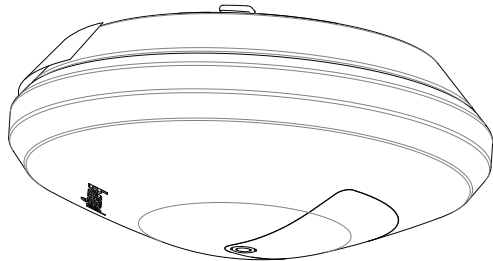


Catalog Number • Numéro de Catalogue • Número de Catálogo: LMDL-600

Country of Origin: Made in China • Pays d'origine: Fabriqué en Chine • País de origen: Hecho en China



UNIT DESCRIPTION

The DLM Wireless photo sensor is a wireless battery powered light sensor intended for operation with Wireless room controllers. It is an open loop photo sensor that measures daylight in foot candles to automatically switch or dim zones of lighting. The sensor sends light level signals to LMRC-611MCC room controllers to adjust connected lighting loads.

Sensor Installation and Configuration Overview

1. Mount the photosensor so that the Daylight Viewing Port directly views the daylight entering the space through a window or a skylight. See Placement Guidelines and Mounting the Photosensor.
2. Turn ON power to the room controller.
3. Use LMCS-100 or the DLM Configuration App software to complete the configuration process. The LMDL-600 will not operate properly until the configuration and calibration is successful.
4. Ensure there is a minimum 5fc of ambient light in the space.
5. From LMCS or the App, select the room network you'd like to calibrate and select the LMDL to start the calibration process. You will need a light level meter in order to record the fc data of the space for each prompt in the software. Place the light meter at the task level.
6. After following the software prompts, once calibrated, you can adjust switch overrides and other features by selecting the LMRC that the LMDL is paired to.

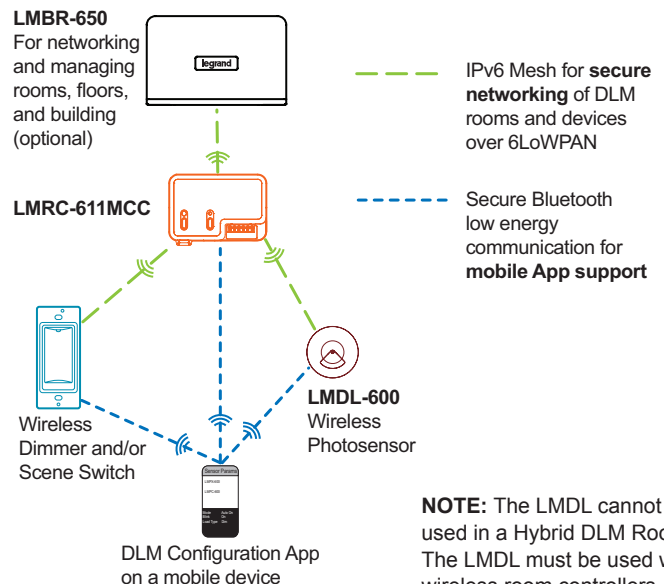
Application Note: Depending on external factors (such as environment, fixture location and dimming curve of the load) an adjustment factor may be needed to achieve the target light level after calibration. If the calibrated LMDL and fixture combination outputs less light than the target light level (set in the LMRC parameter), adjust the 'target light level' parameter by increasing to an appropriate amount.

IMPORTANT: You must wake the device (press the Config button) before commissioning. If the LMDL is paired to a secure room with LMCS, LMCS is required to calibrate the sensor. If the LMDL is paired to a secure room with the DLM Configuration App, please calibrate with the DLM Configuration App.

SPECIFICATIONS

Light sensor range.....	1 to 1,500 fc
Power Supply	Battery powered, CR123A Lithium Ion, 3 VDC
Connection to DLM Network...	Wireless via LMRC-611MCC room controllers
Wireless Hardware	
Radios:	Two IEEE 802.15.4
Frequency:	2.4Ghz
Antennas:	IPv6 Mesh and Bluetooth low energy
Wireless Standards	
Radio 1:	IPv6 Mesh (6LoWPAN)
Range:	up to 60 ft.
Radio 2:	Bluetooth low energy
Range:	up to 30 ft.
Wireless Encryption	
AES-128 bit symmetric key, randomly generated per PAN	
Shared via secured DTLS only	
Environment:	
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	23° to 140°F (-5° to 60°C)
Relative Humidity	5 to 95% (non condensing)
Other:	
Plenum Rating	UL2043
Compliance/Regulatory	
FCC, RoHS,	
Bluetooth certified	
UL and cUL listed (E101196)	
Patent Pending	

