



# Radiar AF10

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



## 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 0-10 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	50/60Hz	
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	0-10VDC	Analog input (Max upto 12VDC)
Current	1mA	

## Features

- Dual channel 0-10V independent output to control intensity and corelated color temperature (CCT)
- Auxiliary 12V/200mA output to power sensors
- 0-10VDC 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 enviorment

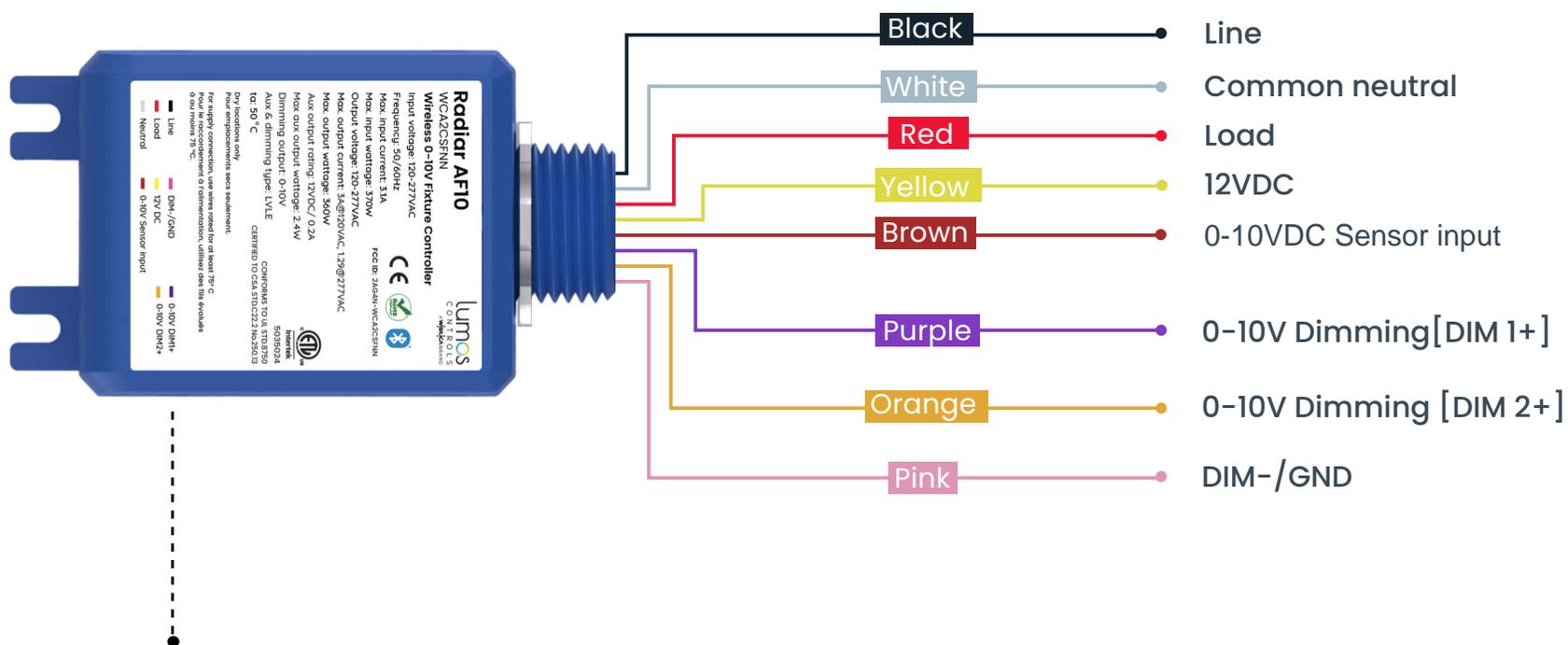
## Environmental

Specifications	Value
Operating temperature	-30 to 50°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 5VA	

