

Radiator 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 |

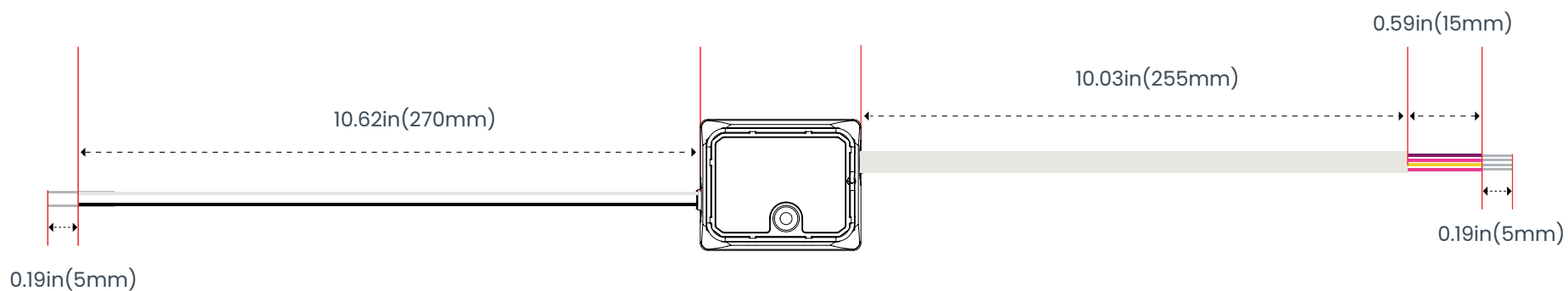
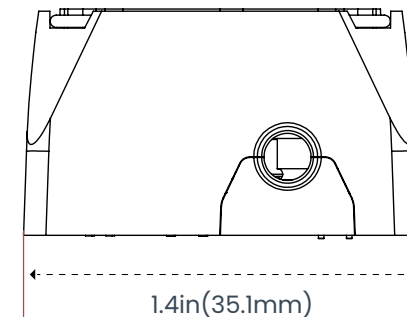
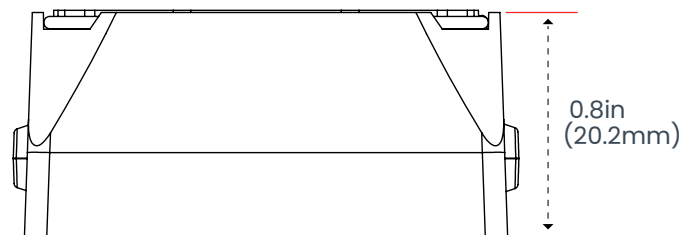
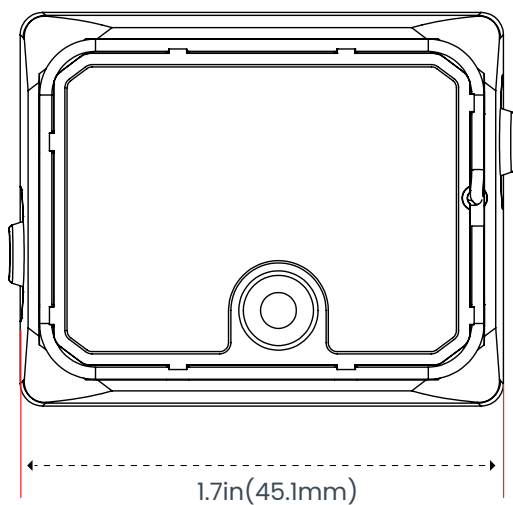
Environmental