WIRELESS DLM CONNECTION



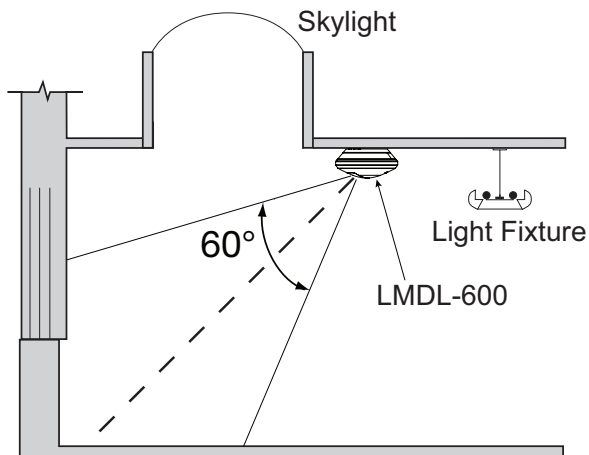
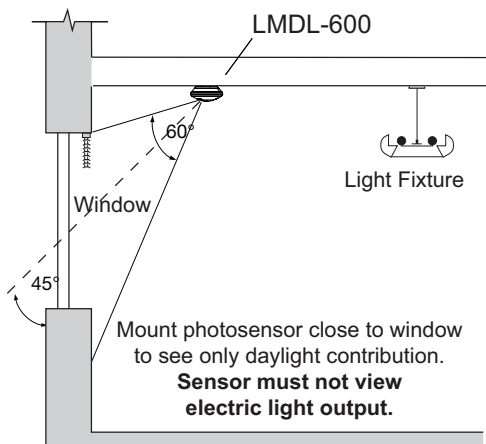
PLACEMENT GUIDELINES



WARNING: DO NOT USE THE DLM LOCAL NETWORK TO CONTROL LOADS OTHER THAN LIGHTING IF THE LOAD IS NOT IN VIEW OF A PERSON AT ALL CONTROL LOCATIONS. DO NOT USE DLM TO CONTROL ANY LOAD THAT MIGHT BE DANGEROUS OR CAUSE A HAZARDOUS SITUATION IF ACCIDENTALLY ACTIVATED.

The LMDL-600 switches or dims electric light in response to daylight. It is important to select a location where the photosensor measures daylight contribution only. For proper operation the photosensor should not see any electric light contribution.

When the primary source of daylight is a window (sidelighting), the LMDL-600 is typically ceiling mounted between one to three feet away from the window. The figure below shows a typical placement location for a sidelit application.



MOUNTING THE PHOTOSENSOR

The LMDL-600 is mounted in a ceiling or open ceiling environment so that the daylight view port directly views daylight entering the space through a window or skylight.

NOTE: The LMDL-600 operates on an included CR123A battery providing a 10+ year lifespan. Before mounting, pull the battery tab on the back of the unit to activate the battery and power the unit.

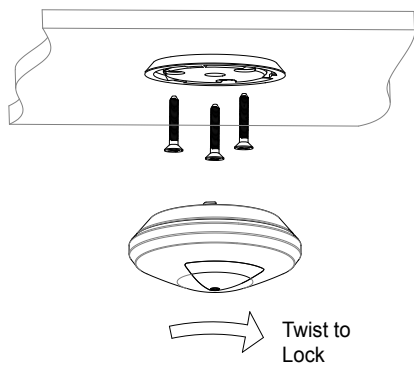
The photosensor can be mounted using one of three possible methods:

- Mounted to the ceiling using the included plastic mounting plate
- Mounted to a hanging threaded rod, for open ceiling environments, using the included threaded rod adapter
- Recessed mounting, using the optional LMDL-600-RPM Recessed Plenum Mounting Kit

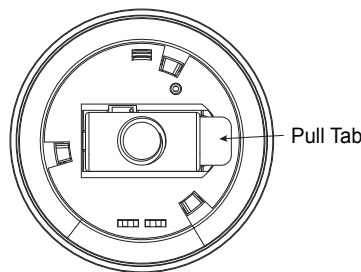
NOTE: The LMDL-600 has a rotating cover which allows the daylight port to be adjusted to point directly at the window or skylight. The cover can be rotated approximately 170°, so mount the photosensor so it points in the general direction of the window/skylight and then adjust the cover.

