SensiLUM

INSTALLATION INSTRUCTIONS

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 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 Encelium Wireless Manager.

Tools Required

- SensiLUM Wireless Integrated Sensor
- LED Power Supply
- Solid core wire — 0.2 to 0.75 mm^2 (18-22 AWG)
- Tunable White Wallstation (if using SensiLUM for Tunable White Luminaires)

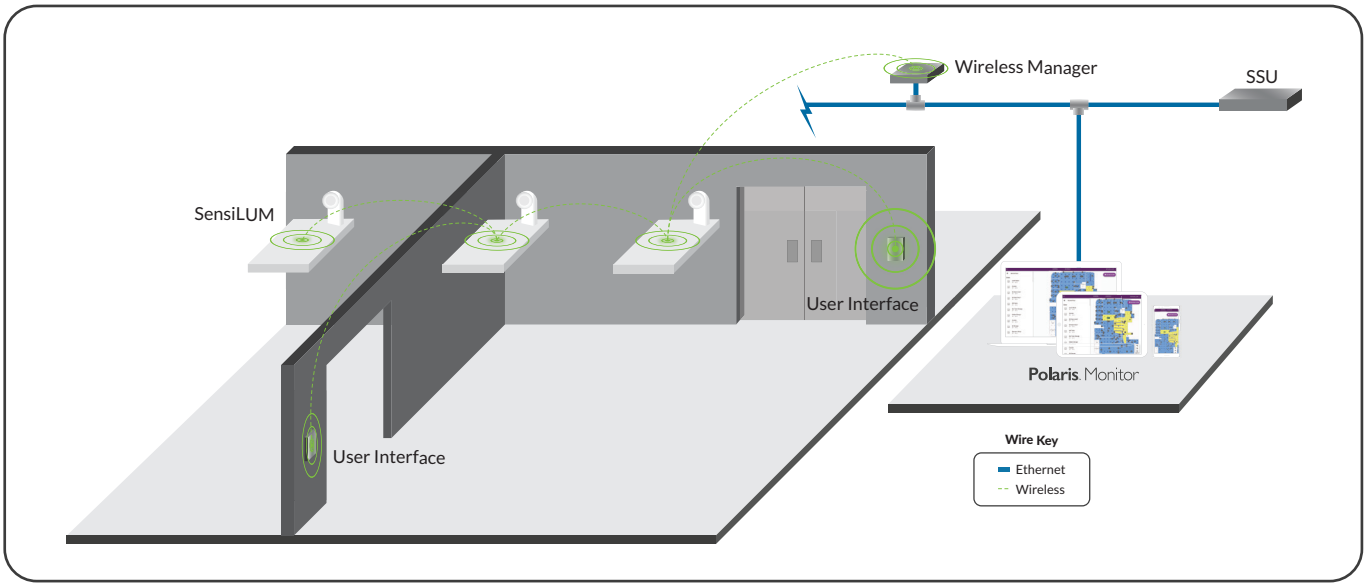
ENCELIUM

SensiLUM

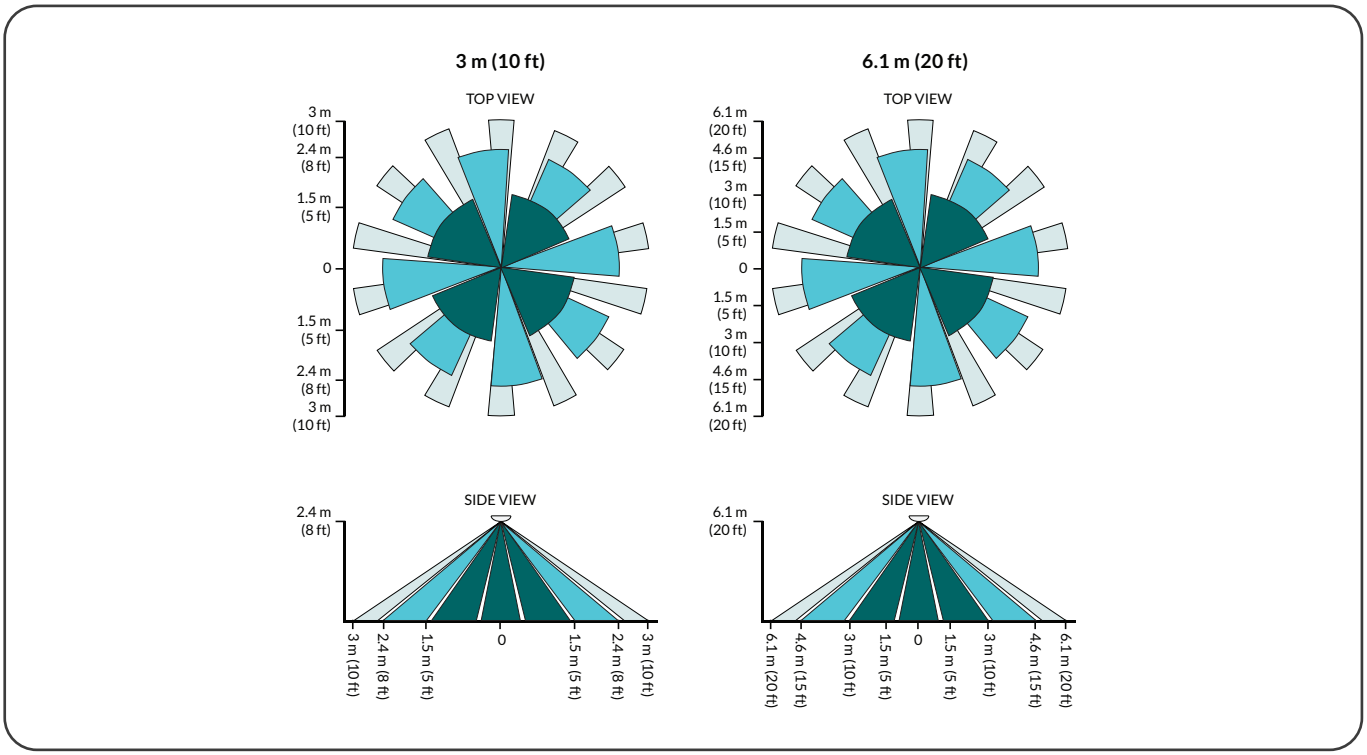
INSTALLATION INSTRUCTIONS

WIRELESS SYSTEM OVERVIEW

