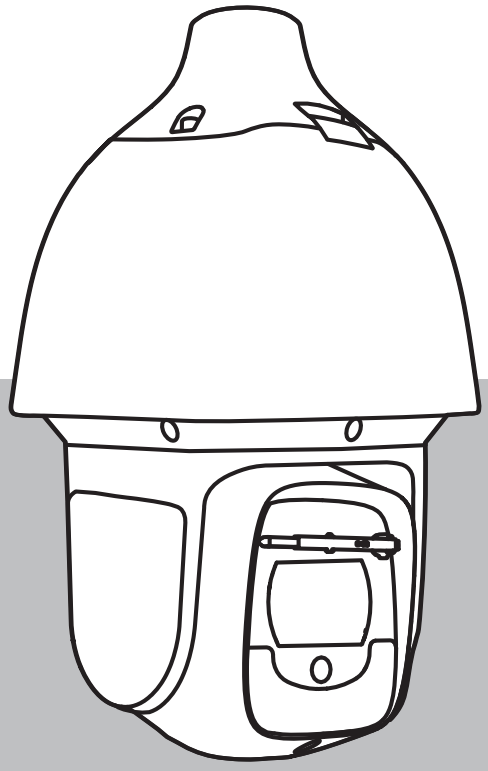
AUTODOME IP starlight 5100i IR

NDP-5533-Z30L



en Installation Manual

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1 Safety

1.1 Legal Information

Copyright

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Trademarks

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

1.2 Safety Precautions

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.

1.3 Important safety instructions

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

1. Clean only with a dry cloth. Do not use liquid cleaners or aerosol cleaners.
2. Do not install device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. Never spill liquid of any kind on the device.
4. Take precautions to protect the device from power and lightning surges.
5. Adjust only those controls specified in the operating instructions.
6. Operate the device only from the type of power source indicated on the label.
7. Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
8. Install in accordance with the manufacturer's instructions in accordance with applicable local codes.
9. Use only attachments/accessories specified by the manufacturer.
10. Protect all connection cables from possible damage, particularly at connection points.

Ventilation – Any openings in the device / enclosure are provided for ventilation to prevent overheating and to ensure reliable operation. Do not block or cover these openings. Do not place the device in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.

Video loss - Video loss is inherent to digital video recording; therefore, Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of losing information, we recommend multiple, redundant recording systems, and a procedure to back up all analog and digital information.

Caution!
Always securely tighten all fittings to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the units. If a sealant is used, ensure that it is a neutral cure type. Sealants that release acetic acid may harm electronics. Use drip loops on the wiring outside the housing.

Always use Teflon tape (user-supplied) and sealant (user-supplied) on connector threads of any mount (sold separately by Bosch or user-supplied).

Notice!
Risk of water ingress
Securely seal all fittings and connection points between the device and all mounts to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the device. Always use Teflon tape (user-supplied) and sealant (user-supplied) on connector threads of any mount (sold separately by Bosch or user-supplied).
If a sealant is used, make sure that it is a neutral cure type. Sealants that release acetic acid may harm electronics.
Use drip loops on the wiring outside the housing.

Warning!
Risk of bodily injury, property damage, or damage to the unit
Because of the weight of the camera, do not use the optional extension pipe (NDA-U-PMTE) to extend the pipe while using the pipe mount (NDA-U-PMT or NDA-U-PMTS).

1.4 Additional safety information

Caution!
Attach the metal mounting plate (supplied with the camera) to the inside of the pendant interface plate mount with the three (3) M4 screws (12 mm) (supplied with mount).

Caution!
This equipment is only to be connected to PoE networks without routing to outside plant.

Danger!
Service - Do not attempt to service this unit by yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel

1.5 Important notices

Notice!
This device is intended for use in public areas only.
U.S. federal law strictly prohibits surreptitious recording of oral communications.

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, IEC 62368-1.
UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

FCC Supplier's Declaration of Conformity

Order number	Identifying feature
NDP-5523-Z30L | NDP-5533-Z30L	PTZ 4MP HDR 30x IP66 pendant IR

Compliance statement
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.

Responsible party
Bosch Security Systems, LLC
130 Perinton Parkway
14450 Fairport, NY, USA
www.boschsecurity.us
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 and the EU EMC Directive (2014/30/EU). 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 (EMC)
CAN ICES-003(A) / NMB-003(A)

1.6 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 meets the EXEMPT Group limit for Cornea/Lens infrared hazard as defined by IEC 62471:2006. The product was found to meet the EXEMPT Group exposure limits for IR 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.
These values have been summarized in the table below:

Hazard	EXEMPT Group Limits		
	t, duration	d, distance	EHV
Cornea / Lens Infrared Hazard	1000 s Hazard Distance	200 mm 279 mm	2.19

1.7 Connection in Applications

24 VAC power source: This unit is intended to operate at 24 VAC (if PoE is not available). User-supplied wiring must be in compliance with electrical codes (Class 2 power levels).
PoE: Use only approved PoE (802.3bt) devices. Power-over-Ethernet can be connected at the same time as a 24 VAC power supply. If auxiliary power (24 VAC) and PoE are applied simultaneously, the camera selects PoE and stops auxiliary input.

1.8 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 links provide more information:

– General information: https://www.boschsecurity.com/xc/en/support/product-security/
– Security advisories, that is a list of identified vulnerabilities and proposed solutions: https://www.boschsecurity.com/xc/en/support/product-security/security-advisories.html

Bosch assumes no liability whatsoever for any damage caused by operating its products with outdated software components.

Notice!

Bosch strongly recommends upgrading to the latest firmware for the best possible functionality, compatibility, performance and security.

Check http://downloadstore.boschsecurity.com/ regularly to see if there is a new firmware version available.

2 Product Description

Keep your security in focus with the many features of the AUTODOME IP starlight 5100i IR camera. The camera is carefully tuned to deliver detailed, 4MP ultra HD images during the day as well as full details in low-light or no-light conditions. The integrated, intelligent IR illuminator automatically adjusts the IR intensity according to zoom factor and field of view to ensure that the scene is illuminated uniformly.

3 Preparing Wiring

- Prepare and install all wiring for 24 VAC, PoE (Cat5e or better), alarms, and audio as necessary. For 24 VAC, follow the recommendations for maximum cable distance and wire gage.

Maximum cable distance in meters (feet) per minimum cable diameter

The following table identifies the recommended transmission distance (maximum) in meters (feet), based on the specified wattage, per the minimum cable diameter (in mm^2), when the cable diameter is fixed and the maximum permitted power consumption for 24 VAC is 10%. For example, for a device of 20 W and a minimum cable diameter of 1.0 mm^2, the recommended transmission distance is 42 m (141 feet) from the transformer.

Models	Watts	1.0 mm^2	1.5 mm^2	2.5 mm^2	4.0 mm^2
Indoor (ceiling)	20	42 m (141 ft)	68 m (225 ft)	109 m (358 ft)	275 m (905 ft)
Outdoor	30	28 m (94 ft)	45 m (150 ft)	72 m (238 ft)	183 m (603 ft)

Wire Gage

Wire diameter (mm^2;ISO 6722, standard DIN sizes)	AWG
1.0	18
1.5	16
2.5	14
4.0	12

4 (Optional) Configuration Programming on a Temporary Table-top Stand

4.1 Installation Overview

Caution!
Risk of damage to camera
Please remove the tape from the top of the camera. The camera head must be free to rotate.

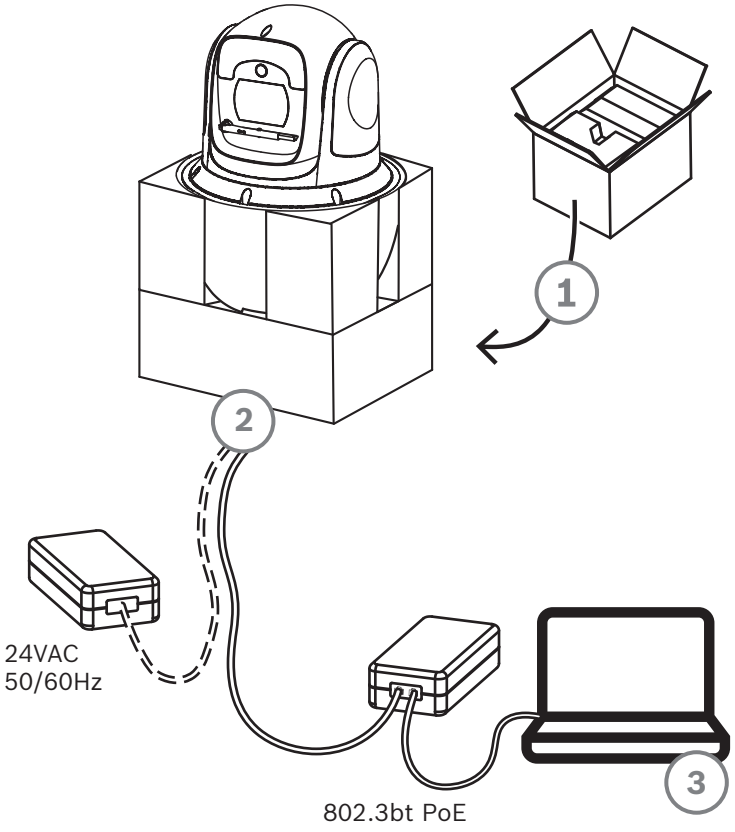
Caution!
ELECTRIC SHOCK HAZARD
To reduce the risk of electric shock, disconnect power to the camera and/or to the power supply unit before moving the camera, before installing any accessories, and before mounting the camera.

Caution!
Type and source of hazard
Take extra care lifting or moving cameras because of their weight.

4.2 Configuration Programming on a Temporary Table-top Stand

The camera packaging with a PE form as a base plate allows installers to configure the camera.

