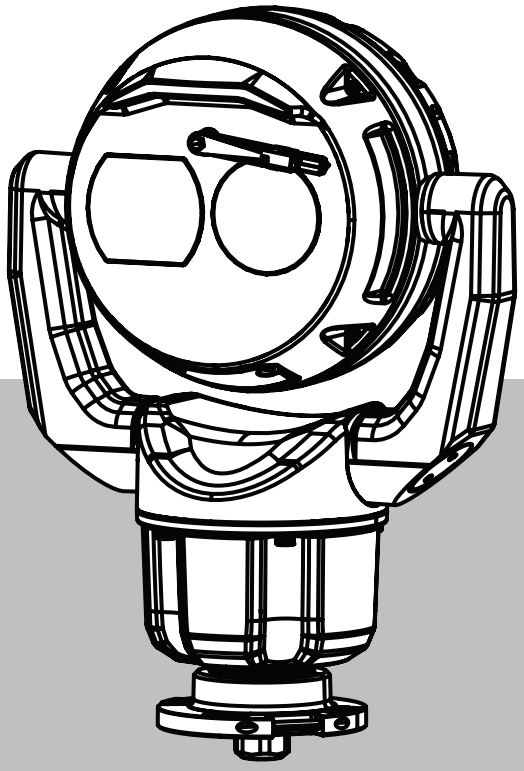
MIC fusion 9100s

MIC-9803S-Z30B18Q | MIC-9803S-Z30W18Q | MIC-9803S-Z30G18Q |
MIC-9803S-Z30B06V | MIC-9803S-Z30W06V | MIC-9803S-Z30G06V |
MIC-9803S-Z30B14V | MIC-9803S-Z30W14V | MIC-9803S-Z30G14V |
MIC-9803S-Z30B42V | MIC-9803S-Z30W42V | MIC-9803S-Z30G42V



en Installation manual

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1 Safety and security information

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.

1.1 Safety message explanation

In this manual, the following symbols and notations are used to draw attention to special situations:



Danger!
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Warning!
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Caution!
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice!
Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

1.2 Safety precautions



Caution!
Installation should only be performed by qualified service personnel in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local codes.



Notice!
To maintain the Type 6P rating when the camera is mounted to a MIC-DCA, installers must make sure that the user-supplied cable glands or conduit connections have Type 6P ratings.

1.3 Important safety instructions

- To clean the device, do not use liquid cleaners or aerosol cleaners.
- Do not install the device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
- Do not spill liquids on the device before installation is completed.
- Adjust only those controls specified in the operating instructions.
- Operate the device only from the type of power source indicated on the label.
- Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
- Install in accordance with the manufacturer's instructions in accordance with applicable local codes.

- Use only attachments/accessories specified by the manufacturer.
- Protect all connection cables from possible damage, particularly at connection points.
- When using a Class I adapter with your product, the power cord shall be connected to a socket-outlet with a connection to ground.
- The Low Voltage power supply unit used must comply with EN 62368-1.
- When your product is powered by a power adapter, the adapter shall be powered by a Listed Power Adapter, or DC power source.
- To prevent injury to your hands or damage to the wiper, do not touch the wiper with your hands, especially when the wiper is moving.
- The defrosters around the optical and thermal window can get extremely hot. Be careful when servicing the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its ground terminal connected properly to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.
- For details about the proper configuration for installing your camera outdoors with surge and lightning protection, refer to Best Practices for Outdoor Installation.



Caution!
To reduce the risk of electric shock and damage to the product, only connect any power source when the device is fully installed.



Warning!
INSTALL EXTERNAL INTERCONNECTING CABLES IN ACCORDANCE TO NEC, ANSI/NFPA70 (FOR US APPLICATION) AND CANADIAN ELECTRICAL CODE, PART I, CSA C22.1 (FOR CAN APPLICATION) AND IN ACCORDANCE TO LOCAL COUNTRY CODES FOR ALL OTHER COUNTRIES. BRANCH CIRCUIT PROTECTION INCORPORATING A 20 A, 2-POLE LISTED CIRCUIT BREAKER OR BRANCH RATED FUSES ARE REQUIRED AS PART OF THE BUILDING INSTALLATION. A READILY ACCESSIBLE 2-POLE DISCONNECT DEVICE WITH A CONTACT SEPARATION OF AT LEAST 3 mm MUST BE INCORPORATED.



Warning!
ROUTING OF EXTERNAL WIRING MUST BE DONE THROUGH A PERMANENTLY EARTHED LIQUID TIGHT METAL CONDUIT.



Notice!
Outdoor installation
For details about the proper configuration for installing your camera outdoors with surge and lightning protection, refer to Best Practices for Outdoor Installation.



Notice!
IQSIGHT recommends the use of surge/lightning suppression devices (sourced locally) to protect network and power cables and the camera installation site. Refer to NFPA 780, Class 1 & 2, UL96A, or the equivalent code appropriate for your country/region, and to local building codes. Refer also to the installation instructions of each device (midspan, camera, and surge suppression device installed where the cable enters the building).

Notice!
Always use one of the following types of shielded network connection (Ethernet) cable (Cat5e/Cat6 or better), and a shielded RJ45 network cable connector:
- F/UTP overall screened cable with unscreened twisted pairs (often referred to as FTP)
- S/UTP overall braided shield with unscreened twisted pairs (often referred to as STP)
Always use shielded cables/connectors in demanding indoor electrical environments where the network cable is located in parallel with electrical mains supply cables, or where large inductive loads such as motors or contactors are near the camera or its cable.

Notice!
Ancillary power (UPS) required
To meet the Mains Supply Voltage Dips and Short Interruptions requirements per EN 50130-4 Alarm Standard, ancillary equipment (for example, an Uninterruptible Power Supply (UPS)) is necessary. The UPS must have a Transfer time between 2-6 ms and Backup Runtime of greater than 5 seconds for the power level as specified on the product data sheet.

Warning!
THE CAMERA MUST BE MOUNTED DIRECTLY AND PERMANENTLY TO A NON-COMBUSTIBLE SURFACE.

1.4 Notices

UL Disclaimer
Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in Standard(s) for Safety for Information Technology Equipment, UL 62368-1: 2018. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.
UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

FCC Statement - Wired Class A digital device (unintentional radiator)
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.

FCC suppliers Declaration of Conformity

MIC fusion 9100s	MIC-9803S-Z30B18Q
MIC fusion 9100s	MIC-9803S-Z30W18Q
MIC fusion 9100s	MIC-9803S-Z30G18Q
MIC fusion 9100s	MIC-9803S-Z30B06V
MIC fusion 9100s	MIC-9803S-Z30W06V
MIC fusion 9100s	MIC-9803S-Z30G06V

MIC fusion 9100s	MIC-9803S-Z30B14V
MIC fusion 9100s	MIC-9803S-Z30W14V
MIC fusion 9100s	MIC-9803S-Z30G14V
MIC fusion 9100s	MIC-9803S-Z30B42V
MIC fusion 9100s	MIC-9803S-Z30W42V
MIC fusion 9100s	MIC-9803S-Z30G42V

Responsible party
IQSIGHT LLC
130 Perinton Parkway
Fairport NY 14450, USA
www.iqsight.com

European Union, Great Britain, Australia, and New Zealand

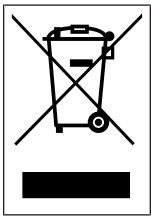
Notice!
This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to **EN 55032**. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, 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.

Canada
CAN ICES-003(A) / NMB-003(A)

VCCI statement (Japan)
この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI - A

Use latest software
Before operating the device for the first time, make sure that you install the latest applicable release of your software version. For consistent functionality, compatibility, performance, and security, regularly update the software throughout the operational life of the device. Follow the instructions in the product documentation regarding software updates.
The following link provides general information and information on security advisories, that is a list of identified vulnerabilities and proposed solutions: https://www.iqsight.com/en/support/product-security/
We assume no liability whatsoever for any damage caused by operating its products with outdated software components.

Old electrical and electronic equipment



This product and/or battery must be disposed of separately from household waste. Dispose such equipment according to local laws and regulations, to allow their reuse and/or recycling. This will help in conserving resources, and in protecting human health and the environment.

1.5 Important notices - Illumination safety

The text in this section applies only to cameras that have illuminators.

Notice!

This product has been tested according to standard IEC62471:2006 “Photobiological safety of lamps and lamp systems”. The product emissions exceed the EXEMPT Group limit for both Retinal Blue Light and Cornea/Lens infrared hazard as defined by IEC 62471:2006. The product was found to meet the Risk Group 1 exposure limits for IR and White LEDs.

The IEC 62471 provides the methods to determine the risk group of any lamp or any product incorporating a lamp. The risk groups in IEC 62471 indicate the degree of risk from potential optical radiation hazards. The risk groups were developed based upon decades of lamp use experience and the analysis of accidental injuries related to optical radiation emission.

EXEMPT Group - no optical hazard is considered reasonably foreseeable, even for continuous, unrestricted use. Typical examples are most frosted incandescent lamps and fluorescent lamps used in domestic applications.

Exposure Hazard Value (EHV) is a ratio of the Exposure Level (distance, exposure time) to Exposure Limit Value (ELV). When EHV is greater than 1, the device has exceeded the Exposure Limit Values for a particular Risk Group. The ELV is the level where optical radiation to the eye or skin is not expected to result in adverse biological effects.

The **Hazard Distance (HD)** is the distance from the source at which the Exposure Level equals the appropriate ELV. In other words, when EHV=1 for a particular Risk Group.

Regarding the Cornea / Lens infrared hazard of this product, the Exposure Hazard Value (EHV) at a test distance of 200mm is 2.19 based on EXEMPT Group exposure limits. The EHV based on Risk Group 1 limits is 0.386. The HD for the Exempt Group is 297 mm.

2 Unpacking

- This equipment should be unpacked and handled with care. Check the exterior of the packaging for visible damage. If an item appears damaged in shipment, notify the shipper immediately.
- Verify that all the parts listed in the Parts List below are included. If any items are missing, notify your Sales or Customer Service Representative from IQSIGHT.
- Do not use this product if any component appears to be damaged. Please contact IQSIGHT in the event of damaged goods.
- The original packing carton (if undamaged) is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.

3 Short information

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was correct at the time of publication, however, the content can change without notice. IQSIGHT accepts no liability for damage resulting directly or indirectly from faults, incompleteness or discrepancies between this manual and the product described.

Copyright

This manual is the intellectual property of IQSIGHT and is protected by copyright.
All rights reserved.

Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

More information

For more information please contact the nearest IQSIGHT location or visit www.iqsight.com

https://commerce.iqsight.com/us/en

4 System overview

4.1 Product description

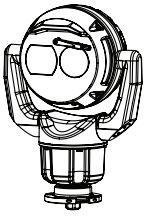
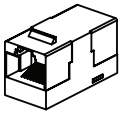
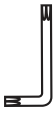
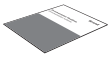
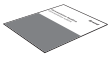
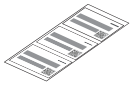
The MIC fusion 9100s camera is an advanced PTZ surveillance platform designed to provide early detection in mission-critical applications. The camera is the solution for robust and high-quality imaging needs, due to the combination of thermal detection for consistent monitoring in challenging lighting and weather conditions with the high-resolution 30x optical camera for precise visual identification.
The camera's ruggedized design is suited for extreme environments and weather conditions such as high winds, rain, fog, ice, and snow. The device offers the most advanced imaging and positioning system solution available on the market.

4.2 Intended use

The camera is designed to be integrated in professional IP video surveillance solutions as a surveillance camera. Installation, commissioning and operation of the camera shall be carried out by trained professionals only.
The use of surveillance cameras is restricted by national laws and regulations. Use the camera accordingly.

5 Preparing for installation

5.1 Parts included

	Quantity	Component
	1	MIC fusion 9100s camera
	1	RJ45 coupler
	5	Fast wire clips
	1	TR20 allen key
	1	Safety and security information
	1	Quick installation guide
	3	Identification label stickers

5.2 Preparation

Before installation, prepare and plan the installation process and materials needed.

Pre-requisites

Remove the components from the box. Make sure that all parts are included and are not damaged.

The necessary material and equipment:

- Appropriate size power drill.
- Screwdriver and bit holder for TR20 bit.
- MicroSD card (optional)

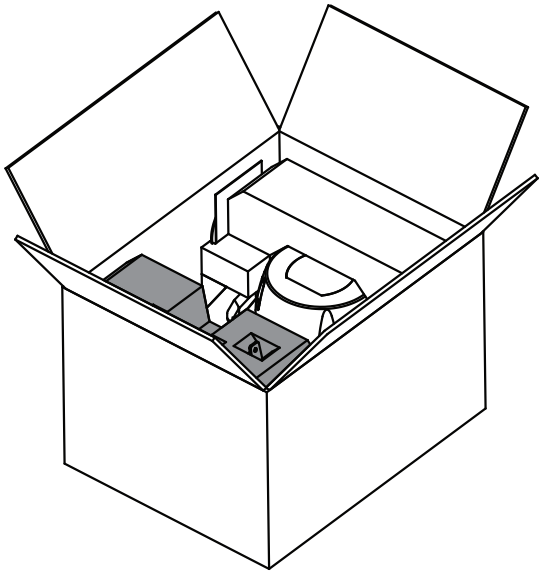
Note: We recommend the use of industrial microSD cards with health monitoring, as listed on the camera datasheet.

5.3 In-box configuration (Optional)

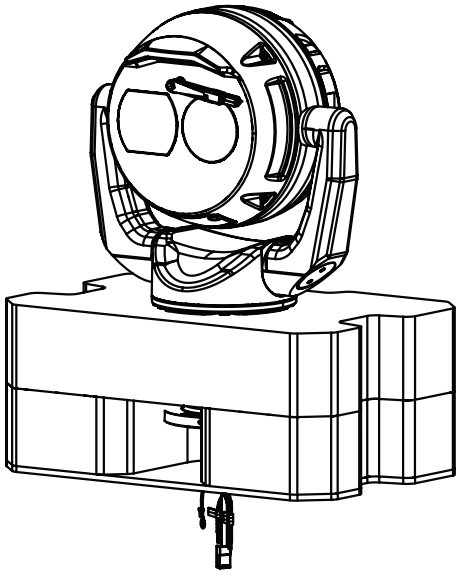
The camera packaging allows installers to connect the camera to the network and configure the camera still in the box.

Caution!
Risk of damage to camera
Do not change the camera orientation to “Inverted” while the camera is still in the box. The camera head must be free to rotate. If you must change the camera’s orientation to “Inverted”, remove the camera from the box and configure it by following the steps in *Configuration on a temporary table-top stand, page 14*.