## Wire Description

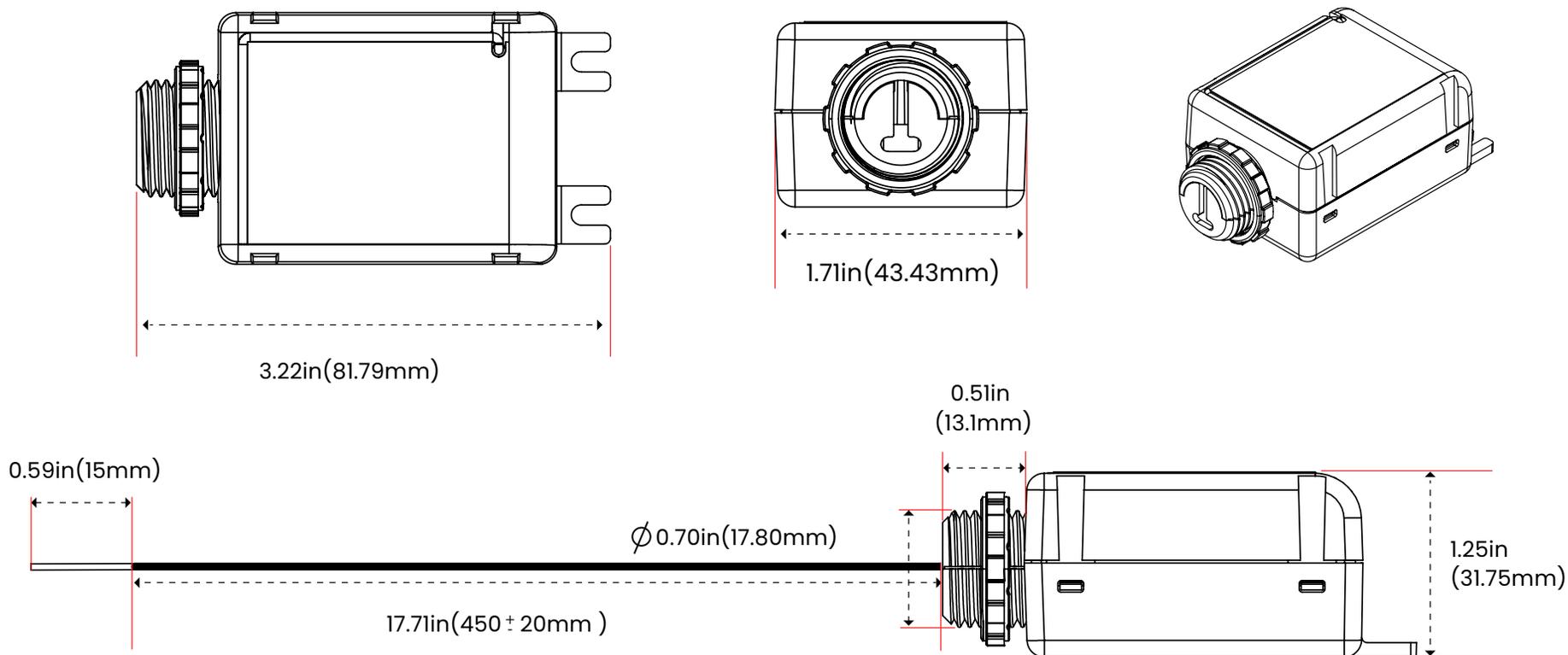


100mm wire antenna

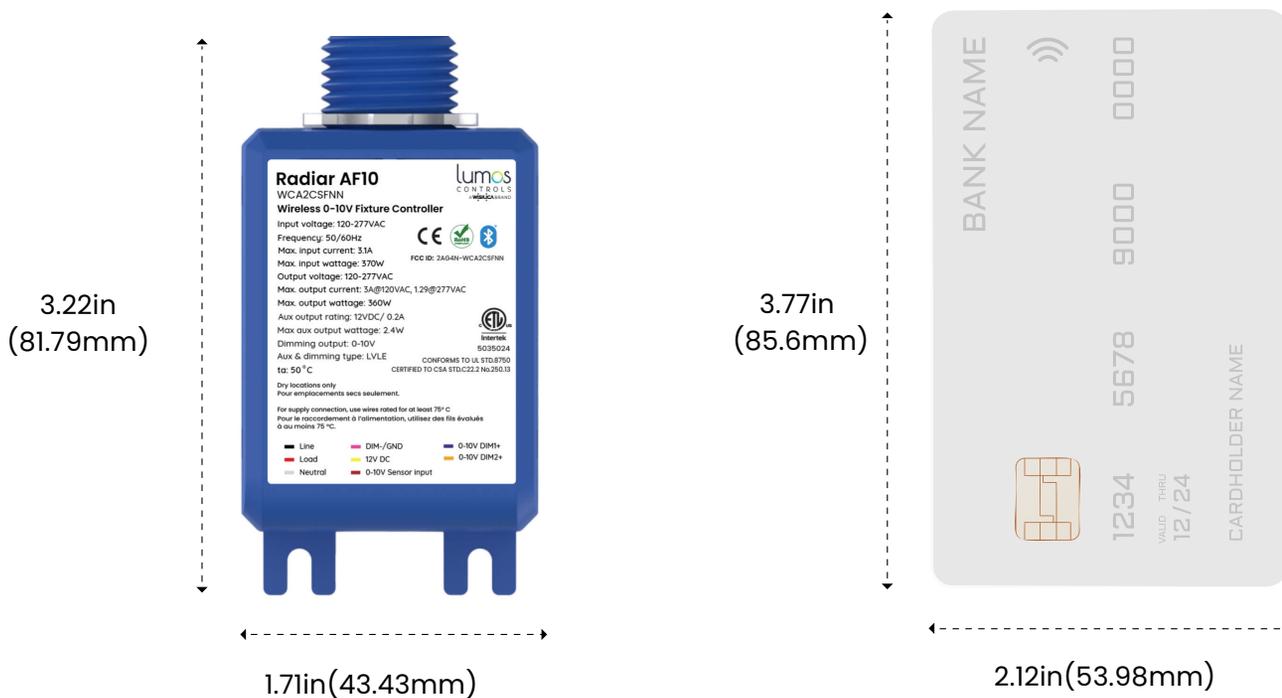
Antenna Information	
Frequency range	2.4GHz-2.5GHz
Impedance	50 Ω Nominal
VSWR	2:1 Max
Gain (Peak)	3dBi

