AVIGILON™



Installation Guide

Avigilon™ H5A Fisheye Camera Models:

8.0C-H5A-FE-DO1	12.0W-H5A-FE-DO1
8.0C-H5A-FE-DO1-IR	12.0W-H5A-FE-DO1-IR
8.0C-H5A-FE-DC1	12.0W-H5A-FE-DC1

Important Safety Information

This manual provides installation and operation information and precautions for the use of this device. Incorrect installation could cause an unexpected fault. Before installing this equipment read this manual carefully. Please provide this manual to the owner of the equipment for future reference.



This Warning symbol indicates the presence of dangerous voltage within and outside the product enclosure that may result in a risk of electric shock, serious injury or death to persons if proper precautions are not followed.



This Caution symbol alerts the user to the presence of hazards that may cause minor or moderate injury to persons, damage to property or damage to the product itself if proper precautions are not followed.



WARNING — Failure to observe the following instructions may result in severe injury or death.

- Installation must be performed by qualified personnel only, and must conform to all local codes.
- This product is intended to be supplied by a UL Listed Power Unit marked “Class 2” or “LPS” or “Limited Power Source” with output rated 12 VDC, 11 W min. (26 W min. with -IR model) or PoE, 11 W min. (26 W min. with -IR model).
- Do not connect directly to mains power for any reason.



CAUTION — Failure to observe the following instructions may result in injury to persons or damage to the device.

- Do not expose the camera directly to high levels of x-ray, laser, or UV radiation. Direct exposure may cause permanent damage to the image sensor.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the device cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all device servicing to qualified personnel. Servicing may be required when the device has been damaged (such as from a liquid spill or fallen objects), has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not use strong or abrasive detergents when cleaning the device body.
- Use only accessories recommended by Avigilon.

Regulatory Notices

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

The H5A-FE-DO1 camera model complies with EN 60529 IP66 and IP67 rating.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications made to this equipment not expressly approved by Avigilon Corporation or parties authorized by Avigilon Corporation could void the user's authority to operate this equipment.

UK Product Security and Telecommunications Infrastructure (PSTI) Act: Avigilon cameras comply with the PSTI requirements. For more information, see the published **PSTI Statement of Compliance**.

For Korea

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모든 지역에서 사용할 수 있습니다.

Disposal and Recycling Information

When this product has reached the end of its useful life, please dispose of it according to your local environmental laws and guidelines.

Risk of fire, explosion, and burns. Do not disassemble, crush, heat above 100 °C (212 °F), or incinerate.

European Union:



This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

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Table of Contents

Overview 1
H5A-FE-DO — Surface Mount 1
Cover View 1
Internal View 2
Bottom View 3
Wall Plate Adapter View 4
H5A-FE-DC — In-Ceiling Mount 5
Cover View 5
Internal View 6
In-Ceiling Mount View 7
H5A-FE-MT-NPTA — Pendant Mount 8
NPT Adapter View 8
Pendant Wall Mount Bracket View 9
Pendant Wall Mount View 10
Preparing the Installation 11
Pre-Deployment In-Box Configuration 11
Removing the Fisheye Cover 12
Mounting and Aiming Video Analytics Cameras 13
Preparing the Cables 13
Inserting an Ethernet Cable through the Single-Hole Grommet 14
Inserting Cables through the 3-Hole Grommet 14
Surface Mount Installation 16
Required Tools and Materials 16
Camera Package Contents 16
Installation Steps 16
Mounting in the Correct Orientation 16
Mounting the Camera to a Ceiling or Wall 18
Mounting the Camera Using the Side Conduit Entry Hole 20
Mounting the Camera to an Electrical Box 24
Connecting Cables 28
Installing the Fisheye Cover 29
In-Ceiling Mount Installation 31
Required Tools and Materials 31
Camera Package Contents 31

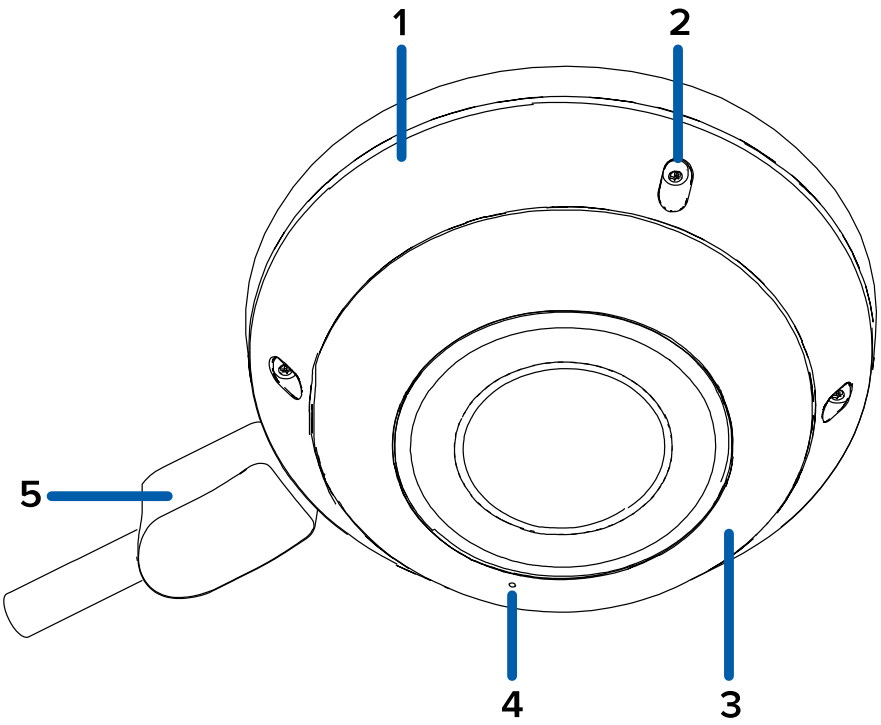
Installation Steps 31
Mounting in the Correct Orientation 31
Using the In-Ceiling Mounting Adapter 33
Installing the Camera Base into the Mounting Adapter 36
Connecting Cables 39
Installing the In-Ceiling Cover 40
Pendant Mount Installation 42
Required Tools and Materials 42
Camera Package Contents 42
Installation Steps 42
Mounting the Camera to a Pipe 42
Mounting the Camera to the Pendant Wall Mount 44
Installing the Camera into the NPT Adapter 48
Connecting Cables 51
Installing the Fisheye Cover 52
Connecting to the Camera 54
Initializing a Camera Username and Password 54
Assigning an IP Address 54
Accessing the Live Video Stream 55
(Optional) Configuring Onboard Storage 55
(Optional) Enabling the Microphone 55
Configuring the Microphone 56
Configuring the Camera 57
For More Information 57
Cable Connections 58
Connecting External Power 58
Non-Seamless Failover 58
Connecting to External Audio and I/O Devices 58
Connection Status LED Indicator 60
Troubleshooting Network Connections and LED Behavior 60
Resetting to Factory Default Settings 62
Setting the IP Address Using the ARP/Ping Method 63
Cleaning 64
Dome Bubble 64
Body 64

Limited Warranty and Technical Support 65

Overview

H5A-FE-DO — Surface Mount

Cover View



1. **Dome cover**

   Vandal resistant dome cover.
2. **Tamper resistant screws**

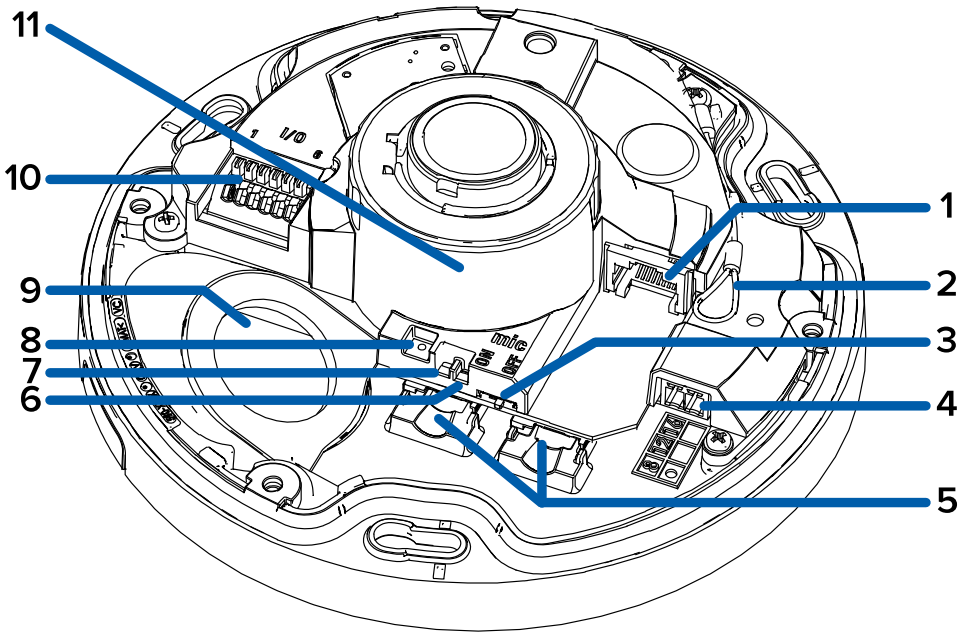
   Star-shaped captive screws to fix the dome cover to the base.
3. **IR illuminator**

   Provides scene illumination in the IR spectrum for supported camera models.
4. **Microphone**

   Built-in audio receiver.
5. **Conduit shroud**

   Optional shroud for connecting a side-entry 1/2" (18 mm) EMT conduit for cabling.

Internal View



1. **Ethernet port**

   Accepts an Ethernet connection to a network. Server communication and image data transmission occurs over this connection. Also receives power when it is connected to a network that provides Power over Ethernet.

2. **Lanyard**

   Anchors the cover to the camera base.

3. **Microphone switch**

   Switch to enable or disable the built-in microphone. For more information, see *(Optional) Enabling the Microphone* on page 55.

4. **Power connector block**

   Accepts an external DC power connection when Power over Ethernet is not available.

5. **microSD card slots (x2)**

   Accepts up to two microSD cards for onboard storage. Install microSD cards so the metal contacts are facing upward. For more information, see *(Optional) Configuring Onboard Storage* on page 55.

6. **Connection status LED indicator**

   Green LED provides information about device operation. For more information, see *Connection Status LED Indicator* on page 60.

7. **Link LED indicator**

   Amber LED indicates if there is an active connection in the Ethernet port.

8. **Firmware revert button**

   Resets the camera to its factory default settings.

9. **Cable entry hole**

An entry hole for the cables required for camera operation.

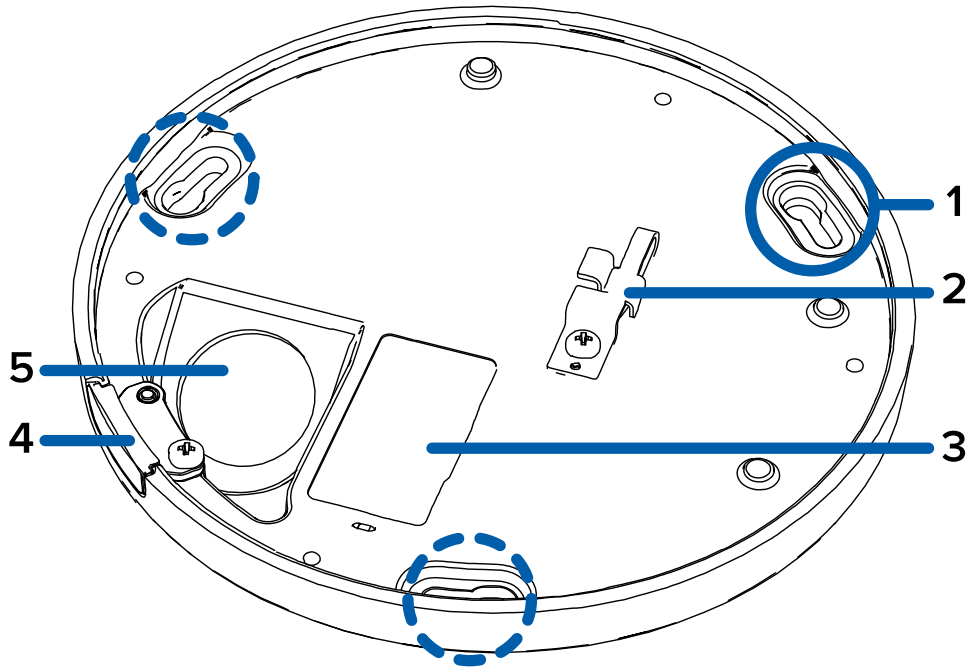
10. **I/O connector block**

    Provides connections to external input/output and audio devices.

11. **Serial number tag**

    Device information, product serial number and part number label.

Bottom View



1. **Mounting slots**

   The mounting points for the camera.

   If using the optional electrical box wall plate adapter or NPT adapter, align the mounting posts with the mounting slots.

   If mounting directly to a wall or ceiling, insert the mountings screws through the slots to fix the camera to the mounting surface.

2. **Lanyard anchor**

   The safety lanyard attaches to the anchor to prevent the camera from falling during installation.

3. **Serial number tag**

   Device information, product serial number and part number label.

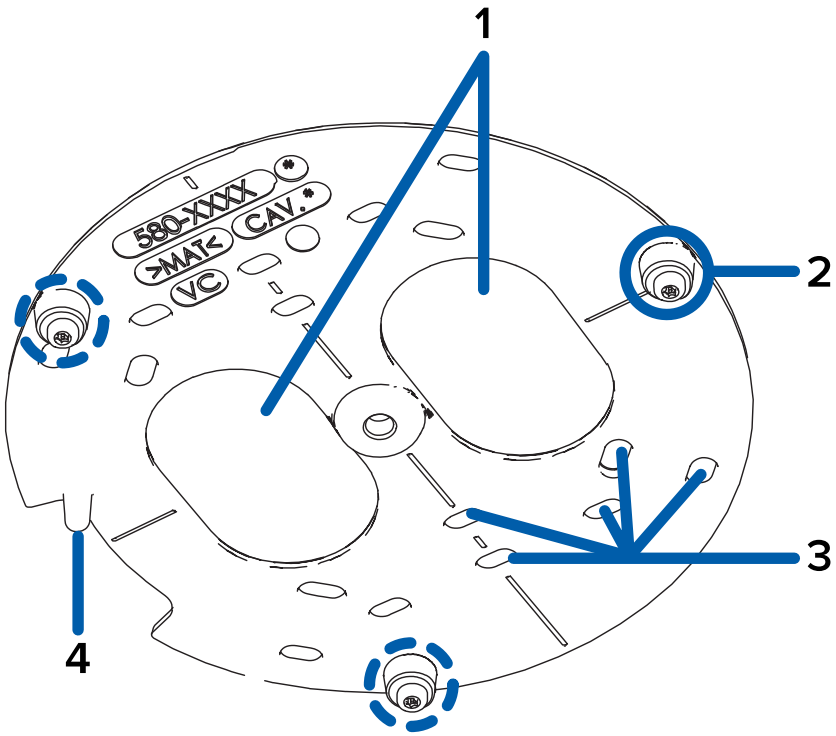
4. **Side conduit tab**

   For installations that require cabling through a side conduit, this tab should be removed and replaced by the conduit shroud.

5. **Cable entry hole**

   An entry hole for the cables required for camera operation.

Wall Plate Adapter View



1. **Cable entry holes**

   Entry holes for the cables required for camera operation.
2. **Camera mounting posts**

   Align the mounting posts on the wall plate adapter to the mounting slots on the camera base.
3. **Mounting holes**

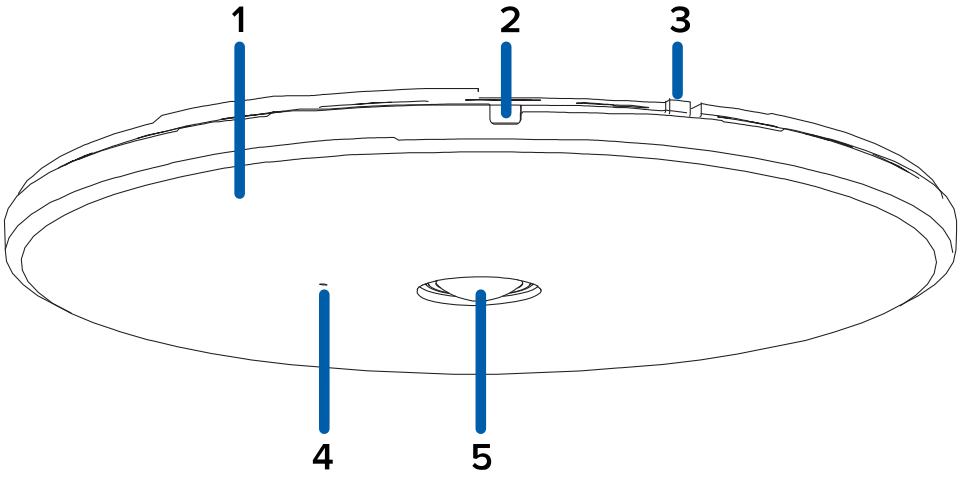
   Holes for mounting the wall plate to the following:

   - UK standard single gang box
   - Octagon gang box
   - 4" gang box
   - Mounting surface
   - US standard single gang box
4. **Orientation post**

   Orientation post that fits properly into the cable entry hole area of the camera base. Post will prevent installation in the incorrect orientation.

