

## Athena Wireless Node

The Athena wireless node is a radio frequency (RF) device that enables simple, digital control of individual light fixtures in an Athena control system. The small size and compatibility with a wide variety of drivers allow for seamless integration with common commercial lighting fixtures from any manufacturer.

The Athena wireless node works with the following LED driver types:

<b>Tunable-White Control</b>	<ul style="list-style-type: none"> <li>• Lutron DALI-2 digital LED drivers (LD2)</li> <li>• DALI-2 certified Type 8 LED drivers</li> </ul>
<b>Static-White Control</b>	<ul style="list-style-type: none"> <li>• Lutron DALI-2 digital LED drivers (LD2)</li> <li>• DALI-2 certified LED drivers</li> <li>• ANSI C137.1 compliant 0–10 V<math>\Rightarrow</math> LED drivers</li> </ul>

The Athena wireless processor or Clear Connect gateway – Type X is required to operate an Athena wireless node in an Athena control system via a simple setup process using an iOS® or Android® compatible app. This enables these fixtures to be controllable by other Lutron wall controls, keypads, sensors, Pico remote controls, etc.

### Models

Model Number	Description
A-WN-D01-RF-WH	Athena wireless node (RF only) (White)
A-WN-D01-RF-BL	Athena wireless node (RF only) (Black)
A-WN-D01-OCC-WH	Athena wireless node with sensor (White)
A-WN-D01-OCC-BL	Athena wireless node with sensor (Black)

### Features

- Enables individual, wireless control of each fixture in an Athena control system. Accommodates zone and control changes without rewiring.
- Typically installed at OEM factory – no wiring required on-site. Fixture is ready to communicate wirelessly once power is connected.
- Pairs with Lutron digital LED drivers (LD2) for either Tunable White or Static White control.
- DALI-2 and ANSI C137.1 compatible for simple interoperability with third-party LED drivers.
- Controls up to 5 drivers as a single zone of control.



Athena Wireless Node RF Only (White)



Athena Wireless Node Sensor (White)



Athena Wireless Node RF Only (Black)



Athena Wireless Node Sensor (Black)

- **A-WN-D01-RF**
  - Plenum rated and can be installed above the ceiling for wireless control of a fixture without any impact on fixture aesthetics.
- **A-WN-D01-OCC**
  - Provides wireless control of the fixture and includes a passive infrared (PIR) sensor for occupancy and a daylight sensor.

<b>Job Name:</b>	<b>Model Numbers:</b>
<b>Job Number:</b>	

# Specifications

## A-WN-D01 Features

### Regulatory Approvals

- cULus Listed (UL916)
- NOM certified
- UL 2043 Plenum Rated
- FCC compliant with the limits for a Class B digital device
- IC (Industry Canada)
- IFETEL
- ANSI C137.1 0–10 V<sub>ac</sub> Electronic Off
- D4i certified
- Supports DALI-2 Type 8 tunable-white color temperature (T<sub>c</sub>) applications - IEC 62386-209 ed.1 \*

### Power/Load

- IEC SELV/NEC® Class 2
- Operating voltage: 9.5–28.8 V<sub>ac</sub>
- Operating current: 46 mA max \*\*
- See page 4 for power supply requirements for DALI or 0–10 V<sub>ac</sub> driver selection

### Colors

- Available in white and black flange only
- Note:** The occupancy sensor dome is white on both the white and black sensor models for the A-WN-D01-OCC

### Environmental

- Ambient operating temperature (immediate vicinity of Athena wireless node): 32 °F to 131 °F (0 °C to 55 °C), 0% to 90% humidity, non-condensing; indoor use only

### Warranty

- 5 Year Limited Warranty.  
For additional Warranty information, please visit:  
[https://www.lutron.com/TechnicalDocumentLibrary/3601462\\_ENG.pdf](https://www.lutron.com/TechnicalDocumentLibrary/3601462_ENG.pdf)

### Wiring

- 4-position screw terminal for 26 AWG to 18 AWG (0.20 mm<sup>2</sup> to 0.75 mm<sup>2</sup>) wire
- For Lutron digital LED drivers (LD2) and D4i/DALI-2 drivers, only (2) wires are required
- For 0–10 V<sub>ac</sub> drivers, all (4) wires are required
- See pages 8 and 9 for complete wiring diagrams

### Mounting

- Mounts to a lighting fixture
- Fits Zhaga Specification Book 20 hole size: 0.859 in to 0.906 in (21.8 mm to 23.0 mm) diameter
- Fits in standard ½ in trade size knockout (0.875 in [22.5 mm] diameter knockout nominal)
- Compatible with fixture wall thicknesses of 0.016 in to 0.080 in (0.4 mm to 2.0 mm)

### Radio Frequency for Wireless Communication

- 2.4 GHz

### Range

- Reference Clear Connect gateway – Type X specification for system details ([www.lutron.com/TechnicalDocumentLibrary/3691144\\_ENG.pdf](http://www.lutron.com/TechnicalDocumentLibrary/3691144_ENG.pdf))
- Each Athena wireless node should be installed within 25 ft (7.62 m) of two or more Athena wireless nodes or other Clear Connect – Type X devices.

\* Athena wireless node does not support tunable-white color temperature applications via DALI Type 6 or 0–10 V<sub>ac</sub>

\*\* 46 mA max is required for D4i compliance. Operating current requirements are different for 0–10 V<sub>ac</sub> applications. See Power Supply Requirements on page 4 for more detail.

