VISIX V-Series All-in-One Cameras - Gen I

Hardware and Installation Manual

2018-3

This manual applies to the following camera models. Please use the below links or the Table of Contents to locate the section of this manual that pertains to your particular All-in-One camera model:

Camera Type	Model
Exterior Bullet Camera	VX-2A-B-RIWDZ (New), VX-2A-B-IWD (DC)
Exterior Bullet Camera w/Remote Focus	VX-2VA-B-RIWD (New), VX-2A-B-RIWD (DC)
Exterior Dome Camera	VX-2AD3B-IWD (New), VX-2AD3-IWD (DC)
Interior Mini Dome Camera	VX-2A-IMD-X
VERA 20°, 36° or 50° Field-of-Vision Thermal Bullet Camera	VX-VT-20, VX-VT-36, VX-VT-58 (New)
Interior Pinhole Camera	VX-2V28-PIN

Please use the links above or the Table of Contents to locate the section of this manual that pertains to your particular All-in-One camera model.

Thank you for purchasing our product. If there are any questions, or requests, please do not hesitate to contact the dealer.

This manual may contain technical inaccuracies or printing errors. The content is subject to change without notice. The manual will be amended if there are any hardware updates or changes.

Disclaimer Statement

"Underwriters Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in UL's Standard(s) for Safety, UL60950-1. 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."

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for 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 Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

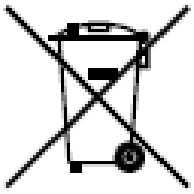
This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information, see: www.recyclethis.info

Safety Instruction

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into 'Warnings' and 'Cautions':

WARNING: Serious injury or death may be caused if any of these warnings are neglected.

CAUTION: Injury or equipment damage may be caused if any of these cautions are neglected.

WARNINGS:

- Please adopt a power adapter which can meet the safety extra low voltage (SELV) standard when possible, and source with 12 VDC or 24 VAC (depending on models) according to the IEC60950-1 and Limited Power Source standard. Before applying power to the camera, check the power source to ensure that it is within the specifications
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture unless it is an exterior/weatherproof model. Please do not install the camera in a place exposed to direct sunlight. Do not operate the camera in environments beyond the specified temperature. Refer to your specific camera model's section of this manual for environmental conditions and limitations.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Please install blackout equipment into the power supply circuit to prevent footage and data loss**.**
- Please make sure that the ceiling can support more than 50(N) Newtons of gravity if the camera is fixed to the ceiling.

CAUTIONS:

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
- Do not aim the camera lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the camera.
- The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor not be exposed to the laser beam.
- Do not place the camera in extremely hot, cold temperatures (the operating temperature should be between -30°C ~ 60°C, or -40°C ~ 60°C if the camera model has an "H" in its suffix), dusty or damp environment, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Keep the camera away from water and any liquid.
- While shipping, the camera should be packed in its original packing.
- Improper use or replacement of the battery may result in hazard of explosion. Please use the manufacturer recommended battery type.

NOTE: For cameras that support IR, you are required to pay attention to the following precautions to prevent IR reflection.

- Dust or grease on the dome cover will cause IR reflection. Please do not remove the dome cover film until the installation is finished. If there is dust or grease on the dome cover, clean the dome cover with clean soft cloth and isopropyl alcohol. (only applies to certain models).
- Make certain the installation location does not have reflective surfaces of objects too close to the camera. The IR light from the camera may reflect back into the lens causing reflection. (only applies to certain models).
- The foam ring around the lens must be seated flush against the inner surface of the bubble to isolate the lens from the IR LEDS. Fasten the dome cover to camera body so that the foam ring and the dome cover are attached seamlessly (only applies to certain models).

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1 VISIX V-Series All-in-One Cameras

1.1 Introduction

VISIX V-Series All-in-One, edge-based IP cameras are powerful, full-featured, VMS and advanced analytic capable. VISIX V-Series cameras provide a complete surveillance solution for the small and medium sized businesses and for unique single-point applications.

Several models exist to best suit any number of environments. Hardware installation details for each model are contained within. Use the Table of Contents to locate the Section pertaining to your particular camera model.

2 VX-2A-B-RIWDZ / VX-2VA-B-RIWD - 2MP Exterior Bullet Camera

The VX-2A-B-RIWDZ (previous model: VX-2A-B-IWD) and VX-2VA-B-RIWD (previous model: VX-2A-B-RIWD) are fully functional indoor/outdoor IP cameras with advanced analytics capabilities. These cameras can be connected to a DVR or act as a standalone recording device. The exterior bullet camera line offers high-definition video at full 1920 x 1080 resolution for both indoor and outdoor video surveillance applications which require superior clarity and detail.

The wealth of features includes; dual-streaming of either H.264 or MJPEG compression; wide dynamic range; Micro SD card slot for local recording; IP66 weather resistant construction; varifocal lens; and IR illumination. The **RIWD** model also features remote one-click auto focus.

The embedded analytics use algorithms that automatically self-adjust, allowing the user to concentrate on the detection rules. This greatly simplifies the analytic process, requiring only a few mouse clicks to configure a detection rule. These advanced analytics allow for object classification, direction, people counting, dwell times, and occupancy counts.

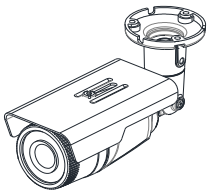
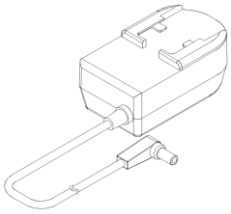
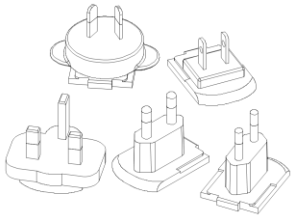
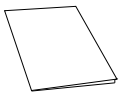
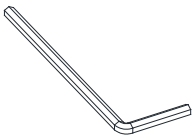
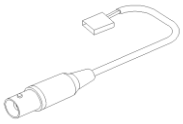
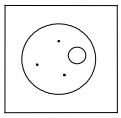
When enabled, the embedded VIGIL Server software from 3xLOGIC allows the camera to be run as a stand-alone device recording video to the onboard memory card. This makes the camera compatible with the 3xLOGIC software suite including VIGIL Client, VIGIL VCM, VIGIL Mobile and VIGIL Cloud applications. Simple plug-and-play installation allows for access using a standard web browser, VIGIL Client, or your mobile device or tablet using our easy to use QR code quick setup.

