

Radiar ARD32

32 Child DALI Room Controller



Product Overview

Radiar ARD32 is a highly flexible and cost-effective DALI room controller. It is a part of the Lumos Controls ecosystem, including controllers, sensors, switches, modules, drivers, gateways, and analytical dashboards. It can be connected to the Lumos Controls cloud for data analytics and configuration management. The lighting network's configuration, commissioning, and controlling can be super-quick from any mobile device.

The device can be connected to a maximum of 32 DALI LED drivers and can be controlled as DALI or 0-10V. It operates on a 100-277 VAC input voltage range and can also be configured in 0-10V mode to control one or two 0-10V controllable LED drivers, or a tunable white LED driver with two 0-10V control interfaces. This device comes with a 3.3VDC input channel that can be used to communicate with an external sensor. It has a customizable communication interface for control and status and has an input for an external AC relay.

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

Specifications

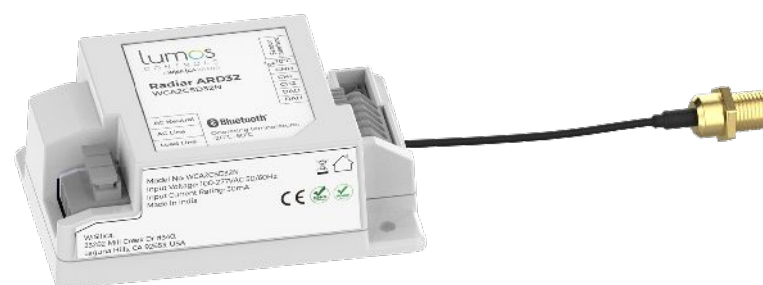
Electrical

| Specifications | Value | Remarks |
|----------------------|-------------|-----------------------|
| Input voltage | 100-277VAC | Rated Input voltage |
| Input current | 10-30mA | @Max RF transmtting |
| Frequency | 50/60HZ | |
| *SSR Load output | 0.8A@230VAC | For LED loads > 30W |
| *SSR Leakage current | 5-15mA | @Rated input Voltage |
| Inrush current | 20A | |
| Surge protection | 3kV | @Line to Line Bi Wave |

*SSR- Solid State Relay

Features

- DALI supporting up to 32 child devices
- Optional analog 2 channel (0-10V) independent output to control intensity and CCT
- Zero downtime Over-the-Air (OTA) firmware updates



DALI Output

| Specifications | Value | Remarks |
|---------------------|----------------------------------|------------------------------|
| Voltage range | 12-20VDC | Typically 16VDC |
| Current | 160mA max | Connected to 32 Dali drivers |
| Supported protocols | 101/ 103/ 207/ 209 | DALI 2.0 |
| Dimming range | 0-100% | 1000 steps resolution |
| Dimming curve | linear/ logarithmic (default) | |

0-10V Output

| Specifications | Value | Remarks |
|--------------------|-------------------------------|----------------------------|
| Number of channels | 2 | |
| Voltage range | 0-10VDC | Tolerance: $\pm 0.2V$ |
| Current | 15mA | Source current per channel |
| Dimming range | 0-100% | 1000 steps resolution |
| Dimming curve | Linear (default) /logarithmic | |

Auxiliary Output

| Specifications | Value | Remarks |
|----------------|--------|---------|
| Voltage | 3.3VDC | Digital |
| Current | 30mA | |

Environmental

| Specifications | Value |
|---------------------|---------------------------|
| Ambient temperature | -20 to 50°C (-4 to 122°F) |
| Case temperature | 70°C (158°F) |
| Relative humidity | 20 -85% non-condensing |