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

## Product Dimensions



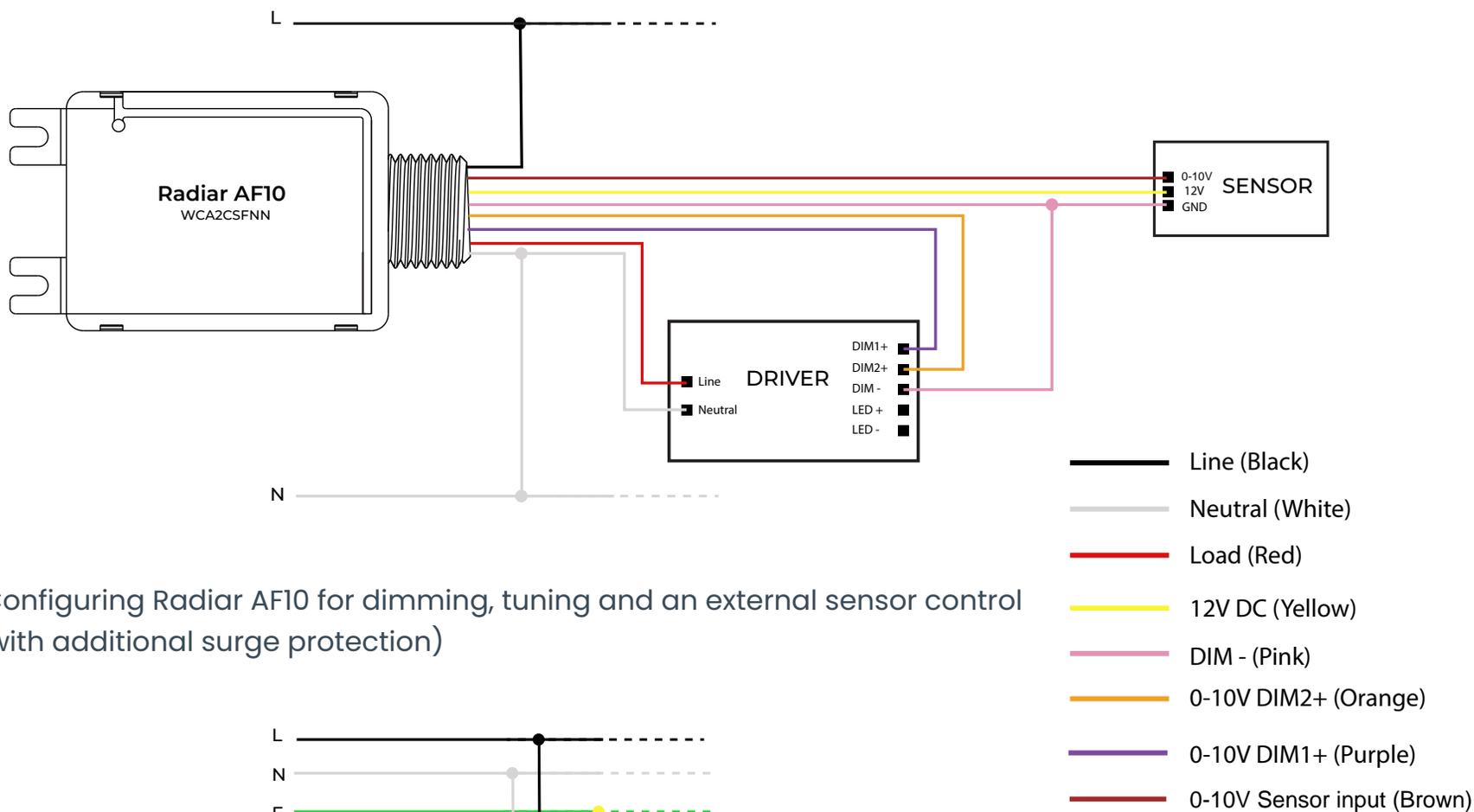
### ■ Size comparison with a standard credit card



