



Radiar AF10

2 channel AC powered 0-10V
fixture controller with inbuilt relay



SELV



Product Overview

Radiar AF10, the dual-channel dimming/ tunable AC fixture controller is a part of the Lumos Controls ecosystem.

The device is easy to mount in an electrical junction box or compatible fixtures. The device has dual channel 0-10V independent output to control intensity and correlated color temperature(CCT) and it has a 0-3 VDC input channel and 12VDC aux output to integrate with third-party sensors.

The device with a 3A relay for load control saves time designing an intelligent lighting network that is in tune with your circadian rhythm. It can be quickly 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. It 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 | 120-277VAC | Rated input voltage |
| Input current | 3.10A | @Max RF transmtting |
| Frequency | 60Hz | |
| Load voltage | 120-277VAC | |
| Max load current | 3A | @120VAC |
| | 1.29A | @277VAC |
| Max output wattage | 360W | @120/277VAC |
| Inrush current | 20A | |
| Surge protection | 1kV* | @Line to line bi wave |

* 10kV SPD accessory available

Sensor Input

| Specifications | Value | Remarks |
|----------------|--------|---------|
| Voltage range | 0-3VDC | digital |
| Current | 1mA | |

Features

- Dual channel 0-10V independent output to control intensity and corelated color temperature (CCT)
- Auxiliary 12V/200mA output to power sensors
- 0-3VDC input channel to integrate with third party sensors
- 3A relay for turning on/off dim to 1 drivers
- Standard ½ inch chase nipple allows easy mounting to a junction box or compatible fixture
- Zero downtime Over-the-Air (OTA) firmware updates

0-10V Output

| Specifications | Value | Remarks |
|--------------------|-------------------------------|----------------------------|
| Number of channels | 2 | |
| Voltage range | 0-10VDC | tolerance: ±0.2V |
| Current | 10mA | source current per channel |
| Dimming range | 0-100% | 1000 steps resolution |
| Dimming curve | linear (default)/ logarithmic | |

Auxiliary Output

| Specifications | Value |
|----------------|-------|
| Voltage | 12VDC |
| Current | 200mA |

Bluetooth

| Specifications | Value | Remarks |
|--|---------------|--|
| Frequency range | 2402-2480MHz | |
| Max output power | 8dBm | |
| Receive sensitivity | -92dBm | |
| Connection distance (device to device) | 45m(147.6 ft) | Vary depending on the installation enviornment |

