

Open Area Sensor Replacement Guide



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Introduction

01

This guide provides the steps and sequence to successfully replace an Open Area Sensor. Follow these steps in order to have a successful sensor replacement.

As long as the sensor is replaced and oriented the same as the original sensor the sensor will perform as intended. If a recommissioning of the sensor is required, it will need to be commissioned with an onsite representative and a remote Density Employee.

Note: Unless otherwise specified, the same mounting option will be used

Please contact support@density.io with any questions.

In the Box

02

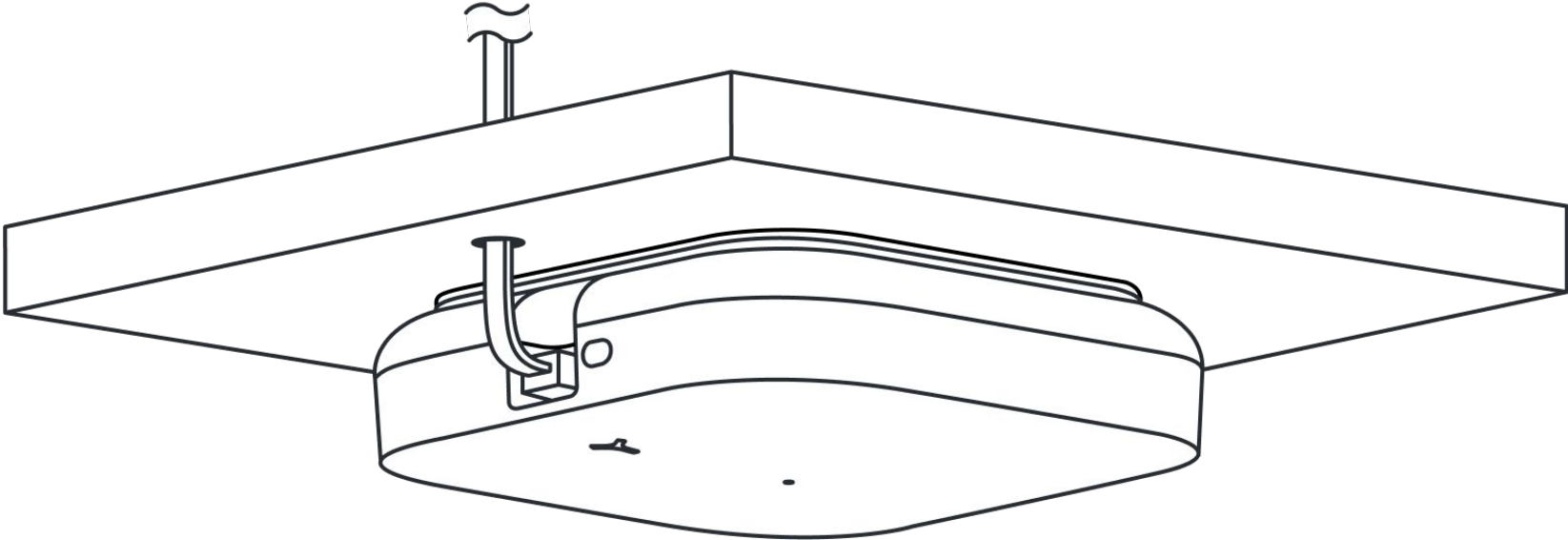
Product

- + Density Open Area sensor
- + QR code for Quick Start Guide
- + Legal information booklet

Ceiling mount kit

- + Mount plate

Mount Plate Installation

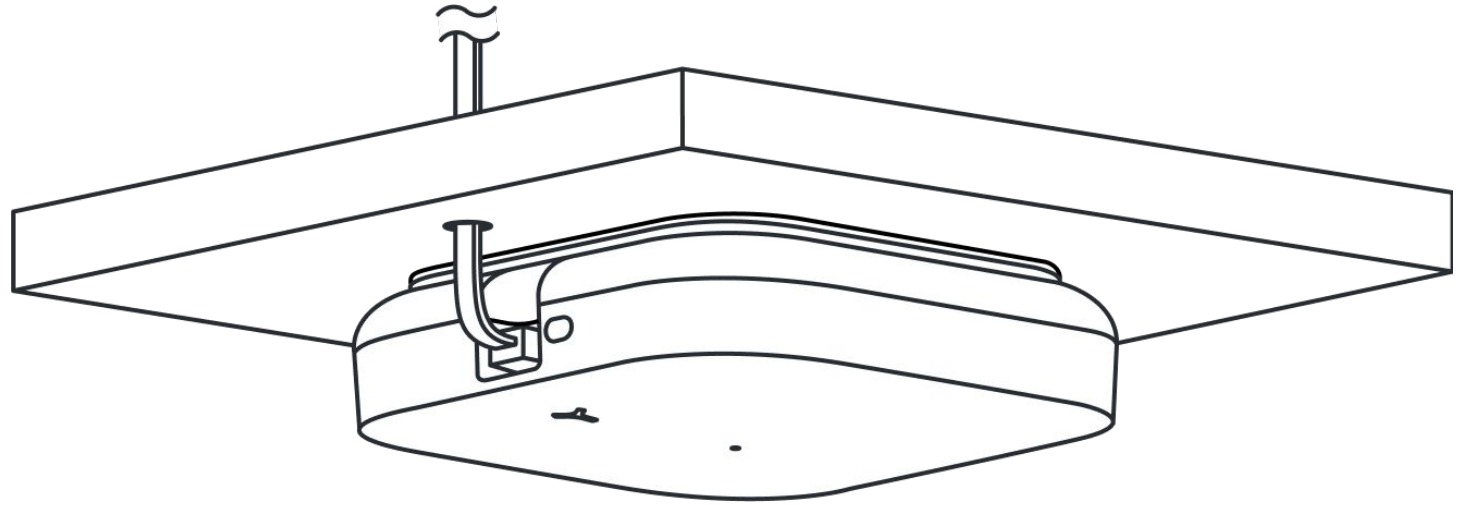


Step 1: Unplug the ethernet cable

Unplug the ethernet cable from the Open Area Sensor.



