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CONTROLS
A WISILICA BRAND

Sensor Interface

t_c 70°C

| GND |
| CH1 |
| CH2 |
| DALI |
| DALI |

Radiar ARD32
WCA2CSD32N

AC Neutral
AC Line
Load Line

Bluetooth®

Operating temperature: -20°C~50°C

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Radiar ARD32

32 Child DALI Room Controller

CE · RoHS COMPLIANT · REACH COMPLIANT · Bluetooth · DLC QPL LISTED · openADR ALLIANCE
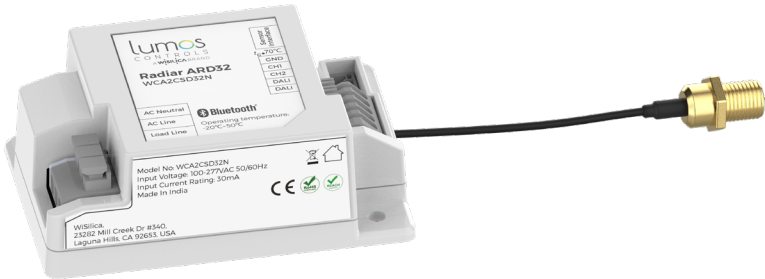
Product Overview

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.

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

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

DALI Output

Specifications	Value	Remarks
Voltage range	12-20VDC	Typically 16VDC
Current	160mA max	Connected to 32 Dali drivers
Supported protocols	101/ 103/ 202/ 207/ 209	DALI 2.0
Dimming range	0-100%	
Dimming curve	Linear/ logarithmic (default)	

0-10V Output

Specifications	Value	Remarks
Number of channels	2	
Voltage range	0-10VDC	Tolerance: ±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

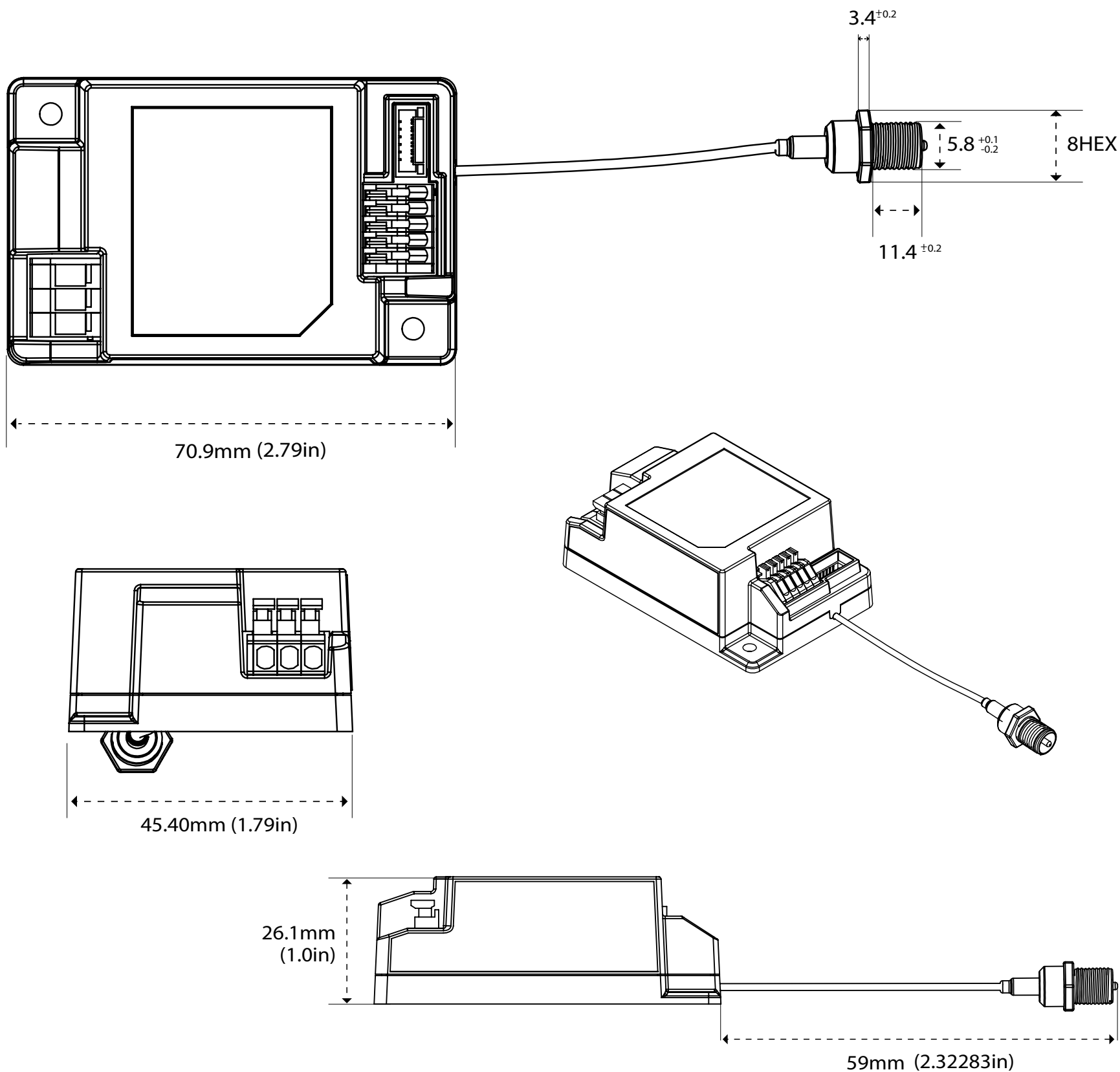| Specifications	Value	Remarks
Voltage range	0-3VDC	Digital
Current	1mA	