Sensor Input

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

Bluetooth

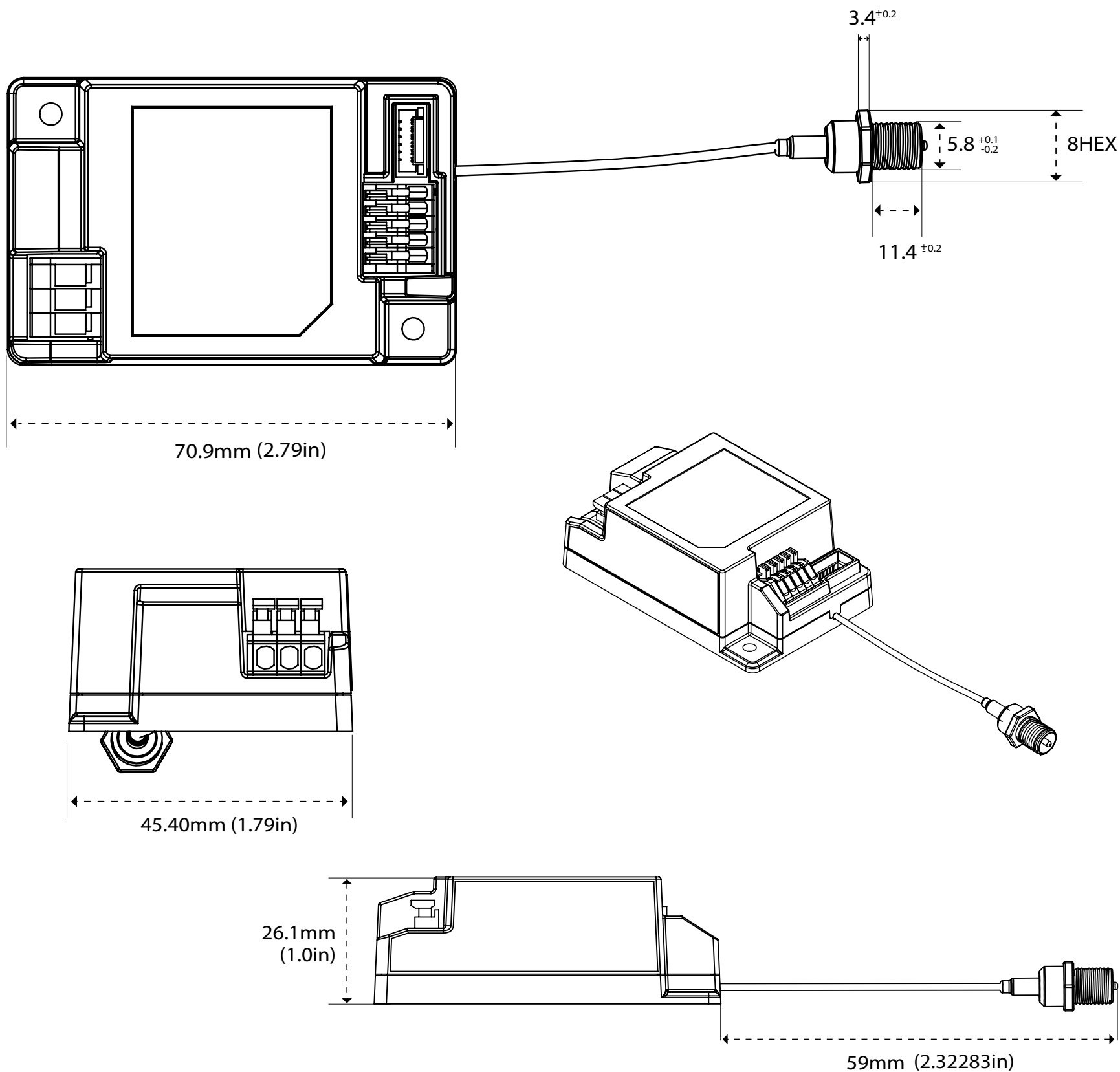
| Specifications | Value | Remarks |
|--|--------------|--|
| Frequency range | 2402-2480MHz | |
| Max output power | 8dBm | With 130mm wire antenna |
| Receive sensitivity | -95dBm | |
| Connection distance (device to device) | 45m, 147.6ft | Vary depending on the installation environment |

