

Radiar AFD1/4

4 Child DALI Controller



PRODUCT OVERVIEW

Radiar AFD1/4 is a DALI controller and operates on 90–277VAC input voltage range. It can be connected to 4 DALI LED drivers. This device also has a 12VDC auxiliary output to power the sensors.

The device is a part of the Lumos Controls ecosystem, including controllers, sensors, switches, modules, drivers, gateways, and analytical dashboards. It can be easily commissioned, configured and controlled from any mobile device and can be connected to Lumos Controls cloud for data analytics and configuration management. The Lumos Controls ecosystem comprises controllers, sensors, switches, modules, drivers, gateways, and analytical dashboards.

The ecosystem is listed by the **Design Lights Consortium (DLC)**, qualifying it for energy conservation incentive programs and rebates by utility companies.

SPECIFICATIONS

Electrical

Specifications	Value	Remarks
Input voltage	90–277VAC	Rated input voltage
Input current	65mA	
Frequency	50/60Hz	
Inrush current	4A	
Surge protection	4kV	
Standby current	7.71mA	

Auxiliary Output

Specifications	Value
Voltage	12VDC
Current	100mA

FEATURES

- Supports ON/OFF, dimming and tuning control of 4 DALI drivers
- Compact form factor for easy integration
- BLE 5.2 based non-flooding intelligent communication
- 12VDC Class-2 auxiliary output to power sensor devices
- Zero downtime Over-the-Air (OTA) firmware updates

DALI

Specifications	Value	Remarks
Voltage range	11–13VDC	Typically 12VDC
Current	8mA	Connected to 4 DALI drivers
Supported protocols	101/ 103/ 207/ 209	DALI2.0
Dimming range	0–100%	1000 steps resolution
Dimming curve	linear/ logarithmic (default)	

Bluetooth

Specifications	Value	Remarks
Frequency range	2402–2480MHz	
Max output power	8dBm	
Receive sensitivity	–95dBm	
Connection distance (device to device)	45m(147.6ft)	Vary depending on the installation environment

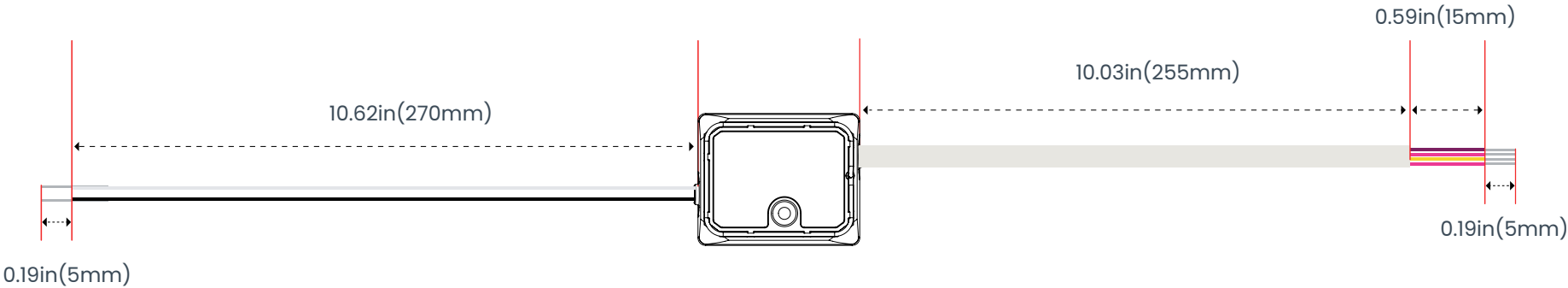
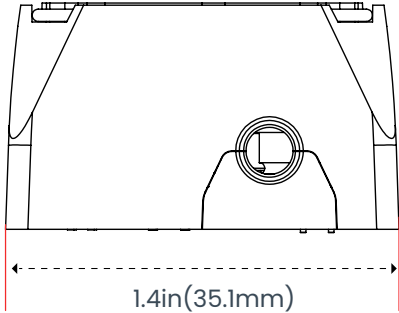
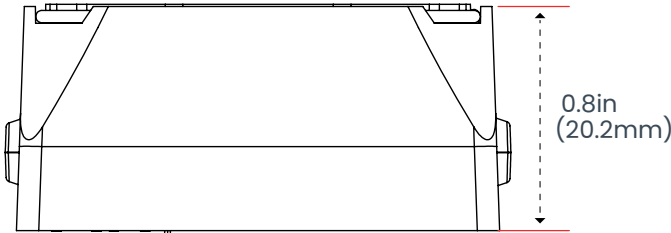
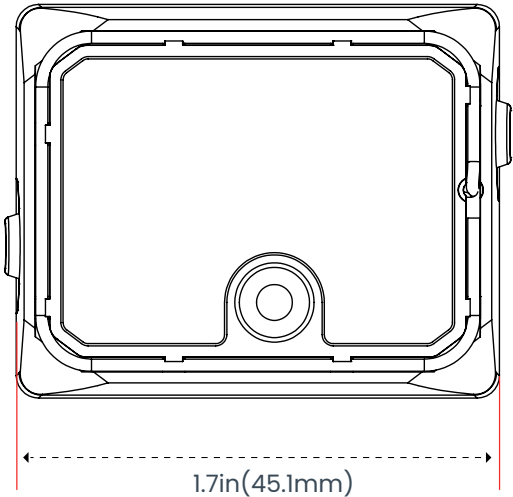
Environmental