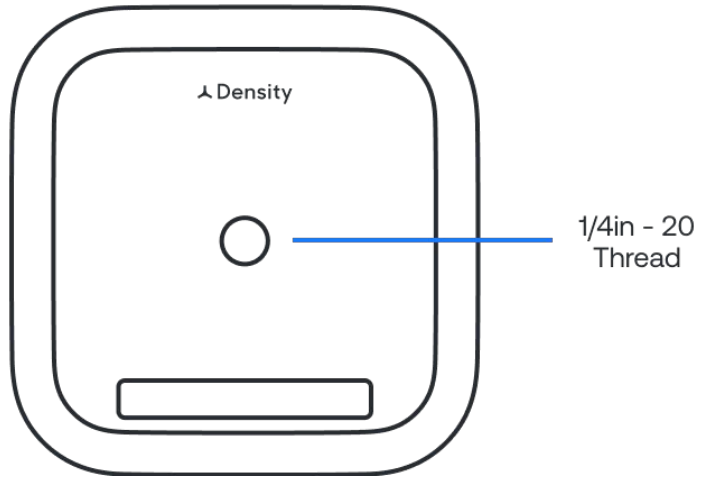
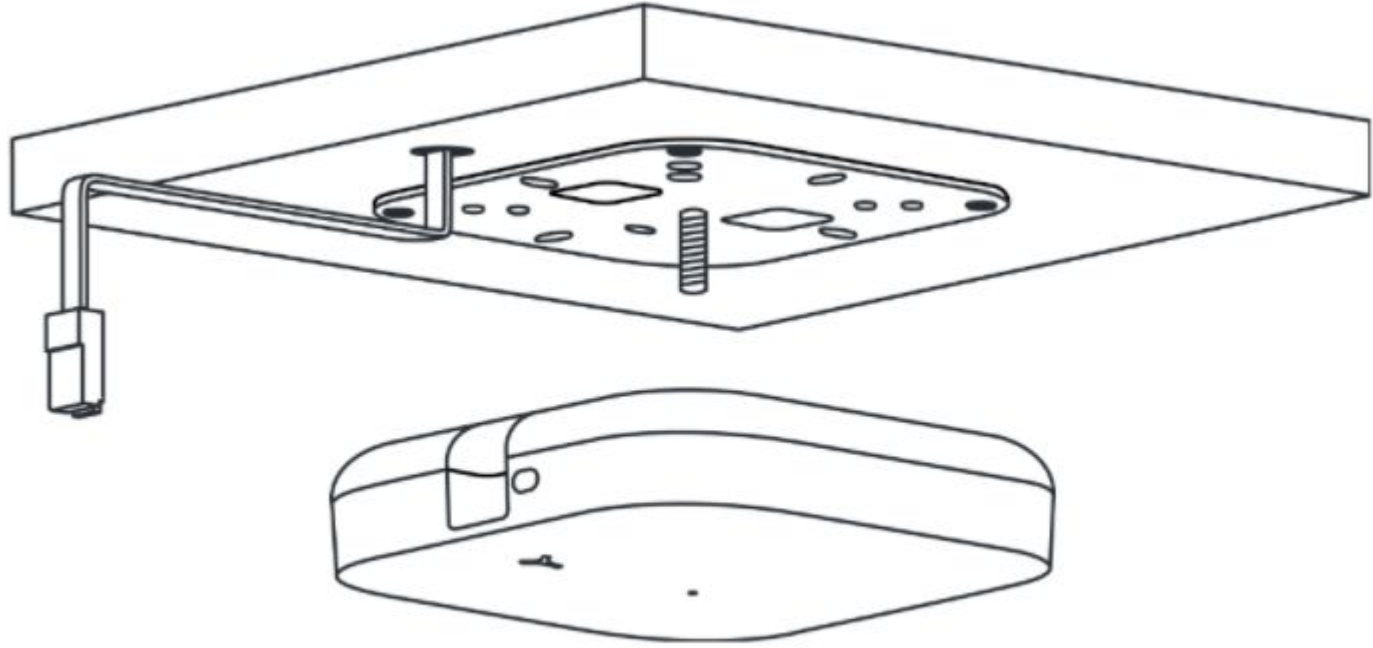
Density sensors comply with certification temperature requirements, and do not pose any risk of burning the skin or causing fires. However, if the sensor has been powered on for an extended period of time, it is recommended to remove the power cable and allow the sensor to cool for at least 5 minutes before handling.



Step 2: Remove defective Open Area Sensor

Remove the Open Area Sensor by unthreading the sensor from the bracket.

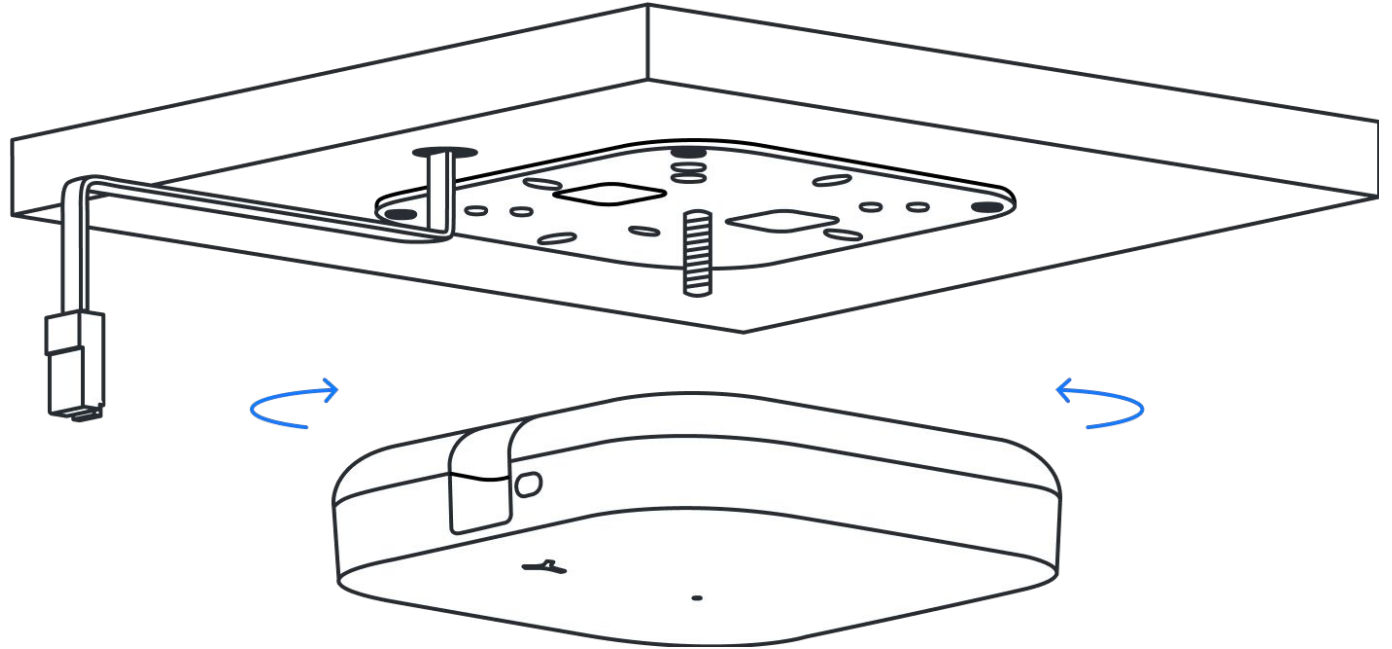
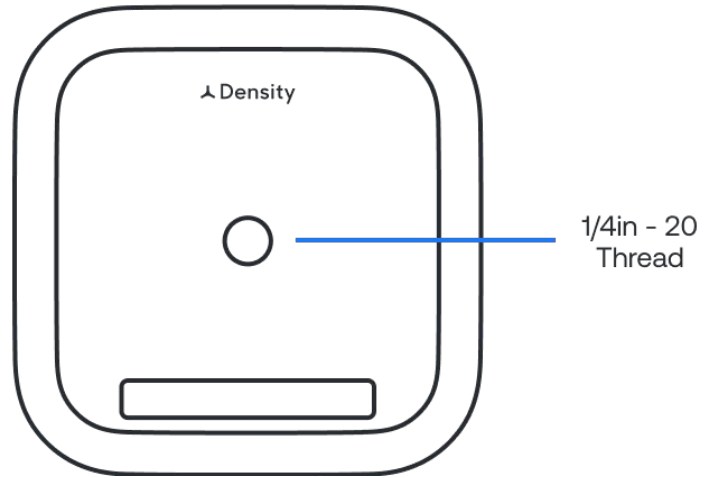
*Unthread the unit by rotating the sensor clockwise.



