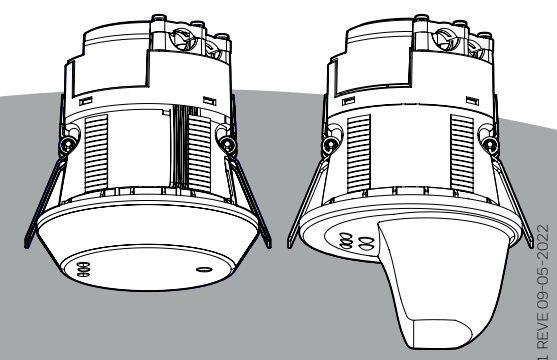


# Installation Instructions



32.351612-001 REV. 09-05-2022

## MLS3xxxCDR High Detection Microwave Sensors

Only suitably qualified personnel should install this equipment

Part Number	Flush Mount	360 degree Sensing	Directional Sensing
MLS3401CDRF	•	•	•
MLS3500CDRF	•	•	•

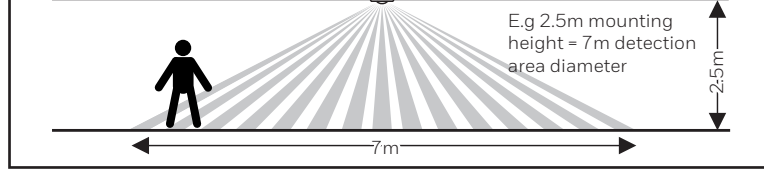
**Security**  
For details of securing the product and system see the General Security Best Practice for Ex-Or Products Information Sheet - D6004.

### 1) Determine Position

The MLS3xxxCDR sensors are extremely sensitive movement detectors. They must be installed on a rigid surface that will not be subject to movement or vibration. They are not recommended for applications where there are large surface areas of metal, e.g. metal ceiling or floor tiles, as unpredictable sensitivity may result. Microwaves can penetrate lightly built partitions, glass, etc. Movement in adjacent spaces may cause spurious triggering if the orientation and sensitivity setting of the detector is not managed carefully.

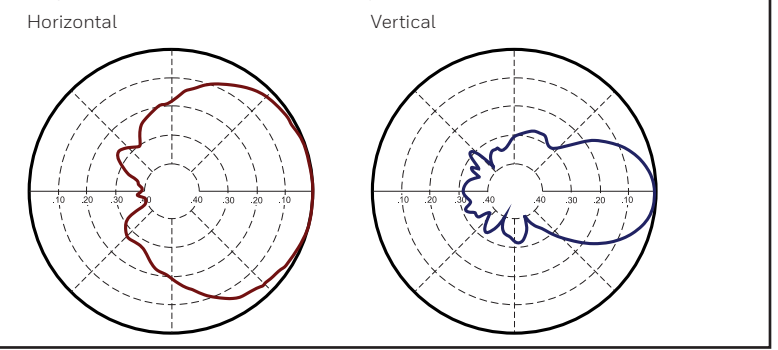
**MLS3401CDRF**  
Do not mount within 0.25m of a luminaire. Max distance between sensors = 5m

**Recommended maximum mounting height** 3m  
**Range** Cone-shaped detection pattern, diameter (at floor level) = 2.8 x mounting height

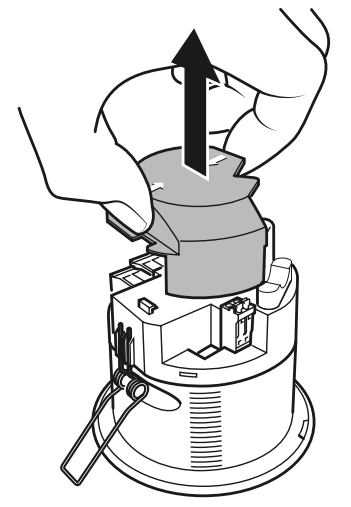
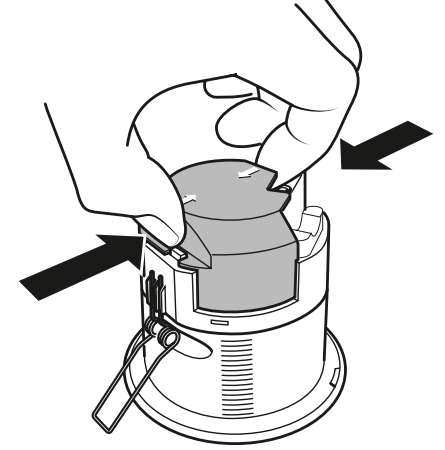