 SPECIFICATION SUBMITTAL		Page
<b>Job Name:</b>		
<b>Job Number:</b>		
	<b>Model Numbers:</b>	

## Specifications *(continued)*

### Default Behavior Prior to Programming

- Occupancy (sensor only): Disabled
- Daylighting (sensor only): Disabled
- Light Level: 100%
- Color Temperature
  - Tunable White: 4000 K (or closest fixture color temperature limit)
  - Static White: Default color temperature of fixture
- **Note:** Athena wireless node performs an unprogrammed startup sequence on every power up until the device is added to an Athena system

### Occupancy/Vacancy Functionality

- Default timeout: 15 minutes<sup>1</sup>
- Minimum timeout: 1 minute<sup>1</sup>
- Passive infrared motion detection with exclusive Lutron XCT technology for major and minor motion detection
- 360° field-of-view

### Daylight Sensor Functionality

- Daylight sensor has simple, automatic fixture-feedback calibration out-of-the-box that is performed on first vacancy after the sensor is added into an Athena system
- Designed to give a linear response to changes in light level
- Detects ambient light level changes from 0 lx to 1600 lx (0 f<sub>c</sub> to 150 f<sub>c</sub>)

### Digital Features

- Enables individual fixture addressing, control, and configuration in an Athena control system
- Simple programming using mobile device running an iOS® or Android® compatible app when connected to an Athena wireless processor or Clear Connect gateway – Type X in an Athena control system

### Wireless Features

- Simplify installation and save materials – no control wire is required to install fixtures
- Simplify design – flexible zoning allows you to re-zone without re-wiring as space needs change

### Fixture Level Settings (via Lutron Designer)

- Fixture zoning/re-zoning
- Low-end and high-end trim adjustment
- Minimum light level setting (optional): Certain applications, such as hallways, may require that the lights never turn off. For these areas, select the minimum light level option and the load will lower to programmed low-end level
- Create preset color temperature and intensity settings of tunable white fixtures
- Occupancy sensor timeout and sensitivity
- Occupancy sensor mode (occupancy or vacancy)
- Daylight sensor enable/disable
- Daylight sensor setpoint

### Emergency Support/Override & Lockout<sup>2</sup>

- Compatible with LUT-SHUNT-FM. For additional details, reference Lutron Application Note 106 (P/N 048106 at [www.lutron.com](http://www.lutron.com))
- After 2024, only use on jobs that already have fixtures deployed with this solution

### Emergency Support/Override & Lockout (2025 Onward)<sup>2</sup>

- Compatible with an externally installed LUT-SHUNT-A-TD-5. For additional details, reference Lutron Application Note 106 (P/N 048106) at [www.lutron.com](http://www.lutron.com))
- For proper functioning of Emergency Lighting, the driver supplying power to the Athena wireless node must meet both conditions:
  1. Discharge completely within 4 seconds of power being removed from the fixture (both when the fixture is on and off).
  2. (0–10 V<sub>DC</sub> drivers only) Restore power to the node within 0.5 seconds of power being restored to the fixture.

**NOTE:** Using the DFC-OEM-DBI to power the node will meet both requirements.

<sup>1</sup> Timeouts valid once device is programmed in an Athena system. Prior to programming, occupancy functionality is disabled.

<sup>2</sup> Emergency Support/Override & Lockout is only available in USA and Canada.

Job Name:	Model Numbers:
Job Number:	

### Compatible Drivers \*

Athena wireless node is compatible with a wide variety of LED Drivers to maximize design flexibility for lighting designers, engineers, contractors, and lighting manufacturers.

**Note:** Not for use with fluorescent fixtures.

**Note:** Controls up to 5 drivers as a single zone of control.

#### For Tunable-White Fixtures

- Premier tunable-white control with Lutron digital LED drivers (LD2 Models)
- Supports DALI-2 Type 8 tunable-white color temperature (T<sub>c</sub>) applications - IEC 62386-209

#### For Static-White Fixtures

- Premier static-white control with Lutron digital LED drivers (LD2 Models)
- Supports DALI-2 static-white applications - IEC 62386-207
- Compatible with ANSI C137.1 compliant 0–10 V<sub>DC</sub> drivers with electronic off
  - 0–10 V<sub>DC</sub> max. sink current: 10 mA

**Note:** Athena wireless node uses a linear 0–10 V<sub>DC</sub> control output. For best dimming performance, it is recommended to pair with a 0–10 V<sub>DC</sub> driver with a logarithmic dimming curve.