The SensiLUM Wireless Integrated Sensor allows luminaires to be wirelessly controlled. The Encelium X Wireless Manager sends dedicated commands wirelessly to each SensiLUM Sensor enabling individually controlled luminaires.

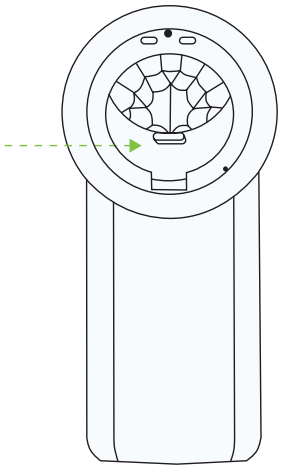


SENSOR COVERAGE



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.

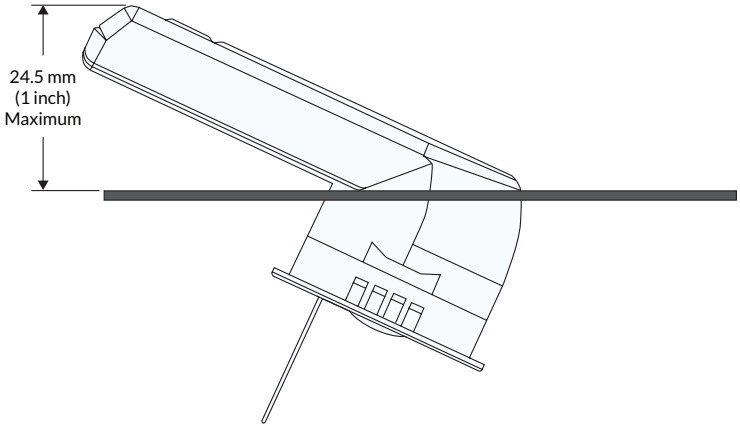


INSTALLATION

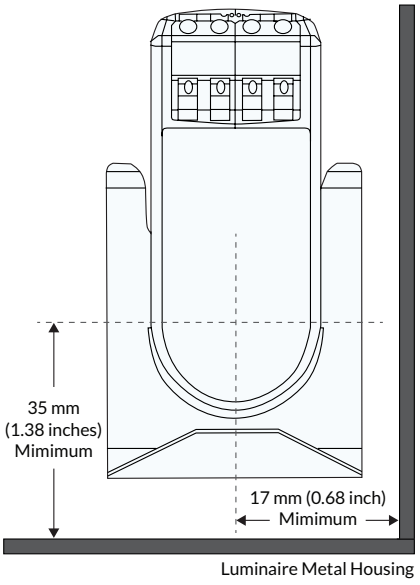
Before initiating the installation, please note the minimum mechanical requirements.

