avigilon™

TRUSTED SECURITY SOLUTIONS™

Installation Guide

Avigilon™ Panoramic High Definition IP Dome Camera Model:

8.0MP-HD-DOME-360

Important Safety Information

This manual provides installation and operation information and precautions for the use of this camera. 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 use.

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

The 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.

- Do not use near water or expose to dripping or splashing.
- Do not place objects filled with liquids above the device.
- Do not expose to rain or moisture.
- For indoor use only.
  If used outdoors, an approved outdoor mounting adapter or enclosure is required. Consult with Avigilon for more information.
- 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 or 24 VAC, 9 W min. or Power over Ethernet (PoE), rated 48 VDC, 9 W min.
- Any external power supply connected to this product may only be connected to another Avigilon product of the same model series. External power connections must be properly insulated.
- Do not connect directly to mains power for any reason.

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

- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all 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.

- Use of controls or adjustments or performance of procedures other than those specified in this document may result in hazardous radiation exposure.

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 A digital apparatus complies with Canadian ICES-003.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

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.

Legal Notices

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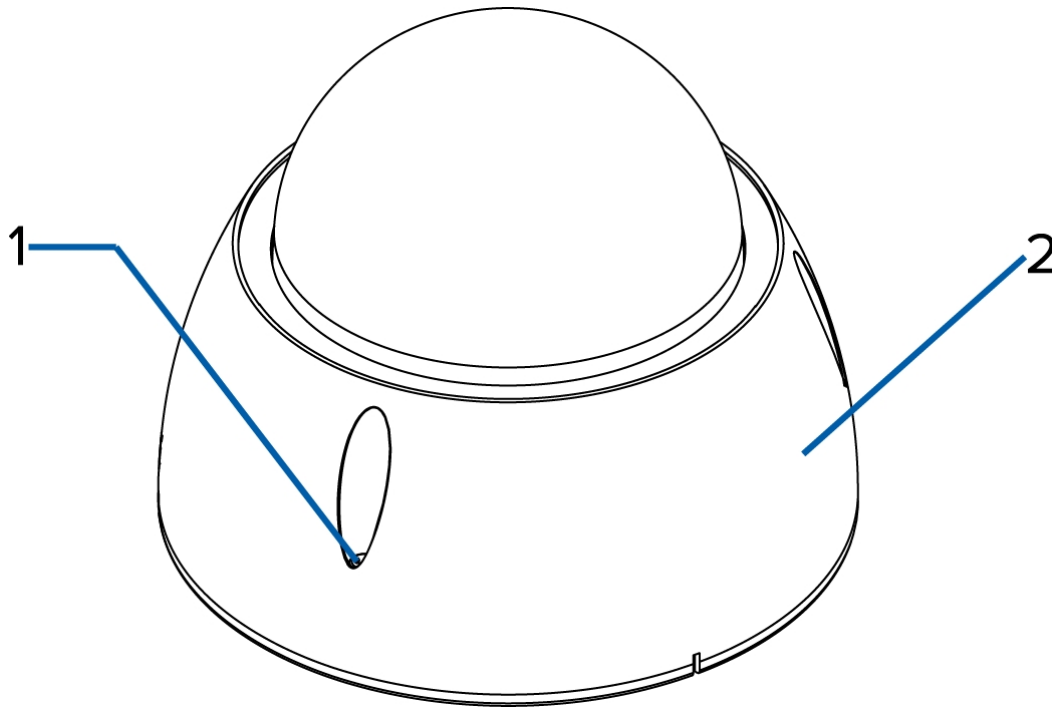Avigilon Corporation
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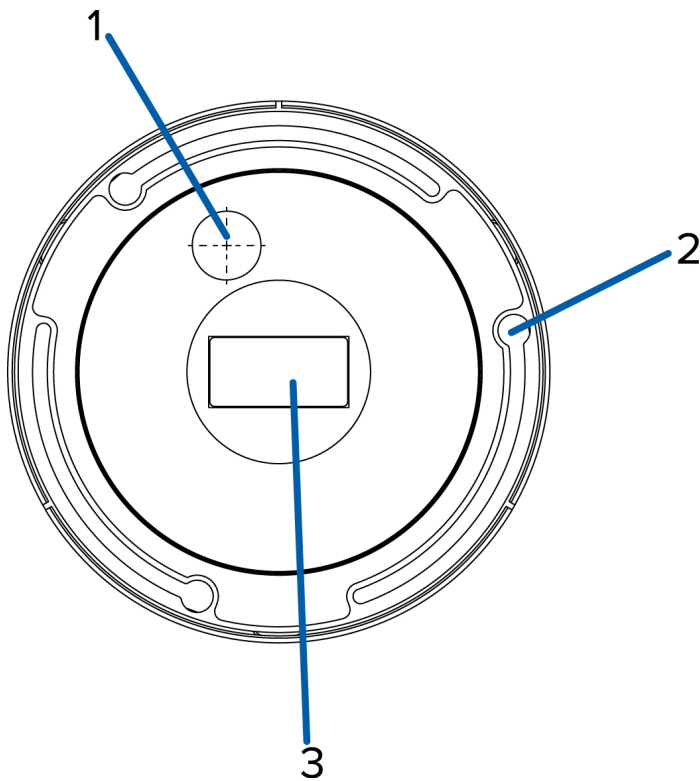# Table of Contents