H5A-FE-DC — In-Ceiling Mount

Cover View



1. **In-ceiling cover**

   Discreet cover, which can be painted to blend into the mounting surface.
2. **Cover lock**

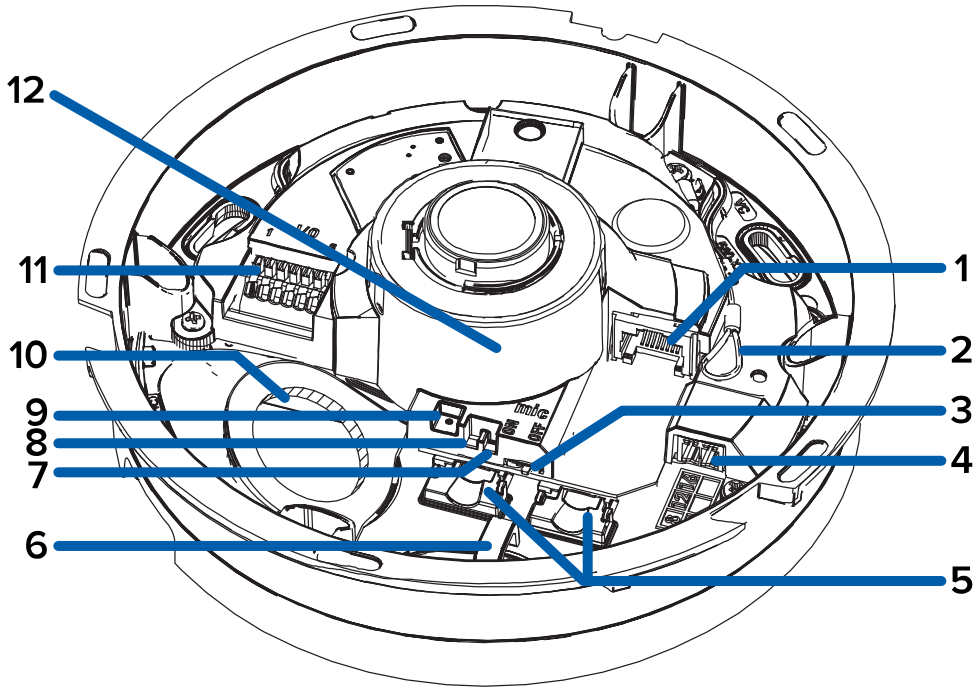
   Locking point for securing the cover to the in-ceiling mount.
3. **Mount lock**

   Locking point that the cover clicks into to secure the cover in place.
4. **Microphone**

   Built-in audio receiver.
5. **Camera lens**

   Fisheye camera lens.

Internal View



1. **Ethernet port**

   Accepts an Ethernet connection to a network. Server communication and image data transmission occurs over this connection. Also receives power when it is connected to a network that provides Power over Ethernet.

2. **Lanyard**

   Anchors the cover to the camera base.

3. **Microphone switch**

   Switch to enable or disable the built-in microphone. For more information, see *(Optional) Enabling the Microphone* on page 55.

4. **Power connector block**

   Accepts an external DC power connection when Power over Ethernet is not available.

5. **microSD card slots (x2)**

   Accepts up to two microSD cards for onboard storage. Install microSD cards so the metal contacts are facing upward. For more information, see *(Optional) Configuring Onboard Storage* on page 55.

6. **Ethernet cable clip**

   Clip to secure the Ethernet cable out of the way of other camera components.

7. **Connection status LED indicator**

   Green LED provides information about device operation. For more information, see *Connection Status LED Indicator* on page 60.

8. **Link LED indicator**

   Amber LED indicates if there is an active connection in the Ethernet port.

9. **Firmware revert button**

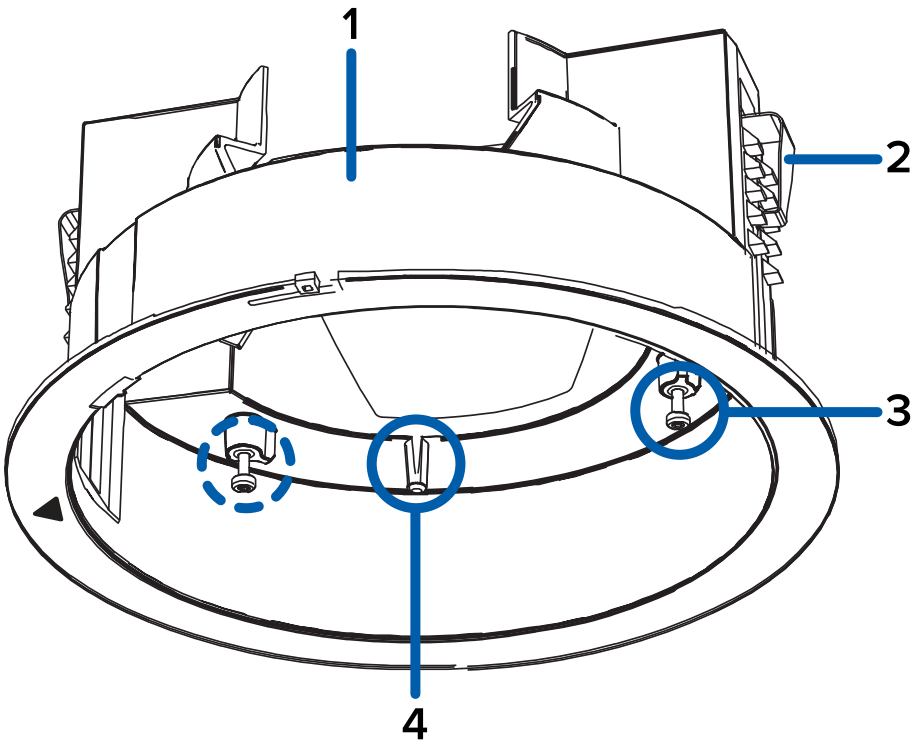
   Resets the camera to its factory default settings.
10. **Cable entry hole**

    An entry hole for the cables required for camera operation.
11. **I/O connector block**

    Provides connections to external input/output and audio devices.
12. **Serial number tag**

    Device information, product serial number and part number label.

In-Ceiling Mount View



1. **In-ceiling mount adapter**

   Used to mount the camera to a ceiling.
2. **Clamps**

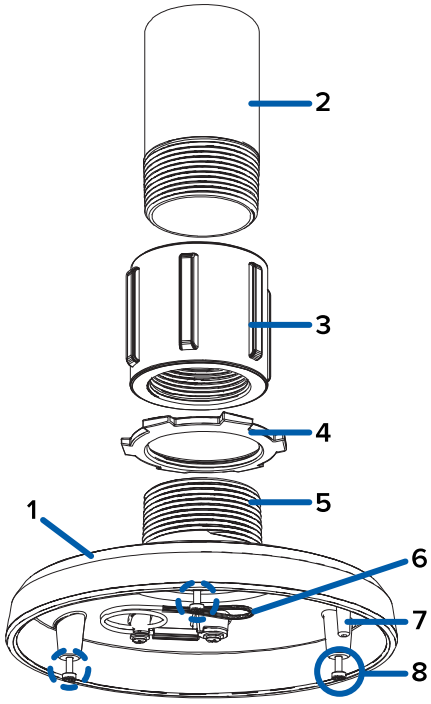
   Manually adjustable clamps for securing the camera to the ceiling.
3. **Camera mounting posts**

   Align the mounting posts on the in-ceiling adapter to the mounting slots on the camera base.
4. **Orientation post**

   Orientation post that fits properly into the cable entry hole area of the camera base. Post will prevent installation in the incorrect orientation.

H5A-FE-MT-NPTA — Pendant Mount

NPT Adapter View



Note: The NPT pipe and NPT-female to NPT-female adapter are not supplied by Avigilon and should be sourced separately. However, if you are using the NPT adapter (H5A-FE-MT-NPTA1), the lock nut is included.

1. **Pendant NPT adapter**

   Camera pendant mount adapter for NPT pipes and wall arm installations.
2. **NPT pipe**

   NPT pipe used for a pendant mount with the NPT adapter.
3. **1-1/2” NPT-female to NPT-female adapter**

   An adapter for attaching the pendant NPT mount to an NPT pipe or wall arm.
4. **Lock nut**

   Lock nut for securing the pendant NPT mount to an NPT pipe or wall arm.
5. **1-1/2” NPT thread mount**

   Standard female 1-1/2” NPT thread mount for mounting the camera to an NPT pipe or wall arm.
6. **Lanyard**

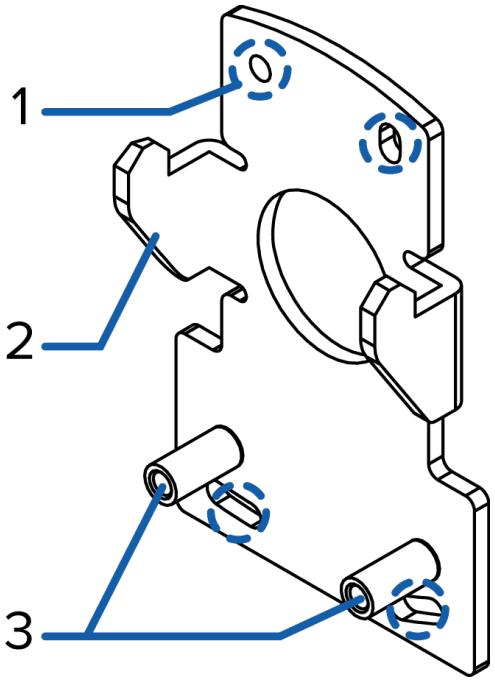
   Connects to the lanyard anchor on the camera base.
7. **Orientation post**

Orientation post that fits properly into the cable entry hole area of the camera base. Post will prevent installation in the incorrect orientation.

8. **Camera mounting posts**

   Align the mounting posts on the pendant NPT adapter to the mounting slots on the camera base.

Pendant Wall Mount Bracket View



1. **Bracket mounting holes**

   Points for mounting the pendant wall mount bracket to a mounting surface.

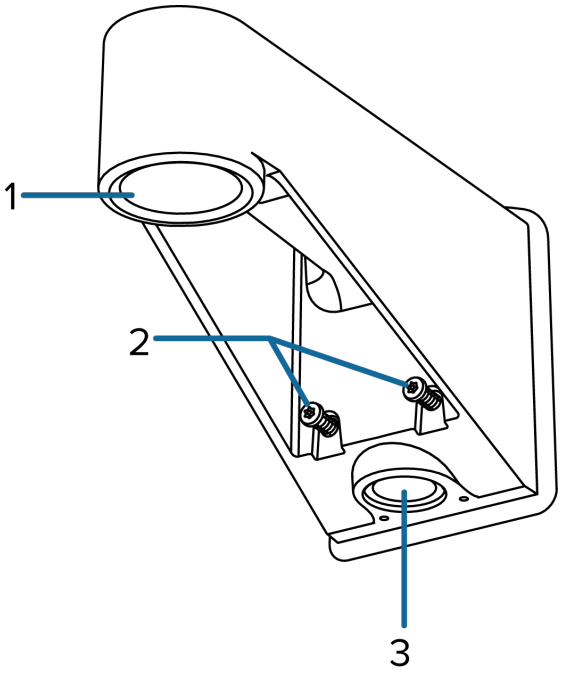
2. **Mounting tabs**

   Tabs for placing the pendant wall mount onto the bracket.

3. **Mounting points**

   Points for securing the pendant wall mount to the mounting bracket.

Pendant Wall Mount View



1. **1-1/2” NPS thread mount**

   Female NPS thread mount for pendant camera installations.
2. **Pendant wall mount screws**

   Screws for securing the pendant wall mount to the mounting bracket.
3. **NPT pipe entry hole**

   A 3/4” NPT threaded hole for NPT pipe conduits.

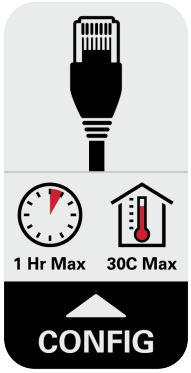
Preparing the Installation

Pre-Deployment In-Box Configuration

The camera comes equipped with an RJ45 configuration cable pre-installed for users that want to configure camera settings before installing the camera. The RJ45 connector on the configuration cable is accessible through the small flap on the side of the camera box for easy configuration before unpacking the camera.

Note: We recommend that you do not exceed 3 hours of leaving your camera connected during in-box configuration with ambient temperatures between 20 °C – 25 °C (68 °F – 77 °F).

1. Locate and open the flap on the side of the camera packaging. Look for the *Config* label.

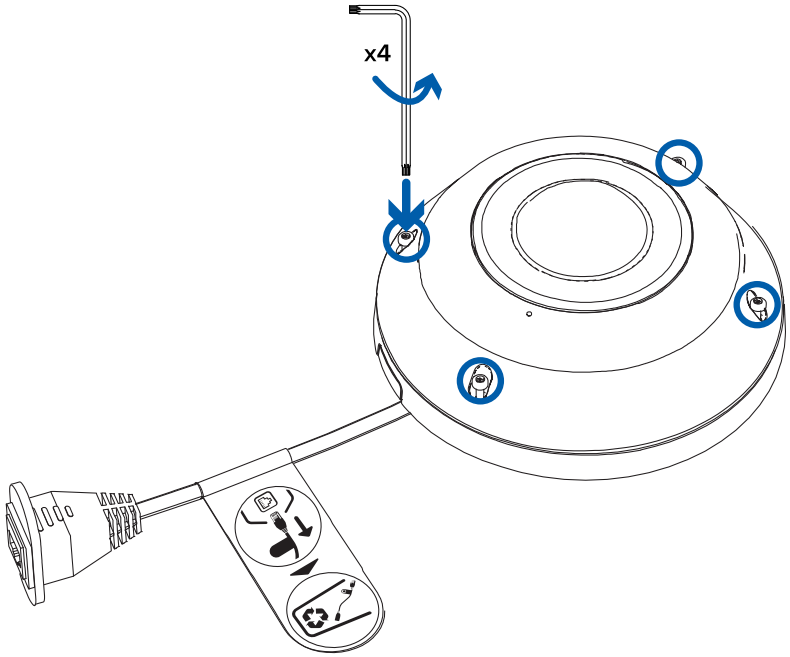


2. Connect a network cable to the RJ45 plug on the configuration cable. The network cable must provide PoE. IEEE 802.3af Class 3, to power the camera during configuration.
3. Connect to the camera using an ACC Client, the Camera Configuration Tool, or the camera's web browser interface to configure the camera's settings. For more information about connecting to the camera, see *Assigning an IP Address* on page 54, and *Accessing the Live Video Stream* on page 55.
4. Once you have finished making configuration changes, unplug the network cable.

CAUTION — Be careful when handling the camera after configuring it inside the packaging. The camera may be hot when handling it or removing from the packaging immediately after in-box configuration.

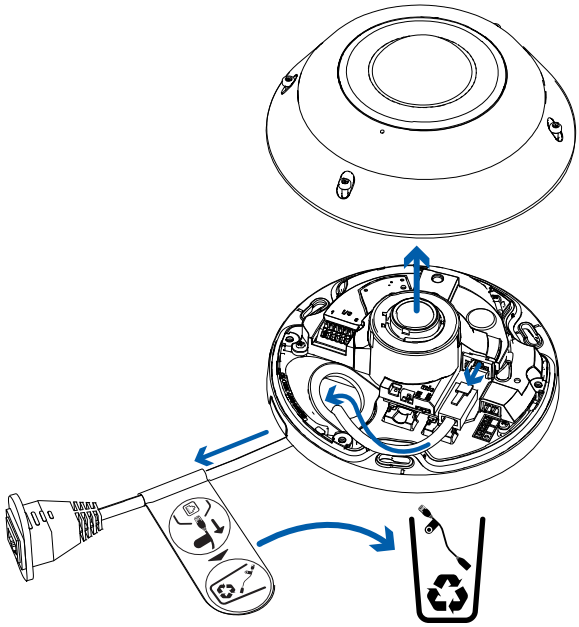
Removing the Fisheye Cover

1. Remove the cover by loosening the screws that fix the cover to the base. Use the provided star-shaped screwdriver to loosen the screws.



Note: Be careful not to scratch or touch the dome bubble. The resulting marks or fingerprints may affect the overall image quality. Keep the protective covers on the outside of the dome bubble until the installation is complete.

2. Lift the cover off the camera base and set it aside.
3. Unplug and remove the RJ45 in-box configuration cable that comes pre-installed on the camera.



Mounting and Aiming Video Analytics Cameras

When installing an Avigilon H5A Fisheye video analytics camera, follow the listed mounting and aiming recommendations to maximize the camera's analytics capabilities:

- The camera should be mounted on a ceiling and look down on the scene.

  Important: Video analytics are not currently supported when the H5A Fisheye camera is mounted on a wall and looking horizontally at the scene.

- We recommend installing the camera above 2.74 m (9 feet).
- The camera should be installed parallel to the floor.
- The camera should be mounted to a stable surface to minimize the physical movement of the camera after installation.

For more details, see *Designing a Site for Video Analytics*. The document is available on the Avigilon website.

Preparing the Cables

Before you connect the cables to the camera, you must prepare the cables for installation.