1. Remove the accessories box from the top, middle section of the box.



2. Remove the packaging material to access the camera’s electrical connectors.



3. Supply power to the camera and Connect the camera to the computer. Note that the wiper moves one to three times across the camera window, and then returns to parked position.
4. Configure the camera. Refer to the separate User Manual for details.

5. Disconnect the wires/cables from the connectors in the base of the camera.

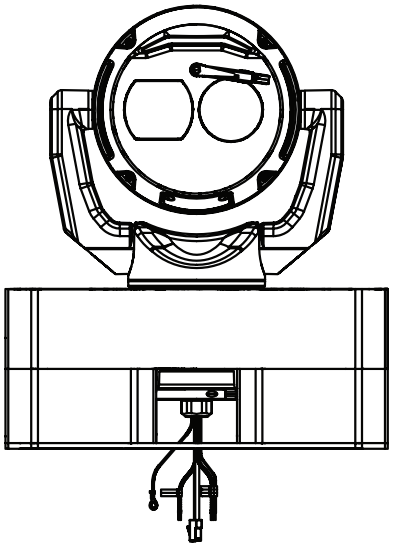
5.4 Configuration on a temporary table-top stand

Caution!
Take extra care lifting or moving MIC cameras because of their weight.

Caution!
Do not pan and tilt the camera when inside the box or in the box stand in the bottom of the box.

The camera (still in the carton stand) can stand temporarily on a flat, horizontal surface such as a desk or a table during initial network connection and configuration.

1. Remove the accessories box from the top, middle section of the box.
2. Remove the packaging material to access the camera's electrical connectors.
3. Remove the carton covering the head of the camera.
4. Remove the camera from the box. Place the camera upright on a flat, horizontal surface.



5. Supply power to the camera and Connect the camera to the computer. Note that the wiper moves one to three times across the camera window, and then returns to parked position.
6. Configure the camera. Refer to the separate User Manual for details.

Notice!
If you change the camera orientation to "**Inverted**" (from the page **Configuration** of the web browser: **Camera** > **Installer Menu** > **Orientation**), then the camera head will rotate automatically into inverted position (180°). Note that the visor will now be near the body of the camera.

7. Disconnect the wires/cables from the connectors in the base of the camera.

6 Installation

6.1 Overview of installation steps

Caution!
Installation must be made by qualified personnel and conform to ANSI/NFPA 70 (the National Electrical Code® (NEC)), Canadian Electrical Code, Part I (also called CE Code or CSA C22.1), and all applicable local codes. IQSIGHT accepts no liability for any damages or losses caused by incorrect or improper installation.

Caution!
ELECTRIC SHOCK HAZARD
To reduce the risk of electric shock, disconnect power to the camera and/or to the power supply unit before moving the camera, before installing any accessories, and before mounting the camera.

Before you install your MIC camera, inspect the camera for any scratches or damage to the surface finish/paint. If you notice damage to the paint, return the unit for a replacement.
1. Select the Mounting Location and Orientation.
2. Install the appropriate 36 VDC power supply, 24 VAC power supply, or IEEE 802.3bt Type 4, Class 8 90W midspan (only without illuminator accessory)), and/or the alarm/washer interface (MIC-ALM-WAS-24) (each sold separately). Refer to the Installation Manual of the appropriate device for installation instructions.
3. Install electrically grounded, liquid tight metal conduit (user-supplied) to the MIC DCA (sold separately) (and to the PSU), install wiring (user-supplied), and then make the necessary connections for power, telemetry, and video.
4. (Optional) Install one or two microSD cards.
5. (Optional) Complete pre-configuration in the shipping box or on a table.
If installing the camera in *inverted* orientation, complete this step on a table-top stand only.
6. Install the DCA and then install the camera on the DCA.
OR
6. Install the camera directly to a mounting surface (such as an eave).
1. (Optional) Install the sun cover (sold separately).
8. (Optional) Install the illuminator (sold separately).
10. Make the appropriate power and control connections.

6.2 Mounting Location and Orientation Options

The MIC fusion 9100s cameras are designed for use in outdoor applications. If you install the camera in an enclosed area, make sure that air circulates around the camera to supply cooling.
Select a secure installation location and mounting orientation for the device. Ideally, this is a location where the device cannot be interfered with either intentionally or accidentally.
Select a location where the MIC camera will not touch materials such as steel straps or cables.
You can install the camera:

- onto a MIC-DCA or a MIC wall mount (MIC-WMB) with a MIC shallow conduit adapter (MIC-SCA). (Never install the wall mount only.)
  or
- directly to a mounting surface using the supplied base gasket and the appropriate connector kit (sold separately):
  - MIC-IP67-5PK MIC7000 IP67 Connector Kit

To have an installation rated IP67, you must use the appropriate IP67 Connector Kit.

Confirm that no residual water or moisture is in the bottom of camera. Ground the camera as described in the chapter Installing a MIC Camera on a Hinged DCA.
You can install the camera in one of two orientations:
– upright (straight up, 90°)
– inverted (straight down, 90°)
The most common type of mounting location is the top of a pole suitable to support CCTV equipment and that provides a robust mounting platform to minimize camera motion and typically has a large base cabinet for mounting ancillary equipment such as power supplies.
The camera can also be mounted on the side of a lamp post, pole, or similar column using the Pole Mount Bracket (MIC-PMB). Be aware that lamp posts can often be subject to movement and are not suitable platforms in all conditions or for all applications.

Notice!
Outdoor installation
For details about the proper configuration for installing your camera outdoors with surge and lightning protection, refer to the chapter “Installing the camera outdoors.”

Ensure that the location has the appropriate clearance from power and lightning conductors, in accordance with *NEC725* and *NEC800 (CEC Rule 16-224* and *CEC Section 60)*.
Do not install the device near:
– Any heat sources
– Any overhead power lines, power circuits, or electrical lights, or where the device may contact power lines, circuits, or lights
Isolate shielded CAT5e or CAT6 cable from any high voltage power lines in a separate grounded, metal conduit. Refer to the datasheet for test conditions for allowable transients / voltage fluctuations.

Notice!
Heat sources may obscure the thermal image
Heat sources in the direct FOV of the thermal camera or which can reflect from thermally reflective sources might obscure the thermal image.

Notice!
Type and source of hazard
Pointing the FOV of thermal camera directly at the sun may cause image artifacts.

Mounting surface recommendations for MIC mounting accessories
The mounting surface should be capable of supporting the combined weight of the MIC camera + MIC Illuminator + MIC mounting accessory (DCA, wall mount, corner bracket, etc.). All expected conditions of load, vibration and temperature should be considered when planning an installation. The material should accommodate a minimum pull-out strength of 275 kg (600 lb).
The mounting accessory should be secured to one of the following surfaces:
– Concrete (solid / cast)
– Concrete masonry unit (concrete block)
– Brick (all types)
– Metal (steel / aluminum, minimum 3 mm (0.125 in.) thick)
In all situations, we recommend referencing any applicable building codes or professional structural engineering guidelines for a secure installation.
▸ Ensure that the selected mounting surface is capable of supporting the combined weight of the camera and mounting hardware (sold separately) under all expected conditions of load, vibration, wind, and temperature.



Caution!

Risk of lightning strikes

If the camera is installed in a highly exposed location where lightning strikes may occur, then we recommend installing a separate lightning conductor within 0.5 m (1.6 ft) of the camera and at least 1.5 m (4.9 ft) higher than the camera. A good earth bonding connection to the camera housing itself will provide protection against damage from secondary strikes. The camera housing itself is constructed to cope with secondary strikes. If the correct lightning protection is applied, then no damage to the internal electronics or camera should result. For more details, refer to the chapter Installing the camera outdoors.

Installation in a damp environment (for example, near a coastline)

The fasteners and fixtures shipped with the camera help to keep the camera secure. Always use the supplied screws and other fasteners when installing or performing maintenance on the camera. The supplied hardware is properly treated and engineered for safe use with your MIC camera.

The camera head has three (3) plastic screws, factory-installed, around each IR port to prevent corrosion in units that do not have accessories installed on the camera head. If you install a sun cover or an illuminator accessory, you must remove the plastic screws and replace them with the metal screws that ship with each accessory.

Before installation, and periodically, inspect the metal parts of the camera for paint that is chipped or otherwise damaged. If you notice any paint damage, return the unit for a replacement.

Avoid installation practices that may bring the camera's metal mountings in contact with materials such as stainless steel. Such contacts can result in galvanic corrosion and degrade the cosmetic appearance of the camera. These cosmetic damages caused by improper installation are not covered by warranty as they do not affect the functionality of the camera.

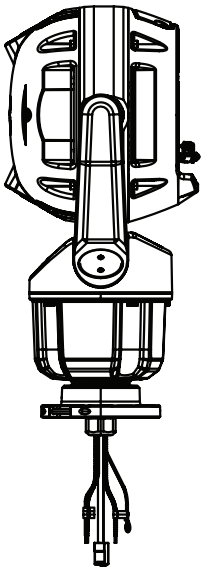
6.2.1 Mounting the camera in inverted orientation

To change the camera orientation to "Inverted," complete the following steps:

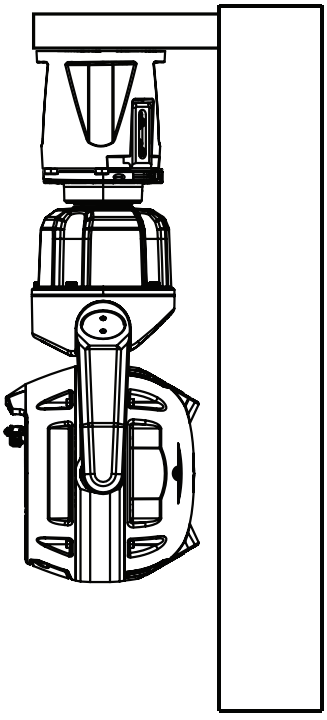
1. Remove the camera from the shipping box.
2. Apply power to the camera.
3. Access the web browser of the camera.
4. Access the page Configuration.
5. Navigate to Camera > Installer Menu > Orientation.
6. Select "Inverted."

   The camera head will rotate automatically into inverted position (180°).

Note the position of the visor when the camera is installed in inverted orientation. The visor will now be near the body of the camera.

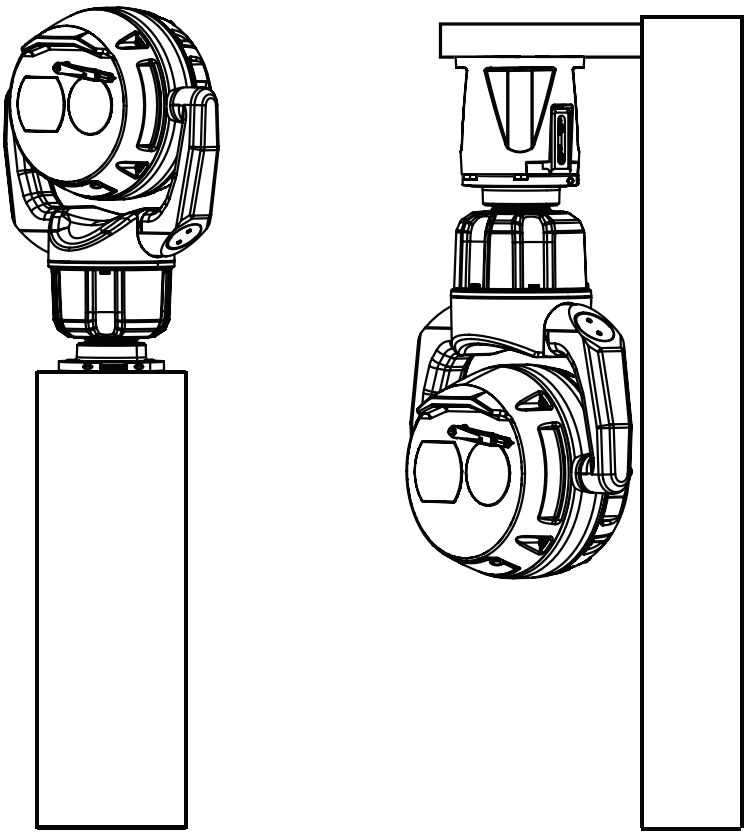


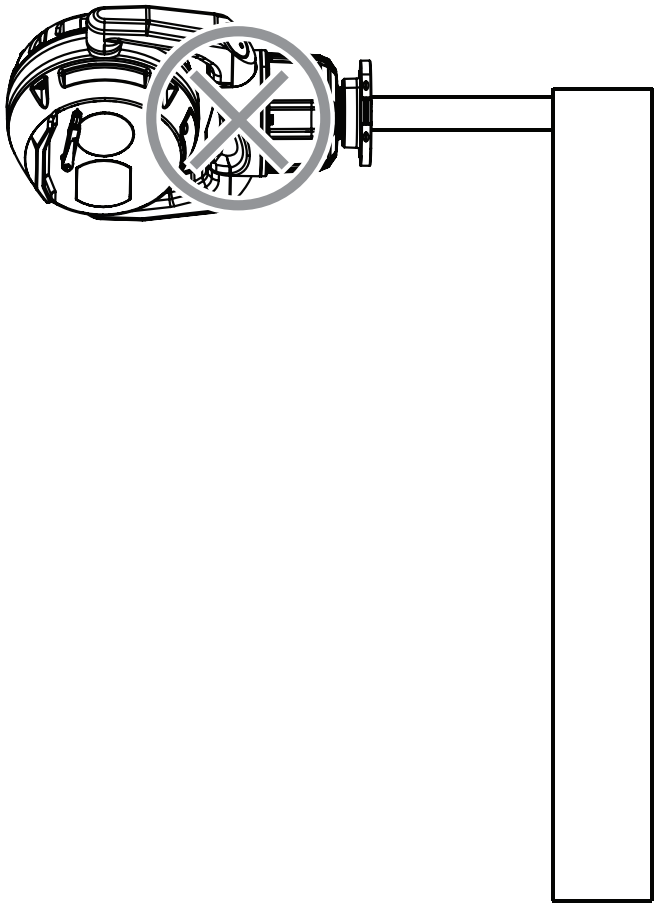
Note: It is not necessary to remove the section for the illuminator on the sun cover because the illuminator is attached to the opposite side of the camera visor.
Seal the mount so that moisture or water cannot collect and stay in the bottom of the MIC camera.
The figure that follows shows the camera installed in inverted orientation on a pole.