1. Remove the foam covering the head of the camera.
2. Remove the camera from the box.
3. Change the camera orientation to inverted.
4. Put the PE foam on a flat, horizontal surface.
5. Put the camera upright in the PE foam as a base plate.
6. 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.



7. Configure the camera. Refer to the separate User Manual for details.
8. Disconnect the wires/cables from the connectors in the base of the camera.

5 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.

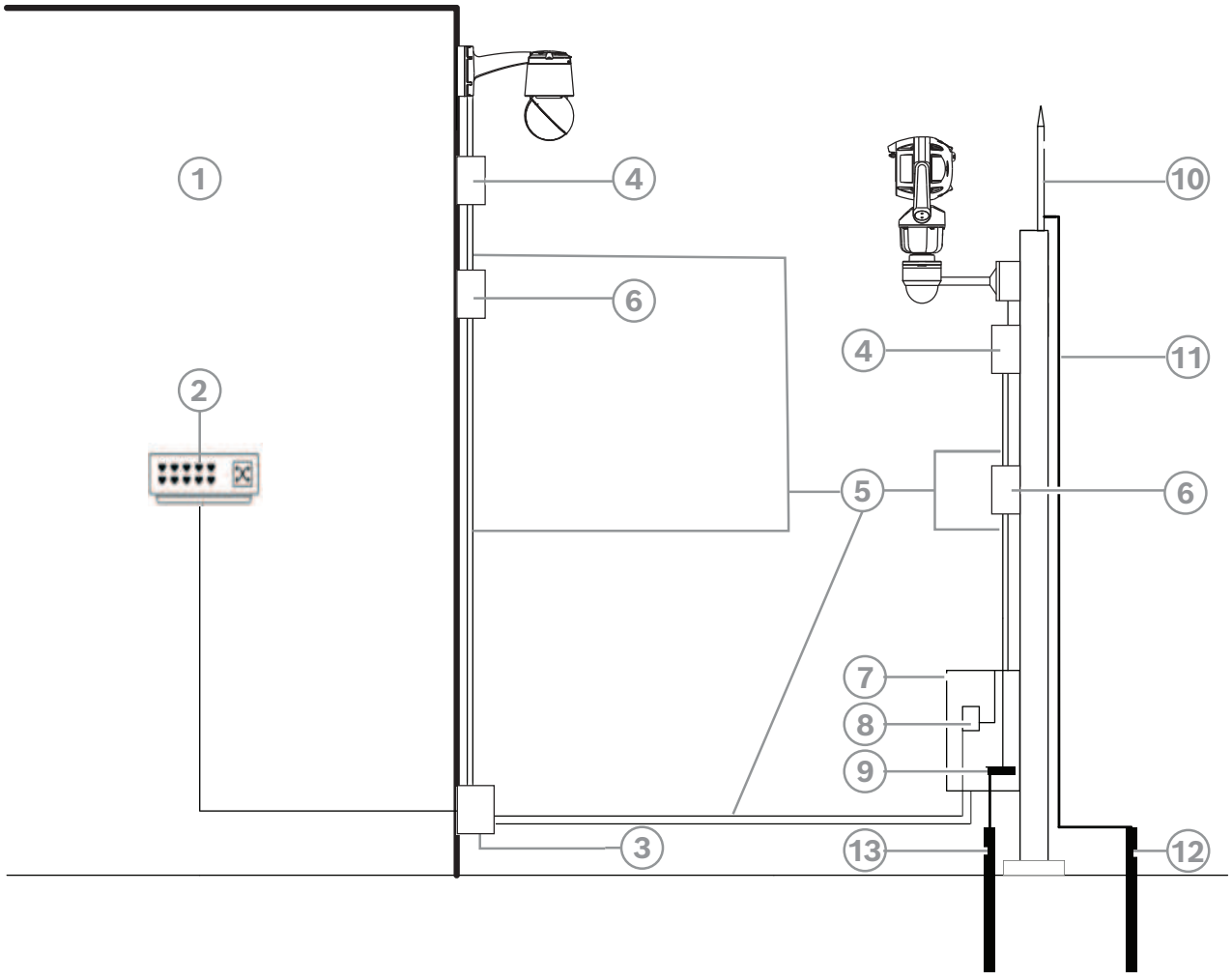


Figure 5.1: Correct outdoor installation with proper surge/lightning suppression

1	Indoor main building	2	Network switch with shielded ports and grounding as recommended by the manufacturer. All network cables must be terminated with shielded RJ45 connectors.
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 F/UTP shielded cable with twisted pairs (often referred to as FTP) or S/UTP braided shield with twisted pairs (often referred to as STP) 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. (Refer to the section **Additional wiring guidelines**.)		
6	Outdoor-rated midspan with shielded RJ45 connections. Ground the metal conduit to the midspan per the installation instructions of the camera/midspan.	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 (Refer to the section **Lightning rod, down conductor, and electrode**.)	11	Down Conductor (Refer to the section **Lightning rod, down conductor, and electrode**.)
12	Lightning Rod Grounding Electrode (Refer to the sections **Lightning rod, down conductor, and electrode** and **Separate grounding electrodes**.)	13	Equipment Grounding Electrode (Refer to the section **Separate grounding electrodes**.)

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, audio, 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

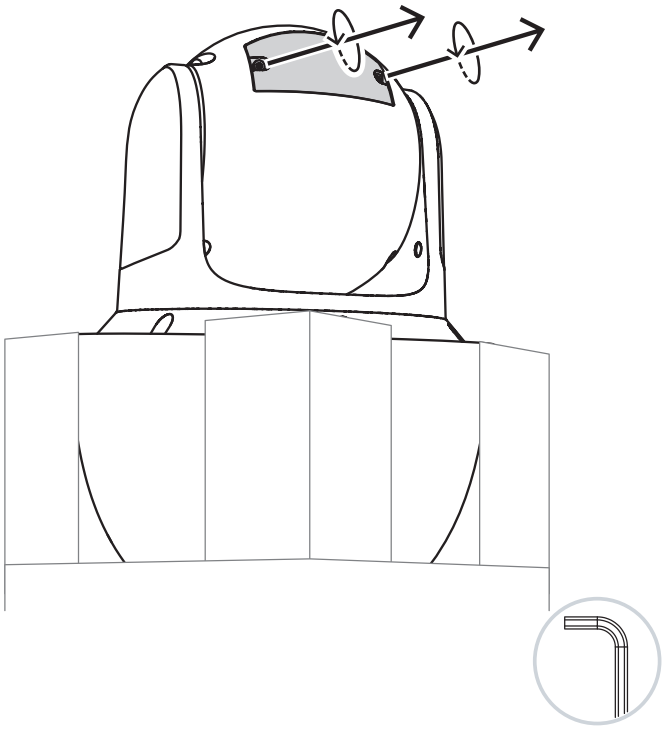
If a metal pole is used, refer to NFPA 780, Class 1 & 2, UL96A, and to the equivalent code appropriate for the country/region.

Camera Housings and Mounts

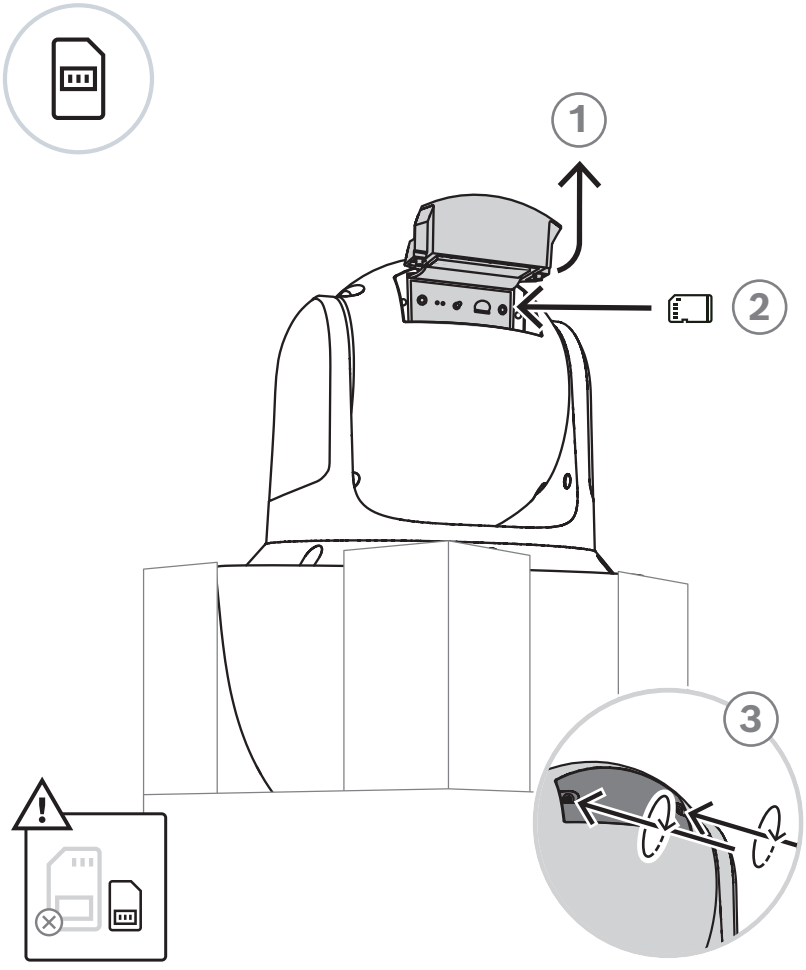
– Use only Bosch mounts listed on the datasheet of the specific camera.
– Follow all grounding for the camera housings and mounts per the installation manual.