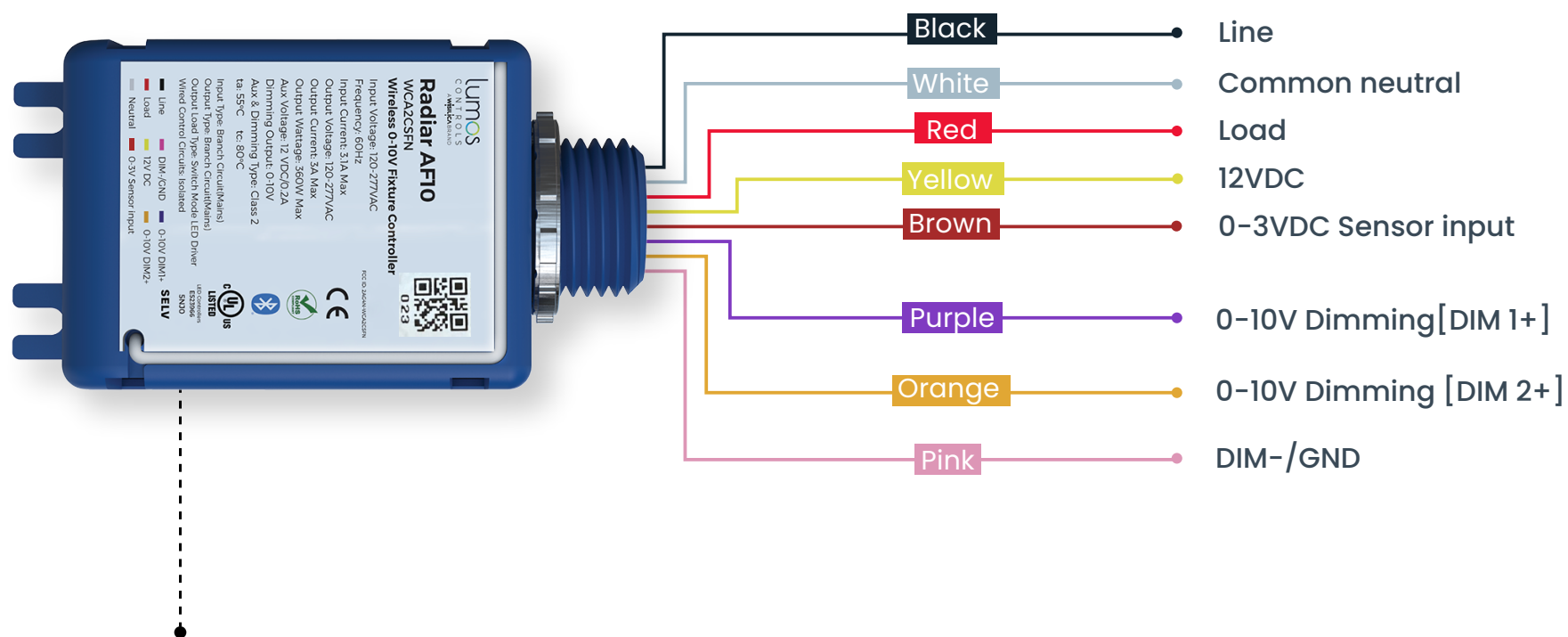
Environmental

| Specifications | Value |
|-----------------------|----------------------------|
| Operating temperature | -30 to 55°C (-22 to 122°F) |
| Case temperature | 80°C (176°F) |
| Relative humidity | 5-95% non-condensing |

Mechanical

| Specifications | Value | Remarks |
|---------------------|---|------------|
| Dimension | 3.22 x 1.71 x 1.25 (inch) 81.79 x 43.43 x 31.75 (mm) | L x W x H |
| Weight | 93g (3.28oz) | |
| Case material | PC | Blue color |
| Flammability rating | UL 94 V-0 | |