2.1 VX-2A-B-RIWDZ/ VX-2-VA-B-RIWD Specifications- Quick Summary

Component	Feature Description
Camera	■ SONY EXMOR 1/2.9” 1080p CMOS Image Sensor ■ True Day / Night ■ DC Auto Iris Lens ■ WDR ■ Embedded IR Illuminator ■ Weather Proof (IP66) ■ Remote Zoom/Focus Control (One Click AF) - **** VX-2-VA-B-RIWD Only****
Video	■ H.264 Baseline, Main, High profile (MPEG-4 Part 10/AVC), MJPEG(Motion JPEG) ■ Max 30fps in 1080p ■ Text Overlay ■ Analog Video Output
Network	■ 10/100 Base-T Ethernet
Integration	■ ONVIF compliant (Profile S)
General	■ Micro SD/SDHC Card Slot x1 ■ Power over Ethernet (PoE)
Video Contents Analysis (VCA)	■ VCA Presence Standard

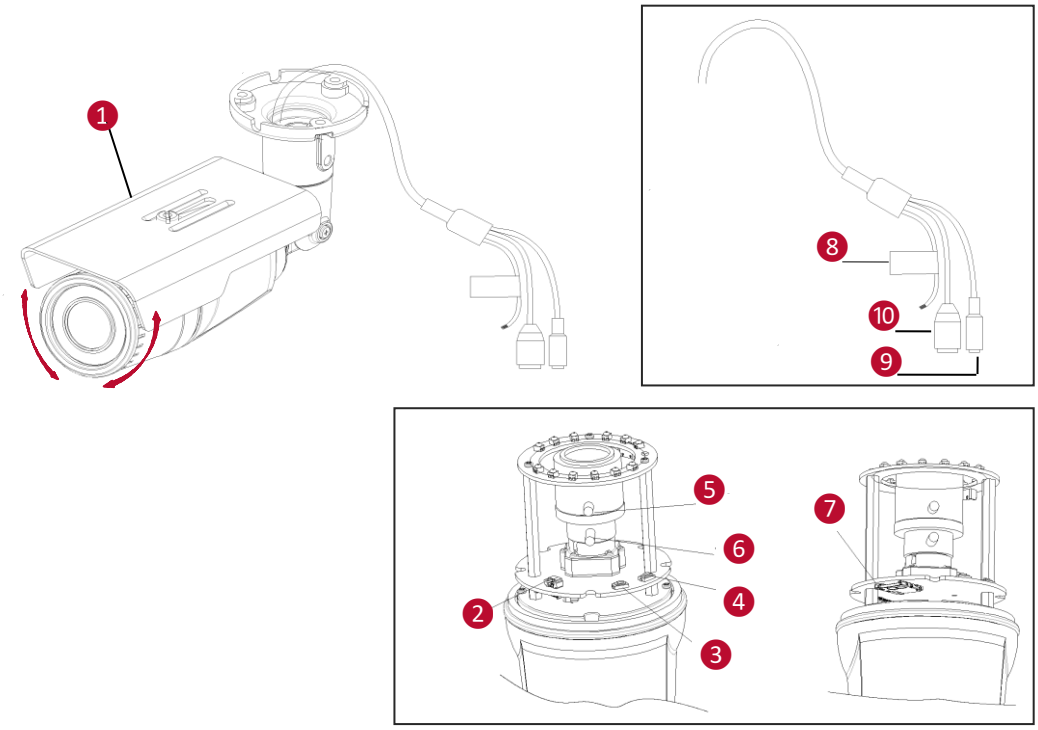
2.2 Package Contents

Please unpack the package carefully and handle the equipment with care. The package contains:

Camera	DC Power Adaptor
	
Universal Plugs	**Screws(M4x30) and Plastic Anchors**
	
Quick Installation Guide	**Hex Wrench(3mm)**
	
Silicon Waterproof Band	**Video Output Cable**
	
Installation Template	
	

NOTE: The contents above are subject to change without prior notice.

2.3 Part Names



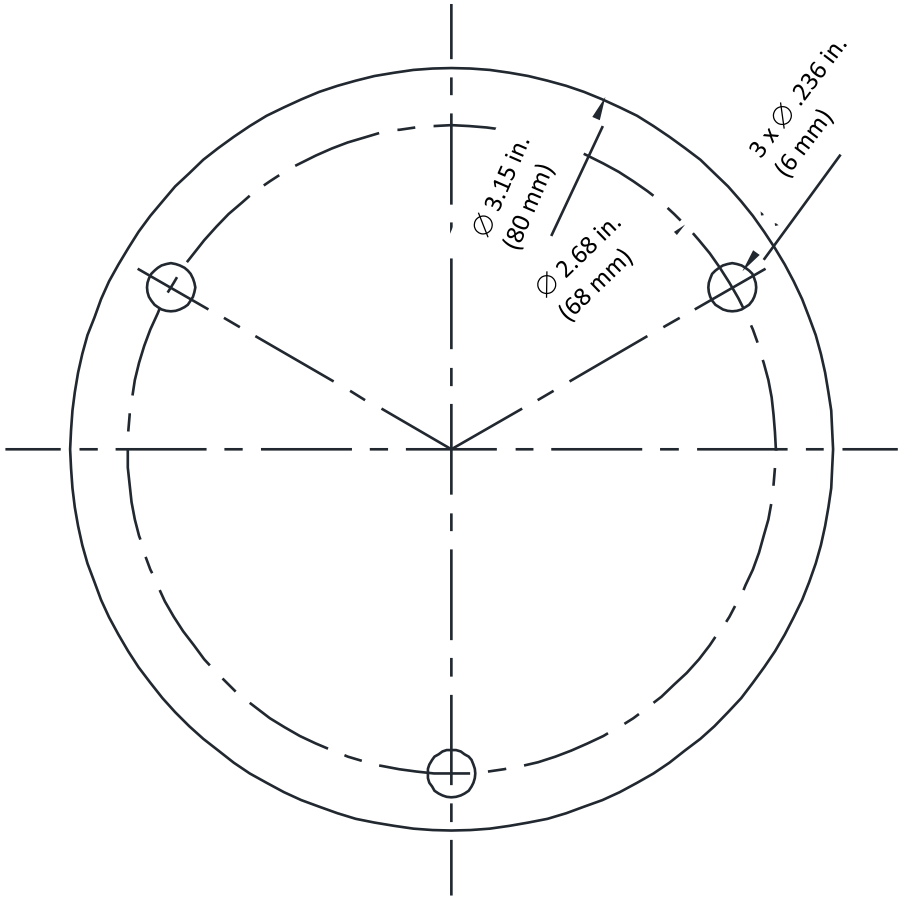
* Models herein and their appearance are subject to change without any prior notice.

