

# TruBlu Mesh DALI Passive Infrared Outdoor Sensor-Controller

## Overview

- Bluetooth® NLC Certified
- Complies with DALI D4i Specifications
- Single Channel DALI Wireless Sensor-Controller
- Mounts to Light Fixture/ Luminaire via Zhaga Book 18 Quick Connect Receptacle
- Features High and Low-End Trim Adjustment, Zoning & Continuous Dimming
- Digital Passive Infrared (PIR) Sensor
- Optional Photocell available for Ambient Light Detection
- IP65 Rated for Outdoor or Indoor Applications
- 24VDC or DALI Bus Powered Options
- Conforms with DLC NLC5 Cybersecurity Standards



For Indoor or Outdoor Use  
Receptacle Sold Separately



## Applications

The PSC-ZAD-I products are a series of Single Channel DALI D4i Wireless Fixture Sensor-Controllers. These sensor-controllers are Bluetooth® NLC certified and designed to work with a Bluetooth SIG mesh system by converting standard Bluetooth SIG mesh protocol to DALI protocol.

The sensor-controllers use PIR motion detection architecture and passive infrared (PIR) technology for improved detection coverage.

The products are IP65 rated and suitable for exterior use. The -11 and -21 models also have integral photosensors for ambient light detection.

These devices communicate directly with DALI drivers and are controlled wirelessly via Bluetooth® Mesh technology allowing for wireless dimming of luminaires. The compact size allows for seamless integration to the fixture.

Two Power Input options are available. The Aux Powered (-10 & -11) models require 24VDC power to operate. The DALI Bus Powered (-20 & -21) models use DALI Bus power to operate. See the product wiring information for wiring designations.

## Operation

**TruBlu™ Mesh:** The PSC-ZAD-I sensor-controller is a Bluetooth NLC certified device by the Bluetooth SIG and offers true multi-vendor interoperability. Configuration of the device and mesh network is accomplished via the TruBlu web portal or iOS mobile app. The app is used for initial setup and subsequent parameter adjustment.

Advanced functionality such as energy monitoring, and demand response is available with the TruBlu Gateway (ordered separately).

**Single Channel Control:** The sensor-controller provides a single channel of D4i compatible DALI output for driver control.

**Photosensor:** An integral photosensor (-11 or -21 models only) provides ambient light level sensing for automatic control of daytime or nighttime designated scenarios.

**Quick Connector:** The controller mounts to a Zhaga Book 18 compliant receptacle (sold separately - part #PSC-ZAD-R1L). One receptacle is required for mounting each controller.

See TruBlu™ Commissioning User Manual for more information.

## Summary

Product Type:  
Single Channel Wireless Sensor-Controller

Input Voltage | Current Consumption:  
24VDC | 100 mA max (Aux Powered)  
16VDC | 100 mA max (DALI Bus Powered)

DALI: Complies with DALI D4i Specifications

Suggested Mounting Height:  
Low Bay Lens - 8-30ft (2.4-9.1m)  
High Bay Lens - 20-40ft (6.1-12.2m)

Maximum Sensor Range:  
Low Bay Lens - 60ft (18.3m) diameter  
High Bay lens - 80ft (24.4m) diameter

Mounting: Mounts to Zhaga Book 18 receptacle (PSC-ZAD-R1L), sold separately

Max Bluetooth Range<sup>1</sup>:  
410ft (125m)

Operating Temperature:  
-40°F to 158°F (-40°C to 70°C)

Storage Temperature:  
-40°F to 185°F (-40°C to 85°C)