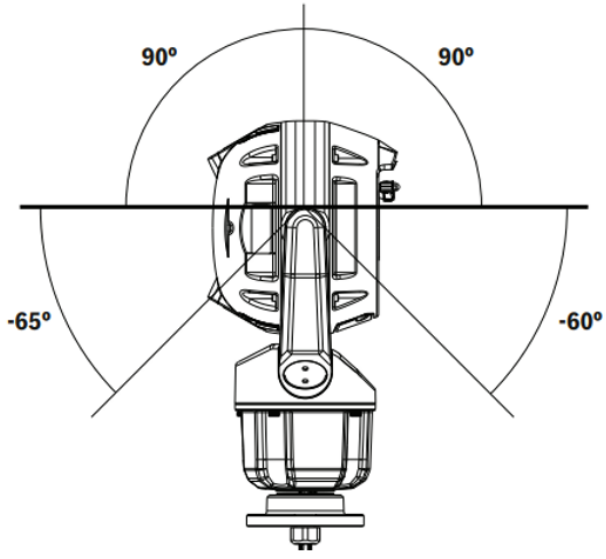
6.3 Mounting Options

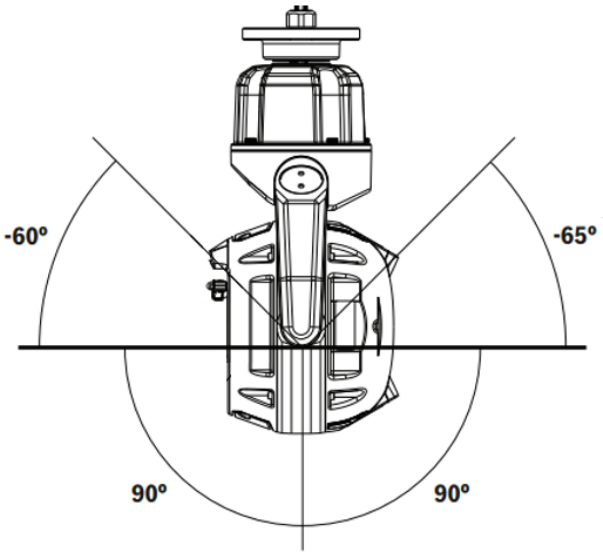
MIC cameras are designed to be mounted upright (straight up) or inverted (straight down). See the figures below for illustrations of the correct and the incorrect mounting orientations of MIC cameras.





The figure below illustrates the tilt range of the camera in upright orientation.





6.4 Mounting Bracket Options

IQSIGHT sells a complete series of mounting brackets that support multiple mounting configurations.

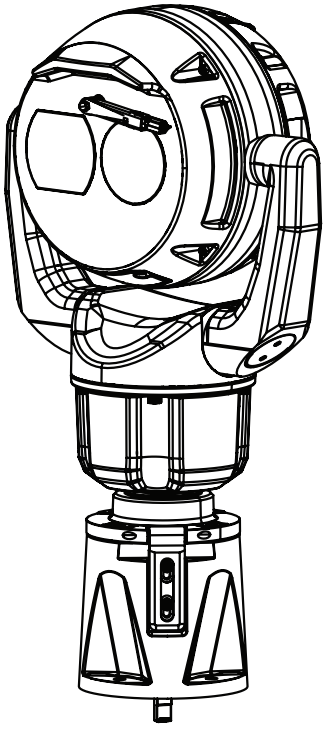
Always use only IQSIGHT-supplied mounts, which are designed for safe installation of your MIC camera.
Refer to the MIC Series Mounting Brackets Installation Guide for complete installation instructions.

Mounting hardware recommendations for MIC mounting accessories

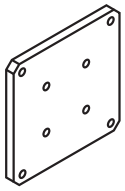
Fasteners are not supplied with the MIC mounting accessories for attachment to the mounting surface. The type of fastener necessary is dependent on the mounting surface.
Fasteners can include wedge anchors, sleeve anchors, single expansion anchors, double expansion anchors, machine screws or 'Thru-Bolting' with a nut.
Fasteners are to be of a structural grade (ISO Class 10.9, SAE Grade 8) and zinc plated for moderate corrosion resistance. When installed in marine or similarly corrosive environments, stainless hardware (A2-800, A4-800) is recommended.
Fasteners are to be a minimum diameter of 8 mm (0.3125 in.).
All bolts must extend through the mounting surface and be secured with a flat washer, lock washer and nut. All studs must be anchored to concrete or welded to a steel backing plate.
In all situations, we recommend referencing any applicable building codes or professional structural engineering guidelines for a secure installation.

Deep Conduit Adapter

The hinged DCA is well-suited to installations on top of a pole.



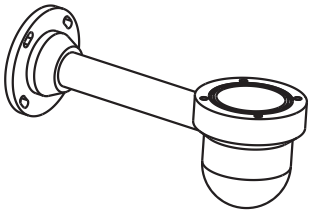
Wall Mount



MIC-SPR-BD
MIC-SPR-WD
MIC-SPR-MG



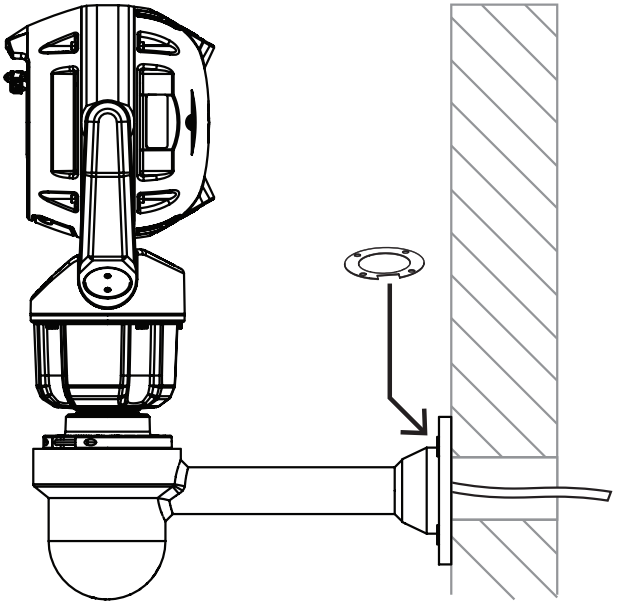
MIC-SCA-BD
MIC-SCA-WD
MIC-SCA-MG



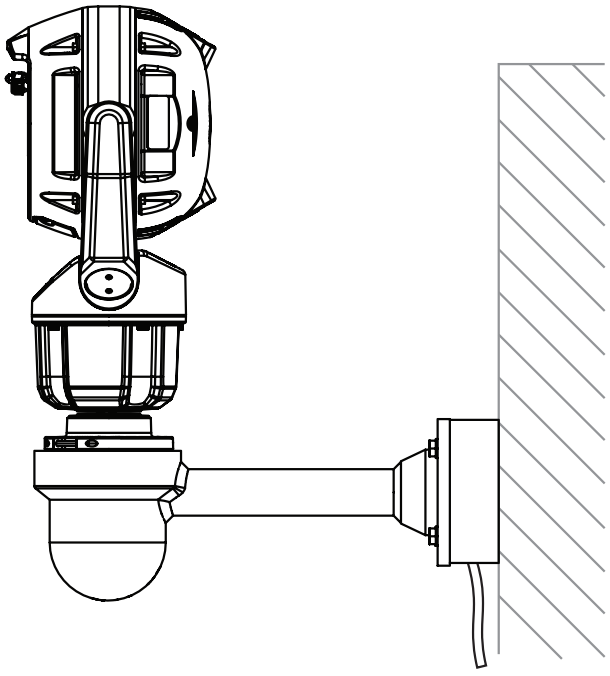
MIC-WMB-BD
MIC-WMB-WD
MIC-WMB-MG

Note: Always install an SCA when you install a wall mount for any installation configuration.
Route cables through the bottom of the SCA (to prevent water from running into the side or top of the SCA along the cables).

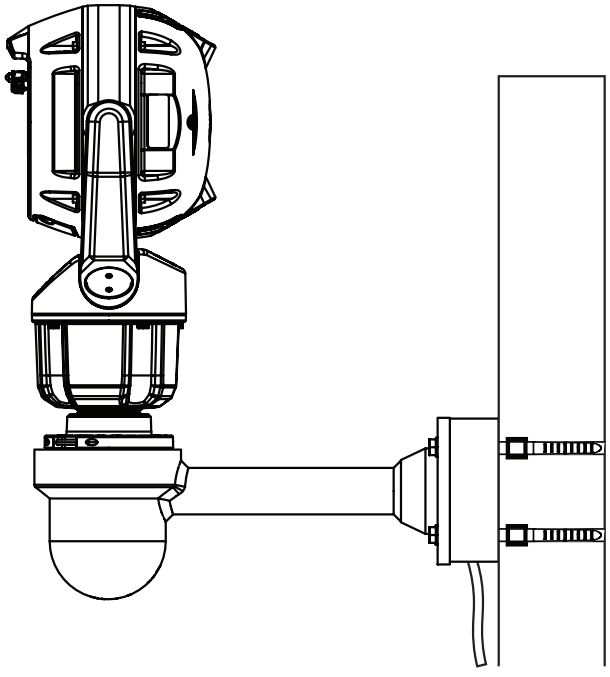
Through-wall Mount



Down-wall Mount

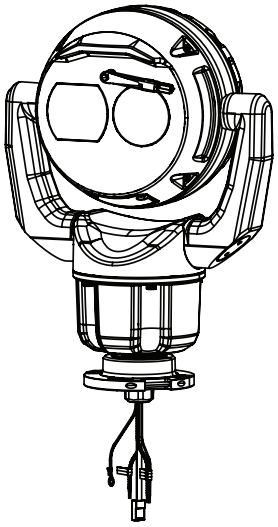


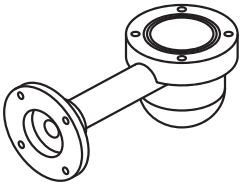
Pole Mount



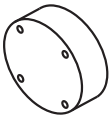
The figure below identifies the three mounting accessories (each sold separately) that are necessary to mount the MIC camera on the side of a pole.

Note: The figure identifies the part numbers, as well as the codes for the available colors (-BD for black, -WD for white, and -MG for grey) of each mounting accessory.

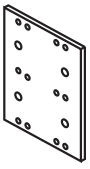




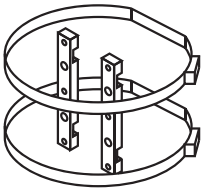
MIC-WMB-BD
MIC-WMB-WD
MIC-WMB-MG



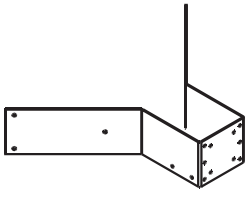
MIC-SCA-BD
MIC-SCA-WD
MIC-SCA-MG



MIC-PMB



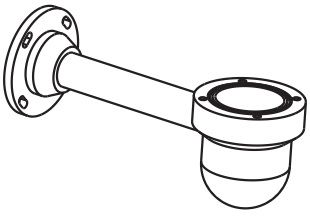
Corner Mount



MIC-CMB-BD
MIC-CMB-WD
MIC-CMB-MG



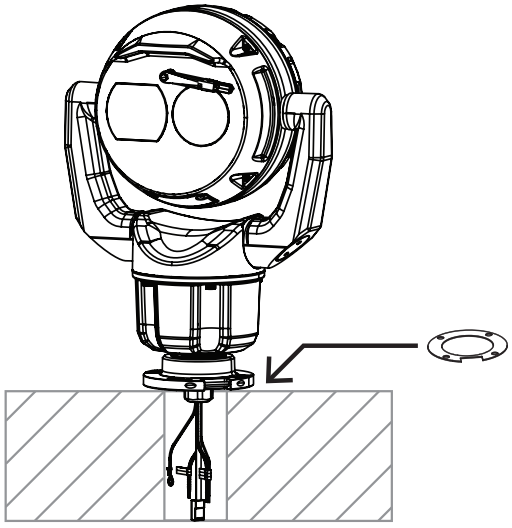
MIC-SCA-BD
MIC-SCA-WD
MIC-SCA-MG

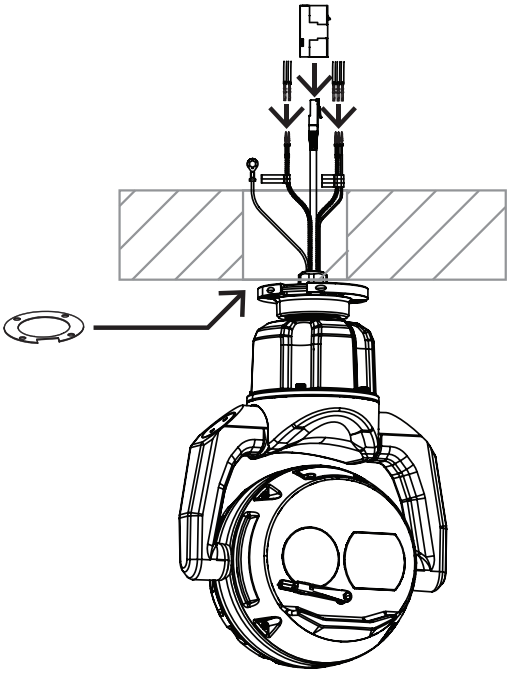


MIC-WMB-BD
MIC-WMB-WD
MIC-WMB-MG

Note: Always install an SCA when you install a wall mount for any installation configuration.
Route cables through the bottom of the SCA (to prevent water from running into the side or top of the SCA along the cables).

Surface Mount





6.5 Installing a MIC camera on a hinged DCA

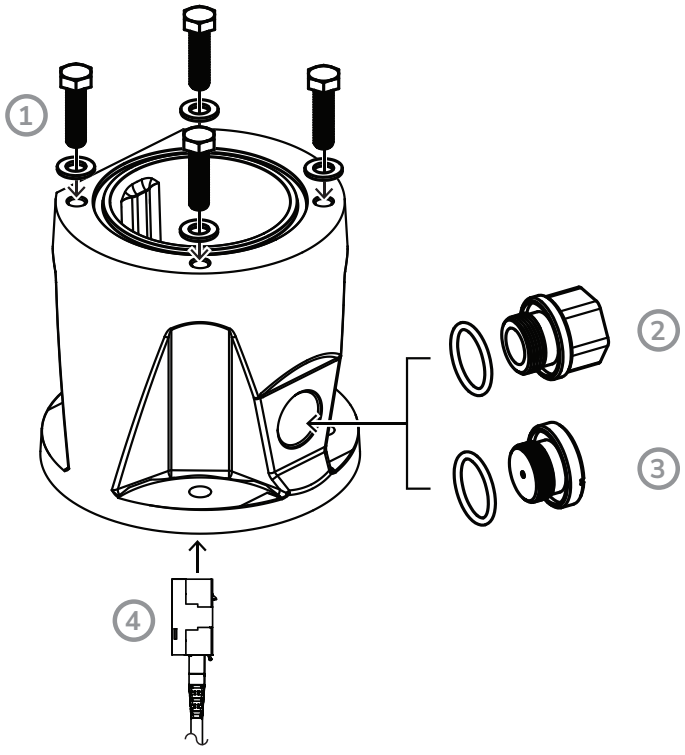
The hinge feature allows installers to “hang” the camera temporarily but securely during installation for easier connection of cables/wiring before final bolts are installed.