Mechanical

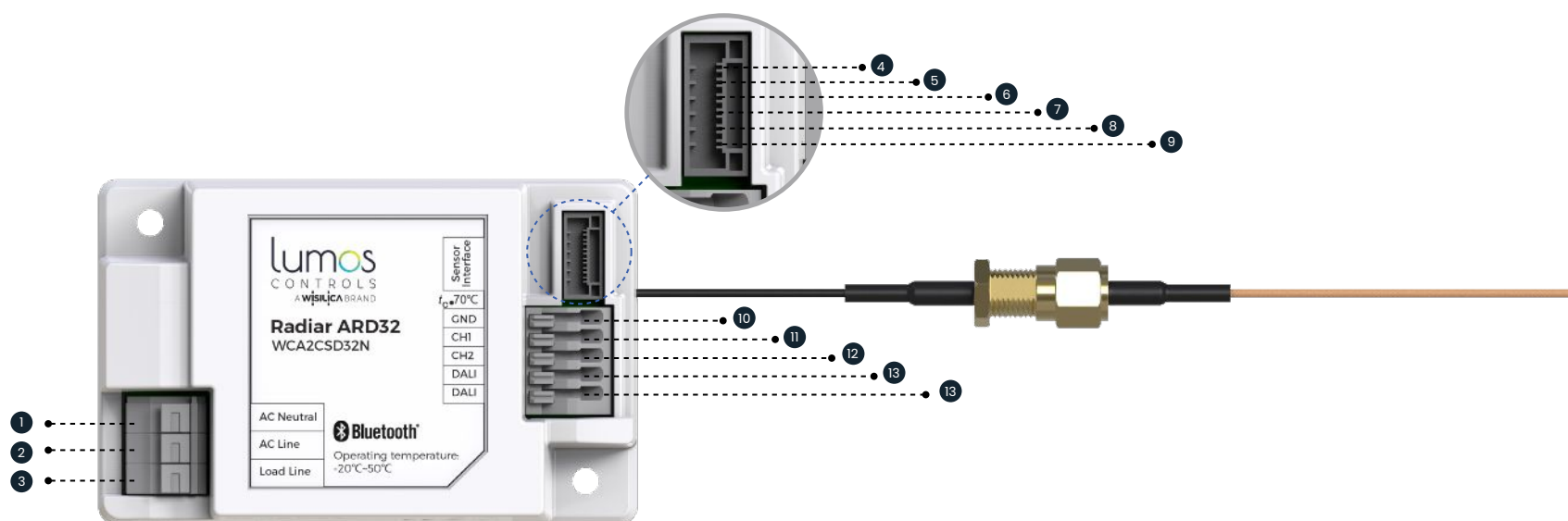
| Specifications | Value | Remarks |
|---------------------|---|-------------|
| Dimension | 2.7 X 1.78 X1.02 (inch) 70.90 X 45.40 X 26.10 (mm) | L x W x H |
| Weight | 50.0g(1.76oz) | |
| Case material | PC | White color |
| Flammability rating | UL 94 V-0 | |

Product Dimensions

Radiar ARD32 Top view: 70.9mm x 45.4mm x 26.1mm (L x W x H)



Connector Description



| | Name | I/o | A/D | Function |
|----|------------|--------|----------------|---------------------------|
| 1 | AC-Neutral | Input | Analog | VAC common neutral |
| 2 | AC -Line | Input | Analog | VAC input line |
| 3 | Load Line | Output | Analog | VAC output line |
| 4 | 3V3 | Output | | DC 3.3V aux supply |
| 5 | GND | Output | | DC GND |
| 6 | TX | Output | Digital (3.3V) | UART transmitter |
| 7 | RX | Input | Digital (3.3V) | UART reciever |
| 8 | Din 1 NC | | NC | No connection (NC) |
| 9 | Din 2 | Input | Digital (3.3V) | 3.3V digital sensor input |
| 10 | GND | Input | | DC GND |
| 11 | CH1 | Output | Analog | 0-10V analog dimming |
| 12 | CH2 | Output | Analog | 0-10V analog dimming |
| 13 | DALI | Output | Digital | DALI+ |
| 14 | DALI | Output | Digital | DALI- |