Specifications	Value	
Operating temperature	-20 to 50°C (-4 to 122°F)	
Case temperature	75°C (167°F)	
Relative humidity	20-85%	Non condensing

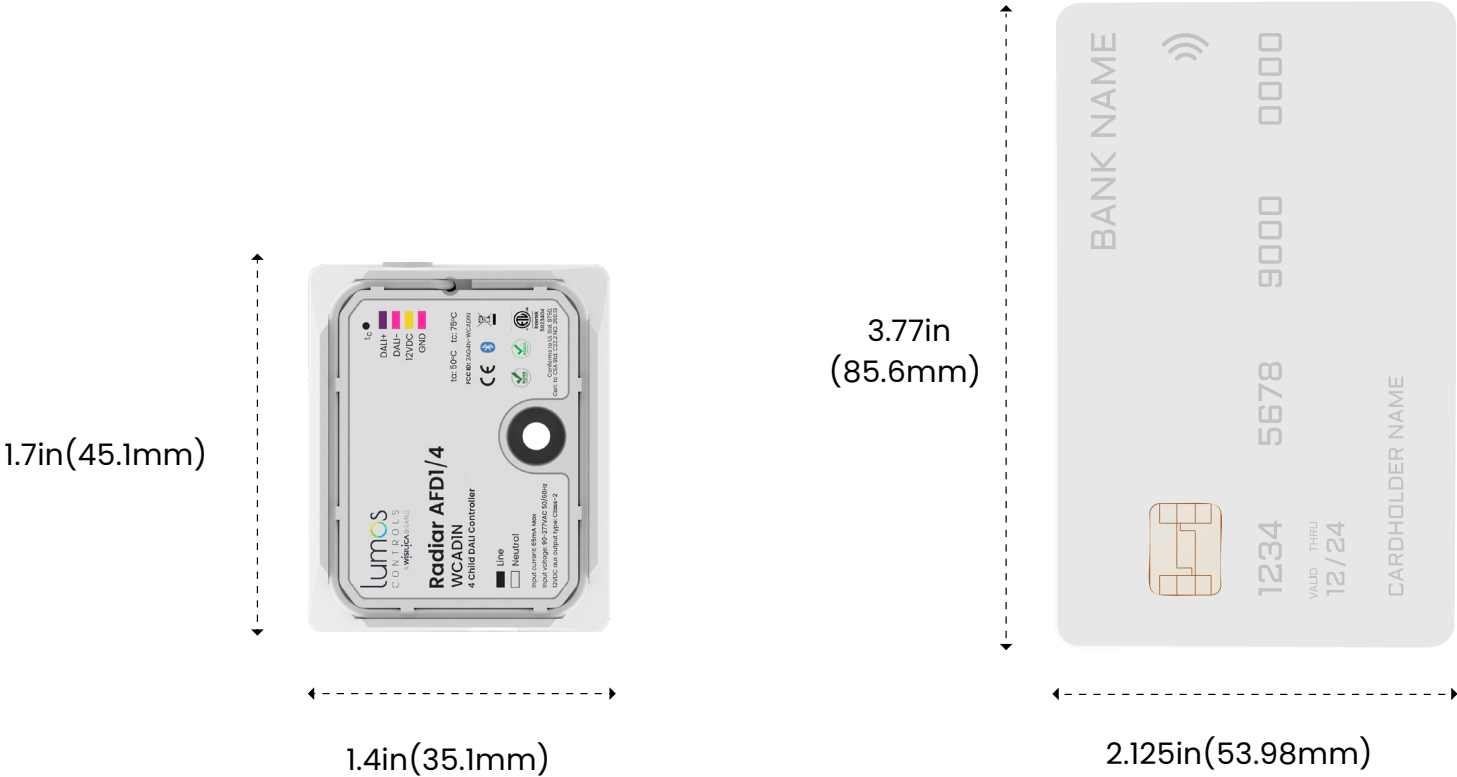
Mechanical

Specifications	Value	Remarks
Dimension	1.7 x 1.4 x 0.8in (45.1 x 35.1 x 20.2mm)	L x W x H
Weight	30g (1.05oz)	
Case material	Polycarbonate	White
Flammability rating	UL 94 V-0	

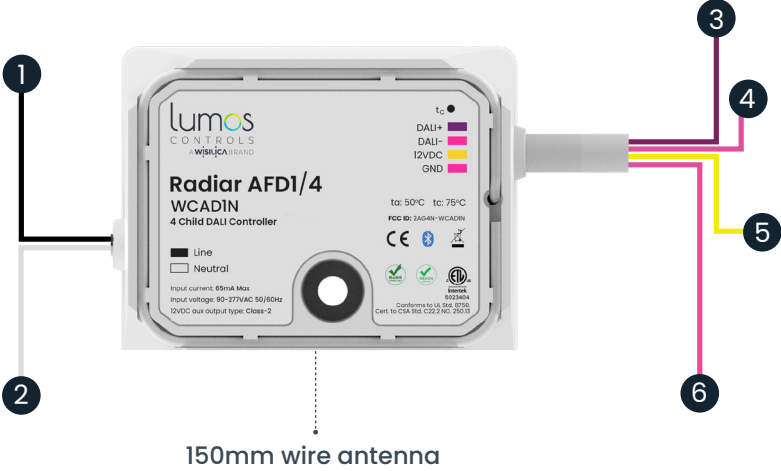
PRODUCT DIMENSIONS



Size comparison with a standard credit card



WIRE DESCRIPTION



Pin	Name	Color	Gauge	Rating	Description
1	Line	Black	18AWG (0.75mm ²)	300V	90-277VAC
2	Neutral	White	18AWG (0.75mm ²)	300V	Common neutral
3	DALI	Purple	28AWG (0.08mm ²)	30V	DALI+
4	DALI	Pink	28AWG (0.08mm ²)	30V	DALI-
5	12VDC	Yellow	28AWG (0.08mm ²)	30V	12VDC auxiliary output
6	Ground	Pink	28AWG (0.08mm ²)	30V	Common ground

ANTENNA INFORMATION

150mm wire antenna



Antenna Properties	
Frequency range	2.4GHz-2.5GHz
Impedance	50Ω Nominal
VSWR	1.92:1 Max
Return loss	-10dB Max
Gain(peak)	1.5dBi
Cable loss	0.3dBi Max
Polarization	Linear