If the camera is installed outdoors, it is important that the cables be insulated against the weather. Provided

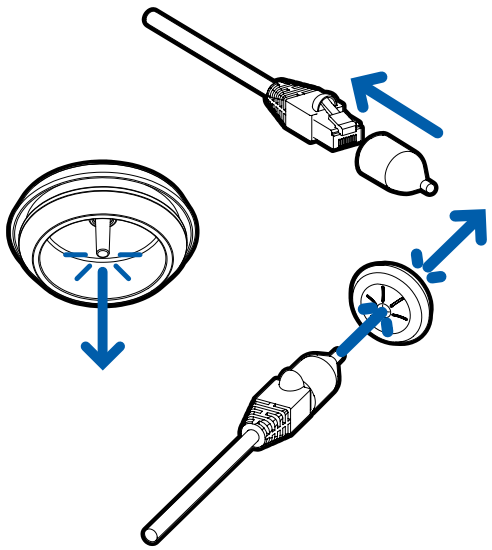
with the camera are two rubber grommets for waterproofing the required cables:

- Use the single-hole rubber grommet for installations using PoE power and require only the Ethernet cable. For more information, see *Inserting an Ethernet Cable through the Single-Hole Grommet* below.
- Use the 3-hole rubber grommet for installations that require more than one cable. For more information, see *Inserting Cables through the 3-Hole Grommet* below.

Inserting an Ethernet Cable through the Single-Hole Grommet

You must pull the required Ethernet cable through the single-hole sealing grommet included with the camera.

1. Remove the sealing grommet from the accessory kit.
2. Pull the tab on the grommet to open a hole for the Ethernet cable.
3. Push an Ethernet cable through the grommet by one of the following methods:
    a. If the Ethernet cable is uncrimped, push the cable through the grommet.
    b. If the Ethernet cable is already crimped, place the grommet piercing cap on the Ethernet connector then push the cable through the grommet.



    Ensure that the orientation of the cable and grommet matches the one shown in the image.
    c.

> **Note:** If you require multiple cables, see *Inserting Cables through the 3-Hole Grommet* below to follow the 3-hole grommet procedure.

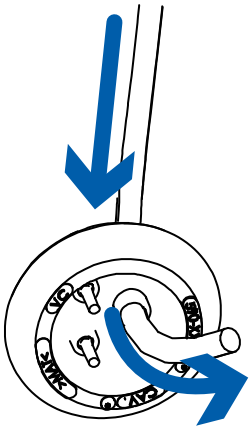
Inserting Cables through the 3-Hole Grommet

> **Note:** The Ethernet cable must be uncrimped to perform this procedure.

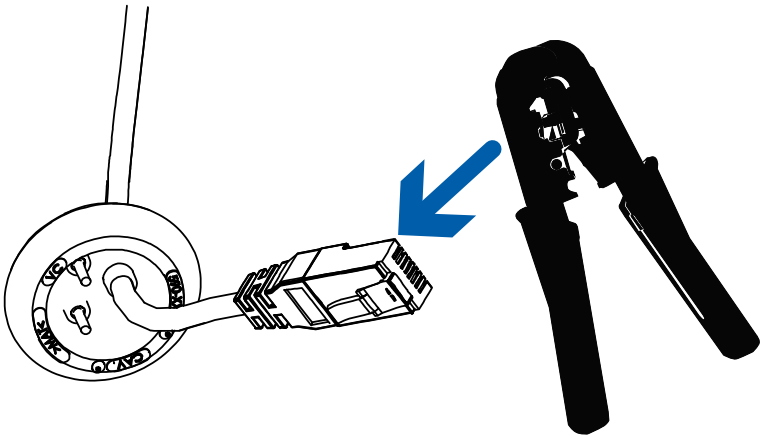
The camera includes an I/O terminal for input/output and audio connections, an external power connector, and an Ethernet connector. If you are connecting 2 or more cables to the camera, follow this procedure for using the 3-hole sealing grommet to insulate the cables from the weather.

1. Remove the sealing grommet from the accessory kit.
2. Thread the Ethernet cable into the largest hole in the 3-hole rubber grommet.
    a. Push the Ethernet cable through the open hole in the rubber grommet.

    Ensure the orientation of the cable and grommet matches the following image.



    b. Crimp the connector onto the Ethernet cable.



3. If you are using other cables, pull one or both of the tabs on the grommet to open the secondary holes for the additional cables.
4. Thread the additional cables through the secondary grommet holes.

    Threading thin cables through the secondary holes may require the use of silicone sealant at the opening to ensure weather proofing.
5. Do not connect the cables to the camera until indicated in the installation procedure.

Surface Mount Installation

Required Tools and Materials

The following tools are required to complete the installation but are not included in the package:

- Appropriate tool for cutting the cable access hole
- Small slotted screwdriver with 5/64” or 2 mm blade width — for connecting power when not using Power over Ethernet
- No. 2 Phillips screwdriver — for attaching camera to an electrical box or mounting surface

Camera Package Contents

Ensure the surface mounted camera package contains the following:

- Avigilon H5A Fisheye Camera
- Camera Base Mounting Template sticker
- Optional wall plate adapter — for electrical box installations.
- Star-shaped screwdriver
- Power terminal block
- Optional conduit shroud — for side-entry conduit cabling.
- 3x screws and anchors — for securing the camera to the mounting surface.
- 3-hole rubber grommet — for multi-cable installations.
- Single-hole rubber grommet — for installations with a single Ethernet/PoE cable.
- RJ45 grommet piercing cap — for use with single-hole rubber grommet only

Installation Steps

Complete the following sections to install the device.

Mounting in the Correct Orientation

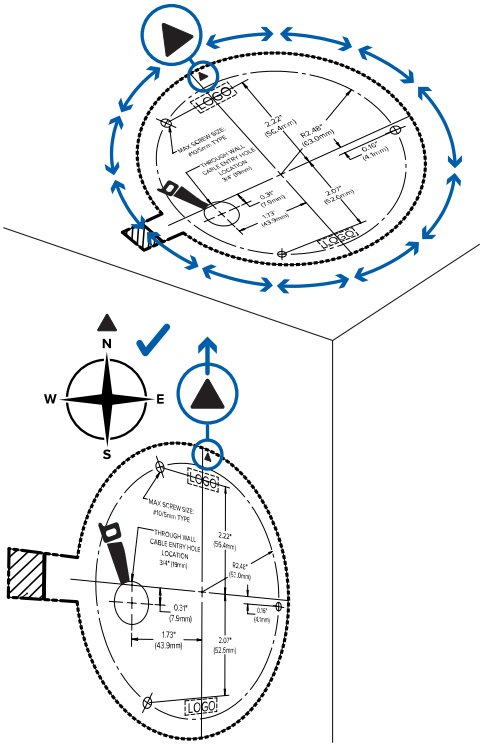
The H5A Fisheye camera provides 360° views of large areas. Because of the 360° view, it is not obvious which part of the camera should be facing up when installed on a wall. To help with this, the mounting template and the camera body have an up orientation arrow printed on them to signal which end should be facing up.

When installing the camera on a ceiling, the orientation arrow can go in any direction.

> **Tip:** Before removing the mounting template after cutting or drilling the required holes, mark or

otherwise make note of the direction the orientation arrow is facing. This will help you to align the camera body in the same orientation when installing.

When installing the camera to a wall, make sure that the orientation arrow is facing up, as shown in the diagram below.

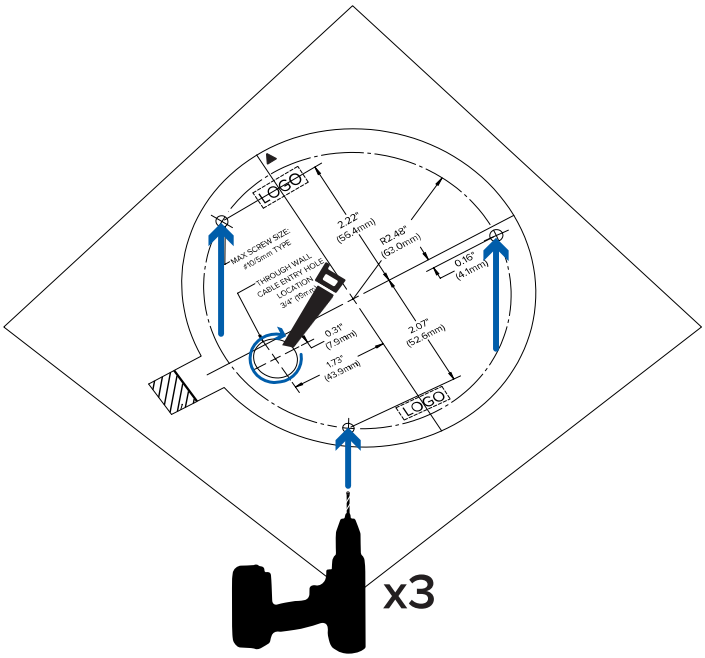


Mounting the Camera to a Ceiling or Wall

Perform the following steps if the required cables will be coming from inside the mounting surface and the camera will be mounted immediately over the cable hole. Use this procedure on surfaces that can be easily drilled into, and when the cables should be kept out of sight.

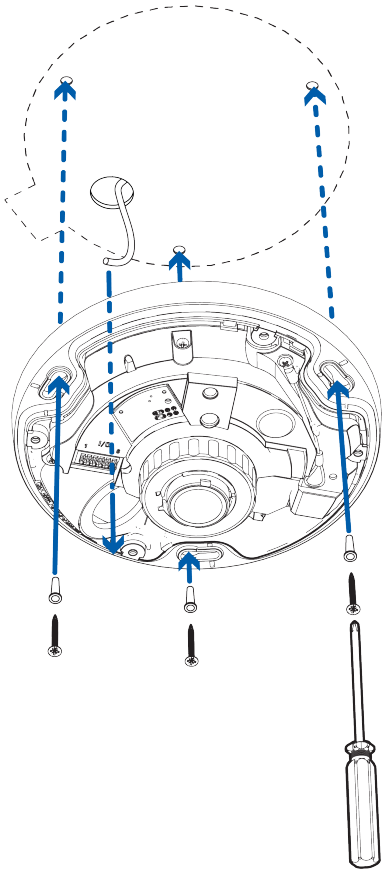
1. Using the Surface Mounting Template, drill 3 pilot holes into the mounting surface for the mounting screws.

   If you are mounting the camera to a wall, make sure the up orientation arrow is at the top, or the video image will be rotated. For more information, see *Mounting in the Correct Orientation* on page 16.

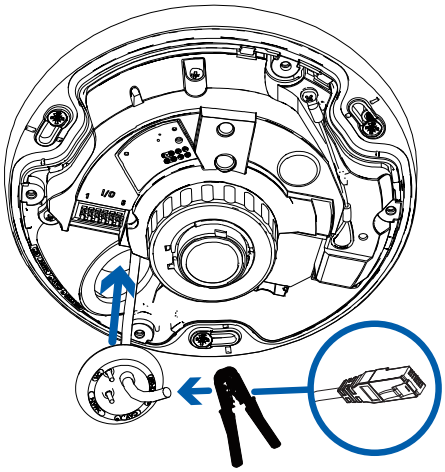


2. Hammer the supplied plastic anchors into the holes.
3. Drill the cable entry hole into the mounting surface.
4. Pull the required cables through the mounting surface and through the cable entry hole in the camera base.

5. Align the up orientation arrow on the camera base with the arrow on the mounting template. Align the mounting slots on the camera base to the drilled pilot holes and use the provided self-tapping screws to secure the camera to the mounting surface.

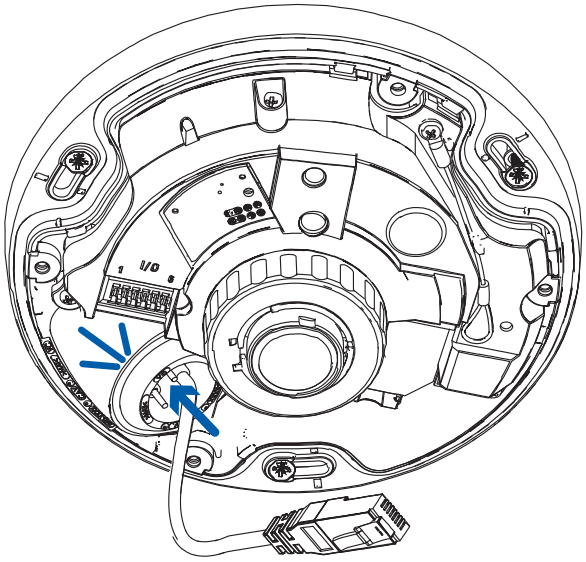


6. Pull the required cables through the rubber sealing grommet. For more information, see *Preparing the Cables* on page 13.



7. Push the rubber sealing grommet with the required cables into the cable entry hole on the camera base. The thread around the grommet should line up with the cable entry hole.

   The rubber grommet should be pressed firmly into the cable entry hole to create a seal.

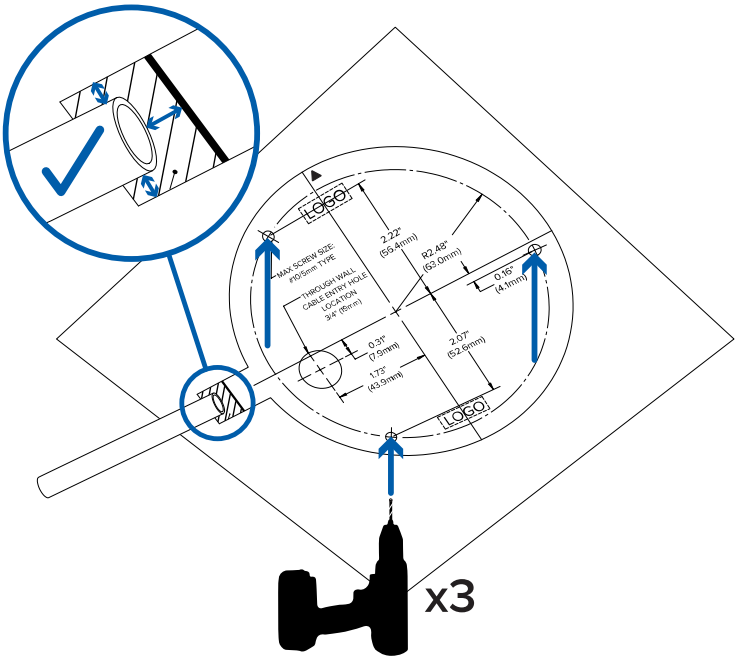


Mounting the Camera Using the Side Conduit Entry Hole

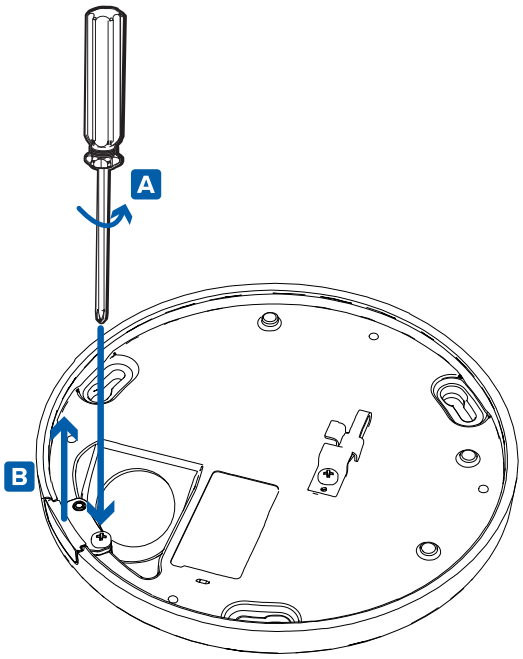
Perform the following steps if the required cables will be run along the mounting surface. Use this procedure if the mounting surface is difficult to drill into, or if the cables must be routed outside of the mounting surface.

1. Using the Surface Mounting Template, drill 3 pilot holes into the mounting surface for the mounting screws.

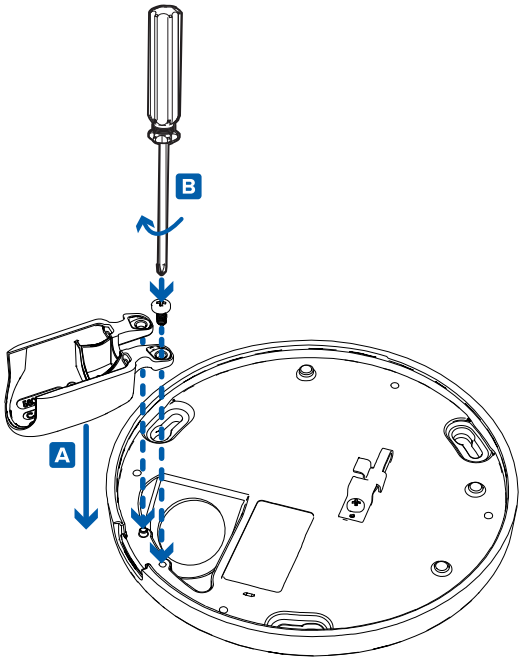
   If you are mounting the camera to a wall, make sure the up orientation arrow is at the top, or the video image will be rotated. For more information, see *Mounting in the Correct Orientation* on page 16.



2. Align the conduit for the cables so that the end of the conduit falls inside the conduit landing area of the mounting template.
3. Hammer the supplied plastic anchors into the holes.
4. Arrange and feed the required cables through the conduit.
5. Loosen the screw holding the cable entry tab on the side of the camera base. Remove the cable entry tab.