Overview

Cover View

1. **Dome cover**

   Vandal resistant dome cover.

2. **Tamper resistant screws**

   Torx captive screws to fix the dome cover to the base.

Bottom View

1. **Cable entry hole**

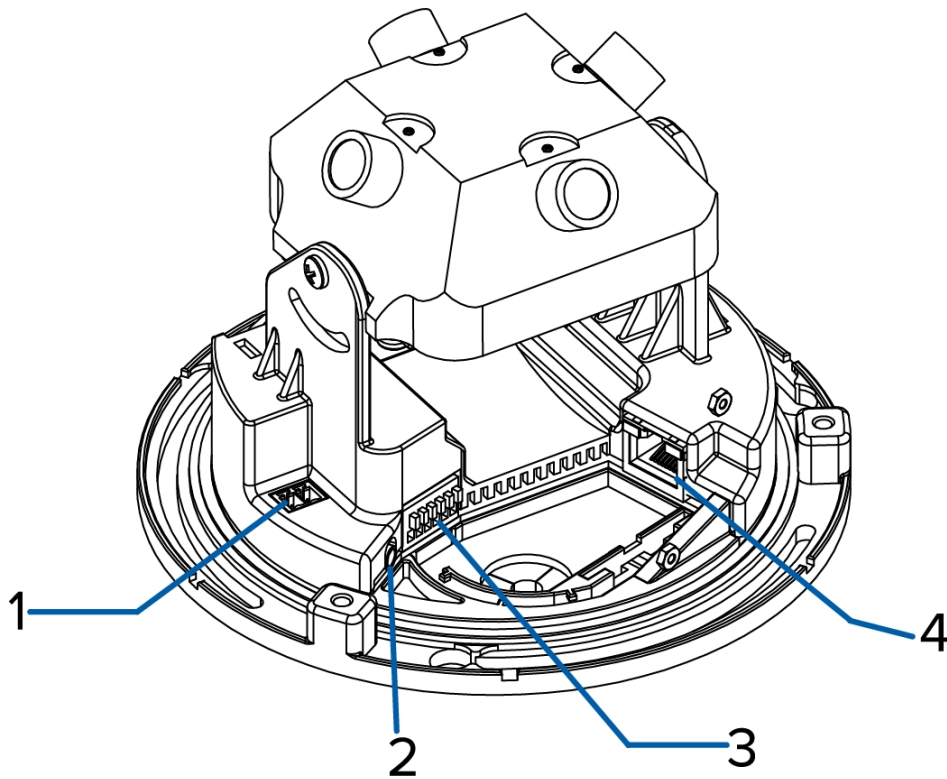   An entry hole for the cables required for camera operation.