**MLS3500CDRF & MLS3500CDRS**  
Position the detector where it has a good 'view' of the space to be controlled. An ideal location is in a corner adjacent to the entrance of a room or at one end of a corridor. Do not mount within 0.25m of a luminaire.

**Recommended maximum mounting height** 3.5m  
**Range** Adjustable up to 20m

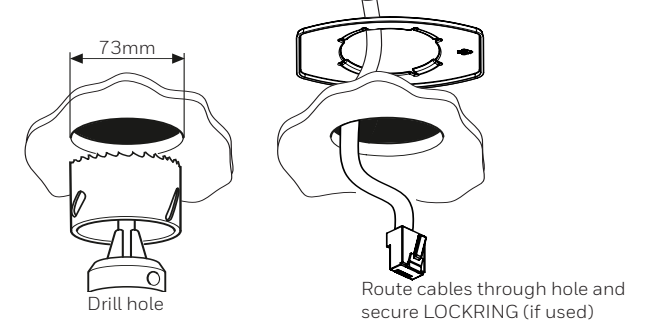


### 2) Remove Terminal Cover



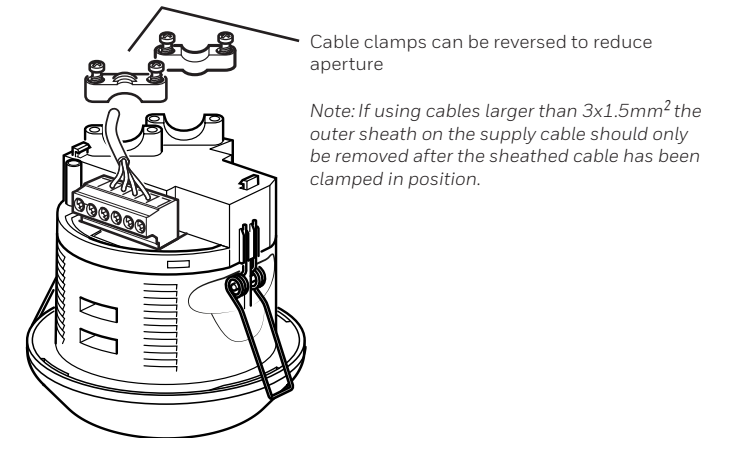
### 3) Fit Flush Mount Version (MLS3401CDRF & MLS3500CDRF)

#### 3a) Prepare Mounting Location and Run Cables

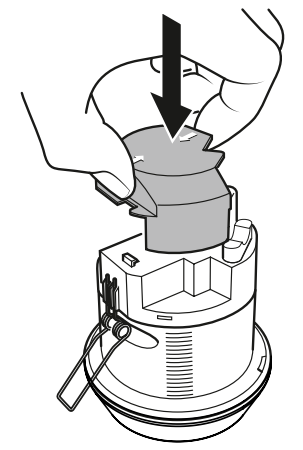


**3b) Connect to LCM** (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)  
Connect to the LCM - see "Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)"