Minimum Requirements for Mounting

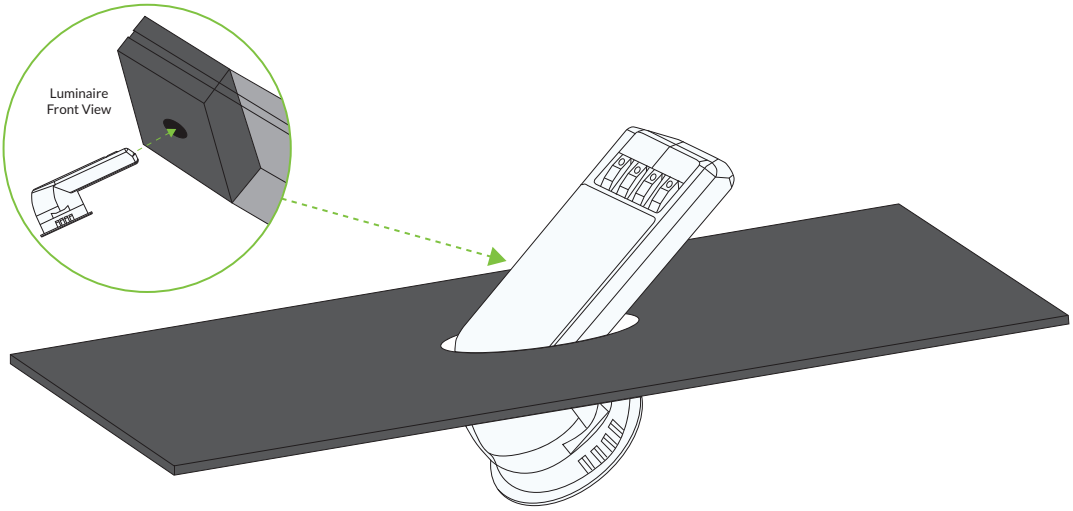
Minimum height required in luminaires to mount the sensor.



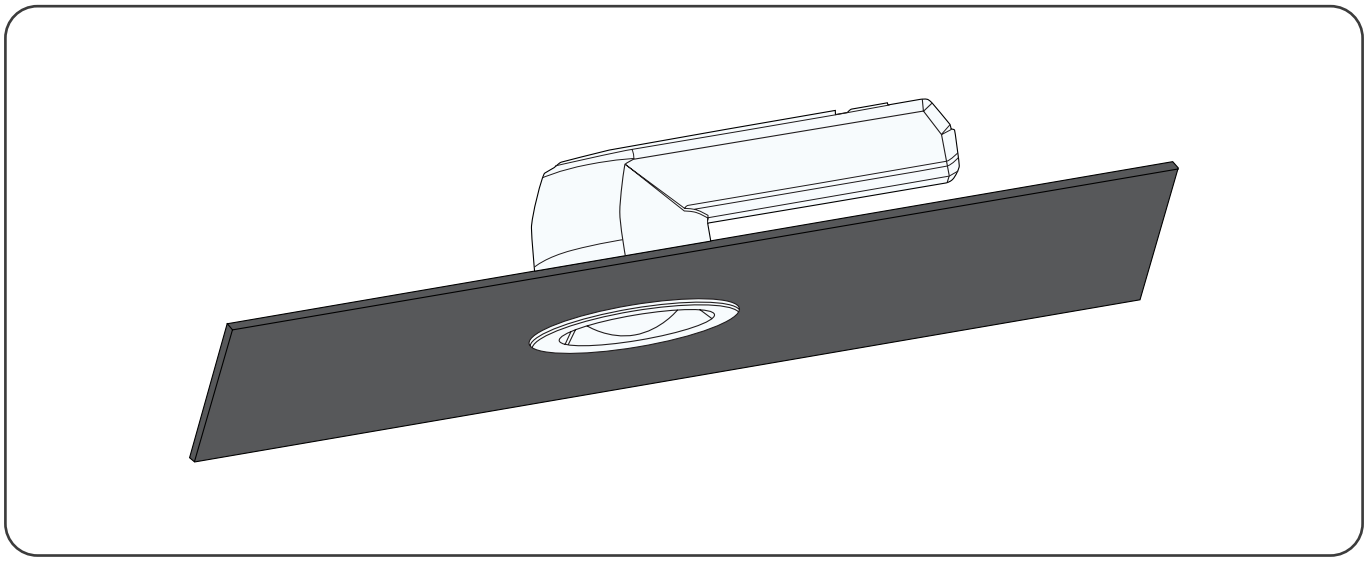
Minimum Requirements for Placing the Pre-Drilled Hole



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

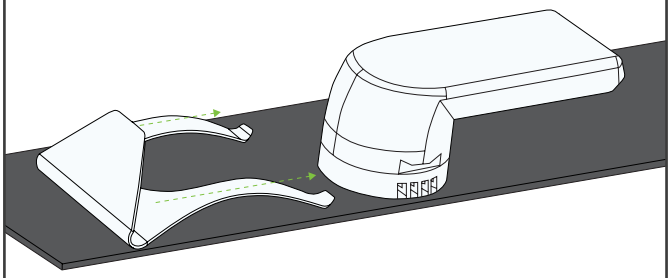


❷ Position the sensor flush to the luminaire metal casing.