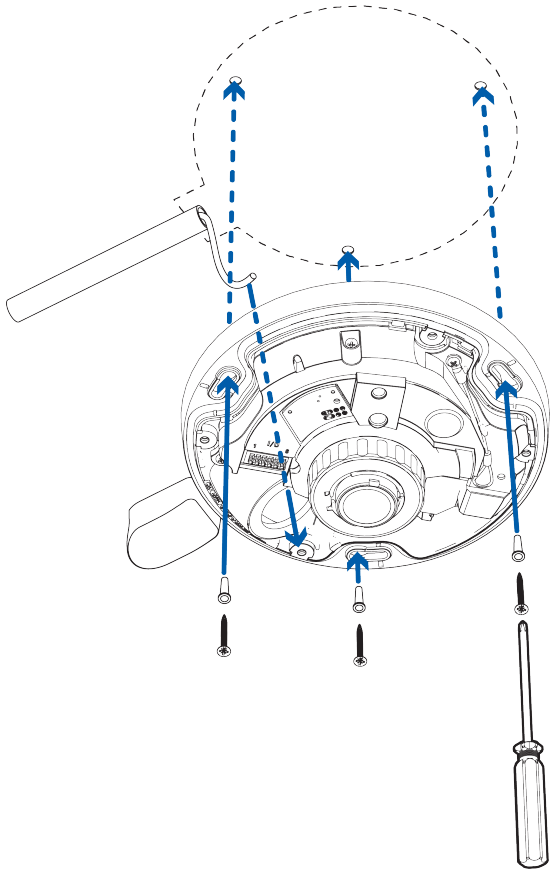


6. Use the same screw to install the optional conduit shroud to the cable entry tab position. The conduit shroud is compatible with up to 1/2" conduits.



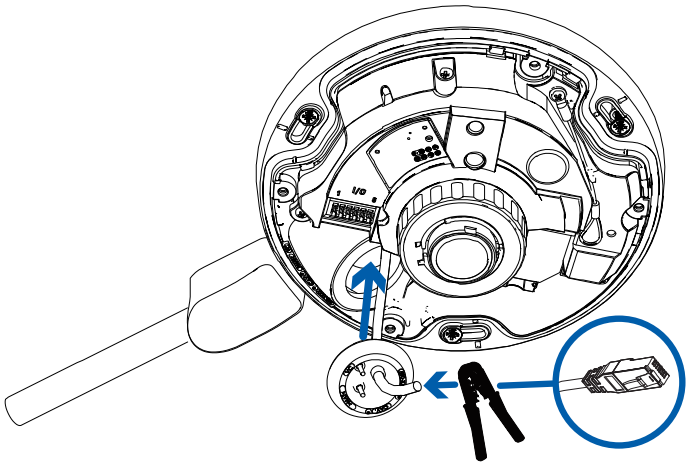
7. Pull the required cables through the cable entry hole on the camera base.

8. Align the up orientation arrow on the camera base with the arrow on the mounting template. Align the mounting slots on the camera base to the drilled pilot holes and use the provided self-tapping screws to secure the camera to the mounting surface.



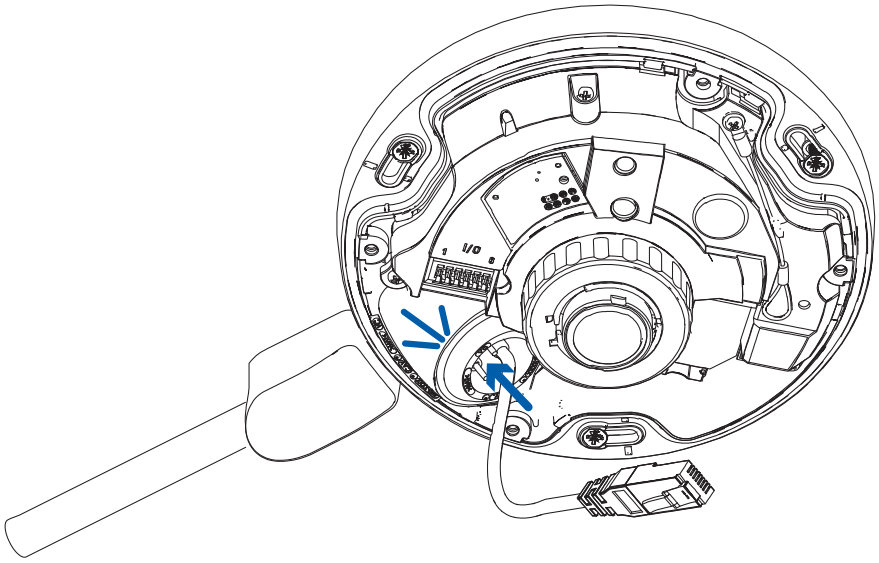
> **Tip:** Make sure the cables run through the space provided by the conduit shroud and that they are not pinched.

9. Pull the required cables through the rubber sealing grommet. For more information, see *Preparing the Cables* on page 13.



10. Push the rubber sealing grommet with the required cables into the cable entry hole on the camera base. The thread around the grommet should line up with the cable entry hole.

    The rubber grommet should be pressed firmly into the cable entry hole to create a seal.



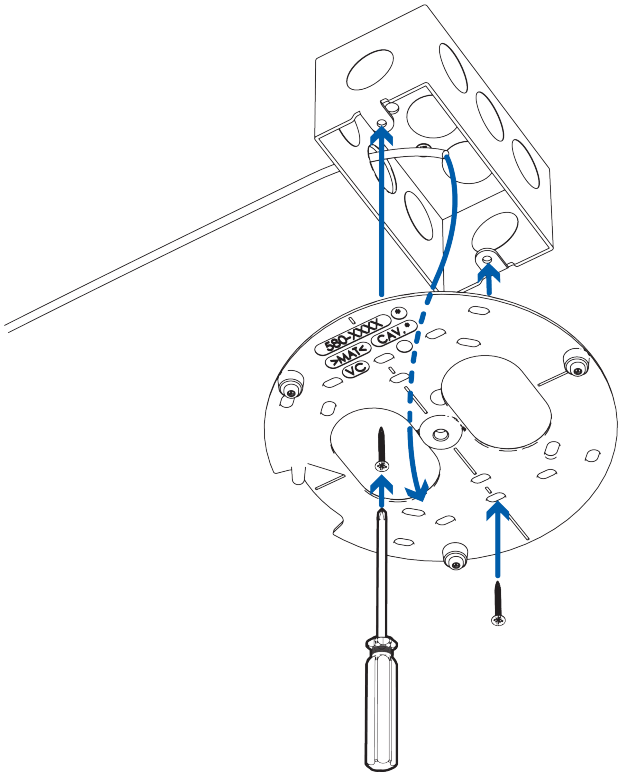
Mounting the Camera to an Electrical Box

Perform the following steps if the required electrical components and cables must be contained in an electrical gang box. To mount the camera to an electrical gang box, you must use the provided wall plate adapter.

1. Install the electrical gang box as required.
2. Align the wall plate adapter mounting holes to the mounting points on the electrical gang box.

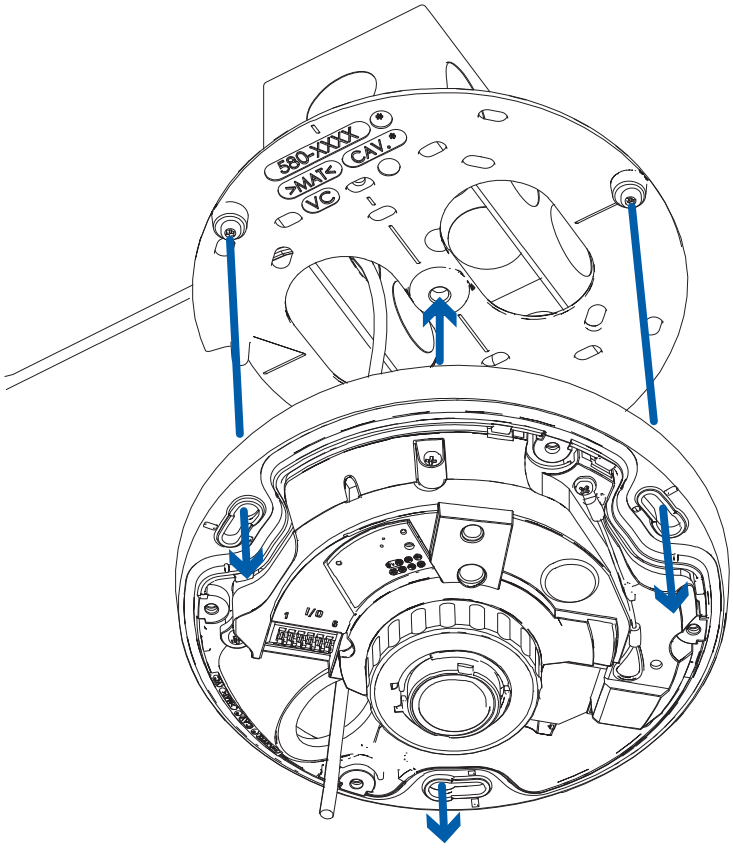
   If you are mounting the camera to a wall, make sure the up orientation arrow on the wall plate is at the top, or the video image will be rotated. For more information, see *Mounting in the Correct Orientation* on page 16.

3. Use the provided machine screws to secure the wall plate adapter to the electrical gang box.

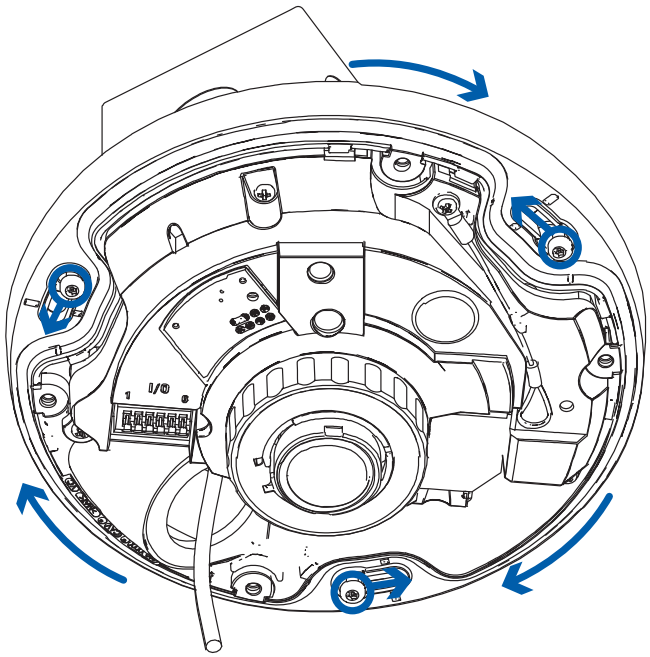


4. Pull the required cables through the electrcal box and a cable entry hole on the wall plate. Then feed the cables through the cable entry hole on the camera base.

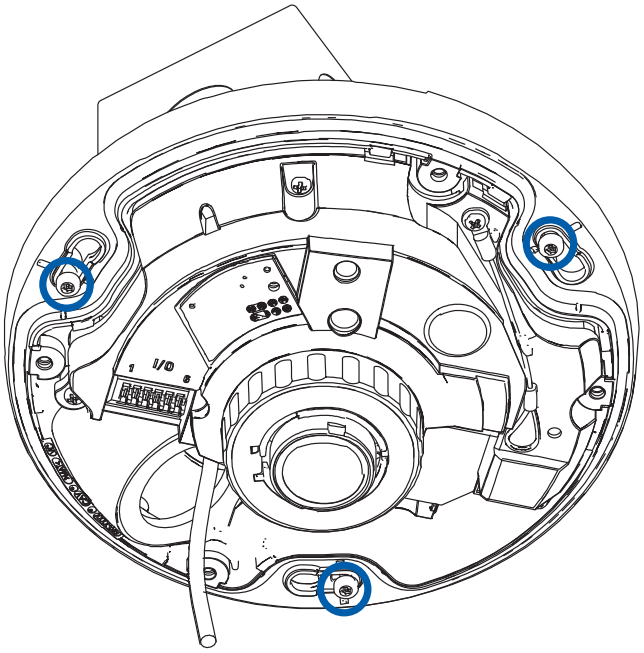
5. Align the up orientation arrow on the camera base with the arrow on the wall plate adapter. Align the mounting slots on the camera base to the mounting posts on the wall plate adapter and push the camera base onto the adapter.



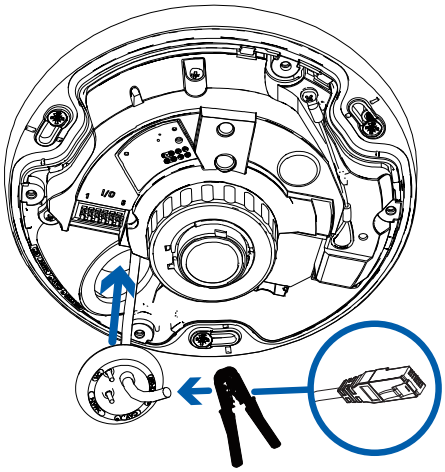
6. Twist the camera base clockwise until the posts come to the right end of the mounting slots.



7. Tighten the mounting posts to fix the camera base into place.

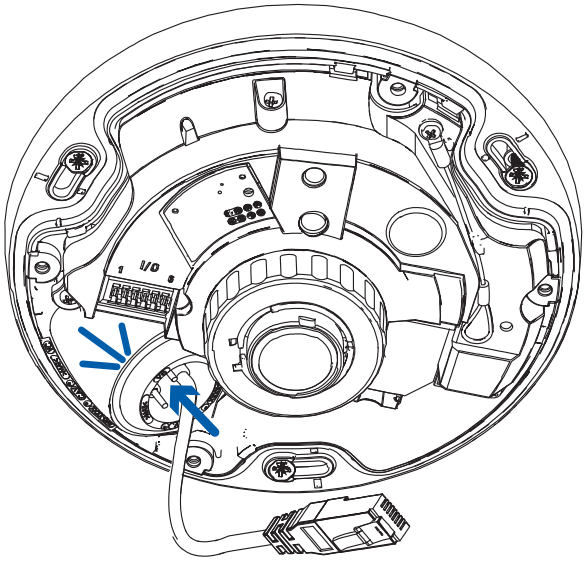


8. Pull the required cables through the rubber sealing grommet. For more information, see *Preparing the Cables* on page 13.



9. Push the rubber sealing grommet with the required cables into the cable entry hole on the camera base. The thread around the grommet should line up with the cable entry hole.

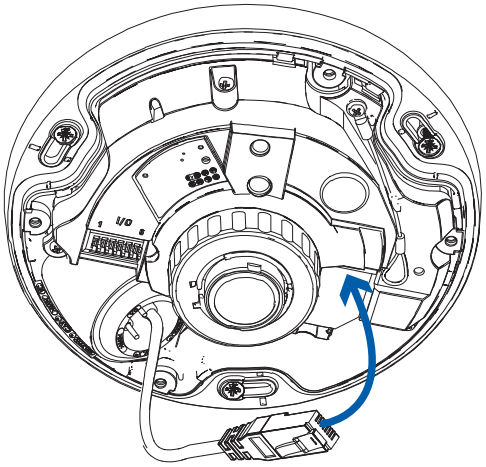
   The rubber grommet should be pressed firmly into the cable entry hole to create a seal.



Connecting Cables

Refer to the diagrams in the **Overview section** for the location of the different connectors and status LEDs on the camera base.

1. Connect a network cable to the camera's Ethernet port (RJ45 connector).



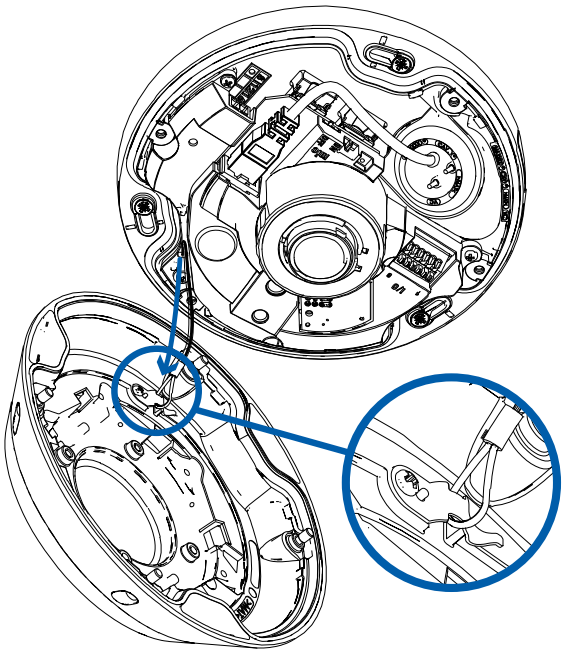
2. If the camera is connected to any external devices, connect the I/O or audio cables to the I/O connector block. For more information, see *Connecting to External Audio and I/O Devices* on page 58.
3. Power the camera using one of the following methods:
    - Power over Ethernet (PoE) Class 3 — If PoE is available, the LEDs will turn on.
        - For cameras with IR LEDs, PoE+, IEEE 802.3at Class 4 power is required for maximum LED power.
        - PoE, IEEE 802.3af Class 3 is sufficient to power camera models without IR LEDs. IR-model cameras will have reduced LED power with IEEE 802.3af Class 3 PoE.
    - External Power — Connect an external 12 V DC power source to the power connector block. For more information, see *Connecting External Power* on page 58.

    The status LEDs turn on when the camera receives power.

