# SensiLUM®

## PRODUCT SAFETY

When using electrical equipment, basic safety precautions should always be followed, including the following:

⚠️ **READ THESE INSTRUCTIONS BEFORE USING THIS PRODUCT.**

⚠️ Using a wire with a higher thickness will cause insufficient connection.

⚠️ **SAVE THESE INSTRUCTIONS.**

## GETTING STARTED

### Overview

The SensiLUM® Wireless Integrated Sensor enables luminaires to be connected wirelessly to the OSRAM Encelium® Extend Light Management System (LMS). The SensiLUM sensor collects occupancy and daylight information from a lighted space and wirelessly communicates this data to the OSRAM Encelium Extend Wireless Manager.

### Tools Required

— SensiLUM Wireless Integrated Sensor
— OPTOTRONIC® LED Power Supply
— Solid core wire (18-22 AWG)
— Tunable White Wallstation, Part Number 58259 (if using SensiLUM for Tunable White luminiares)
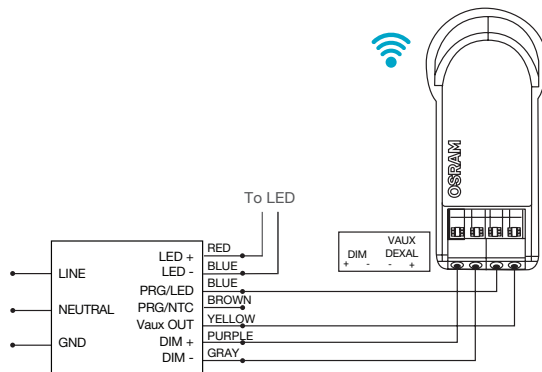
## ENCELIUM

# SensiLUM®

## WIRING DIAGRAMS—GENERAL LIGHTING

A solid core or fine stranded wire of 18-22 AWG (0.20 mm$^2$ — 0.75 mm$^2$) is to be used with a recommended strip length of 0.27 — 0.35 inch (7 — 9 mm) to ensure secure connection.
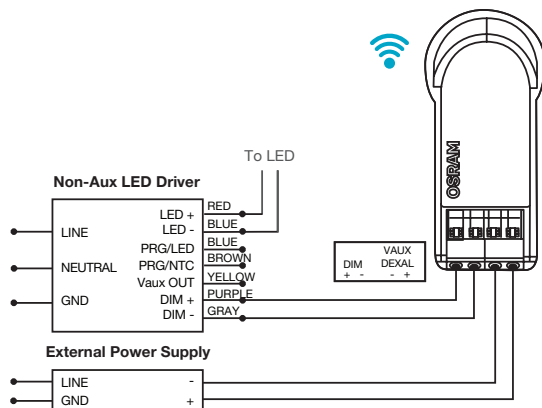
0-10V

❶ **LED Driver With Auxiliary Power Supply**
When using LED Drivers with integrated auxiliary power supply.



❷ **LED Driver Without Auxiliary Power Supply**
When using LED Drivers that do not have integrated auxiliary power supply.
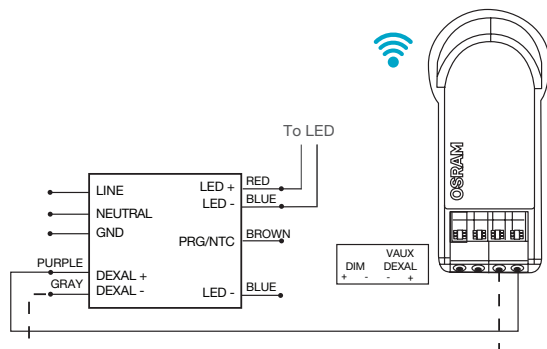
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❸ **Multiple LED Drivers**

When using OSRAM OPTOTRONIC® LED drivers with auxiliary output, the driver should be programmed to 12V auxiliary. The default voltage of the driver out-of-the-box is 12V.

This wiring is suitable for luminaires with multiple LED power supplies that are to be controlled uniformly by a single module.
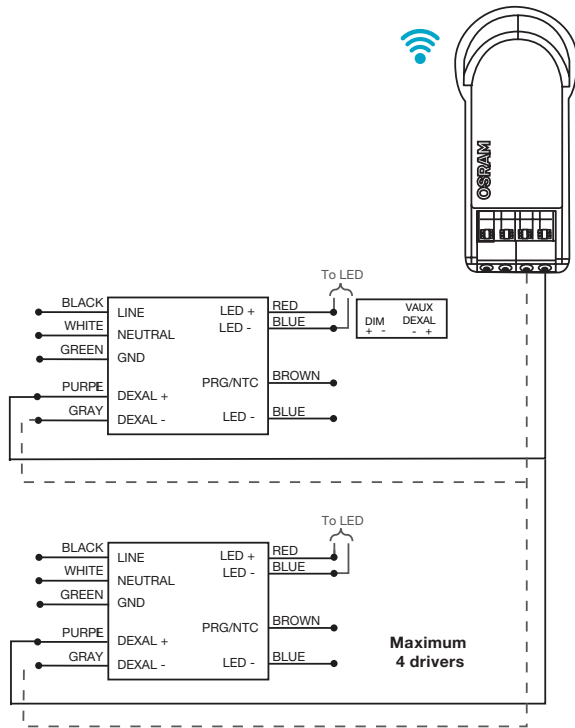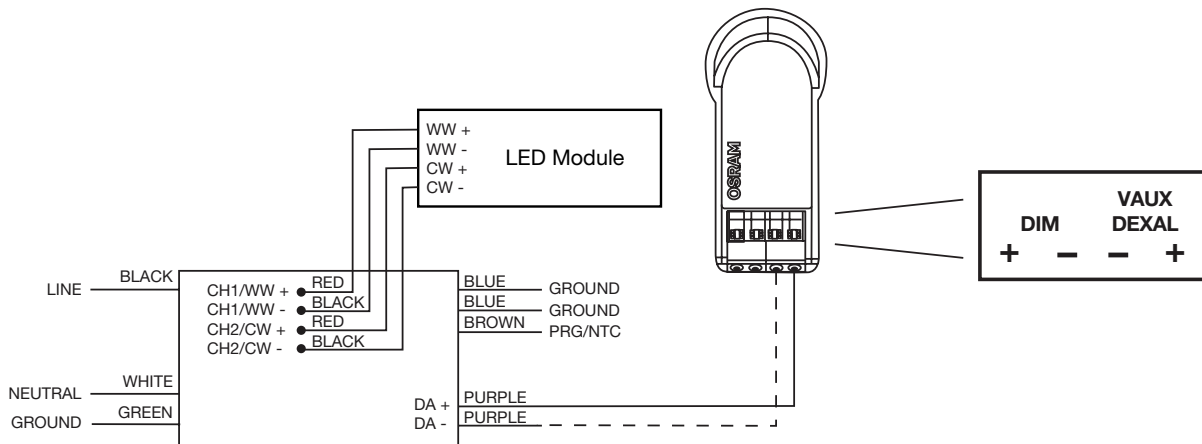