Wire Description

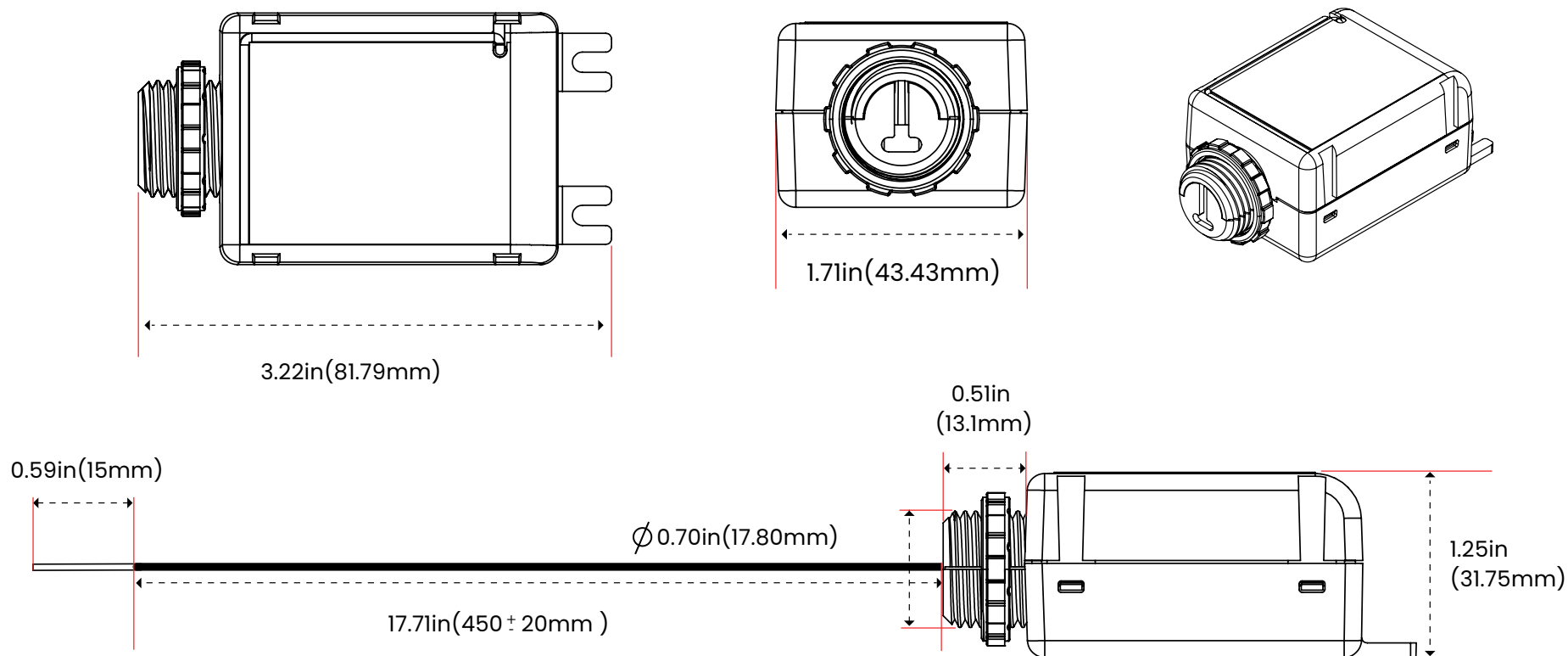


100mm wire antenna

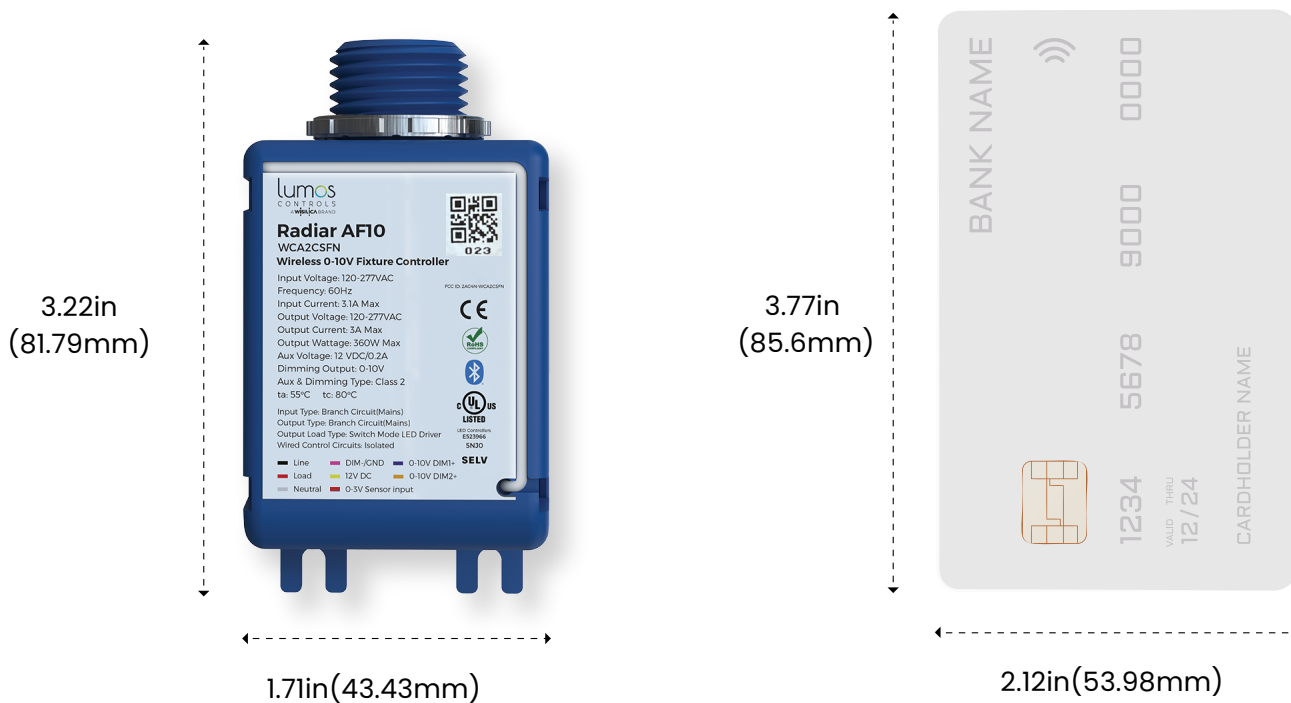
| Antenna Information | |
|---------------------|---------------|
| Frequency range | 2.4GHz-2.5GHz |
| Impedance | 50 Ω Nominal |
| VSWR | 2:1 Max |
| Gain (Peak) | 3dBi |

| NAME | COLOR | GAUGE | RATING | DESCRIPTION |
|-------------------|--------|------------------------------|--------|----------------------------|
| Line | Black | 18AWG (0.75mm ²) | 600V | 120-277VAC |
| Common neutral | White | 18AWG (0.75mm ²) | 600V | Common neutral |
| Load | Red | 18AWG (0.75mm ²) | 600V | 360W@120/277VAC |
| 12VDC | Yellow | 22AWG (0.34mm ²) | 300V | 12VDC auxiliary output |
| 0-3V Sensor input | Brown | 22AWG (0.34mm ²) | 300V | 0-3V input for sensor |
| 0-10V DIM1+ | Purple | 22AWG (0.34mm ²) | 300V | 0-10V output for intensity |
| 0-10V DIM2+ | Orange | 22AWG (0.34mm ²) | 300V | 0-10V output for CCT |
| DIM-/GND | Pink | 22AWG (0.34mm ²) | 300V | Common ground |