6 (Optional) Installing a microSD card

1. Loosen the 2 Hex screws in the back of the camera housing.

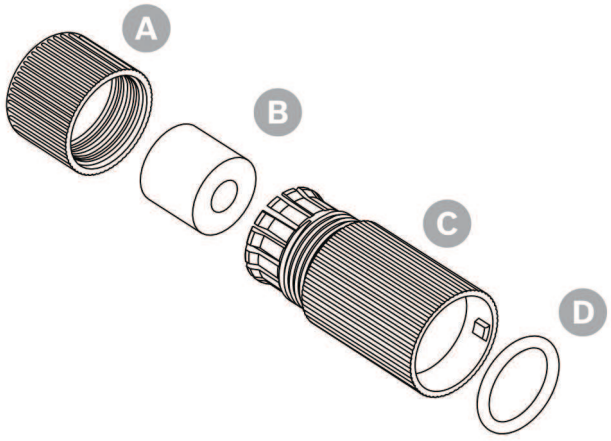


2. Pull up the cover of the SD card slot as illustrated in the graphic that follows.
3. Insert the card into the slot.
4. Push down the cover of the SD card slot and put the screws into their slots.
5. Tighten the screws on the cover.


1
2
3

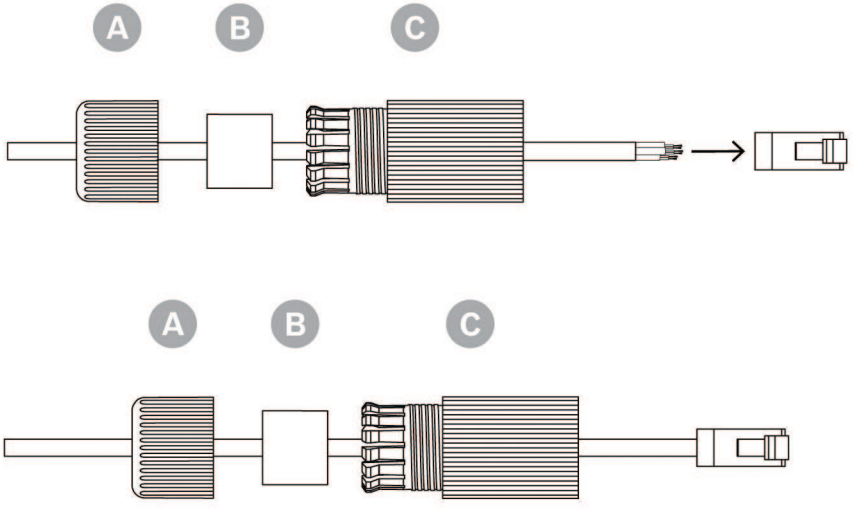
7 Installing the IP66 kit

The camera box includes the IP66 accessory kit. To ensure a waterproof seal on the camera connectors, assemble the IP66 kit on the Ethernet cable (Cat5e or better) before you finish camera installation.
The figure that follows shows the components of the kit.

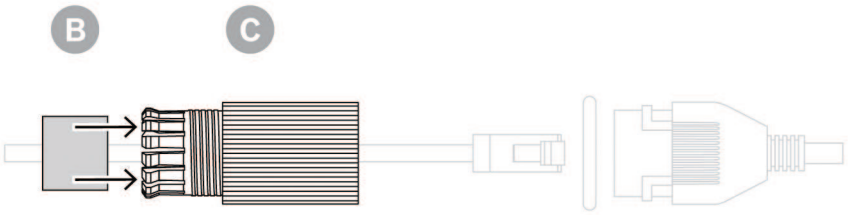


Quantity	Component	Component in figure
1	Cap	A
1	Waterproof plug	B
1	Outer casing	C
1	Grommet	D

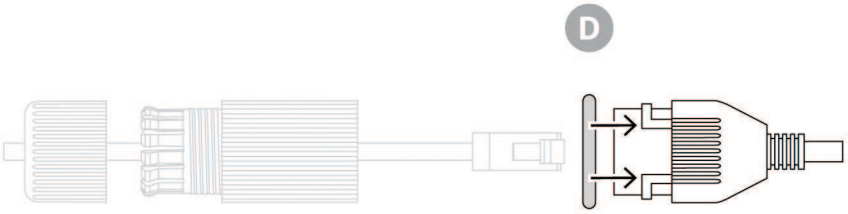
1. Before making the RJ45 plug, put the cap (A), the waterproof plug (B), and the outer casing (C) through the Ethernet bulk cable in the correct sequence.
2. Make the RJ45 plug.



1. Insert the waterproof plug into the outer casing.

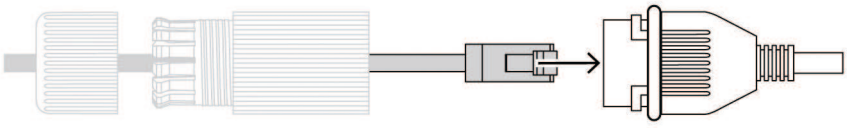


2. Put the grommet on the RJ45 socket on the camera cable on the camera.

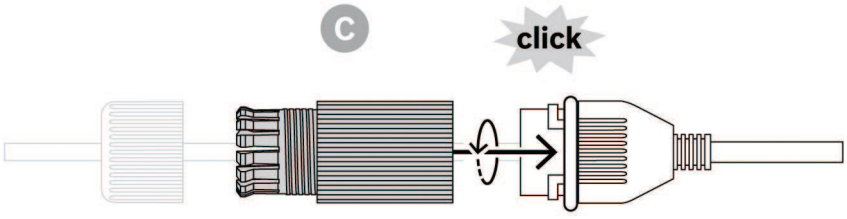


Note: Do not complete the steps that follow until you are ready to complete step 7 of the subchapter **Attaching the Mounting Cap and the Camera**. This subchapter is in the installation chapter of every mount for the camera.

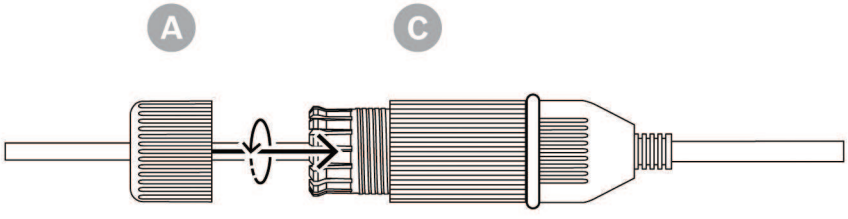
1. Connect the RJ45 plug and the RJ45 socket on the camera cable.



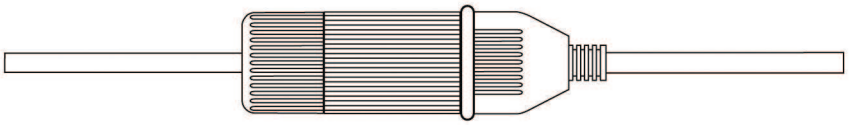
2. Connect the IP66 waterproof kit on the camera cable. It will make a click if inset successfully. Use the outer casing cover the side on camera.



3. Screw the cap on the outer casing tightly.



4. Finish the assembly of the kit.



8 (Optional) Installing the Surveillance Cabinet

The surveillance cabinet can attach directly to a wall mount, to a corner mount, to a pipe mount, or to a pole mount.

To install the cabinet (power supply box), follow the instructions in the Surveillance Cabinet *Installation Manual*.

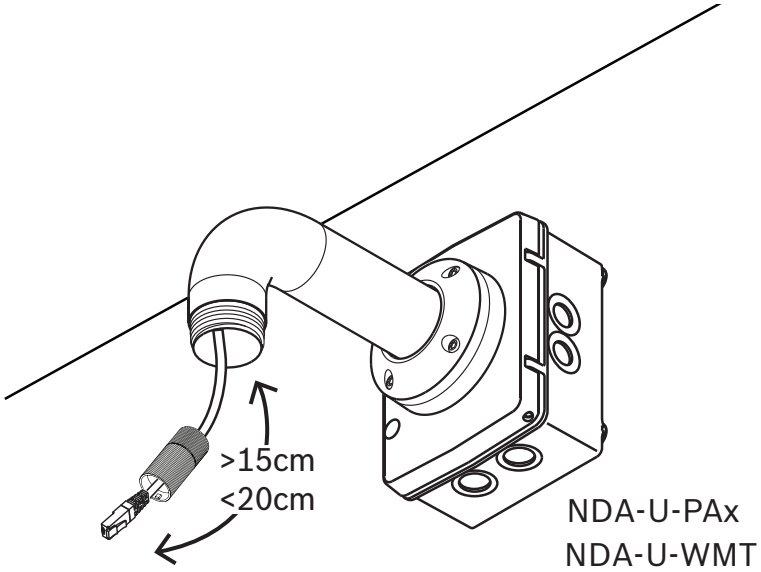
1. Thread the cables through the wall and the mounts.

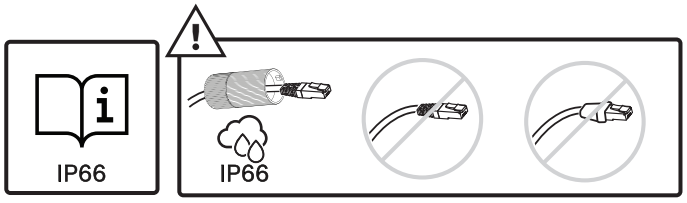
Ensure that the cables are long enough to reach through the mount and the camera's mounting cap to the connections from the camera.