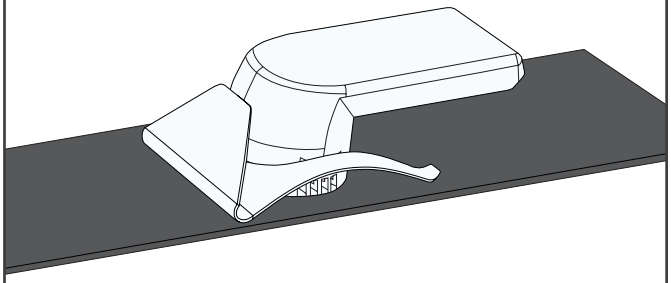


❸ Push the clip towards the sensor until curved metal piece is clamped into the sensor groove.

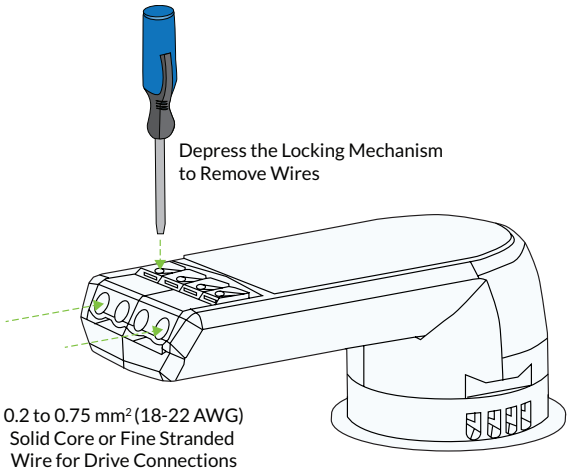
Push Clip



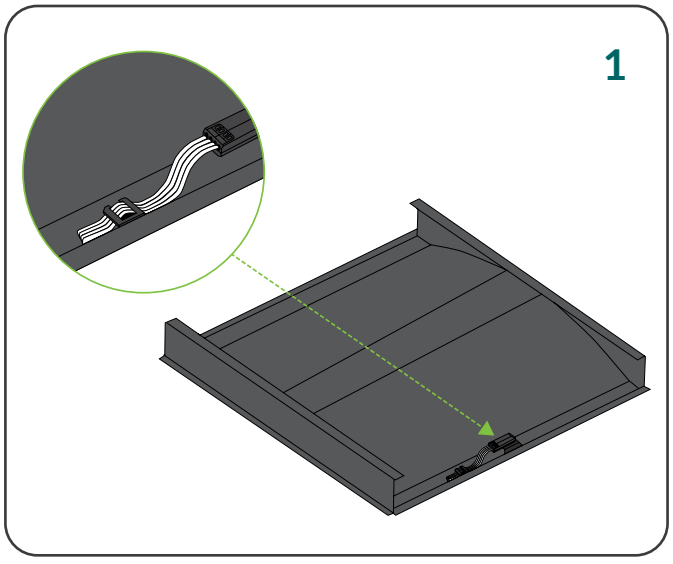
Clamped

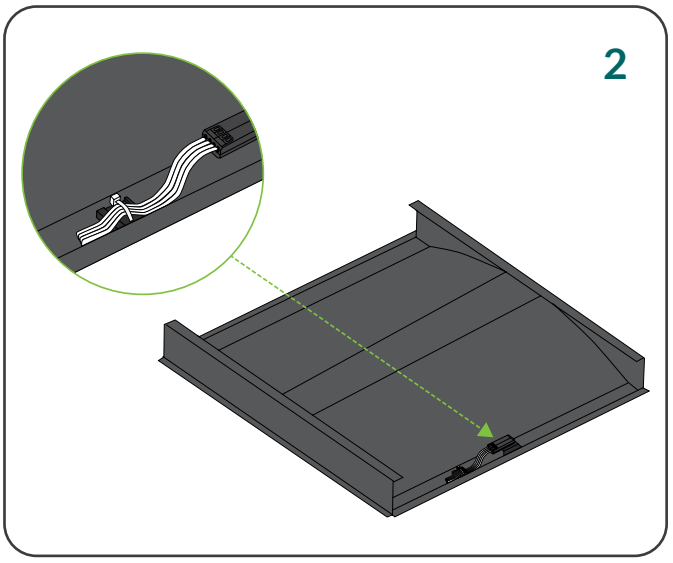


4 Connect wires as shown in section “Electrical Connections”.



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.