1). **Sunshield:** Position the sunshield to prevent direct sunshine.
2). **Video-Out Cable Socket:** Socket for the video output cable included in the package (CVBS: 1.0Vp-p / 75Ω BNC)
3). **PAL/NTSC button:** Pressing the PAL/NTSC button each time changes the mode as follows: No video output -> PAL-> NTSC
4). **Reset button:** Use the button to restart the device or to reset it to Factory Default. Refer to the 3xLOGIC VISIX All-in-One Camera User Manual for more details on restarting/resetting to factory default.
5). **Focus Puller:** Use the puller to manually determine correct focus of the camera. Refer to Adjusting Zoom and Focus for more details.
6). **Zoom Puller:** Use the puller to manually determine appropriate field of view of the camera. Refer to Adjusting Zoom and Focus for more details.
7). **microSD memory card slot:** The camera supports up to 32GB. A card with Class 4 and higher is recommended for HD recordings.
8). **Terminal Connector:** Connector for cable connection of digital input/output. Refer to Section 2.5: Connections for more details.
9). **Power Adaptor Connector:** Use DC12V for the power supply.
10). **LAN connector:** RJ45 LAN connector for 10/100 Base-T Ethernet (PoE supported)

2.4 Installation

2.4.1 INSTALLING THE CAMERA – INSTALLATION WITHOUT BRACKET

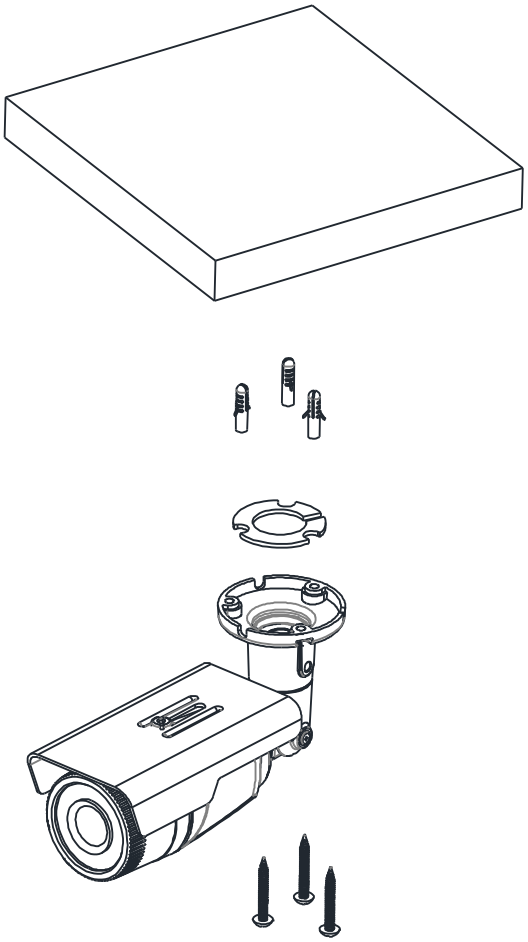
Installation Template



NOTE: Installation template's image size scale in this installation guide is not 1:1. The correct-size template design paper can be found inside the package separately.

Steps:

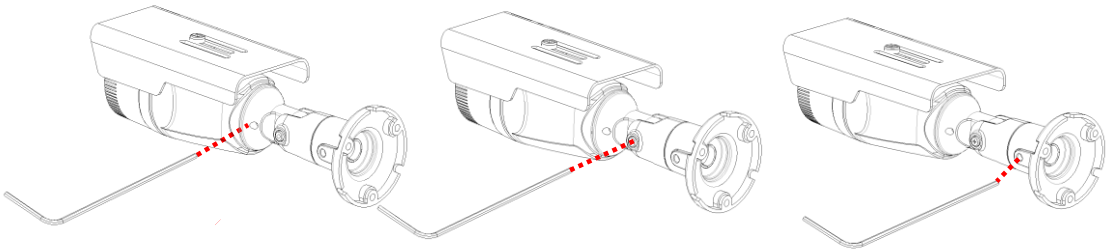
1). Place the installation template included in the package on the desired installation surface.
2). Drill three holes in correct positions based on the template paper, and insert the anchor blocks into the holes.
3). Attach the silicon waterproof band included in the package to the camera's mounting surface by aligning it with the three alignment holes.
4). Connect the required cables including a power cable and a LAN cable (or PoE connection) to the device. See **Section 2.5:** Connections for a diagram of the correct connections.
5). Place the camera body to match the three alignment holes with the three anchor blocks, and hold the camera against the surface where the camera will be mounted.
6). Tighten the anchor blocks with the screws.
7). Adjust the heading direction of the camera. Refer to Adjusting Angle of the Camera for more details.
8). Adjust zoom and focus of the camera. Refer to Adjusting Zoom and Focus for more details.
9). Attach the lens cover on the main body by rotating it clockwise



CAUTION: Sealing gaps is recommended as gaps may appear after the camera installation. Gaps may cause problems such as moisture, water leakage, and etc., which negatively affects the operation of the camera if gaps remain unsealed.
CAUTION: To prevent products from damage, place the camera on a stable and non-vibrating surface. If the stability is in doubt, consult safety personnel for reinforcements, and then proceed with the installation.

2.4.2 ADJUSTING ANGLE OF THE CAMERA

Adjust the camera to the desired angle by unscrewing the joints referring to the following pictures.



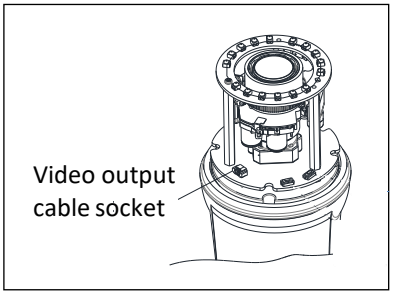
Adjust the joint to install the camera on the wall.

Tilting adjustment

Panning adjustment

Steps:

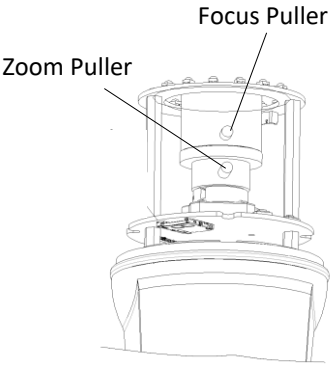
1). Insert the video output cable (included in the package) to the video output cable socket, and connect it to an analogue video test monitor to check if the camera angle has been set as intended. If the angle is appropriate, disconnect the camera from the analogue monitor, and then remove the video output cable from the camera.