Step 3: Attach replacement Open Area Sensor

Attach the Open Area Sensor by threading onto the bracket.

Screw the unit on all the way until it stops (do not overtighten), then if needed, loosen the sensor until it is in the correct orientation as the previous Sensor.



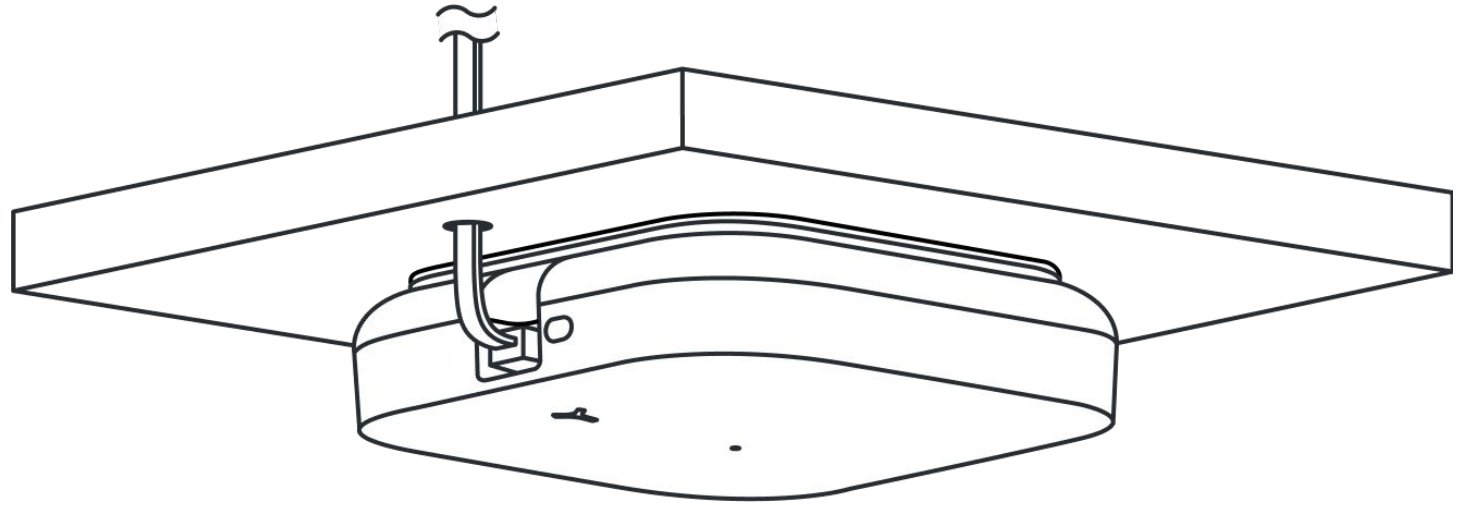
Step 4: Plug in cable

Plug the ethernet cable into the Open Area Sensor.