Suggested Wire Gauge

| | |
|----|--------------------------|
| AC | 16-18AWG (0.75-1.5sq.mm) |
| AC | 16-20AWG (0.5-1.5sq.mm) |

Antenna Information

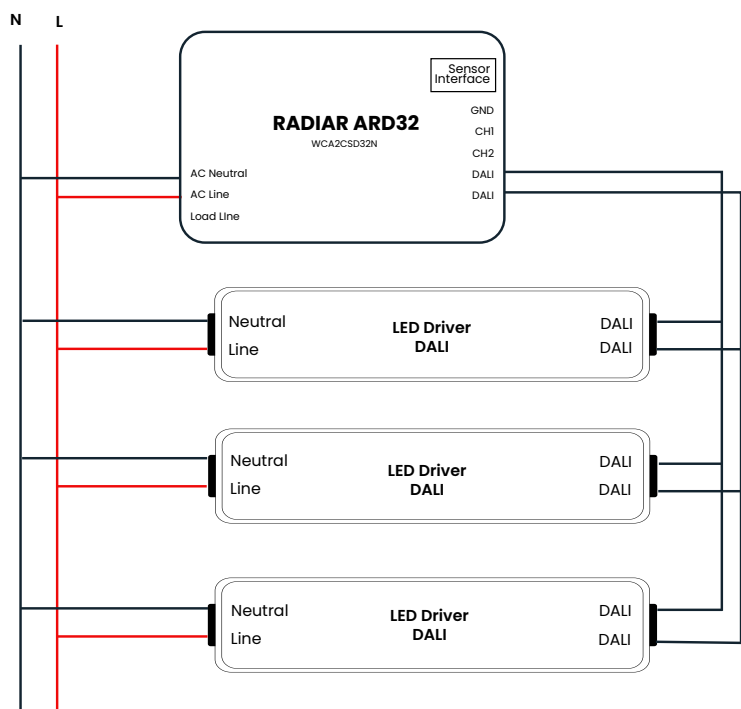
130mm wire antenna



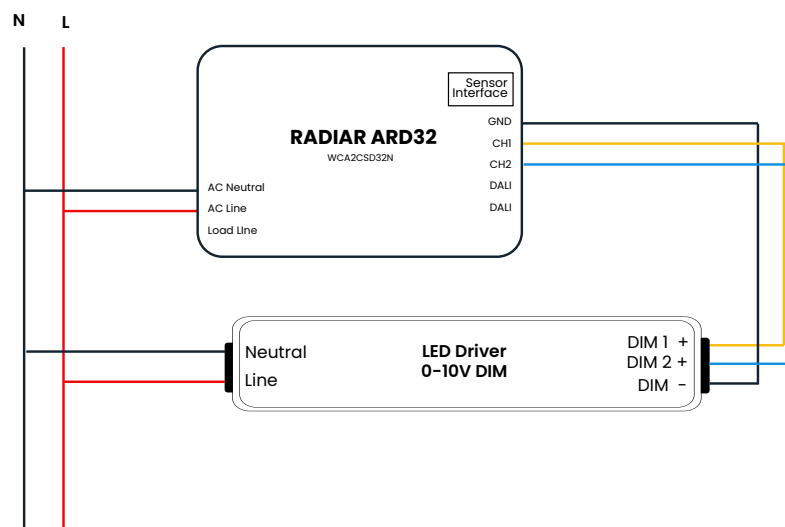
| | |
|-----------------|-----------------|
| Frequency range | 2.4GHz-2.5GHz |
| Impedance | 50 Ω nominal |
| VSWR | 1.92:1 Max |
| Return loss | -10dB Max |
| Gain (peak) | 2dBi |
| Cable loss | 0.3dBi max |
| Polarization | Linear vertical |