2.4.3 ADJUSTING ZOOM AND FOCUS (VX-2A-B-IWD MODEL ONLY)

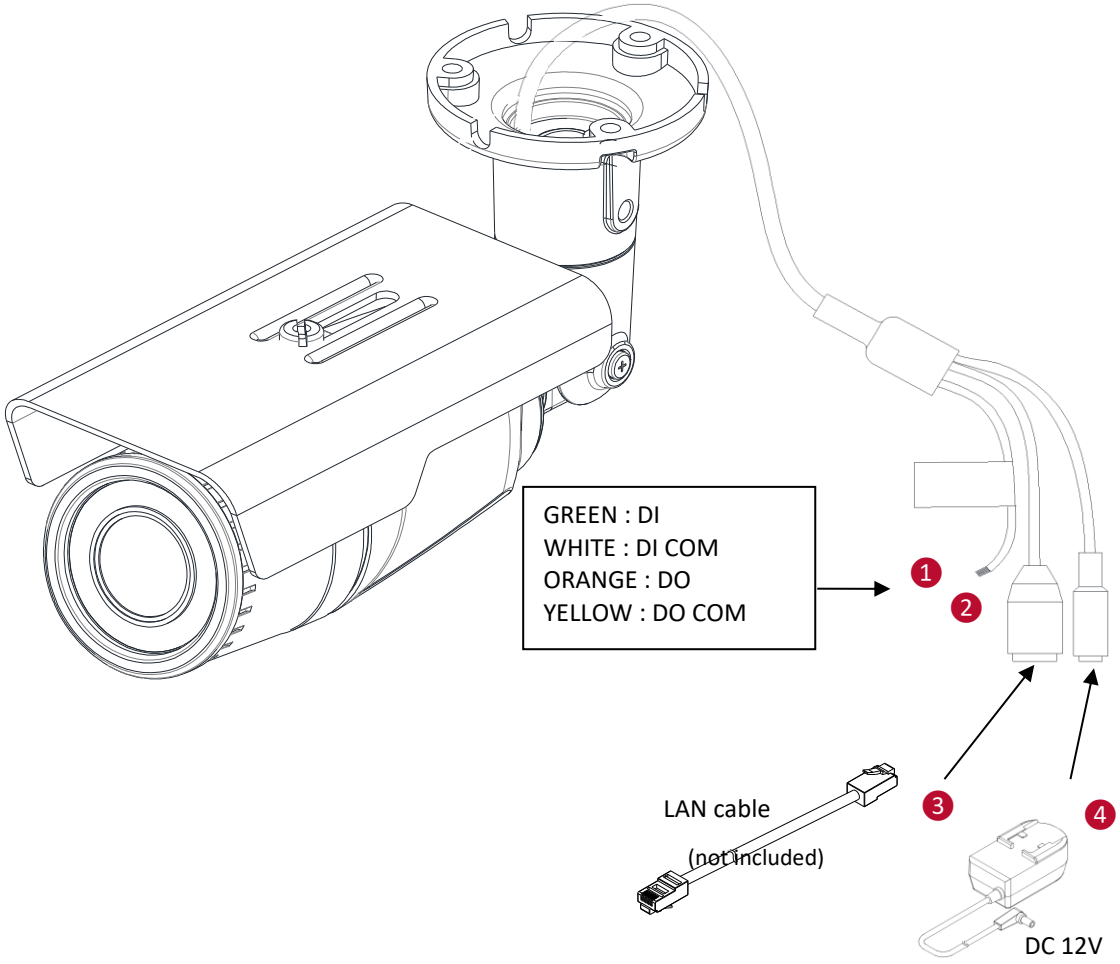
Steps:

1). Unscrew the zoom puller and the focus puller counter-clockwise.
2). Adjust the zoom and the focus of the lens.
3). Tighten the zoom puller and the focus puller again by turning it clockwise after the zoom and the focus are properly adjusted.



CAUTION: Manual adjustment of Zoom and Focus is only possible on the VX-2VA-B-IWD model version. Zoom and Focus controls can be configured digitally from the camera's web interface for VX-2VA-B-RIWD models. See the VISIX V-Series All-in-One Camera User Manual for more details on adjusting lens settings from the camera's web interface.

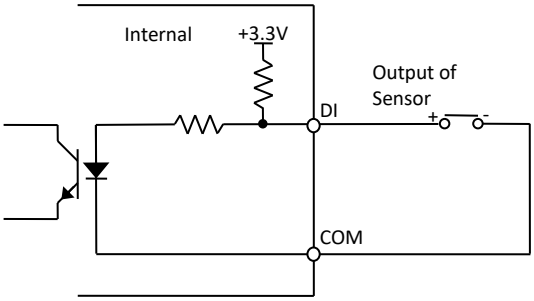
2.5 Connections



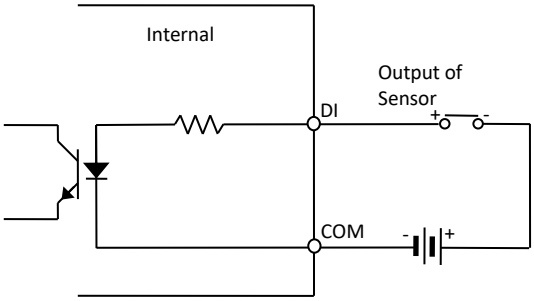
1). **Sensor (DI) connection:** Sensor (DI) can be connected to either a voltage type sensor or a relay type sensor as the following figures. Settings can be done through the camera's webpage.

- **Input voltage range:** 0VDC minimum to 5VDC maximum, Max 50mA.

CAUTION: Do not exceed the maximum input voltage or relay rate.



Relay Type

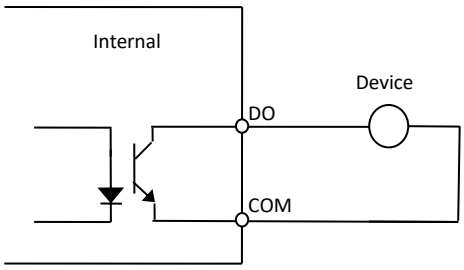


Voltage Type

2). **Alarm (DO) Connection:** Only the relay type is supported.

- **Relay Rating:** Max 24VDC 50mA

CAUTION: Do not exceed the maximum relay rating.



Relay Type

3). **LAN Connection:** This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Use the Ethernet cable (RJ45. to connect the device to a hub or a router in the network. Refer to **Section 6:** Power over Ethernet Specifications to for further detail.