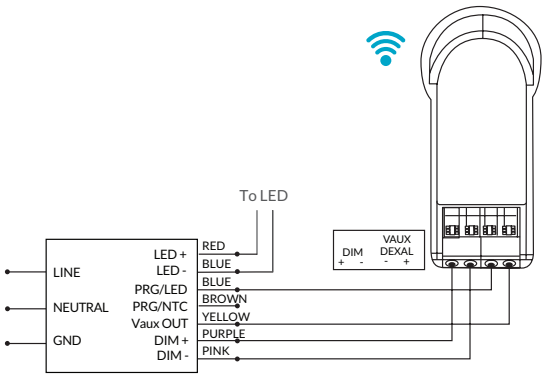
ELECTRICAL CONNECTIONS

General Lighting Wiring Diagrams

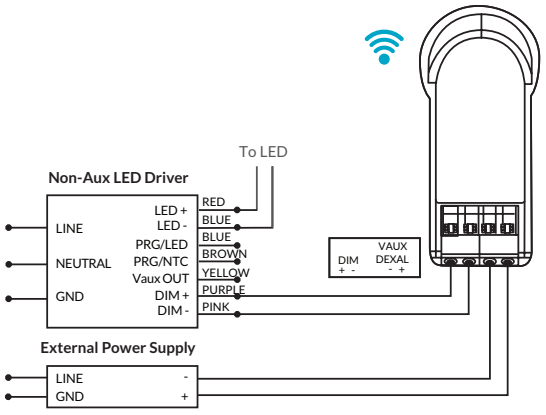
A solid core or fine stranded wire of 0.2 to 0.75 mm² (18-22 AWG) is to be used with a recommended strip length of 7 to 9 mm (0.27 to 0.35 inch) to ensure secure connection.

0-10V

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



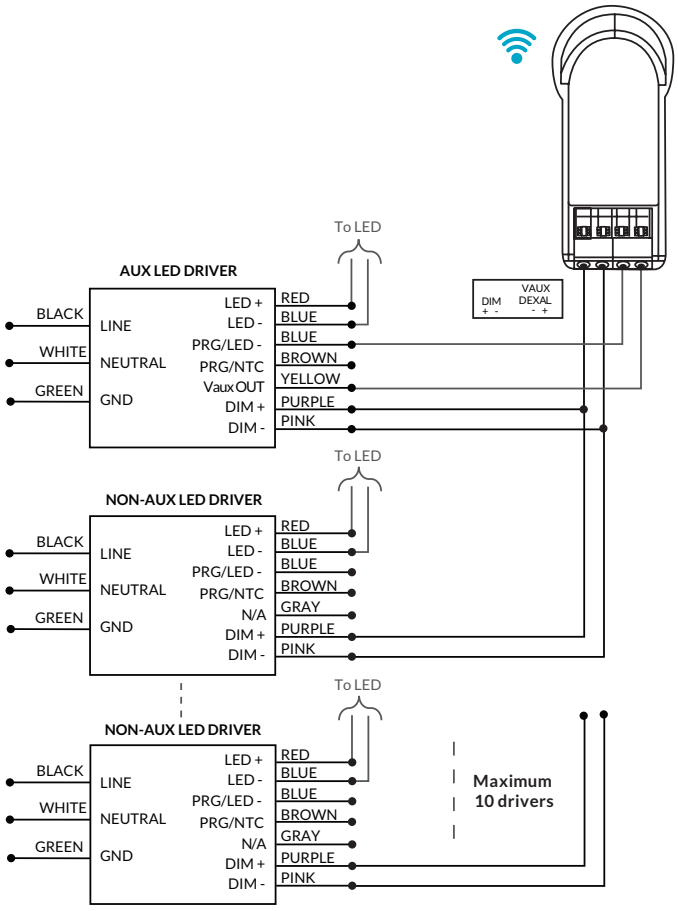
❷ **LED Driver Without Auxiliary Power Supply**
When using LED Drivers that do not have integrated auxiliary power supply.