Relative Humidity:  
90-95% non-condensing at 30°C

Color: Dark Brown, Black, Gray or White

Warranty: 5 years

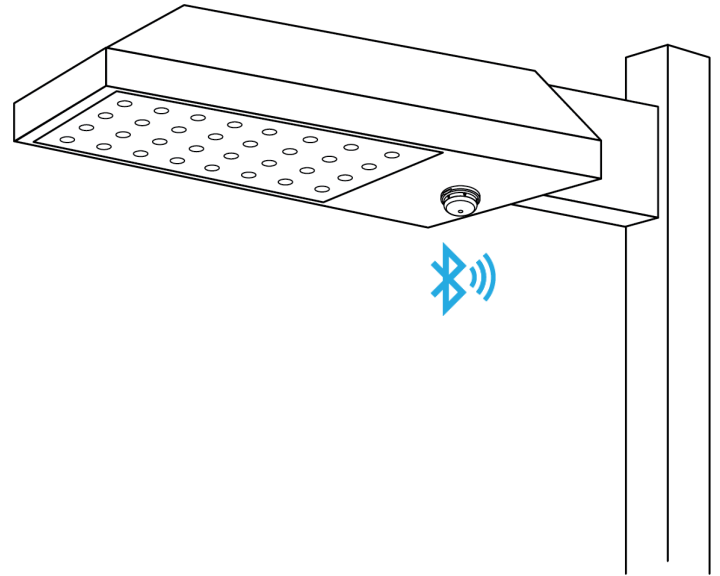
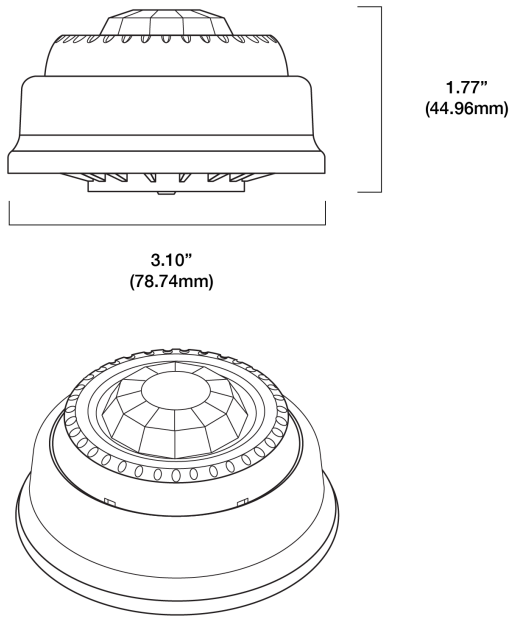
Note:

1. Bluetooth Range is highly dependent on the integration of fixtures, surrounding environment and conditions. It is recommended to conduct testing for Bluetooth range accuracy.

Project

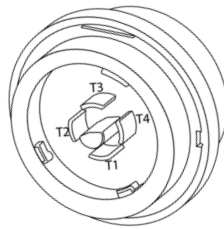
Location/Type

Physical Dimensions



Drawing Are Not To Scale

Product Wiring



View of Back of Device



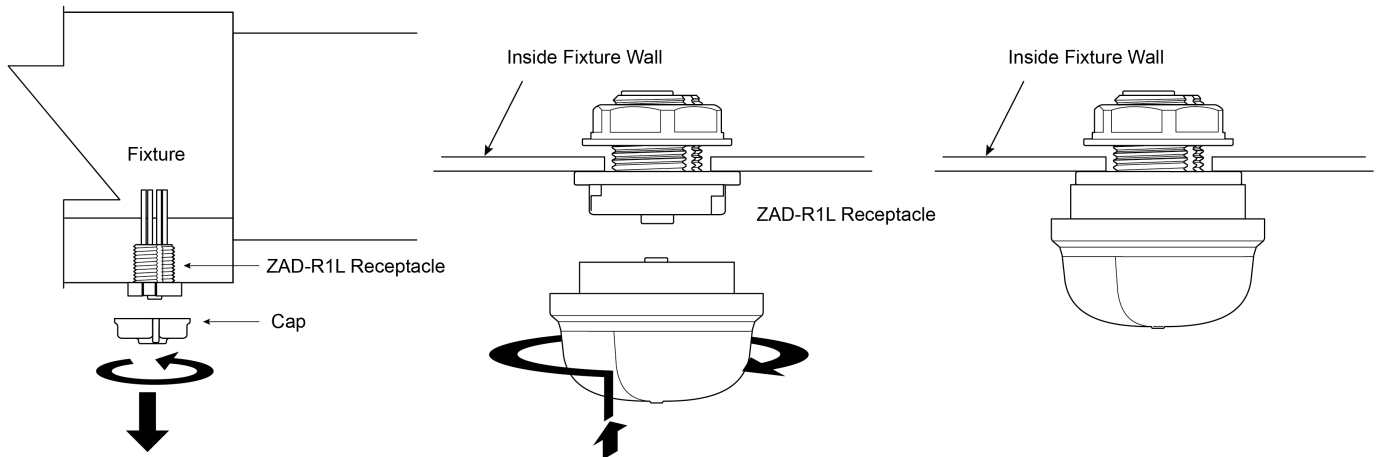
View of Zhaga Book 18 Device Receptacle

Tab/Slot	Wiring Designation	
	-10 & -11 Aux Powered Models	-20 & -21 DALI Bus Powered Models
T1	24VDC+ Power to Sensor-Controller	Reserved
T2	DALI- (Negative DALI Bus) & 24VDC-Ground Power to Sensor-Controller	DALI (16VDC DALI Bus) Polarity Independent
T3	DALI+ (Positive DALI Bus)	DALI (16VDC DALI Bus) Polarity Independent
T4	Reserved	Reserved