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

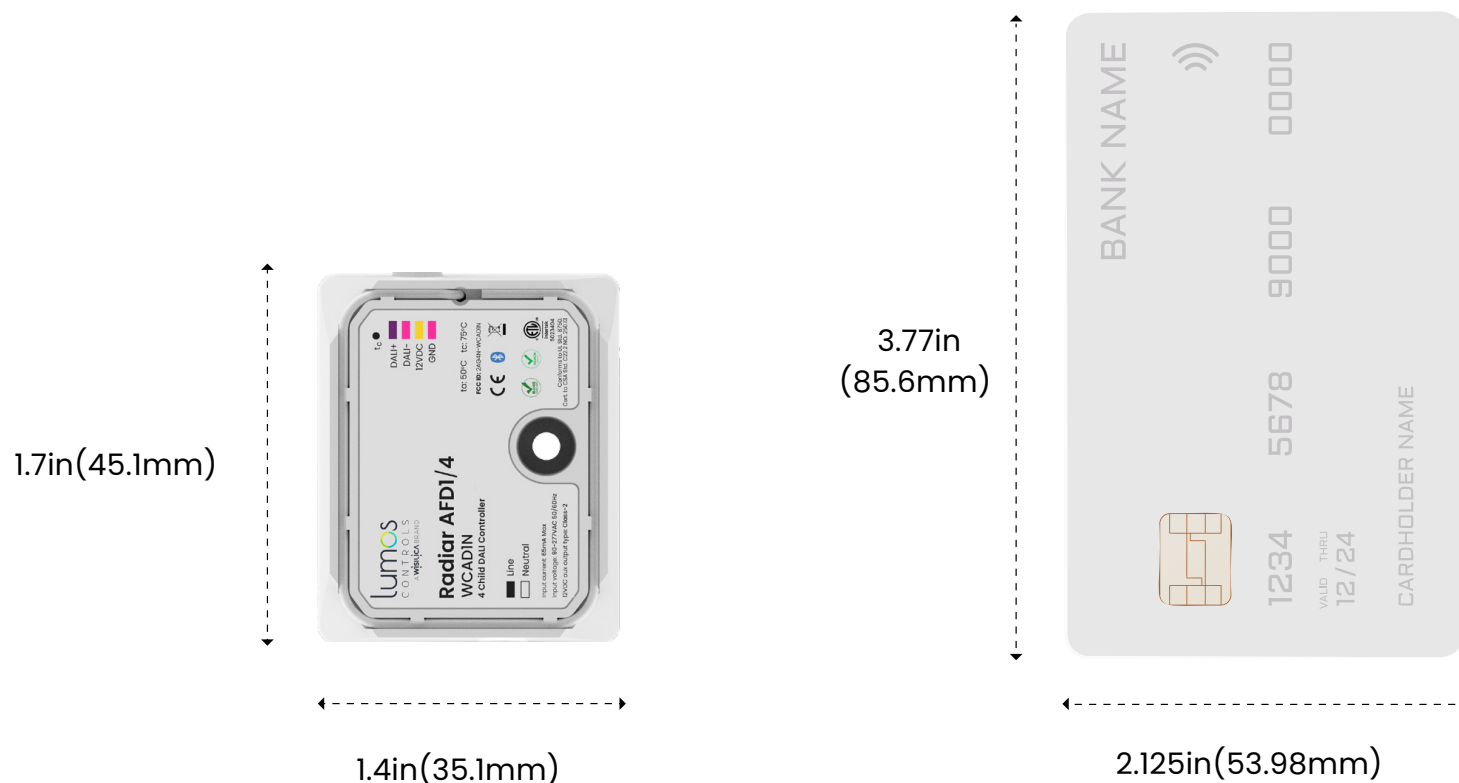
Mechanical

| 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 | |

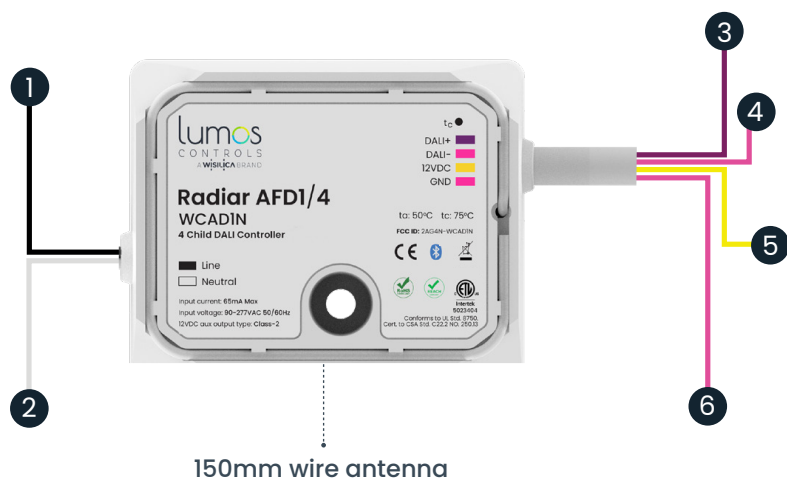
PRODUCT DIMENSIONS