## DEXAL

❶ **Single LED driver**

# SensiLUM®
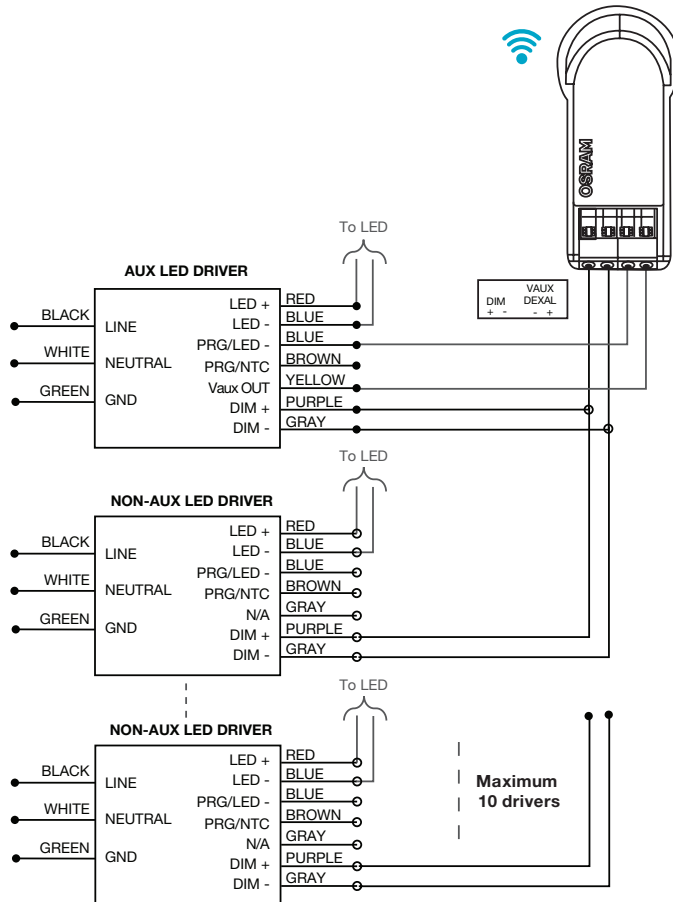
❷ **Multiple LED Drivers**

When using OSRAM OPTOTRONIC® DEXAL LED drivers, the DEXAL setting needs to be enabled and programmed on the driver. By default, this setting is enabled for drivers out-of-the-box.
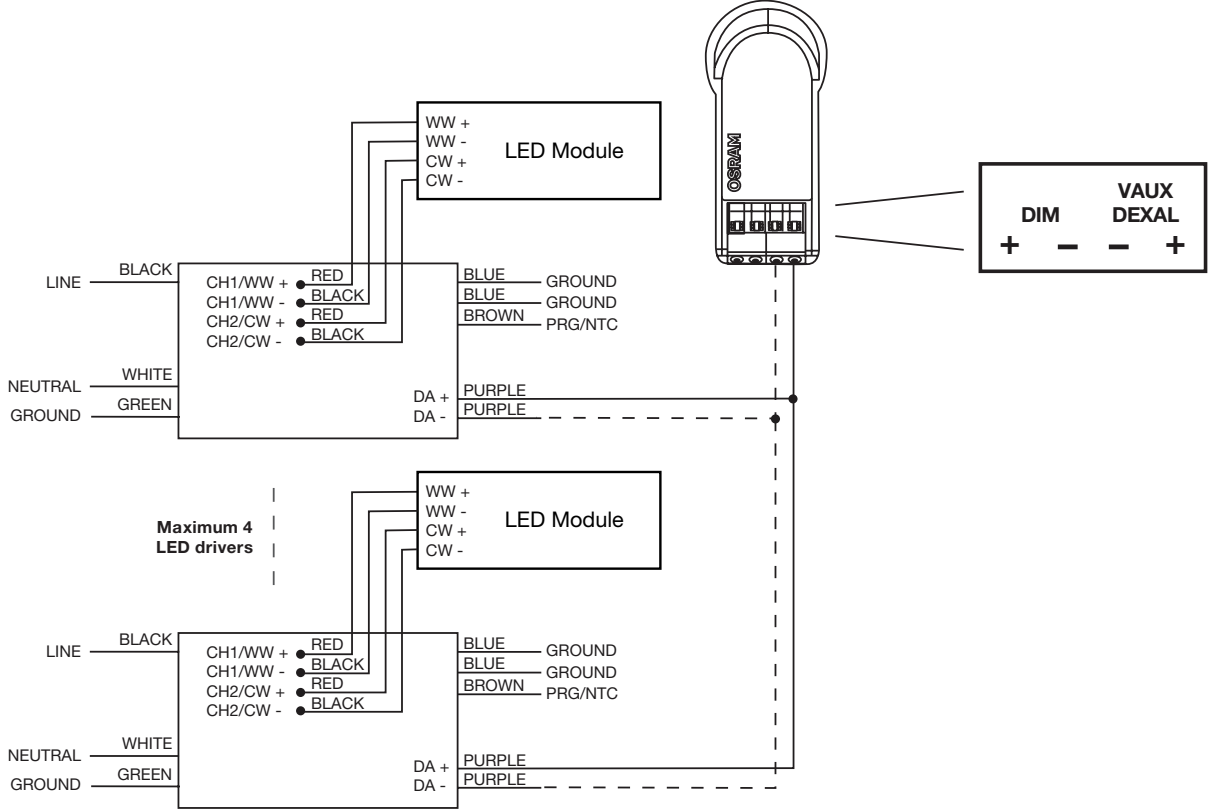