9 Installing a Pendant Wall Mount and Camera

9.1 Installing a Pendant Wall Mount (with the Surveillance Cabinet)

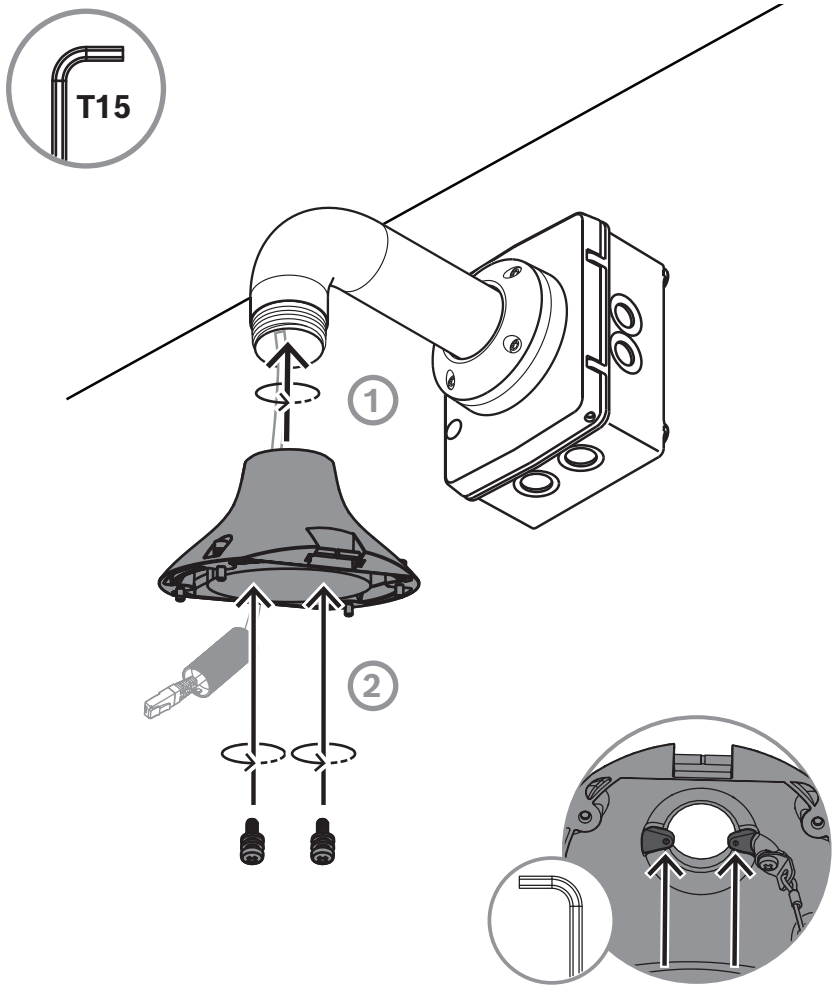
1. Slide the mounting flange over the wall mount.
2. Attach the wall mount to the mounting flange and fix them on the front door of the Wall-mount Surveillance Cabinet by using four M5 screws.
3. Make sure that the total length of cable is between 150 mm and 200 mm (0.49 ft and 0.66 ft).



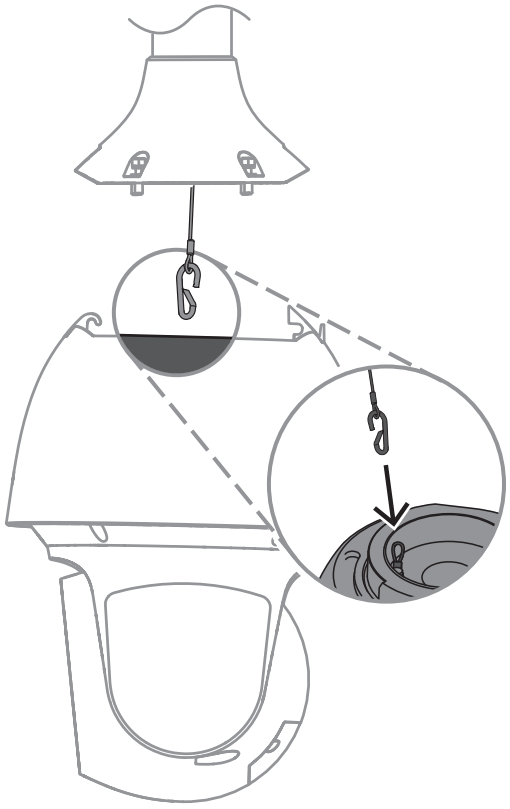


9.2 Attaching the Mounting Cap and the Camera

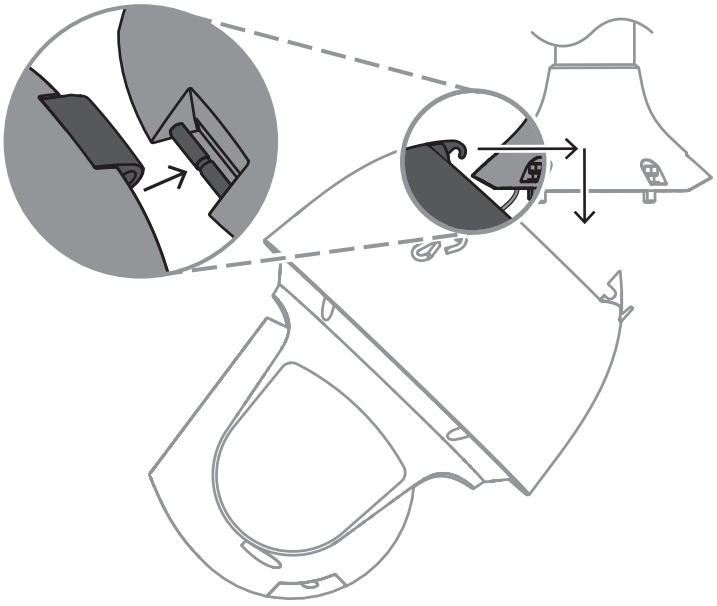
1. To make a watertight seal, wrap PTFE tape (user-supplied) four times around the threads at the end of the mount.
2. Attach the mounting cap to the mount.
3. Secure the locking screw with the T15 Torx screwdriver.



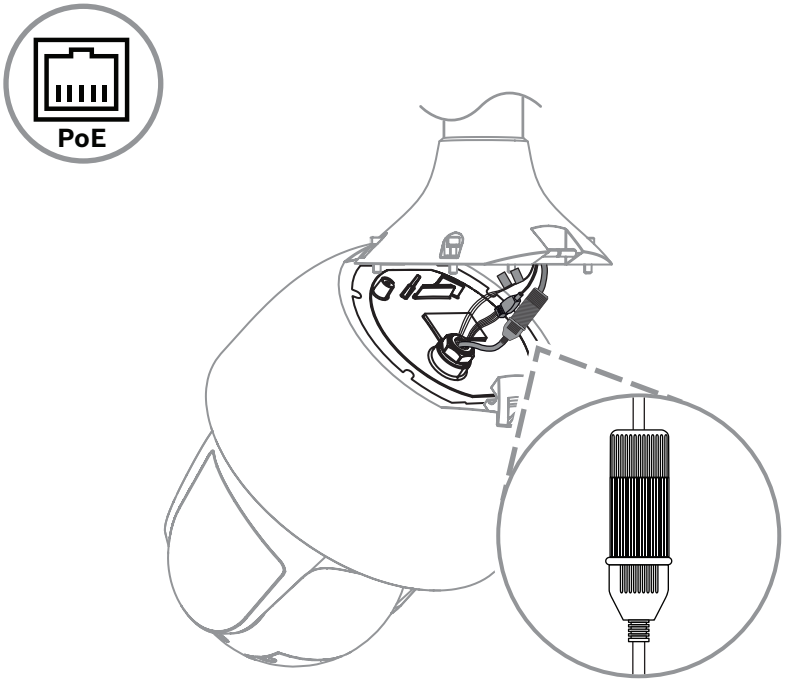
4. Thread all connection cables through the mounting cap.
5. Attach the hook at the end of the Safety Tether to the loop attached to the top of the camera.

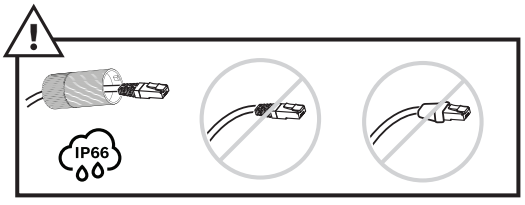


6. Put the camera at approximately 45 degrees. Install the camera in the mounting cap with the hook.

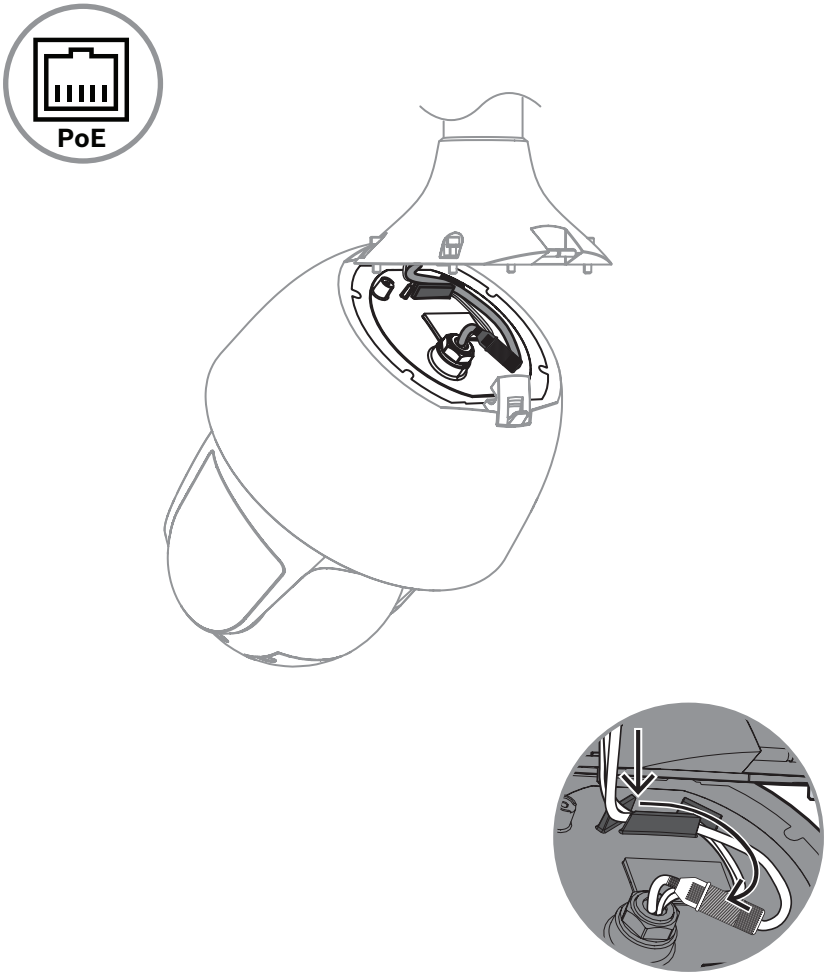


7. Connect the RJ45 plug and the RJ45 socket on the camera cable and assemble the IP66 accessory kit to ensure a waterproof seal.
8. Connect the mating connectors on the user-supplied cables to the matching connectors on the camera. Refer to the chapter Connection for more information.