Parts List

Quantity	Component
1	MIC Hinged DCA (MIC-DCA-Hx)
4	Stainless steel hex bolts, M8 x 30
4	Stainless steel plain washers, M8
1	O-ring, 80 mm x 3 mm
1	Conduit adapter (male M25 to female 3/4” NPT or region-specific liquid tight electrically conductive metal conduit size)
1	Blanking plug, M25 x 1.5, with O-ring
1	Quick Installation Guide

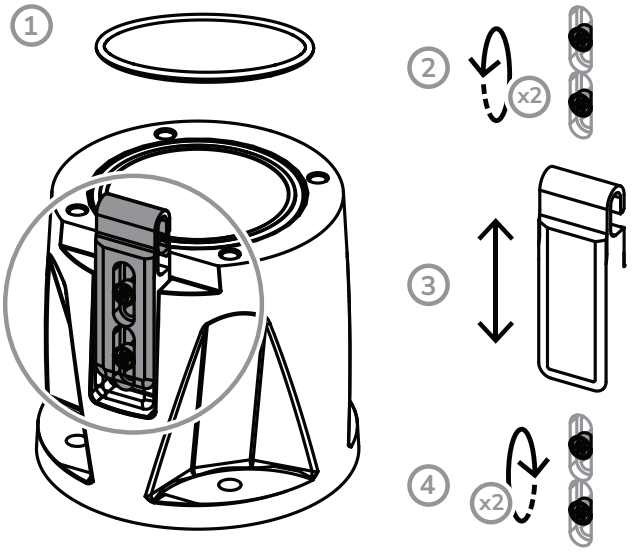
Warning!
Ensure not to damage the paint on the housing of the camera or the mount.

1. Attach the DCA to the mounting location using user-supplied hardware (item 1). (We recommend stainless steel bolts and washers).
2. Attach user-supplied conduit to the side hole or to the bottom hole. If applicable, use the conduit adapter (male M25 to female ¾ in. NPT) (item 2, included with the DCA).
3. Route cables into the DCA (item 4), either through the bottom or from the side.
4. Use the blanking plug and O-ring (item 3, included with the DCA) to close the unused hole (bottom or side) in the DCA.

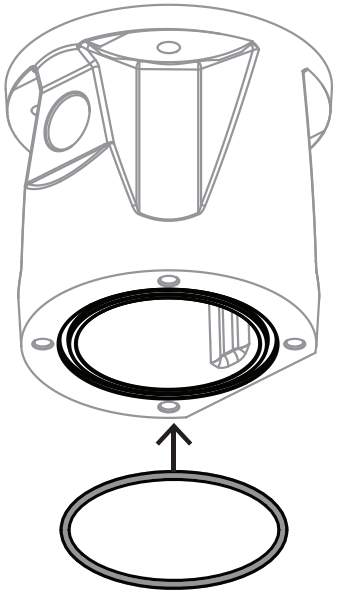


5. Insert the O-ring (item 1).

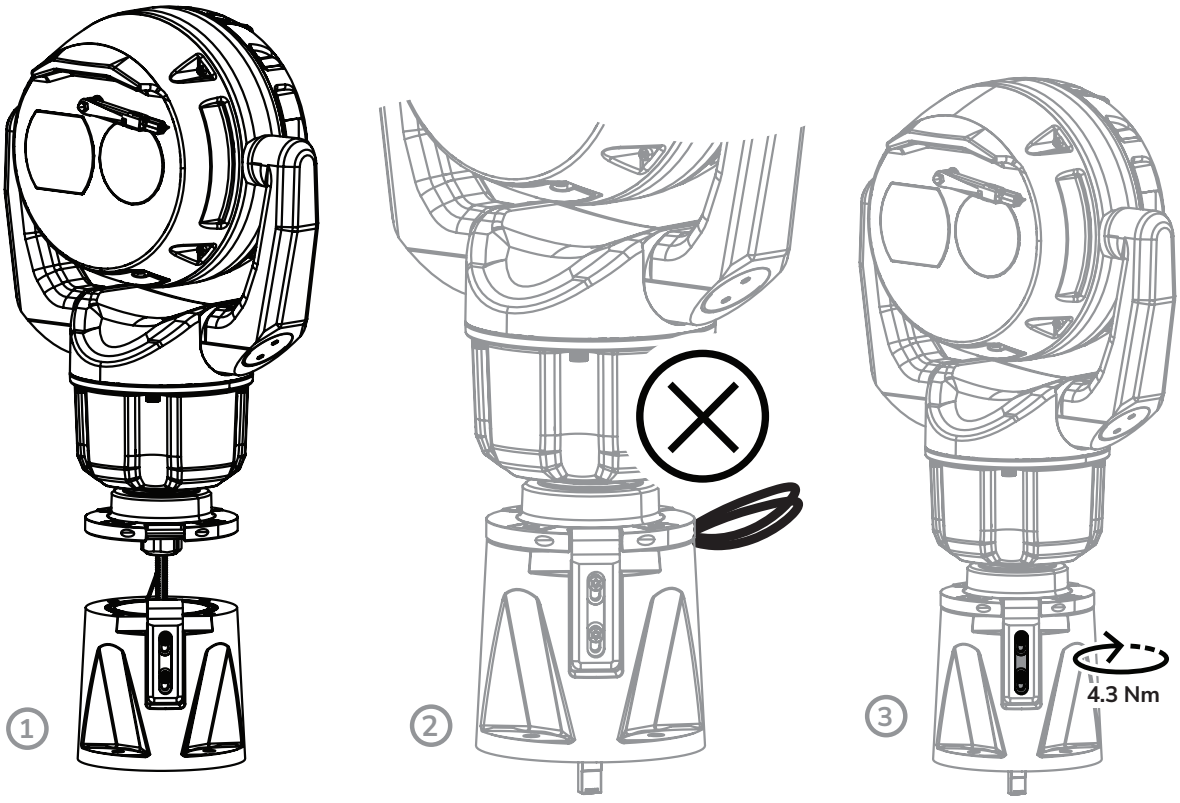
6. Loosen the Torx bolts two (2) turns (items 2). Slide the hook up (item 3). Tighten the bolts to hold the hook in place temporarily (item 4).



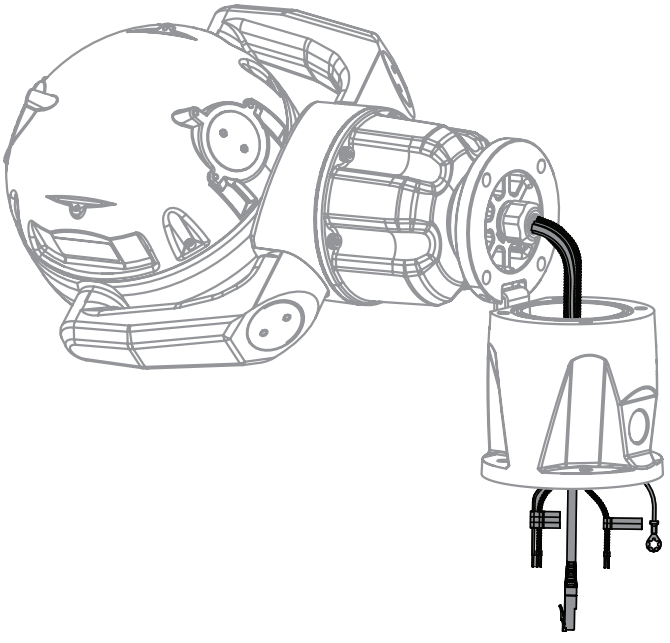
7. For inverted installation, apply a small amount of grease to the primary O-ring to hold it in place.



8. Push the wires from the camera base into the DCA while positioning the base pin of the camera under the DCA hook (item 1). Avoid pinching the wires! (item 2). Loosen the hook bolts, and then slide the hook down to secure the camera pin. Fully tighten the hook bolts (item 3).

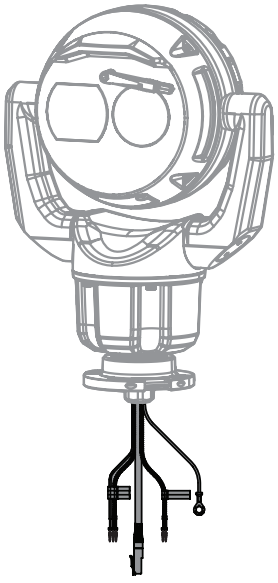


9. Carefully tilt the camera to the side with the pin under the hook.

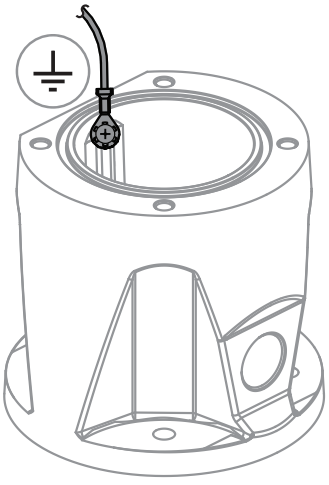


Notice!
Risk of damage to the camera!
Ease the camera into position; do not allow it to fall unassisted into rotated position or allow head to slam into any surface or object!

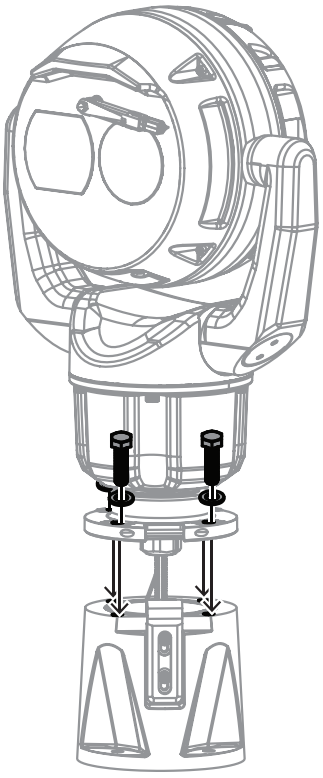
10. Make the appropriate electrical connections. Refer to the chapter **Connections** for more information.



11. Screw the green GND wire from the camera base to the ground hole on the inside wall of the DCA. Attach user-supplied grounded wire (item 4 in step 1) to the same connection point.

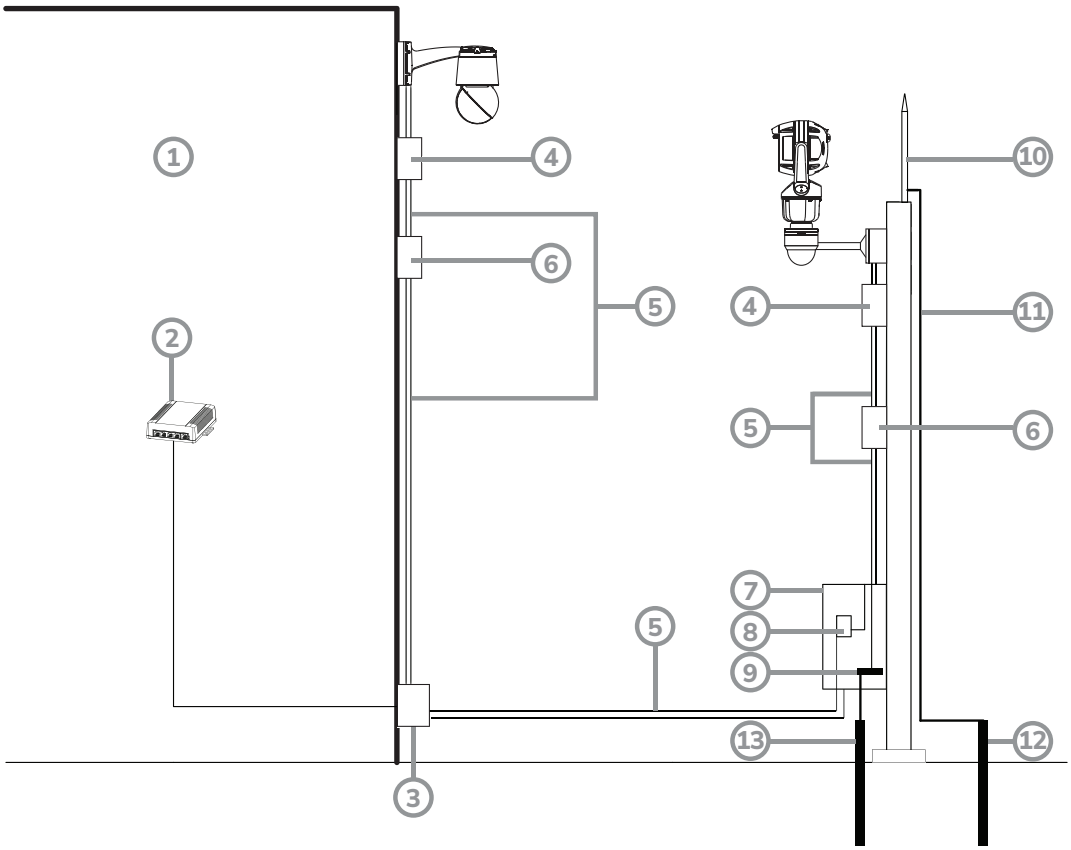


12. Carefully tip the camera to its final position. Avoid pinching wires between the camera base and the DCA! Insert four washers and hex bolts (supplied).



6.6 Installing the camera outdoors

Cameras installed outdoors are typically exposed to surges, transients, and lightning. The details for wiring and installation are based on common practices for proper surge and lightning suppression. The figure that follows is an illustration of the best practices for installing IP cameras outdoors with surge and lightning suppression.
Note that the illustration has an AUTODOME camera and a MIC camera and does not include representations of all models of IP cameras, including AUTODOME and MIC.
The illustration can represent any IP camera. Mounting hardware varies between units.



