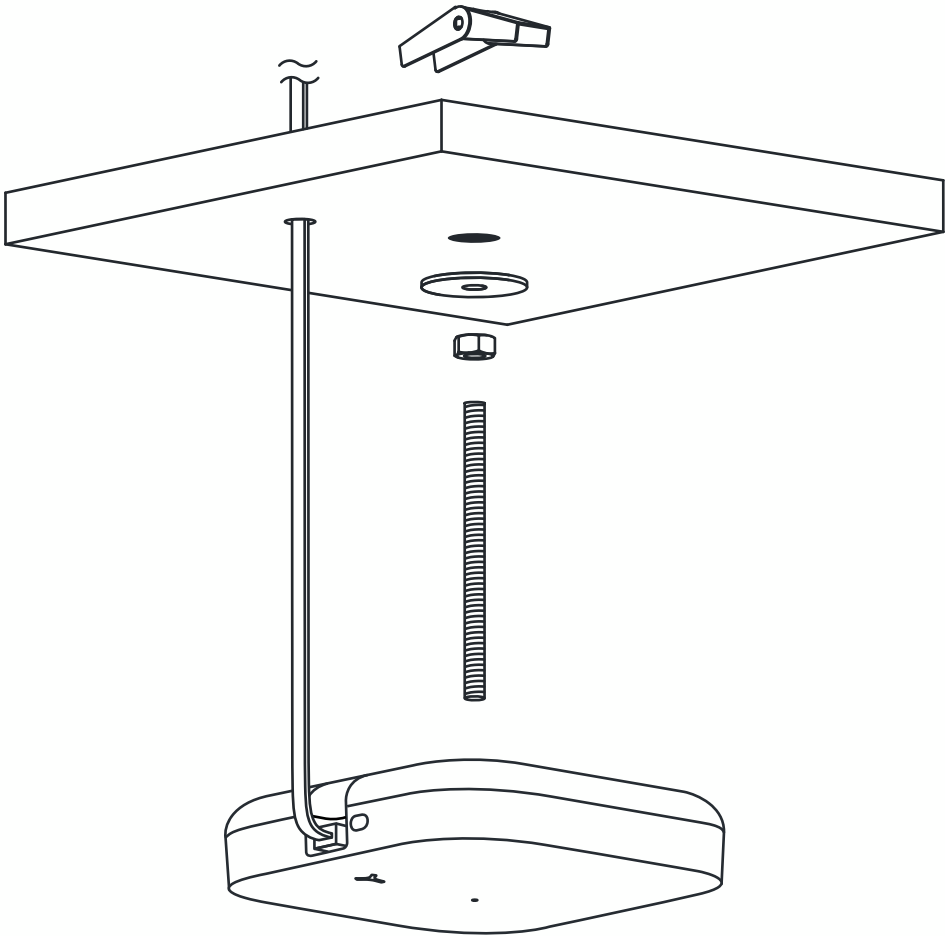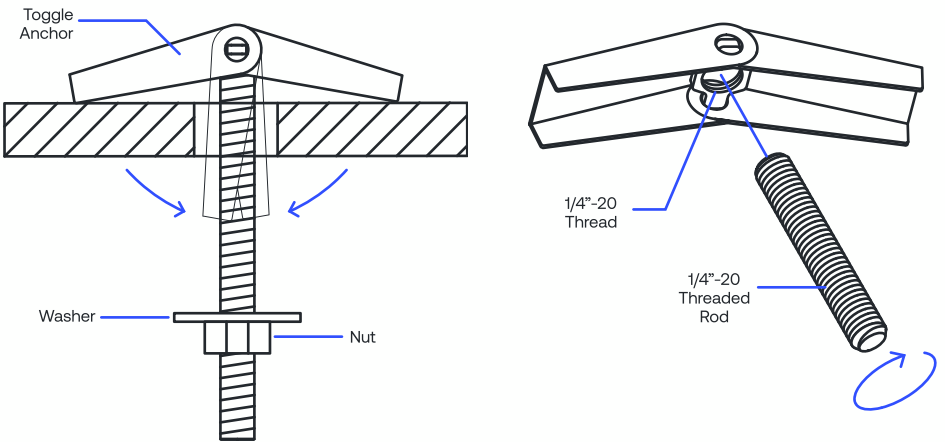## Toggle anchor assembly

The toggle anchor allows the OA sensor to be mounted to hollow ceiling and suspended by a 1/4in-20 threaded rod.
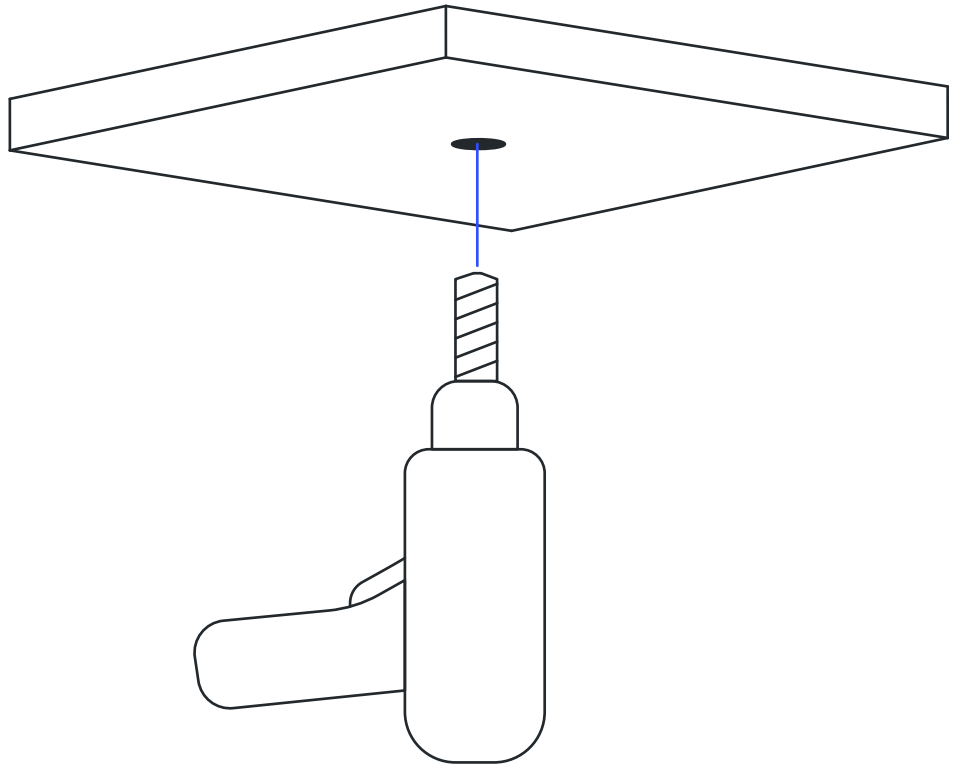
Toggle anchor