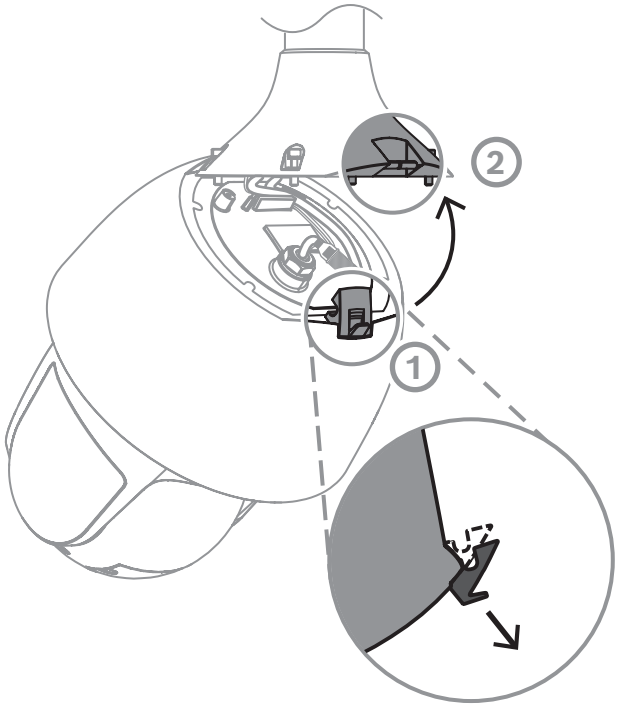




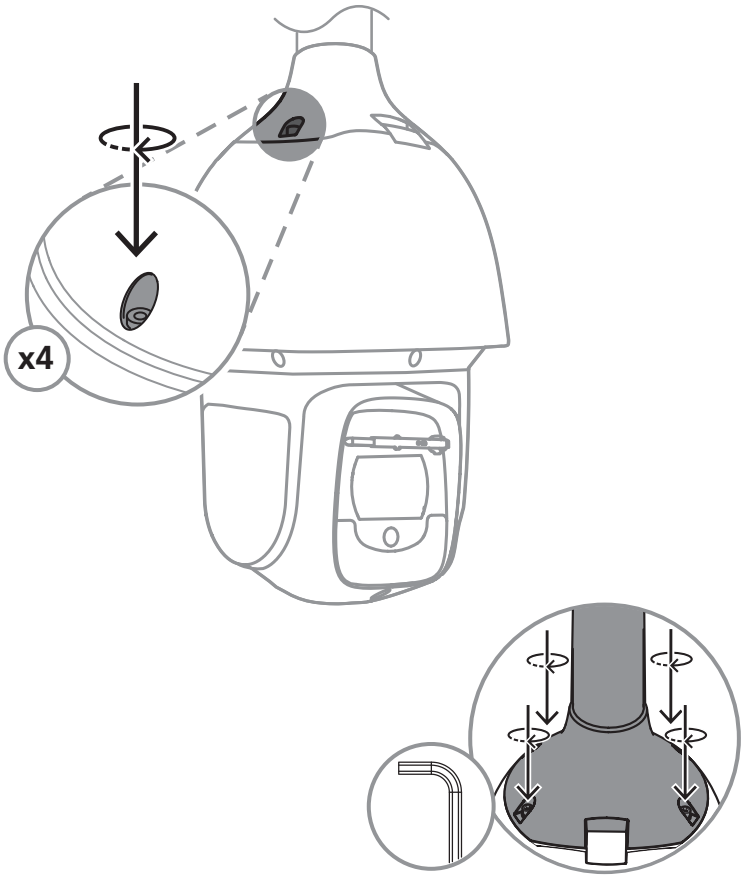
9. Place the line through the base on the camera.



10. Match the miter lock of the cap and the camera.



11. Secure the 4 safety locking screws with the T15 Torx screwdriver.


x4

10 Installing a Parapet Roof Mount and Camera

10.1 Installing the Roof Mount

1. Determine the wall location on the roof for the camera and use the pendant parapet mount bracket as a template to mark the hole locations.

Notice!
Allow enough room below the mount bracket to route the video, control, and alarm wires up through the parapet arm. In certain installations, you may need to lift the parapet arm for the camera to clear the top of the wall when it is swung into position. Provide enough slack in the wires to rotate the pipe arm over the roof and back when camera maintenance is required.

2. Prepare the mounting surface for the type of fastener by drilling holes for the mounting anchors as required.

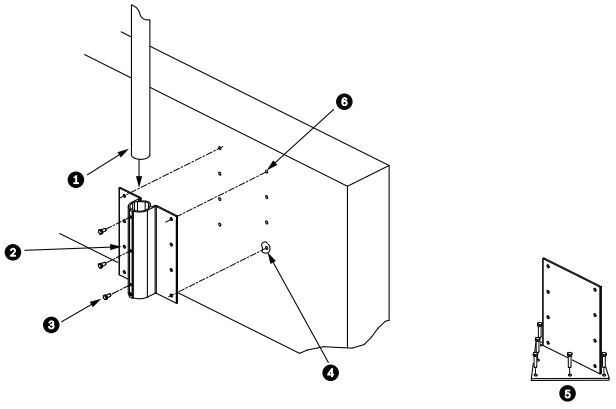


Figure 10.1: Pendant parapet mount bracket and Roof mount plate

1	Pipe arm	4	Apply sealant around each fastener hole
2	Pendant parapet mount bracket	5	Roof mount plate
3	3/8-16 SS Hex Head Bolt (supplied)	6	Use a minimum of six (6) fasteners (not supplied). Eight (8) fastener holes shown.

Notice!
Fasteners are not supplied with the Roof Parapet Mount Kit because the appropriate fasteners depend on the material to which the mount is attached. The material must accommodate a minimum pull-out strength of 275 kg (600 lb) (for example, 19 mm (3/4 in.) minimum for plywood). Fasteners can include bolts, studs, or lag bolts. All fasteners must be made of corrosion-resistant stainless steel with a diameter of 10 mm (3/8 in.).
All bolts must fully extend through the mounting surface and be secured with a flat washer, a lock washer, and a nut. All studs must be anchored to concrete or welded to a steel backing plate. Anchor bolts can be used for blind structures where there is no access to the rear.

3. Apply a weatherproof sealant around each fastener hole at the mounting surface.

4. Attach the pendant parapet mount bracket using at least six (6) stainless steel fasteners, three (3) on each side. (The bracket has eight (8) holes.) Be careful not to overtighten the fasteners because it may strip the threads. If attaching the parapet mount to a flat roof, attach the optional LTC 9230/01 Roof Mount Plate to the roof and then attach the pendant parapet mount bracket to the Roof Mount Plate.
5. Insert the Parapet Pipe Arm into the mounting bracket until it bottoms in the bracket.
6. Remove the End Cap from the front of the arm. Feed the video, control, and power wires up through the bottom of the pipe arm and out the front end.

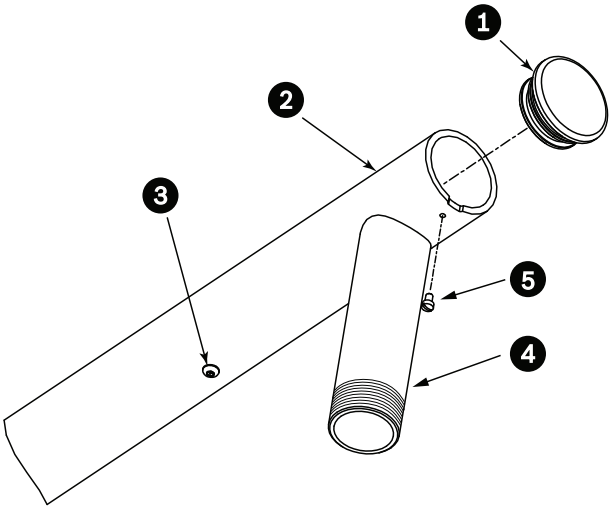


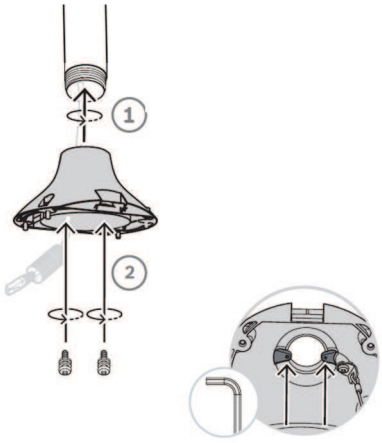
Figure 10.2: NDA-U-RMT

1	End Cap with O-ring
2	Parapet Pipe Arm
3	1/4-20 SS Cap Screw
4	Down Pipe
5	10-24 SS Pan Head Screw

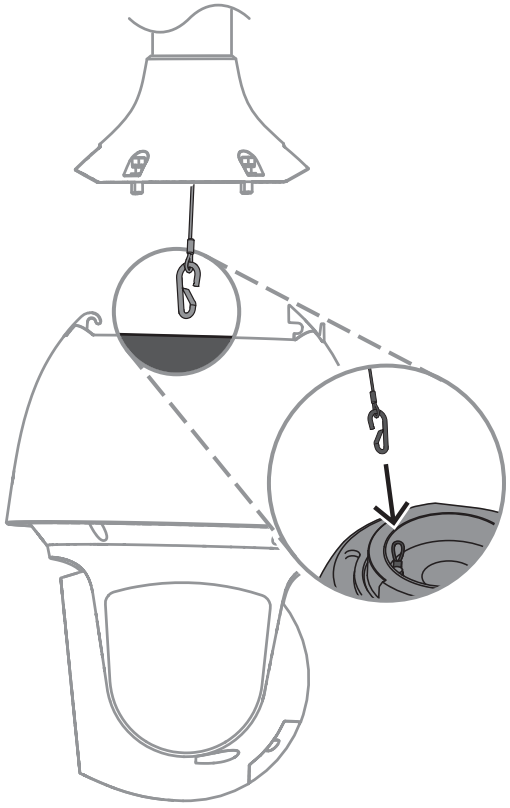
7. Fold back the video, control, and power wires at the front end of the arm and route them down and out through the Down Pipe. Replace the End Cap.
8. Wrap at least five layers of Teflon tape around the Down Pipe threads.

