LRM8114/00
Movement Detector

Ø 63.5

25.9

2

Ø 72

Dimensions in mm

C E
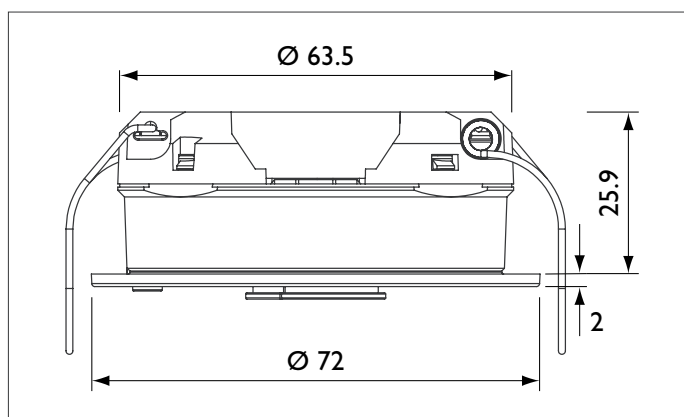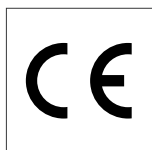
General Description

Compact advanced movement detector that features variable delay-to-off via DIP switches and can be part shaded to limit coverage. The sensor is powered via the additional modular plug-in (RJ12) connector cable that attaches it to a lighting controller. The sensor is suitable for both recessed and surface mounting. Mounting height is between 2.5m and 3.5m.

Movement detector

The movement detector uses a small form integrated quad element pyro-electric passive infra-red sensor. The unit is triggered when a moving thermal signal is picked up from a person within its detection zone. The detection pattern is virtually rectangular and the area covered is affected by the actual mounting height.

Features

- Compact design.
- High sensitivity motion sensor, with rectangular coverage.
- Flush- or Surface ceiling mounting (surface mounting by means of easy to install accessory).
- LED indication to check motion detection to verify placement and function of sensor at installation.
- DIP switches to set the switch-off delay time (5,10,15,20,25,30 or 35 minutes)
- DIP switch to enable/disable the walk test LED.
- The sensor can be parallel wired for multi-unit applications.
- The sensor accepts 12...24VDC power supply.
- The sensor consumes not more than 7.5 mA of current over the complete supply voltage range.
- The sensor has one modular jack entry with possibility to connect modular T-adapter f/f/m RJ12 6c/6p – type LCC8025/00

PHILIPS

Application area

The application area is Indoor (offices etc.), in normally heated and ventilated areas (IP20).

The movement detector is designed for flush-mounted ceiling installation. Surface mounting is possible by means of easy to install surface mount adaptor (LRH 8100 12nc 9137 003 18903).

The movement detector is downwards compatible with LRM 8112 (TRIOS movement detector); and LRM6801/31 but not in dimensions.

General Characteristics

All specified properties are valid for the full operating ambient temperature and voltage range unless otherwise specified.

Environmental conditions
Operating Temperature	+5˚C…+50˚C
Storage Temperature	- 25˚C…+85˚C
Humidity Operating	20%…85% No condensation
Humidity Storage	10%…95% No condensation

Electrical characteristics
T_{amb}=22˚C, V_{supply}=12Volt,

Characteristic
Operation current
LED enabled	Typ. 6.5mA	Max. 7.5mA
LED disabled	Typ. 5mA	Max. 6mA

Operation voltage Min. 9VDC Typ. 12VDC Max. 24VDC
Voltage ripple 10%
Output
  Voltage, in-active Max. 45V
  Voltage, active state Max. $100 \times I_{sinking}$ + 0.7 Volt
  Current, active state Max. 10 mA (sinking)
  Stable time after
  power-up Max. 30 seconds.
Switch off delay timer The switch-off delay can be set between 5 and 35 minutes by 3 dipswitches: 5, 10 and 20 minutes. Timer additions are possible. All switches off results in 1-second switch-off delay (factory default). Accuracy: ±2 %

Safety
Standards	EN 60950 Safety of information technology equipment.
IEC protection class	Class III
Pollution degree	2
Ingress protection	IP20,
Marking	CE

EMC
Generic standards for Residential, Commercial, Light-industrial environment:
- Emission CENELEC EN 50081-1
- Immunity CENELEC EN 50082-1

Product Family standards for Information Technology Equipment
- EN55022; radiated emission 30 to 1000 MHz

