LOYBT-MS2/LOYBT-MS2-B/LOYBT-MS3/LOYBT-MS3-B/LOYBT-MS4

Datasheet #89087304



DALI-2 BT-MESH

The LOYTEC LOYBT multi-sensors with Bluetooth SIG qualified stack are designed for seamless integration into mesh ecosystems. It performs occupancy detection and measures the illuminance level. They integrate perfectly into the LOYBT product line and LOYTEC Bluetooth Mesh enabled controllers. The occupancy sensor uses a passive infrared presence detector and an acoustic presence detector. The sensor is optimized for use in typical office environments where even the small movements of somebody working at a desk have to be detected across the complete detection area.

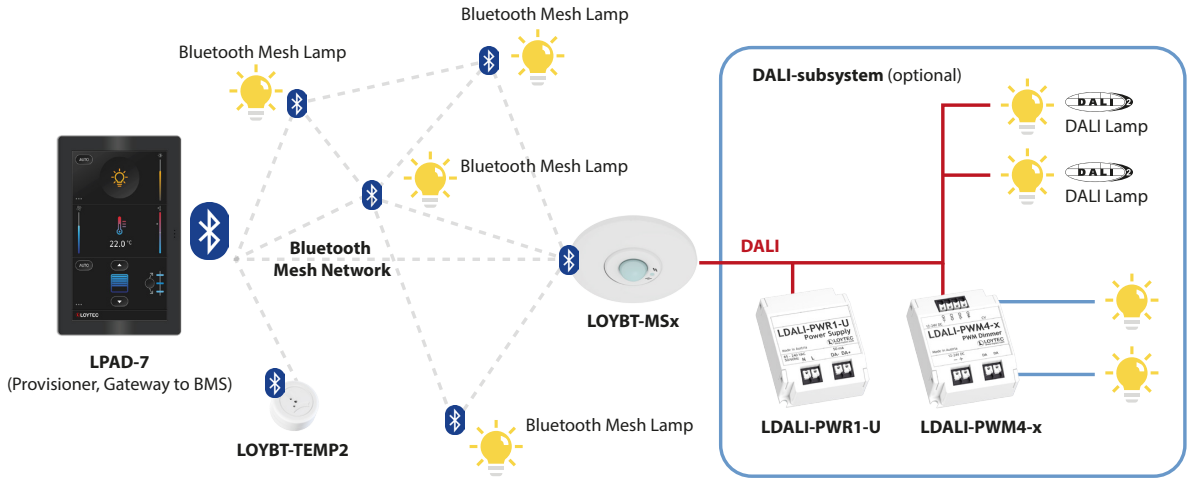
The LOYBT-MS2/MS2-B/MS3/MS3-B provide a presence detection zone diameter of 10.8 m at 3 m mounting height and is ideal to cover a typical office room or an area in an open office space. As well it is suitable for highbay-applications for mounting heights up to 12 m. The detection area for mounting heights from 5 m to 12 m is 256 m2.

The LOYBT-MS4 provides a flat lens and the presence detection zone diameter is 7 m at 3 m mounting height.

With the built-in infrared receiver, the room's lights, sunblinds and HVAC system can be controlled via the optionally available IR remote control L-RC1. In addition to occupancy and illuminance sensors, the LOYBT multi-sensors come with integrated temperature and humidity sensors. In room automation applications, those values can be used to calculate the current dew point. On the back of the sensor, there is a connector for three digital inputs, allowing to connect conventional switches and push-buttons, window contacts, dew point sensor, etc. This feature not only saves on additional hardware, but also significantly reduces wiring costs, as the inputs can be wired inside the room and wires no longer have to be pulled to the I/O modules in the switching cabinet.

Additionally the device acts as Bluetooth Mesh to DALI gateway. The integration of DALI ballasts into Bluetooth Mesh networks allows the use of proven luminaires, technologies and existing installations to be retrofitted easily. Up to 16 DALI-ballasts can be integrated with the help of the gateway. They can be separated in up to 4 groups, which are exposed to the Bluetooth Mesh ecosystem as individually accessible Bluetooth Mesh luminaires.