### Power Supply Requirements

#### DALI

- D4i certified LED drivers
- DALI-2 certified LED drivers with an integrated bus supply
- Maximum supply current: 250 mA \*\*

#### 0–10 V<sub>DC</sub>

- ANSI C137.1 0–10 V<sub>DC</sub> drivers with integrated power supply
- Auxiliary output voltage range: 12 V<sub>DC</sub> to 24 V<sub>DC</sub>
- Minimum output power: 750 mW

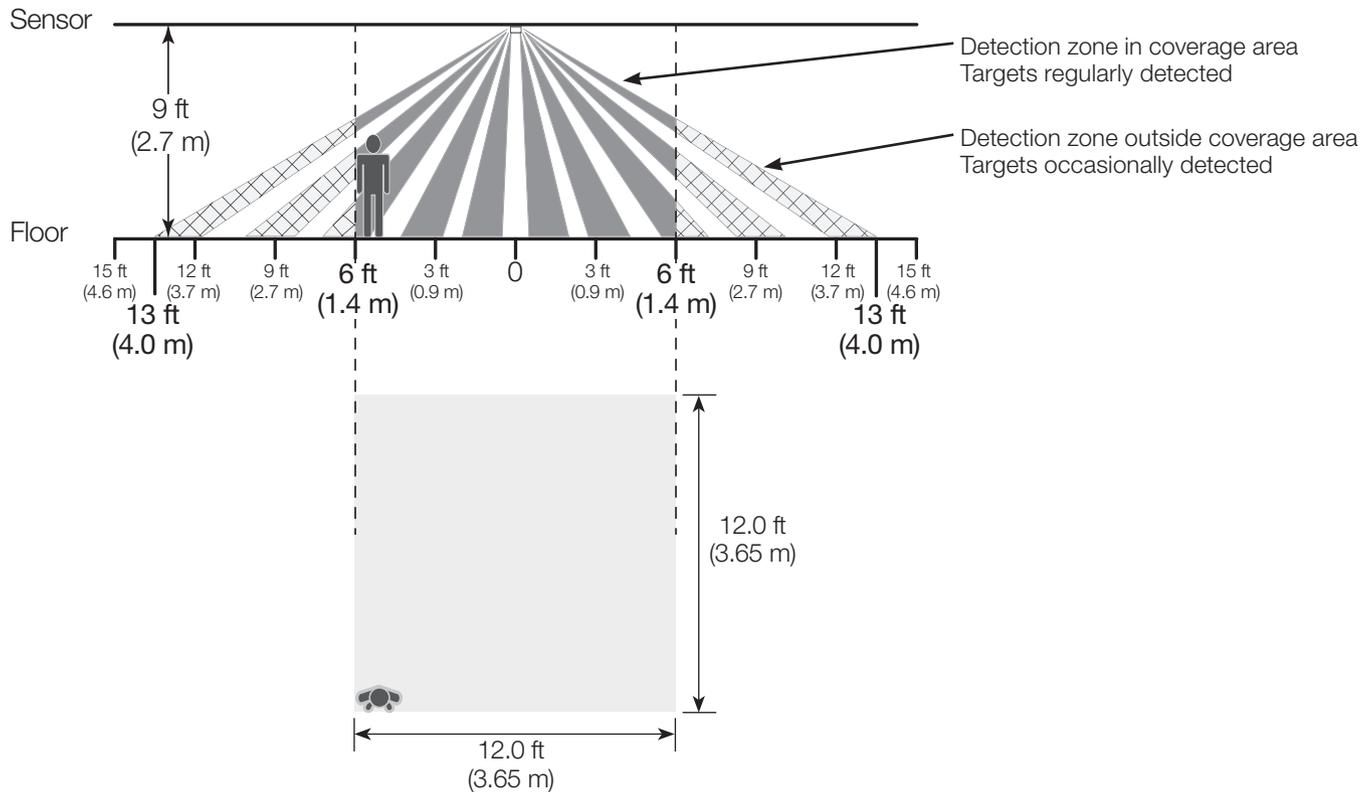
**Note:** For DALI-2 and 0–10 V<sub>DC</sub> drivers that do not have an integrated power supply, or one that does not meet the above specifications, the Lutron DFC-OEM-DBI can be used to power the Athena wireless node. Reference Fixture Control Digital Interface specification for details ([https://assets.lutron.com/a/documents/3691288\\_eng.pdf](https://assets.lutron.com/a/documents/3691288_eng.pdf))

\* Lutron does not evaluate performance or quality of third-party drivers. Lutron recommends that the customer evaluate the entire system (driver, light engine, fixture, etc.) together with actual samples to determine if dimming and other performance metrics of the driver meets the customer’s needs.

\*\* Per DALI Standard IEC 62386, the sum of bus supply currents of attached LED drivers that are powering the DALI bus should not exceed 250 mA.

<b>Job Name:</b>   <b>Job Number:</b>	<b>Model Numbers:</b>
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### Sensor Coverage



**Major motion:**

Movement of a person entering or passing through an area.  
 – 12 ft x 12 ft (144 ft<sup>2</sup>)(3.65 m x 3.65 m [13.3 m<sup>2</sup>])<sup>1,2</sup>

**Sensor Coverage vs. Height**

12 ft (3.7 m) is the maximum recommended mounting height

Sensor Height	Motion Coverage Area
8 ft (2.4 m)	114 ft <sup>2</sup> (10.6 m <sup>2</sup> )
9 ft (2.7 m)	144 ft <sup>2</sup> (13.3 m <sup>2</sup> )
10 ft (3.0 m)	178 ft <sup>2</sup> (16.5 m <sup>2</sup> )
12 ft (3.7 m)	256 ft <sup>2</sup> (23.8 m <sup>2</sup> )

**Minor motion:**

Movement of a person occupying an area and engaging in small activities (e.g., reaching for a telephone, turning the pages of a book, picking up a coffee cup, etc.)