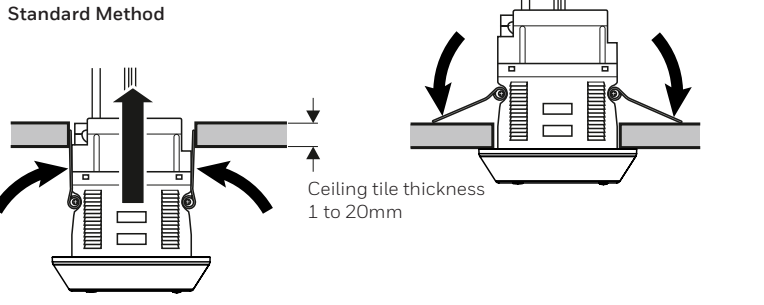
#### 3c) Fix Cable Clamps (optional for 1mm<sup>2</sup>-2.5mm<sup>2</sup> sheathed round cables)



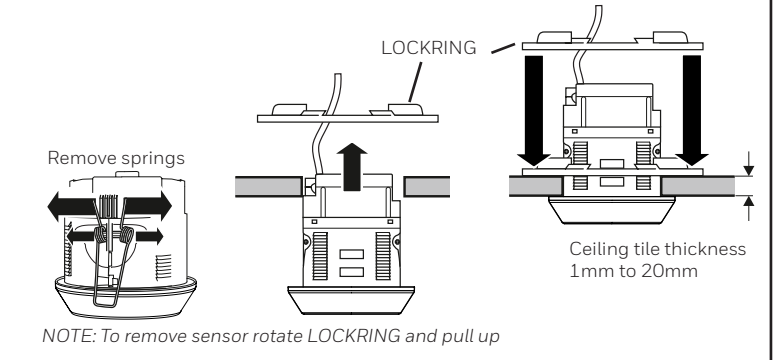
### 3d) Replace the Terminal Cover



### 3e) Fix to Ceiling



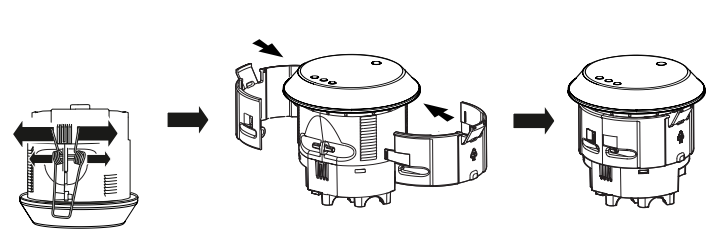
**LOCKRING Method**  
The LOCKRING cannot be used when there is no access to ceiling void.



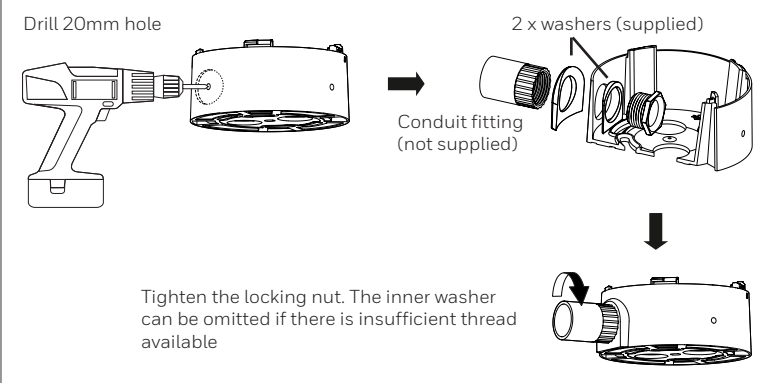
### 4) Fit Surface Mount Version

Note: If surface mounting version his a required a surface mount kit is required.

#### 4a) Remove springs & Attach Shell

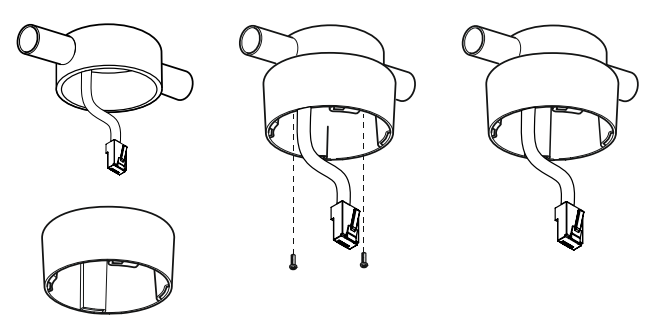


#### 4b) Attach Conduit Fittings & Cable Glands to Lower Housing (if required)



#### 4c) Prepare Mounting Location and Run Cables

The sensor may be mounted to any suitable surface, but is most commonly fixed to a conduit stop-end (BESA) box or bushed to trunking.