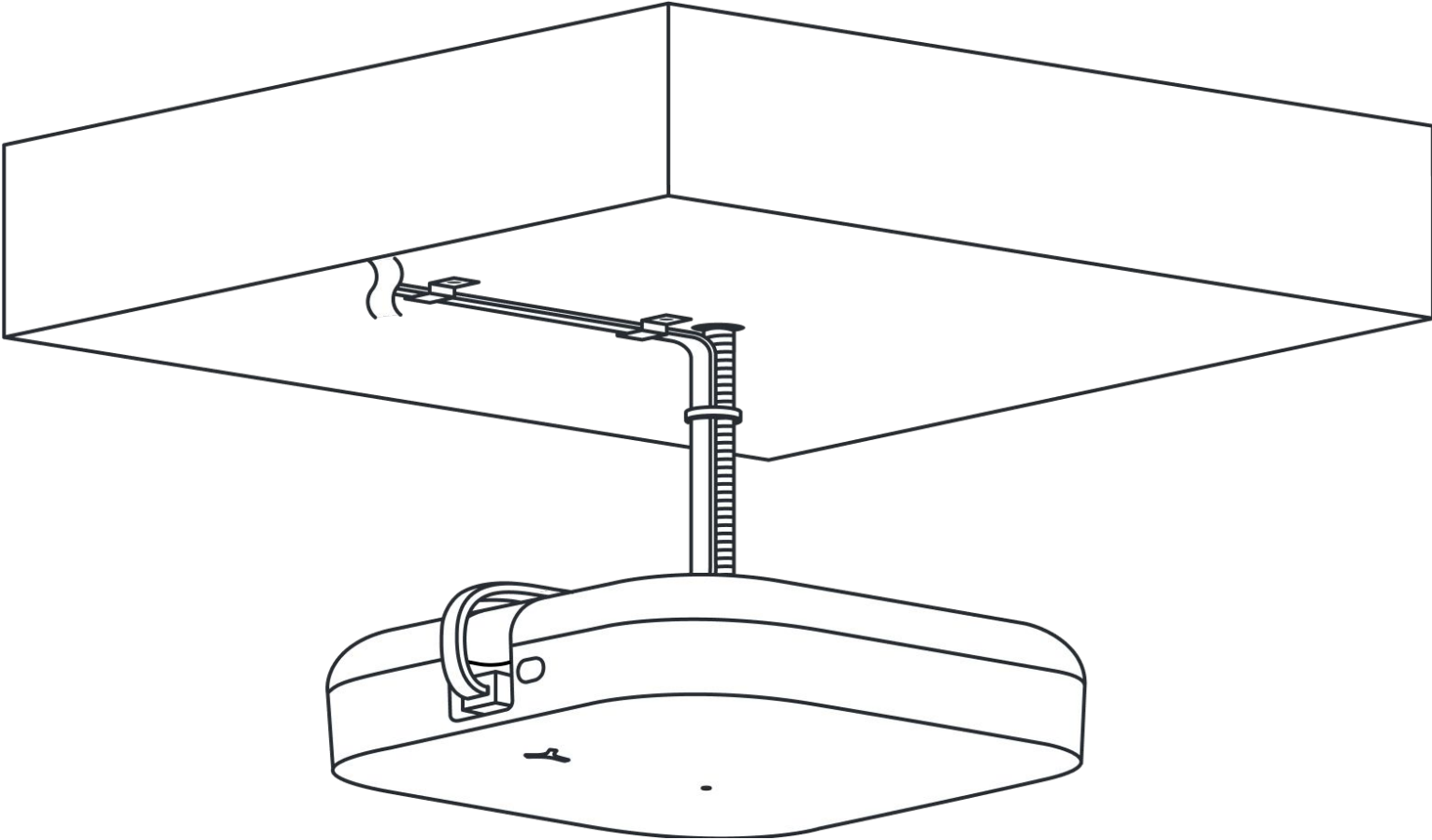
Ensure the Open Area unit is level and parallel to the floor.

The Sensor will cycle through LED light colors and should turn solid white.

Once the Sensor has a solid white LED the replacement is complete.



Suspended Mounting

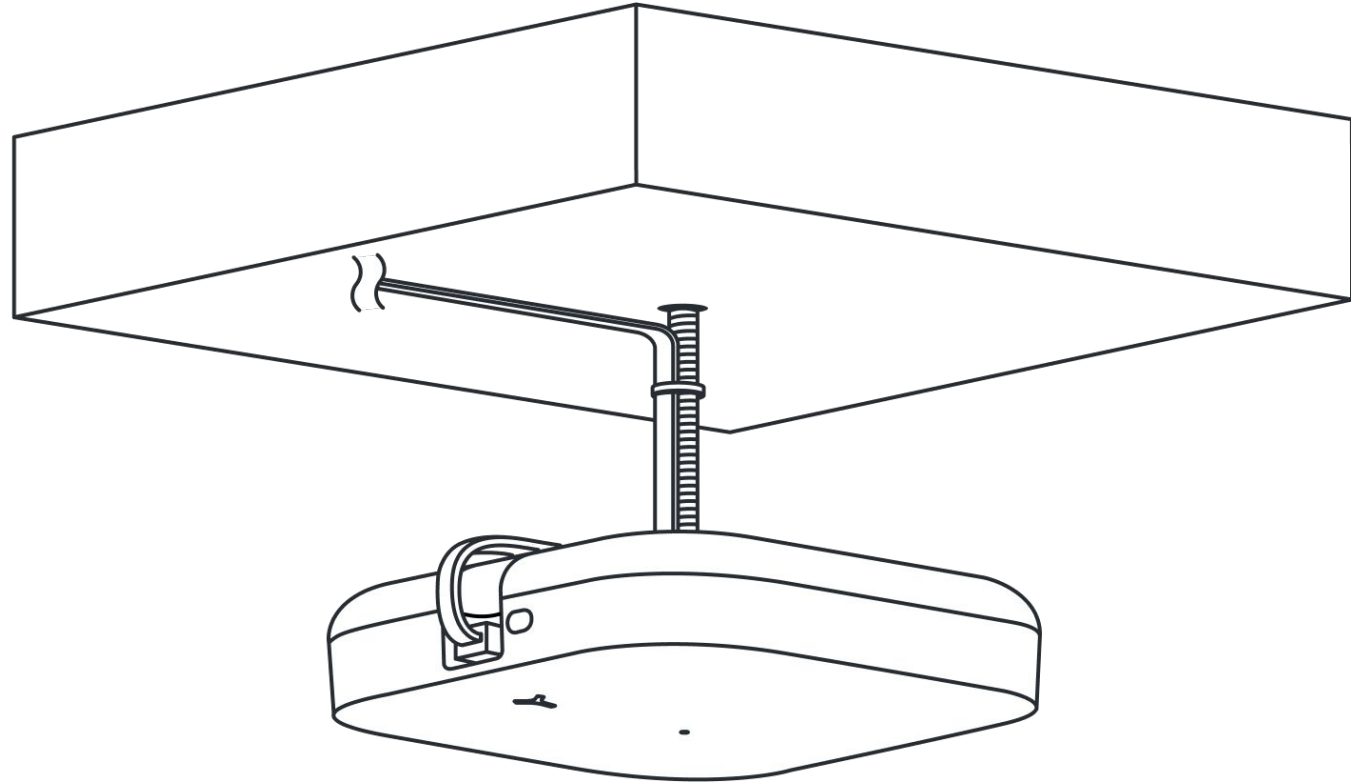


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Unplug the ethernet cable from the Open Area Sensor.