– 12 ft x 12 ft (144 ft<sup>2</sup>)(3.65 m x 3.65 m [13.3 m<sup>2</sup>])<sup>1,2</sup>

**Note:** Optimal sensor performance depends on its placement in the area. For placement examples and best practices, see Lutron Occupancy/Vacancy Sensor Design and Application Guide P/N 3683197 at [www.lutron.com](http://www.lutron.com)

<sup>1</sup> Note that this is for the high sensitivity setting.

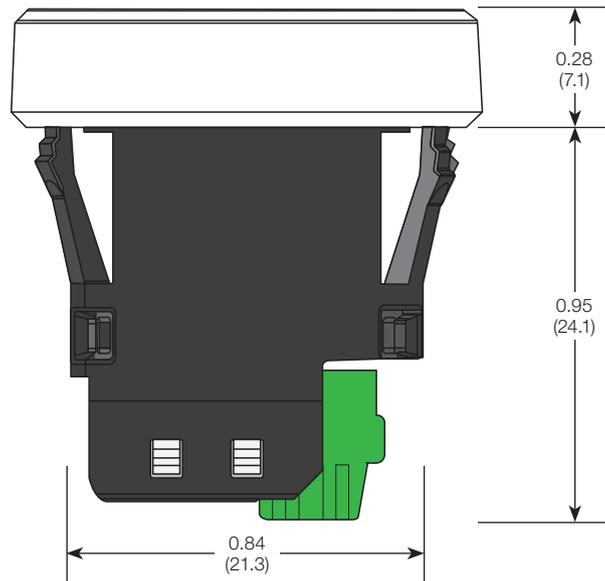
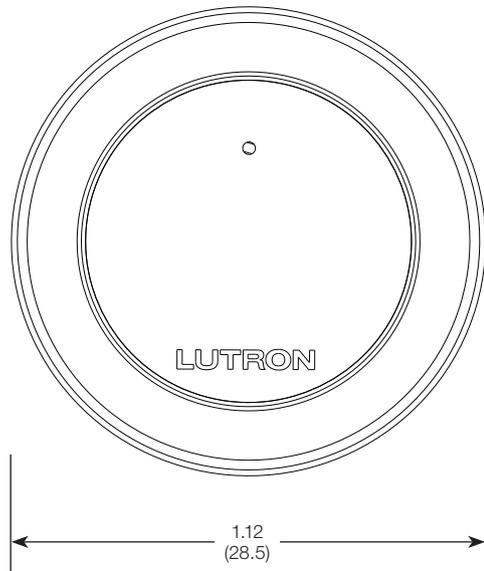
<sup>2</sup> Lights may turn on outside the coverage area.

<b>Job Name:</b>	<b>Model Numbers:</b>
<b>Job Number:</b>	

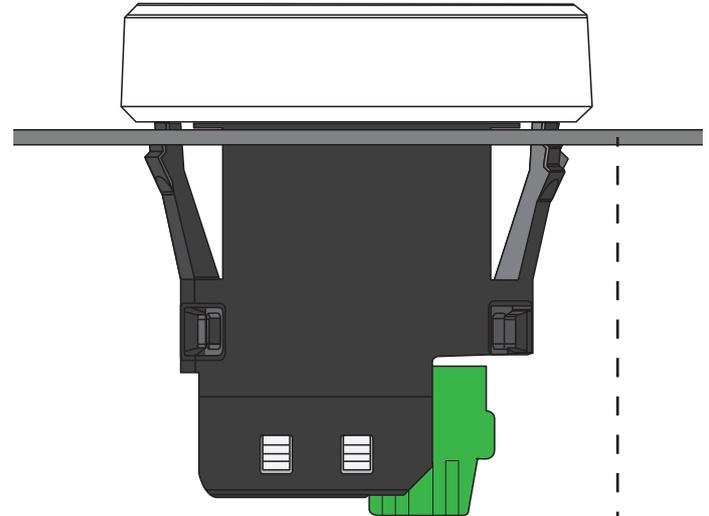
### Dimensions

Shown as: in (mm)

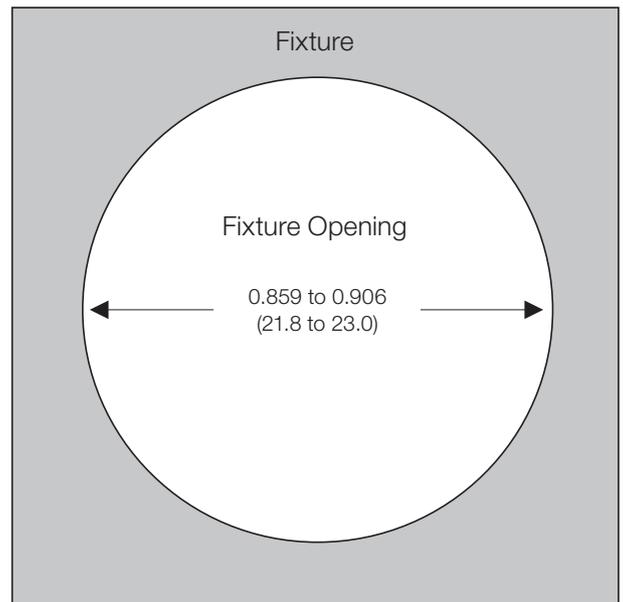
Athena Wireless Node (RF only)



### Fixture Mounting Considerations



Fixture wall thickness range ← 0.016 in to 0.080 in (0.4 mm to 2.0 mm)