Size comparison with a standard credit card



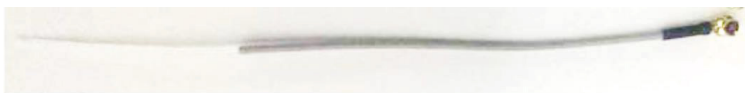
WIRE DESCRIPTION



| 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 |

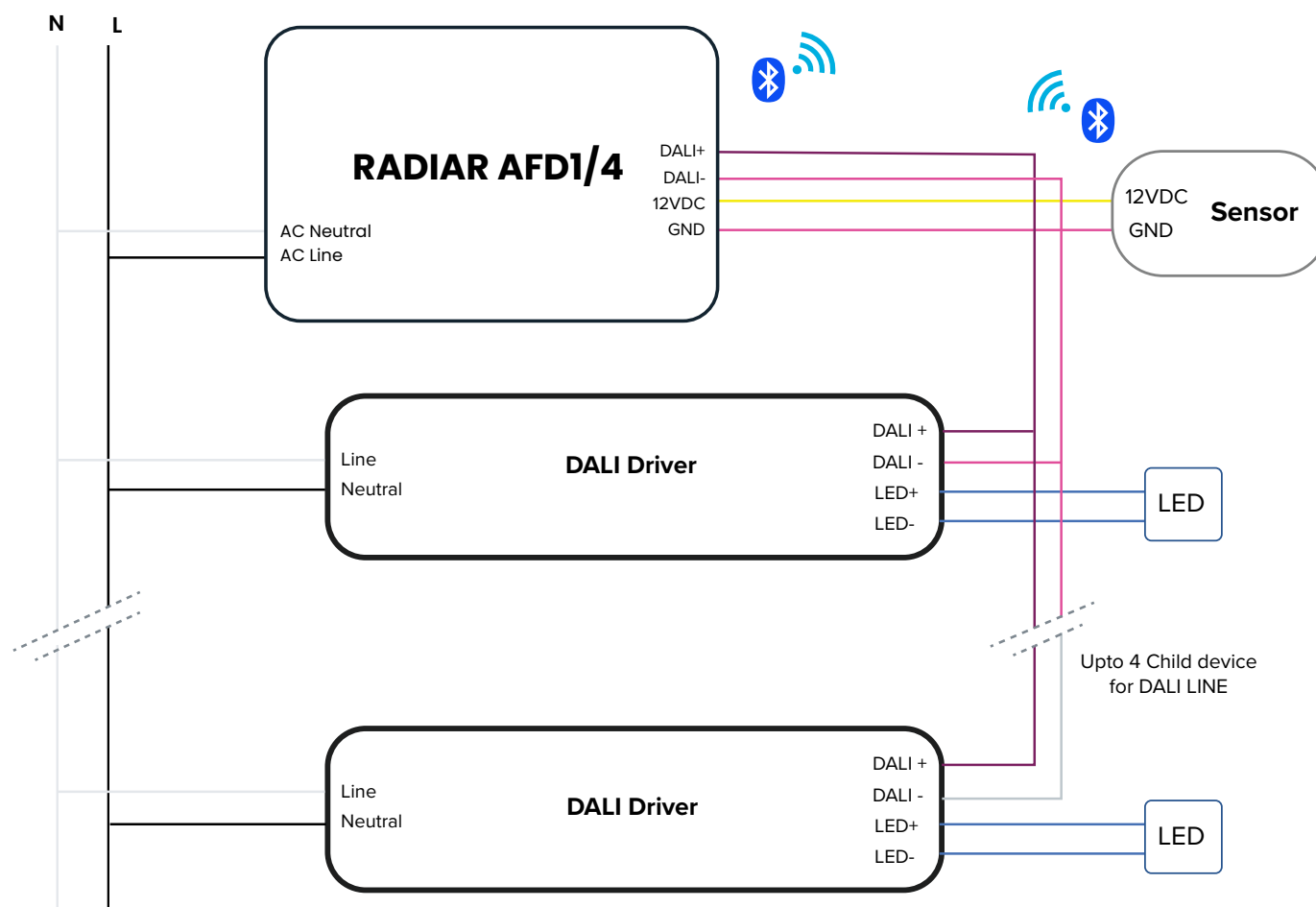
WIRING