❸ Multiple LED Drivers

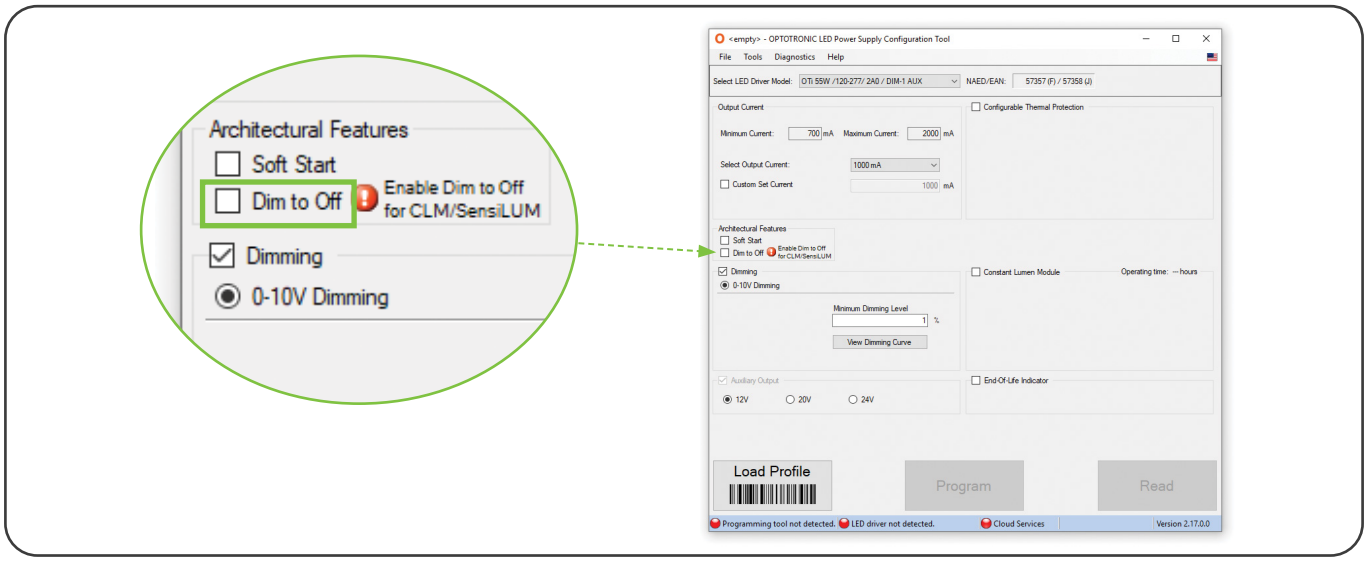
When using OPTOTRONIC LED drivers with auxiliary output, the driver should be programmed to 12V auxiliary. The default voltage of the driver out-of-the-box is 12V.

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



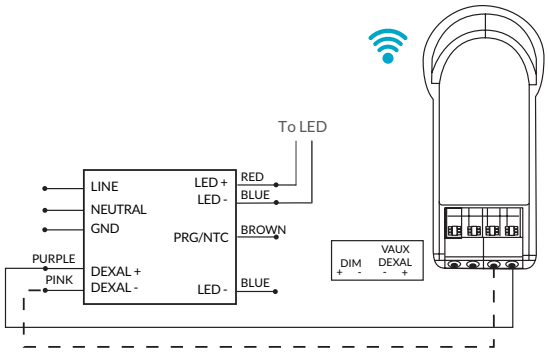
0-10V LED Driver Configuration

For applications that require the luminaire to be turned off, 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.