## WIRING DIAGRAMS—TUNABLE WHITE LIGHTING

❶ **Single LED Driver**

# SensiLUM®

**❷ Multiple LED Drivers**

When wiring multiple LED drivers to a single module, group the DA+ and DA- and follow the polarity as shown. A maximum of 4 LED drivers can be connected to a single module. .
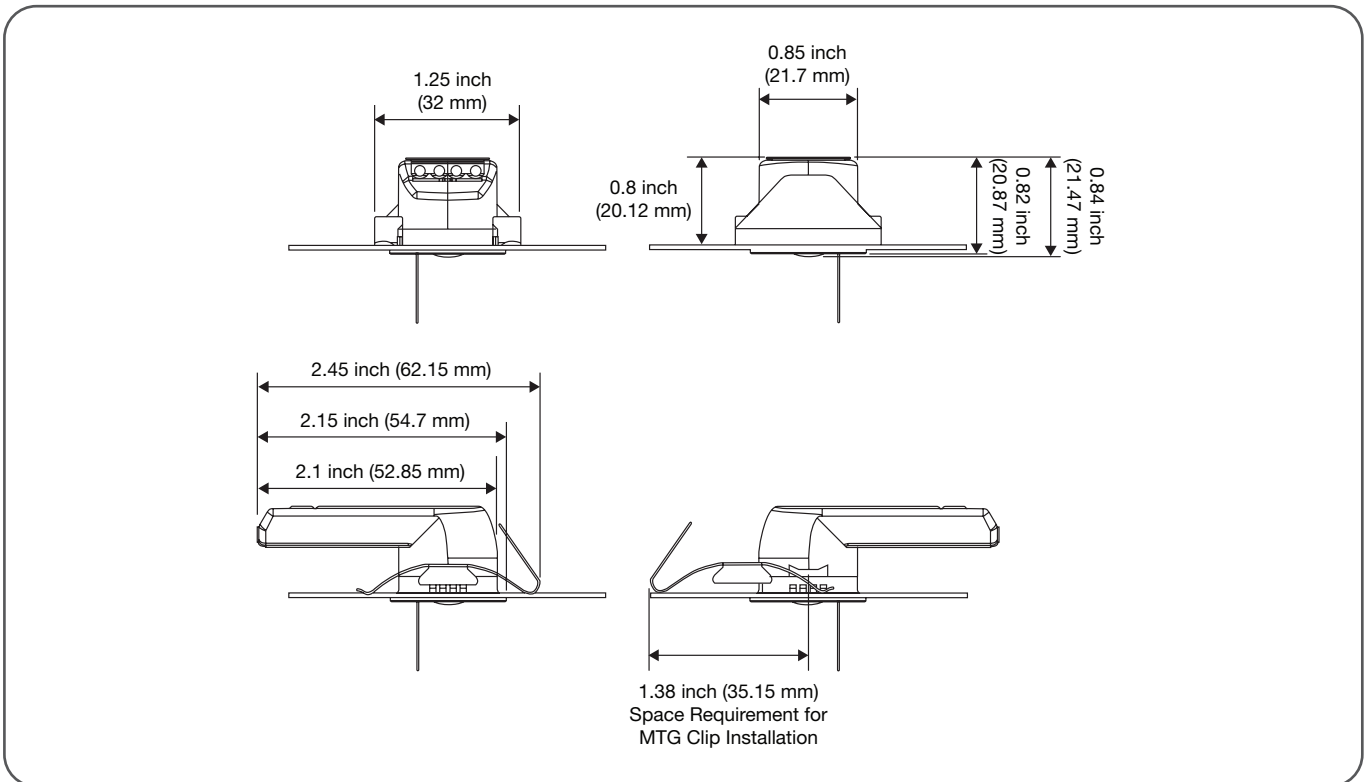
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## Adjustable Shutter

The dual-axis shutter allows end user to fine tune field of view based on the luminaire's placement in the applications space.
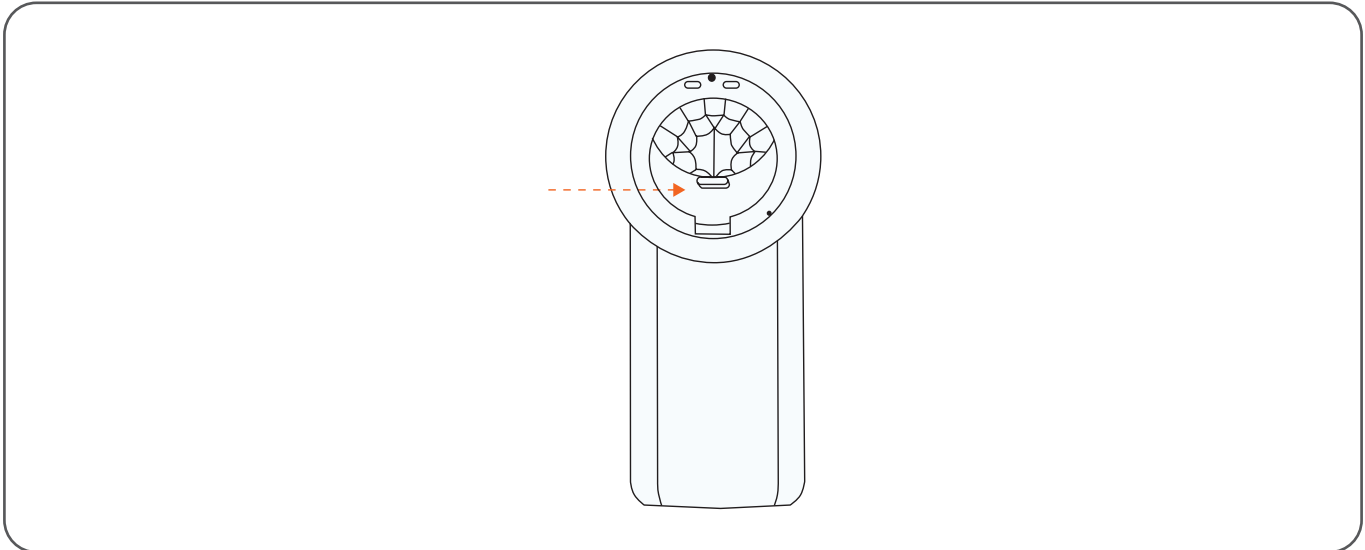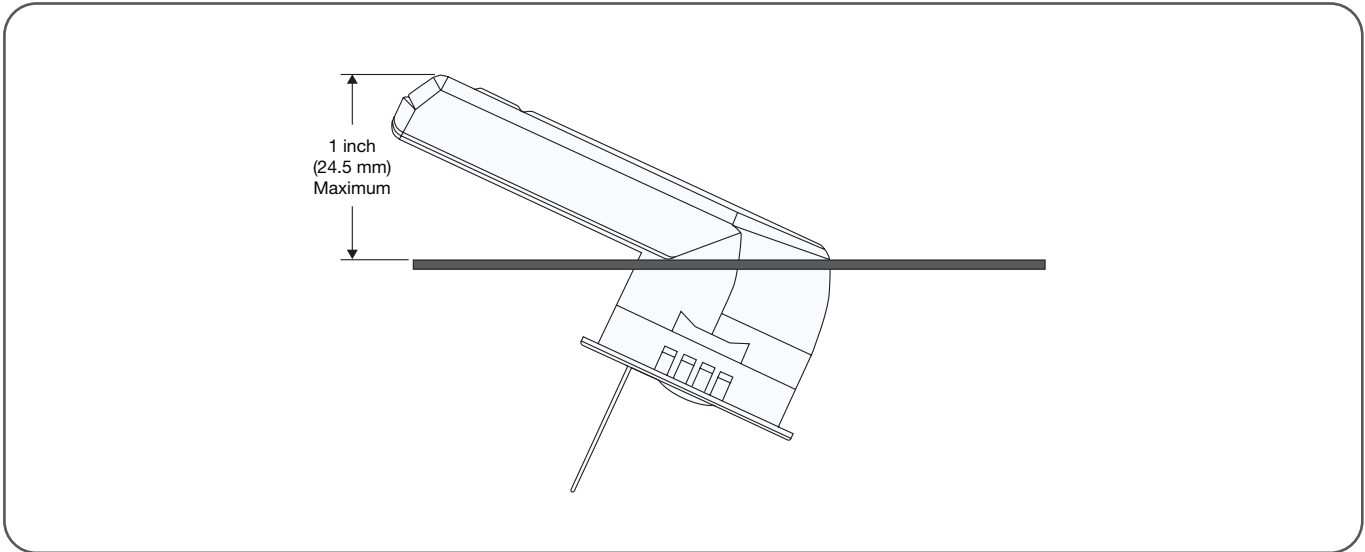


## INSTALLATION

Before initiating the installation, please note the minimum mechanical requirements.