The sensor is powered either via a DC power supply (12V-24V, e.g. LOY-POW2404) or a DALI power supply (e.g. LDALI-PWR1-U). If a DALI power supply is used, additional DALI ballasts can be connected to the DALI-line and controlled via the gateway function of the sensor.



The LOYBT-MS2/MS2-B comes with three mounting options: It can be mounted in-wall in standard flush-mounted boxes, spring snap in false ceilings and on-wall with the mounting kit LOYMS2-OW/LOYMS2-OW-B (must be ordered separately). The LOYBT-MS3/MS3-B/MS4 are designed to be used with spring snaps in false ceilings.

LOYBT-MS2/LOYBT-MS2-B/LOYBT-MS3/LOYBT-MS3-B/LOYBT-MS4

Features

- Easy system integration with Bluetooth Mesh enabled LOYTEC controller
- Perfectly suited for lighting control applications and reducing energy costs
- Bluetooth SIG qualified device, Bluetooth 5.4, Mesh Protocol 1.1, Mesh Model 1.1, Networked Lighting Control (NLC) 1.0
- High sensitivity occupancy detection – dual technology (PIR and acoustic, separate sensitivity parameter for each technology, sensitivity adujstable), optimized for office applications
- Illuminance measurement
- Built-in infrared receiver for optional infrared remote control L-RC1
- Temperature sensor
- Humidity sensor
- 3 digital inputs (dry contact)
- Bluetooth Mesh to DALI gateway for up to 4 groups of DALI-luminaires
- DALI-2 certified application controller
- The LOYBT-MS3/MS3-B/MS4 can be mounted directly in false ceilings (spring mount included).
- The LOYBT-MS2/MS2-B can be mounted in a flush-mounted box, directly in false ceilings (spring mount included) or on-wall (mounting kit LOYMS2-OW/ LOYMS2-OW-B must be ordered separately).
- Supplied via the DALI bus or DC power supply (max. 1A)
- Sensor head of the LOYBT-MS2/MS2-B/MS3/MS3-B can be tilted up to ±15° vertically
- Flat lens in LOYBT-MS4 type
- Firmware update over the air