Bluetooth

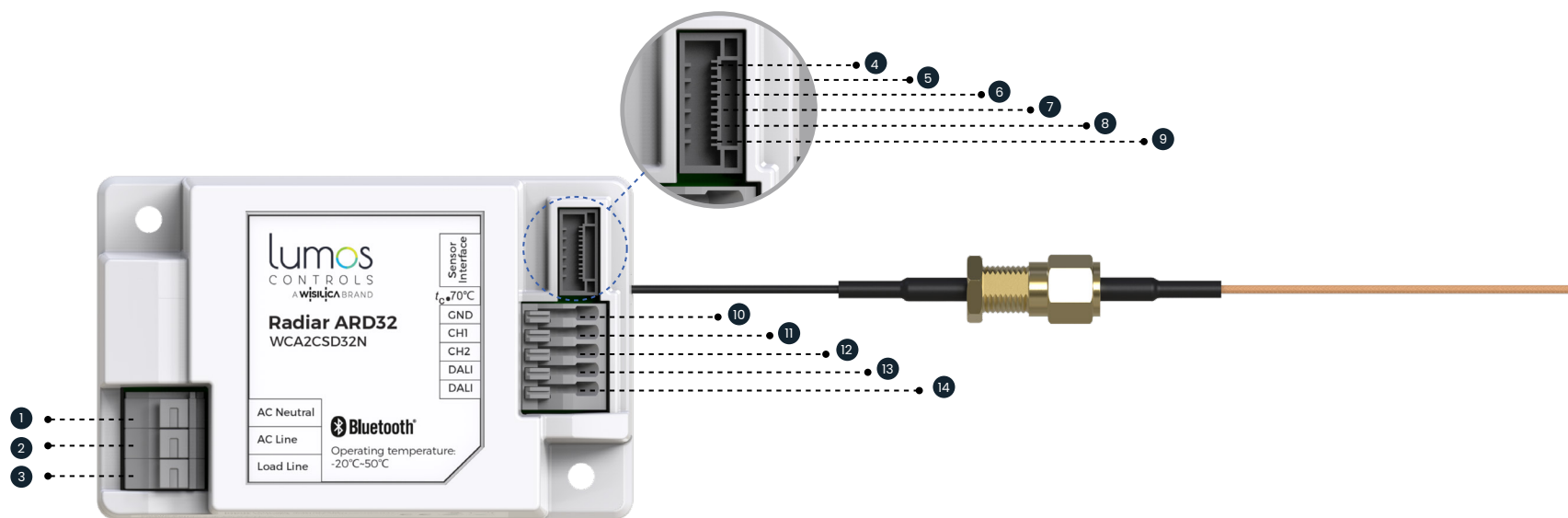| Specifications	Value	Remarks
Frequency range	2402-2480MHz	
Max output power	8dBm	With 130mm wire antenna
Receive sensitivity	-95dBm	
Connection distance (device to device)	45m, 147.6ft	Vary depending on the installation enviroment