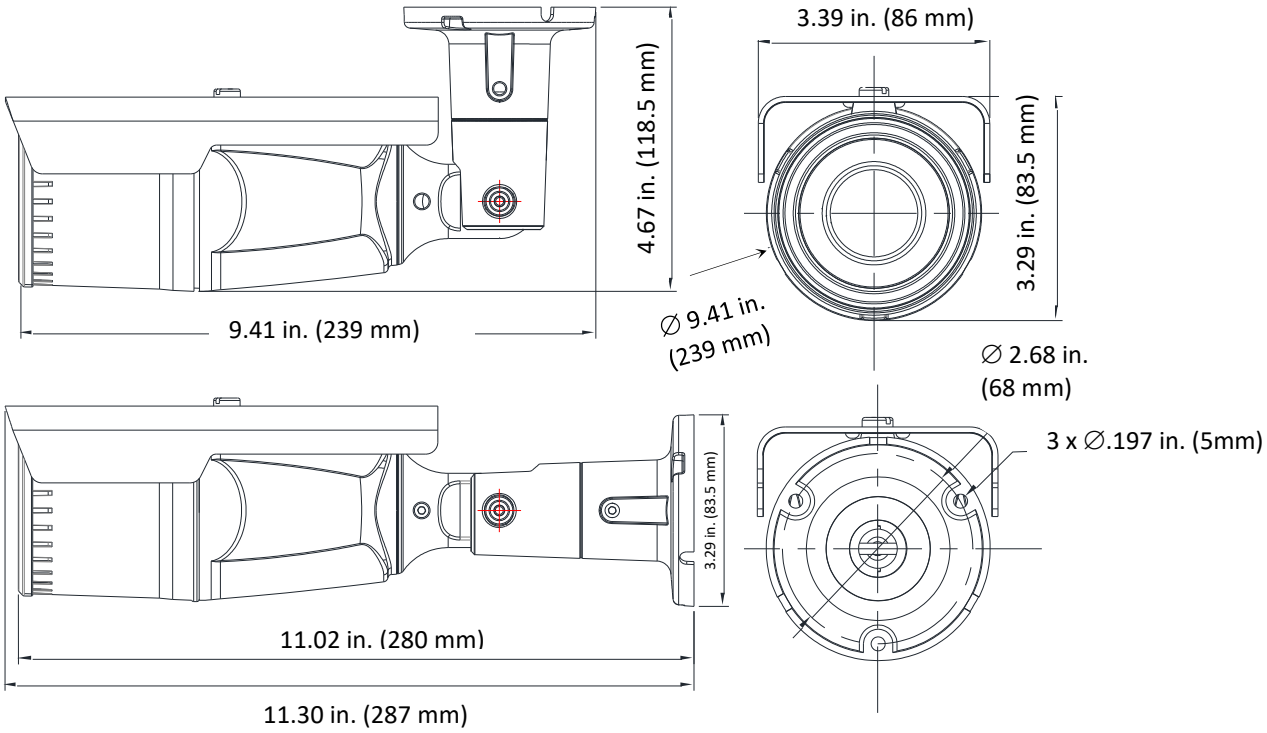
4). **Power Connection:** The camera can be powered from either 12VDC or PoE. If the camera is powered via PoE, refer to **Section 6:** Power over Ethernet Specifications for further detail.

2.6 Full Camera Specifications

Camera Module	
CMOS	
Image Sensor	SONY EXMOR 1/2.9" 1080p CMOS
Effective Pixels	1920x1080
Scanning system	Progressive scanning
Electrical	
Resolution	1920 x 1080
Min. Illumination	Color: 0.7 lux, BW: 0 lux (IR LED On)
AGC Control	Auto
Lens	3.0(w) – 9.0mm(t), F1.5(w) – F2.5(t), Optical 3x
Day & Night	Removable IR Cut Filter
Wide Dynamic Range	Digital WDR
IR Illuminator	
IR LED	High Power IR LED x 12 (850nm)
IR Working Distance	Max. 30m (98ft)
Video	
Compression Format	H.264 and MJPEG Selectable per Stream
Number of Streams	Dual Stream, Configurable
Resolution	1920x1080, 1280x720, 1120x630, 960x540, 800x450, 640x360, 480x270, 320x180
Compression FPS	30fps@1080p
Motion Detection	Built-in
Burnt-in Text (Digital)	Time stamp and text caption overlay
Analogue Output	NTSC/PAL
Audio	
Input/output	-
Compression Format	-
Function	
Digital Input/Output	1/1 channel
RS-485	Not supported
Network	10/100 Base-T
Power over Ethernet (PoE)	Supported

Function	
Protocol	QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, FTP, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1
SD Slot	1 x microSD memory card slot (SD/SDHC up to 32 GB supported) ※ Card not included (Class 4 and higher recommended for HD recordings)
Electrical Characteristics	
Power Source	DC 12V / PoE
Power Consumption	Max. 6W @ DC 12V
Video Output	1 Vp-p, 75Ω, Composite
Audio Input	-
Audio Output	-
D/I	Max 50mA@5VDC, TTL level 1.5V threshold
D/O	Max 50mA@24VDC On-state resistance: 50 Ω (max continuous)
Environment Condition	
Operating Temperature	[DC12V] -20°C ~ 50°C (-4°F ~ 122°F) [PoE] -20°C ~ 50°C (-4°F ~ 122°F)
Operating Humidity	Up to 85% RH
Mechanical Condition	
Material	Aluminum Die-Casting
Color	Ivory
Dimension	83.5mm X 86mm X 287 mm
Weight (Approx.)	860g (1.90lbs)

2.7 Camera Dimensions



3 VX-2AD3B-IWD / VX-2AD3-IWD - 2 MP Exterior Dome Camera

The VX-2AD3B-IWD (previous model: VX-2AD3-IWD) is a fully functional indoor/outdoor IP camera with advanced analytics capabilities. These cameras can be connected to a DVR or act as a standalone recording device.

The exterior dome offers high-definition video at full 1920 x 1080 resolution for both indoor and outdoor video surveillance applications which require superior clarity and detail. Its many features include; dual-streaming of either H.264 or MJPEG compression; wide dynamic range; Micro SD card slot for local recording; IP66 weather resistant construction and IR illumination.

The embedded analytics use algorithms that automatically self-adjust, allowing the user to concentrate on the detection rules. This greatly simplifies the analytic process, requiring only a few mouse clicks to configure a detection rule. These advanced analytics allow for object classification, direction, people counting, dwell times, and occupancy counts.

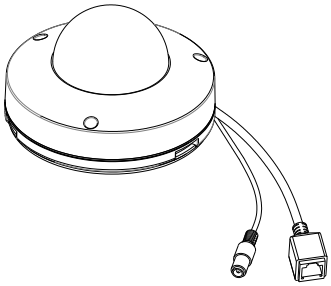
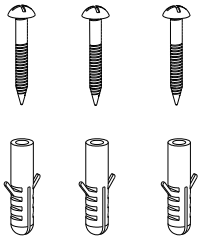
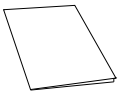
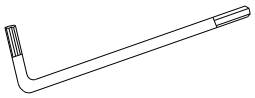
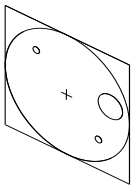
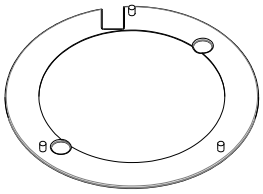
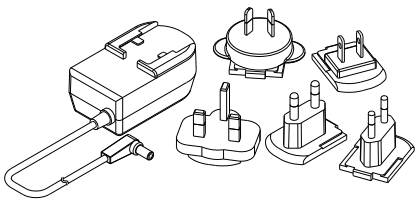
When enabled, the embedded VIGIL Server software allows the camera to be run as a stand-alone device recording video to the onboard memory card. This makes the camera compatible with the existing 3xLOGIC software suite including VIGIL Client, VIGIL VCM, VIGIL Mobile and VIGIL Cloud applications. Simple plug and play installation allows for access using a standard web browser, VIGIL Client, or set it up on your mobile device or tablet using our easy to use QR code quick setup.