Product Dimensions



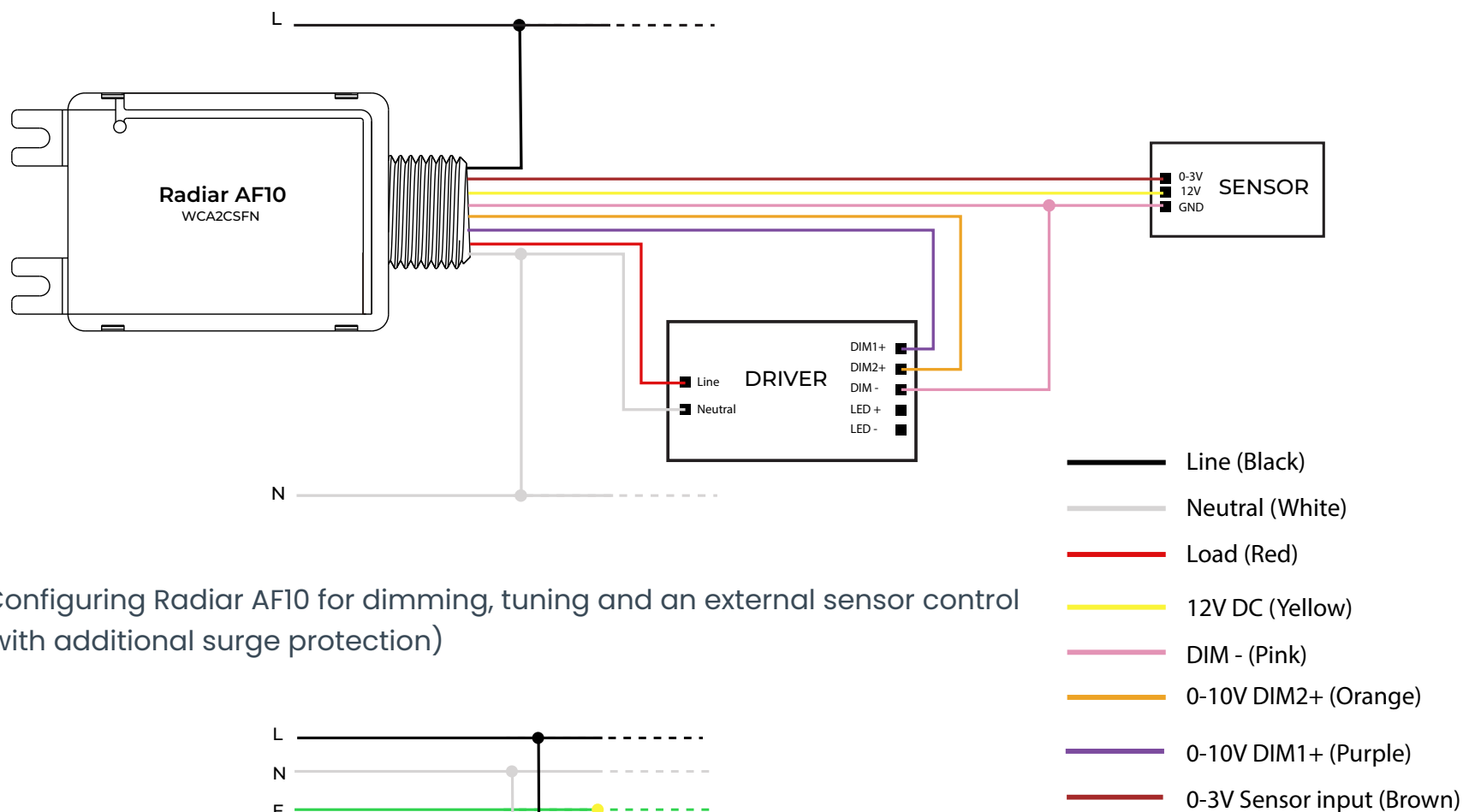
■ Size comparison with a standard credit card