Wiring

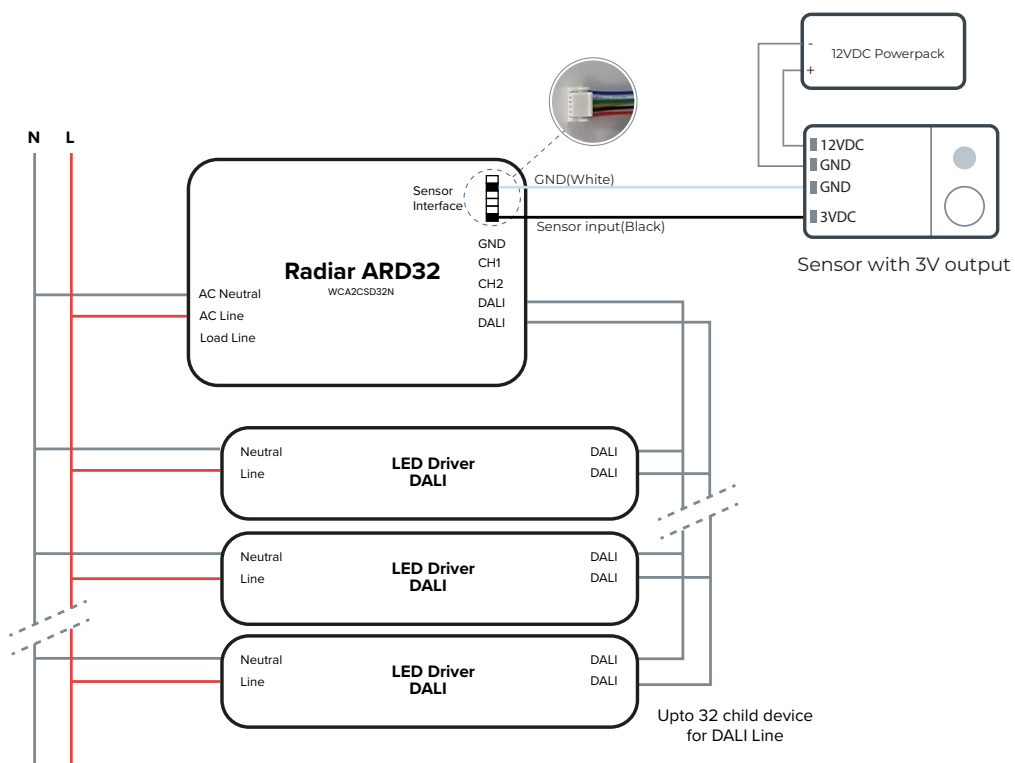
1) Connecting DALI drivers to the Radiar ARD32 controller



