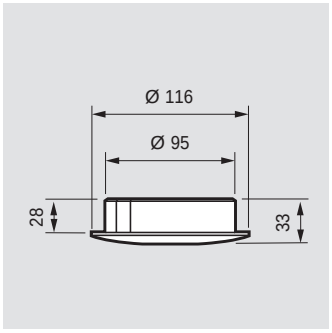
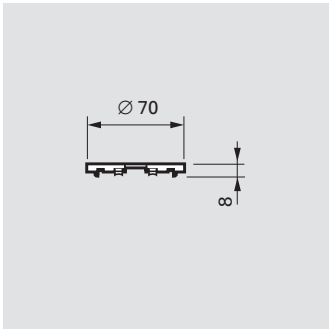
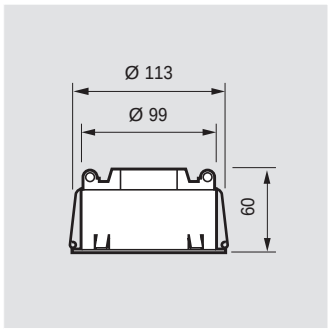
LRM 8112 Movement Detector







Dimensions in mm

Definition

The LRM 8112 is a Movement Detector for the automatic control of lighting systems.
It can be used in combination with various types of Philips Lighting Control Systems such as TRIOS

Description

- The sensor is intended for indoor use in an office environment and comes with a mounting ring for recessed mounting and a mounting plate for surface mounting. The unit is optimized for ceiling mounting.
- The pattern of sensitivity is nearly circular, covering an area with a diameter of approximately 8 m for tangential movements (i.e. around the detector) and approximately 6 m for radial movements (i.e. towards the detector). In the latter area most hand/arm movements will be detected. These figures apply to units mounted to a ceiling of between 2.6 and 3.0 m high.
- More movement detectors can be connected in parallel, in order to cover large or odd shaped rooms. One movement detector output can drive more controller inputs. For details refer to sections "Technical data" and "Miscellaneous".
- The movement detector has a built-in delay timer for the "inactive-state".
- By means of 3 dipswitches (5, 10 and 30 minutes) the timer can be set at values between 5 and 45 minutes. Setting all dipswitches to the off-position results in a walk-test mode with 0 minutes delay.
- The detector contains a red light emitting diode (LED), indicating the active state of the output. The LED can be disabled via a dipswitch.
- Dipswitches for timer setting and LED function can be reached via a hinged cover at the side of the unit. For access to the cover, mounted units must be disengaged from the mounting ring a few centimetres. They can remain electrically connected and operational.
  Factory setting is: timer values off - LED on.
- The housing material is Polycarbonate, white (RAL 9010). It contains lens, sensor element and electronic circuitry and need not be disassembled during installation or commissioning.
- The Movement Detector is powered from the corresponding controller and does not require an external power supply unit.
- Electrical connections are made via a standard modular socket ("Telejack") using a separate sensor cable (not supplied with the unit). The "Telejack" entry is behind a hinged cover at the side of the unit. A cable duct with clamps is provided at the rear side of the sensor, allowing entry of standard flat oval cable from any direction when the unit is surface mounted.
- Recessed mounting in ceiling systems is possible without removing any ceiling parts, provided that sensor positions are pre-wired. The minimum recess clearance is a mere 60 mm.
- The LRM 8112 belongs to a series of sensors with identical construction and appearance. Other sensors in the series are a Light Sensor (LRL 8101), an Infrared Receiver (IRR 8124) and a Multi-Sensor (LRI 8133), i.e. a combination of the three sensor types.
- The LRM 8112 is a functional replacement for the phased-out types LRM 100 and LRM 8012.

Applications

- The Movement Detector is used in combination with TRIOS .
- Main application is energy-saving by automatic switching of light sources, depending on the presence of persons in the room.

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LRM 8112 Movement Detector

Technical data

- Sensitivity
  - level: optimised for use in office (or industrial) applications. Most arm/hand movements will be detected within the sensitivity area for radial movements.
  - pattern: nearly circular,
    8 m diameter for tangential movements
    6 m diameter for radial movements
- Output
  - voltage: 0 Vdc for active detector (open collector, normally open.)
    -0.5 - +15 Vdc maximum rating
  - current: maximum current sinking > 10 mA
    Outputs can be "wired OR" up till at least 10 detectors.
    One detector output can drive up to at least 4 controller inputs.
- Inactive-state delay timer: 0, 5, 10, 30 minutes ±20%, cumulative. to be selected via 3 dipswitches.
- Indicator: Red LED, "on" when output is active. Can be disabled via dipswitch.
- Power supply: 12 Vdc ±10%, 10 mA (LED on), derived from connected controller
- Electrical connections: modular socket ("Telejack") standard pinning:
  1. 12 Vdc supply voltage
  2. ground
  3. 5 Vdc supply voltage (n.a.)
  4. light sensor output signal (n.a.)
  5. infrared receiver output signal (RC5) (n.a.)
  6. movement detector output signal
- Housing
  - colour: white RAL 9010
  - material: polycarbonate
  - flame rating: V0
  - glow wire test: 850 °C ≤ 5 s extinction
  - visible surface texture: 9-125 UN-D 249, suitable for lacquering
- Operating conditions
  - ambient temperature: +5 - +50 °C
  - relative humidity: 20 - 85%, no condensation
- Storage conditions
  - ambient temperature: -25 - +85 °C
  - relative humidity: 10 - 95%
- EMC
  - immunity: in accordance with EN 50082-1
  - radiated interference: in accordance with EN 50081-1
- Reliability
  - call rate: 1% per year (estimated)
  - life time: 10 years (estimated)
- Dimensions
  - sensor: 116 mm x 30 mm
  - mounting plate: 70 mm x 9 mm
  - mounting ring: 113 mm x 60 mm
- Weight
  - sensor: 90 g
  - mounting plate: 10 g
  - mounting ring: 70 g
- Mounting
  - fixation: plate with bayonet-catch for surface mounting ring with springs and bayonet-catch for recessed mounting minimum recess clearance 60 mm. Ceiling tiles need not be removed for mounting