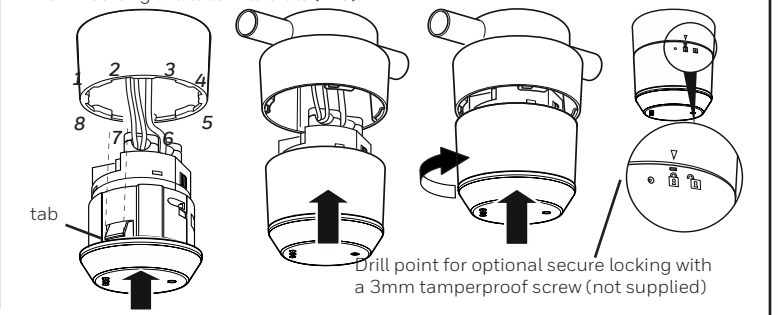


#### 4d) Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)

Connect to the LCM - see "Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)"

#### 4e) Fix to Ceiling

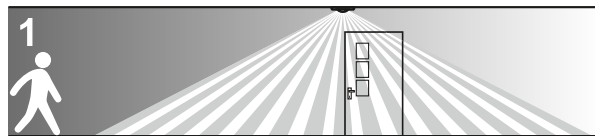
8 segments on the collar allow up to four different rotational positions for the sensor, when inserting the tabs into slots (1-8).



### 5) Perform Walk Test

In order to verify correct installation, walk testing is recommended. Follow the instructions provided with the QSP. During the walk test the connected lights will be switched off until movement is detected.

- Stand out of the sensor's viewable footprint or remain motionless within the viewable footprint and wait for the lights to go out.



- Wait a further 2 seconds for the sensor to stabilise then make a movement, the lights should come back on. Observe that the detection / non-detection area is as expected.



### 6) Configuration

Most of the configuration for the lighting control system is performed on the LCM not the sensor - refer to the LCM's documentation.

The controlling and switching set-points for the photocell can be configured using the Quickset Pro (QSP) or HC5A. The setting is then transmitted from the sensor to the LCM, where it is associated with the appropriate sensor and will be preserved in the event of power failure.

#### Setting the regulating photocell

- Using the QuickSet Pro Programmer, enter the **Utilities** menu and select **LightSpot/MLS/LCM** then **Set Light Level**.
- Use the 'up' and 'down' buttons to adjust the light output from the luminaire(s) and when at the required level press and hold **OK** to store. The luminaire(s) will blink to acknowledge a successful store operation.

*Note: Because the photocell is on the ceiling looking down, it is not possible for measurements made with a lux meter on the working plane to remain constant when daylight illuminates the ceiling and the working plane to a differing extent. Therefore, products of this type should be regarded as capable of only maintaining an approximate light level.*

#### Setting the switching light level

The desired switching light level must now be calculated by either waiting for an appropriate time of day or by a combination of manually switching off lights and perhaps masking windows.

- Using the QuickSet Pro Programmer, enter the **Utilities** menu and select **LightSpot/MLS/LCM** then **IR Remote**.
- Scroll down to **Scene 1** and press and hold **OK** to store. The luminaire(s) will blink to acknowledge a successful store operation.

### 7) Diagnostics

LED indications are provided to help with fault-finding.

LED indication	Meaning
Blue	Movement detected
W W W	Hardware and firmware is working correctly.
G G G	Communication with IR hand-held remote in progress
Flashing green	RS485 bus communication error
R R R	
Flashing red	

#### Connect to LCM (CDW12U5, CDW12X5, CDH4U5 & CDH8U5)

The wiring scheme used should follow either the T-568A or the T-568B Ethernet standards, and must give one-to-one, 'straight-through', connectivity between the two RJ45 connectors for all eight cores.