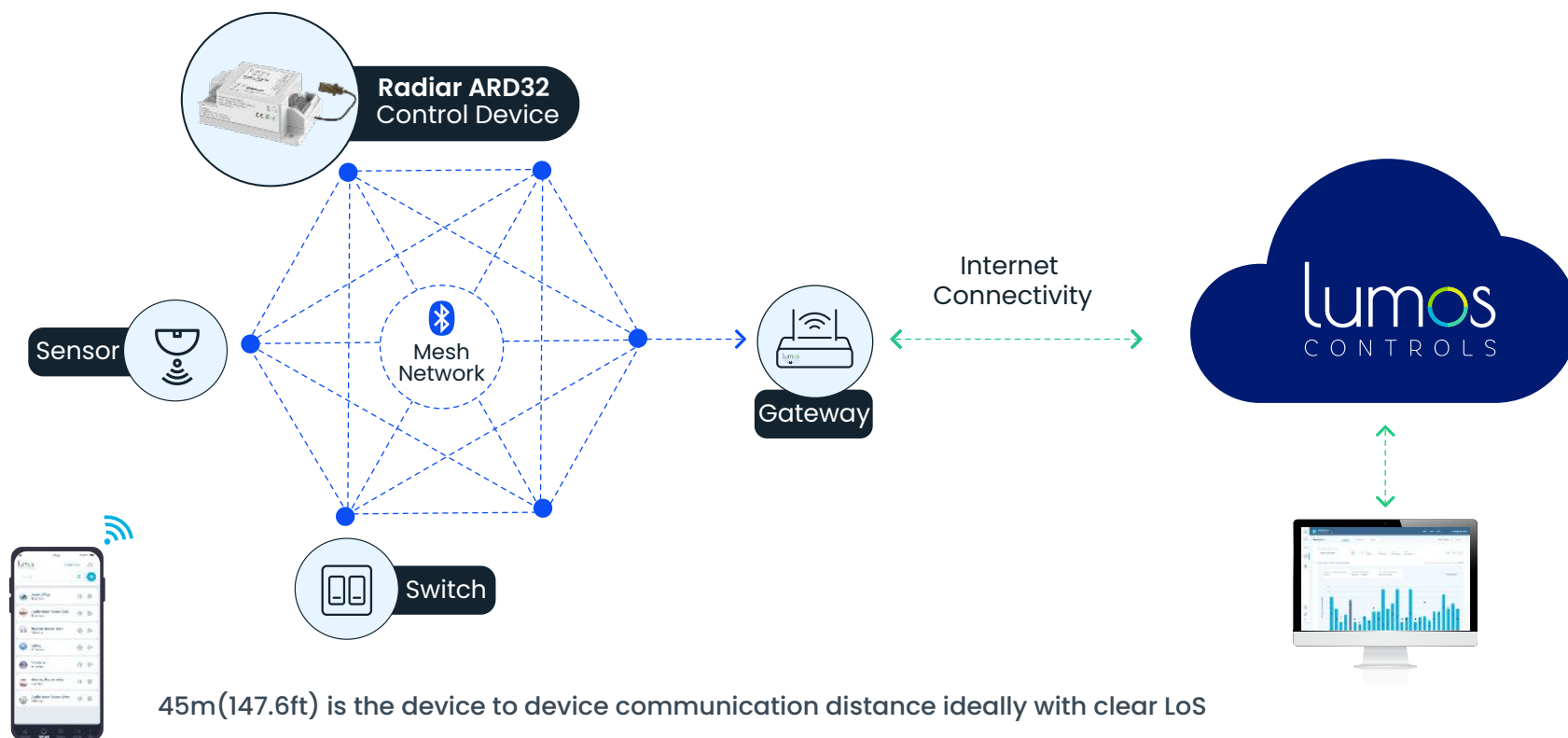
2) Connecting 0-10V drivers to the Radiar ARD32 controller (in 0-10V mode)



3) Connecting an external sensor with 0-3V output to the Radiar ARD32 controller using a Molex connector