Designed for hollow ceiling types (drywall, plaster, ceiling tile, wood paneling, etc.), the toggle anchor has spring loaded wings that fold flush, and then re-open once they have passed through the ceiling material.
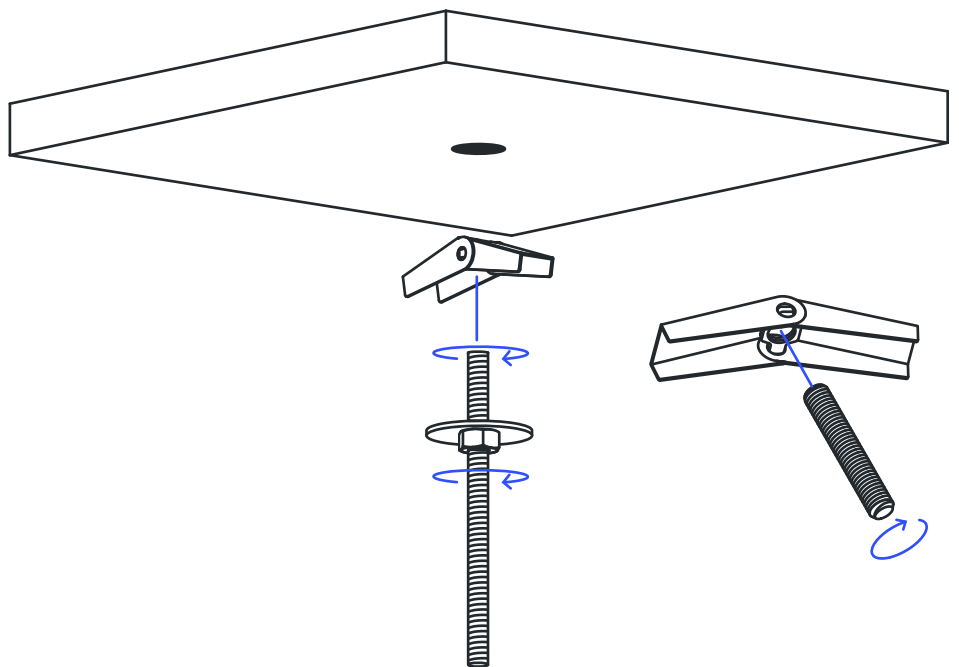
Toggle Anchor

Washer

Nut

1/4"-20 Thread

1/4"-20 Threaded Rod

Step 1: Drill hole in ceiling

Drill a hole all the way through the hollow ceiling material using the 5/8in drill bit.

Step 2: Assemble

Screw the nut and washer onto the top end of the threaded rod. Screw the toggle anchor onto the top end of the threaded rod. Make sure that the threaded rod is fully threaded into the toggle anchor.

Step 3: Insert toggle anchor into ceiling

Fold the toggle anchor flaps down, then insert the toggle anchor and end of the threaded rod through the drilled hole. Once through the ceiling, the Toggle Anchor flaps will spring open again.

To adjust the install height, twist the threaded rod counter clockwise to raise or clockwise to lower. Make sure the threaded rod has enough thread engagement with the toggle anchor.
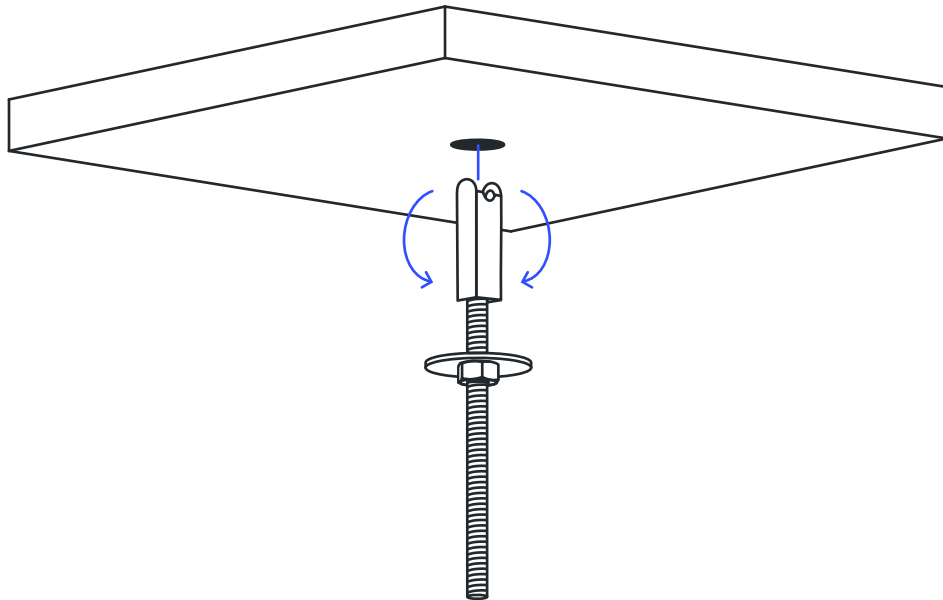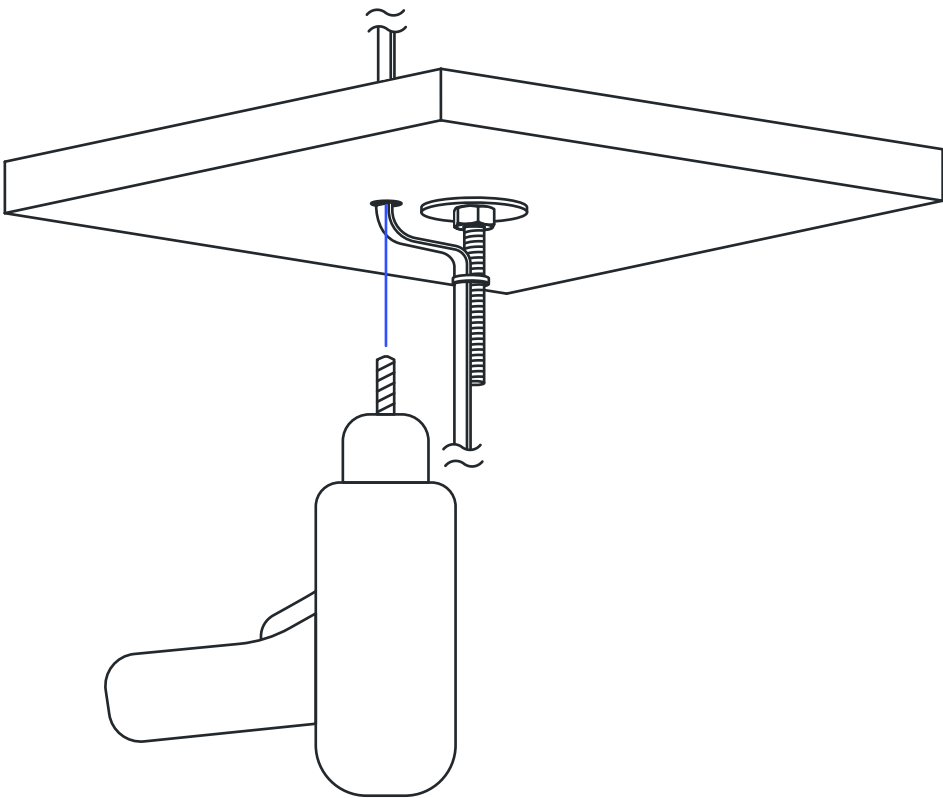
Step 4: Tighten the anchor assembly