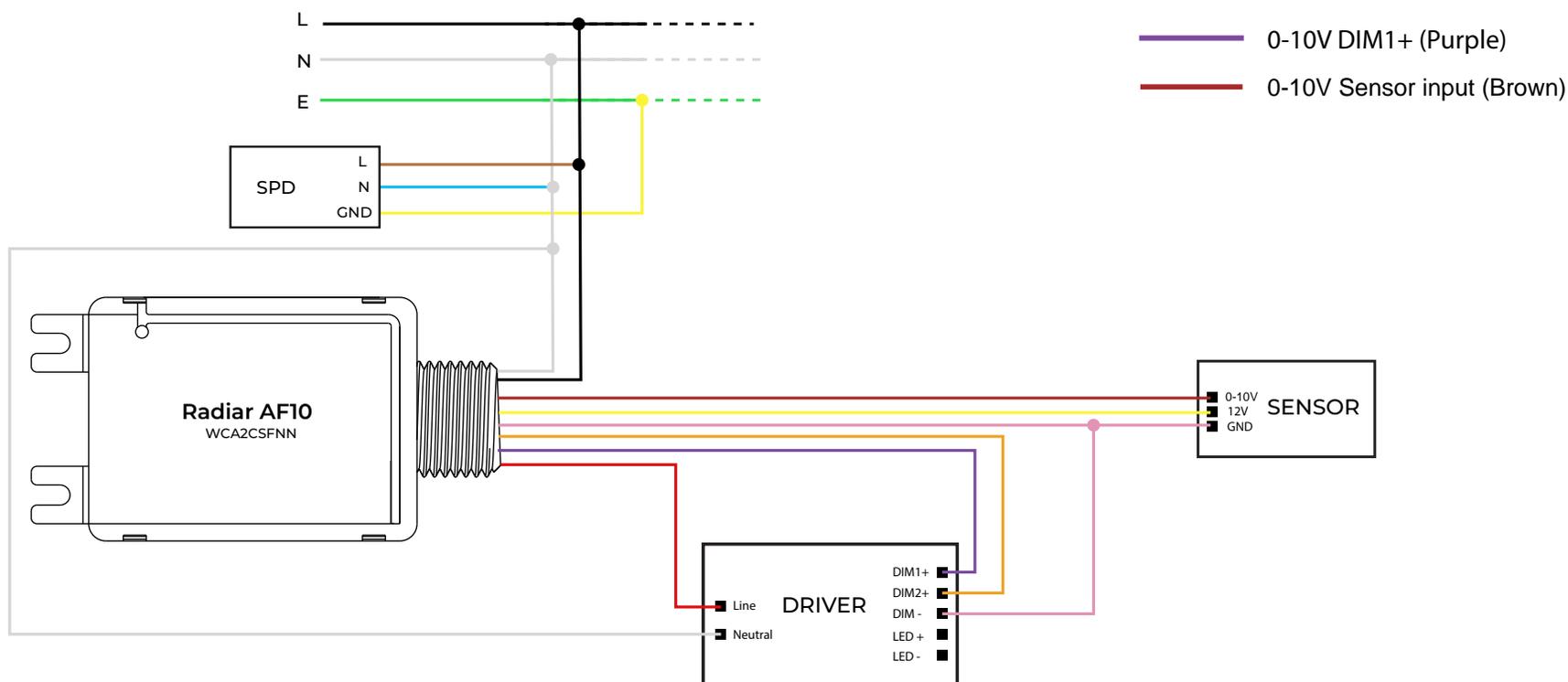
# Wiring

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

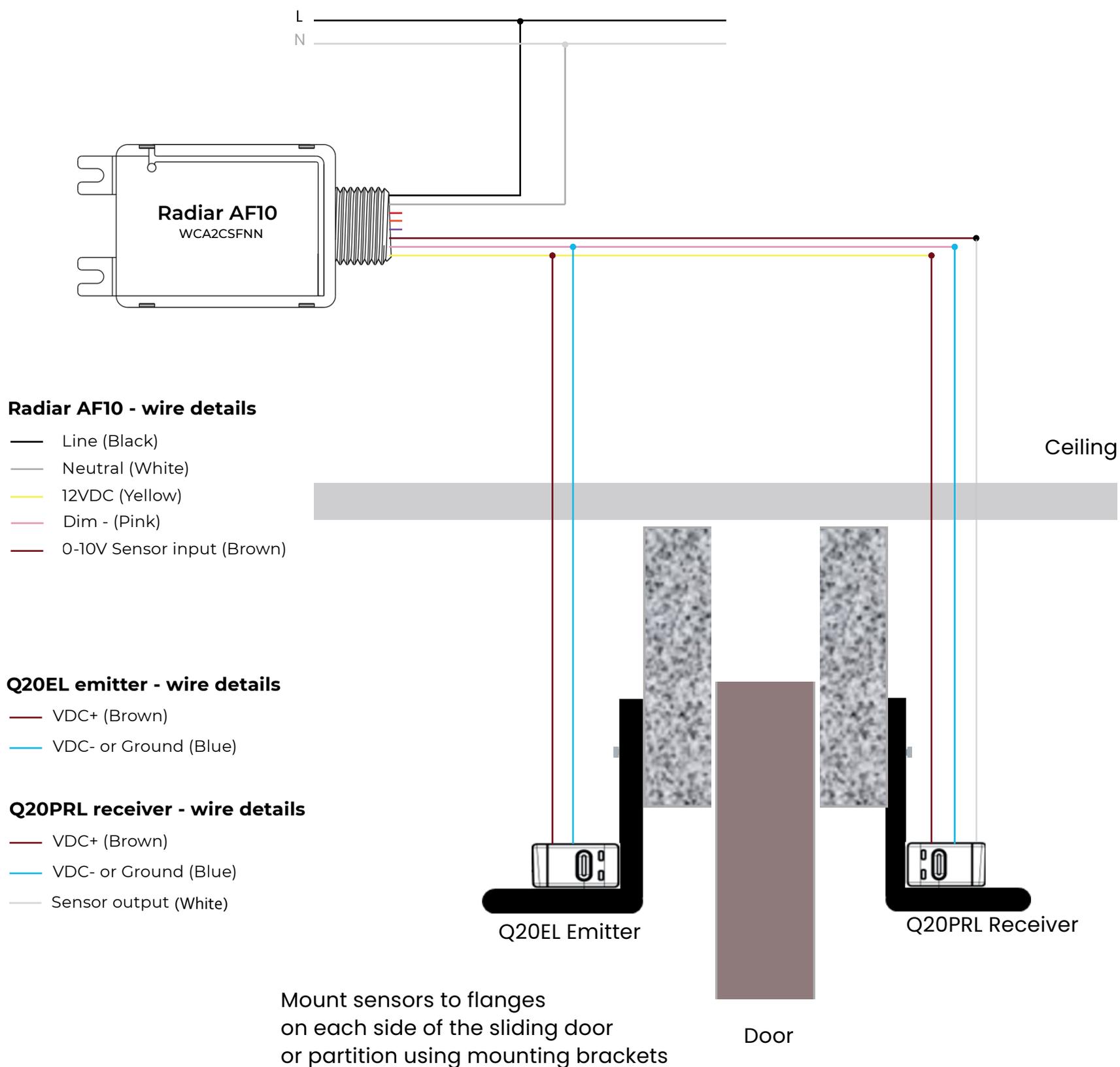
## 1. Configuring Radiar AF10 for dimming, tuning and an external sensor control