2. **Dome mounting slot**

   Mounting points for the camera.

3. **Serial number tag**

   Device information, product serial number and part number label.

Front View

1. **Power connector block**

   Accepts a terminal block with either an AC or DC power connection. DC input can be either polarity. Only required when Power over Ethernet is not available.

2. **Audio I/O connector**

   Accepts a mini-jack connector (3.5 mm).

3. **I/O connector block**

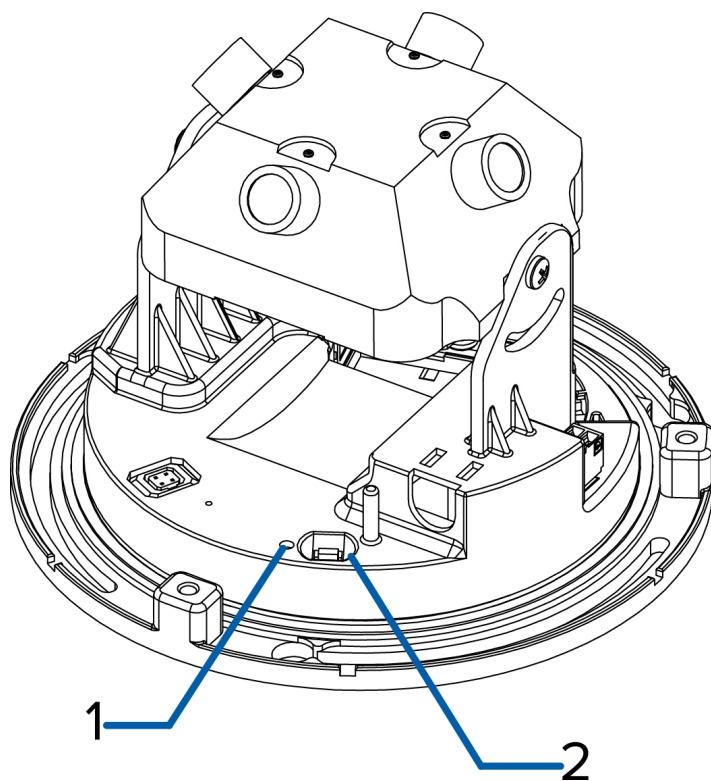   Provides connections to external input/output devices.

4. **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.

   The Ethernet Port has two status lights indicating link (left) and activity (right).
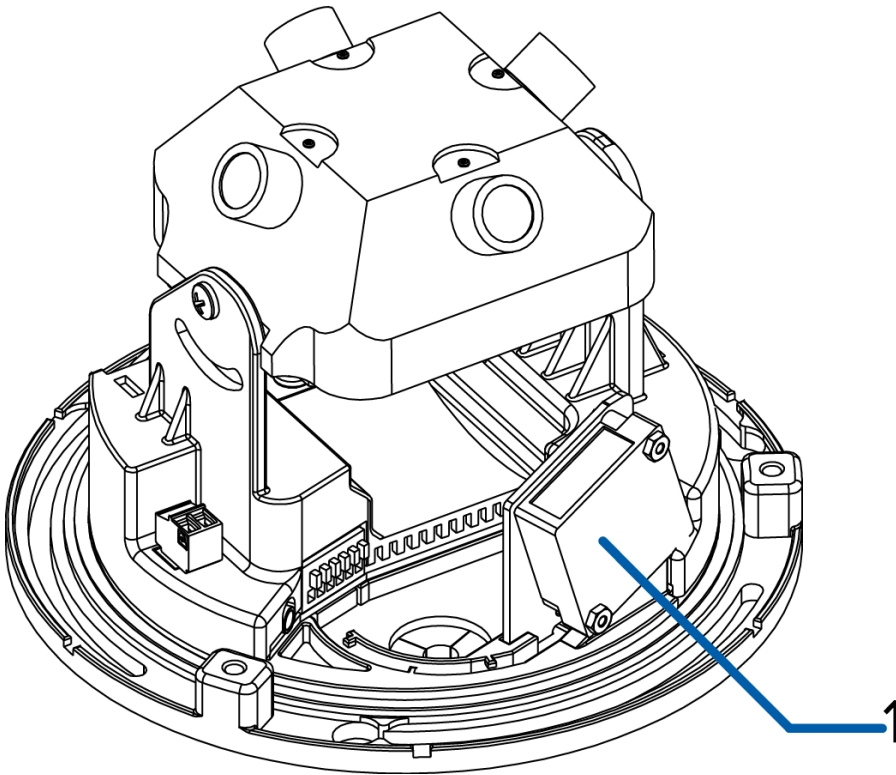
Rear View