❶ Review SensiLUM® dimensional drawings.



1.25 inch (32 mm)

0.85 inch (21.7 mm)

0.8 inch (20.12 mm)

0.82 inch (20.87 mm)

0.84 inch (21.47 mm)

2.45 inch (62.15 mm)

2.15 inch (54.7 mm)

2.1 inch (52.85 mm)

1.38 inch (35.15 mm)
Space Requirement for
MTG Clip Installation

# SensiLUM®

❷  Minimum height required in luminaires to mount the sensor.

1 inch
(24.5 mm)
Maximum

## Minimum Requirements for Placing the Pre-Drilled Hole

1.38 inch
(35 mm)
Mimimum

0.68 inch (17 mm)
Mimimum

Luminaire Metal Housing

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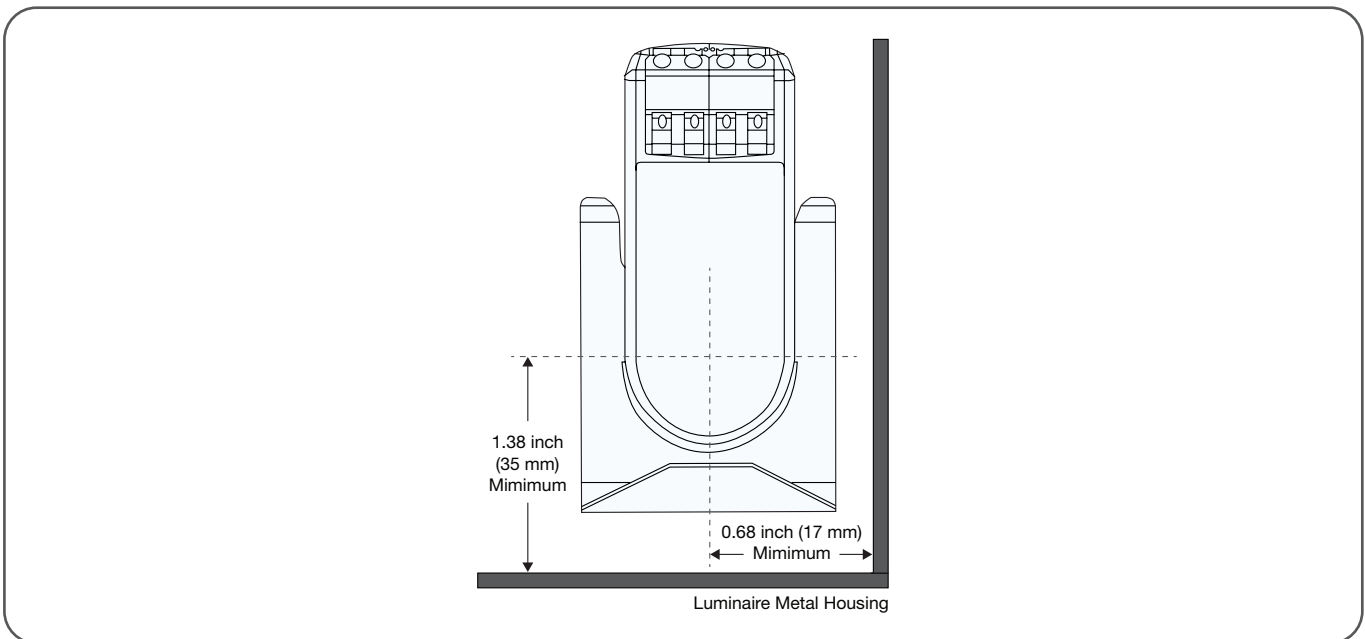
❶  Push the sensor through the pre-drilled 0.5 inch (Pg-7) trade size (0.875 inch ±0.01 inch or 22.25 mm ±0.25 mm) hole.



Luminaire Front View
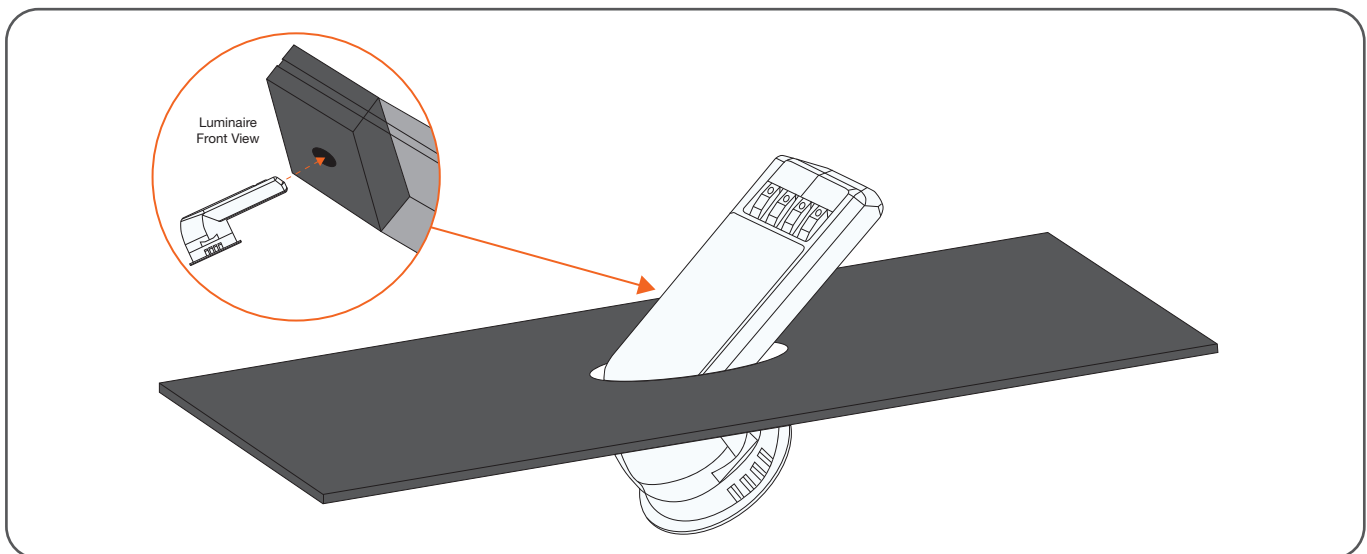
❷  Position the sensor flush to the luminaire metal casing.