Ceiling Mount

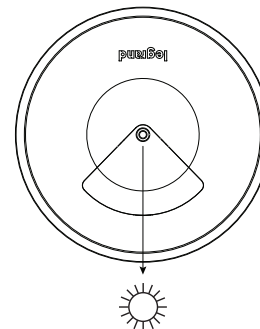
1. Attach the mounting plate to the ceiling with the three included 1" mounting screws.
2. Twist the LMDL-600 clockwise to lock it onto the mounting plate.



NOTE: Pull protective battery tab before installation to power the sensor.



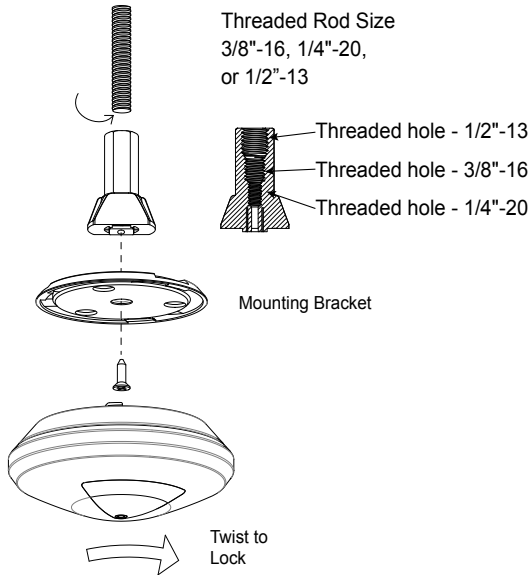
Rotate sensor window so that it points towards window or skylight



Threaded Rod Mount

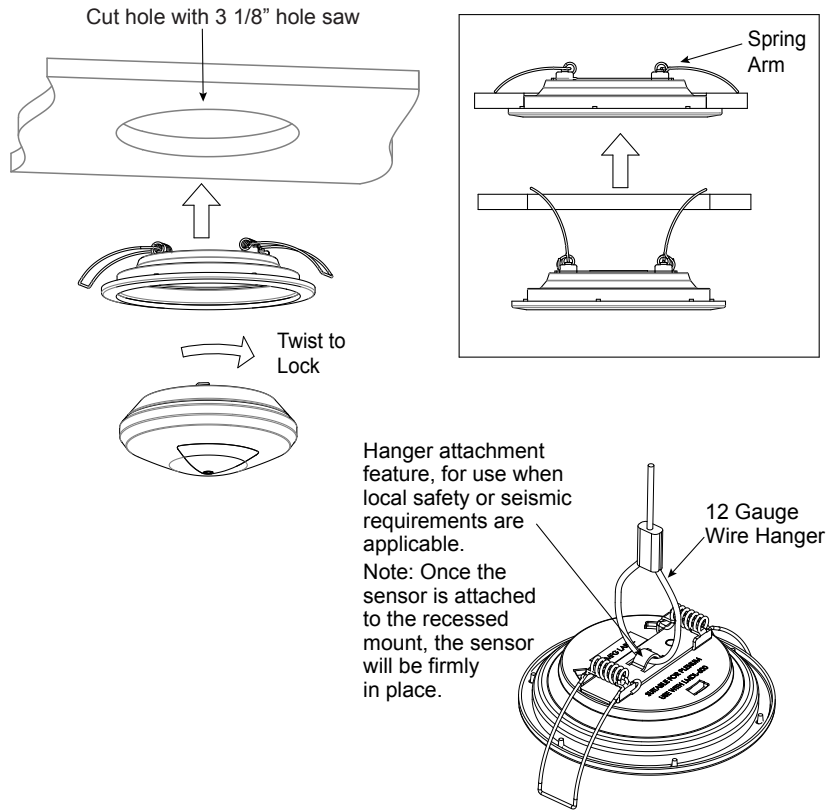
The threaded rod adapter can mount to a 3/8" - 16 or 1/4" - 20 hanging threaded rod.

1. Screw the adapter onto the rod.
2. Attach the mounting plate to the adapter using the included 10mm screw.
3. Twist the LMDL-600 clockwise to lock it onto the mounting plate.



Recessed Mount, using the LMDL-600-RPM

1. Using a 3 1/8" hole saw, cut a hole in the ceiling.
2. Raise the spring loaded arms so they fit through the hole.
3. Release the arms. The LMDL-600 will loosely clamp to the ceiling.
4. Hold the edges of the recessed mounting plate to prevent it from moving, then twist the LMDL-600 clockwise to lock it onto the mounting plate.