1. **Connection status LED**

   Provides information about camera operation. For more information, see *LED Indicators* on page 11.

2. **Image rotation switch**

   Rotates the image by 180˚.

Heater View

1. **Heater**

   Provides heat for the camera to extend the operating temperature range. The heater is not included with all models.

Installation

Required Tools and Materials

- 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 package contains the following:

- Avigilon™ Panoramic High Definition IP Dome Camera
- Terminal block
- T20 Torx key
- 3 screws and anchors for solid walls
- Drill template

Installation Steps

Complete the following steps to install the camera:

Removing the Dome Cover

Remove the dome cover by loosening the screws that fix the cover to the base. The Torx key included with the dome camera can be used 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.

Mounting the Dome Camera

The dome camera can be mounted to a surface on its own or using one of the four dome camera mounting accessories: indoor electrical box mounting plate, indoor in-ceiling mount, indoor/outdoor mounting base, and indoor/outdoor pendant mount.

To mount the dome camera, complete the following steps:

1. Using the drill template, drill three mounting holes and one cable entry hole in the ceiling/ wall. If using a dome camera mounting accessory, this step is not necessary.
2. Drive three screws into mounting holes and leave 6 mm (¼") between the screw head and the ceiling/wall surface.
3. Pull the cables through the cable entry hole in the ceiling/ wall and the cable entry hole in the dome camera.
4. Place the dome base on the screws using the keyed mounting slots and rotate it clockwise.
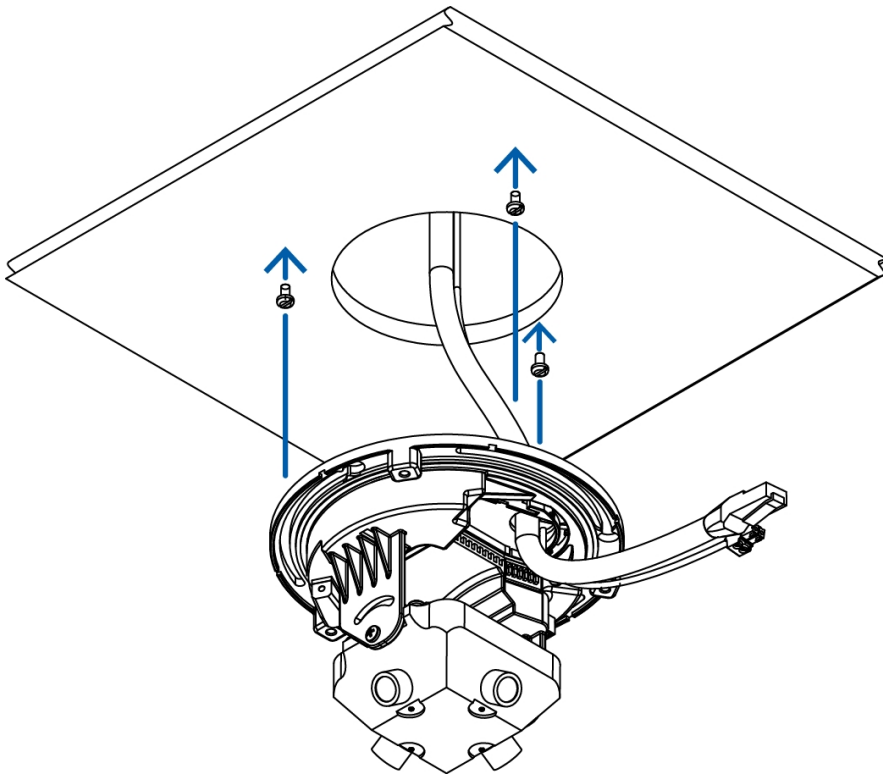5. Tighten the screws to hold the dome camera in place.