Related equipment

- Stand-alone control TRIOS
  - light controller: LRC 1010, LRC 1020
    LRC 1015, LRC 1025
    LRC 1620 DALI Room Controller
- General Purpose Components
  - cables
    - sensor cables: LCC 8011, LCC 8012, LCC 8013, LCC 8014
    - branching connector: LCC 8024
  - sensors
    - multi-sensor: LRI 8133

Related documentation

- Installation Instructions
- Technical Application Manual TRIOS

Miscellaneous

- Sensitivity
  The unit is based on the "passive infrared principle", i.e. it detects infrared radiated by a moving object. Therefore the practical sensitivity depends on the combination of characteristics of the object. It increases with size and temperature (difference with background), and changes with speed and direction of the moving object. Sensitivity is maximum for tangential movements and minimal for radial movements.

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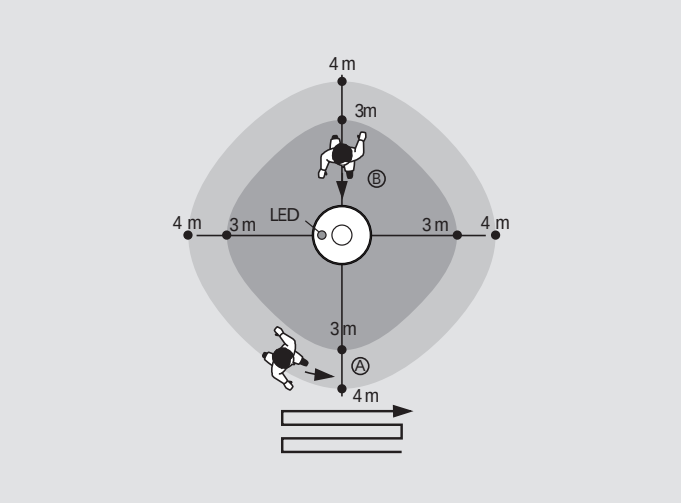
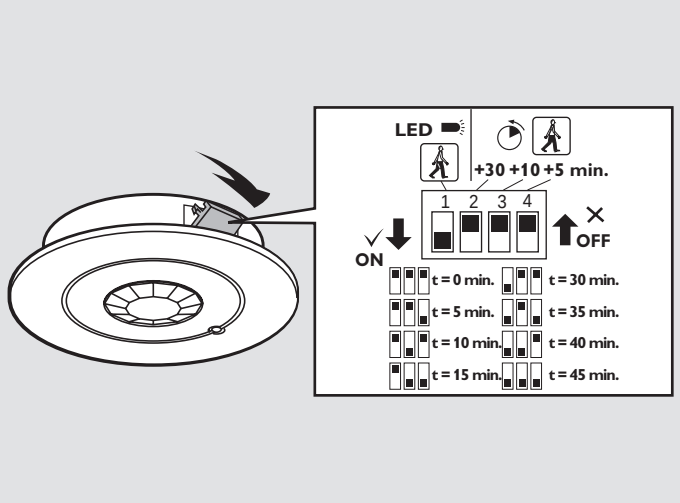


Coverage pattern



Dipswitch setting

Remark:
Figures shown are valid for a mounting height between 2.6 and 3.0 m above floor level. When mounted higher of lower, the coverage area becomes smaller.

Parallel connection of sensors:
When a Movement Detector (LRM 8112) is connected in parallel to other Movement Detectors or to Multi-Sensors (LRI 8133) the rules for "wired-or" are valid as stated under technical data.
The total number of sensors that can be connected to one controller may be limited by the maximum current the controller can source (for the supply of sensors).

Packing data

Type	Box dimensions (mm)	Qty.	Material	Weight (kg) net	gross
Unit box	125 x 135 x 100	1	cardboard	0.170	0.255
Outer box	270 x 410 x 210	12	cardboard	2.04	3.38

Ordering data

Type	EAN1	EAN3	EAN3 Qty.	EOC
LRM 8112/00	8711500 746429	8711500 747082	12	746429

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