LCC1070) is required. The Occuswitch comes with a detachable mains connector for easy installation. This connector is removed if the Wieland cable is used. The mains connection is protected by a retractable cover and secured with a tie rap.



Installation (conventional wiring)

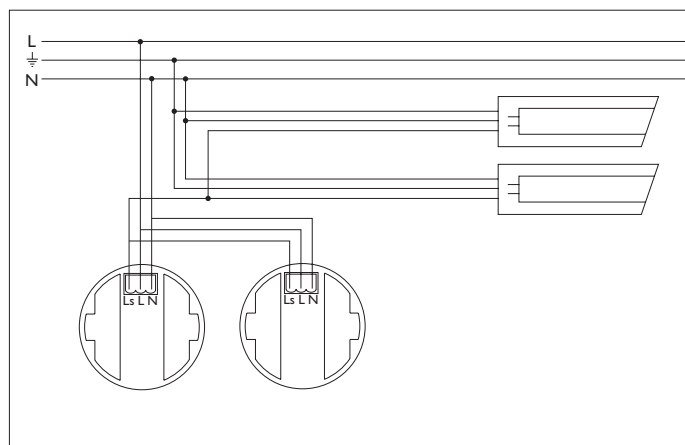


Installation (Wieland)

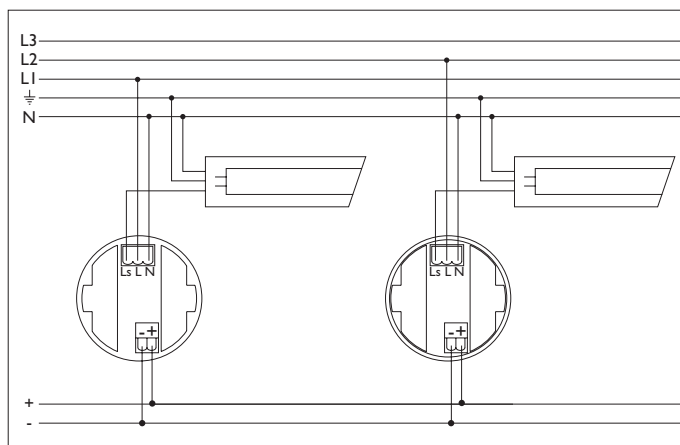


Parallel operation

Parallel operation is used to enlarge the covering area of the Occuswitch. This can be done in two ways; either by parallel installation or by using the parallel connection of the advanced Occuswitch (LRMI080). Parallel installation limits the total load to 6A and restricts the application to one mains group. The LRMI080 uses a bus signal to indicate occupancy to other units. All units can be used up to 6A each and with several mains groups (or even phases). A short delay between the different units during switch of may occur.



Parallel installation



Parallel operation (advanced only)

Daylight control

Daylight override

The daylight override function prevents the lights from switching on when sufficient daylight is available. To enable this function it is necessary to set the required light level by changing the dial from the OFF position. To disable this function turn the dial left into the OFF position.

Daylight switching

This function will actively switch the lights off if sufficient daylight is available.

To enable this function the DIP switch for this function has to be set in the ON position and the light level must be set (see daylight override). When this function is enabled, lights will switch off when the light level is above 220% for more than 15 minutes.

When switching off, the available daylight reaches at least 120% of the required light level. The lights will switch on again when the light level drops below the required level.

Note

This function can only work correctly if the required light level is the same as the installed light level. The Occuswitch will automatically raise the switch off level if the required light level is set well below the installed light level (for instance 500 Lux required with 1000 Lux installed). This will prevent the lights from switching on and off in a 15 minute cycle.

The Occuswitch can switch off once or twice (with a 15 minute delay) for reference purposes. This cycle will repeat every time the Occuswitch is reconnected to the mains power.

Calibration

Turn the dial to raise or lower the required light level.

Local control (LRMI080)

The Occuswitch (advanced version) will react to commands given by a Philips Lighting remote control. There is no special setting required. Although the Occuswitch will operate with all remotes capable of sending the right codes, the IRT8050 (wall mounted) and IRT8010 (hand held with holder) are the best suited for this application.

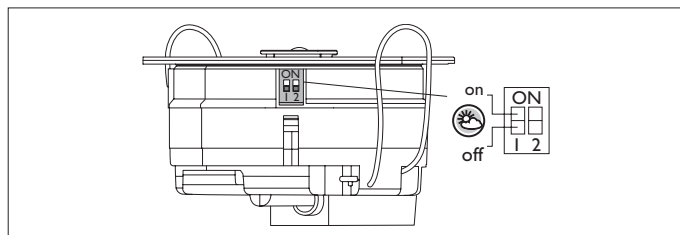
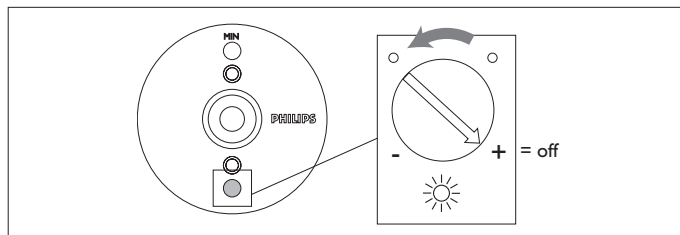
The Occuswitch will respond to channel 1 codes (on/off). By default it will respond to group A and general codes.