3.1 VX-2AD3B-IWD Specifications- Quick Summary

Component	Feature Description
Camera	■ 1/2.9” 1080p CMOS Image Sensor ■ True Day/Night ■ WDR ■ Embedded IR Illuminator
Video	■ H.264 Baseline, Main, High profile (MPEG-4 Part 10/AVC), MJPEG (Motion JPEG) ■ Max 30fps in 1080p ■ Text Overlay
Network	■ 10/100 Base-T Ethernet
Integration	■ ONVIF compliant (Profile S)
General	■ Micro SD/SDHC Card Slot x1 ■ Power over Ethernet (PoE)
Video Contents Analysis (VCA)	■ VCA Presence Standard

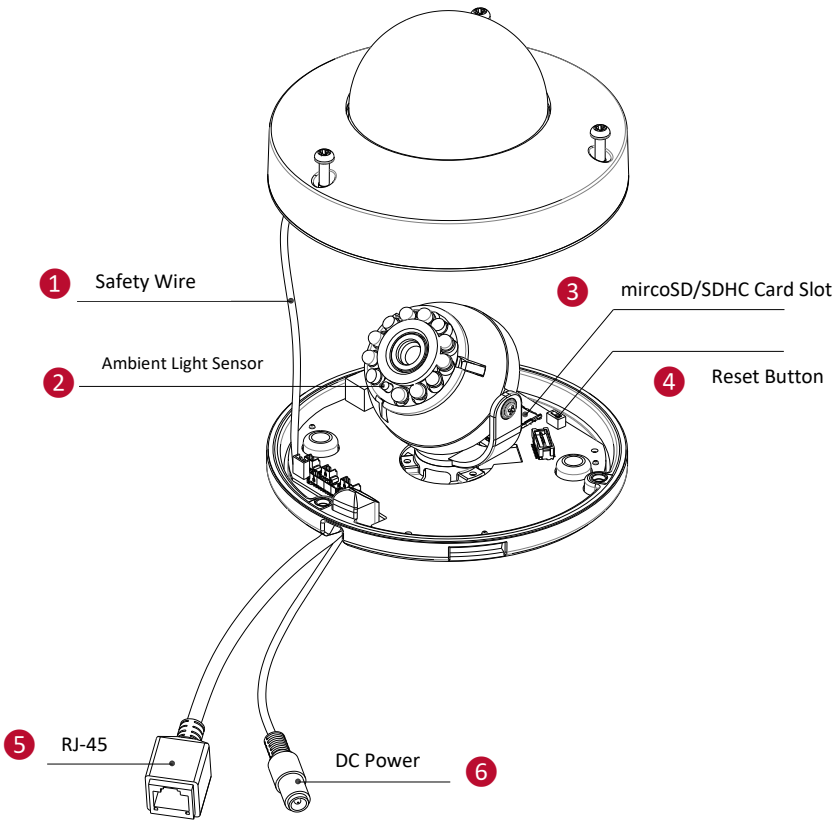
3.2 Package Contents

Please unpack the package carefully and handle the equipment with care. The package contains:

Camera	Screw(M4x35) & Plastic Anchors
	
Quick Installation Guide	**Torx (T20) Wrench**
	
O-ring & Waterproof Bracket	**Installation Template**
	
Bottom Pad	**Adaptor & AC Plug**
	

NOTE: The contents above are subject to change without prior notice.

3.3 Part Names



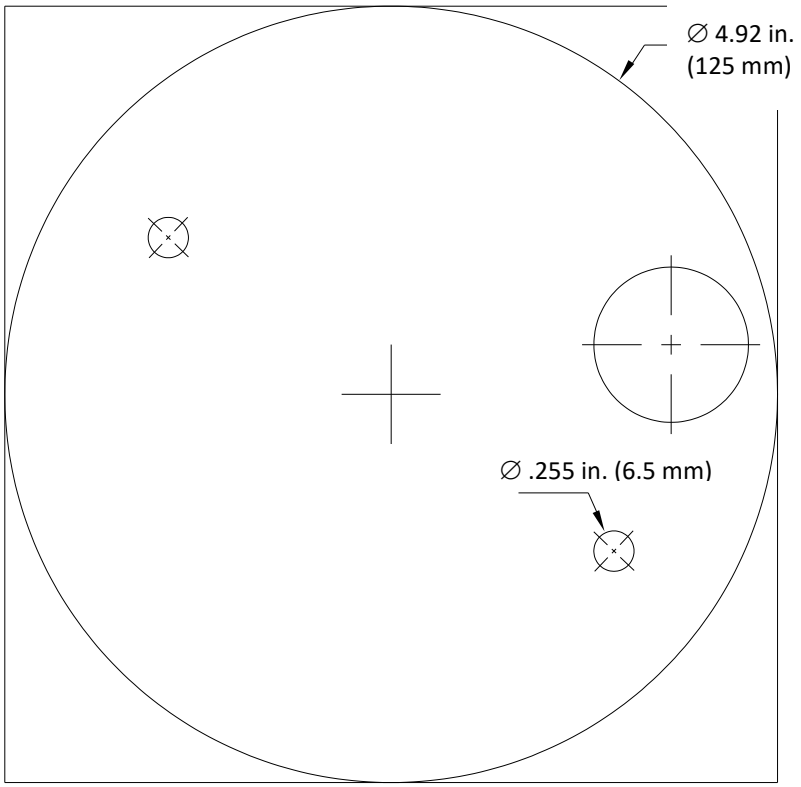
* Models herein and their appearance are subject to change without any prior notice.

1) **Safety Wire:** The dome cover is attached to the camera body with this safety wire to prevent the dome cover from being dropped.
2) **Ambient Light Sensor:** Used to detect the level or the intensity of light for the IR operation. The sensor should not be blocked by any object.
3) **MicroSD/SDHC Card Slot:** Up to 32GB supported. Class 4 and higher recommended for HD recordings.
4) **Reset Button:** Use the button to restart the device or to reset it to Factory Default. Refer *to* the 3xLOGIC VISIX All-in-One Camera User Manual for more details on restarting/resetting to factory default.
5) **RJ-45:** Connect an RJ-45 LAN cable for 10/100 Base-T Ethernet (PoE supported).
6) **DC Power Jack:** Connect the provided DC12V adaptor for the power supply unless it is PoE powered.