1	Indoor main building	2	Network switch with shielded ports and grounding as recommended by the manufacturer.
3	Surge suppression for indoor equipment at cable entry	4	Outdoor rated surge suppressor with shielded RJ45 connections that must be mounted as close to the camera as possible. Connect the ground per the manufacturer's installation manual.
5	Install Cat5e/Cat6 shielded Ethernet cable such as SF/UTP overall braided shield and foil shield with unscreened twisted pairs with shielded RJ45 connectors. The cable must be routed through a liquid-tight metal conduit that is permanently Earth-grounded across the entire span and capable of withstanding the outdoor environment. The cable must be a maximum length of 100 m (328 ft). Power and signal cables must be in separate conduits with the correct physical separation distance between them.		
6	Outdoor-rated midspan with shielded RJ45 connections. Ground the metal conduit to the midspan per the installation instructions of the camera/midspan. Our outdoor midspans require their ground strap to be connected to Earth ground.	7	Equipment enclosure with AC power source for the midspan
8	Optional outdoor-rated network switch or patch panel	9	Connect the Bus Bar to the Equipment Grounding Electrode. All equipment must be bonded to this common bus bar.

10	Lightning Rod	11	Down Conductor
12	Lightning Rod Grounding Electrode	13	Equipment Grounding Electrode

Additional wiring guidelines

Maintain the physical separation distance between the Cat5e/Cat6 shielded Ethernet cable and high voltage/EMF sources. These are typical recommendations, but also refer to local electrical codes.

Voltage range	Minimum separation distance
For <600 VAC	50 mm (2 in.)
For >600 VAC and <3 kV	1.5 m (5 ft)
For >3 kV	3 m (10 ft)

Use shielded cables for alarms or any other connections when applicable.

Lightning rod, down conductor, and electrode

- Note that the lightning rod down conductor connects directly to the grounding electrode.
- Refer to NFPA 780, Class 1 & 2, UL96A, and to the equivalent code appropriate for the country/region.
- Follow the installation instructions of the lightning rod manufacturer.

Separate grounding electrodes

Some standards call for a common electrode for the equipment bus bar and the lightning rod. Refer to NFPA 780, Class 1 & 2, UL96A, and to the equivalent code appropriate for the country/region.

Metal pole grounding

If a metal pole is used, refer to NFPA 780, Class 1 & 2, UL96A, and to the equivalent code appropriate for the country/region.

Camera Housings and Mounts

- Use only the mounts listed on the datasheet of the specific camera.
- Follow all grounding for the camera housings and mounts per the installation manual.

6.7 Installing the illuminator (Optional)

Use the correct set of tools as well as the recommended torque values given in the instructions that follow. The use of the wrong tools or torque values may cause damage to threads or seal caps, which may result in leaks or damage to paint, which then may lead to the start of corrosion.

Parts List

Quantity	Component
1	MIC Illuminator accessory
1	Spanner wrench [to remove the access plug from the camera head]
3	M4x10 socket head Torx screws
1	Quick Installation Guide

Additional Tools Required

1	Torx driver, T20, for M4 Torx screws

1	Phillips-head screwdriver, #2, to remove factory-installed plastic screws from the camera head

Warning!
IR emitted from this product.
Meets IEC 62471, Risk Group 1.

Notice!
This product has been tested according to standard IEC62471:2006 “Photobiological safety of lamps and lamp systems”. The product emissions exceed the EXEMPT Group limit for both Retinal Blue Light and Cornea/Lens infrared hazard as defined by IEC 62471:2006. The product was found to meet the Risk Group 1 exposure limits for IR and White LEDs.

Notice!
If the MIC camera will have both illuminator and sun cover accessories, install the sun cover first.

Notice!
When the illuminator is added, IEEE 802.3bt Type 4, Class 8 90 W power cannot be used and 24 VAC or 36 VDC with sufficient power must be used.

Warning!
At the time of publication of this Installation Manual, the external illuminator is not supported for use in Australia. The camera and illuminator combination is not certified for the applicable IEC 62368-1 Edition 3 national compliance requirements for Australia.

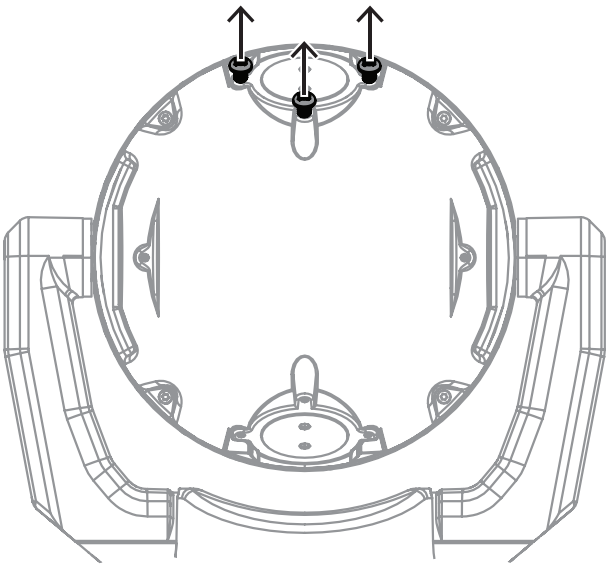
1. Mount the camera or stand it temporarily in the packaging carton on a stable surface before proceeding.

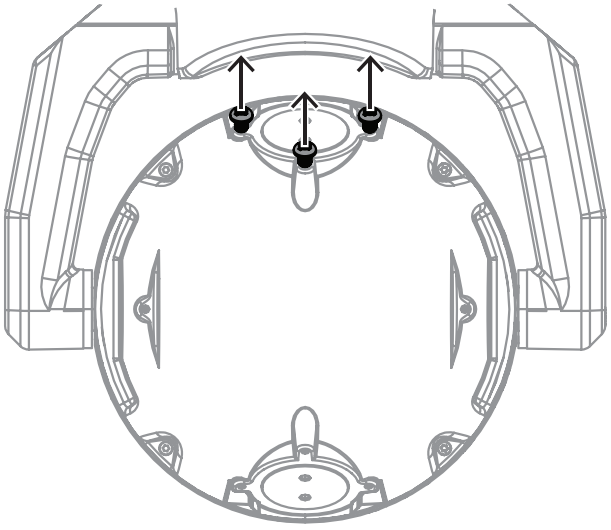
If the camera will be mounted inverted, you must rotate the tilt head before attaching the illuminator.

1. Apply power.
2. Connect to your network.
3. From the web browser, access the camera’s Configuration page. Select Camera > Installer Menu > Orientation.
4. Select “Inverted”. Click **Set** to confirm the selection. The camera head will rotate automatically into inverted position (180°).

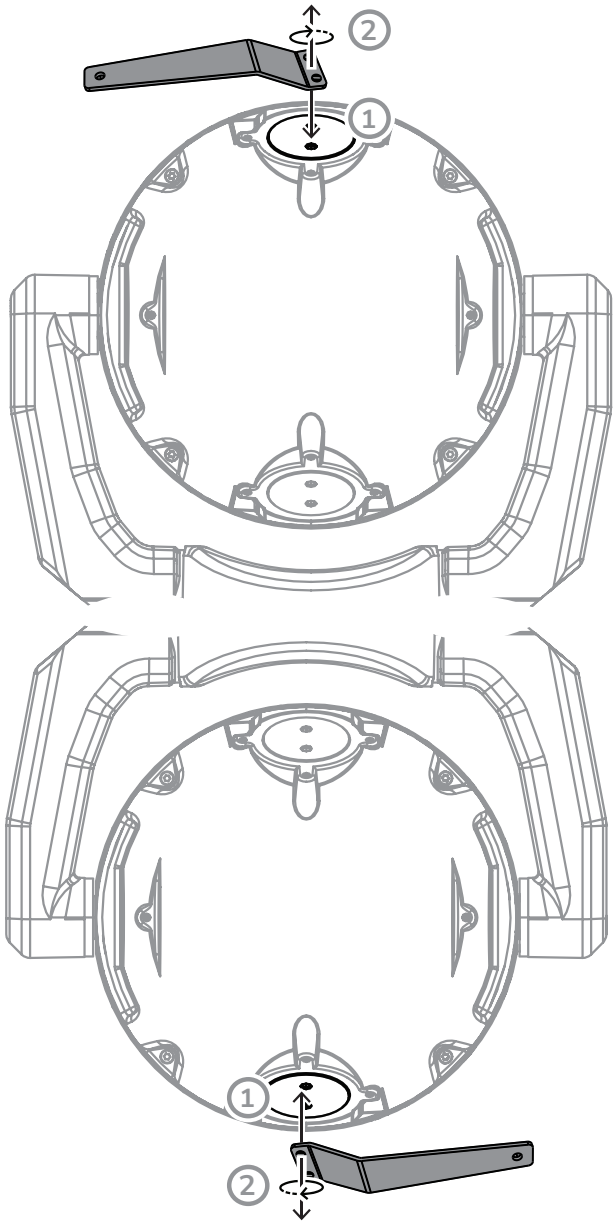
Regardless of mounting orientation, the visor should always be above the camera window.

2. Remove and discard the three (3) plastic screws **surrounding the appropriate access port where the illuminator will be installed**.





3. Remove the appropriate access plug from the camera head with the supplied spanner wrench. For upright cameras, remove the plug near the visor. For inverted cameras, remove the plug farther away from the visor.


2
1
1
2

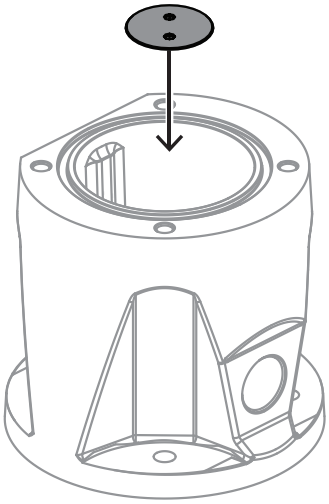
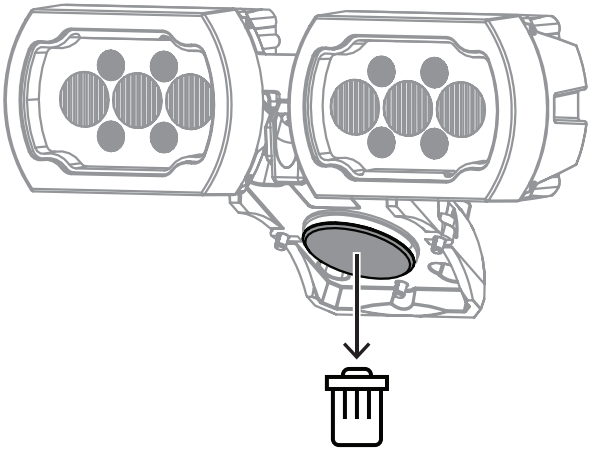
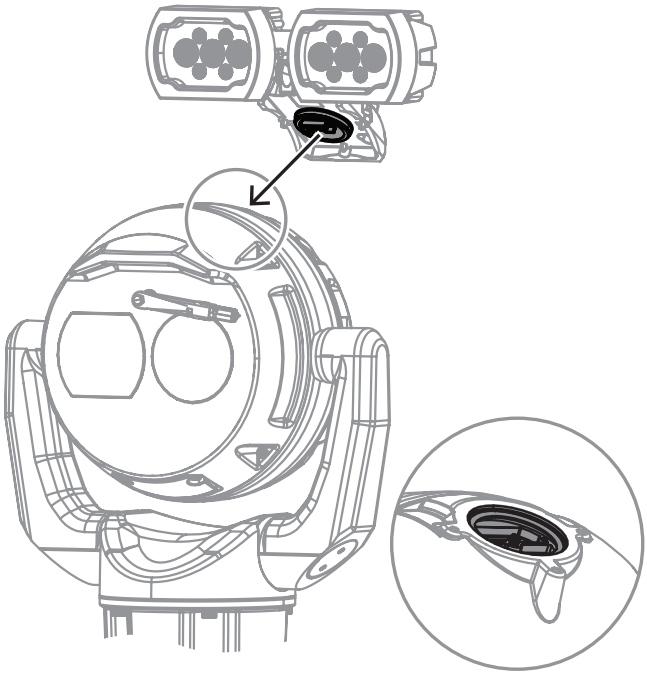


Figure 6.1: We suggest storing the access plug inside the DCA mount (or wall mount accessory) in case it becomes necessary to remove the illuminator.

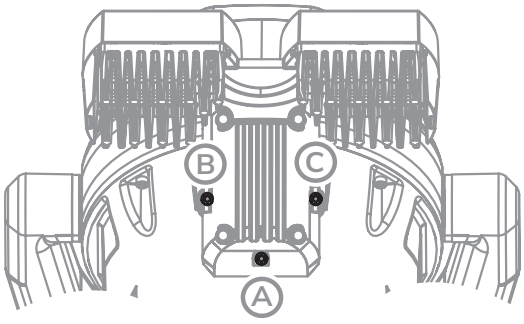
4. Remove the plastic cap from the illuminator accessory. Discard.



5. Align the illuminator over the access port and carefully push into position on the camera head.



6. Partially engage the threads of all three (3) screws. Do not tighten any one screw completely at this point.

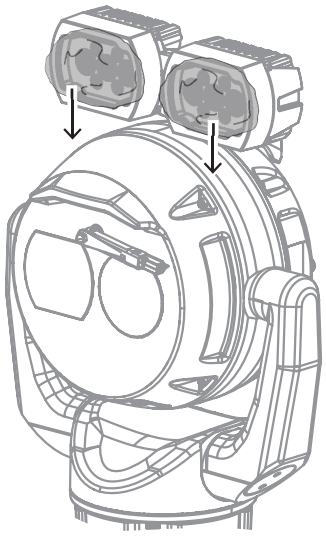


1	● A	● B	● C	0 - 0.7 Nm
2	● A	● B	● C	0.7 - 1.4 Nm
3	● A	● B	● C	1.4 Nm

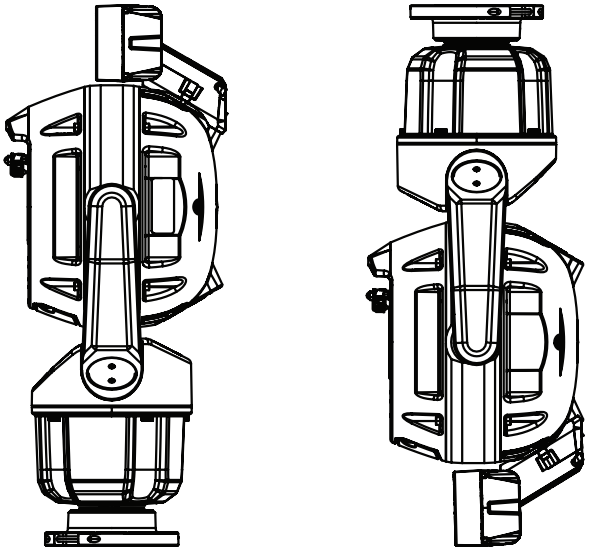
– Using the T20 Torx driver, tighten the screws to the proper torque using the sequence described in the previous figure.