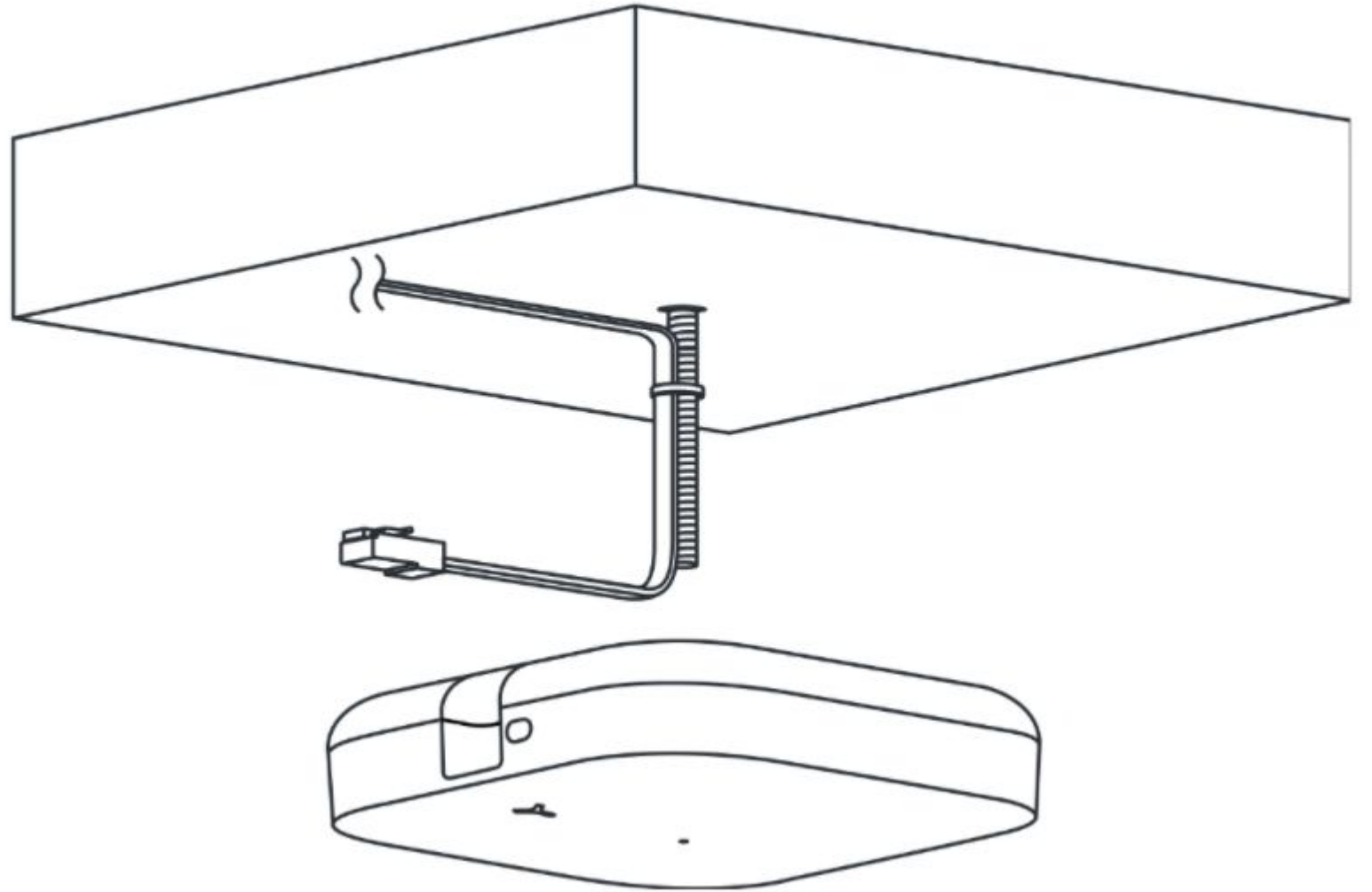
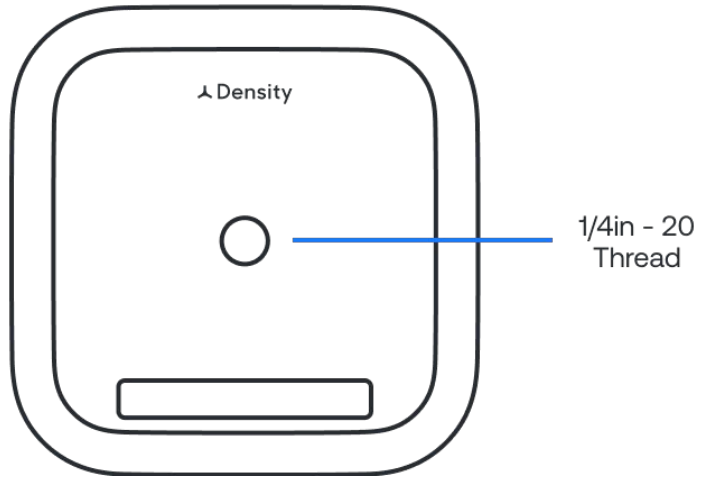
Density sensors comply with certification temperature requirements, and do not pose any risk of burning the skin or causing fires. However, if the sensor has been powered on for an extended period of time, it is recommended to remove the power cable and allow the sensor to cool for at least 5 minutes before handling.



Step 2: Remove defective Open Area Sensor

Remove the Open Area Sensor by unthreading the sensor from the threaded rod.