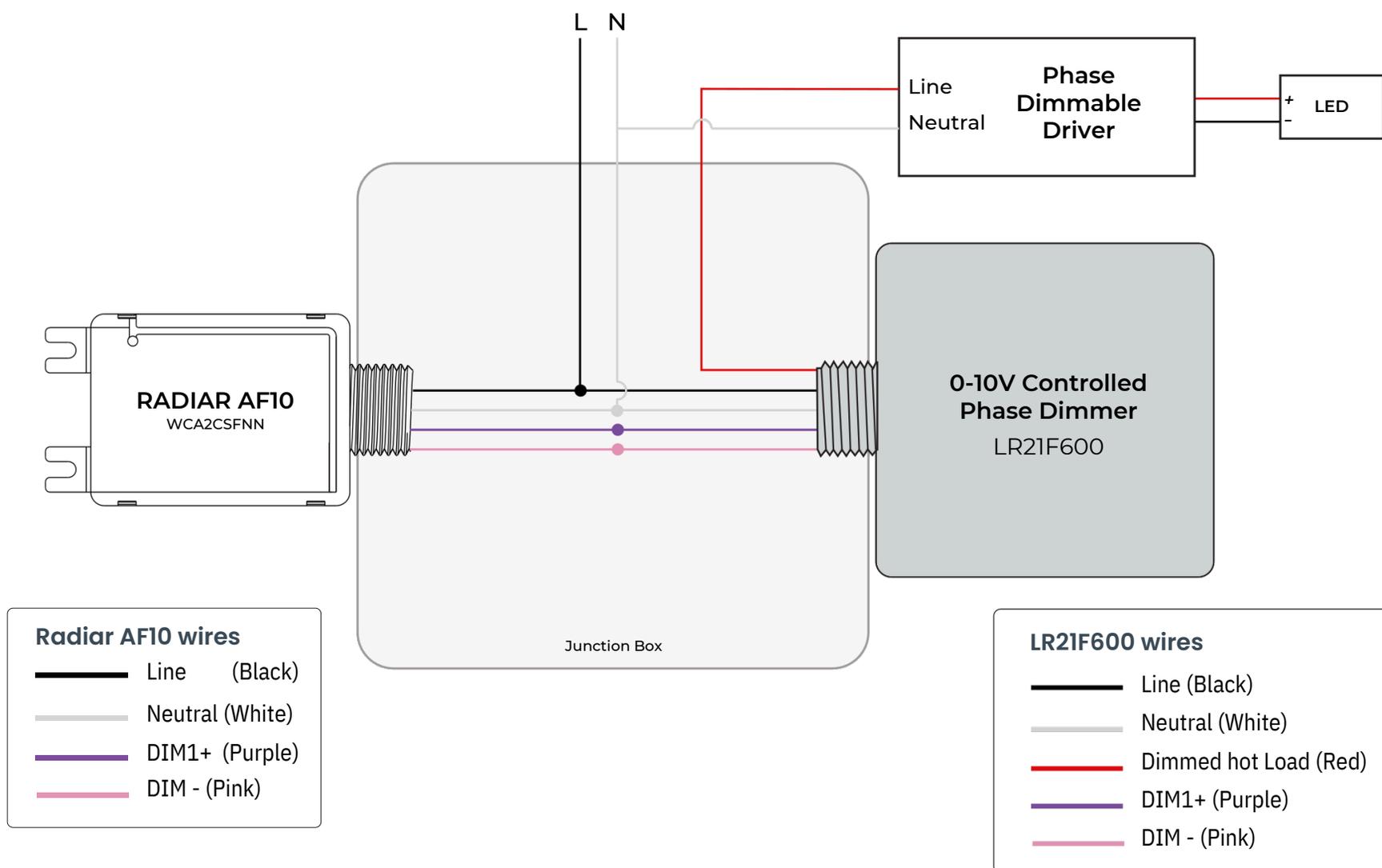
## 2. Configuring Radiar AF10 for dimming, tuning and an external sensor control (with additional surge