Warning!
Total engagement is not complete until you tighten all three (3) screws.

7. Remove the translucent film.



8. Installation of the illuminator is complete.



6.8 Installing a sun cover (Optional)

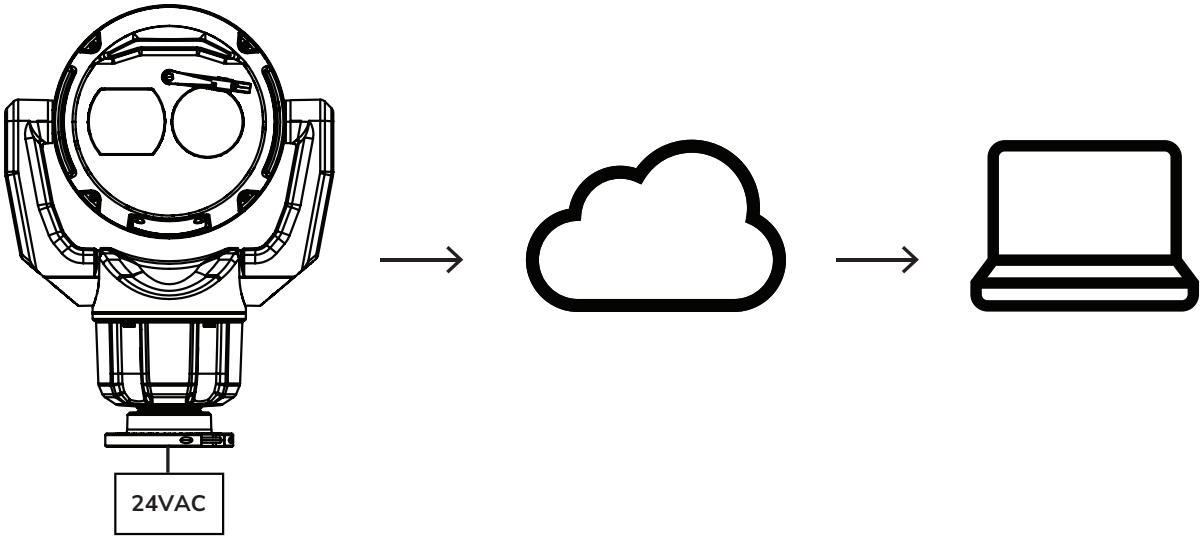
Quantity	Component
1	Sun cover
2	Screws
1	Quick Installation Guide

Additional Tools Required

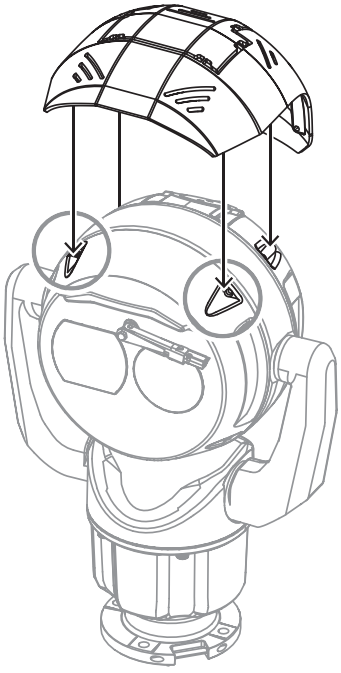
1	Phillips-head screwdriver, #2, to remove factory-installed plastic screws from the camera head
1	Torx driver, T20, for M4 Torx head screws

Note: For a standard sun cover (on a camera without an illuminator accessory), complete step 1. For a camera with an illuminator accessory already installed, skip to step 2.

1. Mount the camera. Apply power (24 VAC, 36 VDC, or IEEE 802.3bt Type 4, Class 8 - 90W at midspan, 71.6W at MIC). Connect using a web browser or VMS.



2. Remove and discard 2 plastic fasteners.
3. Align the sun cover so that the pins slide into the bolt heads on the faceplate.



4. Ensure that the sun cover mounting holes align with the holes in the rear of the camera head. Install 2 screws and washers.
5. Ensure that the gap between the two sun cover halves is approximately 10 mm (0.4 in.).
6. If the rear gap is not parallel, rework to ensure that the pins are seated properly in the bolt heads on the faceplate.

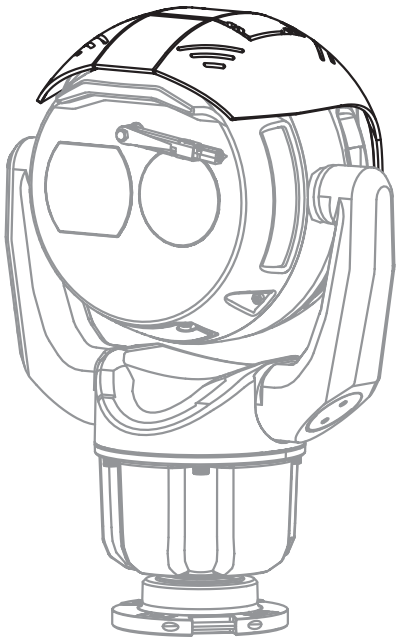
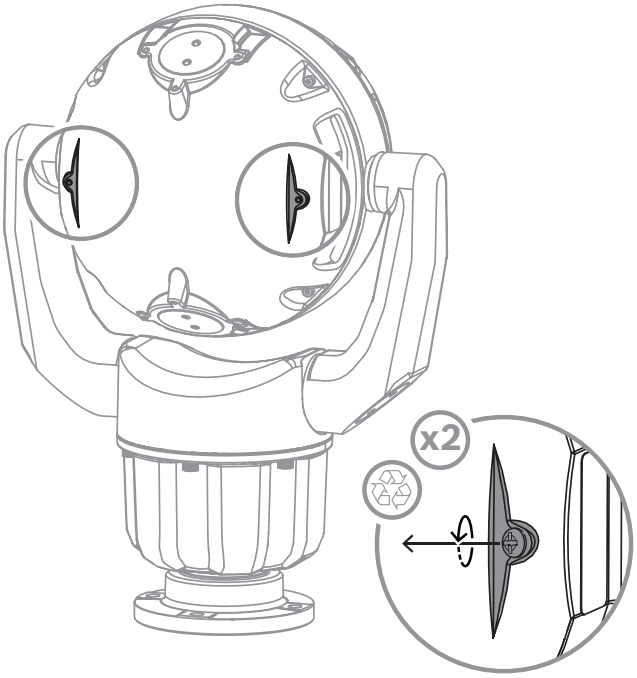


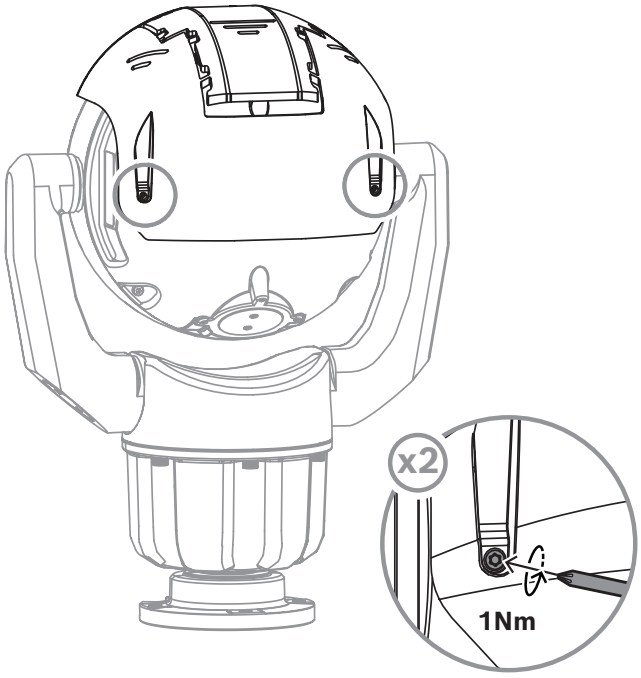
Figure 6.2: MIC fusion 9100s camera with sun cover (MIC-9100-SC) installed

If you install an illuminator on a unit mounted in upright orientation:

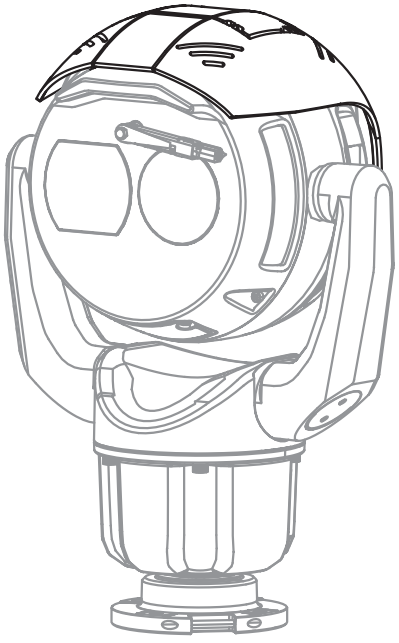
1. Cut out the inset area in the sun cover shell with a pair of diagonal cutters. The inset areas provides space to attach the illuminator. Discard the cut-out plastic.
   Note: This step does not apply to cameras mounted in inverted orientation.
2. Remove the screws from the camera head.



3. Attach the sun cover to the camera head.
4. Make sure that the tabs in the sun cover lock into place in the camera head.
5. Install the M4 x 10 screws. Tighten the screws to 1 Nm (8.85 in-lb).

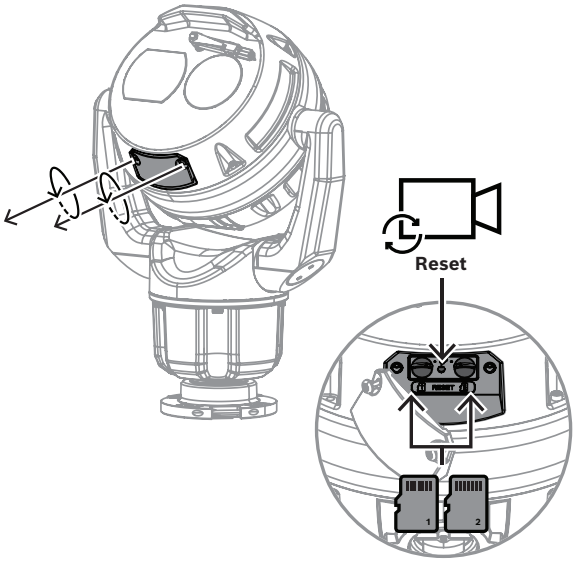


6. Note that when you install the sun cover correctly, the sun cover appears as in the following figure.



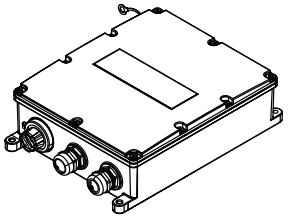
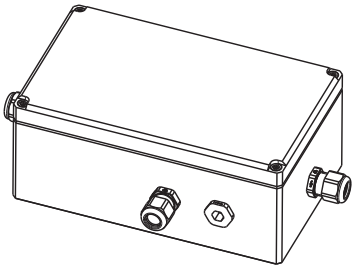
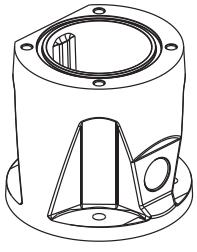
6.9 Installing a microSD card (Optional)

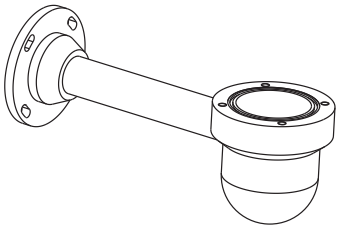
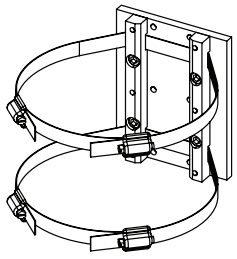
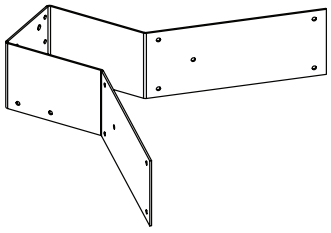
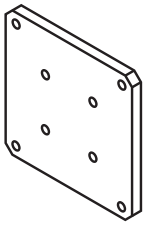
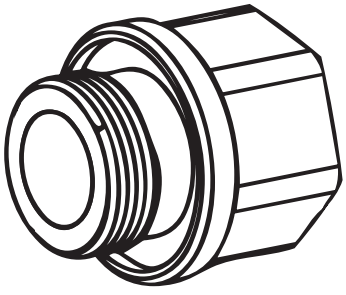
1. Use a T20 Torx driver to remove the two (2) fasteners from the SD card cover on the rear of the camera head.
2. Pull off the SD card cover. Allow the cover and the O-ring seal to hang loose from the tether.
   Note: Do not drop the fasteners.
3. Install one or two microSD cards.
   Note: We recommend the use of industrial microSD cards with health monitoring.

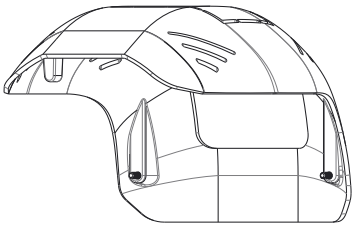
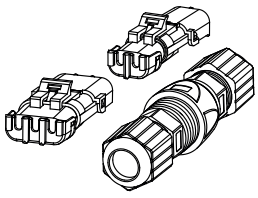
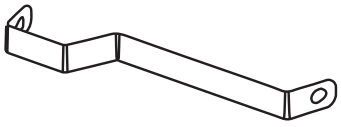
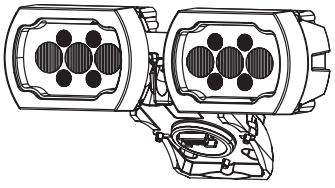
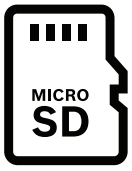


4. Put on the cover.
5. Install the two (2) fasteners that you removed in step 1.
6. Tighten the fasteners to 1.8 N m (1.3 ft lb).