LOYMS2-OW, On-wall Mounting Box



LOYBT-MS2



LOYBT-MS3



LOYBT-MS4



LOYMS2-OW-B, On-wall Mounting Box



LOYBT-MS2-B



LOYBT-MS3-B

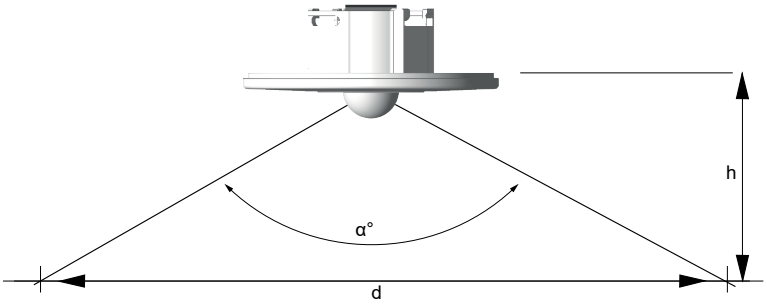
LOYBT Multi-Sensor

LOYBT-MS2/LOYBT-MS2-B/LOYBT-MS3/LOYBT-MS3-B/LOYBT-MS4

Specifications

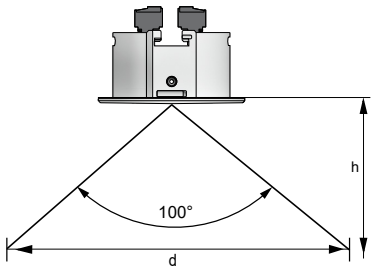
Type	LOYBT-MS2	LOYBT-MS2-B	LOYBT-MS3	LOYBT-MS3-B	LOYBT-MS4
Color	RAL 9010, pure white	RAL 9005, jet black	RAL 9010, pure white	RAL 9005, jet black	RAL 9010, pure white
Dimensions (mm)	Total Ø: 104, DIM087 flush-mounted Ø: 60 mounting depth: 30		Total Ø: 68, DIM88 mounting hole Ø: 60 mounting depth: 42		Total Ø: 68, DIM089 mounting hole Ø: 60 mounting depth: 42
Installation	Ceiling mount: • Direct installation in false ceilings (spring mount included) • Flush-mounted installation • On-wall (mounting kit LOYMS2-OW must be ordered separately)		Ceiling mount: • Direct installation in false ceilings (spring mount included)		
Power supply	Current consumption: typ. 6 mA @ 16 V DC, max. 15 mA (inrush current) Sensor can be supplied by: • DALI power supply: 12.0 – 20.5 V DC, max. 250 mA • DC power supply: 12 V DC or 24 V DC ± 10%, max. 500 mA, use only power supply of type PS1 according to IEC 62368-1 (≤ 15 W)				
Operating conditions	0 °C to +50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP20				
Storage conditions	-20 °C to +70 °C				
Interfaces	1 x DALI 1 x infrared remote control receiver 3 x digital input (dry contact, not protected against overvoltage) 1 x Bluetooth SIG Mesh				
DALI protocol conformance (IEC 62386 parts)	101 ed2, 103 ed1				
Bluetooth protocol conformance	Declaration ID: Design Number (DN) Q301729 contains qualified designs: 239299 (controller subsystem Bluetooth 5.4), 239354 (host subsystem Bluetooth 5.4), and 226841 (Mesh Protocol 1.1, Mesh Model 1.1 and NLC-Profiles 1.0)				
Bluetooth RF characteristics	Maximum output power: + 8 dBm; Frequency range: 2402 - 2480 Mhz				
Occupancy detection	PIR and acoustic, sensitivity adjustable				
Passive infrared motion detector	Detection diameter: 10.8 m @ 3 m mounting height (92 m^2), 136 zones, opening angle: 122° (up to 5 m mounting height) Highbay-application: 5 m – 12 m mounting height, detection area: 256 m^2 (opening angle: 73.6° @ max. 12 m, 122° @ 5 m)				Detection diameter: 7.2 m @ 3 m mounting height (44 m^2),156 zones, opening angle: 100° (up to 5 m mounting height)
Mounting height	max. 12 m				max. 5 m
Illuminance measurement	0 – 4000 lux, resolution: 0.125 lux				
Temperature measurement	0 °C to 50 °C, resolution: 0.1 °C, accuracy: ±0.2 °C (0 °C to 70 °C)				
Rel. Humidity measurement	0 % – 100 %, resolution 0.5 %, accuracy: typ. ±2.2 % R.H. @ 25 °C, 20 % – 80 % R.H. typ. ±4 % R.H. @ 25 °C, 0 % – 20 % R.H. and 80 % – 100 % R.H.				
Connection wires profile	0.2 – 1.5 mm^2 [AWG 28 – 14]				
Wire stripping length	6 mm [0.24 in]				
Wire length for digital inputs	< 10 m				
For use with	Bluetooth Mesh enabled LOYTEC controller (e.g. LPAD-7)				

LOYBT-MS2/LOYBT-MS2-B/LOYBT-MS3/LOYBT-MS3-B/LOYBT-MS4



Mounting Height / Coverage
LOYBT-MS2/MS2-B/MS3/MS3-B

h [m]	d [m]	A [m²]	α[°]
1.5	5.4	23	122
2.0	7.2	41	122
2.5	9.0	64	122
2.7	9.7	75	122
3.0	10.8	92	122
3.5	12.6	125	122
4.0	14.4	164	122
4.5	16.2	207	122
5.0	18.0	256	122
6.0	18.0	256	112
8.0	18.0	256	96.7
10.0	18.0	256	84
12.0	18.0	256	73.6



Mounting Height / Coverage
LOYBT-MS4

h [m]	d [m]	A [m²]	α[°]
1.5	3.6	10.0	100
2.0	4.8	17.8	100
2.5	6.0	27.9	100
2.7	6.4	32.5	100
3.0	7.2	40.2	100
3.5	8.3	54.7	100
4.0	9.5	71.4	100
4.5	10.7	90.3	100
5.0	11.9	111.5	100