For Wiring Diagrams featuring the PSC-ZAD product series, visit the following link:

<http://mwconnect.us/wiring/PSC-ZAD>

### Installation of Device

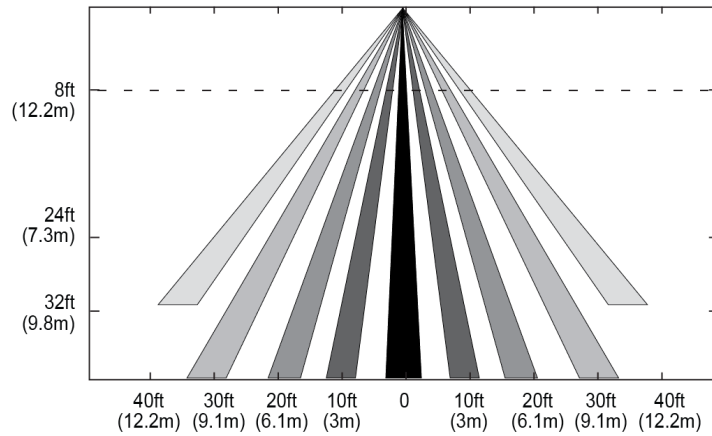
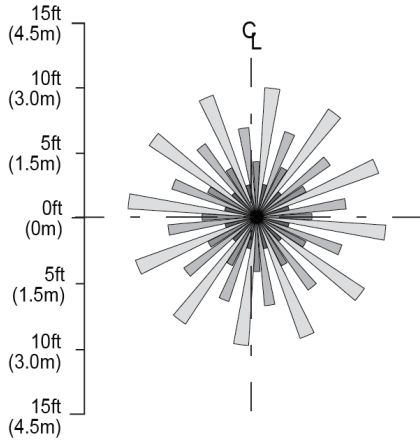


To install a ZAD device, first remove the protective cap on the Zhaga Book 18 receptacle by pushing up and rotating counterclockwise.

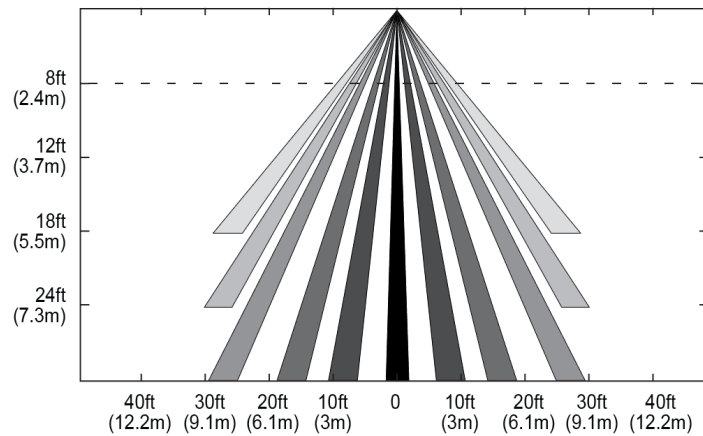
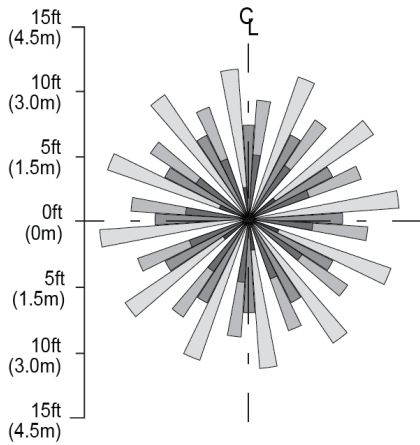
To install ZAD devices insert, push in and rotate clockwise to lock. No tools are required. Luminaires can be easily and quickly upgraded.

The receptacle for ZAD devices is typically installed by luminaire manufacturer and is shipped to job site with a protective cap.