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

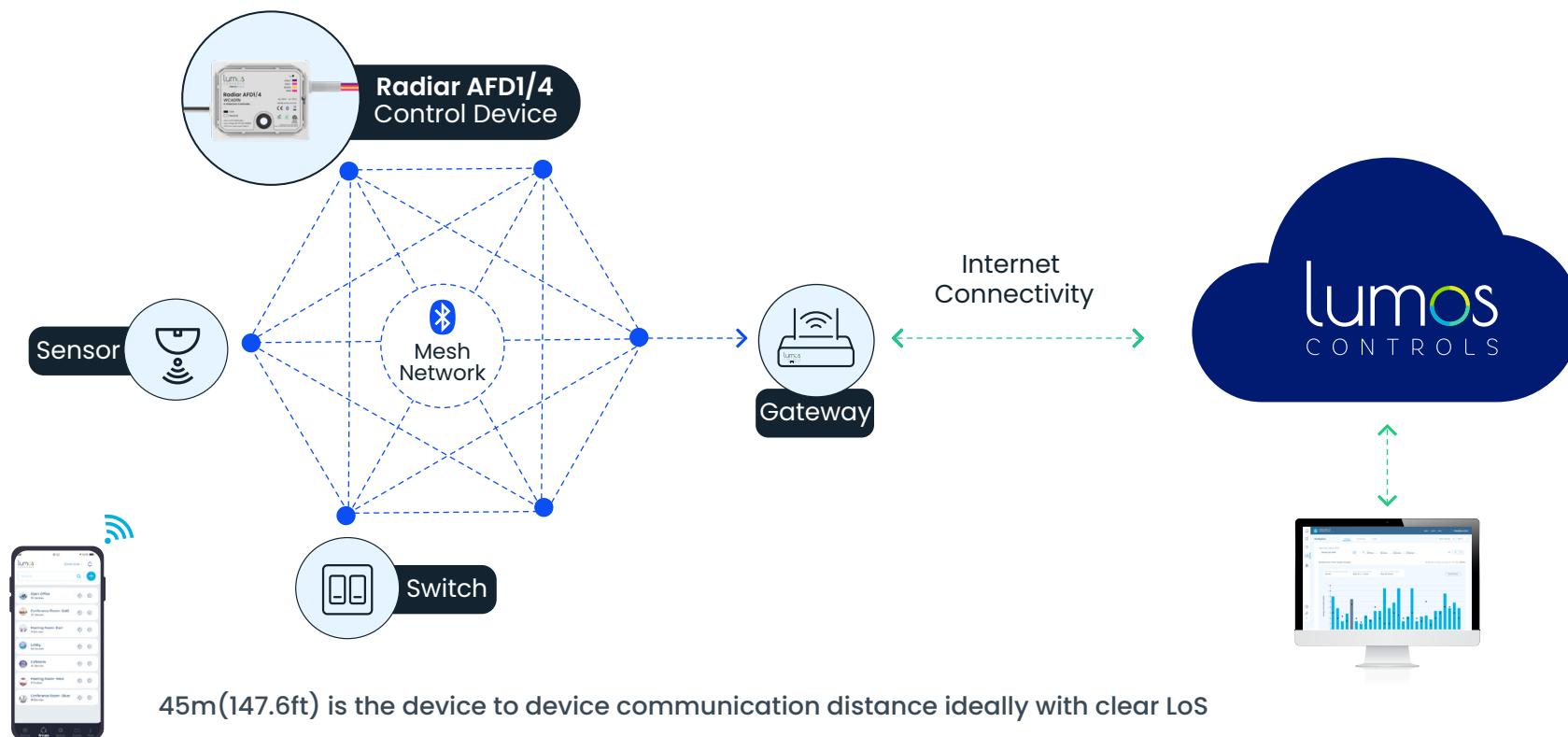
To control DALI drivers, connect the DALI lines to the DALI+ (Purple color) and DALI- (Pink color) wires in the controller.