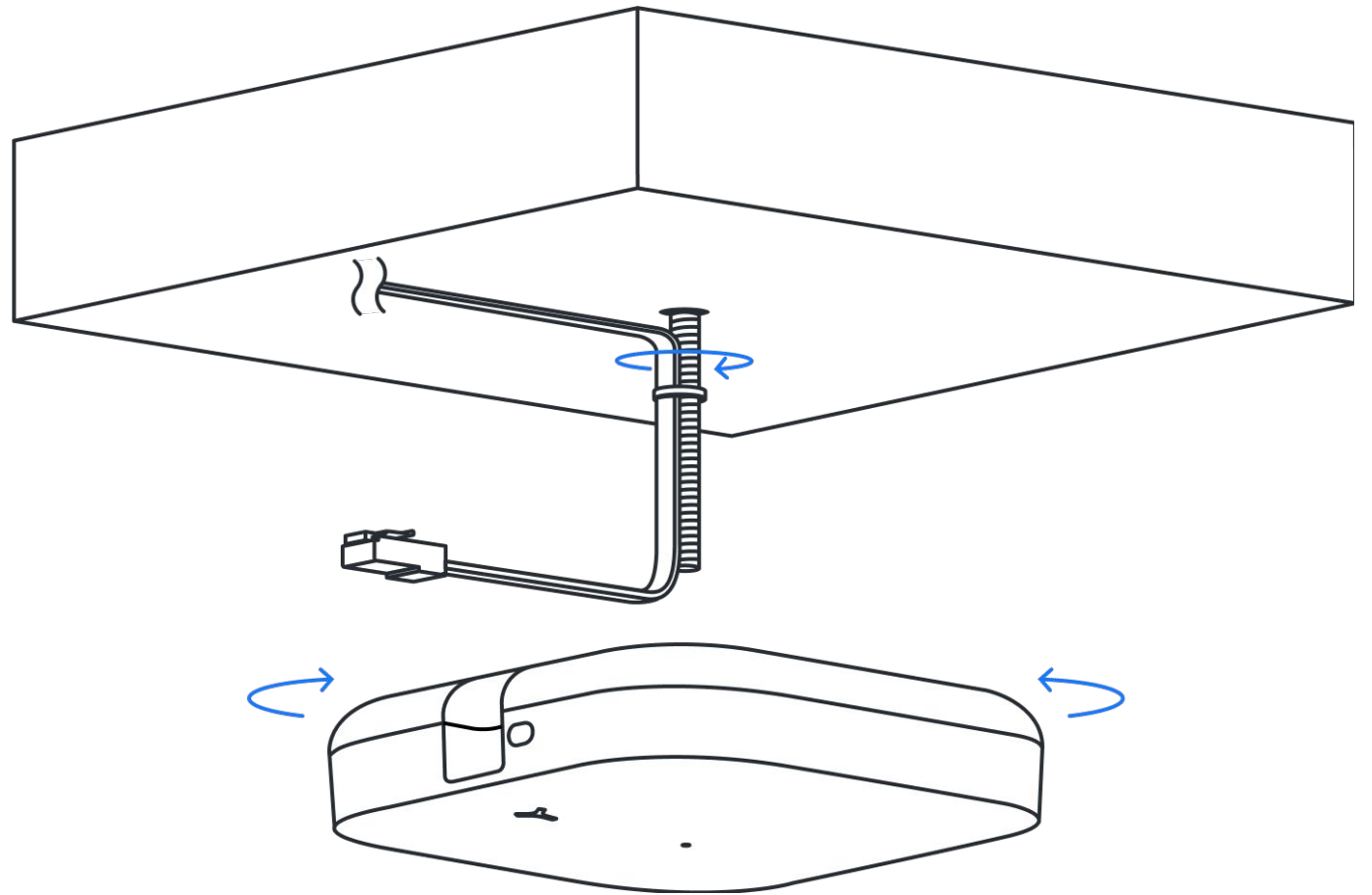
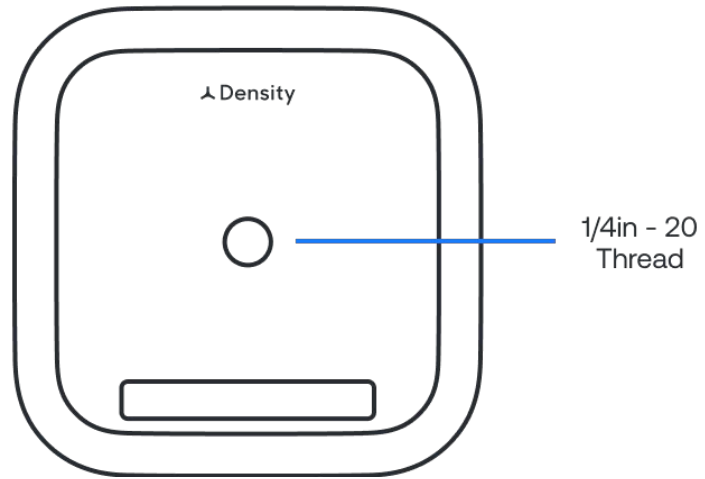
*Unthread the unit by rotating the sensor clockwise.



Step 3: Attach Open Area Sensor

Attach the Open Area Sensor to the threaded rod by inserting the threaded rod into the 1/4in-20 threads on the top of the Open Area

Screw the unit on all the way until it stops (do not overtighten), then if needed, loosen the sensor until it is in the correct orientation as the previous Sensor



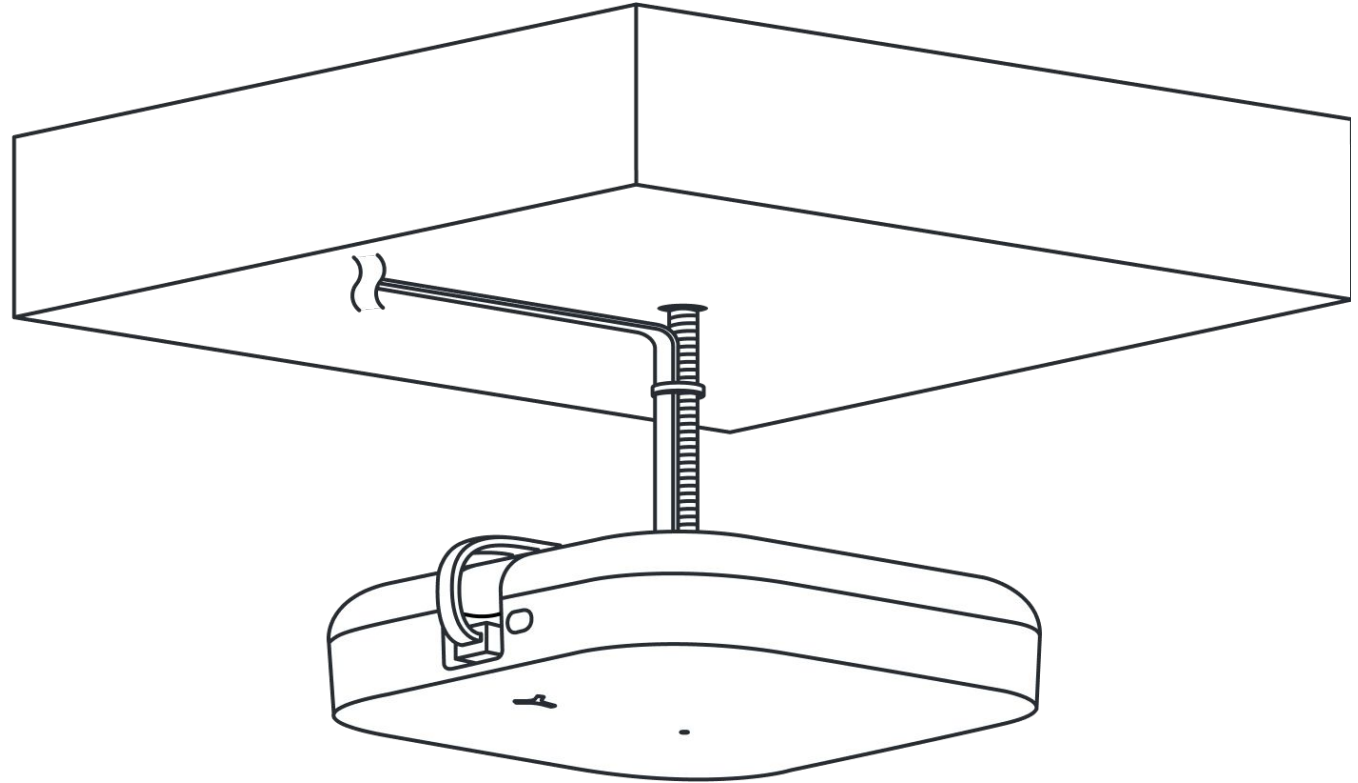
Step 4: Plug in cable

Plug the ethernet cable into the Open Area Sensor.