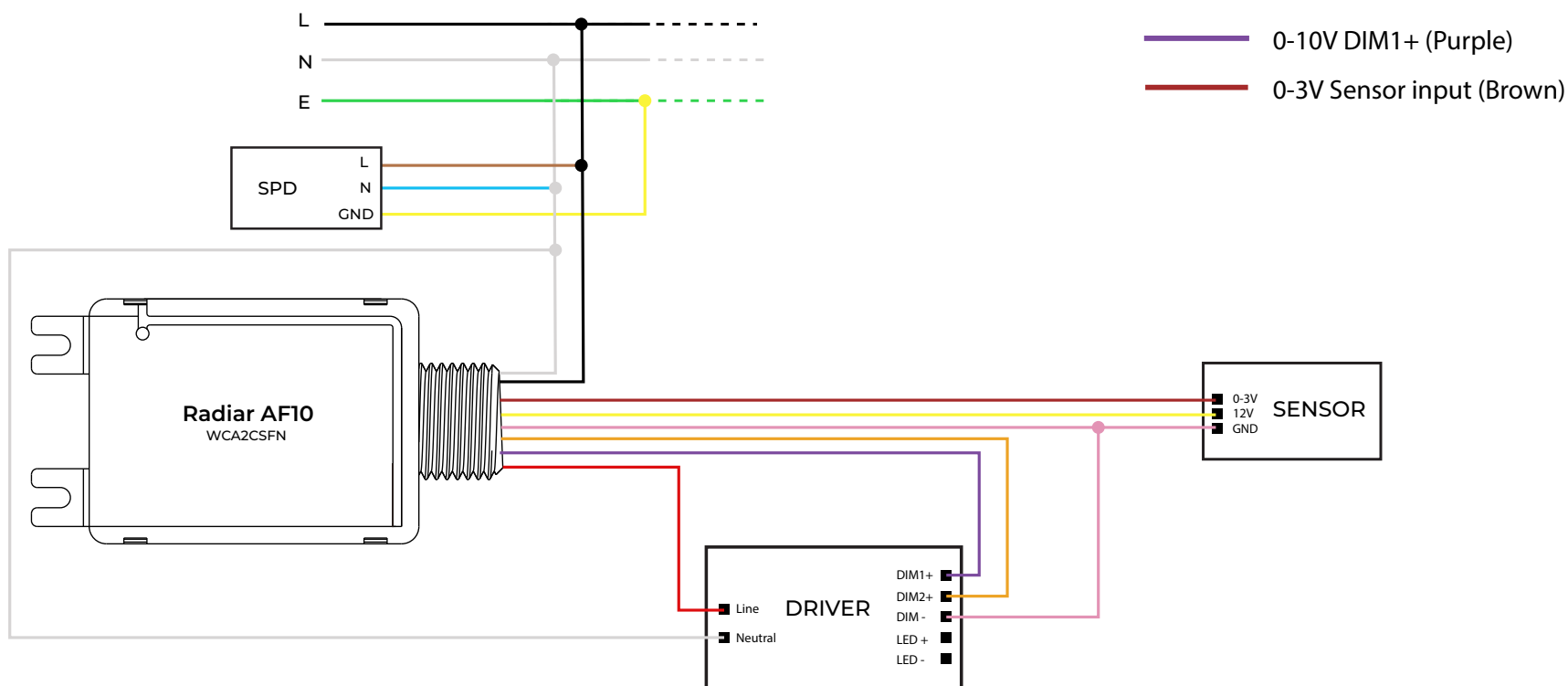
Wiring

Radiar AF10 can be installed in a deep junction box or fixture with standard ½ inch knockouts