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)

$3.4^{\pm0.2}$

$5.8^{+0.1}_{-0.2}$

8HEX

$11.4^{\pm0.2}$

70.9mm (2.79in)

45.40mm (1.79in)

26.1mm
(1.0in)

59mm (2.32283in)

Connector Description

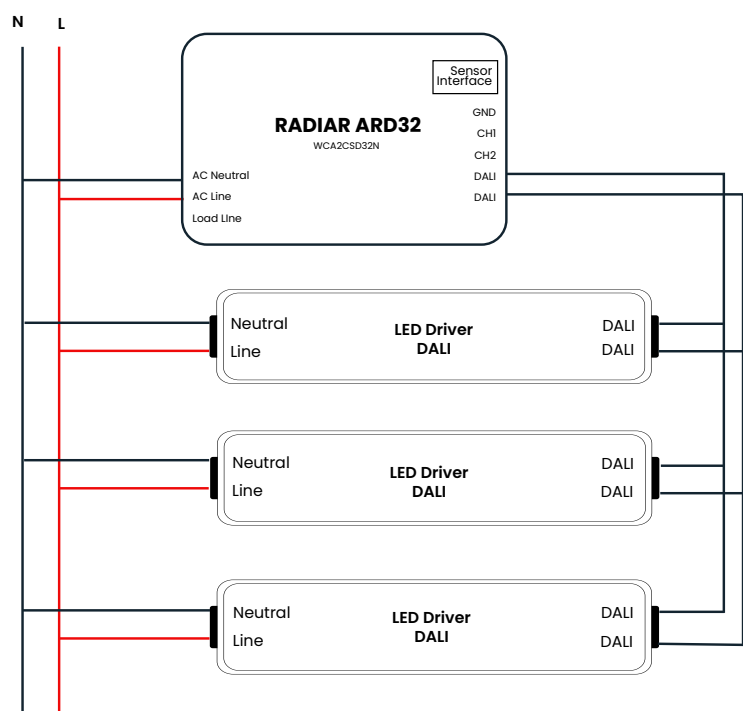|	Name	I/o	A/D	Function
1	AC-Neutral	Input	Analog	VAC common neutral
2	AC –Line	Input	Analog	VAC input line
3	Load Line	Output	Analog	VAC output line
4	3V3	Output		DC 3.3V aux supply
5	GND	Output		DC GND
6	TX	Output	Digital (3.3V)	UART transmitter
7	RX	Input	Digital (3.3V)	UART reciever
8	Din 1 NC		NC	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

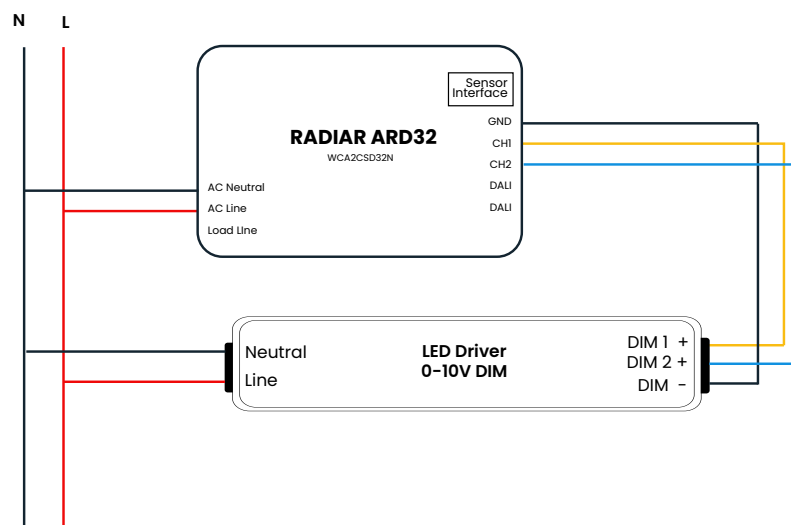| AC	16-18AWG (0.8-1.3sq.mm)
Output (DALI/CH1/CH2)	20-24AWG (0.2-0.5sq.mm)