Once desired install height is determined, twist the nut and washer until they are tight against the ceiling. Tighten the nut with a wrench or pliers so that the washer provides strong clamping pressure against the ceiling.
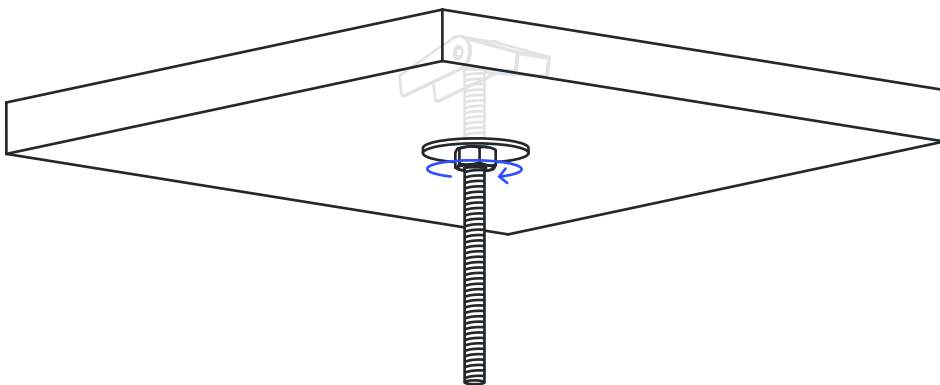
Step 5: Drill cabling hole

Drill a hole using a 5/8in (16mm) drill bit to route cable through.

Step 6 (optional): Cable management

A 1/2in PVC pipe can be used to run the cable and rod through. Before assembly, cut the PVC pipe to the proper length and drill or cut a notch or hole at the top of the pipe to allow for cable relief. For optimal cable aesthetics, we recommend using a flat white Cat 5e or greater ethernet cable as shown. Make sure to use a pipe size with a minimum inner diameter of 0.62in (1.6cm).

Minimum Pipe Size

0.84in
(2.1cm)

0.62in
(1.6cm)
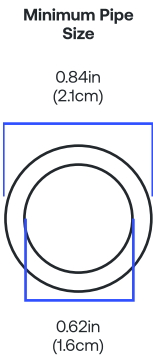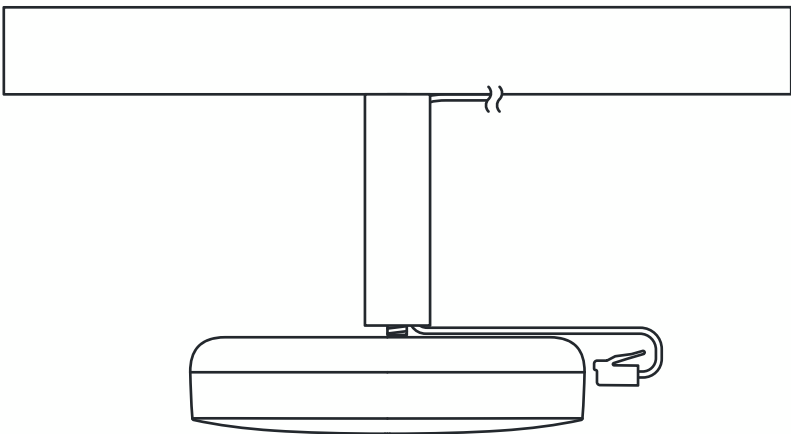
Step 7: Attach Open Area sensor

Attach the OA sensor to the threaded rod by inserting the threaded rod into the 1/4in-20 threads on the back of the OA sensor and twisting the sensor onto the rod until tight.