# SensiLUM®
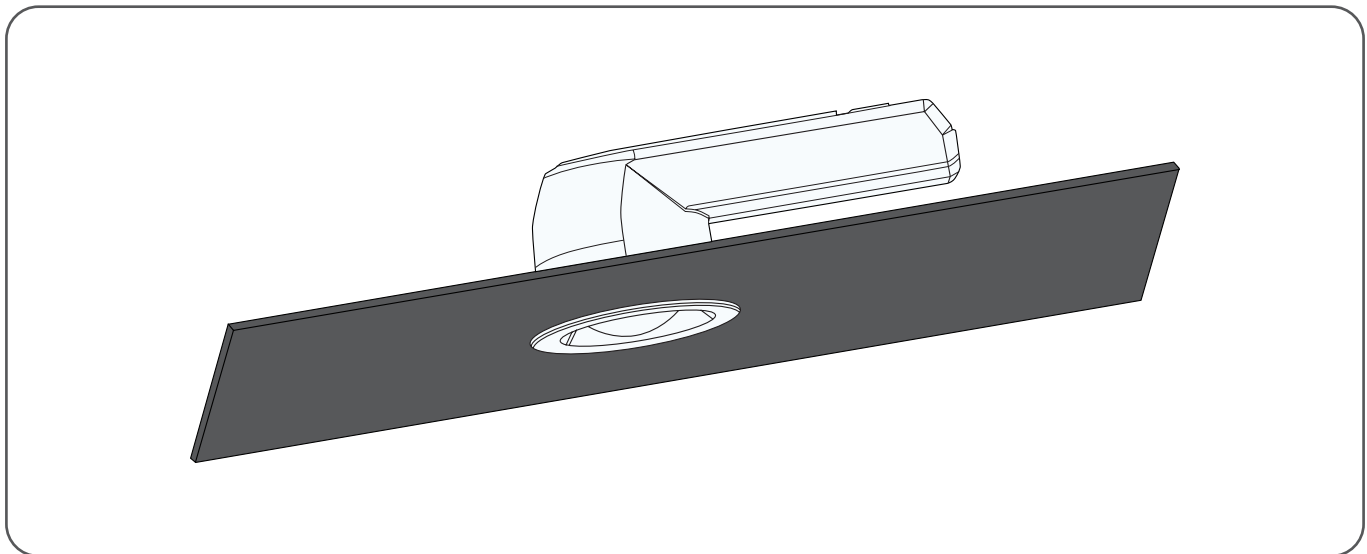
❸ Push the clip towards the sensor until curved metal piece is clamped into the sensor groove.

## Push Clip

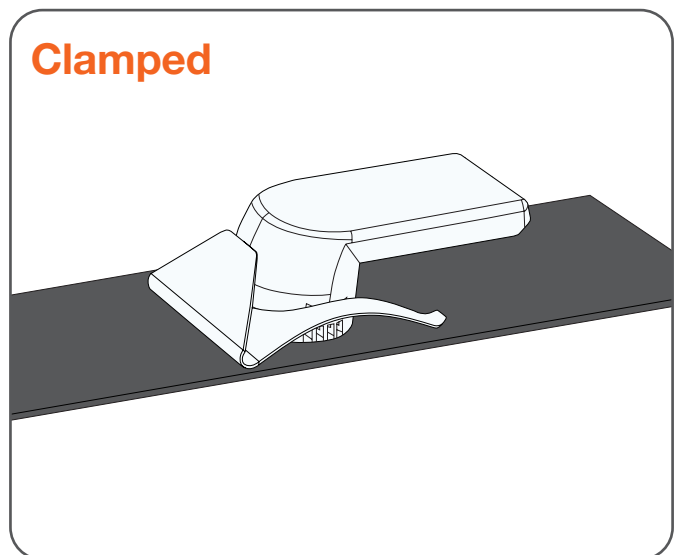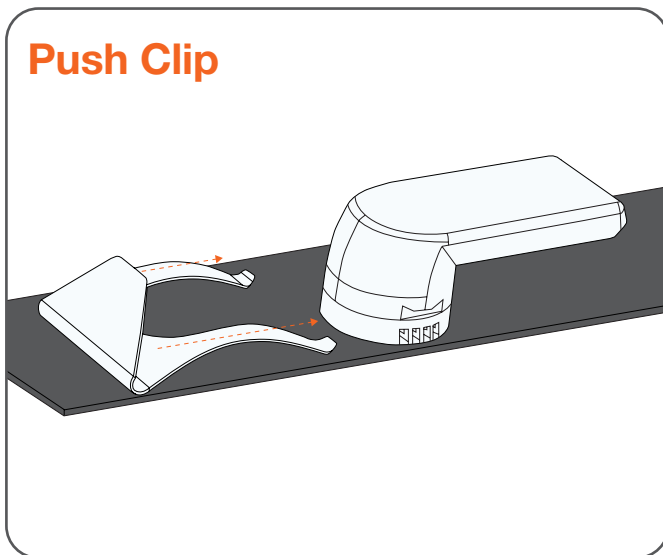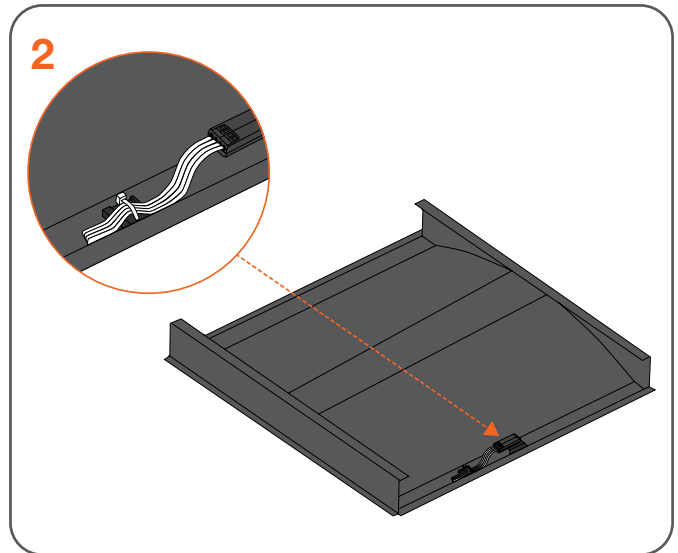## Clamped

❹ Connect wires as shown in section "Wiring Diagrams".