⚠ **WARNING —** Only use UL listed mounting brackets suitable for the mounting surface and can sustain a minimum 0.53 kg (1.2 lbs).

⚠ **CAUTION —** This camera is designed for indoor use only.

For outdoor use, an outdoor mounting accessory is required.

Connecting External Power

If PoE is not available, the camera needs to be powered through the removable power connector block. Refer to the diagrams in this guide for the location of the power connector block.

The power consumption information is listed in the product specifications.

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 V DC or 24 V AC, 9 W min. or PoE rated 48 V DC, 9 W min.

When you select the wire used to provide power, be sure to select a gauge that is heavy enough for the wiring distance. Refer to the following table for the maximum wire length for different wire gauges.

Wire Gauge		Maximum Run Length (ft [m])	
AWG	mm^2	24 V AC	12 V DC
24	0.2	164[50]	43[13]
22	0.33	267[81]	71[21]
20	0.5	428[130]	114[34]
18	0.82	680[207]	181[55]
16	1.3	1071[326]	285[87]

Aiming the Dome Camera

1. Loosen the mounting screws.

2. Turn the lenses to the desired direction by rotating the base and tilting the lenses.

3. Once satisfied, secure the dome camera's position by tightening the screws.

4. If the image is upside down, flip the image rotation switch to rotate the image by a 180° angle.

Connecting to the Network Video Recorder

Important: To avoid networking problems, only use network switches recommended by Avigilon.

Connect the dome camera to the same network as the server running the Avigilon™ Control Center software. An IP address is automatically assigned to the device, and will be detected by the software.

Check the Connection Status LED to track the camera's progress in connecting with the network video recorder. For more information, see *LED Indicators* on page 11.
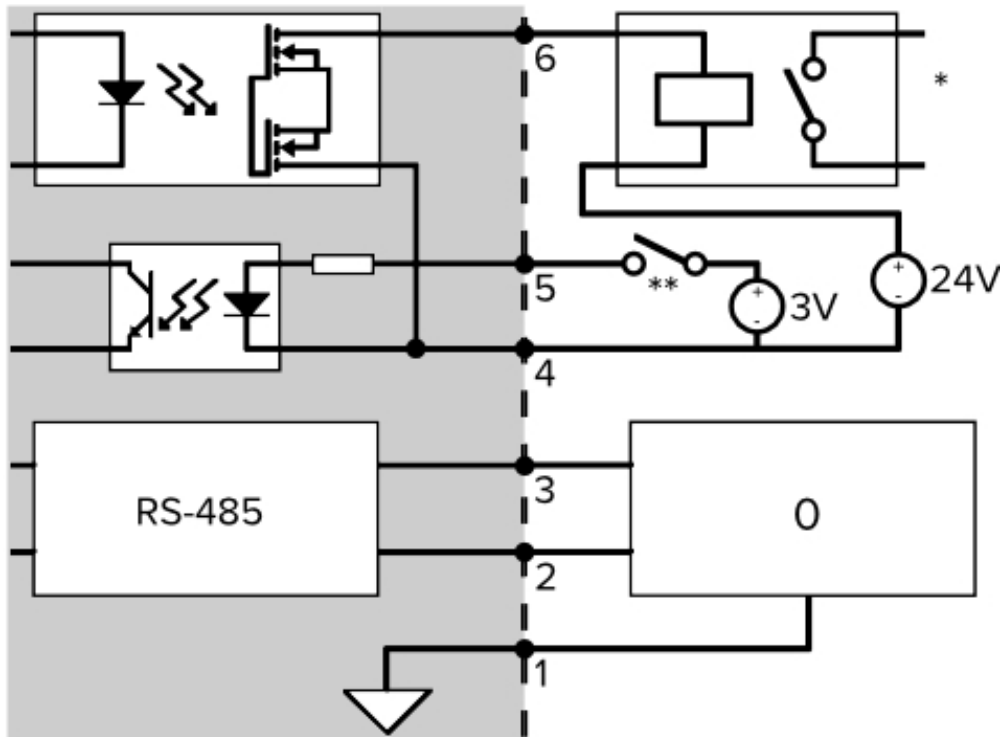
IP Address Selection

Once connected to a network, the dome camera will attempt to locate and obtain an IP address from a DHCP server.