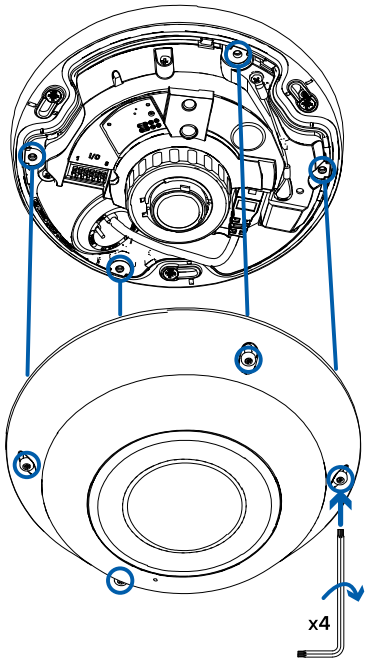
Installing the Fisheye Cover

Be careful not to touch or scratch the dome bubble. Any marks or fingerprints on the dome bubble may cause unwanted reflections from the IR illuminators.

1. Attach the lanyard to the cover.



2. Attach the cover to the base and tighten the screws with the star-shaped screwdriver.



3. Remove the plastic cover on the dome bubble.

In-Ceiling Mount Installation

Required Tools and Materials

The following tools are required to complete the installation but are not included in the package:

- Appropriate tool for cutting the entry hole in the mounting surface
- Small slotted screwdriver with 5/64” or 2 mm blade width — for connecting power when not using Power over Ethernet

Camera Package Contents

Ensure the in-ceiling mounted camera package contains the following:

- Avigilon H5A Fisheye In-Ceiling Camera
- In-ceiling mounting adapter
- In-ceiling camera cover
- Star-shaped screwdriver
- Power terminal block
- 3-hole rubber grommet — for multi-cable installations.
- Single-hole rubber grommet — for installations with a single Ethernet/PoE cable.
- RJ45 grommet piercing cap — for use with single-hole rubber grommet only

Installation Steps

Complete the following sections to install the device.

Mounting in the Correct Orientation

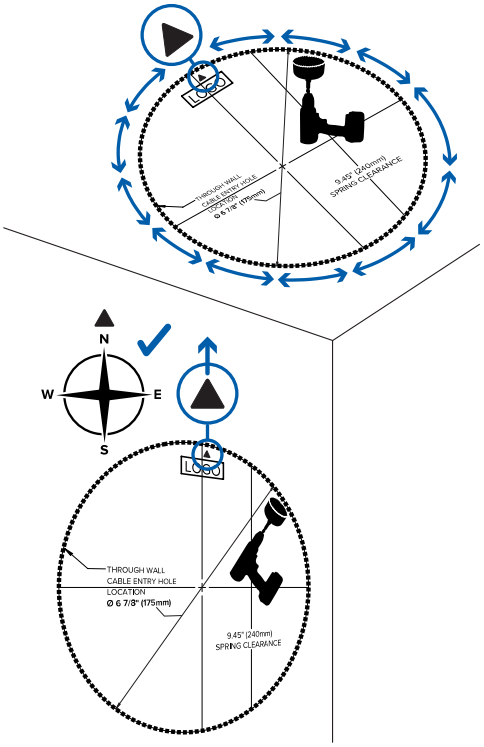
The H5A Fisheye camera provides 360° views of large areas. Because of the 360° view, it is not obvious which part of the camera should be facing up when installed on a wall. To help with this, the mounting template and the camera body have an up orientation arrow printed on them to signal which end should be facing up.

When installing the camera on a ceiling, the orientation arrow can go in any direction.

> **Tip:** Before removing the mounting template after cutting or drilling the required holes, mark or otherwise make note of the direction the orientation arrow is facing. This will help you to align the camera body in the same orientation when installing.

When installing the camera to a wall, make sure that the orientation arrow is facing up, as shown in the

diagram below.



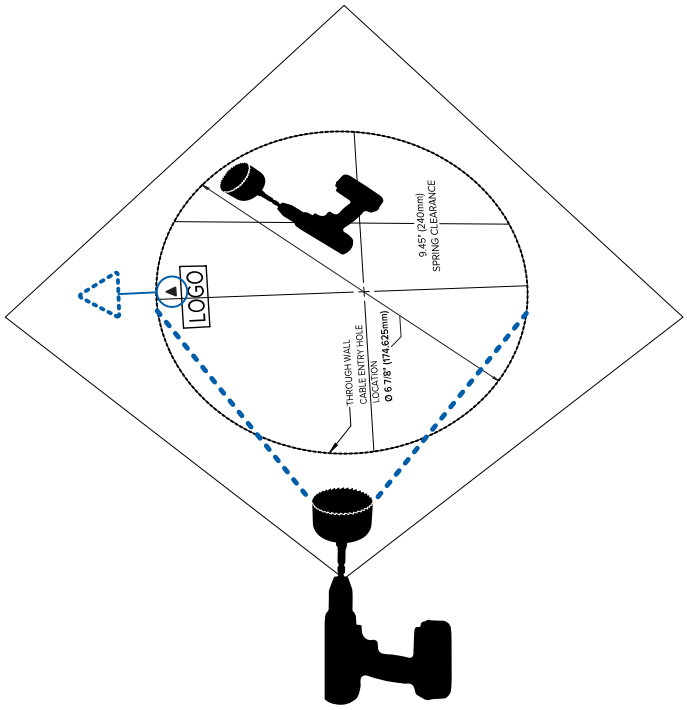
Using the In-Ceiling Mounting Adapter

If the camera needs to be installed into a ceiling, install the in-ceiling mounting adapter into the ceiling first.

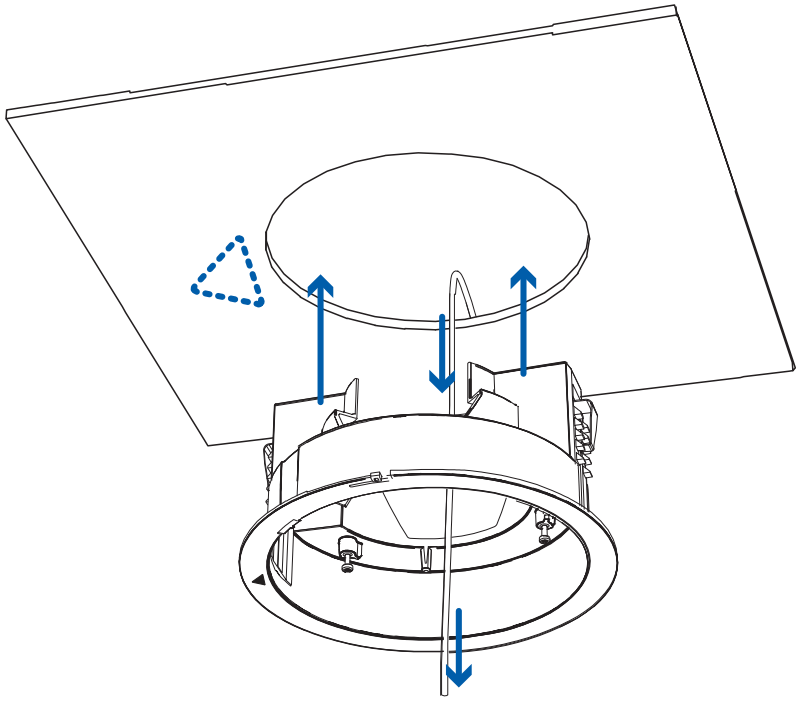
Note: The maximum supported ceiling thickness is 32 mm (1.25").

1. Use the in-ceiling mounting template to cut an entry hole for the camera into the ceiling. Mark or otherwise make note of the position of the orientation arrow so that the other parts can be mounted in the same orientation.

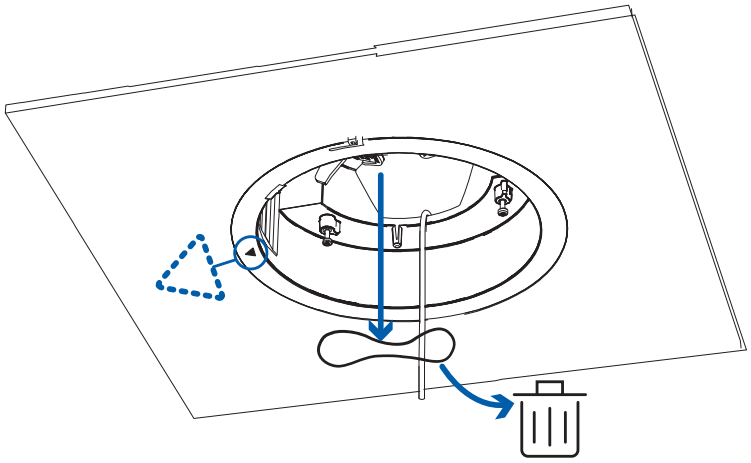
   If you are mounting the camera to a wall, make sure the up orientation arrow is at the top, or the video image will be rotated. For more information, see *Mounting in the Correct Orientation* on page 31.



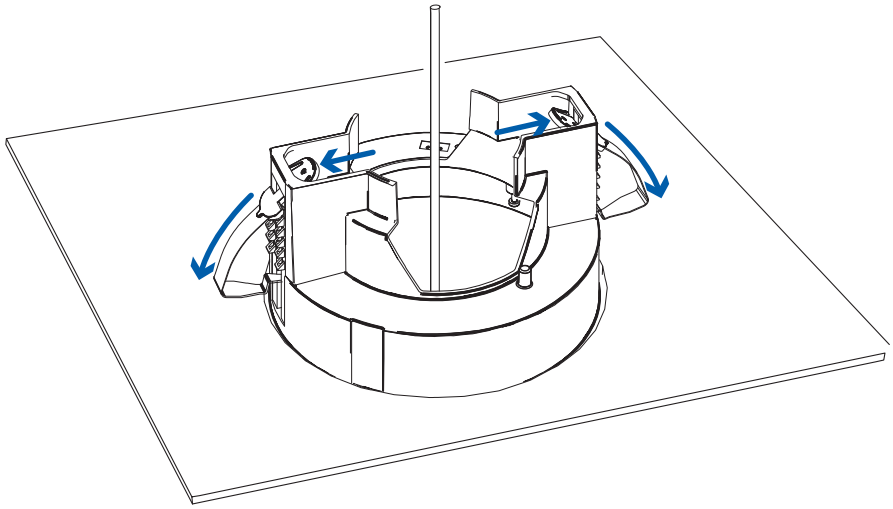
2. Insert the in-ceiling mounting adapter into the entry hole then pull the required cables through the adapter. Ensure the orientation arrow on the adapter is facing the same direction as it did on the mounting template.



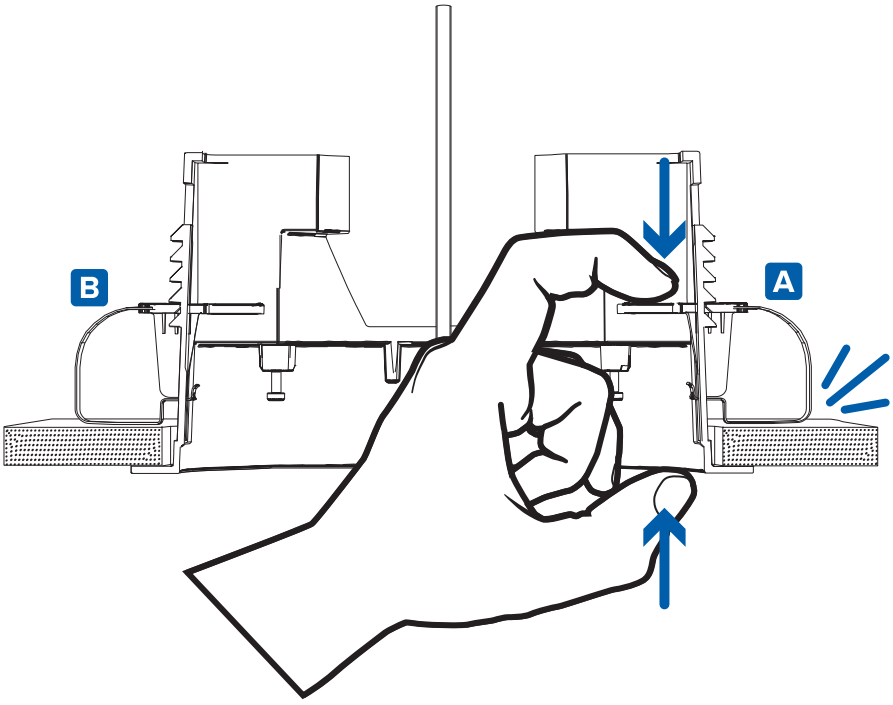
3. Pull off the elastic clamp retainer holding the clamps in place.



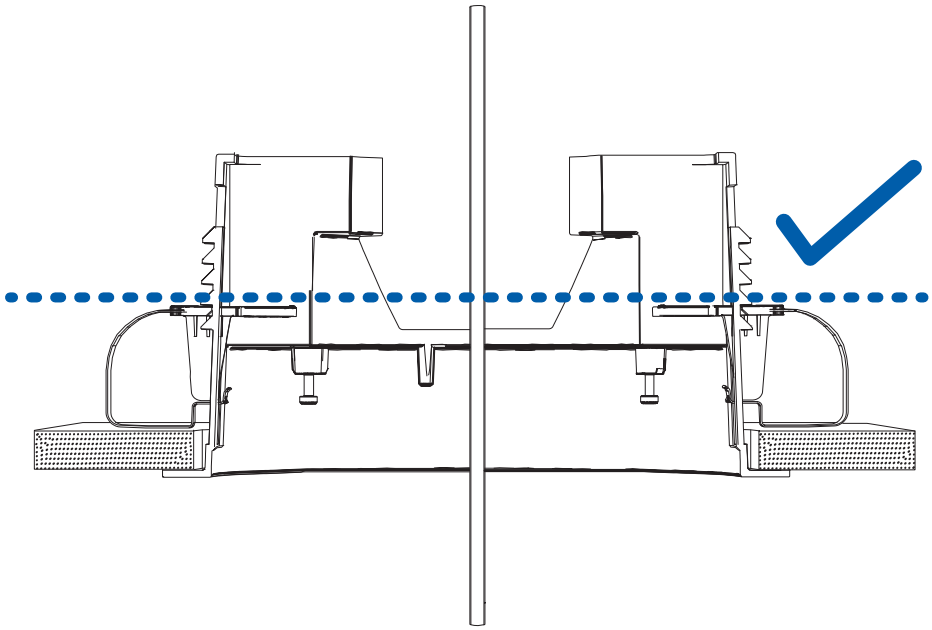
4. Push the orange clamp handles up so that the metal arms extend outside the mounting adapter.



5. With your thumb on the outside edge of the mounting adapter and your forefinger on one of the orange clamp handles, pinch the clamp down until the clamp is secured.



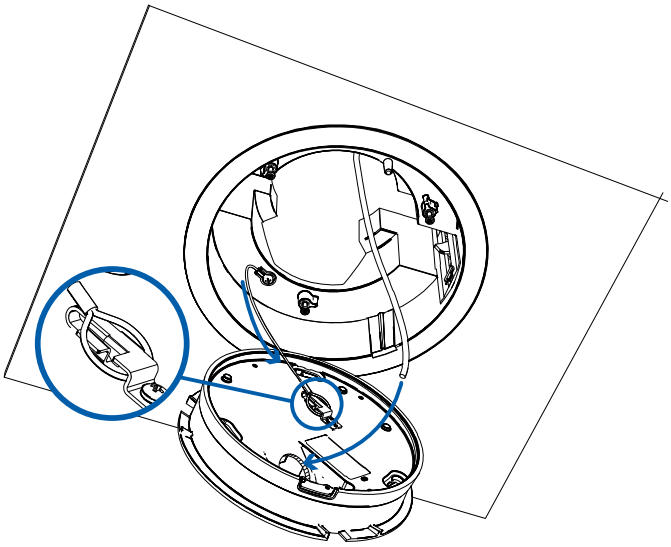
6. Repeat the previous step on the other side. Make sure both clamps are level and horizontal.



Installing the Camera Base into the Mounting Adapter

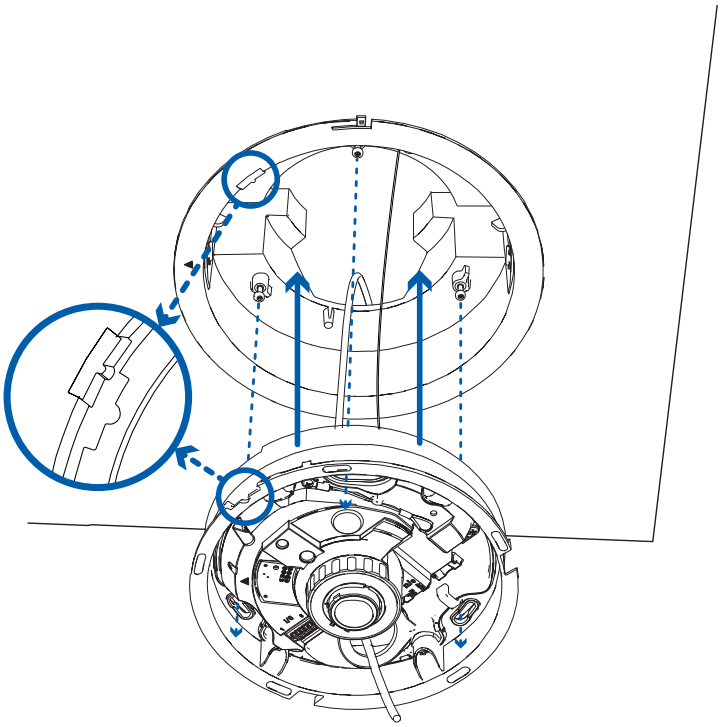
After you install the mounting adapter, mount the camera base to the adapter.