SETTING UP A ROOM NETWORK BY PAIRING DEVICES

Pair wireless devices to a room controller to create a secure individual room network and enable Plug N' Go operation.

Device pairing can be done by using the DLM Config App or Push-to-Pair (PtP) mode on the room controller and all other wireless devices. Because the app is needed for commissioning the LMDL-600, you may find it easier to use the DLM Config app.

To pair devices in a network, they must all have the same wireless channel and PAN ID. By default the channel is 15 and the PAN ID is 1. Using Push-to-Pair mode, the PAN ID for all devices being paired is migrated to a new number, so that only those device communicate with each other. Note that while the channel remains at its default value using Push-to-Pair, if you pair devices using the DLM Config app, you can also change the channel.

Recommended Pairing Methods for Different Scenarios

	Rooms with One Room Controller	Rooms with Multiple Room Controllers
Set Up a new room network	DLM Config App or Push-to-Pair Mode	DLM Config App or Push-to-Pair Mode
Add a device to an existing room network	DLM Config App or Push-to-Pair Mode	DLM Config App

NOTE: LMCS-100 software, version 4.7 or later can also be used to pair devices. However, LMCS-100 requires use of an LMBR-650.

DEVICE PAIRING, COMMISSIONING, AND UNIT ADJUSTMENT USING THE DLM CONFIG APP

The DLM Config App is available for both iOS® and Android® devices. Search "DLM Config" on your device to download.

The app provides the ability to pair various devices in a room. The app is also required in order to configure and calibrate the LMDL-600, which must be done before it will function correctly in the room. Additionally, you can modify load binding and edit various DLM parameters within the app.

For details on the features and operation, download the DLM Config App User Guide from the wattstopper web site at :

<https://www.legrand.us/wattstopper.aspx>

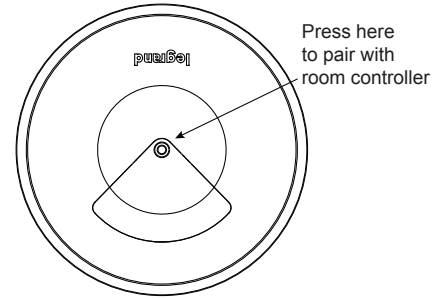
NOTE: LMCS-100 software, version 4.7 or later can also be used to pair devices, commission the LMDL-600, and edit DLM parameters. However, LMCS-100 requires use of an LMBR-650.



DEVICE PAIRING USING PUSH-TO-PAIR MODE

Push-to-Pair in a room with a single LMRC-611MCC Room Controller

NOTE: Once you enter PtP mode on the room controller, a three minute timer begins. If the Config button on any device in the room is pressed, the timer resets and begins the three minute countdown again. If no Config button is pressed within three minutes, the room controller will exit PtP mode.



1. **Enter PtP mode on the room controller.** Press the Config button three times (within three seconds) until the LED on the room controller flashes green.
2. **Enter PtP mode on the LMDL-600.** Using a pointed tool, press the Config button three times. As with the room controller, the LED on the switch will flash green.
3. **Pair the LMDL-600.** Press the Config button on the LMDL-600 once to pair it to the room controller. The load connected to the room controller will toggle once (if the load is OFF, it will turn ON; if ON, it will turn OFF) to indicate that pairing was successful.

NOTE: If there are any wireless sensors, dimmers, or additional switches in the room, repeat steps 2 and 3 for each of those devices so that all devices are paired together in the same network. For each device, the load will toggle during step 3.

4. **Exit PtP mode.** Exit PtP on the room controller, by pressing the Config button 3 times. The LED on the room controller will flash blue while it completes the pairing process. The default PAN ID on all devices will change to a new number, based on the last four digits of the Mac address on the room controller, and now those devices will communicate only with each other and not any devices which have not been paired. Once complete, the switches and sensors will automatically exit PtP mode and will reboot. The LED on each switch or sensor will flash white at least once before resuming normal operation.

NOTE: It is important to exit PtP mode within the three minute time limit mentioned above. If you do not, none of the device pairings will be remembered and you have to start the process over from the beginning.

Push-to-Pair in a room with multiple LMRC-611MCCs

In a room with multiple loads, there may be more than one LMRC-611MCC. They can all be paired to the same room network, allowing the scene switch to set each load to different levels per scene. One of the room controllers will become the master, determining the PAN ID and channel settings for all the devices in the network.