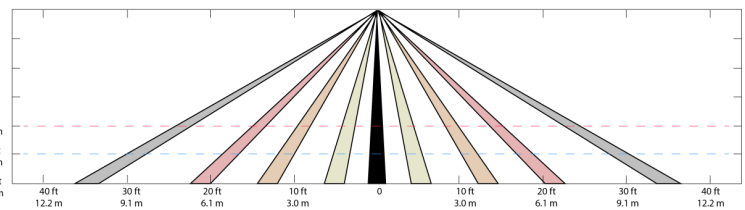
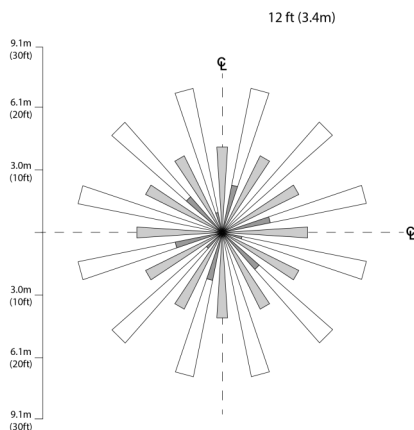
Sensor Patterns



High Bay Lens (H) Pattern



Low Bay Lens (N) Pattern

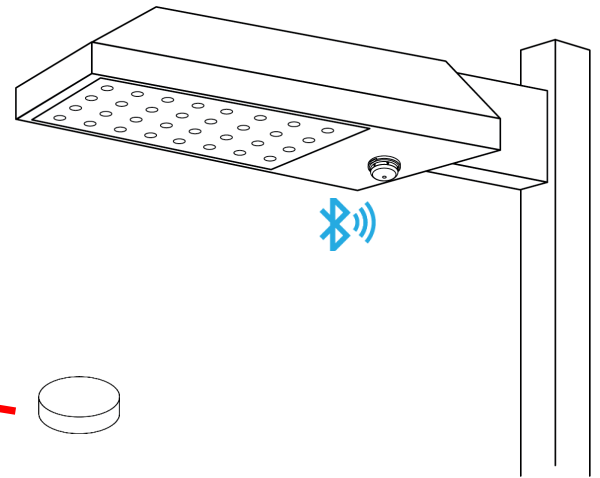


Wide Lens (W) Pattern

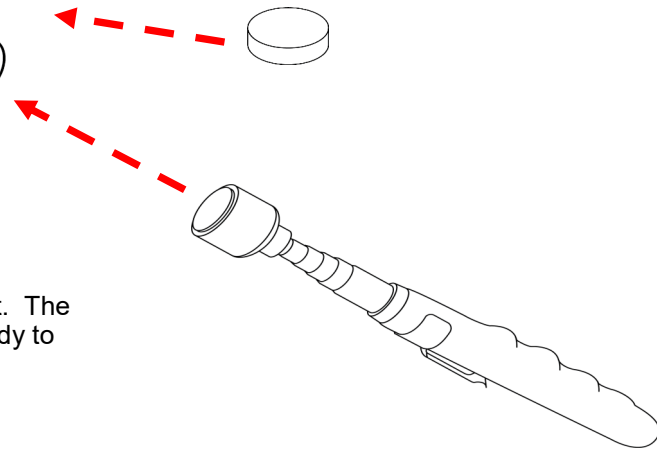
Note: The application/absolute range of the sensor is subject to variation because of different types of clothing, backgrounds, and ambient temperature. Therefore, ensure *that* the lens is properly oriented along routes with expected traffic and conduct testing along those routes.

**Reset Instructions**

Using a magnet (with 20lb pull strength), hold the magnet against the dot labeled RST (reset).



Once the fixture associated with the controller has flashed 3 times then stayed on, remove the magnet. The controller is now reset to factory conditions and ready to be reprogrammed



**Model Number Matrix**

PSC	ZAD	I	__	__	BLE	SR	__
PSC	ZAD	I	10	N	BLE	SR	BN
	DALI Outdoor Device	Passive Infrared (PIR) Sensor	Aux Powered	Low Bay Lens Pattern	Wireless	TruBlu Mesh Compatible	Brown Finish
			11	H			WT
			Aux Powered Photo Sensor	High Bay Lens Pattern			White Finish
			20	W			BK
			DALI Bus Powered	Wide Lens Pattern			Black Finish
			21				GY
			DALI Bus Powered Photo Sensor				Gray Finish

Example:

**PSC-ZAD-I-11N-BLE-SR-BN**

Design and specifications are subject to change without notice.