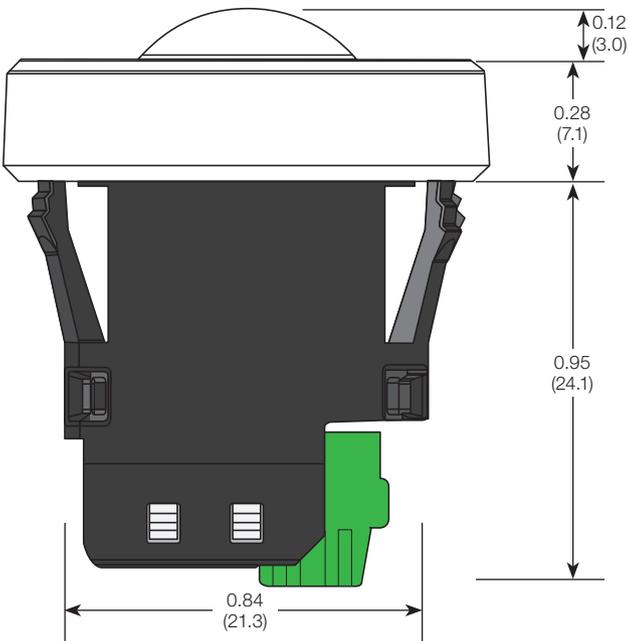
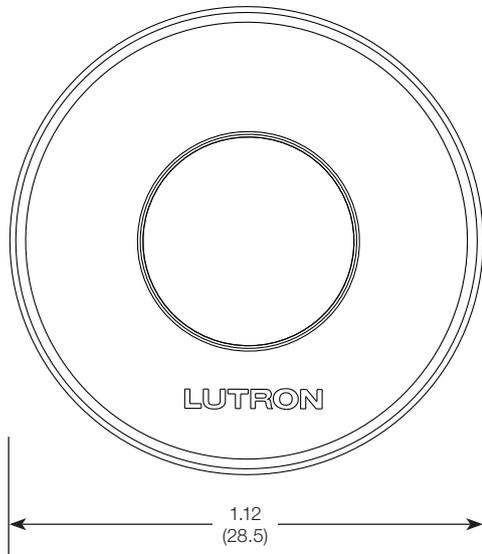
Compatible with fixture openings meeting Zhaga Book 20 or standard 1/2 in trade size knockout (0.875 in [22.5 mm] diameter knockout nominal)

Job Name:	Model Numbers:
Job Number:	

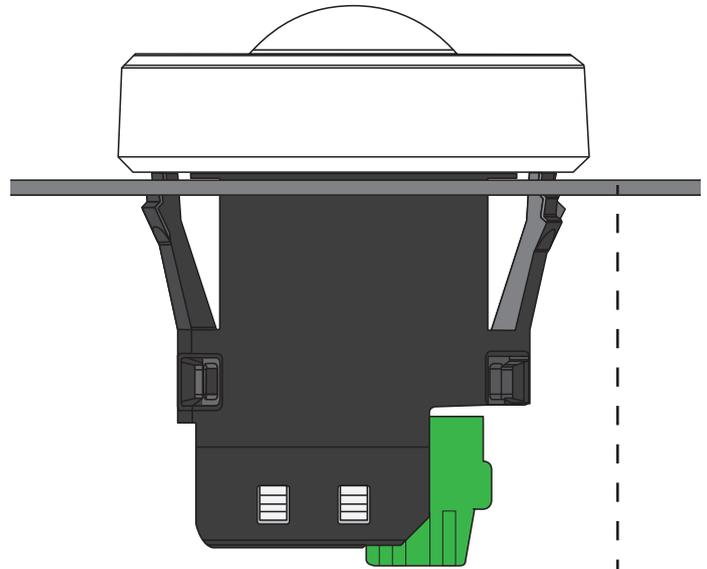
### Dimensions (continued)

Shown as: in (mm)

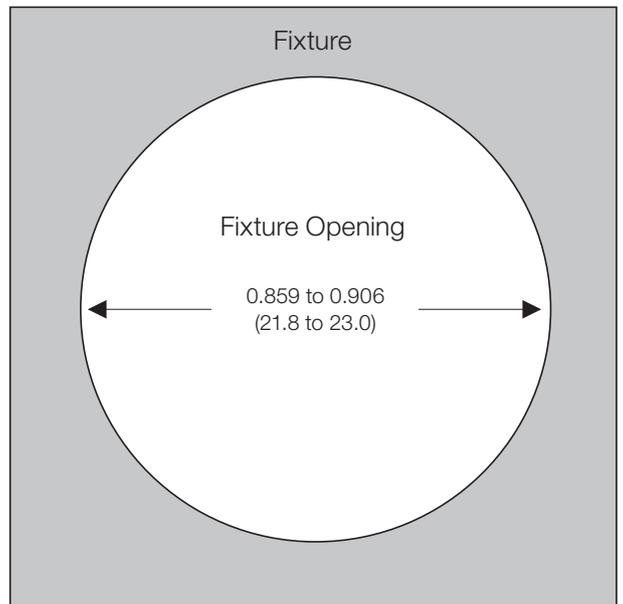
Athena Wireless Node with Sensor



### Fixture Mounting Considerations



Fixture wall thickness range ← - - - - -  
 0.016 in to 0.080 in (0.4 mm to 2.0 mm)