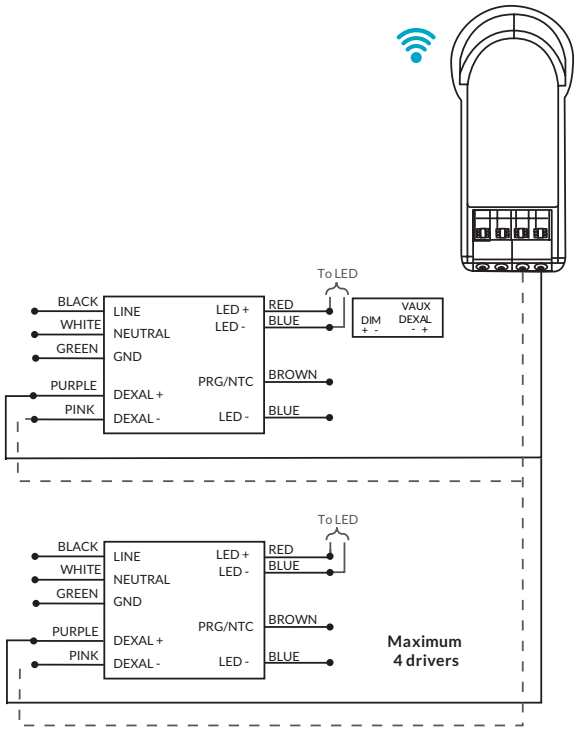
DEXAL

❶ Single LED driver



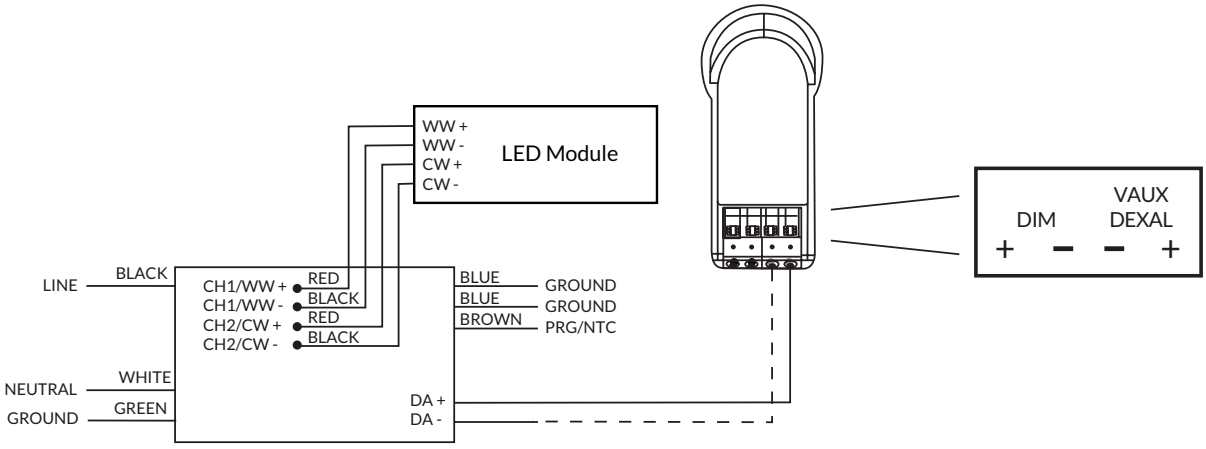
❷ Multiple LED Drivers

When using 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.