6.10 Accessories

NPD-9001-E NPD-9001-EBT	Outdoor midspan with PoE; 90 W, single-port	
MIC-ALM-WAS-24	Interface box, alarm, washer pump, 24VAC	
MIC-DCA-HB MIC-DCA-HBA	Deep conduit mount, M25 holes, black	
MIC-DCA-HW MIC-DCA-HWA	Deep conduit mount, M25 holes, white	
MIC-DCA-HG MIC-DCA-HGA	Deep conduit mount, M25 holes, grey	

MIC-WMB-BD	Wall mount bracket , black	
MIC-WMB-WD	Wall mount bracket , white	
MIC-WMB-MG	Wall mount bracket , grey	
MIC-PMB	Pole mount bracket	
MIC-CMB-BD	Corner mount bracket, black	
MIC-CMB-WD	Corner mount bracket, white	
MIC-CMB-MG	Corner mount bracket, grey sand	
MIC-SPR-BD	Wall mount spreader plate, black sand	
MIC-SPR-WD	Wall mount spreader plate, white sand	
MIC-SPR-MG	Wall mount spreader plate, grey sand	
MIC-SCA-BD	Shallow conduit adapter, black sand	
MIC-SCA-WD	Shallow conduit adapter, white sand	
MIC-SCA-MG	Shallow conduit adapter, grey sand	
MIC-M25XNPT34	Adapter, M25 to 3/4"NPT, stainless steel	

MIC-9100-SC	Sun cover for MIC fusion 9100s, white	
MIC-IP67-5PK	Connector kit, IP67, 5pcs	
MIC-WKT-IR	Washer kit, MIC IR	
MIC-ILB-400	Illuminator, white-IR light, black	
MIC-ILW-400	Illuminator, white-IR light, white	
MIC-ILG-400	Illuminator, white-IR light, grey	
MSD-V256G	Surveillance microSD card 256GB	
MSD-V512G	Surveillance microSD card 512GB	
MSD-V1T00	Surveillance microSD card 1TB	
MSD-V1T50	Surveillance microSD card 1.5TB	

7 Connection

7.1 About camera power and control

The camera incorporates a network video server that encodes video images and PTZ control commands for transmission over a TCP/IP or UDP/IP network.
With its H.264 or H.265 encoding, it is ideally suited for IP communication and for remote access to digital video recorders. Use existing networks to achieve quick and easy integration with CCTV systems or local networks. Several receivers can receive video images simultaneously from a single camera.

7.2 Power source options

The camera can be powered by a network compliant to a 90WPower-over-Ethernet (PoE) standard IEEE 802.3bt Type 4, Class 8 (sold separately). With this configuration, only a single cable connection (Cat5e/Cat6 SF/UTP overall braided shield and foil shield with unscreened twisted pairs and wire gauge 24 AWG) is needed to view, to power, and to control the camera.)
For maximum reliability, the camera can be connected simultaneously to a PoE midspan and a separate 24 VAC or 36 VDC power source. If PoE and 24 VAC or 36 VDC are applied simultaneously, the camera will prioritize PoE over 24 VAC or 36 VDC. If the PoE power source fails, the camera switches power input to 24 VAC or 36 VDC. After the PoE power source is restored, the camera switches power input again to the PoE midspan. This requires the PoE AC input power to be on a separate circuit from the 24 VAC or 36 VDC power supplies AC power.

Notice!
When using the illuminator accessory, PoE does not provide sufficient power to operate both the camera and the illuminator. In this configuration, a higher power source (24 VAC or 36 VDC) is required. To ensure proper operation, PoE should not be connected and the camera must be powered using 24 VAC or 36 VDC

In the table below, an "X" identifies the power source options for MIC 9100s camera models.

	PoE bt Type 4, Class 8	**36 VDC**	**24 VAC**
Camera only	X	X	X
Camera with illuminator attached		X	X

IQSIGHT recommends only a 36 VDC power source for models with an attached illuminator.
The table below identifies the power devices that can be connected simultaneously to the camera.

If power is supplied from:	**Camera can receive power simultaneously from:**
90 W midspan (NDP-9001-E)	24 VAC PSU: 24 VAC (≥ 124 W); 36 VDC (≥124 W)

Caution!
Compliance with EN50130-4 Alarm Standard - CCTV for Security Applications
To meet the requirements of the EN50130-4 Alarm Standard, an ancillary uninterruptable power (UPS) supply is necessary. The UPS must have a **Transfer Time** between 2-6 ms and a **Backup Runtime** of greater than 5 seconds for the power level as specified on the product datasheet.

Maximum wire distances from 24 VAC or 36 VDC power supply to MIC fusion 9100s camera

Wire size (stranded wire should be used)		24 VAC (50/60Hz) Maximum distance		36 VDC Maximum distance	
		With illuminator accessory	Without illuminator accessory	With illuminator acessory	Without illuminator accessory
		MIC Input power: 134W, max PSU Power required including power lost in cable: ~142W (PF ~=0.7306)	MIC Input power: 108W, max PSU Power required including power lost in cable: ~115W (PF ~=0.8)	MIC Input power: 124W, max PSU Power required including power lost in cable: ~132W	MIC Input power: 91W, max PSU Power required including power lost in cable: ~97W
AWG	**mm**	**Meters [feet]**	**Meters [feet]**	**Meters [feet]**	**Meters [feet]**
12	2.05	12 [39.4]	17 [55.7]		
14	1.63	8 [26.2]	10 [32.8]	26 [85.3]	36 [118.1]
16	1.29	5 [16.4]	6 [19.7]	16 [52.5]	22 [72.1]
18	1.02	3 [9.8]	4 [13.1]	10 [32.8]	14 [45.9]

7.3 Power by midspan

7.3.1 Recommendations for third-party IEEE 802.3bt PoE Power Supply

We recommend the use of the following midspan for use with MIC camera models:
PoE midspan IEEE 802.3bt, Type 4, Class 8, 4 Pair Power (4PPOE) 90W at PSE (PoE midspam or PoE Ethernet switch) side, (71.3W at MIC fusion 9100s also known as PD side) using a single-signature PD. By using the midspan, you make sure to meet all specifications and access to all features.
In general, you can use a third-party IEEE 802.3bt, Type 4, Class 8 compliant midspan or PSE with the MIC fusion 9100s camera models, as long as the midspan meets the power requirements as in the table that follows.

Model	Minimum current output required (Amps)			Minimum current output required (Watts)		
	24VAC, 50/60Hz (Non LPS)	PoE 54 VDC	36 VDC (Non LPS)	24VAC, 50/60Hz (Non LPS)	PoE 54 VDC	36 VDC (Non LPS)
MIC fusion 9100s without illuminator	5.4	1.32	2.51	108 (PF = 0.8)	71.3	91
MIC fusion 9100s with illuminator	7.6	NOT SUPPORTED	3.43	134 (PF = 0.73)	NOT SUPPORTED	124

It must be an electrically Earth-grounded metal box with a watertight, electrically grounded metal conduit that is connected between the box and the camera.

The power redundancy feature is only guaranteed to work with our midspans mentioned on the camera datasheet, since the feature depends on other power supply features beyond the IEEE 802.3bt standard.

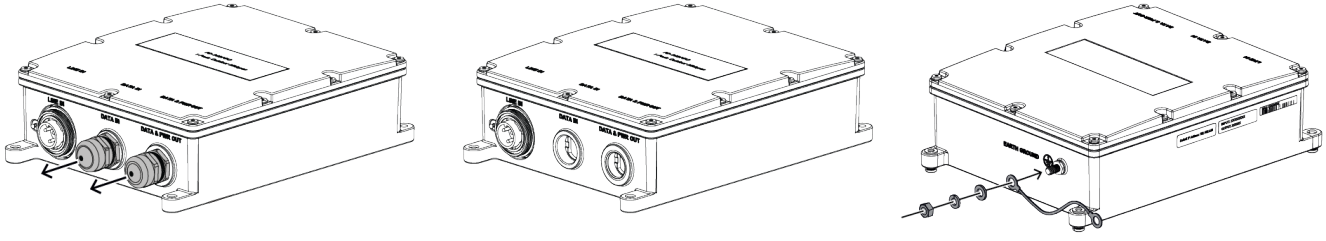
Note: If the power redundancy feature is used, the illuminator will not be supported.

It is recommended that any third-party IEEE 802.3bt midspan support a retry feature if there is a momentary over-current.

Note: For the system and chosen power device to meet all of the MIC certifications and specifications, the midspan/power supply must meet the same certifications and requirements.

7.3.2 Connecting watertight, electrically grounded metal conduit to outdoor midspans

1. Unscrew and remove the fittings from the DATA & PWR OUT and DATA IN ports of our Outdoor midspan.
2. Find electrically conductive liquid tight metal conduit with PG16 threads to screw into the two holes, or find an appropriate liquid tight fitting to adapt a PG16 male thread to the conduit of your choice such as ½ " NPT while maintaining its IP rating.
3. Add 4 wraps of PTFE tape to the threads to ensure IP66.
4. Connect the braided ground wire on the metal housing of the outdoor midspan to earth ground of the system installation.



7.3.3 Power by 24 VAC/36 VDC

7.3.3.1 Recommendations for 24 VAC or 36 VDC Power Supply

IQSIGHT recommends operating the MIC fusion 9100s camera models by IEEE 802.3bt PoE Type 4, 90W. You can also use a third-party 24 VAC, 50/60Hz or 36 VDC power supply that meets the stated requirements.

The power supply must provide 24 VAC or 36 VDC +/-10% voltage at the camera after any voltage drop across the cable, and for the following current and power loads as in the table that follows.

Model	Minimum current output required (Amps)			Minimum current output required (Watts)		
	24VAC, 50/60Hz (Non LPS)	PoE 54 VDC	36 VDC (Non LPS)	24VAC, 50/60Hz (Non LPS)	PoE 54 VDC	36 VDC (Non LPS)
MIC fusion 9100s without illuminator	5.4	1.32	2.51	108 (PF = 0.8)	71.3	91
MIC fusion 9100s with illuminator	7.6	NOT SUPPORTED	3.43	134 (PF = 0.73)	NOT SUPPORTED	124

It must be an electrically Earth-grounded metal box with a watertight, electrically grounded metal conduit that is connected between the box and the camera.
Note: For the system and chosen power device to meet all of the MIC certifications and specifications, the midspan/power supply must meet the same certifications and requirements.

7.4 Ethernet connections

Notice!
Cat5e/Cat6 or better shielded Ethernet cables must be routed through earth-grounded, liquid-tight conduit capable of withstanding the outdoor environment.

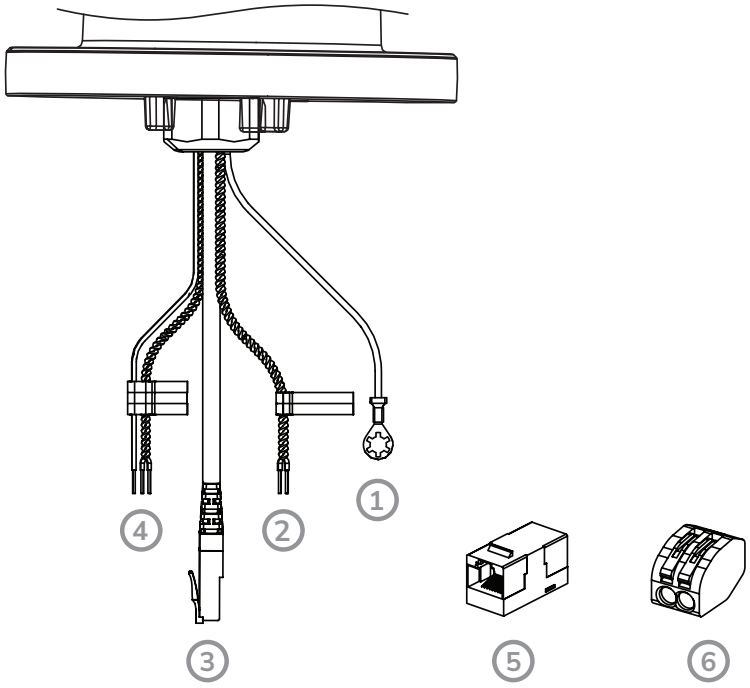
Notice!
SF/UTP overall braided shield and foil shield with unscreened twisted pairs using 24 AWG wire when IEEE 802.bt Type 4, Class 8, 90W PoE power is required.

Cable Type	**Cat5e/Cat6 (or better) SF/UTP Shielded Twisted Pair Ethernet cable (directly to the camera, or to a network switch between the camera and the network)** **Note: Cat5e/Cat6 SF/UTP Shielded has on overall braided shield and a foil shield over unshielded Twisted Pair cable. It is required in order to meet European regulatory EMC standards.** **Note: If PoE is used the cable must also support its current and wire gauge 24 AWG is recommended.**
Maximum Distance	100 m (330 ft)
Ethernet	10BASE-T/100BASE-TX/1000BASE-T, auto-sensing, half/full duplex
Terminal Connector	RJ45, Male with ground connections to support SF/UTP cable

Note: Consult the National Electrical Code (NEC) or other regional standards for cable bundling requirements and limitations.

7.5 Camera connections

All electrical and data connections from the camera are made from the connectors in the base of the camera.



	Description	Wire Color
1	Chassis (Earth) ground wire (18 gage) with connector lug	Green
2	24 VAC or 36 VDC power wires (if not using a PoE network)*	24 VAC-L (Line voltage) / 36 VDC+ = Black 24 VAC-N (neutral) /36 VDC- = White
3	RJ45 connector (male) for communication and control of the camera, and optionally to provide PoE power	
4	RS-485 half-duplex connections for communication to / from the MIC-ALM-WAS-24 or other device providing legacy serial protocol signals	**+** = Purple **-** = Yellow **GND** = Brown
5	RJ45 coupler (female to female)	
6	Wire connectors on 9 wires (numbers 2 and 4 in the corresponding graphic) **Note**: The quick clips should remain on unused wires. If the clips are removed, cover the exposed copper on the wires with electrical tape to prevent the unused wires from electrically shorting to one another or to the mount enclosure.	

Note: If the MIC camera will be installed directly to a mounting surface, instead of onto a MIC DCA or a MIC wall mount bracket, it is recommended that you use the connector kit for your model of camera to protect the connections against moisture and dust particles. Each kit provides components for connecting as many as 5 MIC cameras.

– MIC-IP67-5PK (Connector kit for MIC cameras)

Not using the IP67 Connector Kit will void the camera warranty.

Note: The PoE connection is not intended to be connected to exposed (outside plant) networks. Seal the base of the camera against moisture ingress (standing water).

Note: European EMC requires that a liquid-tight metal conduit be used.

7.6 Connect the camera to the network

Notice!
The camera supports IEE 802.3 bt Type 4, Class 8 PoE which requires a compatible midspan. Midspans can only be used without optional illuminator accessory.