1. Attach the lanyard on the mounting adapter to the anchor on the camera base.

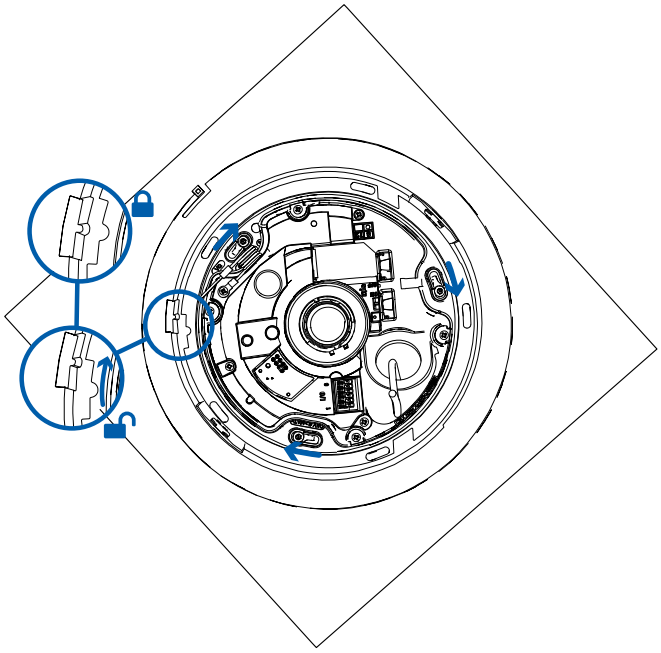


2. Pull the required cables through the cable entry hole on the camera base.
3. Align the up orientation arrow on the camera base with the arrow on the in-ceiling adapter. Align the mounting slots on the camera base to the mounting posts on the in-ceiling adapter and push the

camera base onto the adapter.

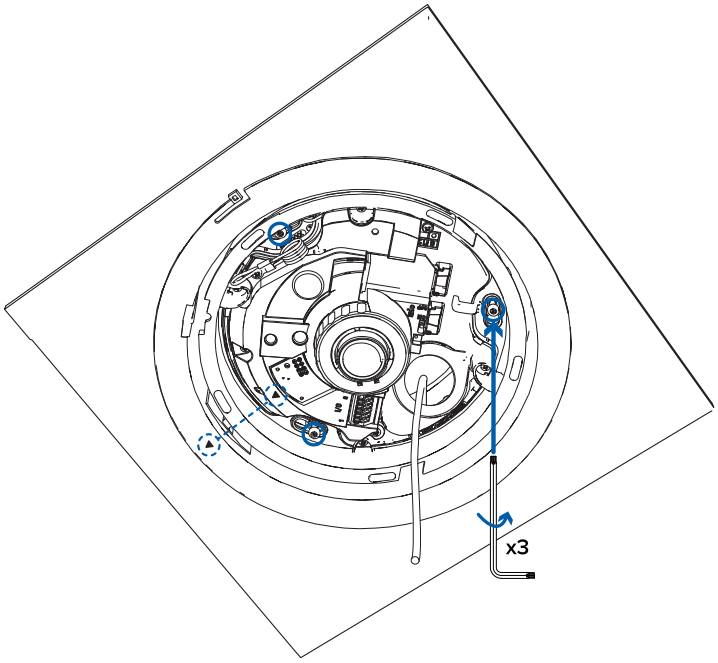


4. Twist the camera base clockwise until the posts come to the right end of the mounting slots and the alignment feature is in the locked position.

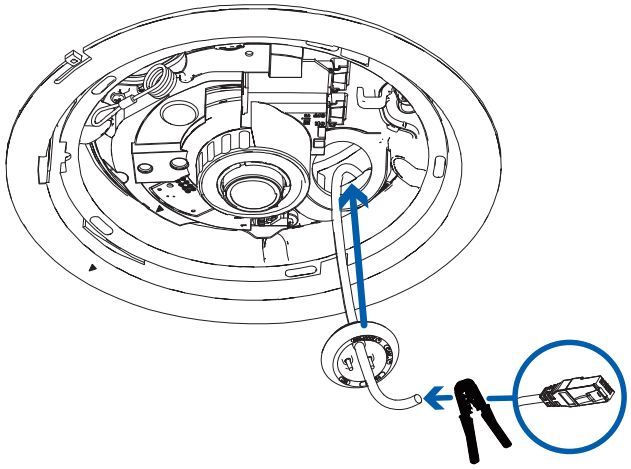


5. Tighten the mounting posts to fix the camera base into place. Ensure that the orientation arrows on the

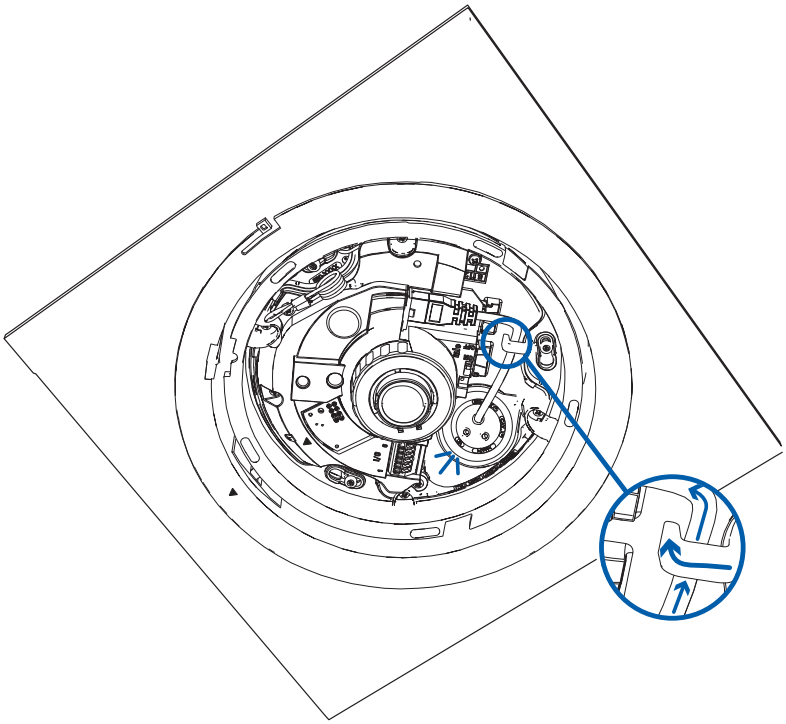
in-ceiling adapter and camera base point in the same direction.



6. Pull the required cables through the rubber sealing grommet. For more information, see *Preparing the Cables* on page 13.



7. Install the grommet into the cable entry hole on the camera base. Make sure the grommet flange is securely seated on the inside and outside of the cable entry hole.

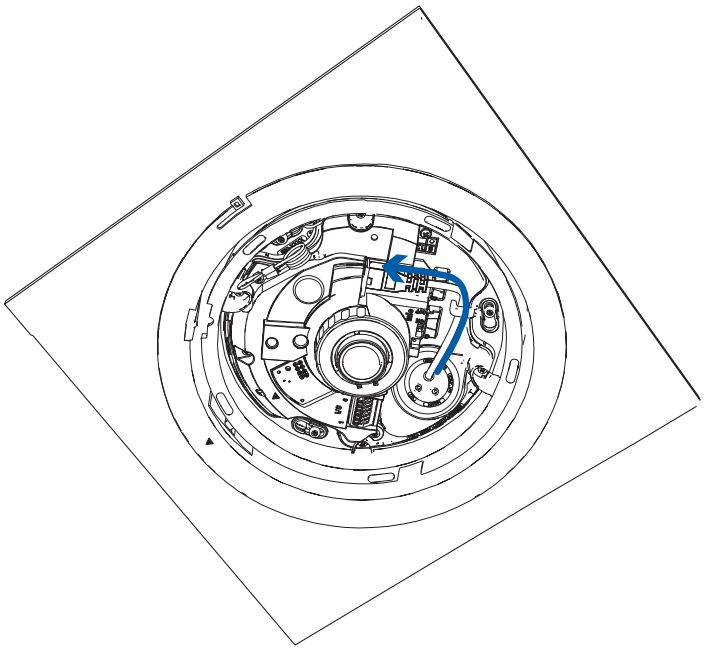


8. Use the cable clip to hold the Ethernet cable in the correct position.

Connecting Cables

Refer to the diagrams in the **Overview section** for the location of the different connectors and status LEDs on the camera base.

1. Connect a network cable to the camera's Ethernet port (RJ45 connector).



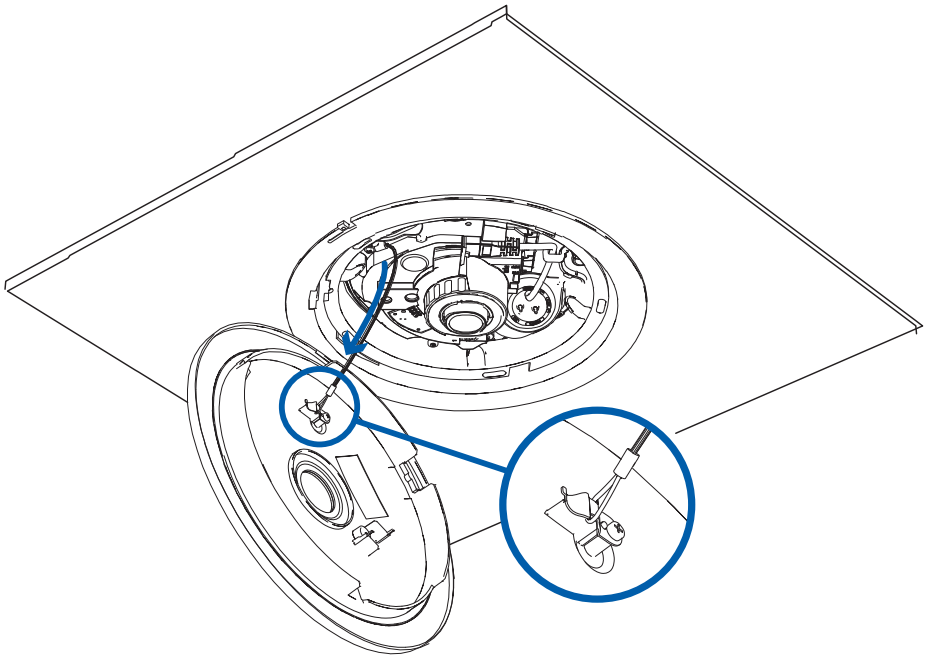
2. If the camera is connected to any external devices, connect the I/O or audio cables to the I/O connector block. For more information, see *Connecting to External Audio and I/O Devices* on page 58.
3. Power the camera using one of the following methods:
    - Power over Ethernet (PoE) IEEE 802.3af Class 3 — If PoE is available, the LEDs will turn on.
    - External Power — Connect an external 12 V DC power source to the power connector block. For more information, see *Connecting External Power* on page 58.

    The status LEDs turn on when the camera receives power.

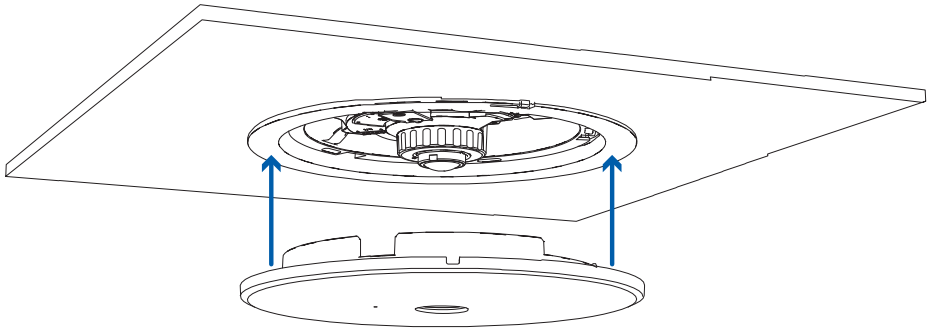
Installing the In-Ceiling Cover

Be careful not to touch or scratch the camera lens. Any marks or fingerprints on the lens may cause unwanted blurriness.

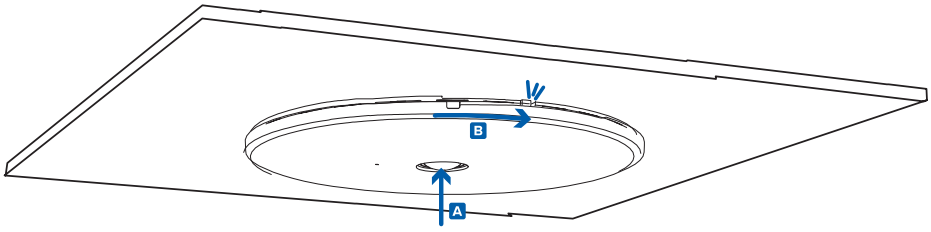
1. Attach the lanyard to the in-ceiling cover.



2. Push the in-ceiling cover onto the camera base.



3. Rotate the cover clockwise while pushing up so that it clicks into place.



Pendant Mount Installation

Required Tools and Materials

The following tools are required to complete the installation but are not included in the package:

- Appropriate tool for cutting the cable access hole, if required
- Small slotted screwdriver with 5/64” or 2 mm blade width — for connecting power when not using Power over Ethernet

If you will be installing the NPT adapter (H5A-FE-MT-NPTA1), you will need:

- 1-1/2" NPT female to female adapter
- NPT pipe

Camera Package Contents

Ensure the surface mounted camera package contains the following:

- Avigilon H5A Fisheye Camera
- Camera Base Mounting Template sticker
- Optional wall plate adapter — for electrical box installations.
- Star-shaped screwdriver
- Power terminal block
- Optional conduit shroud — for side-entry conduit cabling.
- 3x screws and anchors — for securing the camera to the mounting surface.
- 3-hole rubber grommet — for multi-cable installations.
- Single-hole rubber grommet — for installations with a single Ethernet/PoE cable.
- RJ45 grommet piercing cap — for use with single-hole rubber grommet only

If you are using the optional NPT adapter (H5A-FE-MT-NPTA1), ensure the package contains the following:

- NPT adapter for the H5A Fisheye Camera
- Lock nut
- Thread seal tape

Installation Steps

Complete the following sections to install the device.

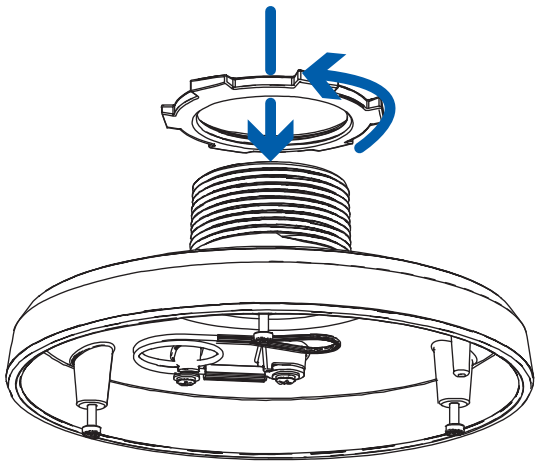
Mounting the Camera to a Pipe

If the camera needs to be installed to a pipe for a pendant installation, you use the NPT adapter (H5A-FE-MT-

NPTA1).

Note: This procedure requires a 1-1/2” NPT-female to NPT-female pipe adapter and conduit pipe that are not supplied by Avigilon and should be sourced separately. It is recommended that the NPT adapter be mounted to a 1-1/2” conduit pipe.

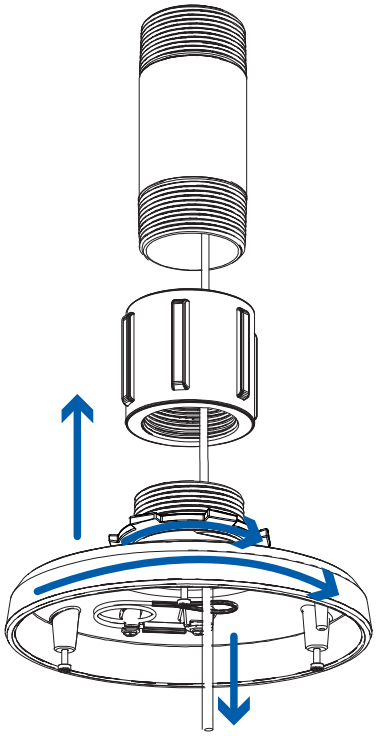
1. Pull the required cables through the NPT conduit pipe.
2. Apply thread seal tape to the pipe and screw on the 1-1/2” NPT female to NPT female pipe adapter.
3. Screw the lock nut onto the NPT adapter.