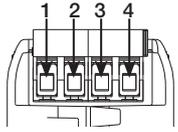


Compatible with fixture openings meeting Zhaga Book 20 or standard 1/2 in trade size knockout (0.875 in [22.5 mm] diameter knockout nominal)

Job Name:	Model Numbers:
Job Number:	

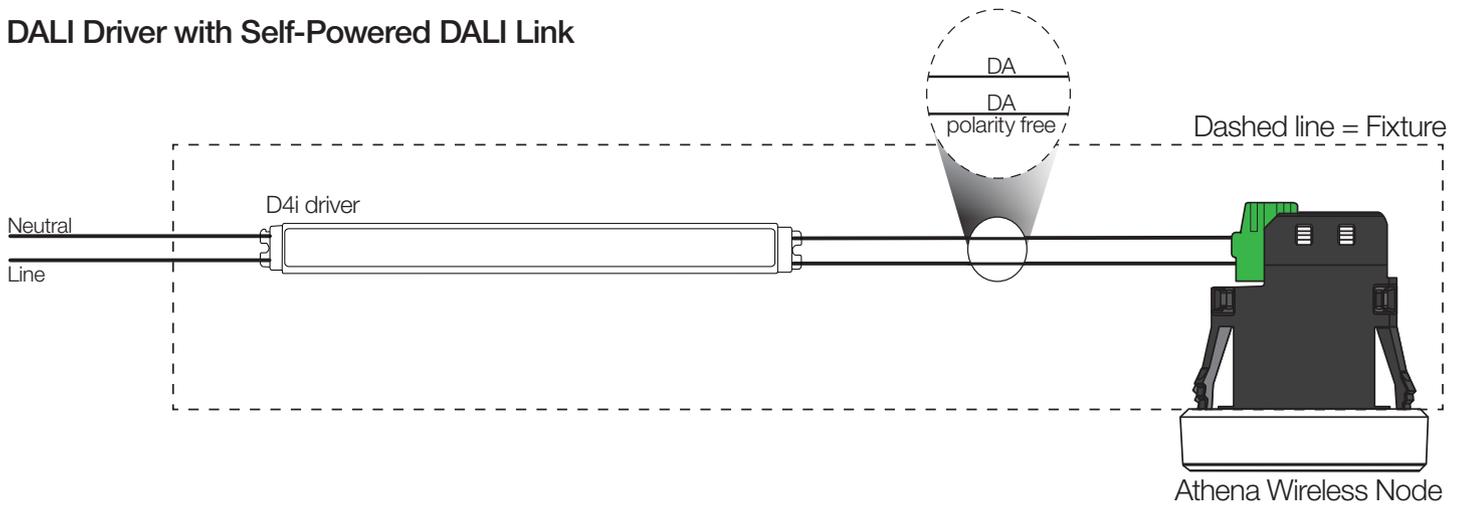
# Wiring/System Diagram

## Wiring Guide

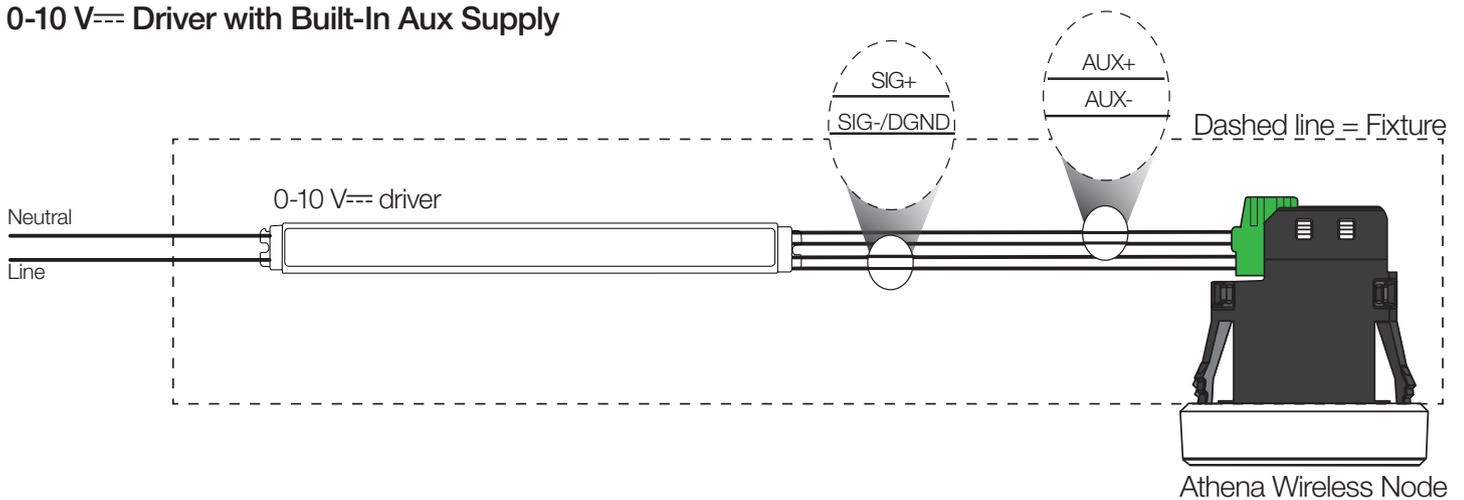


Connector Position	DALI Function	0-10 V Function
1	DA	AUX+
2	DA	AUX-
3	N/C	SIG+
4	N/C	SIG-/DGND