Screw the unit down all the way until it stops, then back it off to the prescribed location using the ethernet jack as the location guide.
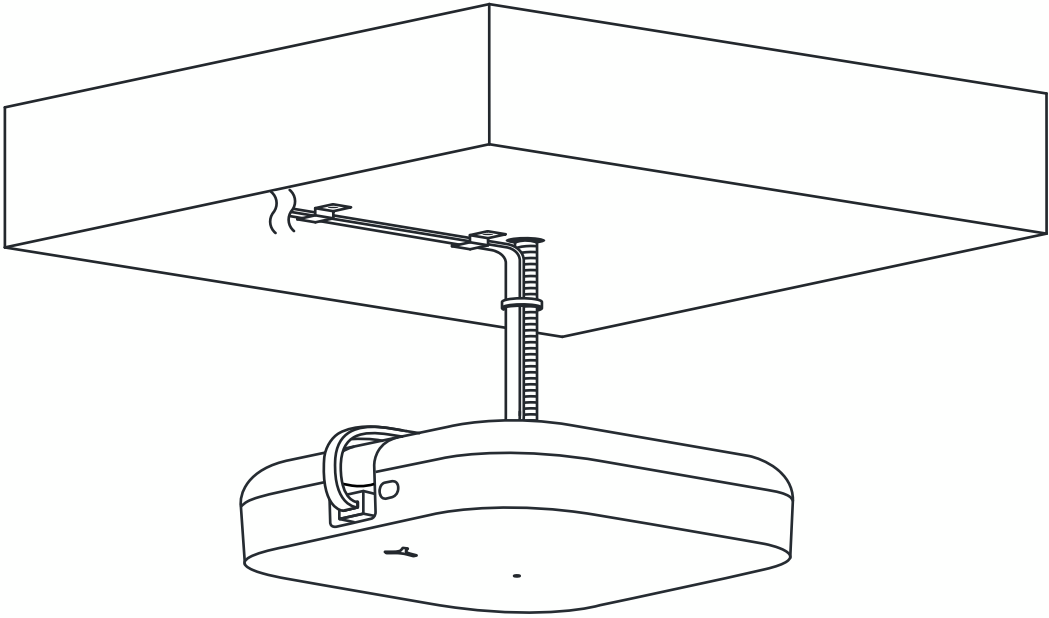
1/4in - 20
Thread
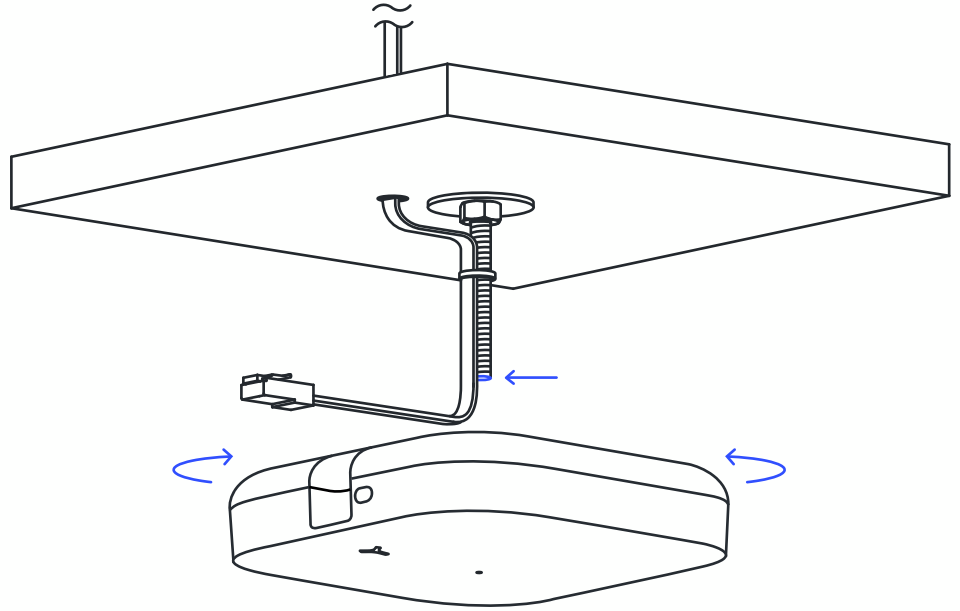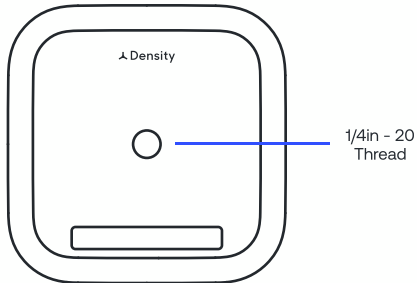
Step 8: Plug in cable

Plug the ethernet cable into the Open Area sensor. The sensor will automatically power up and the LED indicator on the front of the sensor will turn white.

Ensure the Open Area unit is level and parallel to the floor.
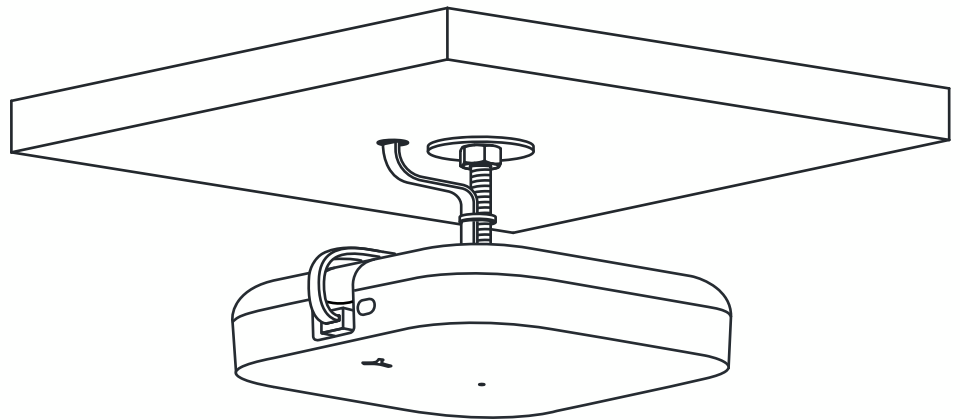
Threaded Rod Anchor Mounting

For solid ceiling types (wood, concrete, steel)

Ceiling Mount

- Threaded rod anchor for concrete
- Threaded rod anchor for steel
- Threaded rod anchor for wood
- Concrete anchor installation

Materials not included

- Drill
- Hammer
- 5/8in drive socket (wood only)
- 1/2in drive socket (steel only)
- ANSI 3/8in masonry bit (concrete only)
- 1/4in-20 threaded rod
- Cable management clips
- PVC pipe (for cable management)
- Ethernet cable (Cat 5e or later)