Smart Ecosystem

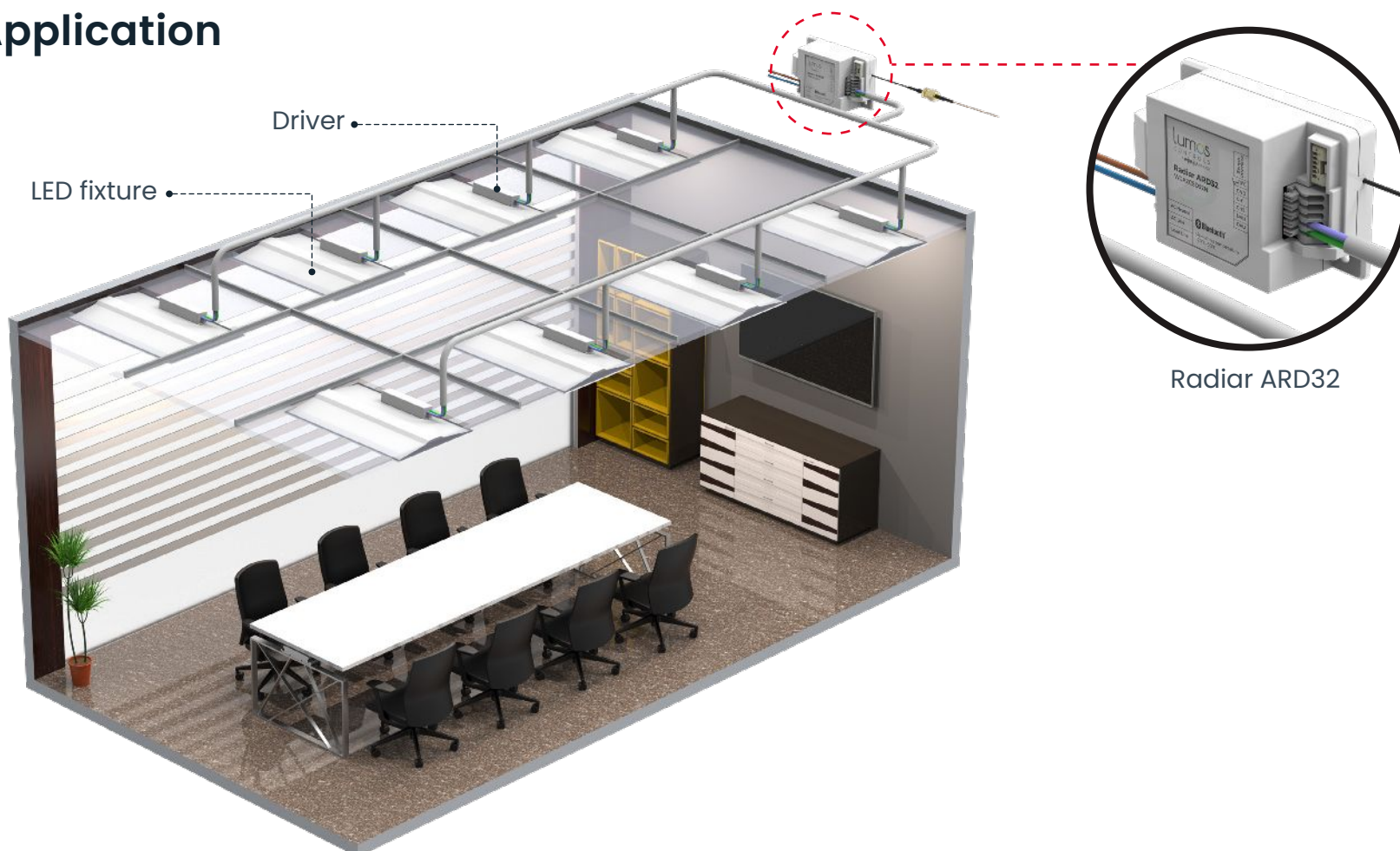


| Certifications | Details |
|------------------|---|
| CE | <p>Article 3, RED 2014/53/EU</p> <p>EMC test standards</p> <p>ETSI EN 301 489-1 V2.2.3(2019-11)</p> <p>ETSI EN 301 489-17 V3.2.4(2020-09)</p> <p>EN 55032: 2015/A11:2020</p> <p>EN 55035: 2017+A11 :2020</p> <p>Safety test standard</p> <p>IEC 62368-1:2014+A11: 2017</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</p> <p>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 |

Items included in the package box

- Radiar ARD32
- User manual
- Antenna

Application



Ordering Information

| Product Code | Product Name | Product Description | Communication | Voltage Rating | Sensor Input | Output Channel |
|--------------|--------------|-------------------------------|---------------|----------------|--------------|--------------------------|
| WCA2CSD32N | Radiar ARD32 | 32 child DALI room controller | BLE 5.2 | 100-277 VAC | 3VDC | DALI/0-10V 2 channels |

Accessories

| | |
|-------|---|
| WAIB | Lumos Controls installation box |
| WAS6C | Lumos Controls sensor interface 6 pin connector |

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