3.4 Installation

3.4.1 INSTALLING THE CAMERA – INSTALLATION WITHOUT BRACKET

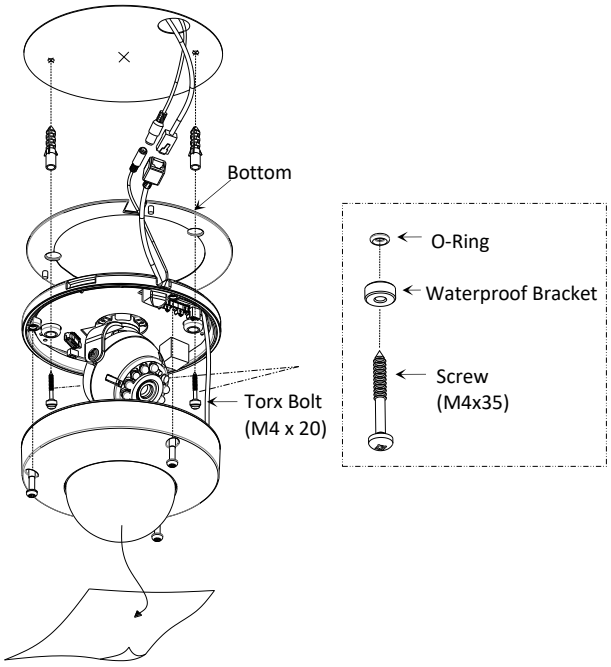
Installation Template



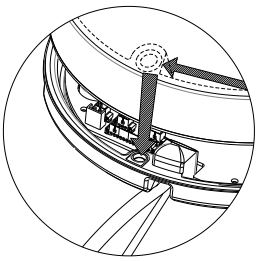
CAUTION: Installation template's image size scale in this installation guide is not 1:1. The correct-size template paper can be found inside the product packaging.

Steps:

1). Place the installation template included in the package on the desired installation surface.
2). Drill two holes for the plastic anchors and a big hole for the cable lines based on the template paper, and insert the plastic anchors into the drilled holes.
3). Attach the provided bottom pad to the bottom of the camera body for the prevention of water permeation.
4). Detach the dome cover from the camera body by loosening the three screws with the provided T20 Torx wrench.
5). Make the screws (M4x35) ready for the installation: Insert the provided waterproof bracket and the O-ring into the screw in a row by placing the head of the bracket beneath the screw head by reference to the squared image on the left.
6). Take the camera to the ceiling, and connect the necessary cables including a LAN and power cable (or PoE cable) dropped from the ceiling to the corresponding connectors on the camera.
7). Align the screw holes on both sides of the camera body and the installation surface, insert the screws prepared at the step 5 into the screw holes on the camera body, and tighten them into the plastic anchors on the ceiling with a screw driver.
8). Adjust the angle of the camera. Refer to Adjusting Angle of the Camera for more details.
9). Reattach the dome cover to the camera body by aligning the screws on the dome cover with the alignment holes on the camera body. Refer to the caution below for the alignment method.
10). Once properly aligned, tighten the screws into the camera body with the provided Torx wrench for the firm attachment of the dome cover. Then, remove the protection film from the dome cover.



3.4.2 REATTACHMENT OF DOME COVER – ALIGNMENT



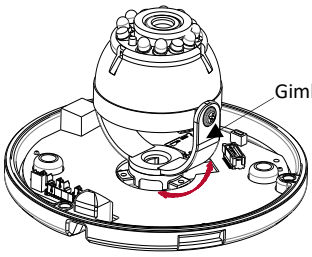
The screw hole where the cable line passes has a block next to it due to the cables underneath. Thus, the part shaped differently from the other two screw hole parts shall be aligned with the corresponding part of the dome cover, which is also shaped differently from the other two parts.

Refer to the image on the right for the clarification.

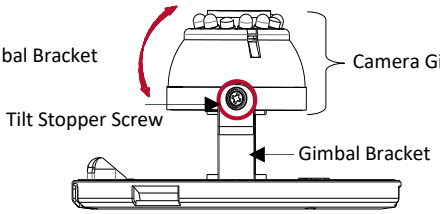
CAUTION: Do not forcefully pull or shake the dome cover as it is linked to the camera body with a safety wire.
CAUTION: To prevent products from damage, install the camera on stable and non-vibrating surfaces. If the stability of a mount surface is in doubt, consult the safety personnel for reinforcements, and then proceed with the installation.

3.4.3 ADJUSTING ANGLE OF THE CAMERA

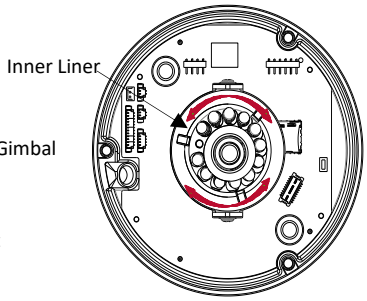
Adjust the angle of the camera by manually moving the corresponding parts by reference to the directions below.



A. To pan, rotate the gimbal bracket horizontally.



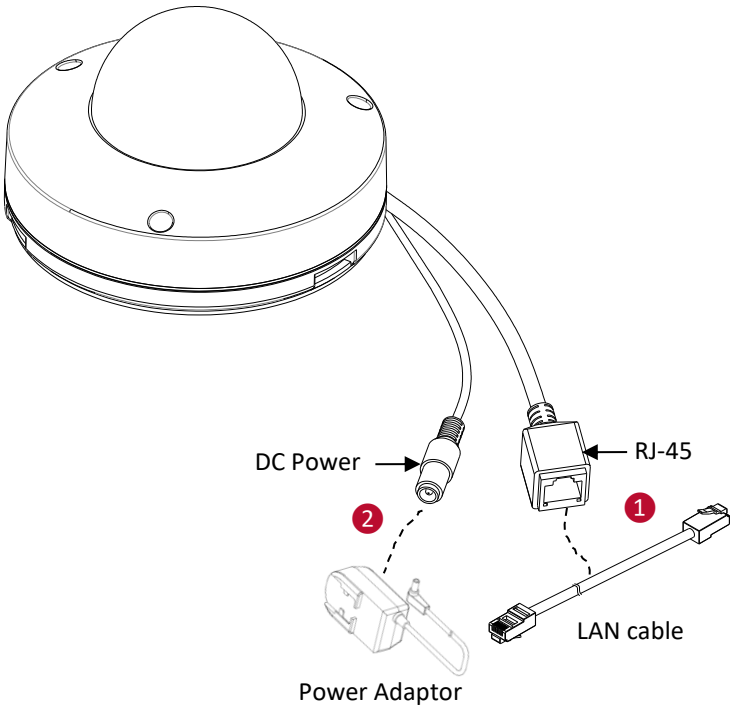
B. To tilt, tilt the camera gimbal by vertically adjusting it.



C. For the horizontal rotation of the lens, rotate the inner liner clockwise or counter-clockwise with the inner liner.

CAUTION: Refrain from continuous rotation of the camera gimbal or the inner liner to a single direction as they are attached to the IR-LED cable inside.
CAUTION: Be careful not to make the ambient light sensor hidden by the dome cover when adjusting the camera angle. The ambient light sensor shall be uncovered for its normal operation.
NOTE: Tighten the tilt stopper screw after the angle adjustment is completed.

3.4.4 CONNECTIONS



1). **LAN Connection:** This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Use the Ethernet cable (RJ45 to connect the device to a hub or a router in the network. Refer to **Section 6:** Power over Ethernet Specifications for further detail.