Power & connectivity

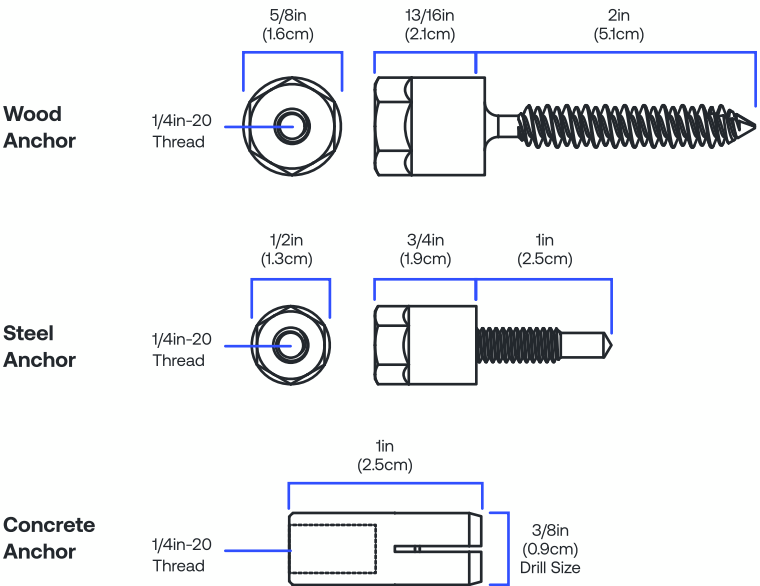All sensors require power over ethernet and internet connectivity.

Threaded rod anchor assembly

The Open Area sensor can be suspended from a 1.4in-20 threaded rod and mounted to solid wood, concrete or steel ceiling types using the provided threaded rod anchors.

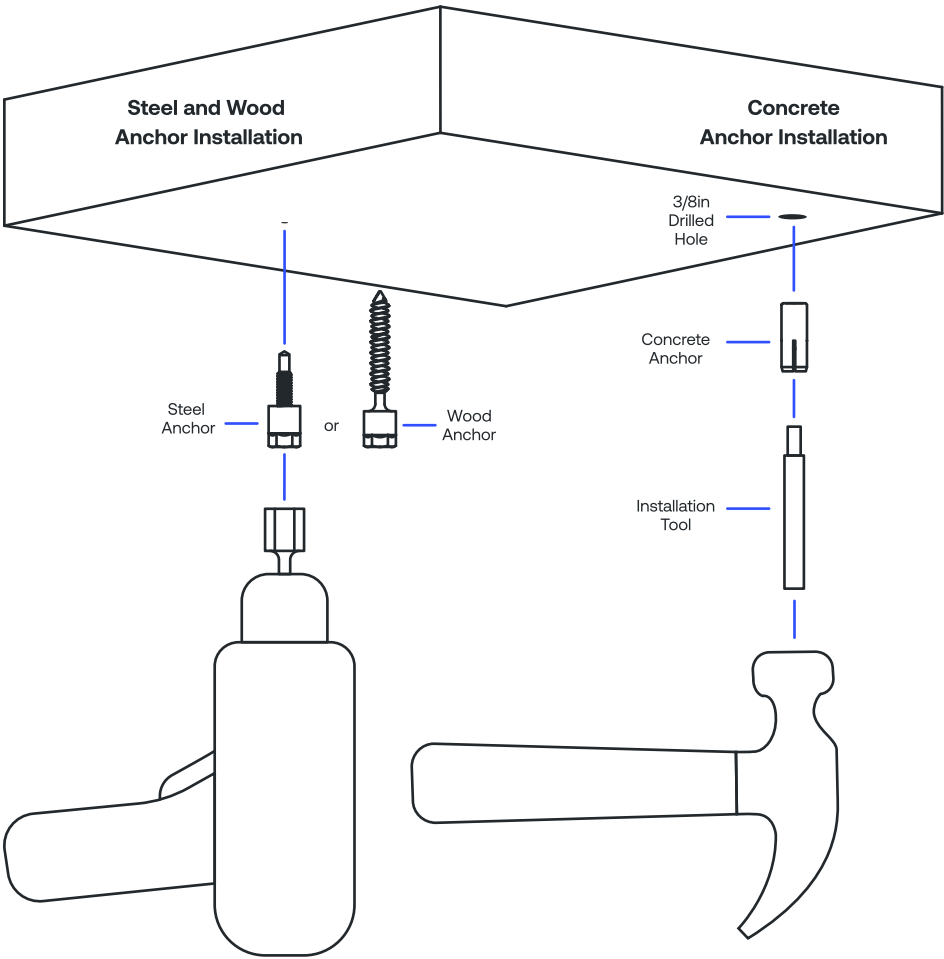Concrete Anchor   or   Steel Anchor   or   Wood Anchor
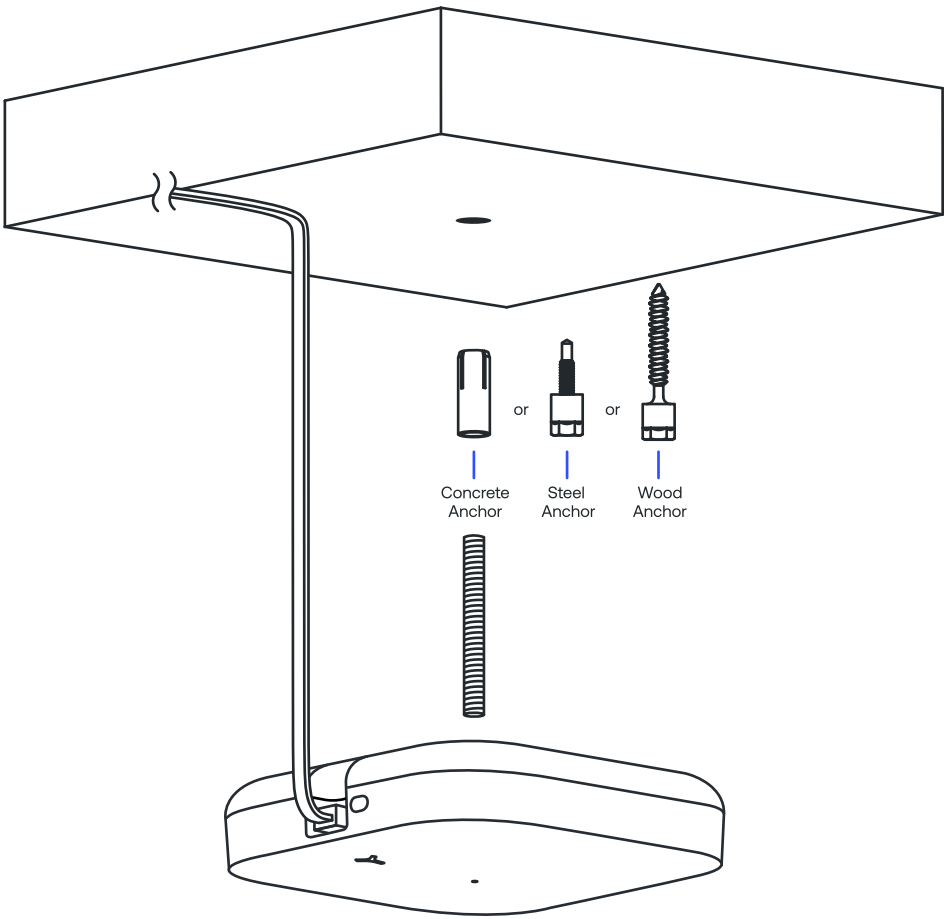
Thread rod anchors