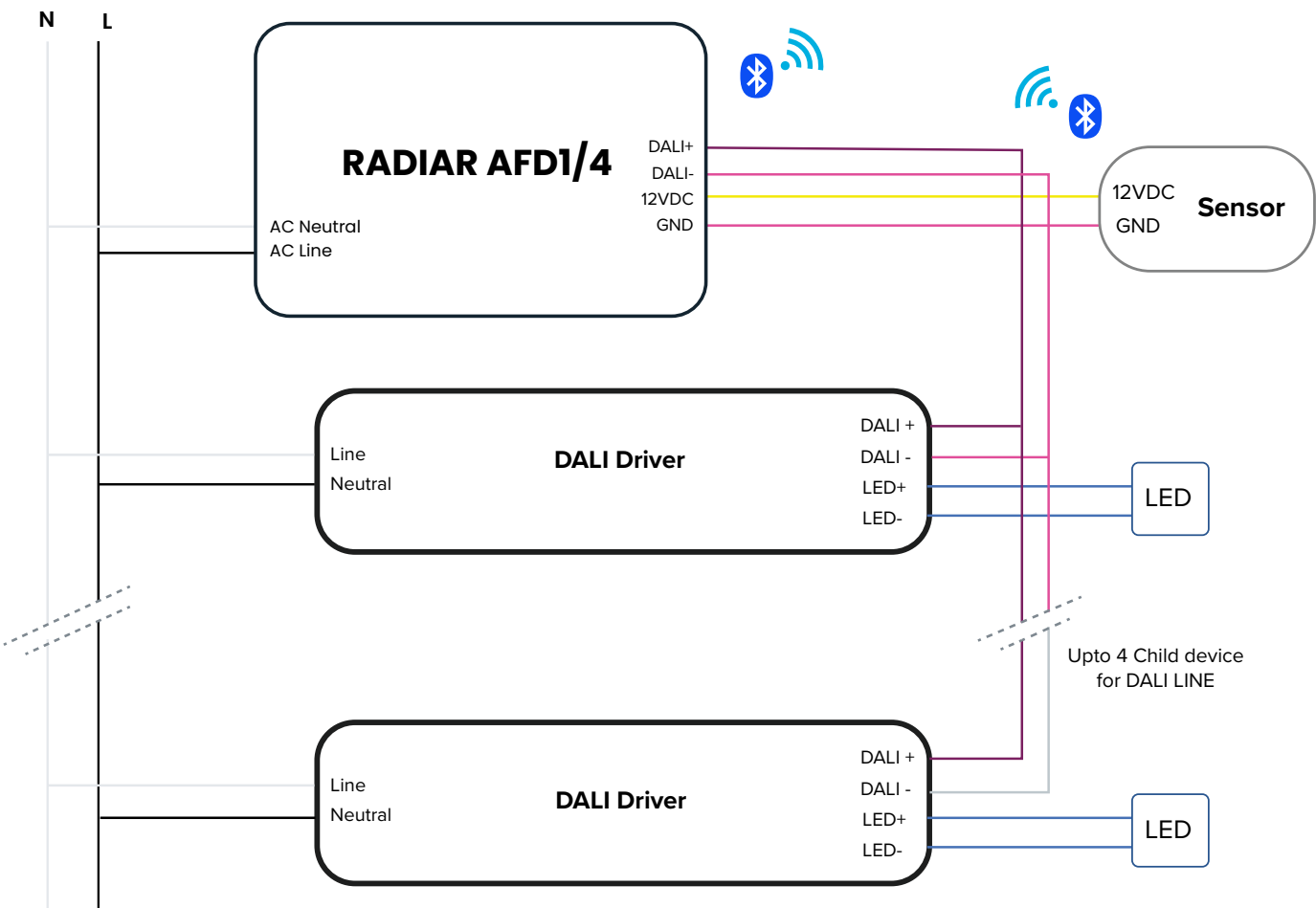
WIRING

In order to power the controller, connect the AC line and neutral wires from the mains supply to the line (Black color) and neutral wire (White color) of the controller

To control DALI drivers, connect the DALI lines to the DALI+ (Purple color) and DALI- (Pink color) wires in the controller.