Ensure the Open Area unit is level and parallel to the floor.

The Sensor will cycle through LED light colors and should turn solid white.

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Sensors

Single-chip 60-64GHz mmWave sensor

Environmental specifications

- + Temperature: 32°- 95°F (0°- 35°C)
- + Relative humidity: 20% to 80%
- + Non-condensing
- + Rated for indoor installation only

Note: Open Area sensors can reach temperatures up to 135°F (57°C) after going online. Please keep proper ventilation in mind. If you need to handle the sensor, unplug it and wait a few minutes for it to cool down, or wear gloves so it is more comfortable to handle the device.

Indicators

Multi-color status LED

Unit weight

0.78lbs (0.35kg)

Dimensions & features

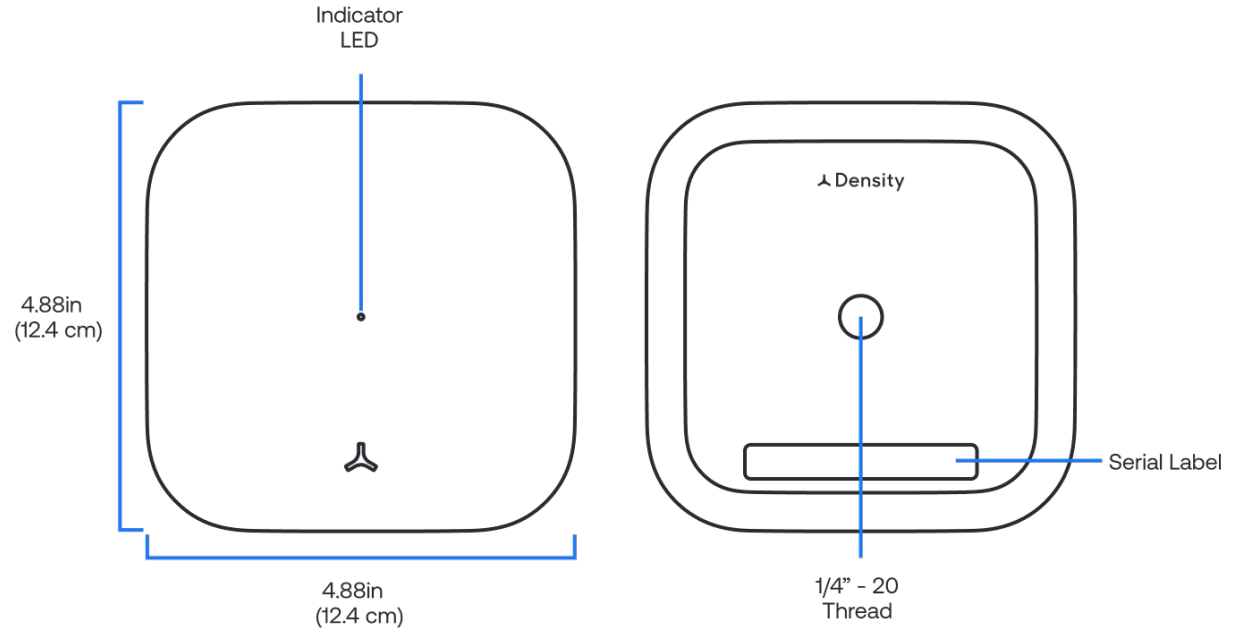
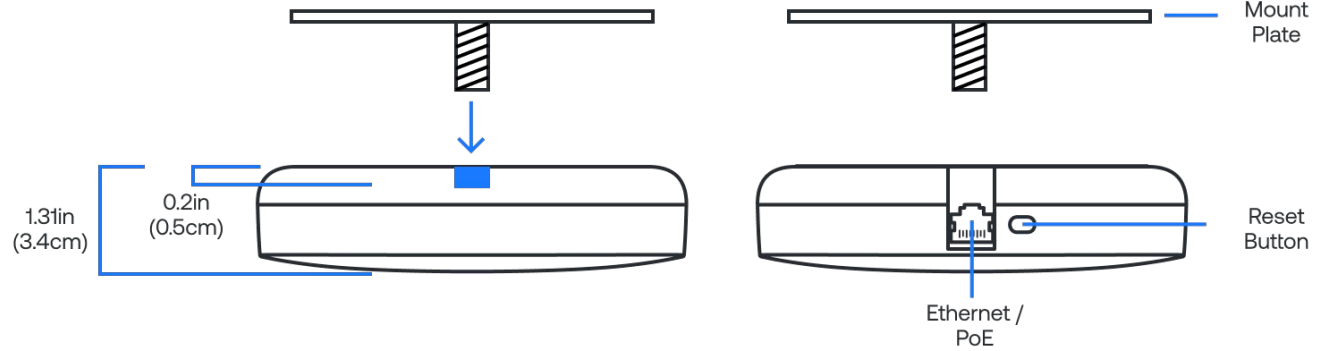
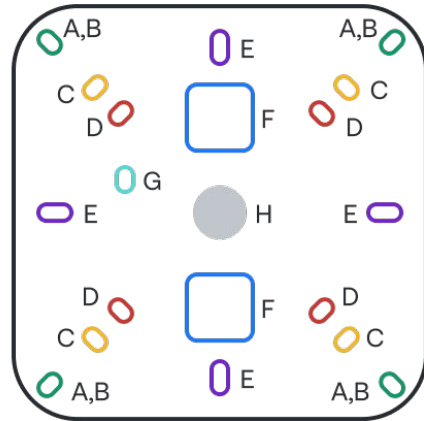
- + White polycarbonate enclosure
- + Painted aluminum base
- + Integrated 1/4"-20 mounting threads
- + Mount plate
- + Thread depth: 0.2in (0.5cm)

Interface

- + 1x 10/100/1000 BaseT RJ45 interface
- + WiFi/Bluetooth dongle
- + Reset button