Install directly into a mounting surface to suspend a threaded rod. Three different mounting anchors are specifically designed for wood, steel, and concrete surfaces. The wood and steel anchors require a drill along with the appropriate sized drive socket (not included) for installation. The concrete anchor requires a hole drilled by an ANSI 3/8in masonry bit, as well as a hammer (not included) and an installation tool (included).

Wood Anchor — 1/4in-20 Thread — 5/8in (1.6cm) — 13/16in (2.1cm) — 2in (5.1cm)

Steel Anchor — 1/4in-20 Thread — 1/2in (1.3cm) — 3/4in (1.9cm) — 1in (2.5cm)

Concrete Anchor — 1/4in-20 Thread — 1in (2.5cm) — 3/8in (0.9cm) Drill Size

Step 1: Install threaded rod anchor

Wood and Steel installation: Use a drill and a drive socket (5/8in for wood, 1/2in for steel) to drive the anchor into the ceiling until the bottom side of the anchor head is flush with the ceiling.

Concrete installation: Anchors for concrete require a hole drilled by an ANSI 3/8in masonry drill bit. To install, place the anchor into the drilled hole, insert the required installation tool into the anchor, and drive with a hammer until the thicker portion of the tool makes contact with the anchor. When installed, anchors sit flush with the surface.

Steel and Wood Anchor Installation

Concrete Anchor Installation

Steel Anchor

or

Wood Anchor

3/8in Drilled Hole

Concrete Anchor

Installation Tool

Step 2: Attach Open Area sensor

Attach the OA sensor to the threaded rod by inserting the threaded rod into the 1/4in-20 threads on the back of the OA sensor and twisting the sensor onto the rod until tight.

Screw the unit down all the way until it stops, then back it off to the prescribed location using the ethernet jack as the location guide.

人Density

1/4in - 20
Thread
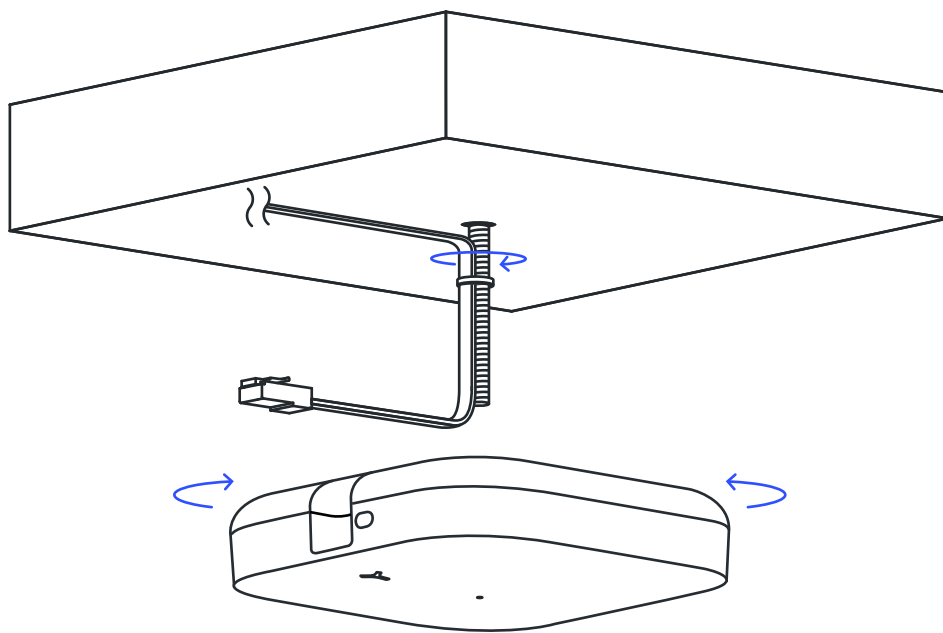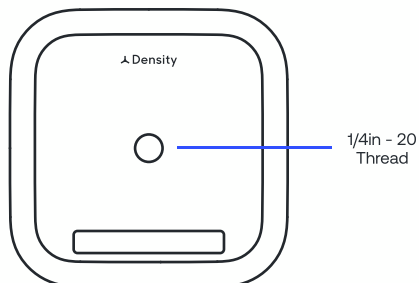
Step 3: Plug in cable

Plug the ethernet cable into the Open Area sensor. The sensor will automatically power up and the LED indicator on the front of the sensor will turn white.

Ensure the Open Area unit is level and parallel to the floor.
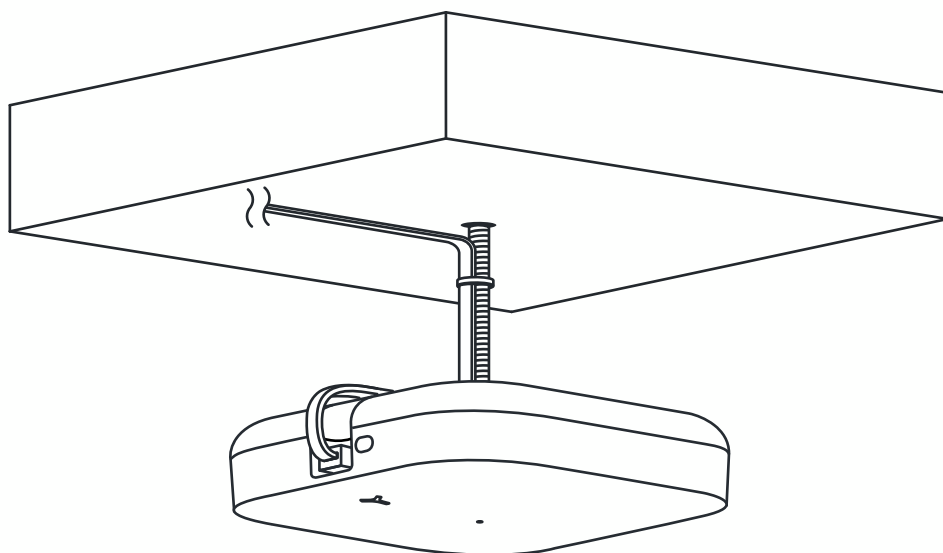
Step 4 (optional): Cable management