4. Apply thread seal tape to the NPT adapter and screw it into the pipe adapter.

   Make sure the parts are assembled in this order from NPT conduit pipe to camera adapter:

   a. NPT conduit pipe
   b. 1-1/2" NPT female to female pipe adapter
   c. Lock nut
   d. NPT adapter

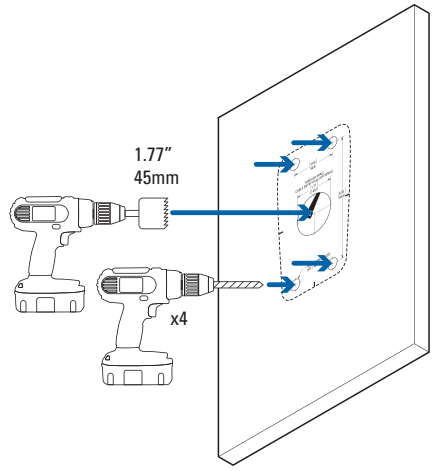


5. Carefully tighten the lock nut until the NPT adapter is secured to the conduit pipe.

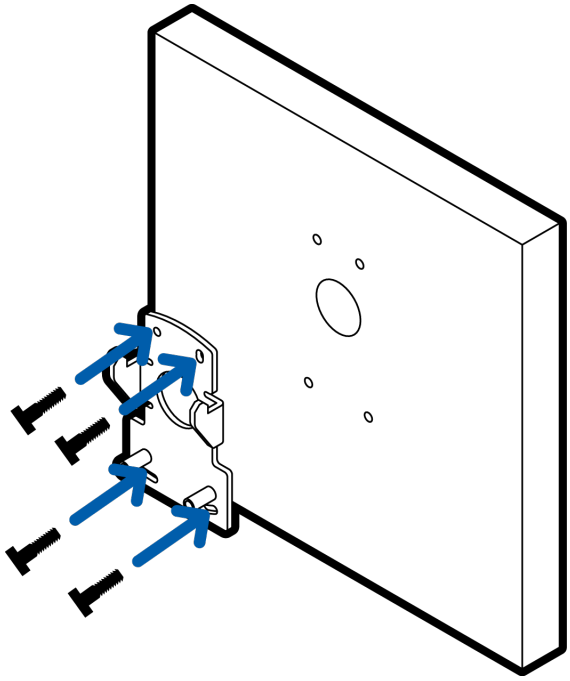
Mounting the Camera to the Pendant Wall Mount

If the camera will be using the pendant wall mount, you will need to install the NPT adapter as well.

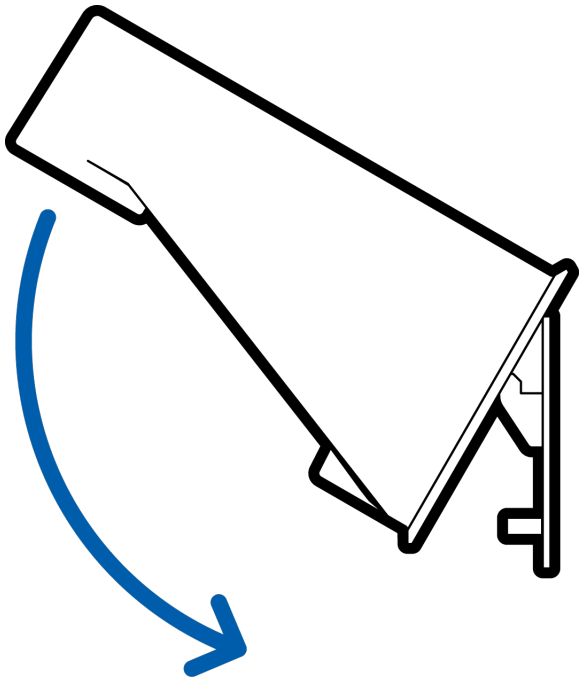
1. Determine where the cables will enter the pendant wall mount.
    - If the cables will be pulled from inside the mounting surface, use the cable entry hole at the rear of the pendant wall mount.
    - If the cables will be coming out of an external conduit pipe, use the 3/4” NPT pipe entry hole on the bottom of the pendant wall mount.
2. Use the provided mounting template to drill four mounting holes into the mounting surface.
    - If you are using the rear cable entry hole, also drill the cable entry hole into the mounting surface.



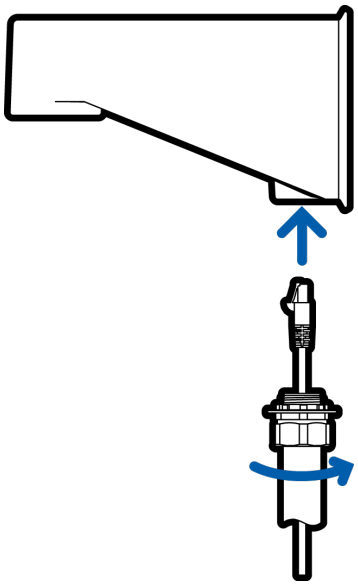
3. Fasten the pendant wall mount bracket to the mounting surface.



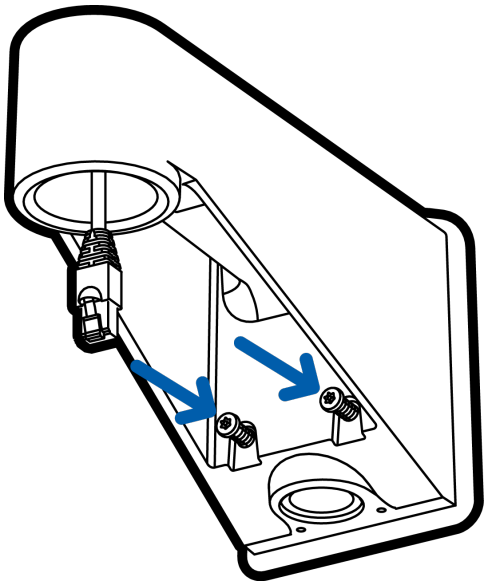
4. Insert the pendant wall mount over the bracket mounting tabs.



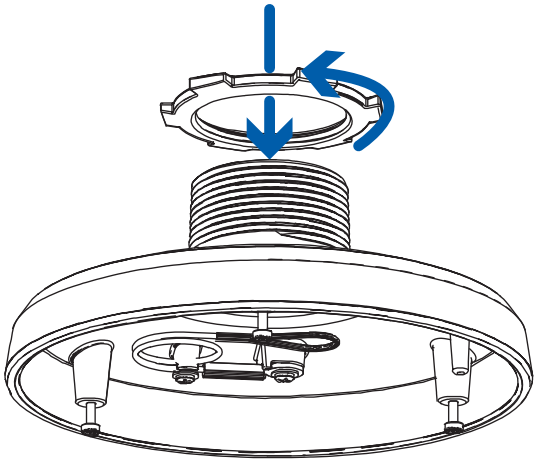
5. Pull the required cables through the preferred cable entry hole on the pendant wall mount.
    - If you are using the pipe entry hole, pull the cables through the pipe conduit then the wall mount. Next, apply thread seal tape to the pipe conduit and screw it into the pipe entry hole.



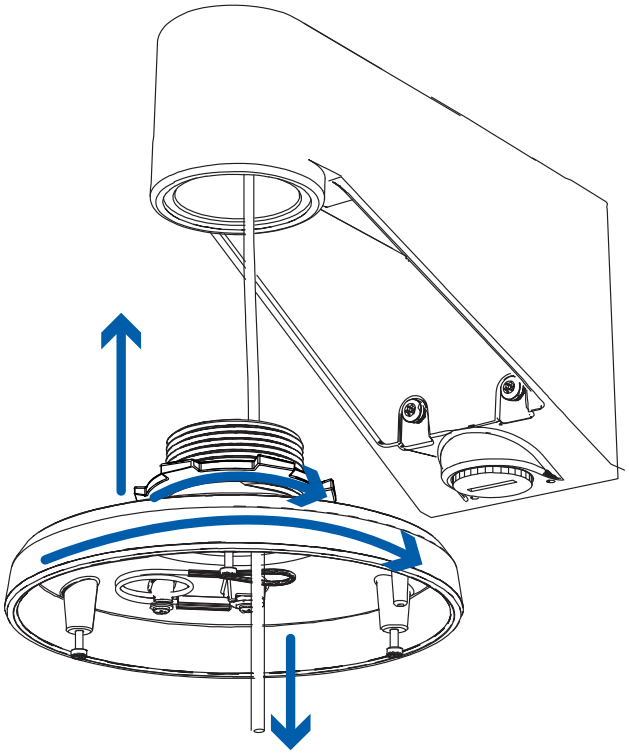
6. Tighten the wall mount screws to secure the wall mount to the bracket. Use the T20 star-shaped key provided in the camera package.



7. Loosely thread the lock nut onto the NPT adapter, then secure the NPT adapter into the pendant wall mount.



8. Carefully tighten the lock nut until the NPT adapter is secured to the wall mount.

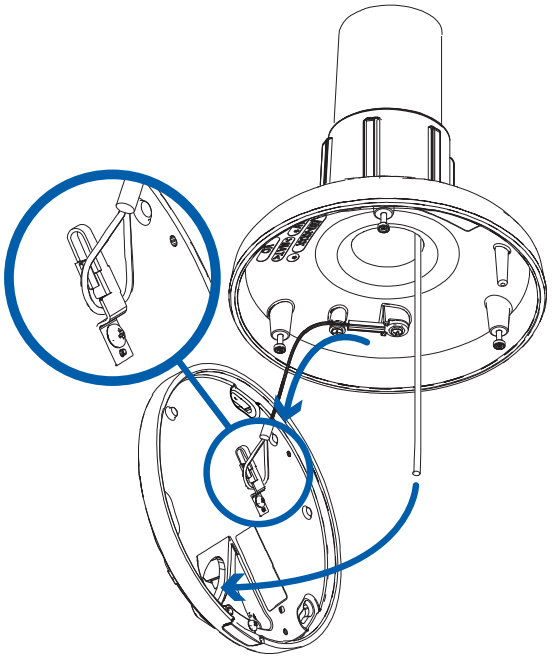


Installing the Camera into the NPT Adapter

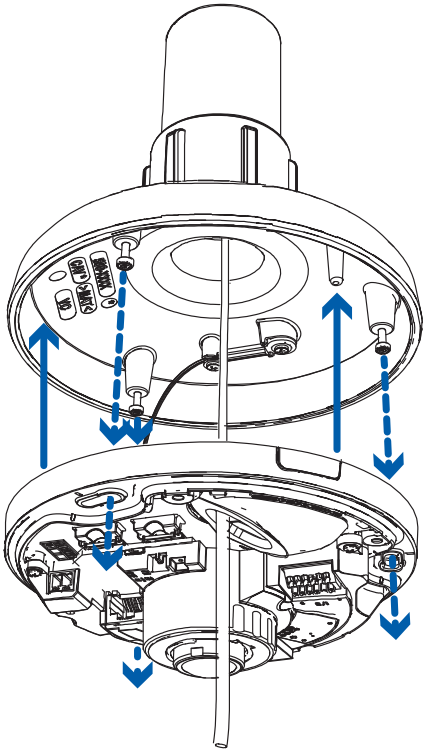
Before installing the camera, you must first prepare either the wall mount or NPT pipe mount.

> **Note:** The following steps show installation of the camera into NPT adapter installed onto a pipe. The steps are the same for installing the camera to the wall mount.

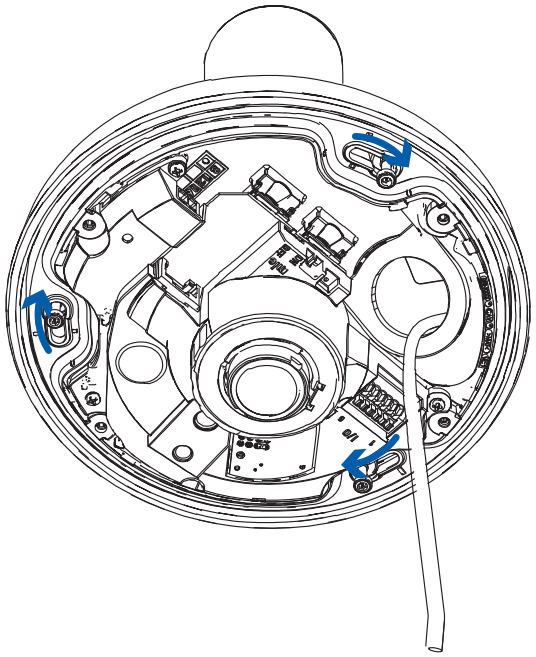
1. Attach the lanyard to the camera base. Pull the required cables through the cable entry hole.



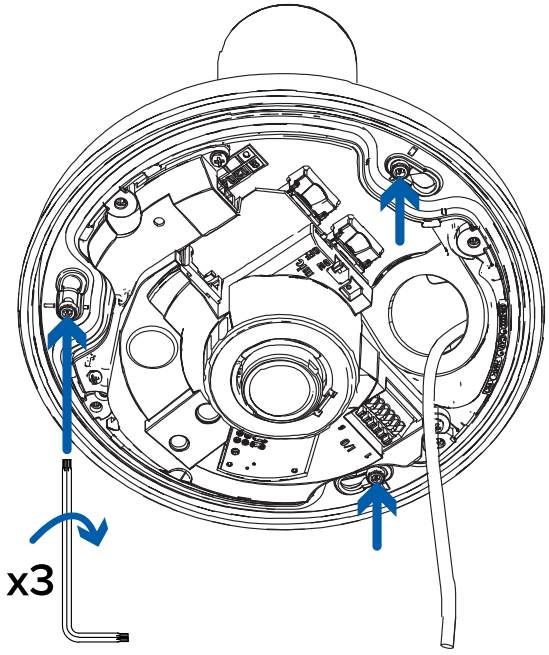
2. Align the mounting slots on the camera base to the mounting posts on the NPT adapter and push the camera base onto the adapter.



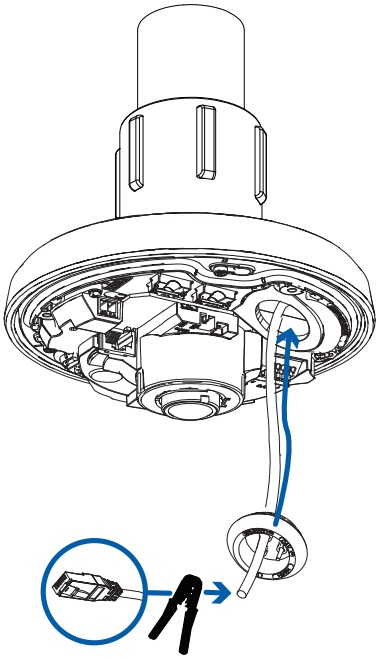
3. Twist the camera base clockwise until the posts come to the right end of the mounting slots.



4. Tighten the mounting posts to fix the camera base into place.

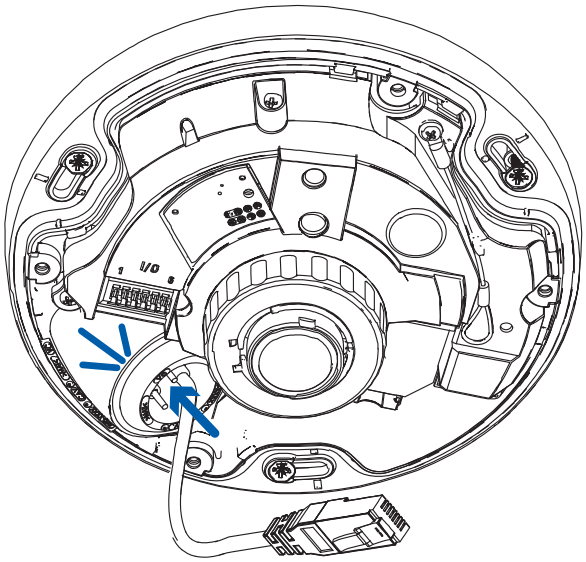


5. Pull the required cables through the rubber sealing grommet. For more information, see *Preparing the Cables* on page 13.



6. Push the rubber sealing grommet with the required cables into the cable entry hole on the camera base. The thread around the grommet should line up with the cable entry hole.

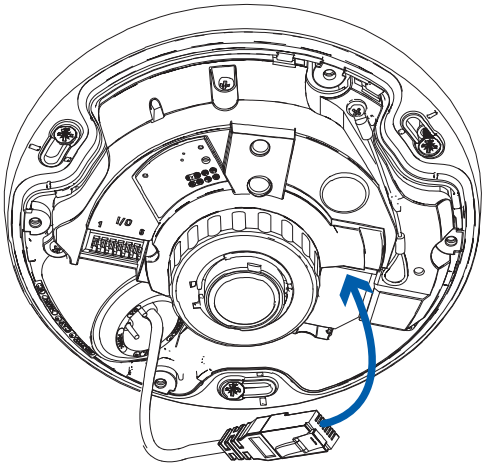
   The rubber grommet should be pressed firmly into the cable entry hole to create a seal.



Connecting Cables

Refer to the diagrams in the **Overview section** for the location of the different connectors and status LEDs on the camera base.

1. Connect a network cable to the camera's Ethernet port (RJ45 connector).



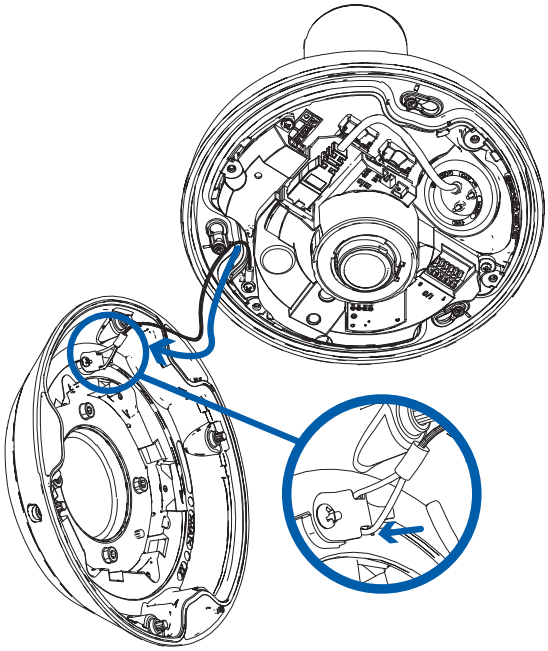
2. If the camera is connected to any external devices, connect the I/O or audio cables to the I/O connector block. For more information, see *Connecting to External Audio and I/O Devices* on page 58.
3. Power the camera using one of the following methods:
    - Power over Ethernet (PoE) Class 3 — If PoE is available, the LEDs will turn on.
        - For cameras with IR LEDs, PoE+, IEEE 802.3at Class 4 power is required for maximum LED power.
        - PoE, IEEE 802.3af Class 3 is sufficient to power camera models without IR LEDs. IR-model cameras will have reduced LED power with IEEE 802.3af Class 3 PoE.
    - External Power — Connect an external 12 V DC power source to the power connector block. For more information, see *Connecting External Power* on page 58.