Antenna Information

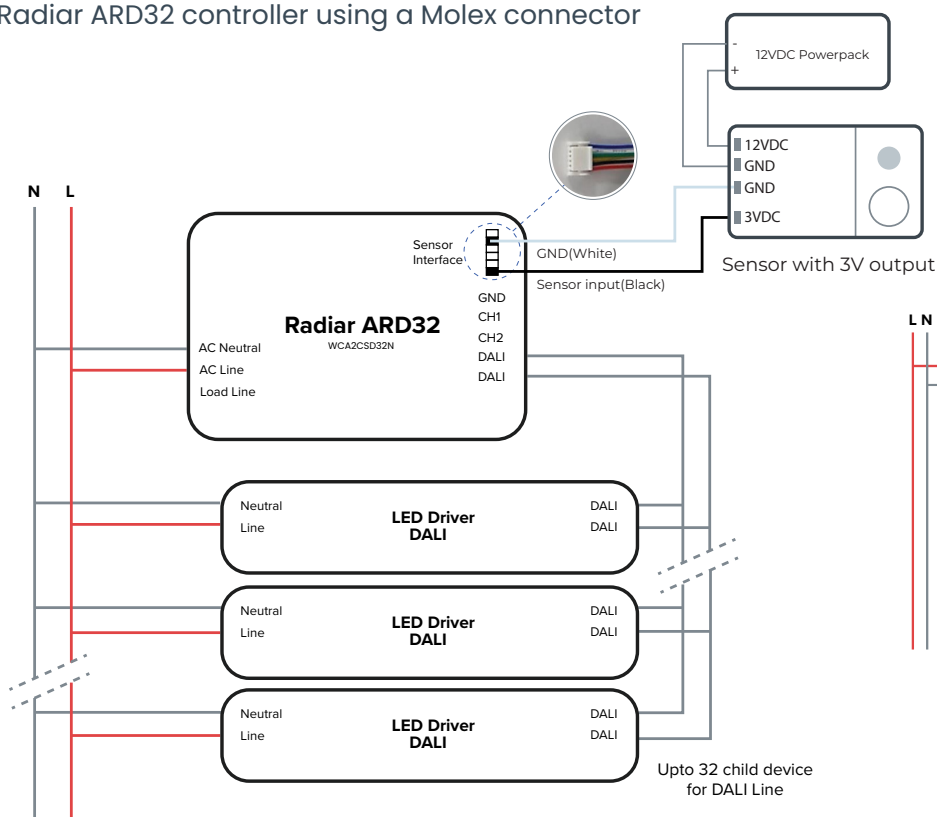| 130mm wire antenna	
Frequency range	2.4GHz-2.5GHz
Impedance	50 Ω nominal
VSWR	1.92:1 Max
Return loss	–10dB Max
Gain (peak)	2dBi
Cable loss	0.3dBi max
Polarization	Linear vertical

Wiring

1) Connecting DALI drivers to the Radiar ARD32 controller
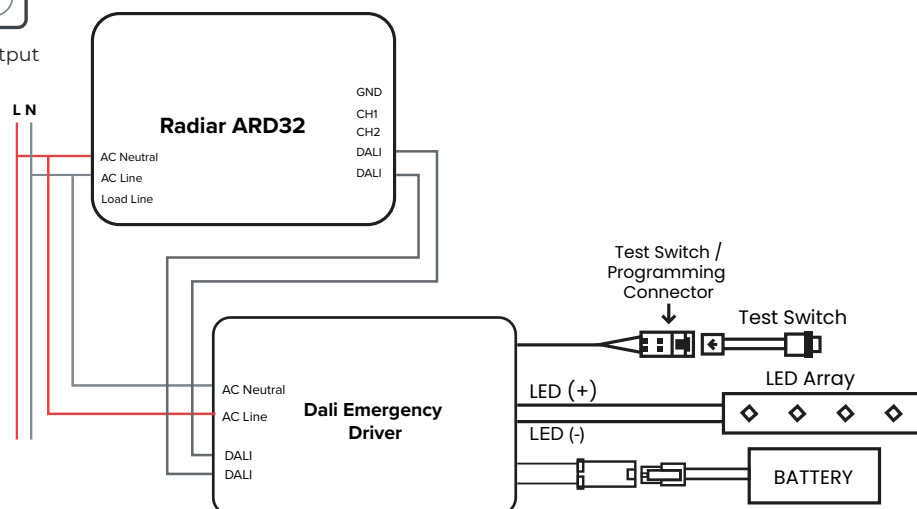