Only with the IRT8099 it is possible to change the group address to make a distinction between different Occuswitches and transmitters. The Occuswitch does not react to preset commands.

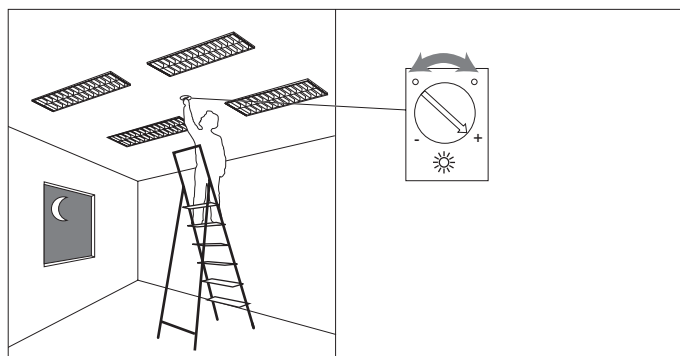
The remote control should be operated within the detection area of the Occuswitch.

Absence mode

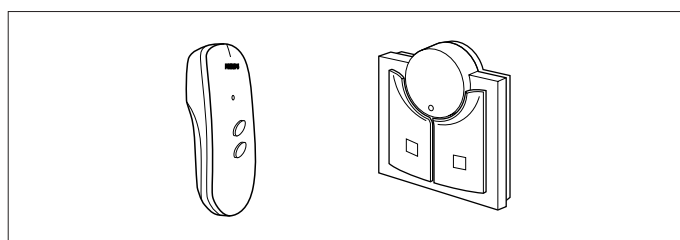
The Occuswitch will not switch on the lights automatically in absence mode. A remote control has to be used to switch on the lights. The Occuswitch will switch off 1..30 minutes after the area is vacated. Set the DIP switch in the right position to activate the absence mode.



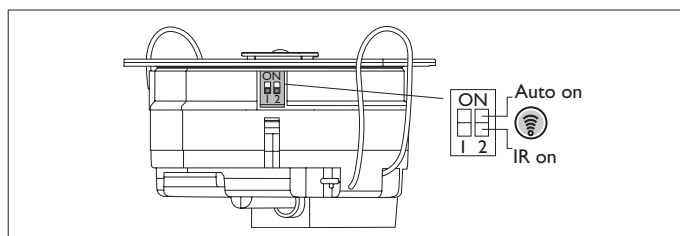
Enabling daylight override and switching



Calibration



IRT8010 and IRT8050



Enable absence mode

IRT8099 (LRM1080)

Set required light level

Make certain that the required light level is available and no daylight is entering the area.
 Calibrate by aiming the IRT8099 towards the Occuswitch and pressing the "save" button.
 The lights will flash once to indicate the new level is stored.

Change IR group

Both the Occuswitch and transmitters can operate in 7 different groups. Both the transmitter and Occuswitch must be in the same group.
 Select "group A-G" on the IRT8099, followed by the desired IR group (A-G, buttons 1..7).
 Aim the IRT8099 towards the Occuswitch and press the green transmit button. The lights will flash once to indicate the new setting is stored.

Change power-up behaviour

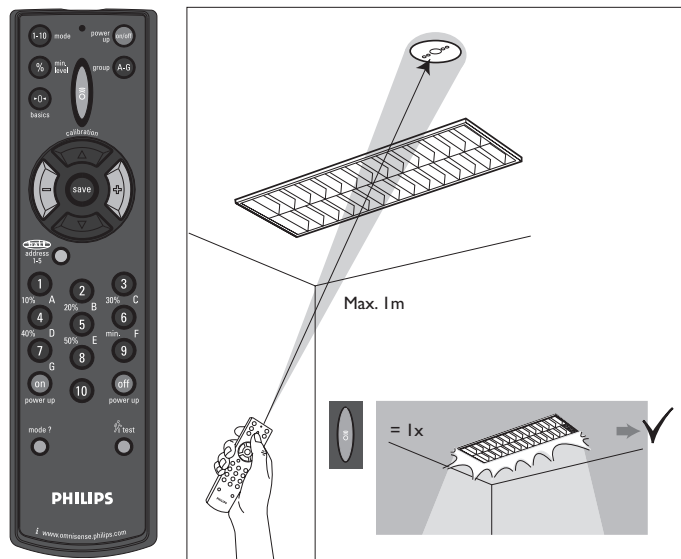
The Occuswitch switches the output on when it is connected to the mains. If the area is vacated the lights will switch off after 5 minutes. It is possible to leave the output off and start movement detection 30 seconds after the mains is connected.
 Select "power up on/off" on the IRT8099, followed by either "on" or "off". Aim the IRT8099 towards the Occuswitch and press the green transmit button. The lights will flash once to indicate the new setting is stored.

