

CLM

Connected Lighting Module

Date: _____

Quantity: _____

Company: _____

Project: _____



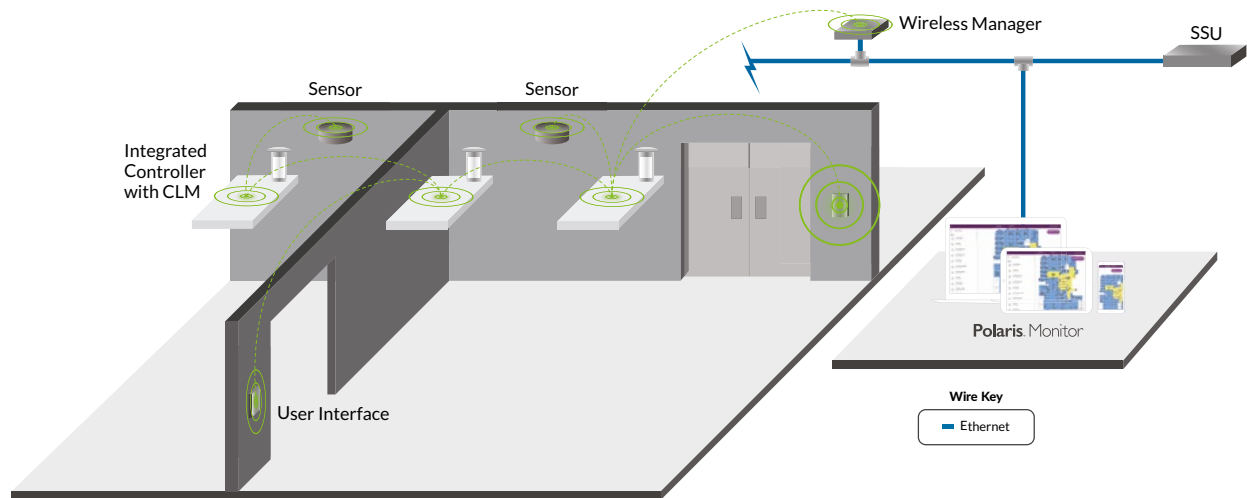
The CLM is a wireless device designed to bring individual luminaire control to spaces delivering ultimate flexibility to building managers for the life of the space. With controls inherently integrated, it significantly reduces electrical contractor labor hours during installation. For the lighting OEM, it reduces component count and streamlines assembly.

Key Features & Benefits

- Seamlessly enable tunable white applications with luminaire integrated control using DALI Type 8 LED driver
- Future-proof the lighting controls for flexible zone modifications as building needs change
- Customize lighting scenes for tailored experiences and tasks
- The dimming interface allows control of single or multiple luminaires in a single space
- Significantly reduce electrical contractor labor hours with luminaire integrated lighting controls
- Eliminate power pack and input side relay with built-in dim-to-off functionality optimized for CLM and LED driver
- Unique form factor is intended for installation into a standard Pg-7 (0.5 inch) trade-size knockout present on virtually every luminaire
- Works with:
 - Encelium X
 - Encelium Extend

Wireless System Overview

This illustration shows how each component is easily integrated into the Encelium X Lighting Control System. The Connected Lighting Module (CLM) allows luminaires to be wirelessly controlled. The System Manager sends dedicated commands wirelessly to each CLM enabling individually controlled luminaires.



Specifications

SENSING AND CONTROL

Wireless Range

- 45.7 m (150 ft) line of sight, 15.2 m (50 ft) standard walls

LED Drivers

- Each CLM is capable of handling 4 DEXAL drivers in parallel connection

Dimming Output

- Single 0-10V dimming output (IEC 60929 Annex E). Capable of sinking 3 mA (this is equivalent to 10 typical dimming ballasts/drivers)
- DALI and DALI Type 8 for Tunable White

ELECTRICAL

Input Voltage

- 12 VDC
- Power delivered by DALI based LED drivers with DEXAL Technology

Input Current

- Typically <40 mA

Radio Frequency

- 2.4 GHz

Connection Ports

- VDC +/DEXAL +
- VDC -/DEXAL -
- DIM +
- DIM -

ENVIRONMENTAL

Operating Temperature

- -40° to 60°C (-40° to 140°F)

PHYSICAL

Dimensions (H x W x D)

- 135 x 85 x 45 mm (5.47 x 3.34 x 1.77 inches)

Weight

- 233 g (8.2 oz)