If this fails, an IP address will be selected using Zeroconf (APIPA). If the IP address is set using Zeroconf, the IP address will be in the 169.254.* subnet. A static IP address can be set from the Avigilon Control Center software, consult the software user guide for details.

Cable Connections

Connecting to External Devices

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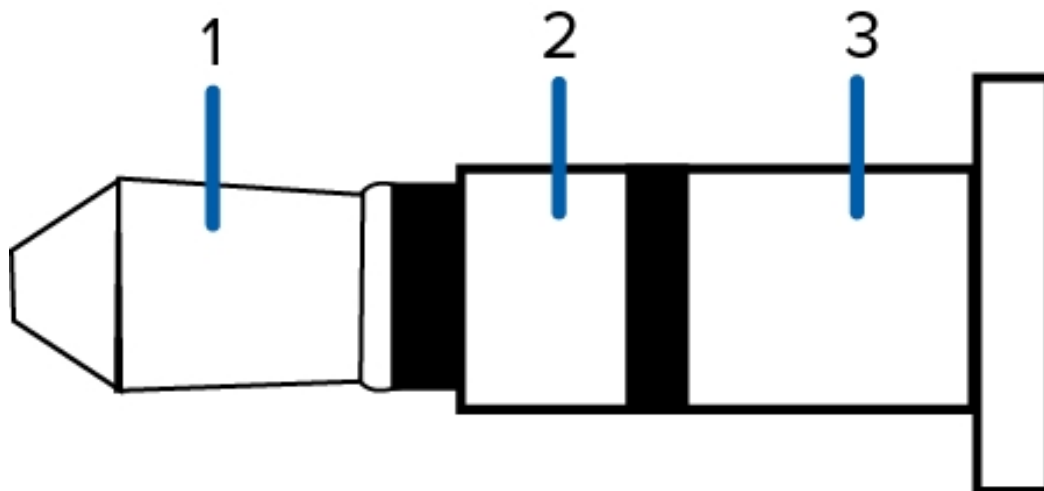

Figure 1: Example application.

1. GND

2. RS-485 RX/TX+ — Half-duplex RS-485 interface for controlling external equipment.

3. RS-485 RX/TX- — Half-duplex RS-485 interface for controlling external equipment.

4. Input (-)/Output A — Shared pin for Input and Output.

5. Input (+) — The input uses a photocoupler and is electrically isolated from the internal circuitry. The input voltage should not exceed 12 V.

6. Output B — The output uses a photocoupler and is electrically isolated from the internal circuitry. The output terminal (A and B) connections can be made with either polarity. The output can drive a maximum load of 50 V and 120 mA.

- * — Relay
- ** — Switch
- 0 — External Device

Connecting to Microphones and Speakers

The dome camera can be connected to an external microphone and speaker through the audio connector. The audio connector is a 3.5 mm (1/8") input for a mono microphone or a line-in mono signal. The left channel of the stereo signal is used. The connector pinout is shown in the following diagram.

Consult the software user guide for details on how configure the audio input and output.