protection)



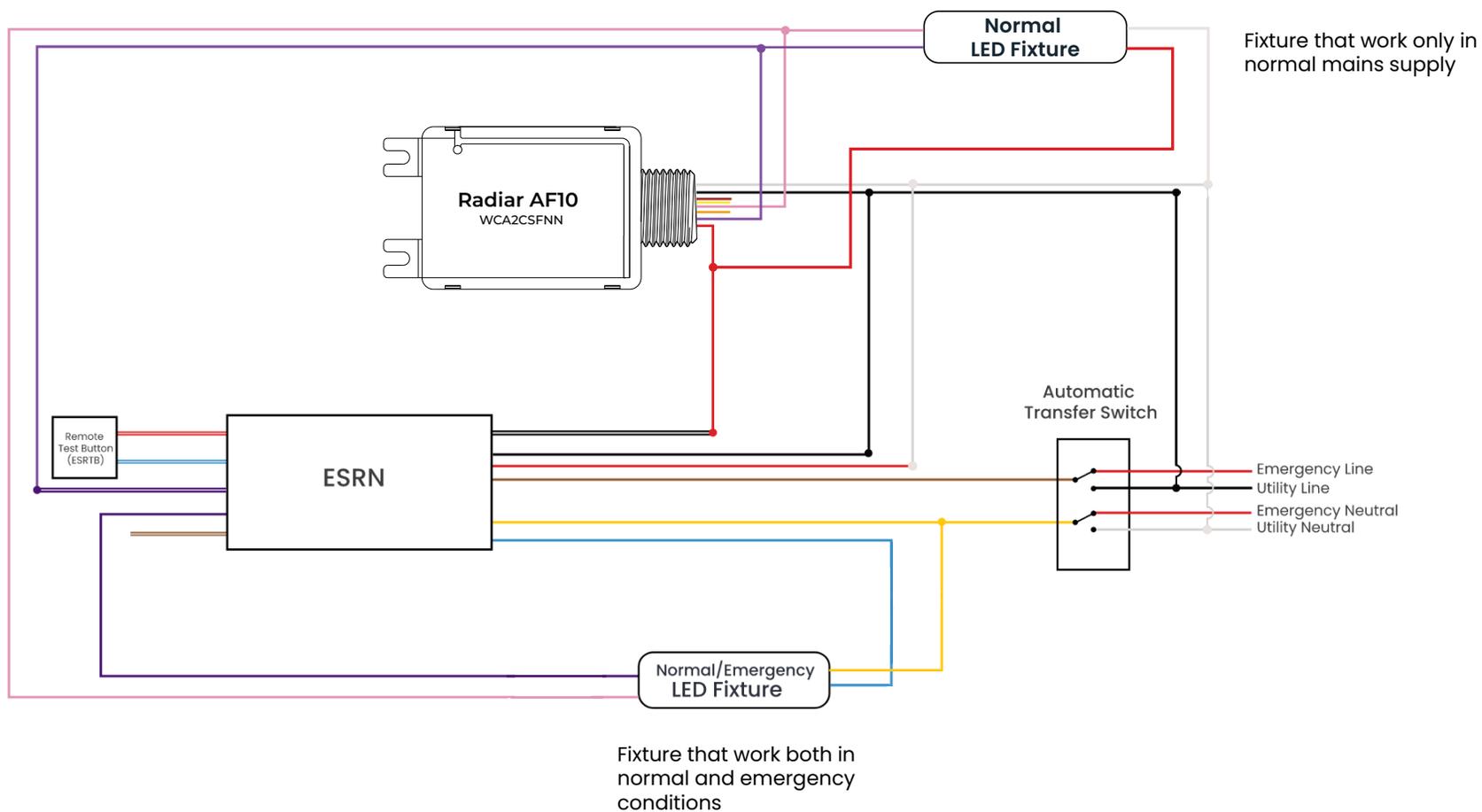
### 3. Wiring Radiar AF10 with Q20EL Infrared emitter, Q20PRL receiver for partition detection