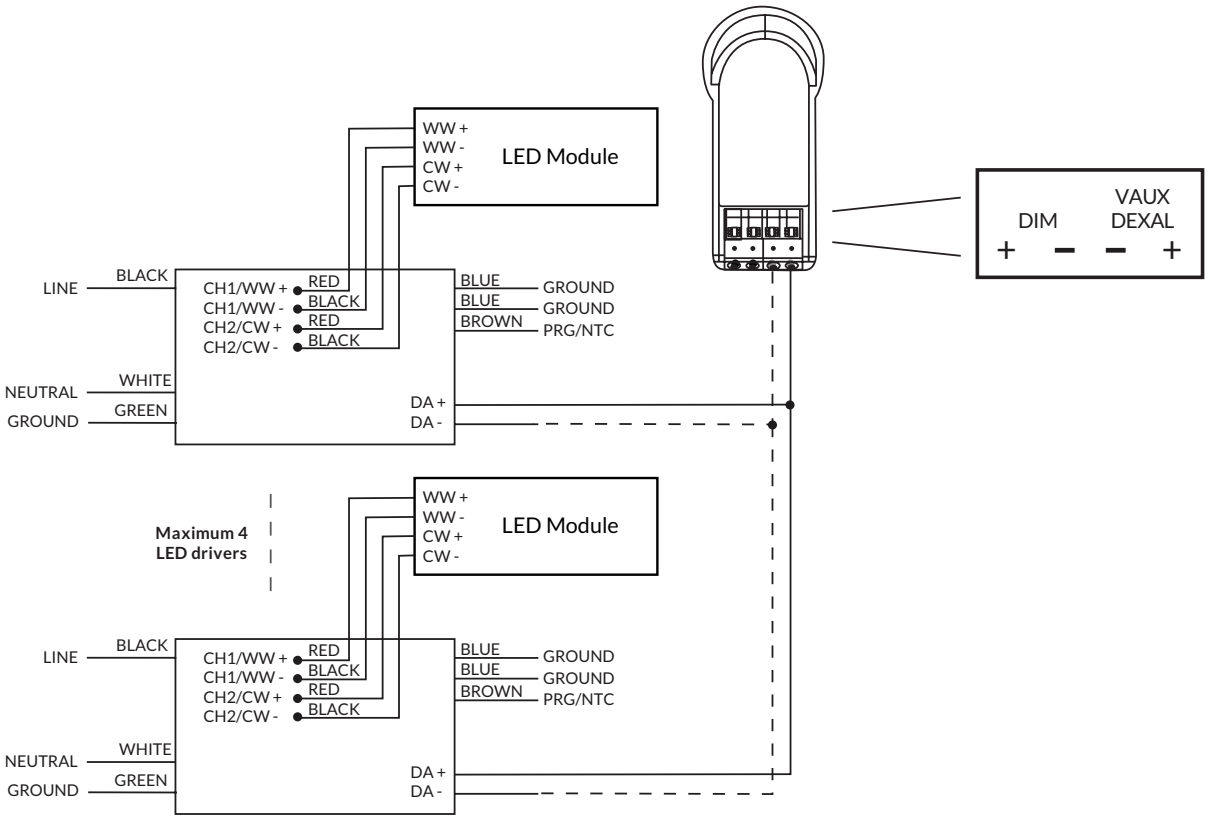
Tunable White Lighting Wire Diagrams

❶ Single LED Driver



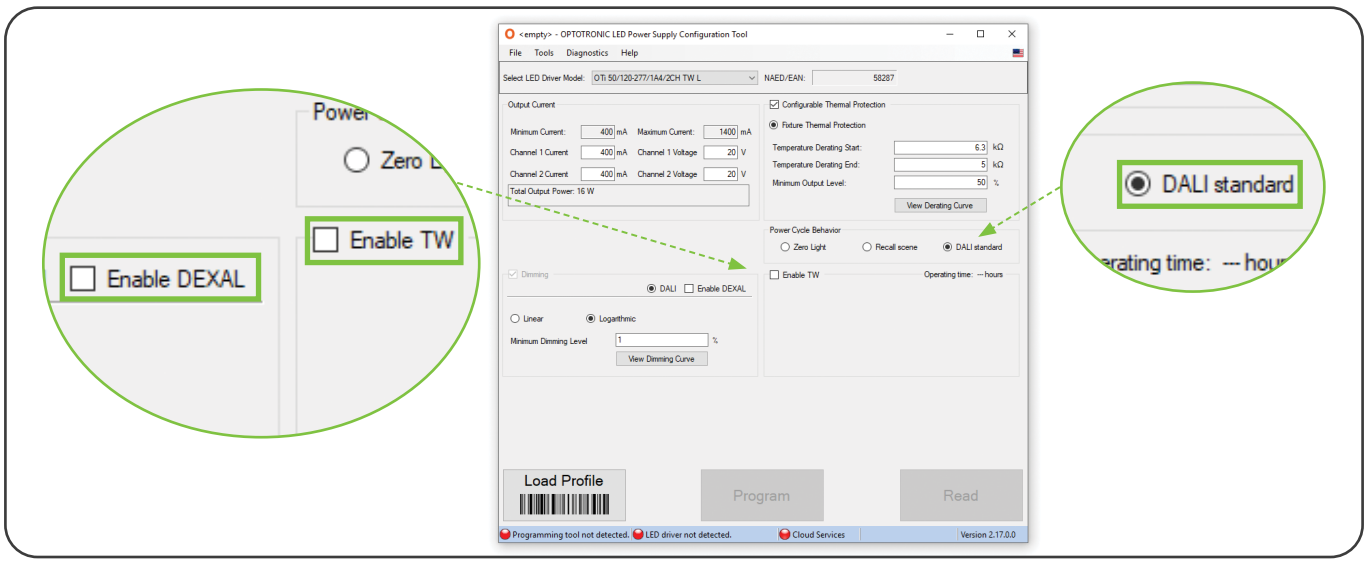
❷ **Multiple LED Drivers**

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. .



Tunable White LED Driver Configuration

When using the OPTOTRONIC 2CH TW Led driver with CLM DEXAL, 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.



END-OF-LINE TESTING

When Using General Lighting

When the luminaire is powered, the luminaire turns ON and reaches its full output. The SensiLUM then cycles through the entire dimming range starting from 100% output level to OFF* 2 times. This confirms that the module is receiving power and is able to communicate the 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 and will be performed the first 10 times the SensiLUM is powered up. Before commissioning, this routine can be used to determine if a device has been paired to a network.

The Wiring Test Tool (EN-WTT-ZB) can also 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 SensiLUM 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 Tunable White Lighting

To facilitate OEMs to conduct system operation at the end of the assembly line with the control modules installed, 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. If connected to a Tunable White Driver, following the blinking, the luminaire will cycle from one end of the color temperature e.g. 6500 K to the other end e.g. 2700 K. The end-of-line testing routine repeats at each power cycle. This EOL test will be performed the first 10 times the device is powered up. The Wiring Test Tool (56306) can also be used to toggle the EOL sequence prior to commissioning. This would indicate that the device is wired correctly and ready to be paired to an open network. For more information, please refer to the Wiring Test Tool User Guide.

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

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 Wireless Manager is NOT connected to emergency back-up power.

Condition Prior to Emergency

- Luminaire is functioning normally.

Emergency Condition

- Luminaire, Encelium 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 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 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 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 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 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 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 Wireless Manager comes back online due to Normal Power being restored.

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