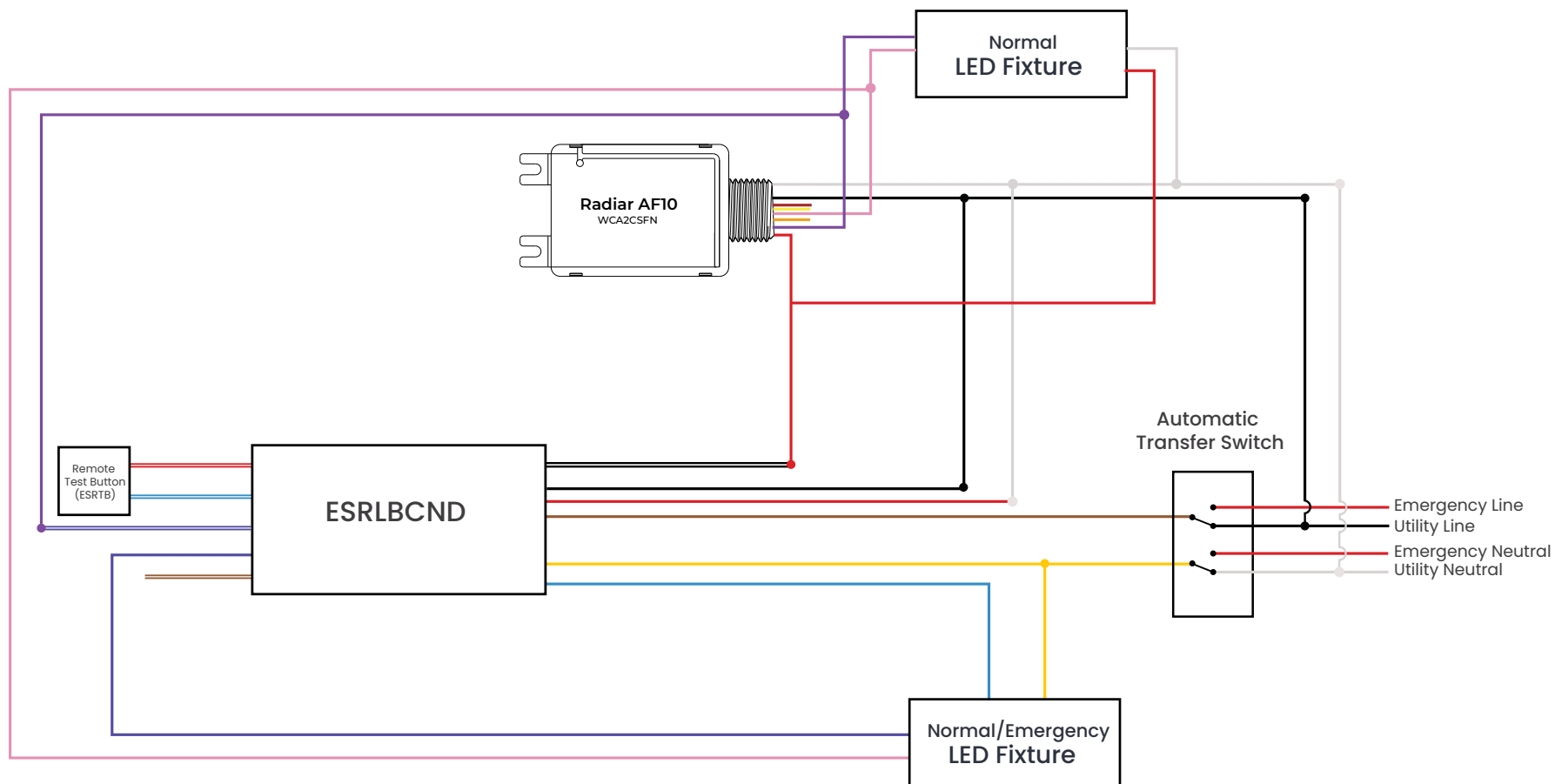
1. Configuring Radiar AF10 for dimming, tuning and an external sensor control











2. Configuring Radiar AF10 for dimming, tuning and an external sensor control (with additional surge protection)



3. Configuring Radiar AF10 for Emergency Lighting Control with ESRLBCND(5Amp SPST)






Radiar AF10 - Wire description

| | | |
|---|--|---|
|  Line (Black) |  12VDC (Yellow) |  0-10V DIM1+ (Purple) |
|  Neutral (White) |  DIM- (Pink) |  0-3V Sensor input (Brown) |
|  Load (Red) |  0-10V DIM2+ (Orange) | |