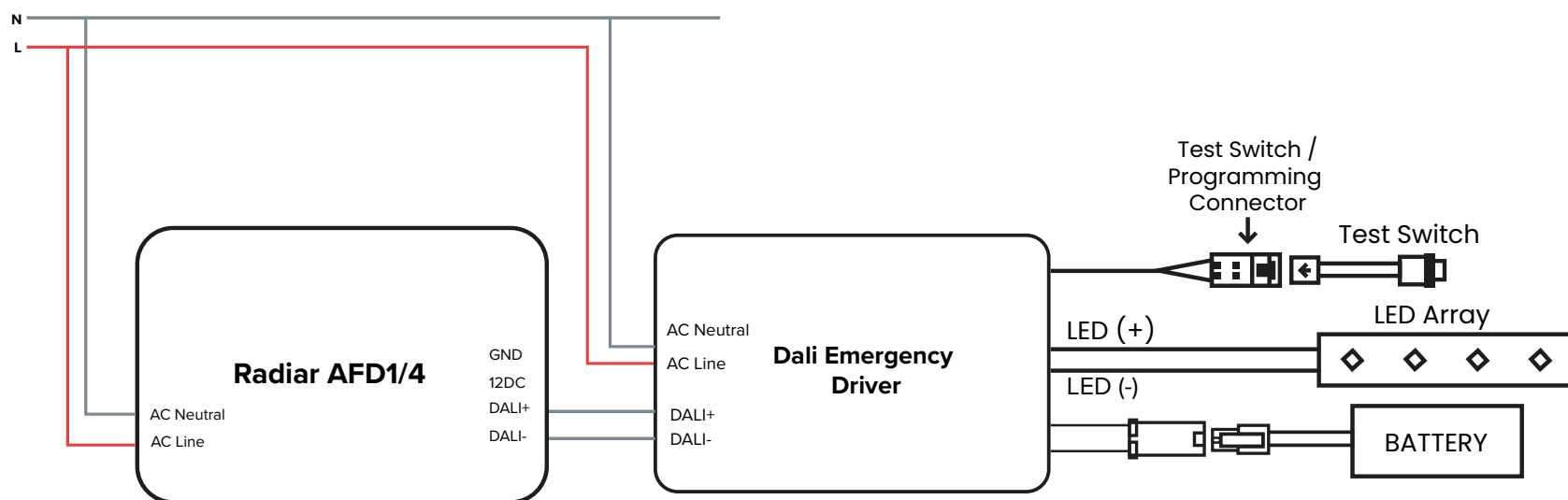
12VDC (Yellow color) and GND (Pink color) can be used to power 12VDC sensor.