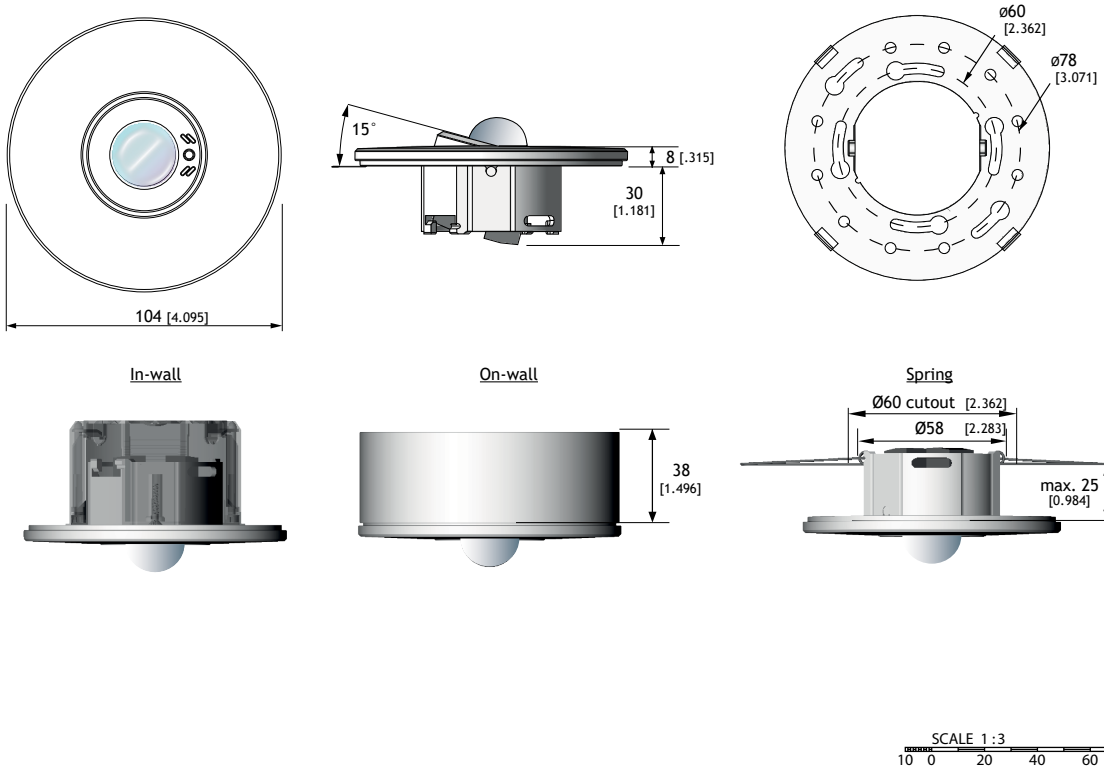
Order number	Product description
LOYBT-MS2	Multi-sensor with Bluetooth SIG qualified stack (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh), up to 12 m mounting height, total diameter 104 mm, white
LOYBT-MS2-B	Multi-sensor with Bluetooth SIG qualified stack (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh), up to 12 m mounting height, total diameter 104 mm, black
LOYBT-MS3	Multi-sensor with Bluetooth SIG qualified stack (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh), up to 12 m mounting height, total diameter 68 mm, white
LOYBT-MS3-B	Multi-sensor with Bluetooth SIG qualified stack (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh), up to 12 m mounting height, total diameter 68 mm, black
LOYBT-MS4	Multi-sensor with Bluetooth SIG qualified stack (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh, flat lens), up to 5 m mounting height, total diameter 68 mm, white
LOYMS2-OW	On-wall Mounting Kit for LDALI-MS2-BT / LOYBT-MS2 (8 pcs per package), white
LOYMS2-OW-B	On-wall Mounting Kit for LDALI-MS2-BT-B / LOYBT-MS2-B (8 pcs per package), black
LOY-POW2404	Power Supply, 4 W, 100-277 V AC, 24 V DC, 167 mA
LDALI-PWR1-U	DALI power supply unit for 1 DALI channel, 50 mA
L-RC1	Infrared remote control for room automation applications

Dimensions of the devices in mm and [inch]