ESRLBCND - Wire description

Feedback/Dimmer Contacts

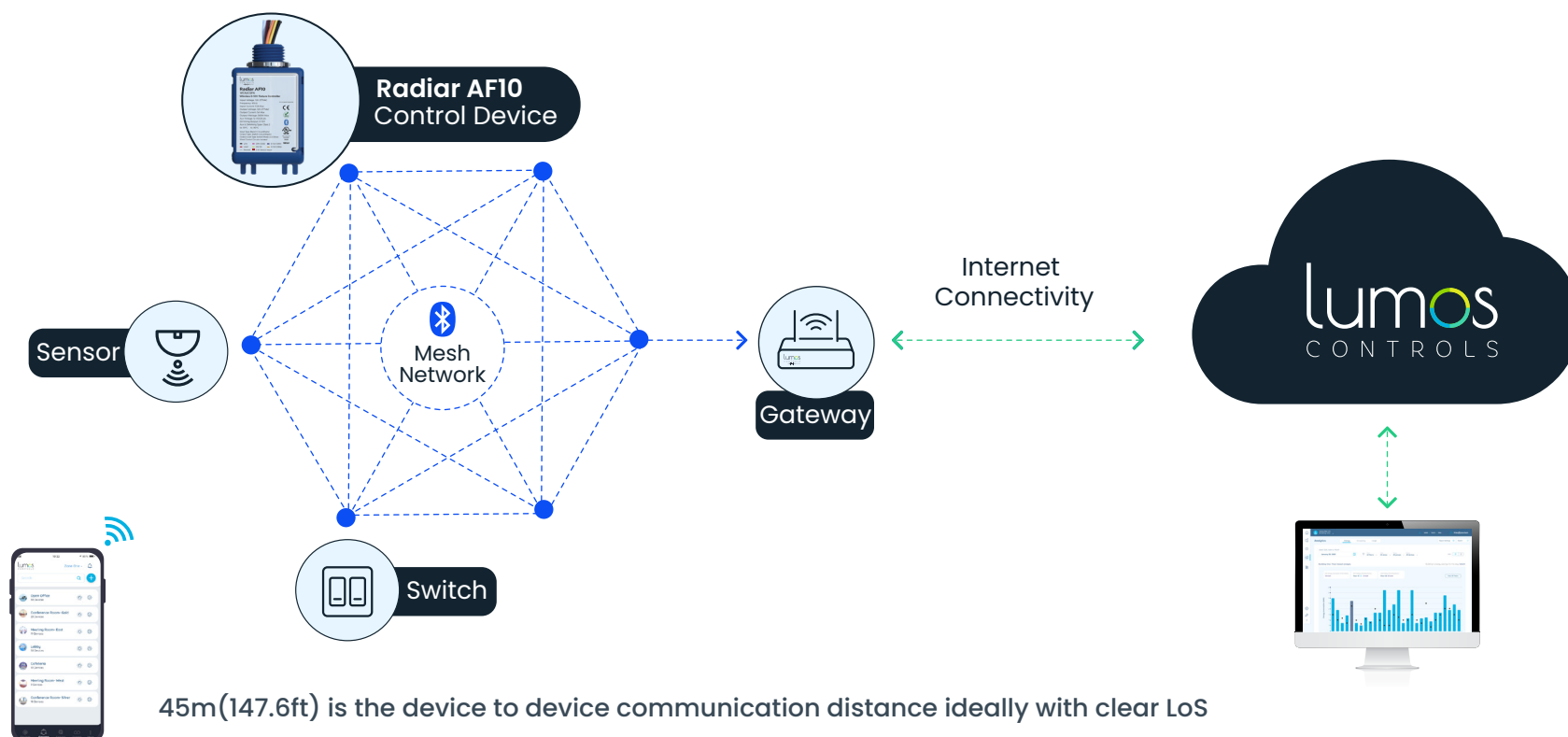
| |
|---|
|  NO (White/Violet) |
|  C (Violet) |
|  N/C (White/Brown) |

Remote Test Input

| |
|--|
|  White/Red |
|  White/Blue |

| |
|---|
|  Normal Hot (Black) |
|  Normal Switched Hot (White/Black) |
|  Normal Neutral (Red) |
|  Emergency Neutral (Yellow) |
|  Emergency Hot (Brown) |
|  Emergency Hot to Load (Blue) |