    The status LEDs turn on when the camera receives power.

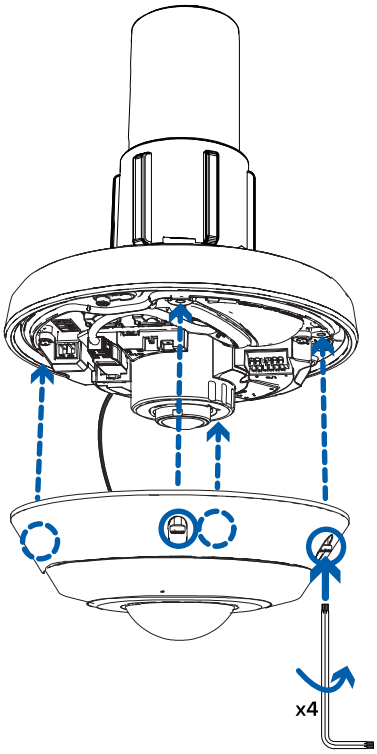
Installing the Fisheye Cover

Be careful not to touch or scratch the dome bubble. Any marks or fingerprints on the dome bubble may cause unwanted reflections from the IR illuminators.

1. Attach the lanyard to the cover.



2. Attach the cover to the base and tighten the screws with the star-shaped screwdriver.



3. Remove the plastic cover on the dome bubble.

Connecting to the Camera

Initializing a Camera Username and Password

Important: You must create a user with *administrator* privileges before the camera is operational.

The first user can be created using any of the following methods:

- Camera's Web Interface: enter the camera's IP address in a web browser to access the web interface. If the camera is in the factory default state you will be redirected to the Add a new user page to create the first user. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide.*
- Camera Configuration Tool: cameras discovered in the factory default state will be identified by . Select the **Admin Users** tab to create the first user. For more information, see the *Avigilon Camera Configuration Tool User Guide*.
- Avigilon Control Center software version 7.4 or later, or version 6.14.12 or later: when connecting a camera in the factory default state, the client software will ask you to create a new user. For more information, see the *Avigilon Control Center Client User Guide*.
- Avigilon Cloud Services (ACS) v3.0 or later: when adding a camera you will be asked to create a new user for cameras in the factory default state. For more information, see the *Avigilon Cloud Services User Guide*.

Tip: If you are connecting your Avigilon camera to a 3rd party VMS, you will need to set up the first user through the camera's Web Interface or Camera Configuration Tool before you connect to the 3rd party VMS.

Assigning an IP Address

The device automatically obtains an IP address when it is connected to a network.

Note: If the device cannot obtain an IP address from a DHCP server, it will use Zero Configuration Networking (Zeroconf) to choose an IP address. When set using Zeroconf, the IP address is in the 169.254.0.0/16 subnet.

The IP address settings can be changed using one of the following methods:

- Device's web browser interface: http://*<camera IP address>/*.
- Network Video Management software application (for example, the Avigilon Control Center™ software).
- ARP/Ping method. For more information, see *Setting the IP Address Using the ARP/Ping Method* on page 63.

Accessing the Live Video Stream

Live video stream can be viewed using one of the following methods:

- Web browser interface: http://*< camera IP address>/*.
- Network Video Management software application (for example, the Avigilon Control Center™ software).

(Optional) Configuring Onboard Storage

To use the camera's onboard storage feature, you must insert 1 microSD card into a microSD card slot. While there are two microSD slots, currently the camera only supports a single microSD card in either slot for onboard storage. For the location of the microSD card slots, see *Overview* on page 1.

It is recommended that the microSD card have a capacity of 64 GB or more. Video Speed Class microSD card required, with Class V10 or better recommended. If the microSD card does not meet the recommended capacity or write speed, the performance of the onboard storage may suffer and result in the loss of frames or footage.

Ensure the microSD card is designed for continuous video recording or the microSD card life expectancy may be adversely affected.

1. Insert the microSD card into the camera.

   CAUTION — Do not force the microSD card into the camera or you may damage the card and the camera. The card can only be inserted in one direction.

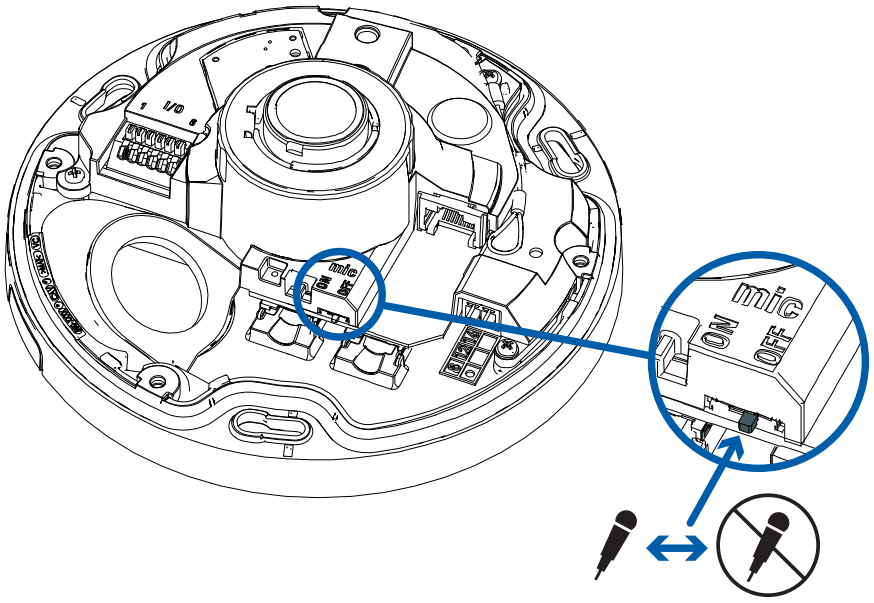
2. Access the camera's web interface to enable the onboard storage feature. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

(Optional) Enabling the Microphone

This camera features an internal microphone, and include a switch to physically enable or disable the microphone. The microphone switch is set to OFF by default.

It is recommended that you enable the microphone before installing the camera in its final location.

1. Locate the microphone switch on the camera assembly.



2. Slide the switch from the default OFF position to ON to enable the microphone.

Configuring the Microphone

The H5A Fisheye Camera features two microphones: a built-in microphone and an external audio input.

After you've connected the required microphones, you can configure the microphones or line level audio input from the camera web interface or in the ACC Client software.

- In the camera web interface, the microphones are configured from the Microphone page. You can adjust the microphone volume by changing the gain.
  - **Line in Gain** — configures the gain for the microphone that is built into the camera.
  - **External Source Gain** — configures the gain for any line level audio input that is connected to the audio input connector on the I/O terminal block.

  For more information, see the *Camera Web Interface User Guide*.
- In the ACC Client software, the microphones are configured in the Microphone dialog box that can be accessed from the camera's Setup tab. You can adjust the microphone volume by changing the gain and link the audio to other cameras in the site.
  - **External Input** — configures the gain for any line level audio input that is connected to the audio input connector on the I/O terminal block.
  - **Internal Mic** — configures the gain for the microphone that is built into the camera.

  For more information, see the *Avigilon Control Center Client User Guide*.

Configuring the Camera

Once installed, use one of the following methods to configure the camera:

- If you have installed multiple cameras, you can use the Camera Configuration Tool to configure common settings. For more information, see the *Camera Configuration Tool User Guide*.
- If the camera is connected to the Avigilon Control Center system, you can use the client software to configure the camera. For more information, see the *Avigilon Control Center Client User Guide*.
- If the camera is connected to a third-party network management system, you can configure the camera's specialty features in the camera's web browser interface. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

For More Information

Additional information about setting up and using the device is available in the following guides:

- *Avigilon Control Center Client User Guide*
- *Web Interface User Guide — Avigilon High Definition H4 and H5 IP Cameras*
- *Web Interface User Guide — Avigilon High Definition H4 and H5 IP Cameras*
- *Avigilon Camera Configuration Tool User Guide*
- *Designing a Site with Avigilon Video Analytics*

These guides are available on **help.avigilon.com** and on the Avigilon website: **avigilon.com/support**.

Cable Connections

Connecting External Power

If PoE is not available, the camera needs to be powered through the removable power connector block. Refer to the **Overview section** for the location of the power connector block.

To connect power to the power connector block, complete the following steps:

1. Remove the power connector block from the camera.
2. Remove the insulation from ¼" (6 mm) of the power wires. Do not nick or damage the wires.
3. Insert the two power wires into the two terminals on the power connector block. The connection can be made with either polarity.

   Use a small slotted (5/64" or 2 mm blade width) screwdriver to loosen and tighten the terminals.
4. Attach the power connector block back into the camera.

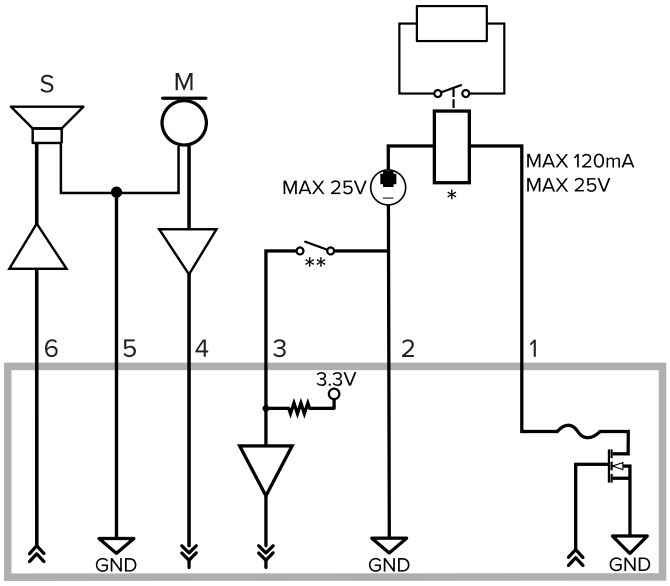
WARNING — This product is intended to be supplied by a UL Listed Power Unit marked "Class 2" or "LPS" or "Limited Power Source" with output rated 12 VDC, 11 W min. (26 W min. with -IR model) or PoE, 11 W min. (26 W min. with -IR model).

Non-Seamless Failover

- If the camera has power available from both an external Aux power supply and a PoE PSE (Power Sourcing Equipment) device, the camera will draw power from Aux.
- When the camera is using Aux power, PoE power negotiation is inhibited.
- If the camera loses Aux power, the camera will power-off while waiting to transition to PoE power.
- If the external Aux power re-energizes, the camera might reboot while transitioning back to using Aux power. The camera might not reboot if the external Aux power supply reacts quickly enough to the increase in load.
- Ensure that sufficient power is manually reserved on the PSE, as the camera will not request PoE power until the camera loses Aux power.

Connecting to External Audio and I/O Devices

External audio and I/O devices are connected to the camera through the audio and I/O connector block. The pinout for the connector block is shown in the following diagram:



1. Digital Output — When active, Output is internally connected with the Ground pin. Circuit is open when inactive. Maximum load is 25 VDC, 120 mA.
2. Ground
3. Digital Input — To activate, connect the Input to the Ground pin. To deactivate, leave disconnected or apply between 3-15 V.
4. Audio Input (line level)
5. Audio Ground
6. Audio Output (line level)

   An external power amplifier should be used when connecting speakers and microphones, as shown in the diagram.

- * — Relay
- ** — Switch
- M — Microphone
- S — Speaker

Connection Status LED Indicator

Once connected to the network, the green Connection Status LED indicator will display the progress in connecting to the Network Video Management software.

The following table describes what the LED indicator shows:

Connection State	Connection Status LED Indicator	Description
Obtaining IP Address	One short flash every second	Attempting to obtain an IP address.
Discoverable	Two short flashes every second	Obtained an IP address but not connected to the Network Video Management software.
Upgrading Firmware	Two short flashes and one long flash every second	Updating the firmware.
Connected	On	Connected to the Network Video Management software or an ACC™ Server. The default connected setting can be changed to Off using the camera's web user interface. For more information see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

Troubleshooting Network Connections and LED Behavior

Note: For any of the below LED behaviors, ensure that the camera is getting power and is using a good network cable before trying another solution.

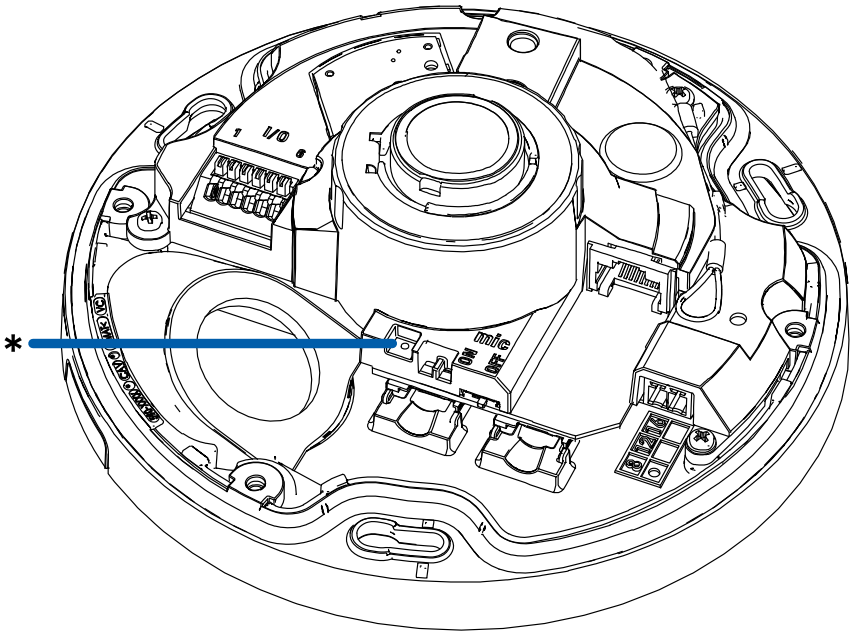
LED Behavior	Suggested Solution
Green LED is off and amber is on	Perform a factory reset of the camera using the physical firmware revert button. Resetting through the camera's web interface will not produce the desired result.
Both LEDs are off and the camera is not connected or streaming video	Check the **General** setup page in the camera's web interface to ensure the LEDs are not disabled. If the LEDs are not disabled, perform a factory reset of the camera using the physical firmware revert button. Resetting through the camera's web interface will not produce the desired result.

LED Behavior	Suggested Solution
Both LEDs are blinking several times at the same time, then pause and repeat the blinking	Perform a factory reset of the camera using the physical firmware revert button. Resetting through the camera's web interface will not produce the desired result.
A different LED blinking pattern than those described above	Perform a factory reset of the camera using the physical firmware revert button. Resetting through the camera's web interface will not produce the desired result.

Resetting to Factory Default Settings

If the device no longer functions as expected, you can choose to reset the device to its factory default settings.

Use the firmware revert button to reset the device. The firmware revert button is shown in the following diagram:



1. Ensure the camera is powered on.
2. Remove the cover.
3. Press the reset button.
4. The LEDs beside the reset button will turn off.

Wait while the camera reverts to the factory default settings.

Setting the IP Address Using the ARP/Ping Method

Complete the following steps to configure the camera to use a specific IP address:

> **Note:** The ARP/Ping Method will not work if the **Disable setting static IP address through ARP/Ping method** checkbox is selected in the camera's web browser interface. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

1. Locate and make note of the MAC Address (MAC) listed on the Serial Number Tag for reference.
2. Open a Command Prompt window and enter the following commands:
   a. `arp -s` *<New Camera IP Address> <Camera MAC Address>*

      For example: `arp -s 192.168.1.10 00-18-85-12-45-78`

   b. `ping -l 123 -t` *<New Camera IP Address>*

      For example: `ping -l 123 -t 192.168.1.10`
3. Reboot the camera.
4. Close the Command Prompt window when you see the following message:

   `Reply from <New Camera IP Address>: ...`

Cleaning

Dome Bubble

If the video image becomes blurry or smudged in areas, it may be because the dome bubble requires cleaning.

Note: Cleaning the dome bubble does not apply to in-ceiling models as they do not have a dome bubble. Use caution if needing to clean the lens. Obtain a lens cleaning swab and solution and follow the cleaning instructions provided.

To clean the dome bubble:

- Use hand soap or a non-abrasive detergent to wash off dirt or fingerprints.
- Use a microfiber cloth or non-abrasive fabric to dry the dome bubble.

Important: Failure to use the recommended cleaning materials may result in a damaged or scratched dome bubble. A damaged dome bubble may negatively impact image quality and cause unwanted IR light reflecting into the lens.

Body

- Use a dry or lightly dampened cloth to clean the camera body.
- Do not use strong or abrasive detergents.

Limited Warranty and Technical Support

Avigilon warranty terms for this product are provided at **avigilon.com/warranty**.

Warranty service and technical support can be obtained by contacting Avigilon Technical Support: **avigilon.com/contact**.