Figure 2: TRS mini-jack audio connector

1. Audio IN
2. Audio OUT
3. GND

LED Indicators

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

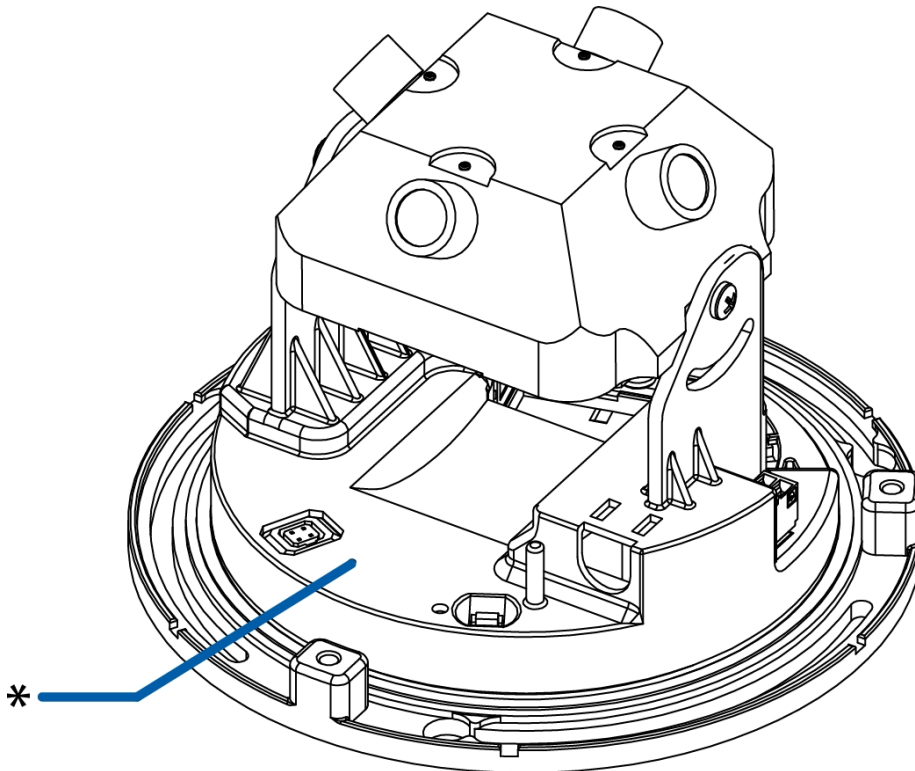The following table describes what the LEDs indicate:

Connection State	Connection Status LED	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 is 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.

Resetting to Factory Default Settings

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

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

1. Disconnect power from the device.
2. Using a straightened paperclip or similar tool, gently press and hold the firmware revert button.
3. While continuing to hold the button, power the device.

   Release the button after three seconds.

⚠ **CAUTION —** Do not apply excessive force. Inserting the tool too far will damage the camera.

Cleaning

Dome Bubble

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

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.

Specifications

Network

Network	100Base-TX
Cabling Type	CAT5
Connector	RJ-45
Security	SSL
Protocols	UDP, TCP, SOAP, DHCP, Zeroconf

Mechanical

Dimensions ØxH	149.9mm x 121.3mm (5.9" x 4.8")
Weight	0.91 kg (2.0 lbs) without lens
Dome Bubble	Polycarbonate, clear
Body	Aluminum
Housing	Surface mount, vandal resistant
Finish	Powder coat, cool gray 2

Electrical

Power Consumption	9 W +5 W with heater option
Power Source	VDC: 12 V +/-10% VAC: 24 V +/-10% PoE: IEEE802.3af Class 3 compliant
Power Connector	2-pin terminal block

Environmental

Operating Temperature	-10 °C to +50 °C (14 °F to 122 °F) -30 °C to +50 °C (-22 °F to 122 °F) (with heater option)
Storage Temperature	-10 °C to +70 °C (14 °F to 158 °F)
Humidity	0-95% non-condensing

Certifications

Certifications	UL cUL CE ROHS WEEE RCM EAC
Safety	UL 60950-1 CSA 60950-1 IEC/EN 60950-1

Environmental	IK10 Impact Rating Meets IP66 Weather Rating
Electromagnetic Emissions	FCC Part 15 Subpart B Class A EN 55032 Class A IC ICES-003 Class A EN 61000-6-3 EN 61000-3-2 EN 61000-3-3
Electromagnetic Immunity	EN 55024 EN 61000-6-1

Limited Warranty and Technical Support

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

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