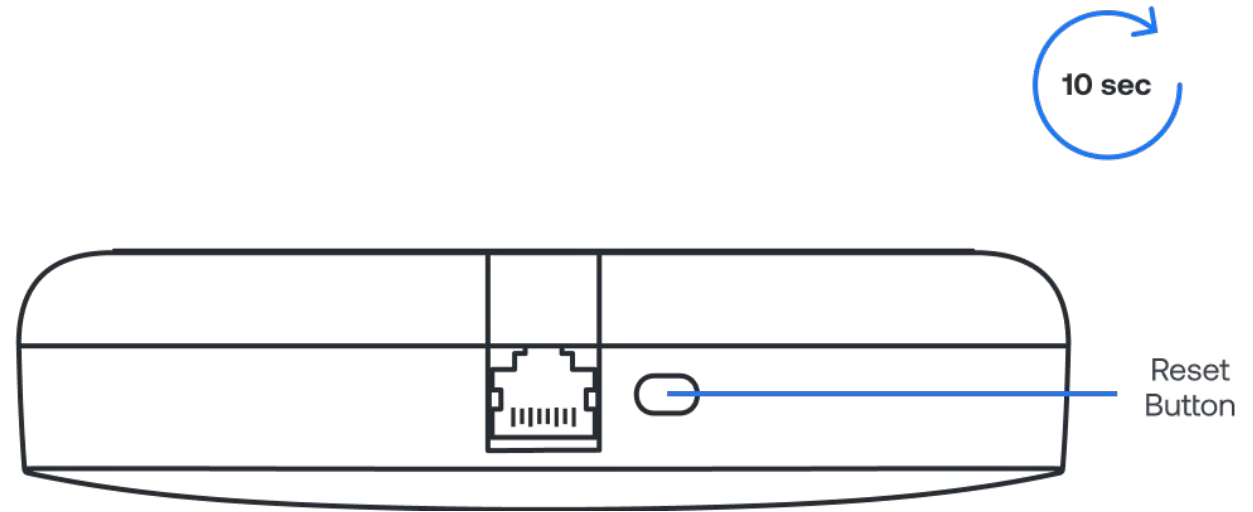
Mounting Plate

- A. Ceiling or Drop Ceiling Tile
- B. 4" Square Junction Box (US)
- C. 4" Round Junction Box (US)
- D. 3.5" Round Junction Box (US)
- E. Single-Gang Outlet Box (US)
- F. Cable Pass Through
- G. Auxiliary Hole
- H. 1/4"-20 Threaded Stud



Resetting the sensor

To reset the sensor to default factory settings, press and hold the reset button until the LED stops blinking (approximately 10 seconds). The sensor must be plugged in and connected to power in order to reset.

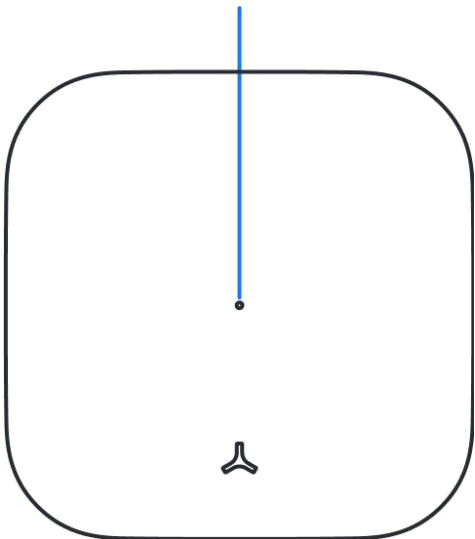


Sensor LED status indicator

The sensor has an indicator LED located on the front of the sensor. The color chart below explains the meaning of each color, defines any issues, and lists what actions to take if necessary.

If the recommended action does not resolve the LED light error status, factory reset the sensor. To reset, press and hold the reset button on the side of the sensor until the LED light starts flashing white. If the issue persists, please reach out to support@density.io

Indicator LED



Color	Pattern	Visual	Meaning	Description/Action
None	No Light		Sensor is not receiving power	Check sensor is plugged in and is receiving power from source
White	Solid		Operating normally	No action needed
White	Flashing		Indicates where sensor is when selecting "Locate" in Unit Setup App	Triggered via Unit Setup App
Blue	Solid		Sensor is ready for provisioning	Typical state out of the box once sufficient power is provided.
Blue	Flashing		Sensor is provisioning	Triggered via Unit Setup App. This process may take 5-10 minutes.
Orange	Flashing		Low power mode	Confirm switch is PoE with at least 16W per port or test ethernet cable.
Purple	Solid		Sensor cannot connect to Density server	Provision sensor via Unit Setup app and if not resolved, run Validation in same app
Purple	Flashing		Server cannot connect to DNS	<i>Verify DNS is available on VLAN. If no internal DNS server, review corporate firewalls to verify device can reach default DNS servers.</i>
Red	Solid		Sensor does not have a Network Configuration	<i>If using WiFi, use the Unit Setup app to create a Network Template. If using ethernet, verify DHCP server is available on VLAN.</i>
Red	Flashing		Bluetooth dongle not present	Occurs when device has not yet been provisioned and the Bluetooth Dongle is absent. Plug in Bluetooth Dongle to provision.

Networking basics

Density devices require internet connectivity to pass data to the web application.

Recommended Configuration: Wired ethernet connectivity configured via DHCP with internal NTP and internal DNS servers. IPv4 is required.

Networks that are not supported:

- + Captive portal
- + Proxy
- + WPA2 Enterprise
- + Hidden Networks *
- + 5GHz WiFi networks

* *Hidden networks can be used if temporarily made transparent while we configure the devices.*

If you have a corporate firewall

You will need to safelist the device MAC addresses (the MAC addresses can be found on the outside of the packaging box for the device). You may also have to safelist the following addresses to ensure the device is able to communicate outside of your corporate network:

*.density.io
*.s3.amazonaws.com
*.pool.ntp.org (required for static IP)
connman.net
connectivitycheck.gstatic.com
8.8.8.8 (if applicable)
8.8.4.4 (if applicable)

Density does not currently support IP address safelisting. A list of exact API subdomains is available by request.

- + Internal NTP server is strongly recommended. If not available, port 123 must be open to the internet.
- + An Internal DNS server is strongly recommended. If one is not available, access to the internet on port 53 is required.

Setup App

Used to configure and troubleshoot units. iOS and Android application available - Go to mobile.density.io to download.