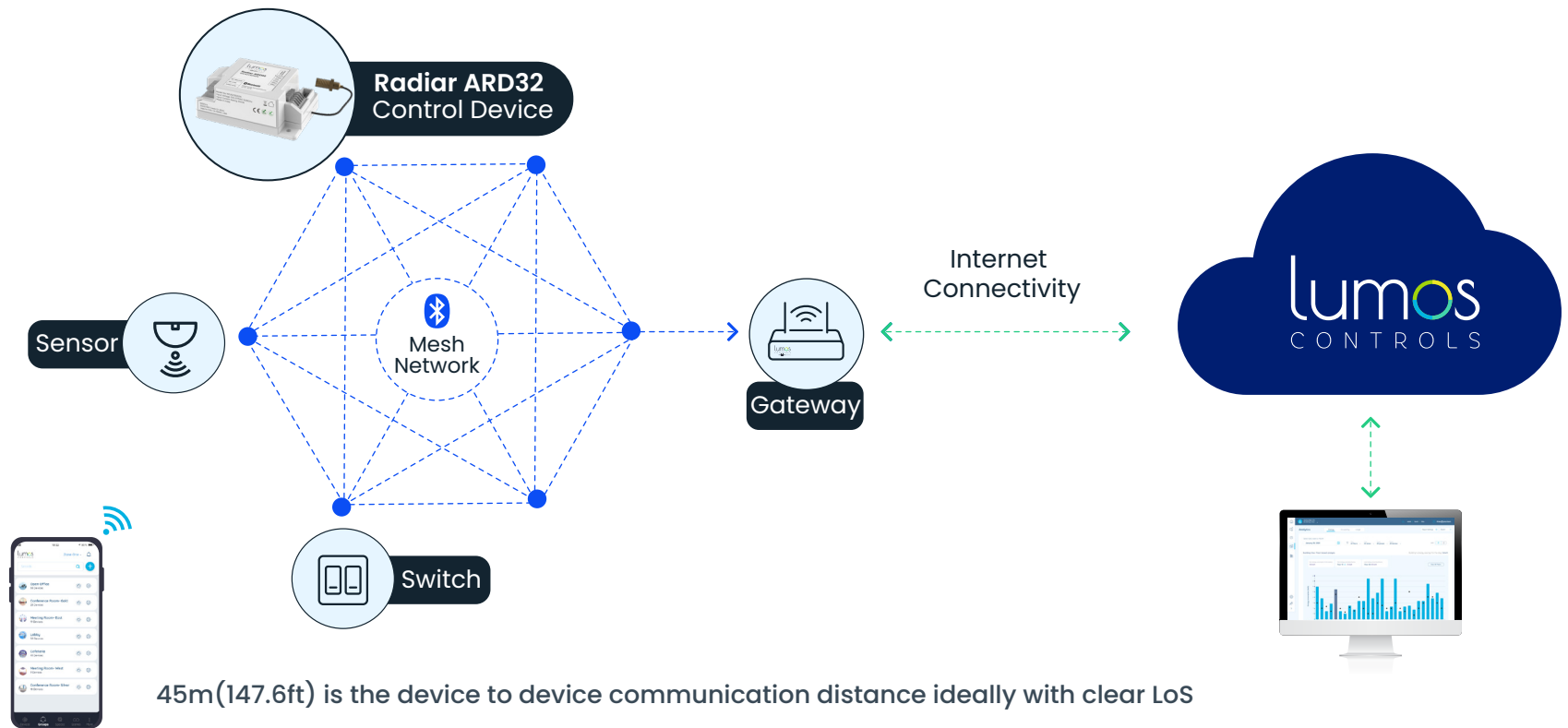## 2) Connecting 0-10V drivers to the Radiar ARD32 controller (in 0-10V mode)