Restore defaults

To restore the default settings aim the IRT8099 towards the Occuswitch and press on "basics".

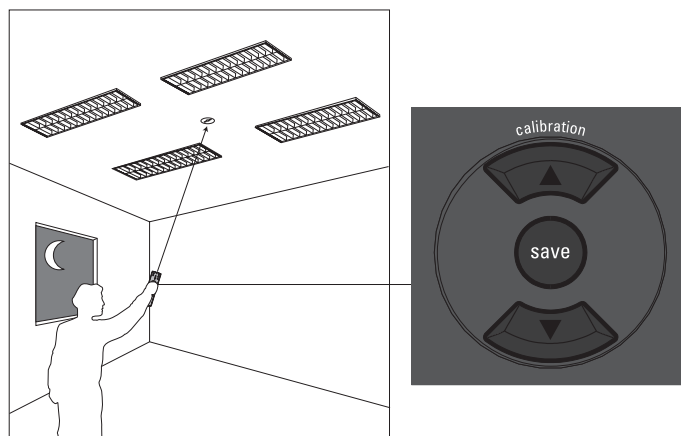
Note

The IRT8099 will send the power on and IR group settings together (if changed). To erase previous settings press first "basics" on the IRT8099.



IRT8099
 commissioning tool

Send command



Calibrate light level

Warnings



The Occuswitch should not be used in the following situations

- In applications outside the specification range, most notable heights above 3,5 meter:

- Environmental conditions other than in a normal office environment (temperature, humidity).
- In applications with heat sources like electrical heaters, within the detection range of the Occuswitch.
- In combination with lighting sources, or other devices, that can be damaged if they are switched off and on in a short period of time.

Warnings advanced version



The Occuswitch should not be used in the following situations

- In applications with (semi continuous) IR appliances like IRDA communication, IR communication between PDA and phones and other devices, Headsets operating with IR communication, etc. etc. Please note that some devices with IR communication send IR messages, even when there is no communication link. These features must be disabled.
- In applications with electronic ballasts that operate up or near the IR transmission frequency of 36Khz. Also when these ballasts are not used in combination with the Occuswitch, but the light from the lamps they operate is visible to the IR receiver.

Technical data

Environmental conditions		LED indicators	Red LED on movement
Storage conditions		Switch off delay	1 .. 30 minutes
Temperature	-20 .. +70°C	Light levels	250 .. 1000 Lux (30% reflection)
Relative humidity	20% to 90%; no condensation	Detection range	see diagram
Operating conditions		The remote control and light sensor work in a similar range.	
Temperature	+5 .. +50°C	Standards	EN/IEC 60669-2-1 Electronic switches
Relative humidity	20% to 90%; no condensation	Classification	Class I
Mains connection		Pollution	degree 2
Voltage	230VAC +/10%; 50/60Hz	Over voltage	category III
Maximum load	6 A. (1380 VA) any load.	Approbation	Product complies with the relevant European Directive (CE)
Connector screw terminal	MRT3P7.62-3VE or GMVSTBW2.5/3-ST-7.62	KEMA	
Maximum wire range	1.5 .. 2.5mm ²	Protection Class	IP20
Mains distribution system	TN-S, 16A max, with Neutral grounded	Flammability	UL94 V-0
Power consumption		Glow wire test	960°C/5s
Stand-by	1.2 W	Insulation Double insulation	(4kV) between Mains and SELV
Max.	1.2 W	EMC	
Parallel interface		Compliance	IEC (EN) 60669-2-1
Maximum	10 units in parallel SELV signal, max 5 V. Free Topology Wiring sensitive	Immunity	IEC (EN) 61547
Polarity		Emission	IEC (EN) 55015 and IEC (EN) 55022, class B
Connector type	screw terminal CPF5.08-2VE or MSTB2.5/2-ST-5.08	Weight	0.2 Kg
Maximum wire range	1.5 .. 2.5mm ²		
Maximum length	100m		

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LRM1070 Unit box	105 x 95 x 58	1	card board	0.12	0.15
LRM1070 Outer box	400 x 300 x 300	42	card board	5	5.6
LRM1080 Unit box	105 x 95 x 58	1	card board	0.12	0.15
LRM1080 Outer box	400 x 300 x 300	42	card board	5	5.6
LRH1070 Unit box	105 x 95 x 58	1	card board	0.044	0.07
LRH1070 Outer box	400 x 300 x 300	42	card board	1.8	2.4
LCC1070 Unit box		1	plastic bag	0.13	
LCC1070 Outer box	289 x 214 x 178	18	card board	2.4	2.7

Ordering Data

Type	MOQ	Ordering number	EAN code level I	EOC
LRM1070/00 Occuswitch basic	1	9137 003 27803	87 11559 731384	731384 99
LRM1080/00 Occuswitch advanced	1	9137 003 27903	87 11559 731407	731407 99
LRH1070/00 Ceiling box	1	9137 003 28003	87 11559 731438	731438 99
LCC1070/00 Wieland cable 3p	1	9137 003 30303	87 11559 731773	731773 99