A 1/2in PVC pipe can be used to run the cable and rod through. Before assembly, cut the PVC pipe to the proper length and drill or cut a notch or hole at the top of the pipe to allow for cable relief. For optimal cable aesthetics, we recommend using a flat white Cat 5e or greater ethernet cable as shown. Make sure to use a pipe size with a minimum inner diameter of 0.62in (1.6cm). The cable can be attached to the ceiling using a variety of screw or nail in cable management clips.
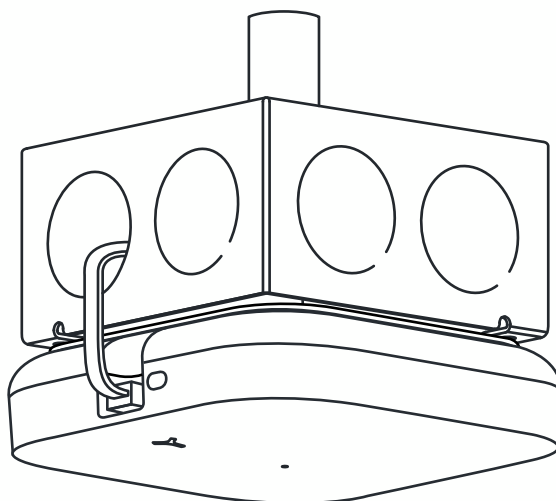
Minimum Pipe Size

0.84in
(2.1cm)

0.62in
(1.6cm)
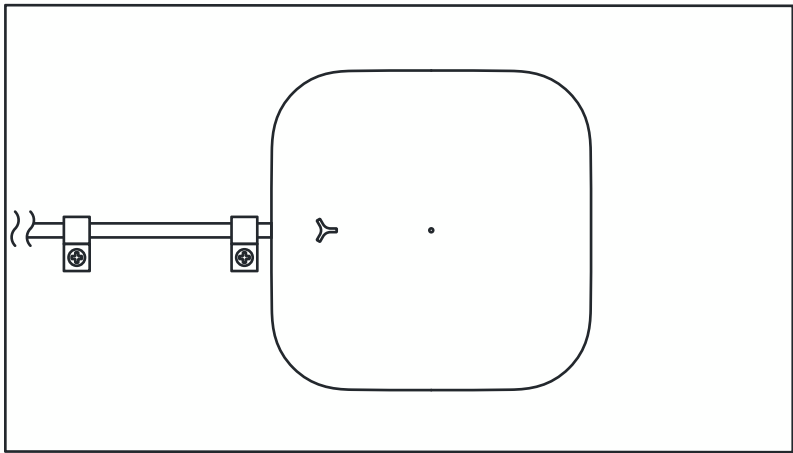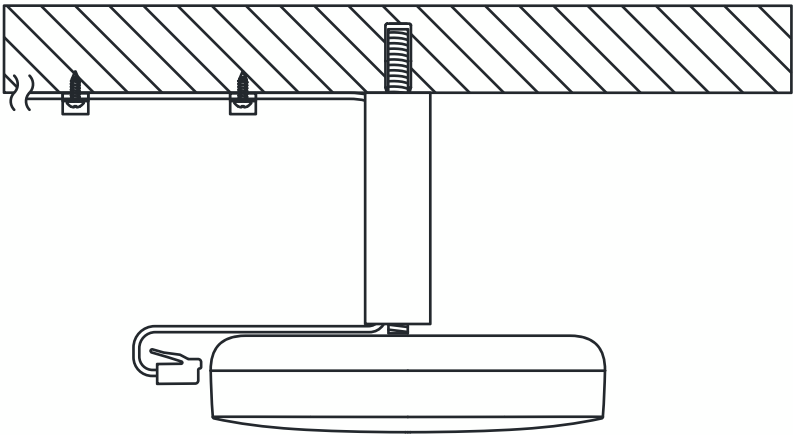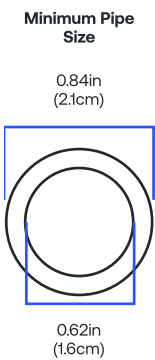
Installation complete
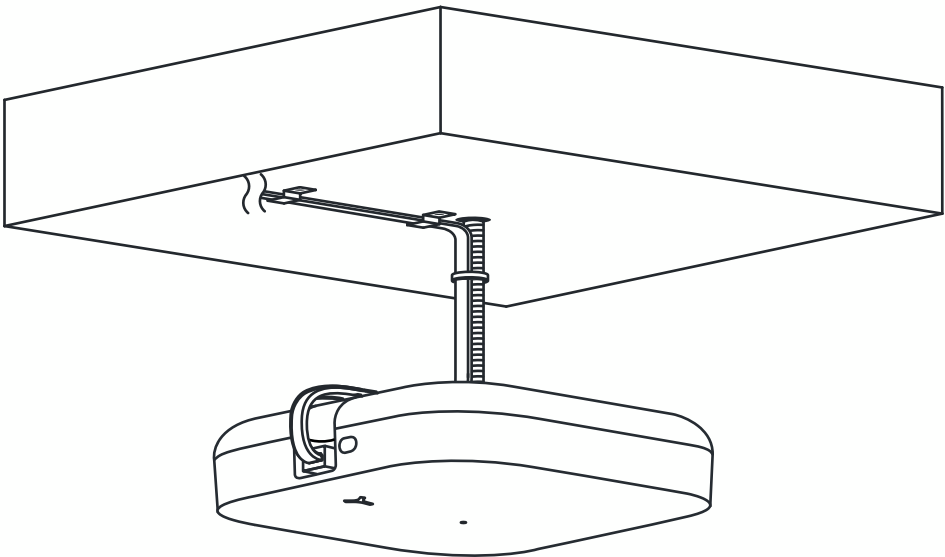
Junction Box Mounting