DIM087

LDALI-MS2-BT

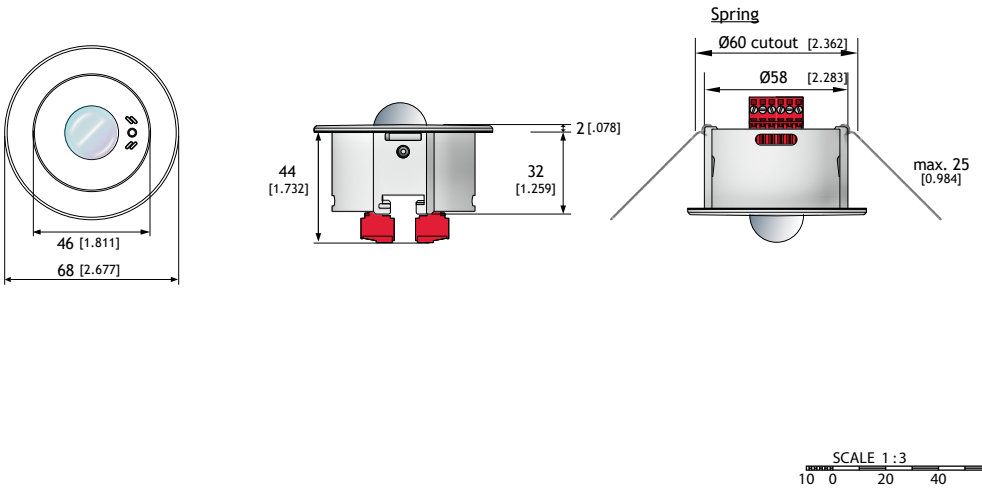
LOYBT-MS2



DIM088

LDALI-MS3-BT

LOYBT-MS3

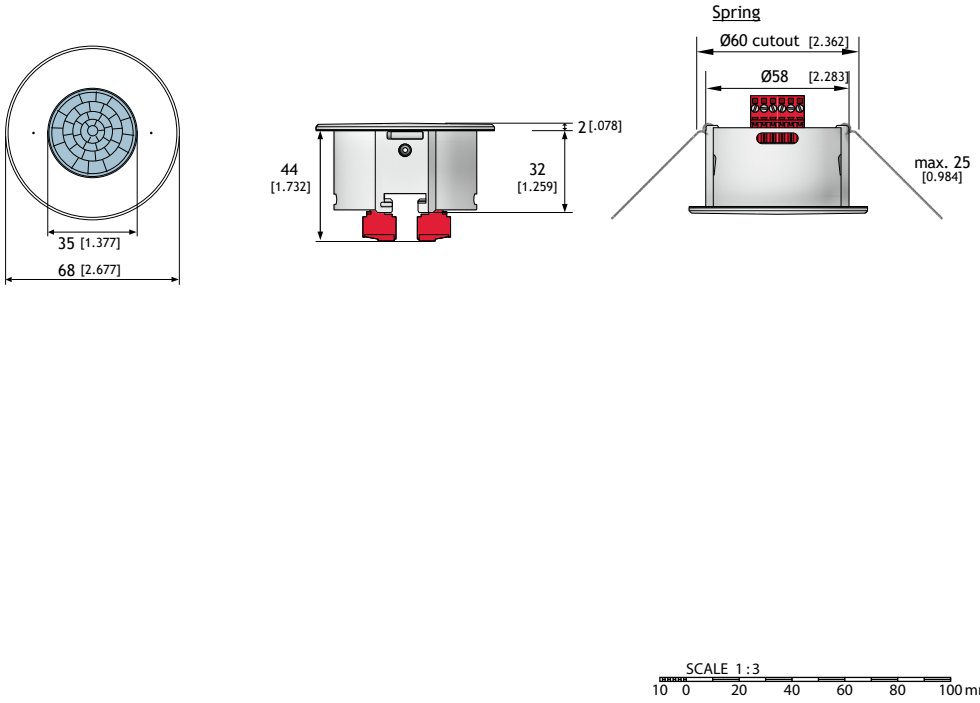


Products of Delta Intelligent Building Technologies (Europe) GmbH are subject to ongoing development, and technical specifications may change without notice. The most recent datasheet can be downloaded from www.loytec.com.

Dimensions of the devices in mm and [inch]

DIM089 LDALI-MS4-BT

LOYBT-MS4



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