### DALI Driver with Self-Powered DALI Link



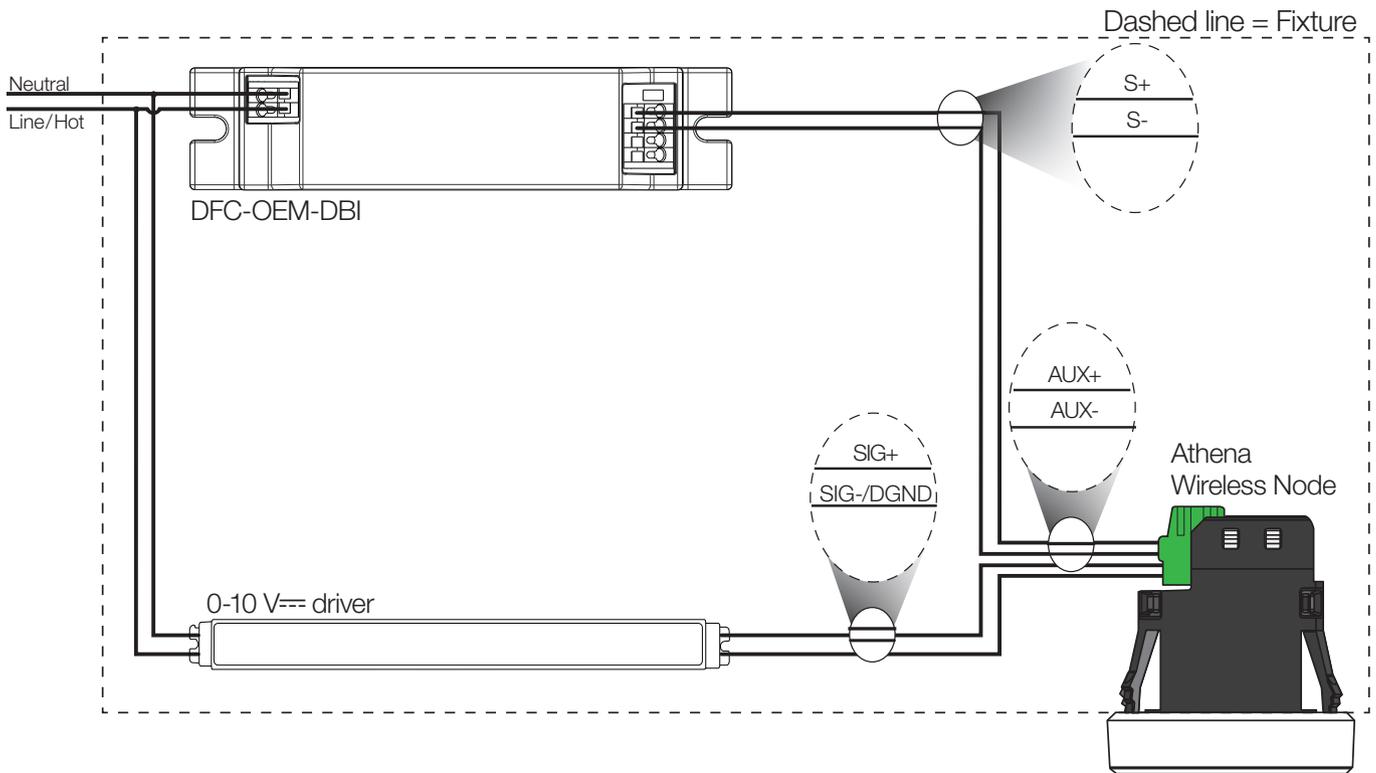
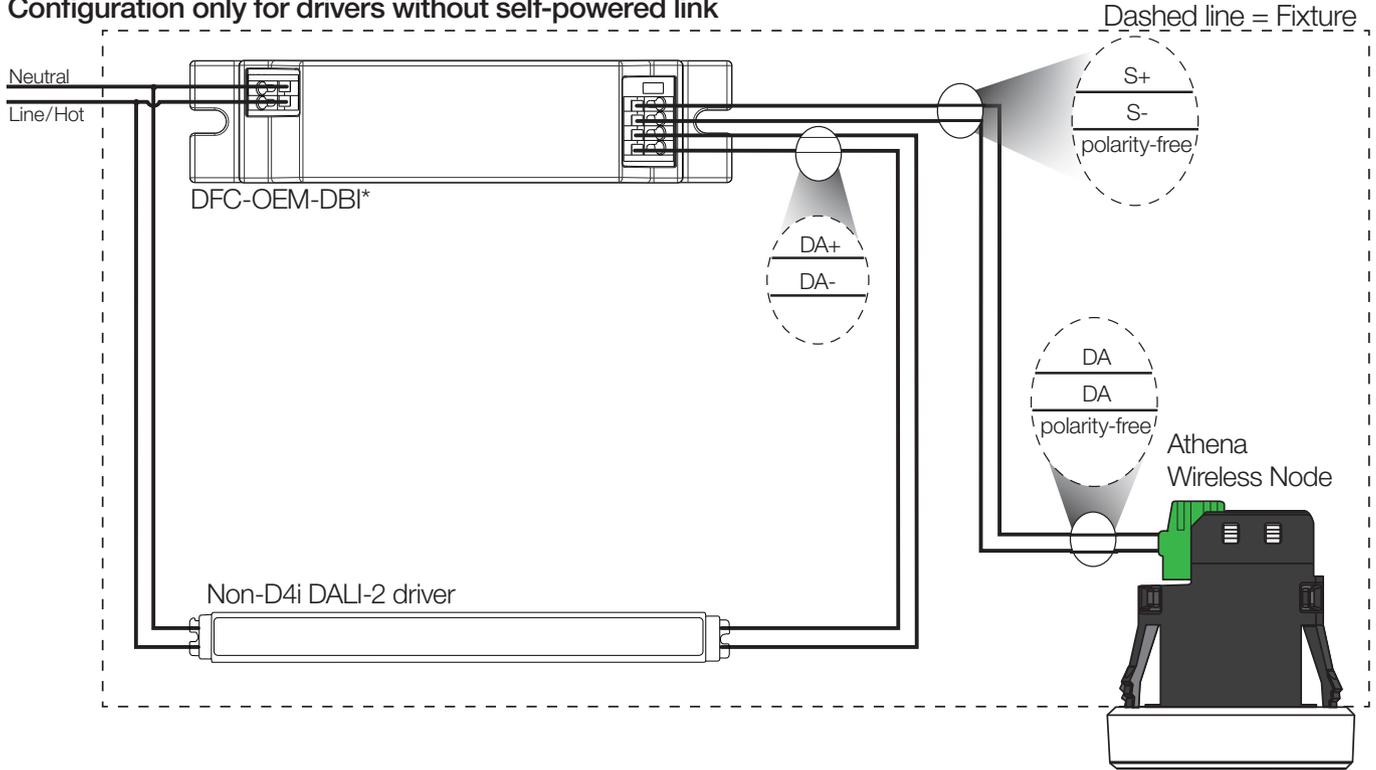
### 0-10 V<sup>DC</sup> Driver with Built-In Aux Supply