1. Make the appropriate network connections depending on the power source of your IP network:
– If using a PoE **midspan** power source:
  a. Connect one end of a Cat5e/Cat6 SF/UTP Ethernet cable to the RJ45 connector of the camera through RJ45 coupler.
  b. Connect the other end of the cable to the DATA + POWER OUT port on the midspan. **Note**: You must ground cable at both ends!
  c. Connect a Cat5e/Cat6 SF/UTP Ethernet cable from the DATA port of the midspan device to the Local Area Network (LAN). If using an outdoor midspan, connect the midspan ground to Earth ground.
– If **not using** PoE: Connect a Cat5e/Cat6 SF/UTP Ethernet cable from the RJ45 connector of the camera to the Local Area Network (LAN).
– If **not using PoE and if connecting directly** to a computer, DVR/NVR, or other related cnetwork device: Connect either a Cat5e/Cat6 SF/UTP Ethernet cable or a **crossover** Ethernet cable between the RJ45 connector of the camera and the network device. **Note**: You must ground cable at both ends!
2. If applicable, connect the 24 VAC or 36 VDC wires to the power source.
3. If applicable, connect the RS-485 wires to the MIC-ALM-WAS-24 (optional).
4. Attach the ground wire from the camera to an earth-ground connection on the mounting surface using the supplied screw or a suitable user-supplied fastener.

8 Troubleshooting

Table of Troubleshooting Issues

The table below identifies issues that could occur with the camera, and how to resolve them.

Note: Refer to the Error Codes section of the manual for descriptions of the error codes that appear on the OSD. The section also lists recommended actions to resolve the error codes.

Problem	Questions to Ask/Actions to Resolve the Problem
No camera control.	- Ensure that the LAN cable has good connection and is secured. - Refresh the browser and ensure that video is updated. - Cycle the camera's power off and on. - Reboot the computer.
Camera moves when attempting to move other cameras.	- Check that the camera's IP address is properly set. If the camera's IP address is not set, then: - Use Configuration Manager to confirm that two cameras do not have the same IP address. If they do, change the address of one of the cameras.
No Network Connection.	- Check all network connections. - Ensure that the maximum distance between any two Ethernet connections is 100 m (328 ft) or less. If OK, then if you are behind a firewall, ensure that the Video Transmission mode is set to UDP.
Camera does not operate at all, or does not operate as expected, after being subjected to extreme low temperatures (below -40 °C (-40 °F)).	- Allow the camera to warm up. The camera requires a 60-minute warm-up prior to PTZ operations. - If camera does not operate after this warm-up period, then reset the camera through the Installer menu. - Refer to Status Code 7 in Error Codes.
No video.	- Check that the mains power to the power supply is on. - If providing power via 24VAC or 36 VDC, ensure that the 24 VAC voltage at the camera is between 21.6 VAC and 26.4 VAC, and the 36 VDC between 32.4 VDC and 39.6 VDC. - If providing power via PoE, ensure that the midspan or Ethernet switch is compliant with IEEE 802.3bt Type 4, Class 8, 4 Pair Power (4PPOE) 90W at PSE (PoE midspan or PoE Ethernet switch) side, (71.3W at MIC fusion 9100s side also known as PD side) using a single-signature PD. - Check to see if you can access a web page. – If you can, then cycle the camera's power off and on and check that the optical camera iris isn't closed. If this doesn't correct the problem, switch the Stream from Stream 1 or Stream 2 to M-JPEG. – If you cannot, then you may have the wrong IP address. Use Configuration Manager to identify the correct IP address. If OK, then check that the power supply is providing the correct voltage.

Problem	Questions to Ask/Actions to Resolve the Problem
	If OK, then check the integrity of all wires and mating connectors to the camera.

Camera reboots frequently or intermittently	Your camera has an improper network connection. Test your camera with another power supply. Check the company website for a software update that might address the issue.

No OSD messages appear.	The Video SDK is required. Video management software from third parties does not use the SDK.

Additional troubleshooting for MIC thermal imagers.

Problem	Questions to Ask/Actions to Resolve the Problem
A small square appears intermittently of the video output.	Do nothing; this is normal operation for the thermal camera.
The thermal image appears 'grainy'.	Wait for the camera to perform a flat-field correction (FFC).
The thermal image is of poor quality.	Adjust the thermal camera settings to optimize the quality of the image. Refer to section on Thermal Camera Settings in Operation Manual.
The picture shows images that aren't present in the scene.	- Check to see if the heat of objects are being reflected off a surface causing thermal reflections. - Adjust the thermal camera picture settings.
Video is noisy or distorted.	- Check the integrity of all connectors and splices of the Ethernet cable. If O.K., then: - Contact Technical Support.
The image on the screen is dim.	Is the window dirty? If so, clean the window with a soft, clean cloth.
The contrast on the screen is too weak.	Adjust the contrast feature of the monitor. Is the camera exposed to strong light? If so, reposition the camera.
The image on the screen flickers.	Does the camera face directly into the sun or fluorescent lighting? If so, reposition the camera.
Illuminator accessory won't turn on	Check that 24 VAC or 36 VDC is being used and has adequate power to power the illuminator. IEEE 802.3bt does not support the illuminator accessory.

9 Maintenance

Regular maintenance of your MIC camera will preserve the MIC, especially the surface finish, for an extended period.

Cleaning – Remove power from the device before cleaning. Generally, using a dry cloth for cleaning is sufficient, but a moist, fluff-free cloth may also be used. Do not use liquid cleaners or aerosol cleaners. In corrosive environments, you should clean the camera surface periodically with fresh water.

- Wash the camera thoroughly with fresh water:
  - Regularly (1-2 times per quarter, or more frequently if possible)
  - Immediately after an event such as a sea storm that could introduce a layer salt on the camera's surface

Use a flow rate of 150-145 liter/minute. Hold the nozzle a minimum distance of 1 m from the camera.

- In certain use cases, it might help to use a solution of hydrophobic liquid to prevent long-term buildup of salt layers on the camera's surface.

Note: Do not use water pressure greater than 96.5 kPa (14 psi) to wash the unit.

No User-serviceable Parts

Except for the external wiper blade, the device contains no user-serviceable parts. Contact your local service center for device maintenance and repair. In the event of failure, the device should be removed from site for repair.

On-Site Inspection

It is recommended that the device be inspected on-site every six months to check mounting bolts for tightness, security, and any signs of physical damage. Inspection of this device shall only be carried out by suitably-trained personnel in accordance with the applicable code of practice (for example, EN 60097-17).

Information about cameras with illuminators

The text in this section applies only to cameras which have the optional illuminator accessory.
When servicing the device, disconnect power to the device to avoid possible exposure to the eyes. If disconnecting power to the device is not possible, use appropriate shielding to block the LED arrays or wear appropriate eye protection.

Illuminator removal

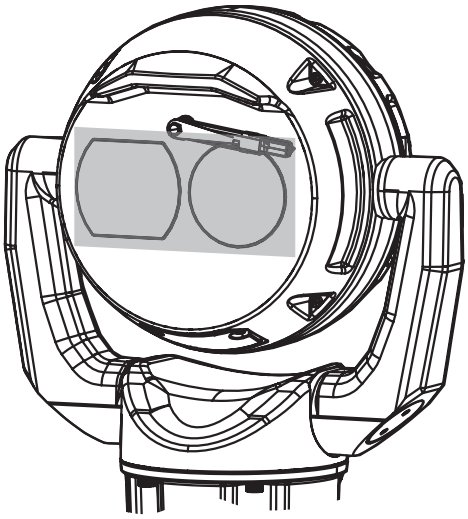
If you must remove the illuminator because it is damaged or has failed, follow these steps:

1. Remove the three (3) M4 Hex screws.
2. Install the access plug (which may be stored in an access hole of the MIC-DCA or the wall mount accessory; if not, see the note below).

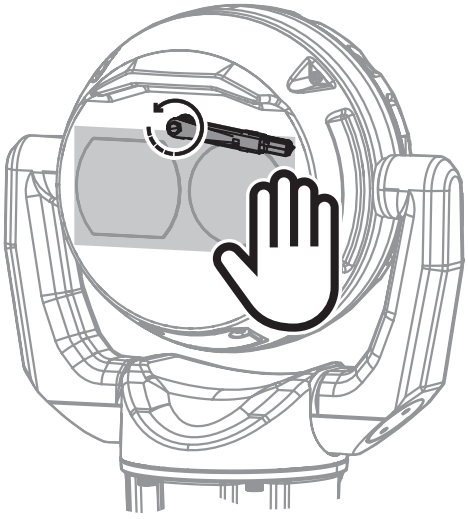
Note: If you do not have an access plug, **do not remove the illuminator** until you request and receive a new access plug.

9.1 Replacing a wiper assembly

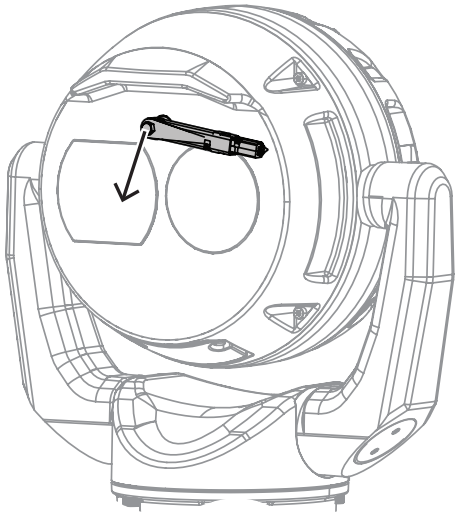
1. Put a piece of thin, protective material between the window glass and the wiper to prevent accidental damage.



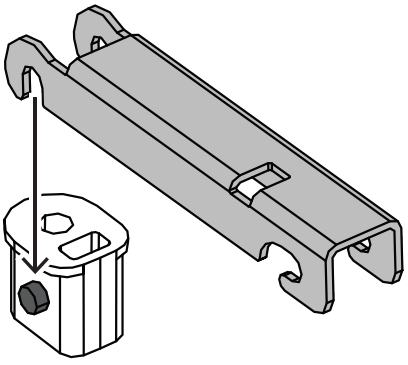
2. With one hand, hold the wiper arm firmly in place to restrict rotational movement.
3. With the other hand, using a 7mm Hex socket or nut driver, rotate the acorn nut counter-clockwise until the nut is free from the wiper shaft.



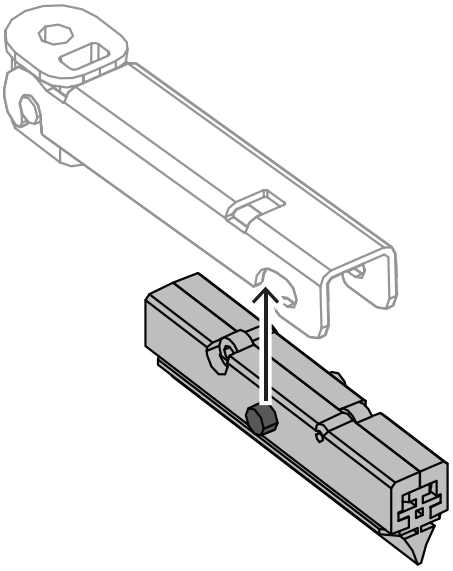
4. Remove the wiper spring, hub, arm, and blade assembly from the wiper shaft.



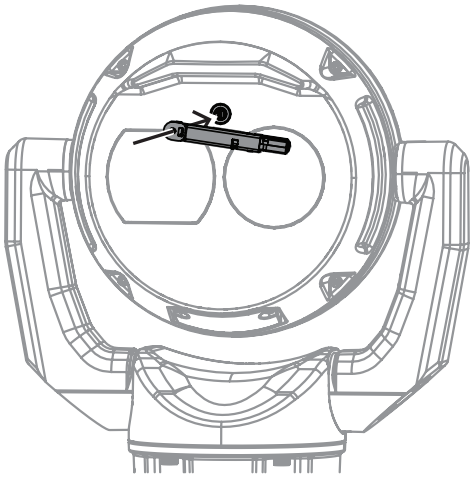
5. Connect the new wiper arm and the new wiper hub.



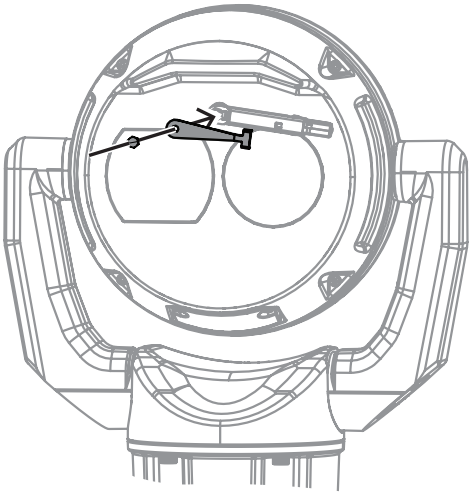
6. Insert the new blade assembly into the new wiper arm.



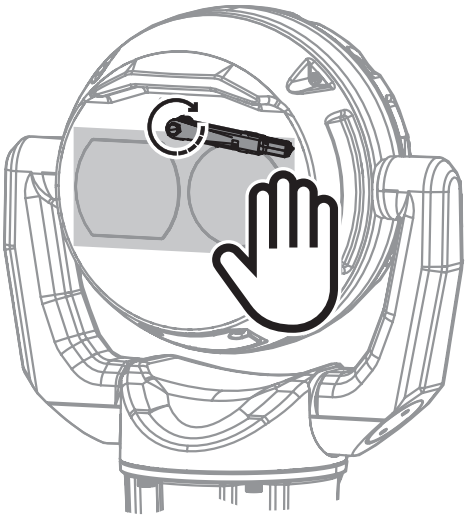
7. Slide the new wiper hub and the attached parts onto the wiper shaft.



8. Slide the new wiper spring onto the wiper shaft and over the new wiper arm.



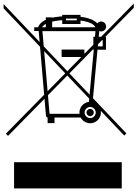
9. Apply Loctite 243 to the hole of the acorn nut.
10. Lightly thread the new acorn nut onto the wiper shaft over the new wiper spring and new wiper hub.
11. With one hand, hold the new wiper arm firmly in place to restrict rotational movement and to keep the wiper assembly parallel with the flat top of the glass.
12. With the other hand, using a 7mm Hex socket or nut driver, tighten the new acorn nut clockwise to a torque value of 1.0 Nm.



10 Decommissioning

10.1 Disposal

Old electrical and electronic equipment

	This product and/or battery must be disposed of separately from household waste. Dispose such equipment according to local laws and regulations, to allow their reuse and/or recycling. This will help in conserving resources, and in protecting human health and the environment.

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