Note: DALI is polarity insensitive

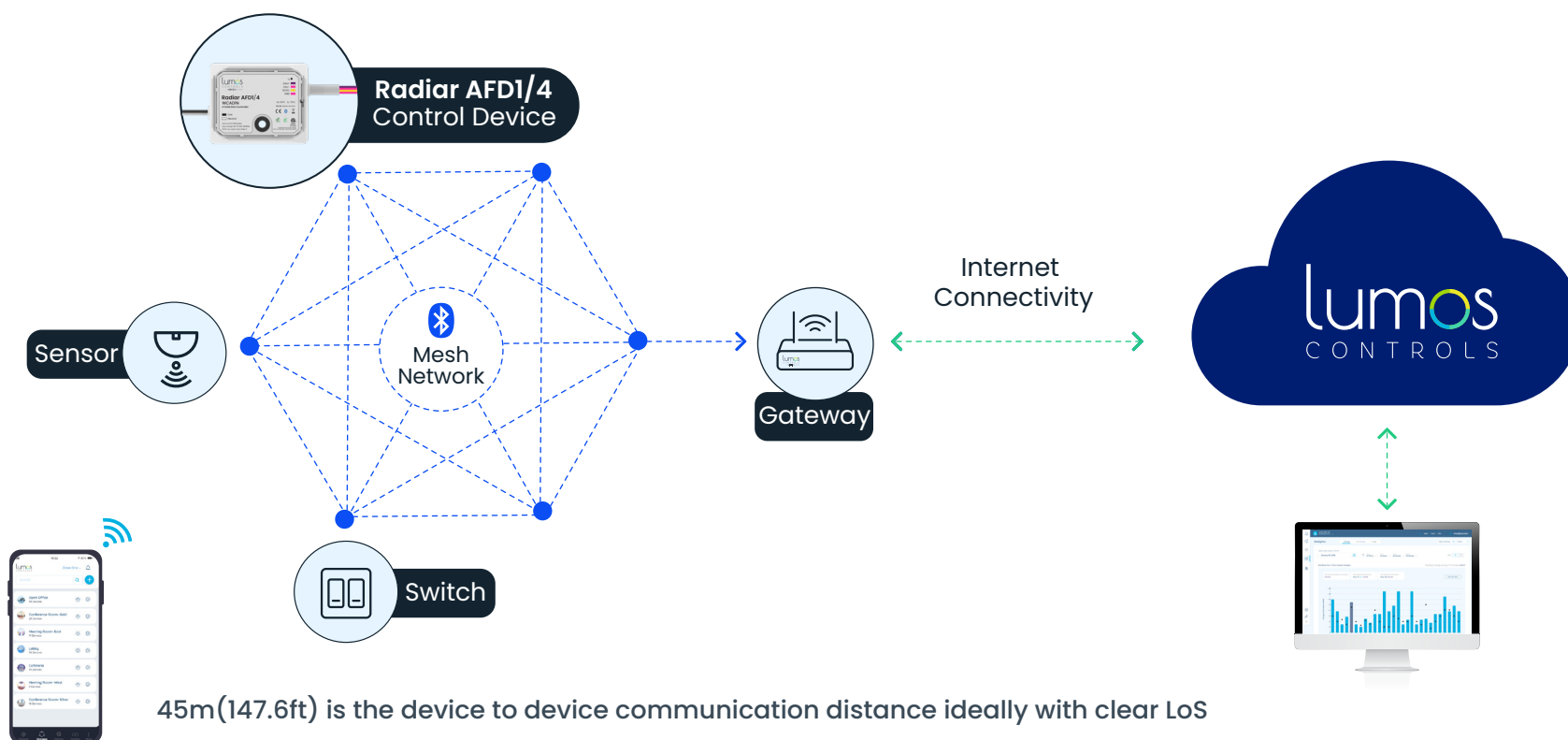


DALI Emergency Wiring diagram

Connecting a DALI Emergency Driver with Radiar AFD1/4 controller



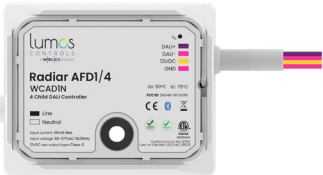
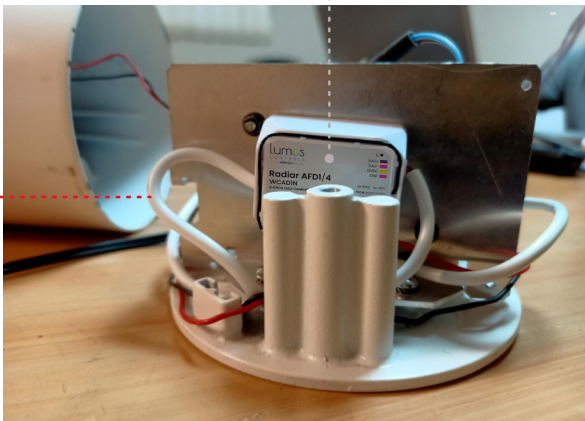
SMART ECOSYSTEM



Certifications	Details
CE	<div>Article 3, RED 2014/53/EU</div> <div>EMC test standards ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09) EN 55032: 2015/A11: 2020 EN 55035: 2017+A11: 2020</div> <div>Radio test standard ETSI EN 300 328 V2.2.2 (2019-07)</div> <div>Health test standards: EN 62479: 2010 EN 50663: 2017</div> <div>Safety test standards EN 61347-2-11:2001+A1:2019 EN 61347-1:2015+A1:2021</div>
RoHS 2.0	RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU
REACH	Regulation (EC) No 1907/2006 of REACH
WEEE	Under the WEEE Directive: 2012/19/EU
Bluetooth	Declaration ID: D059551
cETLus	Conforms to UL Std. 8750 Cert. to CSA Std. C22.2 NO. 250.13
FCC	ID: 2AG4N-WCADIN