#### 4. Wiring Radiar AF10 with LR21F600 for Phase Dimming



## 5. Configuring Radiar AF10 for Emergency Lighting Control with ESRN.



### Radiar AF10 - Wire description

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

### Wire Description: ESRN

#### Feedback/Dimmer Contacts

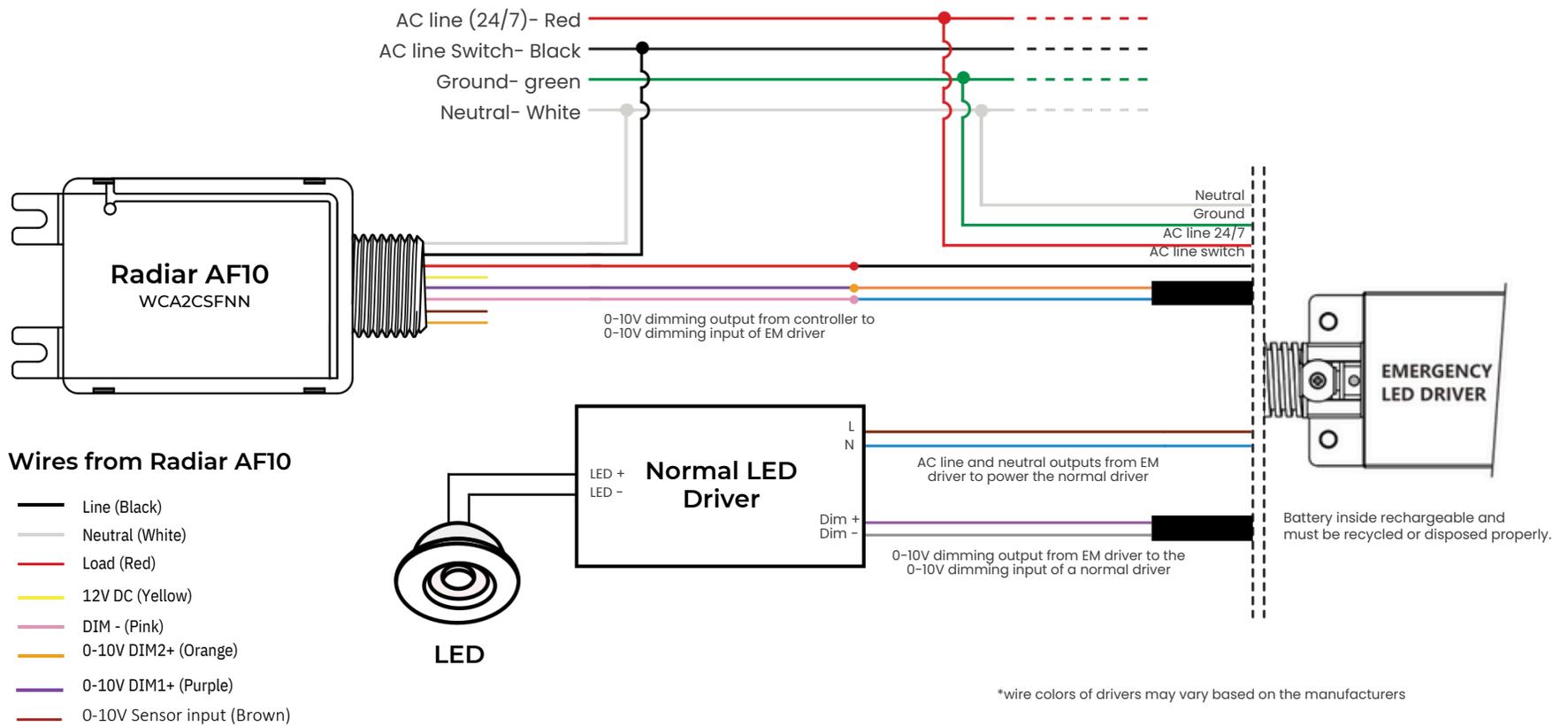
NO (White/Violet)
C (Violet)
N/C (White/Brown)