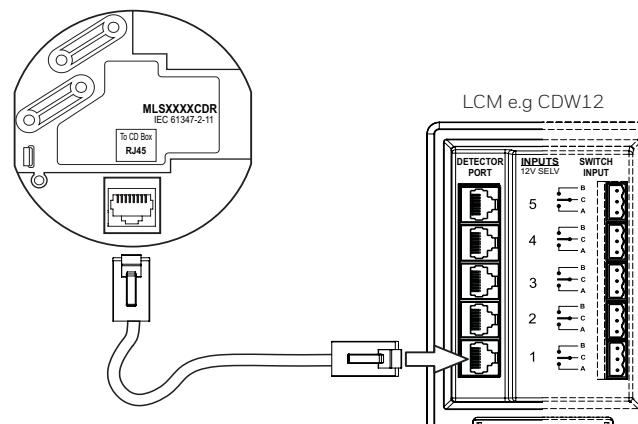
*Note: The leads must be segregated from mains wiring to preserve the detector SELV status that is provided by the LCM design.*

*Note: Strain-relief hoods should not be fitted to the insulation displacement RJ45 connectors, due to the limited space available above the sensor.*

<b>Terminal type</b>	RJ45
<b>Recommended cable</b>	4- twisted pair, 24 AWG multistranded, unshielded data cable to Category 5E standard, (e.g. Belden Datatwist 350).
<b>Max cable length</b>	100m

Ready-made patch leads in lengths of 3m (BT5E030GY), 5m (BT5E050GY) and 10m (BT5E100GY) are available.

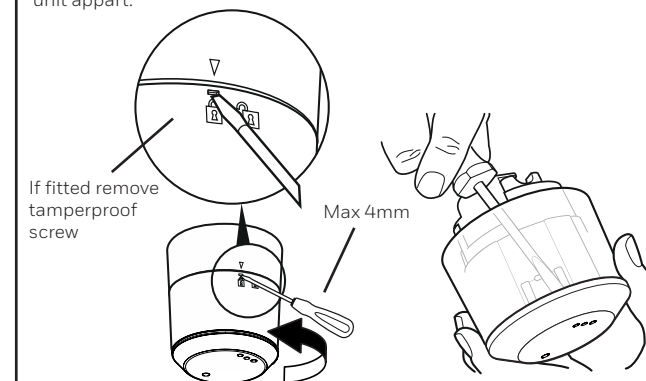
Where it is a requirement that the patch leads are protected by conduit it may prove more convenient to run the cables unterminated and attach the RJ45 connectors afterwards.



*Note: The sensor is not an Ethernet device and cannot be used with hubs and switches.*

#### Uninstall surface mount variants (MLS3401CDRS)

Insert a flat headed screwdriver into the slot as shown and twist the collar anti-clockwise to release. To separate the sensor from the surface mount casing, push a flat headed screwdriver onto the tab via the inside void of the casing and pull the unit apart.



### IMPORTANT NOTES

- In order to achieve satisfactory light level regulating operation, a sensor must observe a substantially greater proportion of artificial light from the luminaire(s) under its control than from neighbouring luminaires not under its control. This is particularly important when planning the installed layout of linear luminaires that have an integral detector positioned at one end.
- All information given in this document was correct at the time of publication.

#### Specifications

<b>Operating voltage</b>	12V DC, SELV if correctly installed
<b>Photocell</b>	Regulating
<b>IP Rating</b>	IP40
<b>Operating temperature</b>	0°C to 45°C
<b>Dimensions</b>	
MLS3401CDRF	Height 93.5mm, diameter 87mm
MLS3500CDRF	Height 120mm, diameter 87mm
<b>Weight</b>	
MLS3401CDRF	140g
MLS3500CDRF	240g
<b>Colour</b>	White (RAL9010)
<b>Material</b>	Flame retardant PC/ABS

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At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre.

Do not dispose of with normal household waste. Do not burn

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