Housing Color

- White

Housing Material

- Nylon

Mounting Option

- Luminaire Mount

WARRANTY

- For warranty details, refer to the full warranty documentation at encelium.com

CERTIFICATIONS & SAFETY

Approbations

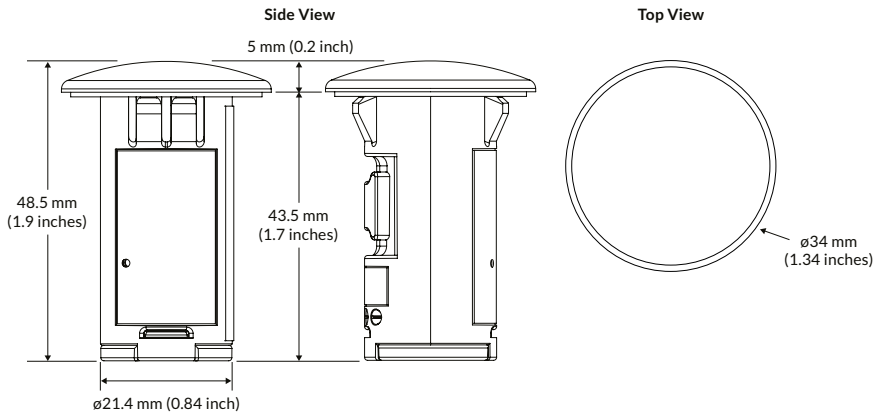
- UL916 (Energy Management Equipment)
- UL924 cUL US Listed (Emergency Lighting Equipment)
- UL2043 Plenum Rated
- CE
- FCC
- RoHS Compliant



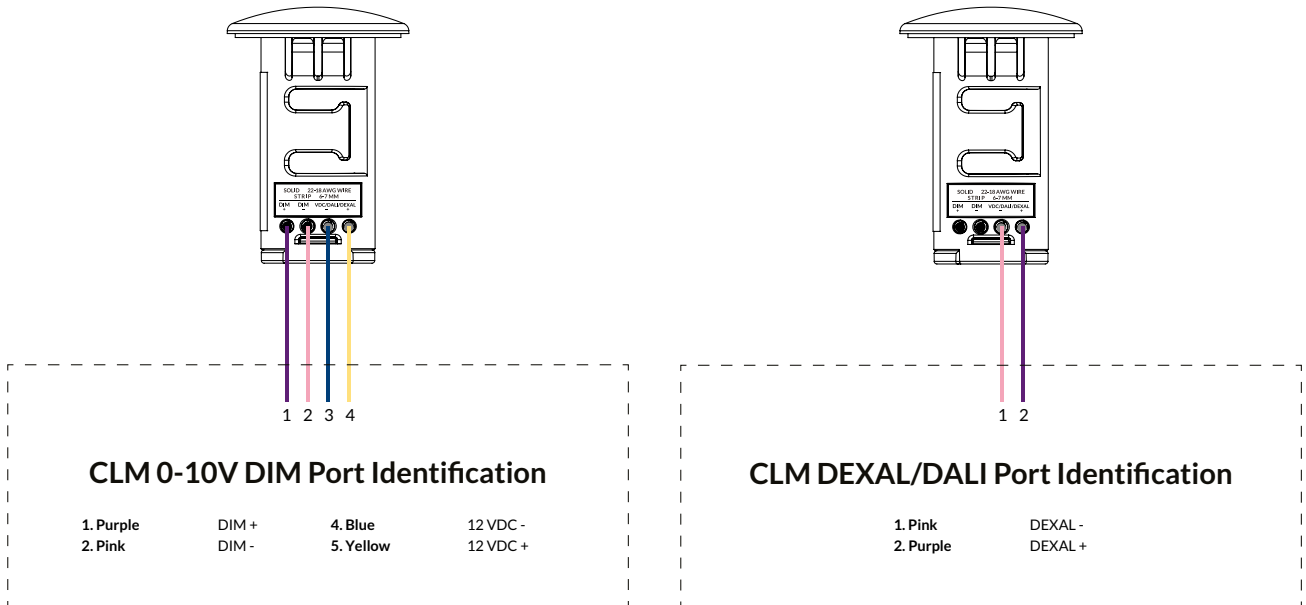
Ordering Information

Item Number	Ordering Code	Description	Approbations	Communication Network	Dimming Protocol
45678	ZBHA-CLM-DIM-ENC	CLM DIM	UL and CE	Wireless	0-10V, DALI, DEXAL, DALI Type 8