#### Remote Test Input

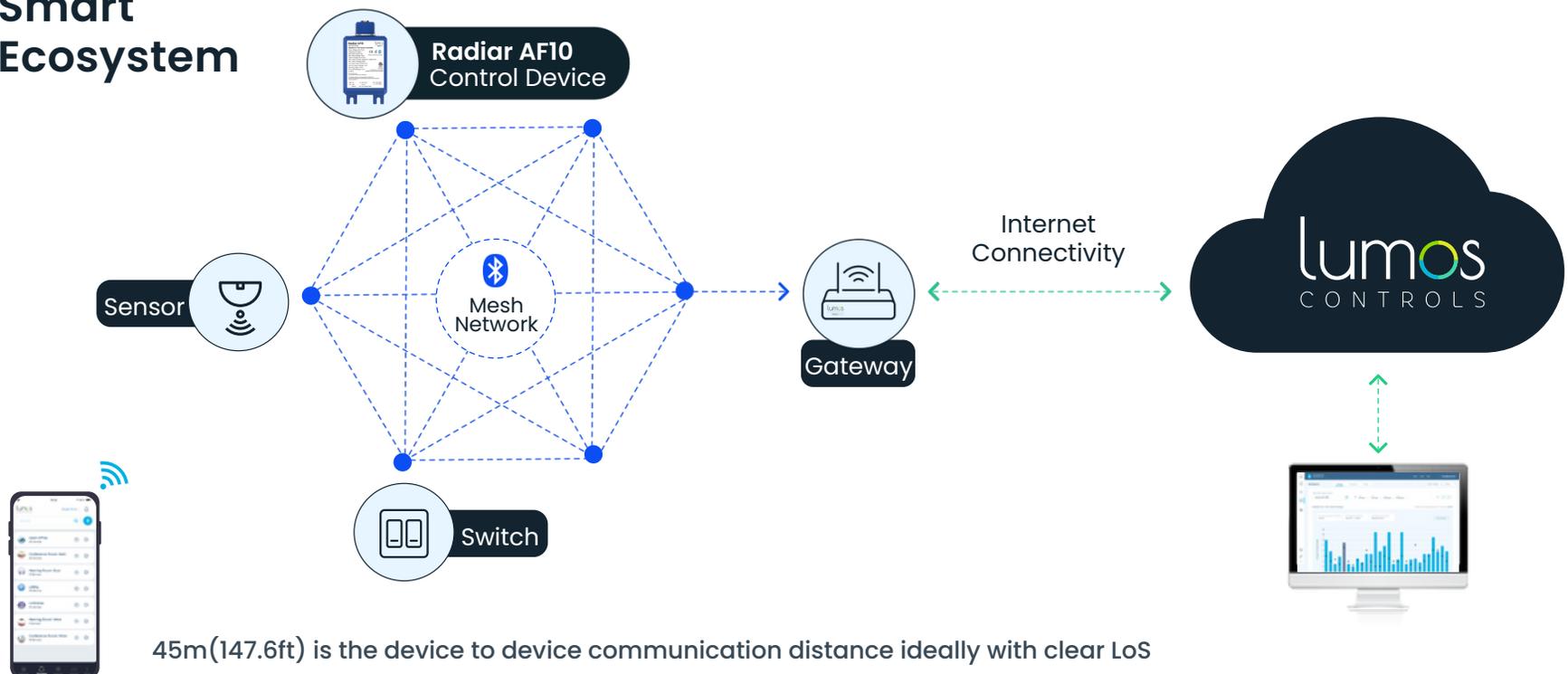
White/Red
White/Blue

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

## 6. Wiring Radiar AF10 with a 0-10V battery backup emergency driver



## Smart Ecosystem





## Ordering Information

Product Code	Product Name	Product Description	Communication	Voltage Rating	Sensor Input	Output Channel	Aux Power
WCA2CSFNN	Radiar AF10	Wireless 0-10V dual channel dimming AC powered fixture controller	BLE5.2	120-277VAC	0-10VDC	0-10V 2 Channels	12VDC

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