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

4) Connecting a DALI Emergency Wiring diagram with 0-3V output to the Radiar ARD32 controller
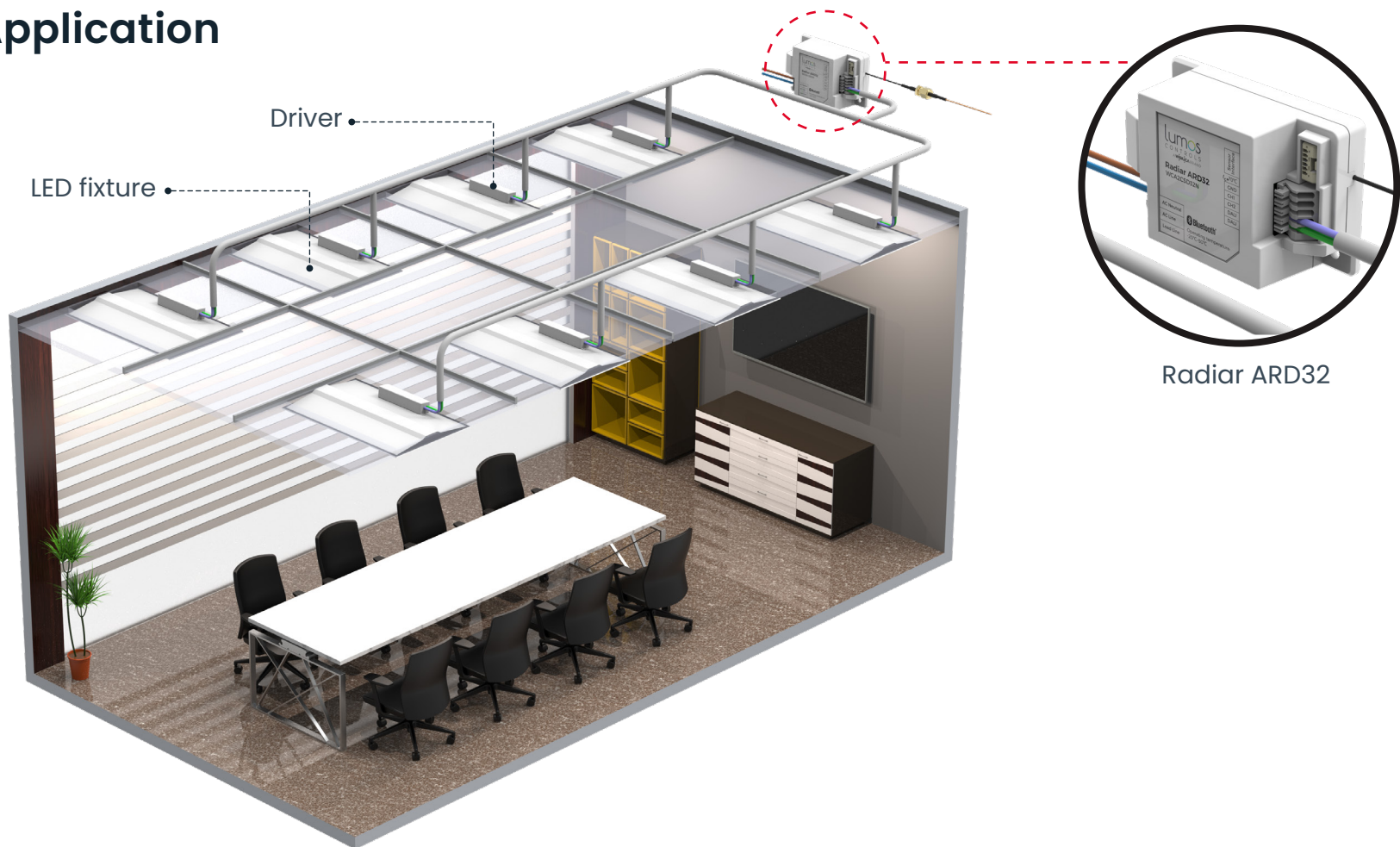
Smart Ecosystem

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

Certifications	Details	
CE	Article 3, RED 2014/53/EU **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 **Safety test standard** IEC 62368-1:2014+A11: 2017	**Radio test standard** ETSI EN 300 328 V2.2.2 (2019-07) **Health test standard** EN 62479: 2010 EN 50663: 2017
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

Radiar ARD32

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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ISO/IEC 27001:2013
Information security certified

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