Depress the Locking Mechanism to Remove Wires

24-18 AWG (0.2 – 0.75 mm$^2$) Solid Core or Fine Stranded Wire for Drive Connections
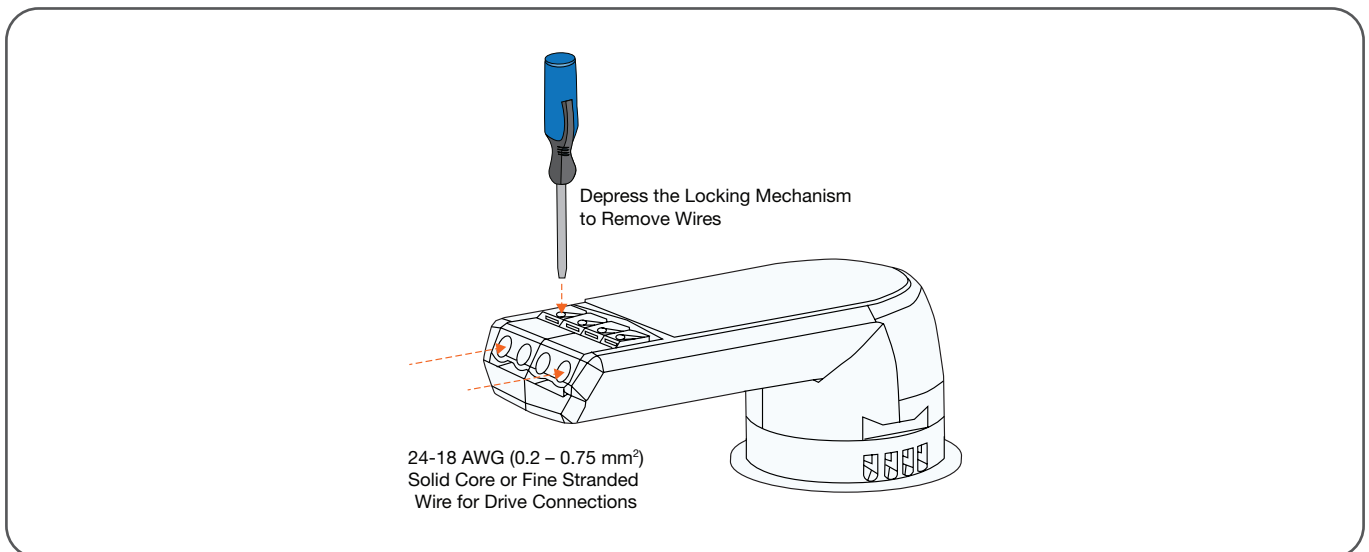
**5** Apply strain relief to the wires using either (1) a built-in strain relief or (2) a stick-on adhesive backed cable tie mount, as well as a cable tie.
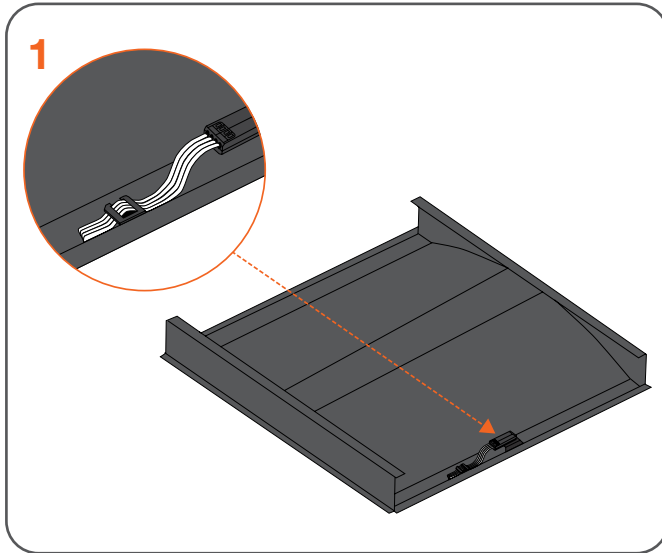




## SUING 2CH TW LED DRIVER CONFIGURATION

When using the 2CH TW Led driver with SensiLUM, the following features need to be enabled – Enable DEXAL, Enable TW and DALI Standard as shown in the image below. The Enable DEXAL feature turns on the DALI power supply from the LED driver that is used to provide power to the wireless devices.
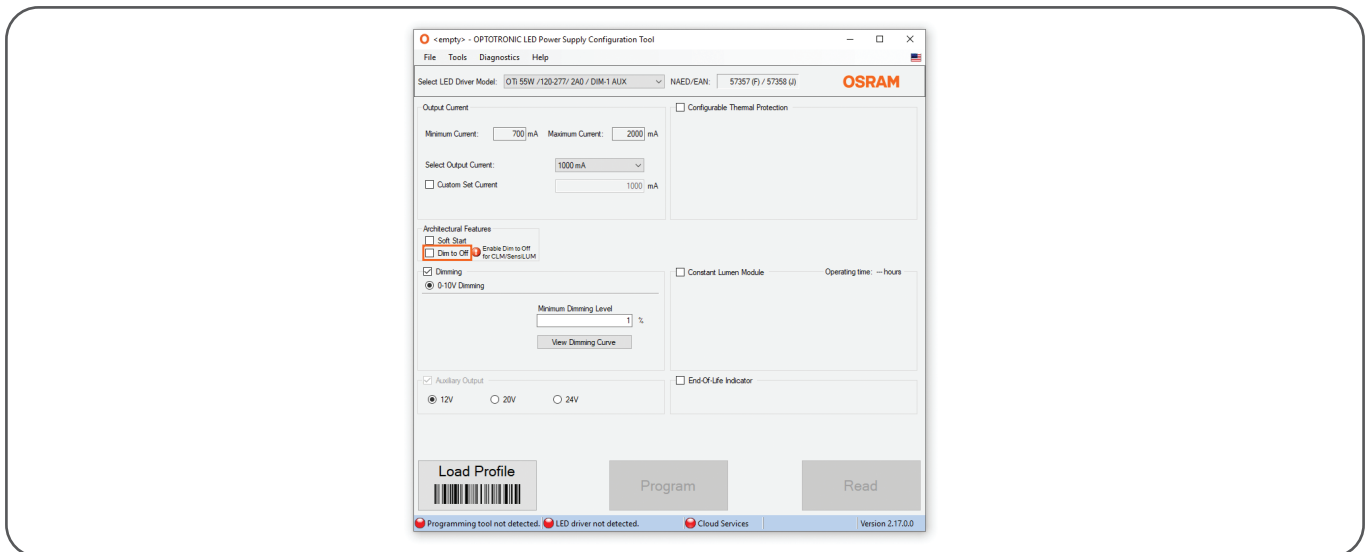


**Important:** **When using the SensiLUM with a 0-10V LED driver, the LED driver must posses Dim-to-OFF capability, and it must be enabled.**

If using OPTOTRONIC® LED Power Supplies, the dim-to-off feature must be enabled in the programming software. The default state of dim-to-off feature is disabled for out-of-the-box products.

# SensiLUM®

## END-OF-LINE TESTING

### When Using for General Lighting

To facilitate OEMs to conduct system operation at the end of the manufacturing line, an end-of-line testing routine is pre-programmed into the device that confirms the wiring and the wireless readiness of the device.