10.2 Attaching the Mounting Cap and the Camera

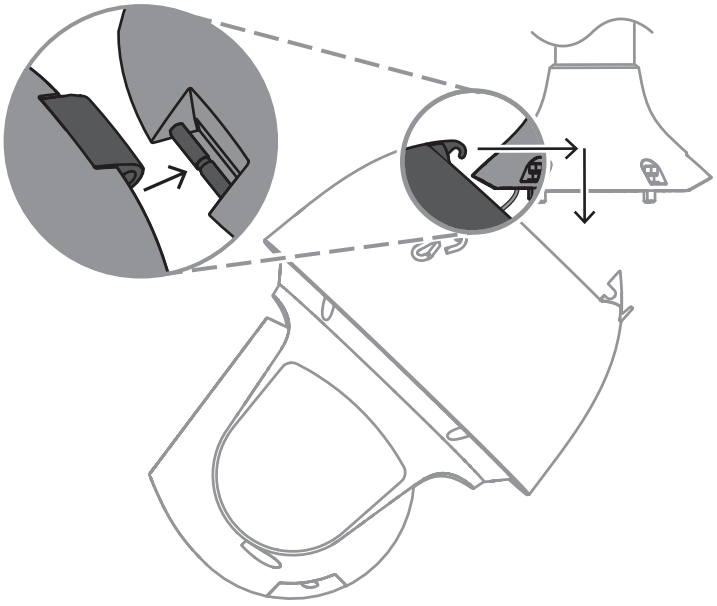
1. To make a watertight seal, wrap PTFE tape (user-supplied) four times around the threads at the end of the mount.
2. Attach the mounting cap to the mount.
3. Secure the locking screw with the T15 Torx screwdriver.



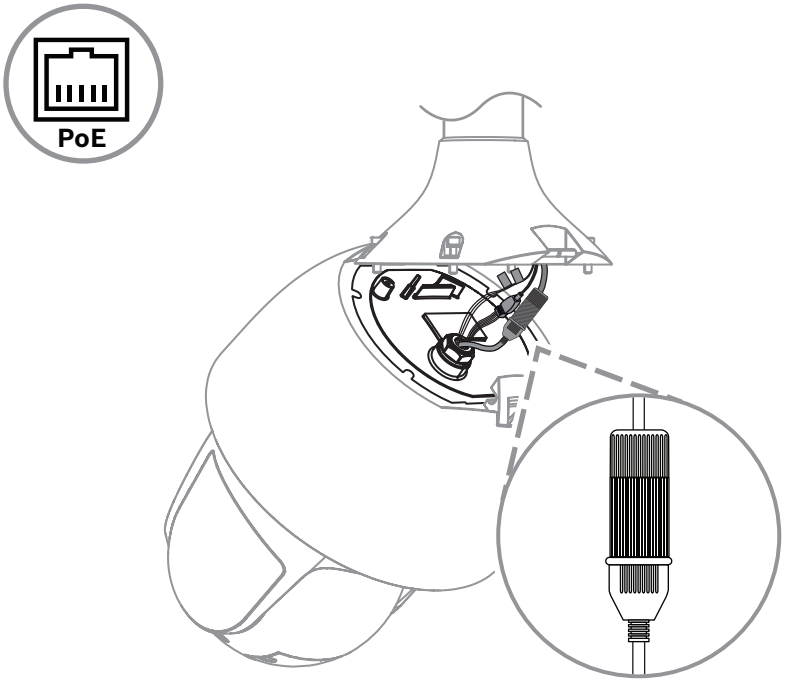
4. Thread all connection cables through the mounting cap.
5. Attach the hook at the end of the Safety Tether to the loop attached to the top of the camera.

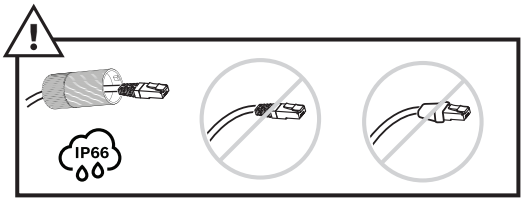


6. Put the camera at approximately 45 degrees. Install the camera in the mounting cap with the hook.

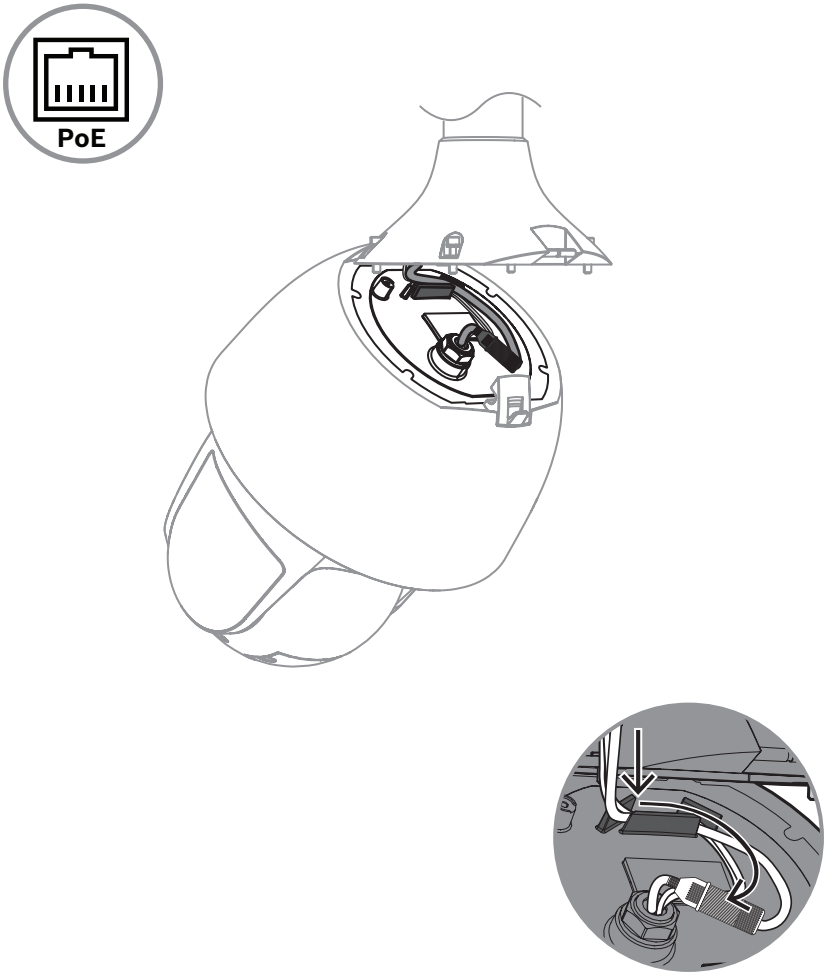


7. Connect the RJ45 plug and the RJ45 socket on the camera cable and assemble the IP66 accessory kit to ensure a waterproof seal.
8. Connect the mating connectors on the user-supplied cables to the matching connectors on the camera. Refer to the chapter Connection for more information.