For mounting to square, round, or octagonal junction boxes

Ceiling Mount

- Mount plate
- 2pcs 8-32 flat head screws
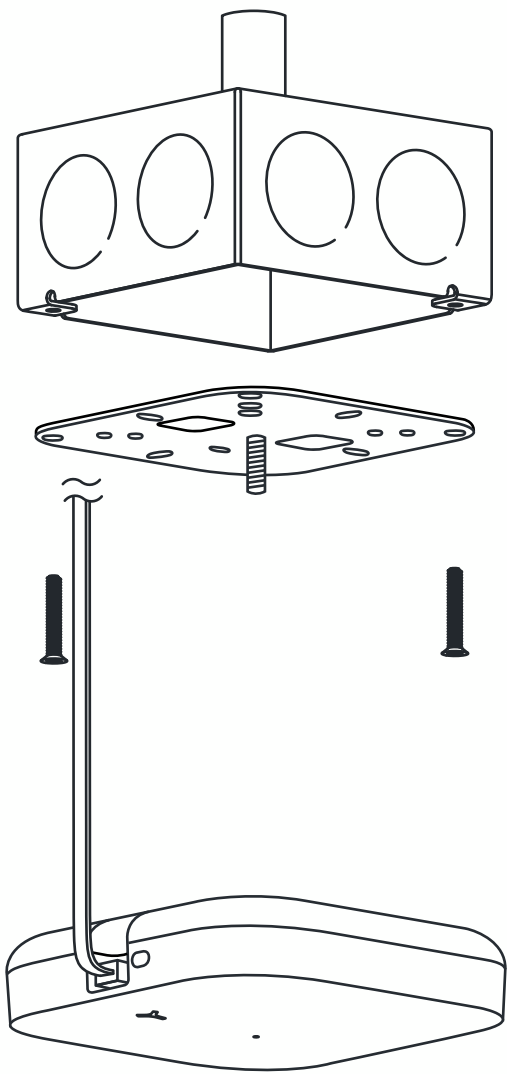
Materials not included

- Drill of screwdriver
- Junction box
- Ethernet cable (Cat 52 or later)

Power & connectivity

All sensors require power over ethernet and internet connectivity.

Threaded rod anchor assembly

With the junction box hung and positioned, affix the mount plate to the junction box using the appropriate hole pattern and the provided screws.

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. Threaded Rod
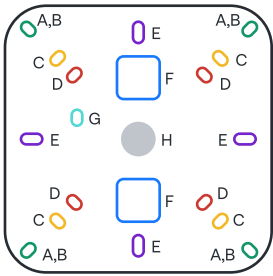
Step 1: Attach mount plate

Attach the mount plate to the junction box using the necessary screws. Density provides 2pcs 8-32 Flat Head Screws that are compatible with some junction boxes. Make sure you have the proper screw for the desired junction box.
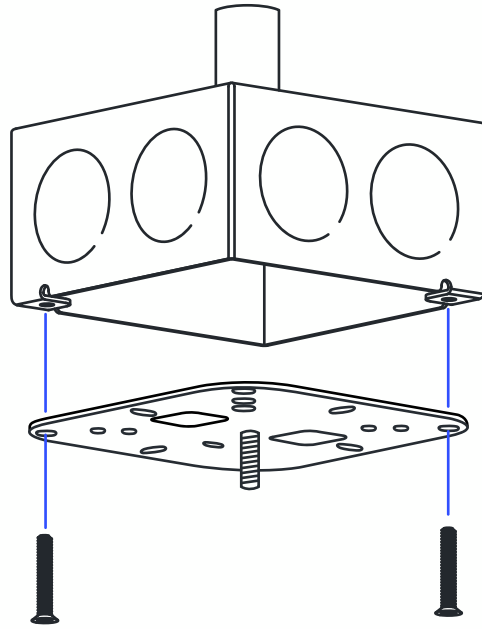
Step 2: Attach Open Area sensor

Attach the OA sensor to the threaded rod by inserting the threaded rod into the 1/4in-20 threads on the back of the OA sensor and twisting the sensor onto the rod until tight.

Screw the unit down all the way until it stops, then back it off to the prescribed location using the ethernet jack as the location guide.

ㅅ Density

1/4in - 20
Thread
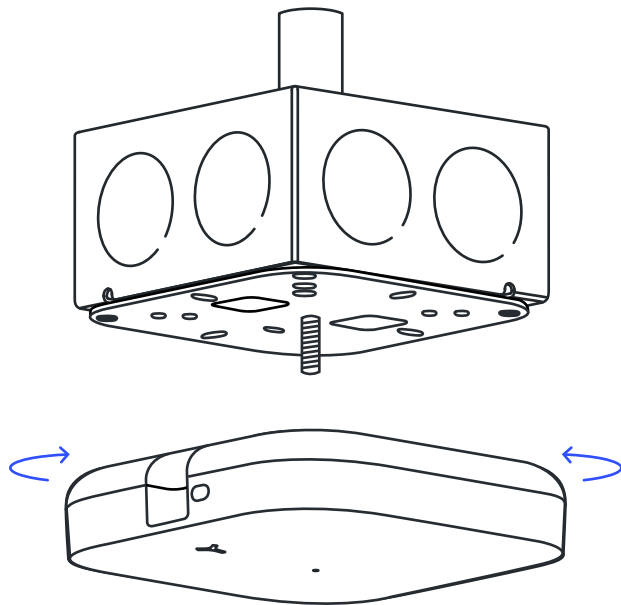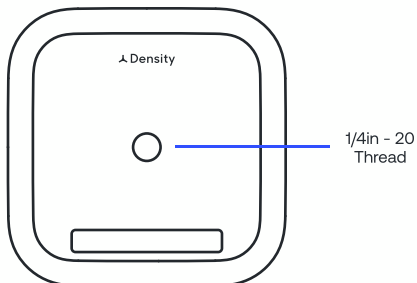
Step 3: Route cabling

The ethernet cable can be routed through the knockout holes in the junction box.