Smart Ecosystem



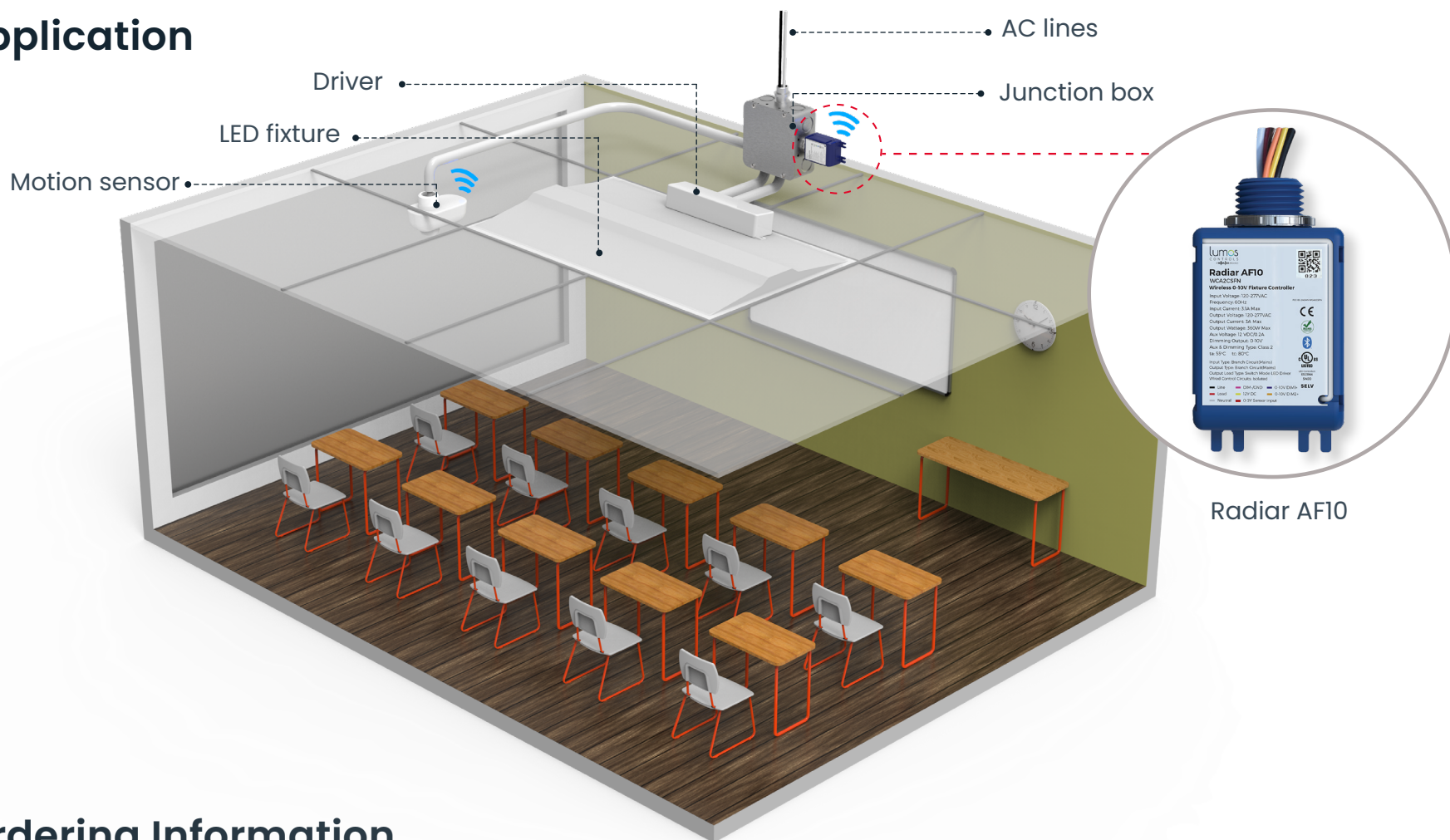
45m(147.6ft) is the device to device communication distance ideally with clear LoS

| 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 standard</p> <p>EN 61347-2-11:2001+A1:2019; EN 61347-1:2015+A1:2021 EN 62493:2015;</p> <p>Radio test standard</p> <p>ETSI EN 300 328 V2.2.2 (2019-07)</p> <p>Health test standard:</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 |
| cULus | E523966, Light-emitting-diode controllers (FLTJ) |
| FCC | FCC Rule Part 15C ID: 2AG4N-WCA2CSFN |
| Bluetooth | Declaration ID: D059551 |

Items included in the package box

- Radiar AF10
- User manual
- Metallic locknut
- Wire nuts

Application



Ordering Information

| Product Code | Product Name | Product Description | Communication | Voltage Rating | Sensor Input | Output Channel | Aux Power |
|--------------|--------------|---|---------------|----------------|--------------|---------------------|-----------|
| WCA2CSFN | Radiar AF10 | Wireless 0-10V dual channel dimming AC powered fixture controller | BLE5.2 | 120-277VAC | 0-3VDC | 0-10V 2 Channels | 12VDC |

Accessories

| | | |
|---------------------------|---|----------------------------------|
| Product Code : SPD1PRIP67 | Product Description : LED Surge Protection Device | SPD offers protection up to 10kV |
|---------------------------|---|----------------------------------|

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