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

Note: DALI is polarity insensitive



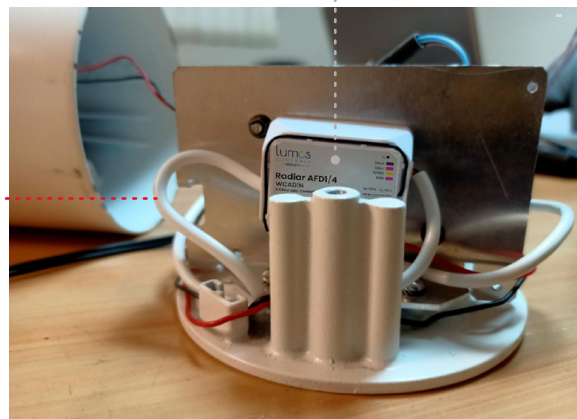
SMART ECOSYSTEM



| Certifications | Details |
|----------------|--|
| CE | <p>Article 3, RED 2014/53/EU</p> <p>EMC test standards</p> <p>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</p> <p>Safety test standards</p> <p>EN 61347-2-11:2001+A1:2019 EN 61347-1:2015+A1:2021</p> <p>Radio test standard</p> <p>ETSI EN 300 328 V2.2.2 (2019-07)</p> <p>Health test standards:</p> <p>EN 62479: 2010 EN 50663: 2017</p> |
| 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



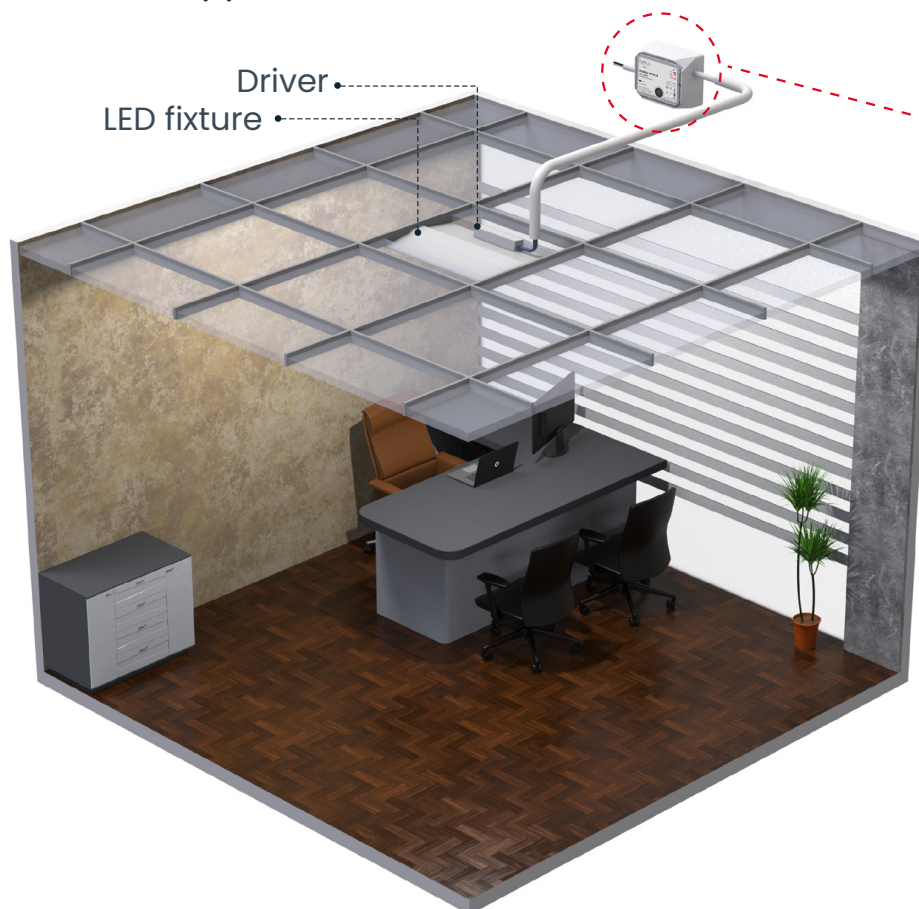
Radiar AFD1/4 installed inside a light fixture



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



Radiar AFD1/4

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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