1. **Enter wireless Push-to-Pair (PtP) mode on all room controllers.** Press the Config button three times on each LMRC-611MCC to put them all in PtP mode. The green LEDs will flash on all room controllers.
2. **Enter PtP mode on the LMDL-600.** Using a pointed tool, press the Config button three times. As with the room controller, the LED on the switch will flash green.
3. **Pair the LMDL-600.** Press the Config button on the LMDL-600 once to pair it to the room controller. The load connected to the room controller will toggle once (if the load is OFF, it will turn ON; if ON, it will turn OFF) to indicate that pairing was successful.

NOTE: If there are any wireless sensors, dimmers, or additional switches in the room, repeat steps 2 and 3 for each of those devices so that all devices are paired together in the same network. For each device, the load will toggle during step 3.

4. **Pair the room controllers together.** Press the Config button once on each room controller. This indicates to the rooms controllers that they will be paired with each other.
5. **Exit PtP mode.** On one of the room controllers, press the Config button 3 times. This room controller will become the master. The LED on the room controller will flash blue while it completes the pairing process. The default PAN ID on all devices will change to a new number, based on the last four digits of the Mac address on the room controller, and now those devices will communicate only with each other and not any devices which have not been paired. Once complete, the switches and sensors will automatically exit PtP mode. The LED on each switch or sensor will flash white at least once before resuming normal operation.

NOTE: It is important to exit PtP mode within the three minute time limit mentioned above. If you do not, none of the device pairings will be remembered and you have to start the process over from the beginning.

Pairing a device to an existing network

If you need to add the LMDL-600 to an existing in room network, follow the procedure below:

1. **Revert the room controller to its default Channel and PAN ID.** Press the Config button on the room controller seven times. If there are multiple room controllers in the network, this should be done on the master (see note below). This will set the room controller back to the default values for the Channel and PAN ID, so that it can communicate with the LMDL-600. However, other devices previously paired to the room controller will still remain paired to it.
2. **Enter wireless Push-to-Pair (PtP) mode on the room controller.** Press the Config button three times (within three seconds) until the LED on the room controller flashes green.
3. **Enter PtP mode on the LMDL-600.** Using a pointed tool, press the Config button three times. As with the room controller, the LED on the switch will flash green.
4. **Pair the devices.** Press the Config button on the LMDL-600 once to pair the LMDL-600 to the room controller. The load connected to the room controller will toggle once (if the load is OFF, it will turn ON; if ON, it will turn OFF) to indicate that pairing was successful.
5. **Exit PtP mode.** Exit PtP on the room controller, by pressing the Config button 3 times. The LED on the room controller will flash blue while it completes the pairing process. The PAN ID of the LMDL-600 will change to the value used by the previously paired devices and the room controller also returns to that value.

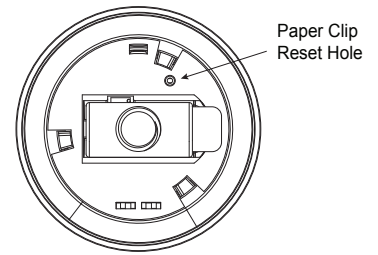
NOTE: With multiple room controllers, you need to use the master room controller, but you may not know which is the master. For this reason, Wattstopper recommends using the DLM Config App when adding a device to an existing network with multiple room controllers. However, if the app is not available. It is possible to determine the master by using Push n' Learn mode. The master is the one wired to Load 1 (the first load that will turn On). For details on Push n' Learn Mode, see the guide for the LMRC-611MCC, LMSW-605, or LMDM-601.

RESETTING THE LMDL-600

When you reset the LMDL-600, the Channel and PAN ID will return to their default values, and if the switch was previously paired, it will no longer be connected to that room network. All DLM parameters are also returned to their default values.

There are two ways to reset the LMDL-600:

- Press the Config button 10 times. The LED will blink green each time the Config button is pressed. After the 10th press, the LED will turn red then briefly turn white indicating it is rebooting.
- On the back of the sensor, is a small hole that will fit a paper clip. Use a paper clip to depress the button inside that hole and hold for 10 seconds. When you first press the reset button, the LED will blink red once, then after the 10 second will reboot and the LED will briefly turn white, indicating it is rebooting.



FCC REGULATORY STATEMENTS

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with FCC and IC safety levels of radio frequency (RF) exposure for Mobile devices.

This device is only authorized for use in a mobile application. At least 20 cm of separation distance between this device and the user's body must be maintained at all times.

Any changes or modifications not expressly approved by The Watt Stopper Inc. could void the user's authority to operate the equipment.

WARRANTY INFORMATION	INFORMATIONS RELATIVES À LA GARANTIE	INFORMACIÓN DE LA GARANTÍA
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