APPLICATION

For fixture control application

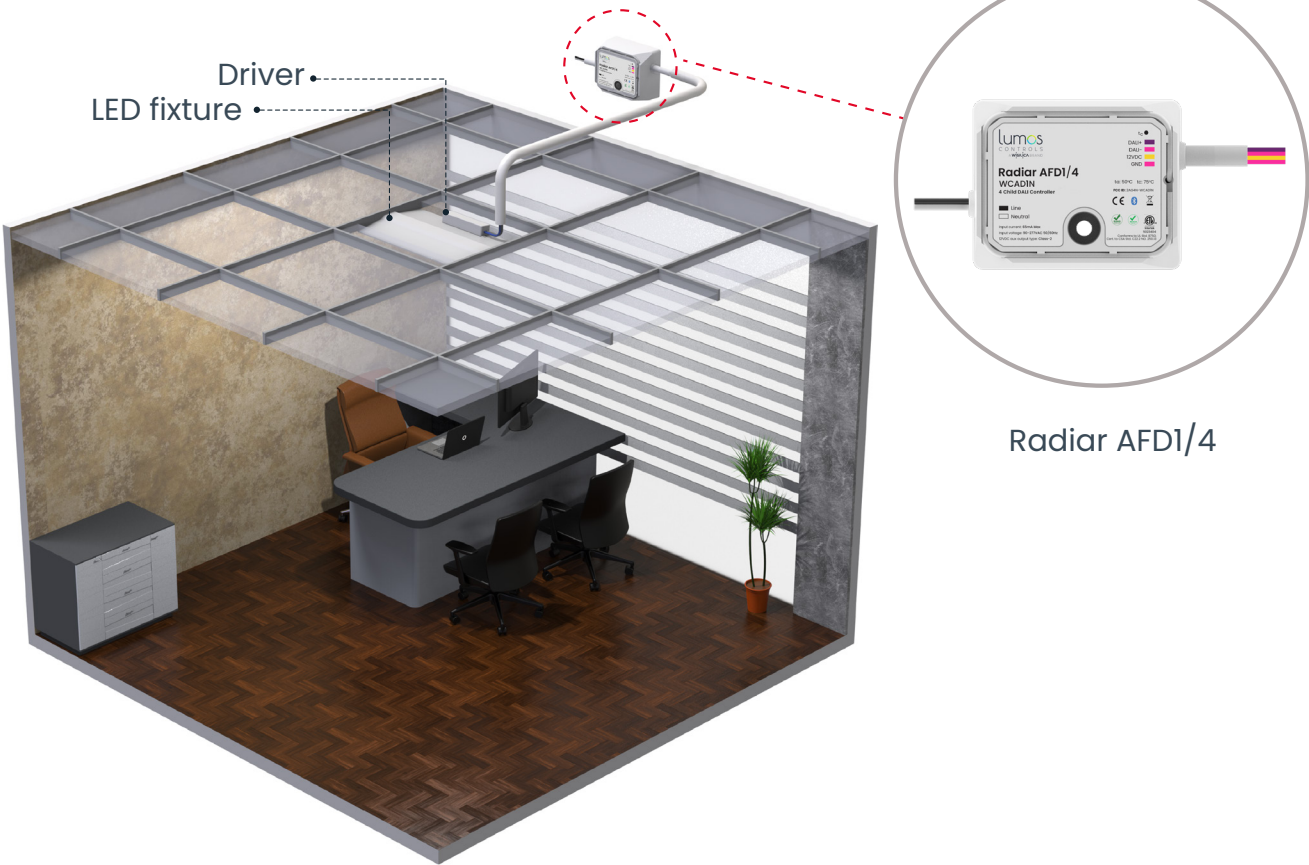


*Radlar AFD1/4 installed
inside a light fixture*

Method of installation varies based on the luminaire manufacturer

- Turn off the power before wiring and installing the device
- The compact form factor allows the device be installed within any lighting fixture or in the junction box.

For room control application



ITEMS INCLUDED IN THE PACKAGE BOX

- Radiar AFD1/4
- User manual
- Screw
- Wallplug

ORDERING INFORMATION

Product Code	Product Name	Product Description	Communication	Voltage Rating	Aux Power	Output Channel
WCADIN	Radiar AFD1/4	4 Child DALI Controller	BLE5.2	90-277VAC	12VDC	DALI

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