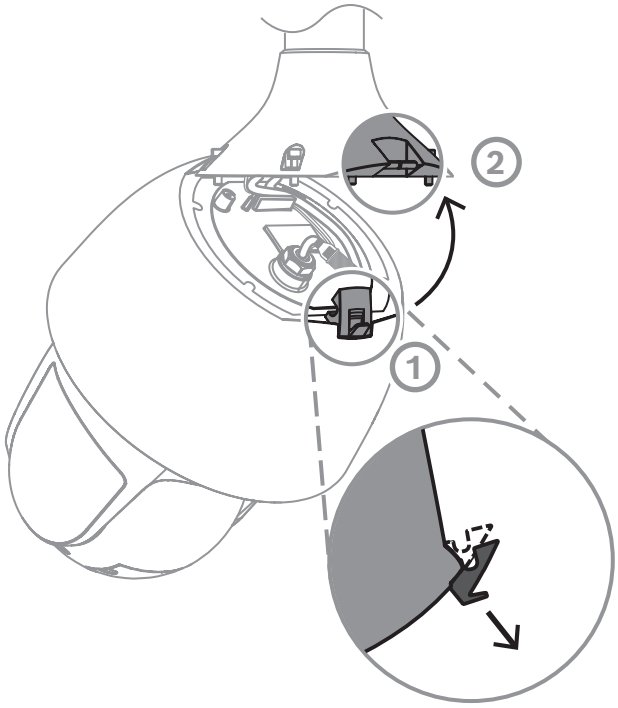




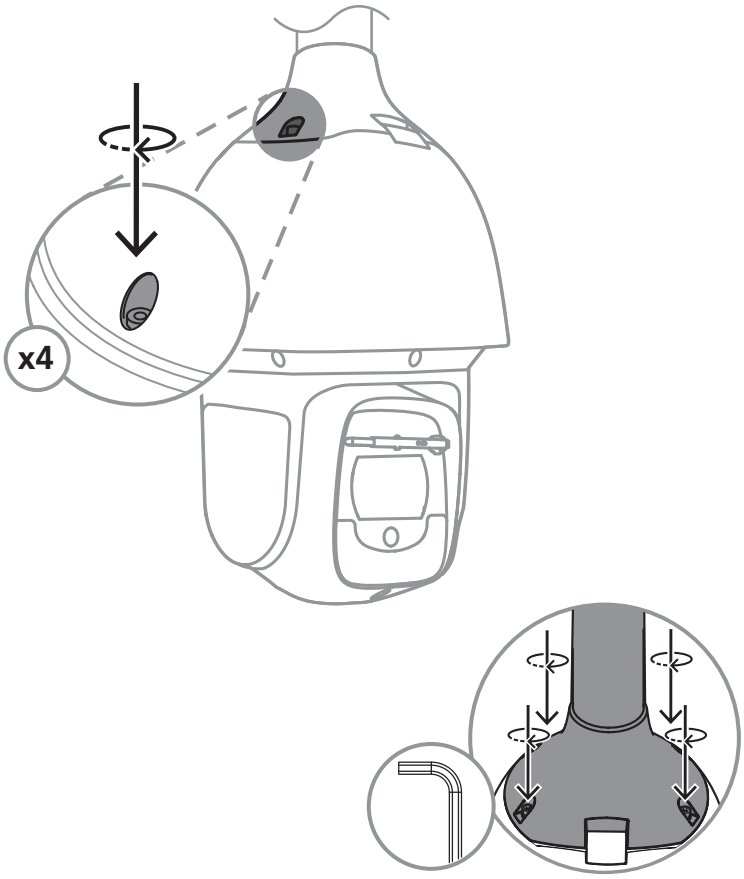
9. Place the line through the base on the camera.



10. Match the miter lock of the cap and the camera.



11. Secure the 4 safety locking screws with the T15 Torx screwdriver.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11 Installing a Pipe Mount and Camera

11.1 Preparing the Ceiling for Installation

1. Determine a secure location for the pipe mount. Ensure there is an adequate opening in the ceiling or mounting structure for the cables to pass through.

Caution!
Select a rigid mounting location to prevent excessive vibration to the camera.

Notice!
The fasteners and mounting surface must be capable of supporting a maximum load of 11.33 kg (25 pounds).

2. Use the direct connect plate as a template to mark the location to drill holes for the four mounting screws (and anchors (user-supplied) if necessary), and to cut the hole for the cables.
3. Drill the holes for the mounting screws.
4. Drill a hole (maximum of 20 mm [.79 in.]) in the center of the mounting location to feed the cables through the mount.
5. Insert the wall anchors (user-supplied), if necessary, into the ceiling at the locations marked in step 2.

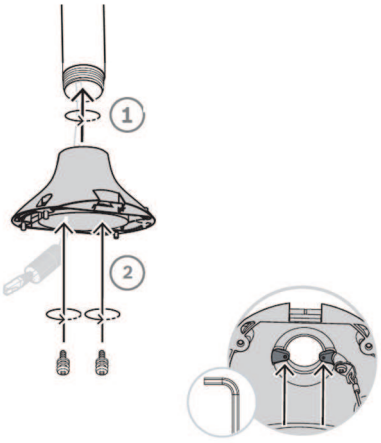
11.2 Installing the Pipe Mount

Ensure that the cables are long enough to reach through the mount and the camera's mounting cap to the connections from the camera.

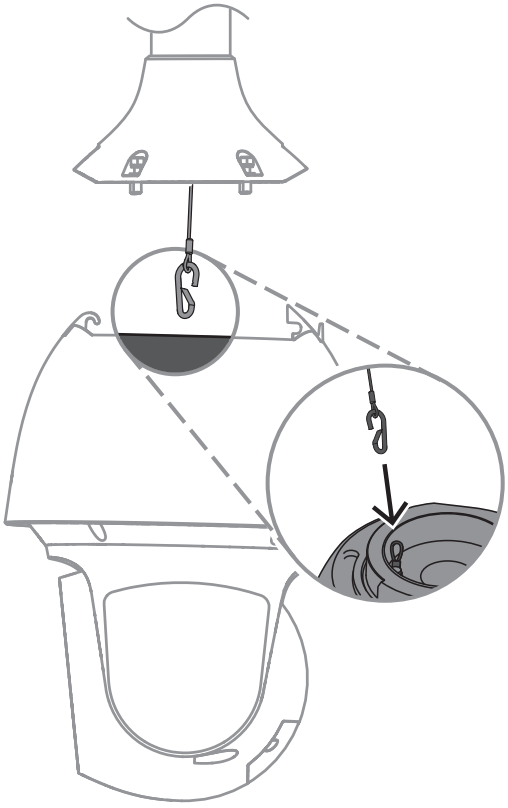
1. Attach the mounting flange and (adapter) to the direct connect plate using four M5 screws.
2. Thread the cables through the pipe mount.
3. Attach the pipe mount to the mounting flange and (adapter).
4. If you choose to install the pipe mount extension, thread the cables through the extension. Attach the pipe extension to the open end of the pipe mount.
5. Attach the hook at the end of the Safety Tether to the loop attached to the top of the camera.
6. Connect the mating connectors from the user-supplied cables from the pipe to the matching connectors from the camera. Refer to the chapter Connection for more information.

11.3 Attaching the Mounting Cap and the Camera

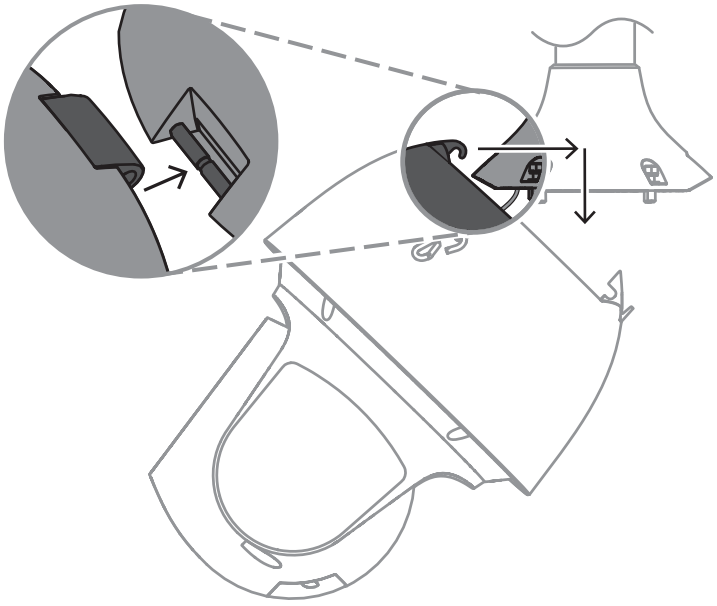
1. To make a watertight seal, wrap PTFE tape (user-supplied) four times around the threads at the end of the mount.
2. Attach the mounting cap to the mount.
3. Secure the locking screw with the T15 Torx screwdriver.



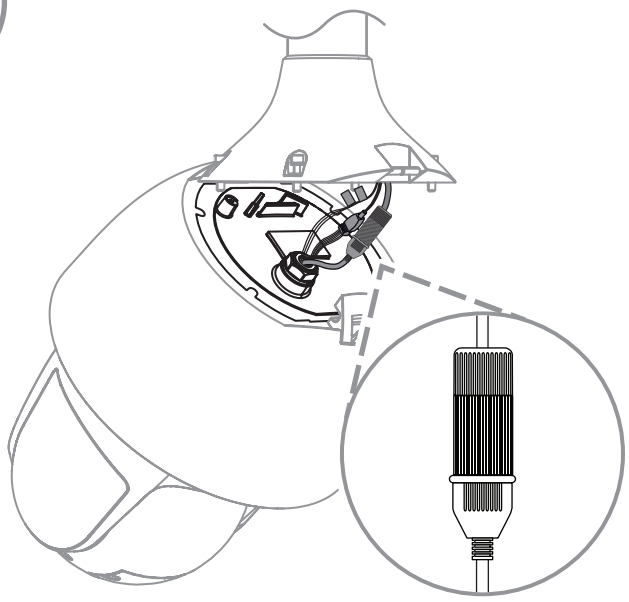
4. Thread all connection cables through the mounting cap.
5. Attach the hook at the end of the Safety Tether to the loop attached to the top of the camera.



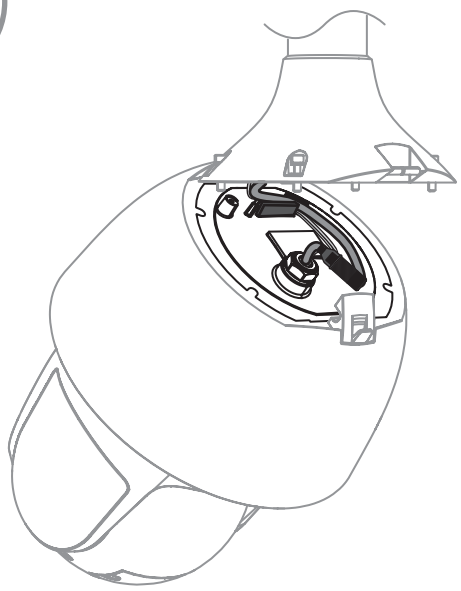
6. Put the camera at approximately 45 degrees. Install the camera in the mounting cap with the hook.

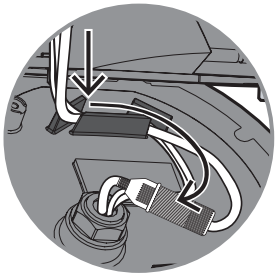


7. Connect the RJ45 plug and the RJ45 socket on the camera cable and assemble the IP66 accessory kit to ensure a waterproof seal.
8. Connect the mating connectors on the user-supplied cables to the matching connectors on the camera. Refer to the chapter Connection for more information.