Diagnostics
• Walk test
  LED is flashing each time motion is detected (only in case the LED is enabled).
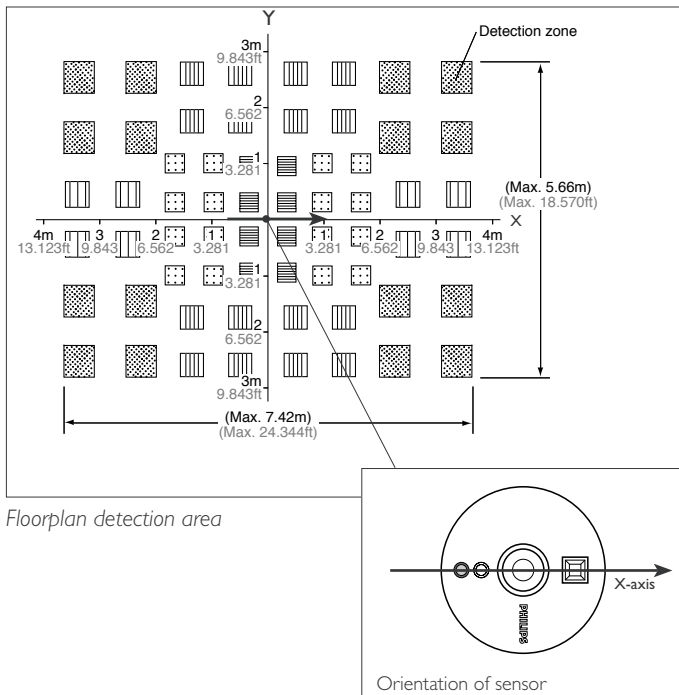
Start-up time

Movement Detector
• Delay timer disabled (DIP switch 2, 3 and 4 off)
  Microcontroller is passing the output pulses of the PIR sensor to the MD-output. The circuit stabilisation time is max. 30 seconds.
• Delay timer enabled
  After power-up, the MD output is set LOW (active). After 30 seconds (circuit stabilisation time) the switch off delay timer is set to 1 minute (independent of the selected DIP Switch setting). When there is motion detected within this minute, the switch off delay timer will be according to the DIP Switch setting. When there is no motion detected within this minute, the output will switch to inactive state after the one-minute delay timer has expired.

Movement Detector element

Sensor
Device type	Quad element pyroelectric
Rated detection distance	Max. 5m
Diameter of detection area	7,42m x 5,66m (at 2,5m height),
Number of detection zones	64

Detection area

Floorplan detection area

Orientation of sensor

The X-Y cross-sectional diagram shows the detection area (at 2,5m sensor height).

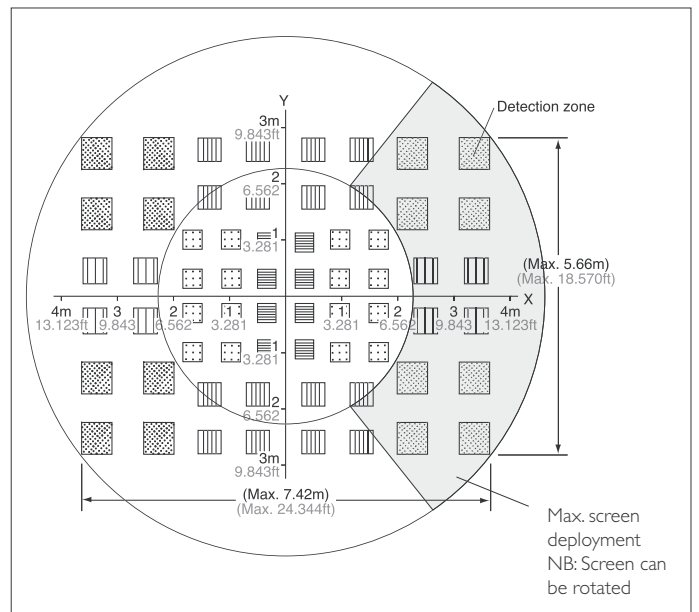This detection area is defined by the sensor height:

Formula:
$X = 2,968 \times Height$
$Y = 2,264 \times Height$

Example:
Ceiling height = 2,70 meter. In that case the detection area is:
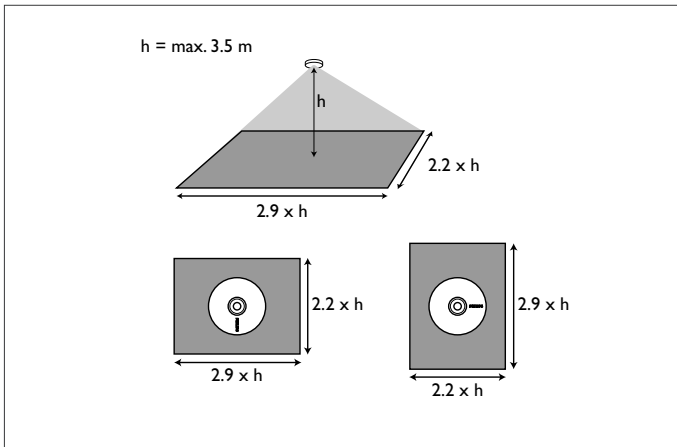$X = 2,968 \times 2,70 = 8$ meters
$Y = 2,264 \times 2,70 = 6.11$ meters

The detection area can be limited by means of a movable screen as shown below.