Dimensions



CLM Wiring Diagrams

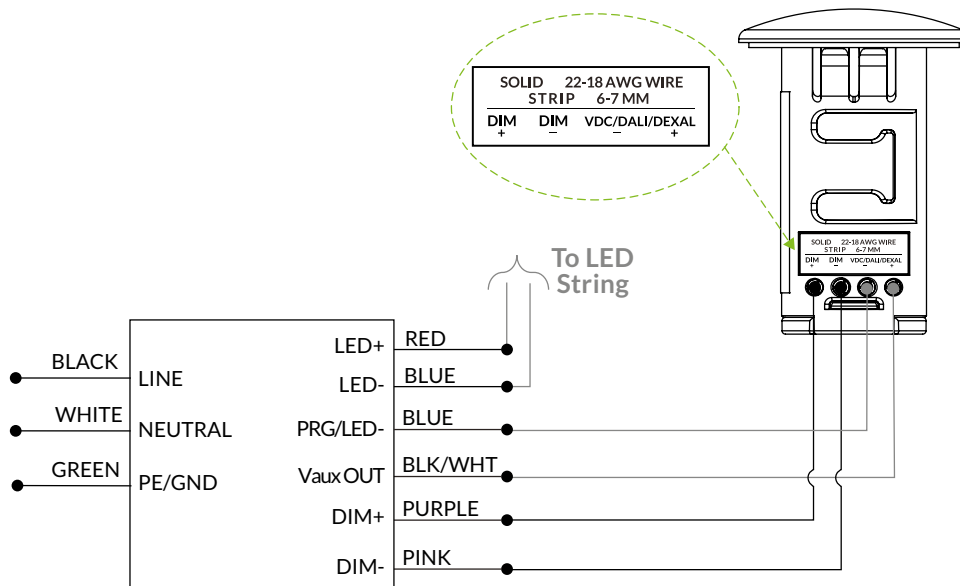


LED Driver Compatibility for 0-10V LED Drivers

Manufacturer/Brand	Driver Model	Form Factor	Maximum Number of Drivers per Device
OPTOTRONIC®	OTi20W, OTi30W, OTi48W, OTi50W, OTi85W	Linear Drivers	10
OPTOTRONIC®	OTi25W, OTi40W, OTi55W	Compact Drivers	10

The LED drivers must be programmed to deliver power over the DALI/dimming ports.

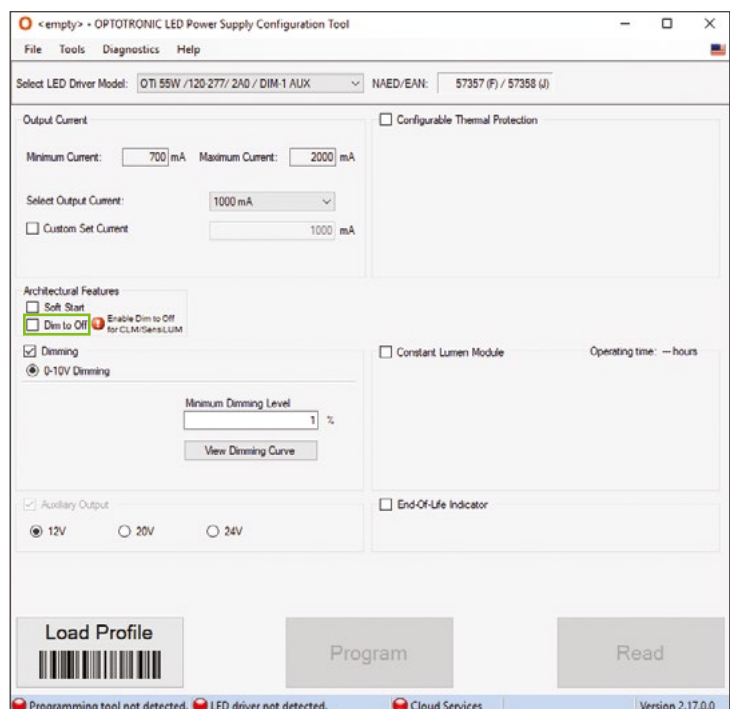
General Lighting Wiring Diagram for 0-10V LED Drivers