When the luminaire is powered, the luminaire turns ON and reaches its full output. The sensor module then cycles through the entire dimming range starting from 100% output level to OFF* two times. This confirms that the module is receiving power and is able to communicate the 0-10V dimming signals to the power supply. The blinking of the LED module is also an indicator that the module has not been paired and that it is actively scanning for open networks. The end-of-line testing routine repeats at each power cycle.

Before commissioning, this routine can be used to determine if a device has been paired to a network.

In addition to this pre-programmed sequence, the OSRAM Wiring Test Tool (56306) can be used to toggle the luminaire ON and OFF and go through a defined dim to minimum sequence prior to commissioning. This would indicate that the sensor module is wired correctly and ready to be paired to an open network. For more information, please refer to the Wiring Test Tool User Guide.

\* Only when dim-to-off feature is enabled via the OT Programmer for OPTOTRONIC® LED Power Supply. If feature set not enabled, the luminaire would   go to the minimum dimming level.

### When Using for Tunable White Lighting

The end of line testing can be carried out using a 2-step method. Step 1 will allow testing of the LED lighting devices and visually confirm lighting color temperature changes. Step 2 allows to test the wiring of the control device to the LED drivers.

❶ **Testing Tunable White LED Board Wiring**
   After wiring the LED driver to the LED boards on both channels, group the purple cables from all the LED drivers together and connect them to the Tunable White Wallstation (58289).

# SensiLUM®
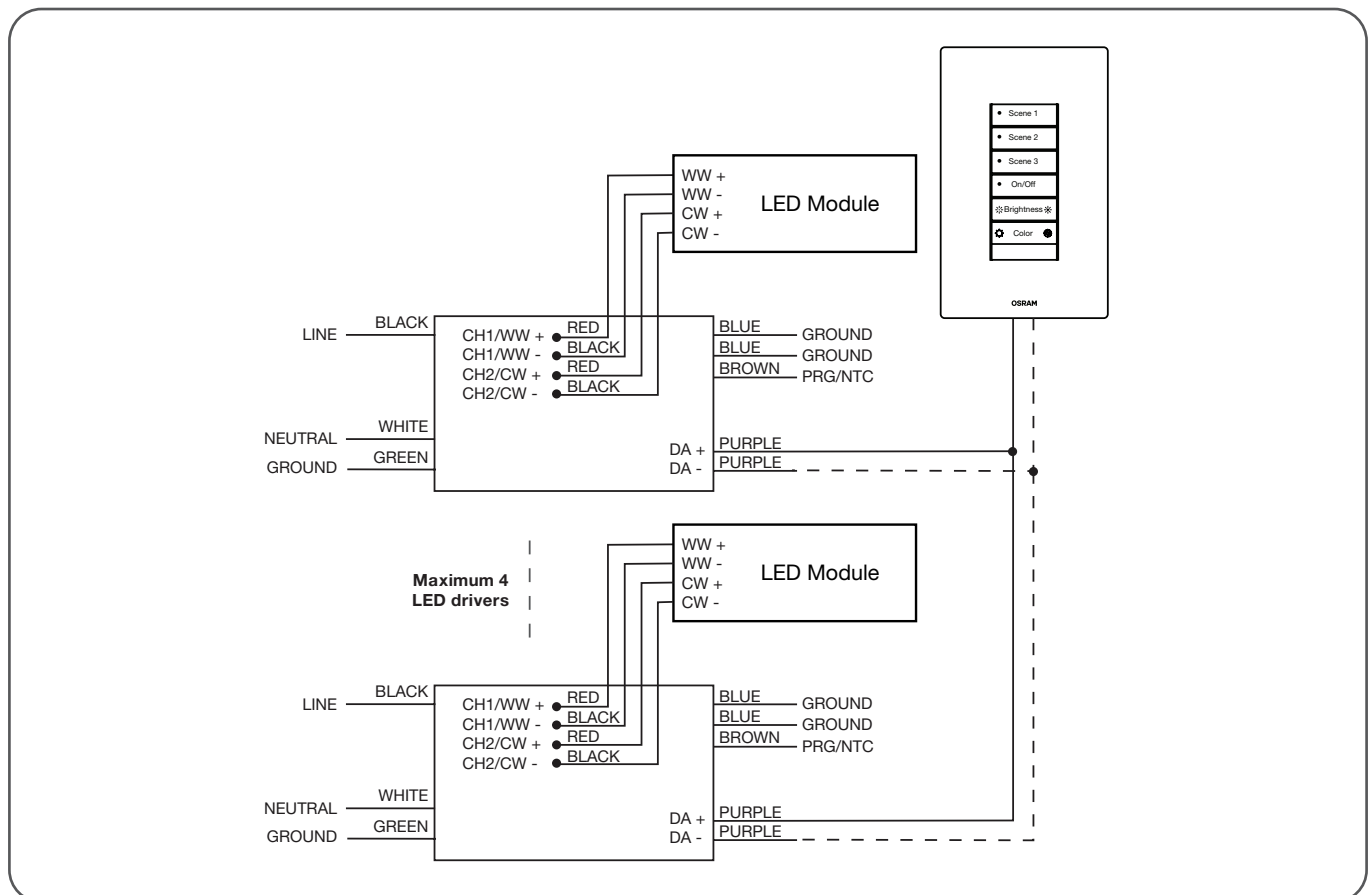
When connecting to the wallstation, control wires should be inserted into the left two push-in connectors on the back of the wallstation. Power to the wallstation and communication to and from the wallstation is achieved using these two wires only. The two ports on the right are non-functioning terminals.
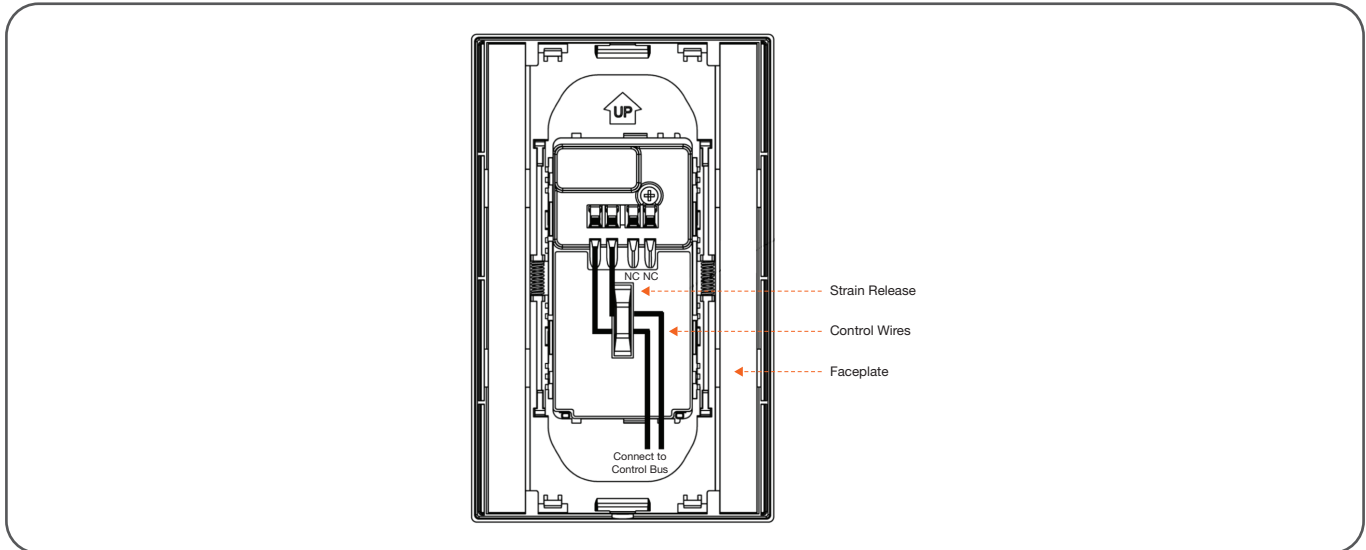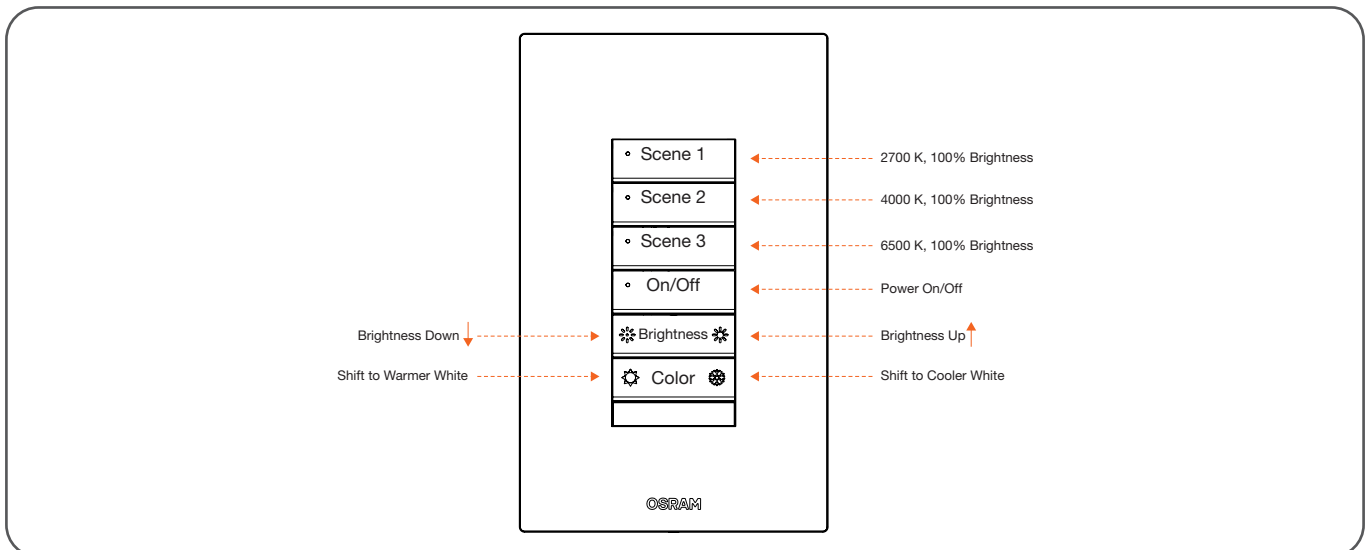