Detection area limitation
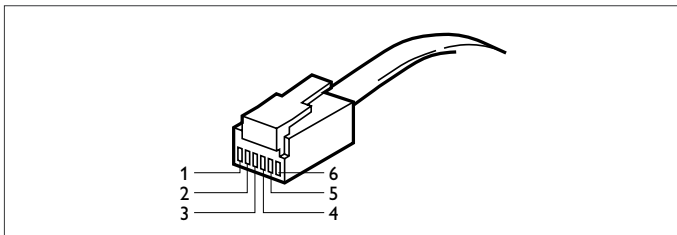

Max. screen deployment
NB: Screen can be rotated

Mounting position

Floorplan detection area

Modular jack entry

The movement detector has a modular jack entry for the connection of RJ12 modular plugs, see figure below.
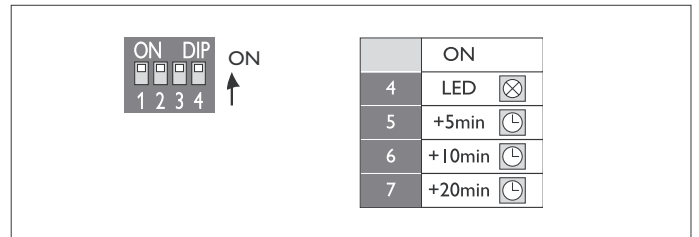

RJ12 modular pug

Pin 1	White	+12…24VDC
Pin 2	Black	GND
Pin 3	Red	not used
Pin 4	Green	not used
Pin 5	Yellow	not used
Pin 6	Blue	MD

It is possible to interlink sensors by means of a modular 2-way adaptor (LCC8025/00)

DIP switch

Default DIP switch settings

SW4   Enable/Disable LED   ON = factory default

SW4	SW5	SW6	SW7	Description	
LED	+5	+10	+20	NB: Timer set to 1 second ex factory.	
Off	Off	Off	Off	Delay timer = 1 second	LED = off
Off	On	Off	Off	Delay timer = 5 minutes	LED = off
Off	Off	On	Off	Delay timer = 10 minutes	LED = off
Off	On	On	Off	Delay timer = 15 minutes	LED = off
Off	Off	Off	On	Delay timer = 20 min	LED = off
Off	On	Off	On	Delay timer = 25 minutes	LED = off
Off	Off	On	On	Delay timer = 30 minutes	LED = off
Off	On	On	On	Delay timer = 35minutes	LED = off

Special Note:
The selected delay timer will be extended by 10 minutes, when motion is detected within 20 seconds after expiration of the selected switch-off delay time.

Dimensions, mounting and mechanical

Ø 63.5

25.9

2

Ø 72
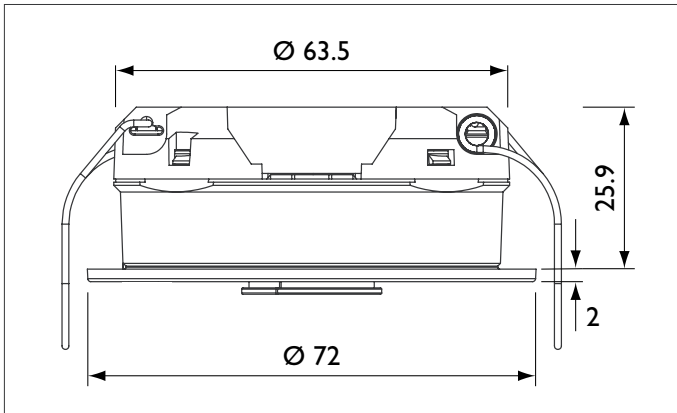
Dimensions in mm

Fixation

Flush mounting	2 metal springs
Hole diameter (flush mount)	64 mm
Max ceiling thickness (preferred)	25 mm
Installation height in ceiling	25,9 mm
Surface mounting	By means of separate sensor surface box. LRH 8100/00

Housing

Colour (standard)	Front part RAL9010
	Back part RAL9010
Material	Polycarbonate, UL listed
Flame rating	V-0
Weight unpacked product	43 gram

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg) net	gross
Unit box	80 x 72 x 40	1	card board	0.043	0.076
Outer box	227 x 169 x 169	24	card board	1.032	1.99

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3
LRM8114/00	1	9138 003 18403	87 11559 519067	87 11559 519074

Local override devices: occupancy-sensors

Occupancy sensors shall be provided as indicated on the drawings to ensure that lighting is turned OFF in unoccupied spaces. The sensors shall use a quad element passive infra red device to detect small movements by personnel.

The unit shall be no more than 75 mm overall diameter and be suitable for installation into a 64 mm diameter hole. It shall accommodate tile thicknesses from 0.5 mm to 50 mm. It shall be possible to install the unit into a false ceiling where the void is at least 30 mm deep.

The PIR sensor shall have a rectangular detection pattern, which typically covers an area 7.6 metres by 5.4 metres at floor level when the unit is mounted at 2.5 metres height. The sensor shall include a shield that can be turned and is able to block part of the detection zone. This feature is intended to help to prevent nuisance tripping from adjacent circulation areas.

The detector shall include a facility for selecting the 'time to OFF' delay between 5 and 35 minutes, in 5 minute steps. There shall also be an option to have no delay. When a delay is selected the unit shall be adaptive such that if the selected delay appears to be too short then the delay will be extended temporarily.

A red LED shall be provided for walk test purposes, which can be switched OFF for day to day use.