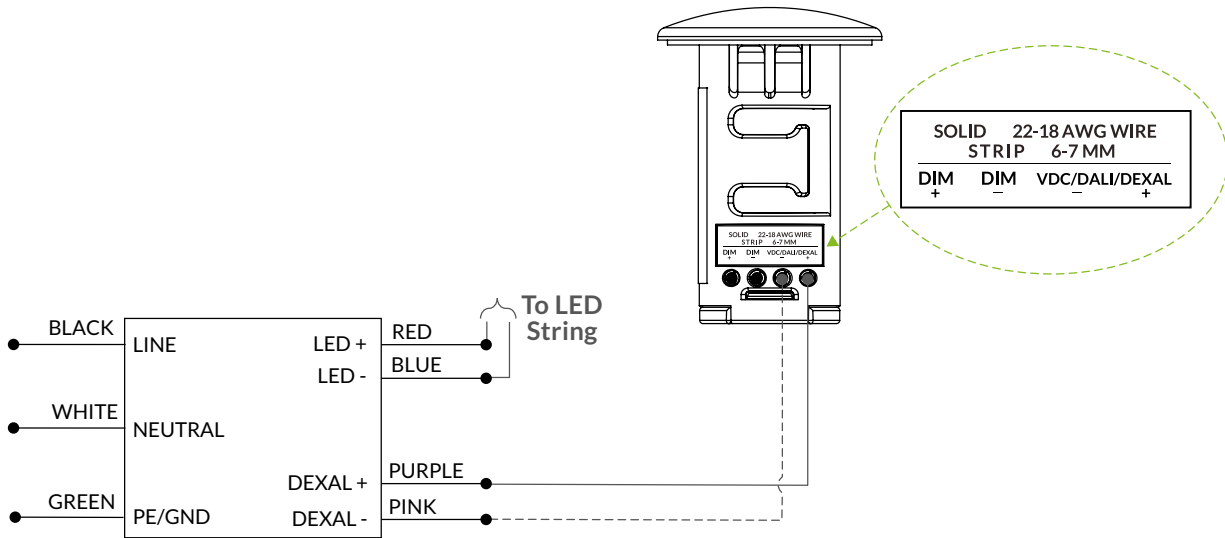
0-10V LED Driver Configuration

Important: When using in 0-10V luminaires, the LED driver must possess dim-to-off capability and it must be enabled in the configuration (if applicable).

If using DALI based 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.



General Lighting Wiring Diagram for DEXAL LED Drivers

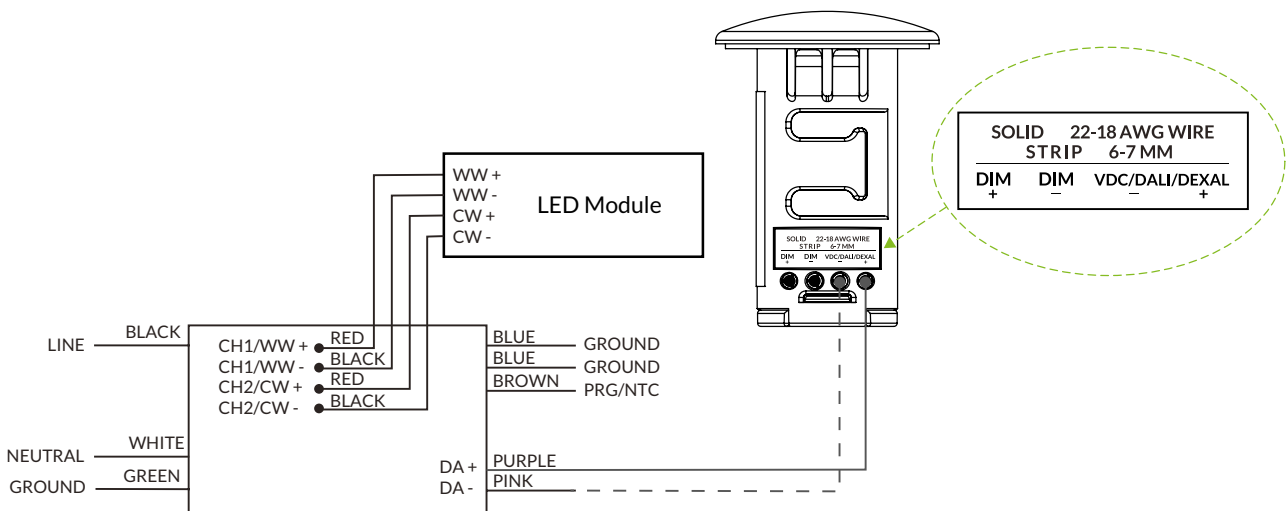


LED Driver Compatibility for Tunable White using DALI 2.0 Type 8

Manufacturer/Brand	Driver Model	Dimming Protocol	Maximum Number of Drivers per Device
OPTOTRONIC®	OTi50/120-277/1A4/2CH TW L	DALI 2.0 Type 8	4
Signify Xitanium	XI040C110V050VWT1	DALI 2.0 Type 8	4

The LED drivers must be programmed to deliver power over the DALI/dimming ports.

Tunable White Wiring Diagram for OPTOTRONIC LED Drivers



Tunable White LED Driver Configuration for OPTOTRONIC Family

If using the DALI based 2-CH TW LED driver with CLM, 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.