Using the scene buttons, manually cycle through the 3 scenes that recall default color temperature. Additional testing like ON/OFF and manual change of CCT and brightness can also be performed.



### ② Testing Control Wiring

To facilitate OEMs to conduct system operation at the end of the manufacturing line with the control modules installed, an end-of-line testing routine is pre-programmed into the wireless device that confirms the wiring and the wireless readiness of the device.

When the luminaire is powered, the luminaire turns ON and reaches its full output. The sensor module then cycles through the entire dimming range starting from 100% output level to OFF two times. This confirms that the module is receiving power and is able to communicate. The blinking of the LED module is also an indicator that the device has not been paired and that it is actively scanning for open networks. The end-of-line testing routine repeats at each power cycle.

Before commissioning, this routine can be used to determine if a device has been paired to a network.

# SensiLUM®

## EMERGENCY LIGHTING CONFIGURATIONS

❶ Central Power Sense, Luminaire with Integrated Vaux (Class 2)

**Mains Connection**

— Luminaire is connected to a branch circuit that is connected to back-up power circuit.
— The Encelium® Extend Wireless Manager is NOT connected to emergency back-up power.

**Condition Prior to Emergency**

— Luminaire is functioning normally.

**Emergency Condition**

— Luminaire, Encelium® Extend Wireless Manager lose normal power when power outage occurs.
— Emergency/back-up power system is initiated via central sense or switchgear.

**Emergency Behavior**

— Luminaire regains power feed when back-up power comes on. The sensor module releases the dimming control to the emergency luminaire.

**Note:** The sensor module will begin dimming again when the Encelium® Extend Wireless Manager comes back online due to Normal Power being restored.

❷ Central Power Sense, Standalone Vaux Power Supply (Class 2)

**Mains Connection**

— Standalone Vaux Power Supply and Luminaire is connected to a branch circuit that is connected to back-up power circuit.
— The Encelium® Extend Wireless Manager is NOT connected to emergency back-up power.

**Condition Prior to Emergency**

— Luminaire is functioning normally.

**Emergency Condition**

— Luminaire, Vaux Power Supply, Encelium® Extend Wireless Manager lose normal power when power outage occurs.
— Emergency/back-up power system is initiated via central sense or switchgear.

**Emergency Behavior**

— Luminaire and Vaux Power Supply regain power feed when back-up power comes on. The sensor module releases the dimming control to the emergency luminaire.

**Note:** The sensor module will begin dimming again when the Encelium® Extend Wireless Manager comes back online due to Normal Power being restored.

❸ Central Power Sense, Standalone or Integrated Vaux Power Supply (Class 2)

**Mains Connection**

— Standalone Vaux Power Supply and Luminaire is connected to a branch circuit that is connected to back-up power circuit.
— The Encelium® Extend Wireless Manager is NOT connected to emergency back-up power.

**Condition Prior to Emergency**

— Luminaire is functioning normally.

**Emergency Condition**

— Luminaire Vaux or Standalone Vaux Power Supply fails due to hardware failure, Encelium® Extend Wireless Manager does not lose normal power.

**Emergency Behavior**

— The sensor module releases the dimming control to the emergency luminaire.

**Note:** The sensor module will begin dimming again when the Encelium® Extend Wireless Manager comes back online due to Normal Power being restored.

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