Job Name:	Model Numbers:
Job Number:	

### Wiring/System Diagram (continued)

Configuration only for drivers without self-powered link

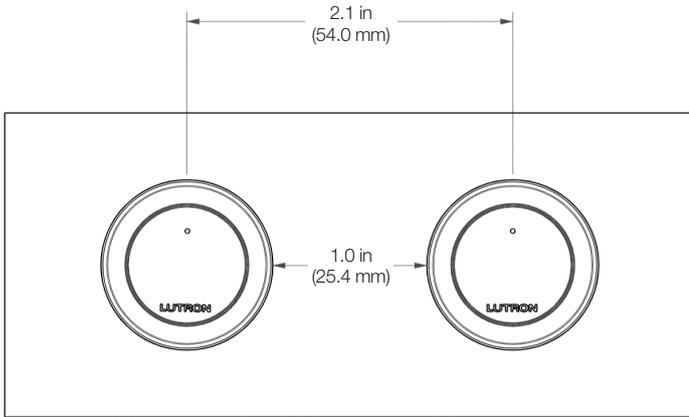


\* Previous versions of the DFC-OEM-DBI may have DA+ /DA- labeled as E+ /E-.

Job Name:	Model Numbers:
Job Number:	

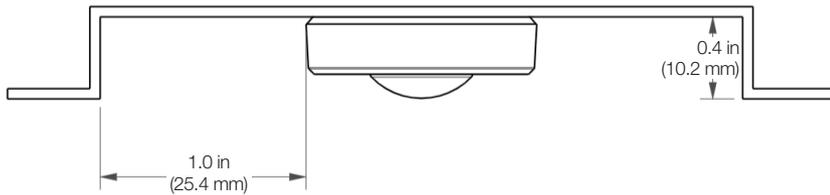
### Node-to-Node Spacing

- 2.1 in (54.0 mm) center-to-center spacing for knockout.
- 1.0 in (25.4 mm) spacing for edge-to-edge of nodes.



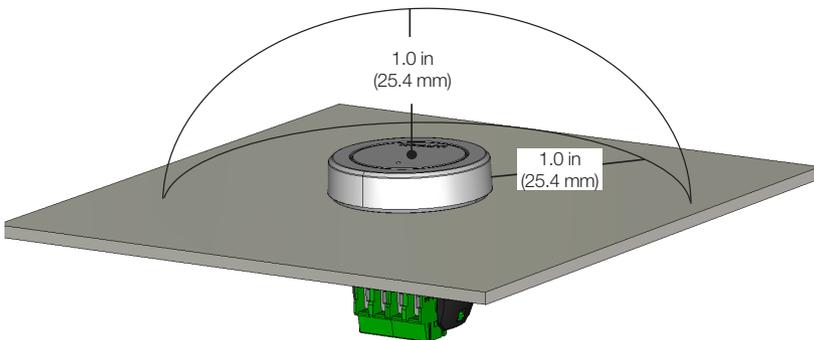
### Metal Clearance

- The node must be installed external to metal enclosures.
- 1.0 in (25.4 mm) spacing from metal features.
- Maximum recess of 0.4 in (10.2 mm).



### Exclusion Zone

- No metal should be placed in the front of the node.
- Ensure that all wiring and other obstructions are at least 1.0 in (25.4 mm) away.



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