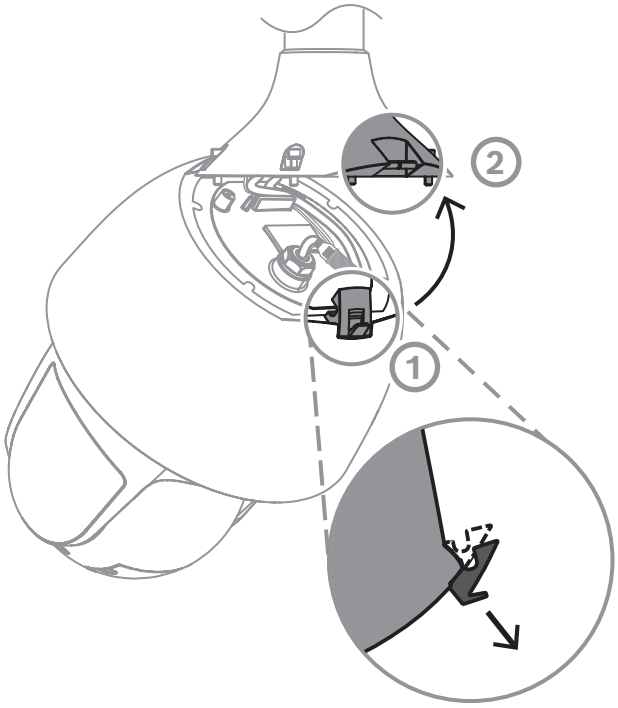


9. Place the line through the base on the camera.

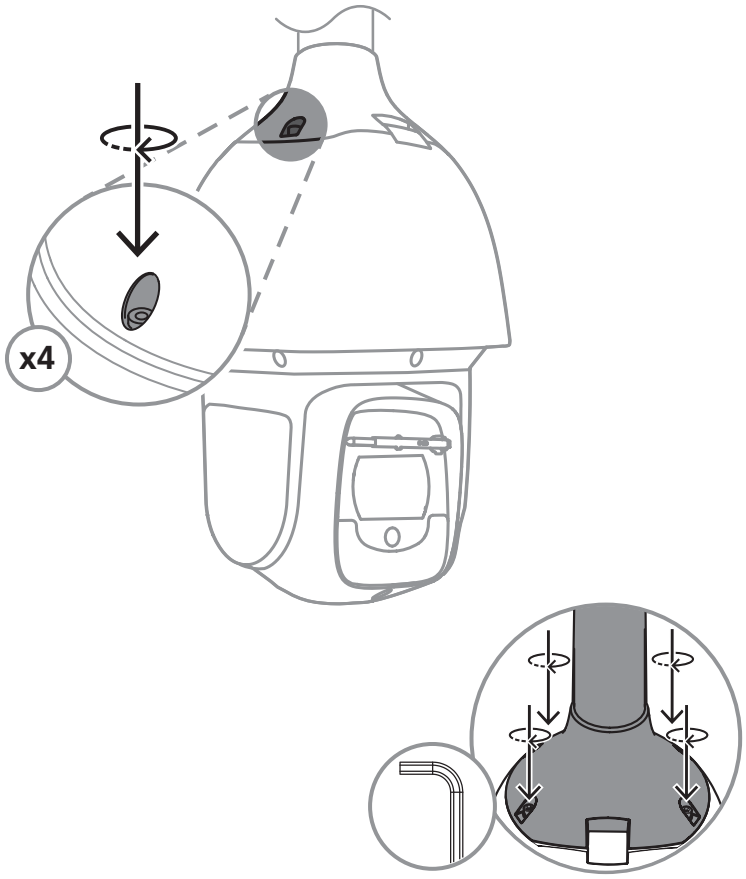




10. Match the miter lock of the cap and the camera.



11. Secure the 4 safety locking screws with the T15 Torx screwdriver.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12 Connection

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.

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

- Connect the cable to the 24 VAC wires from the camera.

Label ID	Description	Cable Wire Color
AC24V	24 VAC	Red
AC24V	24 VAC	Black
EARTH	Earth Ground	Yellow/Green

- Connect the Ethernet cable to the RJ45 connector of the camera. The following figure illustrates a typical system configuration.

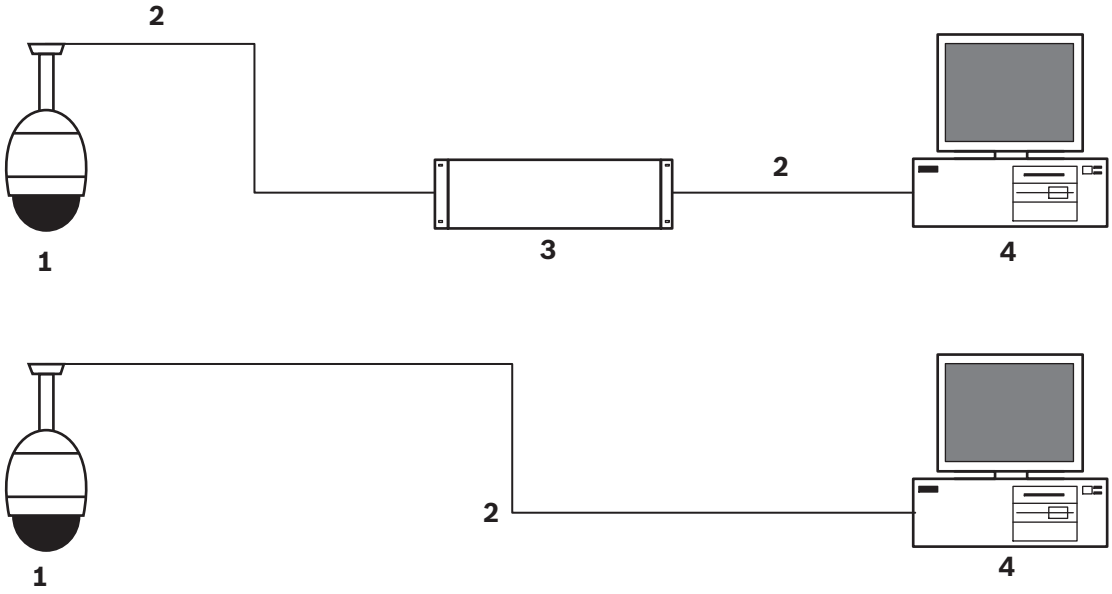

Figure 12.1: AUTODOME IP System Configuration

1	AUTODOME camera
2	IP connection (Ethernet/Cat5) (100 m maximum)
3	Network switch
4	Network device (computer with monitor, DVR/NVR, etc.)

- If desired, connect the alarm and/or audio wires as identified in the following table.

Label ID	Description	Cable Wire Color
ALARM_COM	Alarm Communications	Red
ALARM_OUT	Alarm Out	Brown
ALARM_IN1	Alarm In 1	White
ALARM_IN2	Alarm In 2	Blue
AUDIO OUT	Audio Out	Grey
GND	Ground	Black
AUDIO GND	Audio Ground	Green
AUDIO IN	Audio In	Purple

13 Maintenance

All bubbles require special care when handling and cleaning to avoid scratches.

Notice!
Risk of damage to the bubble
Handle the bubble with care. Do not scratch the inside of the bubble which doesn't have a hard coating.

Caution!
Risk of burns - Camera surface may be hot
The camera housing may be hot to the touch, especially in hot weather climates. Use caution when handling the camera to avoid burns.

Notice!
To avoid excessive moisture saturation inside the housing, limit the amount of time that the bubble is disconnected from the housing. Bosch recommends that the bubble be removed from the housing for no more than five (5) minutes.

Bubble Handling

The bubble may be packaged with a protective plastic sheet. It is recommended that the bubble remain stored this way until it is ready to install. Limit handling the bubble, as any scratches can quickly affect visibility.

Bubble Cleaning

If cleaning the bubble is required, use the following procedures and comply with all the warnings listed below.

Cleaning the Bubble Interior

The extremely soft interior surface should not be cleaned by rubbing or dusting with a cloth. Use clean dry compressed air, preferably from a spray can, to remove any dust from the interior surface.

Warning!
Do not use alcohol-based solutions to clean the bubble. This will cause the surface to cloud and, over time, cause stress aging, which makes the bubble brittle.

Cleaning the Bubble Exterior

The exterior of the bubble is hard-coated for extra protection. If cleaning becomes necessary, only use cleaning solutions and cloths suitable for cleaning safety glass lenses. Dry the bubble thoroughly with a dry nonabrasive cloth to prevent water spots. Never scrub the bubble with any abrasive material or cleaners.
Bosch recommends cleaning the exterior of the bubble with NOVUS "No. 1" Plastic Clean & Shine (or equivalent), according to manufacturer's instructions. Refer to www.novuspolish.com to order or to find a local distributor.

Cautions

- Do not clean bubbles in the hot sun or on very hot days.
- Do not use abrasive or highly alkaline cleaners on the bubble.
- Do not scrape the bubble with razor blades or other sharp instruments.
- Do not use Benzene, Gasoline, Acetone, or Carbon Tetrachloride on the bubble.

14 Decommissioning

14.1 Transfer

The device should only be passed on together with this Installation manual.

14.2 Disposal

	**Disposal -** Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2012/19/EU*.

15 Support

Support

Access our **support services** at www.boschsecurity.com/xc/en/support/.

Bosch Security and Safety Systems offers support in these areas:

- Apps & Tools
- Building Information Modeling
- Warranty
- Troubleshooting
- Repair & Exchange
- Product Security

Bosch Building Technologies Academy

Visit the Bosch Building Technologies Academy website and have access to **training courses, video tutorials** and **documents**: www.boschsecurity.com/xc/en/support/training/

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