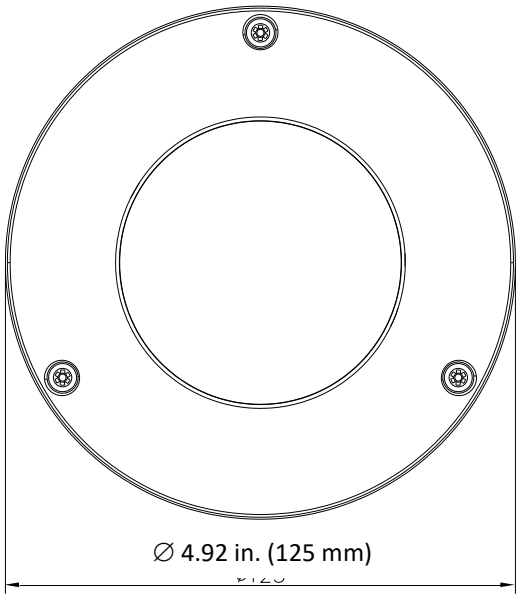
Power Connection: The camera can be powered from either 12VDC or PoE. If the camera is powered via PoE, refer to **Section 6:** Power over Ethernet Specifications for further detail.

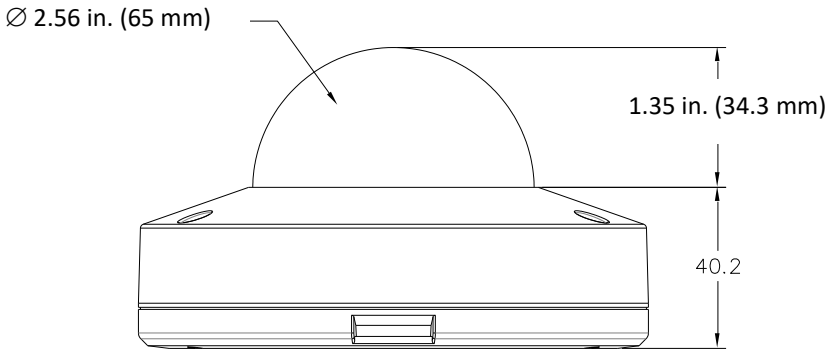
3.5 Full Camera Specifications

Camera Module	
CMOS	
Image Sensor	1/2.9” 1080p CMOS
Effective Pixels	1920x1080
Scanning system	Progressive scanning
Electrical	
Resolution	1920 x 1080
Min. Illumination	Color: 0.5 lux, BW: 0 lux (IR LED On)
AGC Control	Auto
Lens	4.0mm, F1.8
Day & Night	True Day & Night
Wide Dynamic Range	Digital WDR
Video	
Compression Format	H.264 Baseline, Main, High profile(MPEG-4 Part 10/ AVC), MJPEG(Motion JPEG)
Number of Streams	Dual Stream, Configurable streams in H.264, MJPEG H.264: Controllable frame rate, bandwidth(VBR/CBR) MJPEG: Controllable frame rate, JPEG quality
Resolution	1920x1080, 1280x720, 1120x630, 960x540, 800x450, 640x360, 480x270, 320x180
Compression FPS	30fps@1080p
Motion Detection	Built-in
Burnt-in Text (Digital)	Video stream overlay text
Audio	
Input/output	-
Compression Format	-
Function	
Digital Input/Output	-
RS-485	-
Network	10/100 Base-T

Function	
Power over Ethernet (PoE)	Supported
Protocol	QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, FTP, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1
SD Slot	1 x microSD memory card slot (SD/SDHC up to 32 GB supported) ※ Card not included (Class 4 and higher recommended for HD recordings)
Electrical Characteristics	
Power Source	DC 12V / PoE IEEE802.3af (Class 0)
Power Consumption	Max. 5.4 W @ DC 12V
Video Output	-
Audio Input	-
Audio Output	-
D/I	-
D/O	-
Environment Condition	
Operating Temperature	-20˚C ~ 50˚C (-4˚F ~ 122˚F)
Operating Humidity	Up to 85% RH
Mechanical Condition	
Material	Aluminum Die-Casting (Vandal Resistance)
Color	Ivory
Dimension	Housing: 125 (Ø) x 74.5 (H) mm Dome: 65(Ø) mm
Weight (Approx.)	455g (1lb)

3.6 Camera Dimensions





3.7 Compatible Accessory Installation (Mounts)

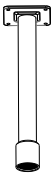
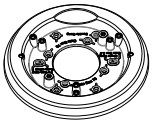
The following are the various combinations of the compatible accessories to mount this camera model.

Model Names & Combinations:

- VX-2AD-WM + VX-2AD-PMC
- VX-2AD-CM + VX-2AD-PMC
- VX-2AD-GB

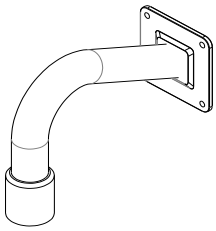
Refer to the corresponding accessory model's installation guide for the instructions.

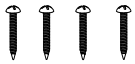
Model Image

VX-2AD-WM	VX-2AD-CM	VX-2AD-PMC	VX-2AD-GB
			

3.7.1 WALL MOUNT- VX-2AD-WM

Contents


Wall Mount Bracket x 1


M5 Tapping Screw x 4

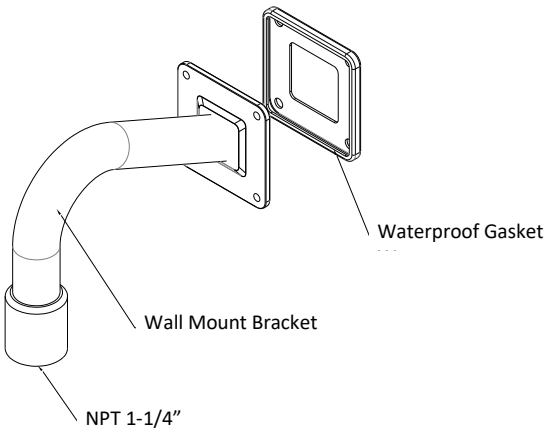
Plastic Anchor x 4

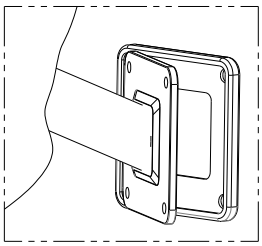
Waterproof Gasket x 1

Installation

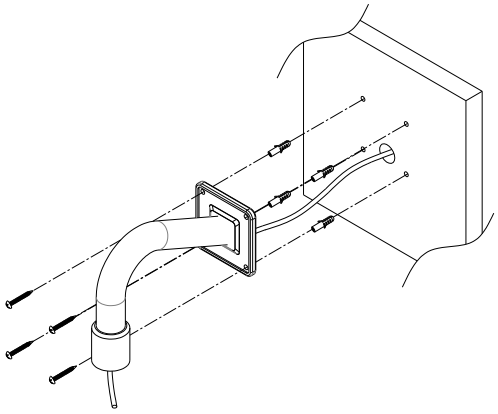
Steps:

1). Cover the wall mount bracket with the waterproof gasket like the image on the left.



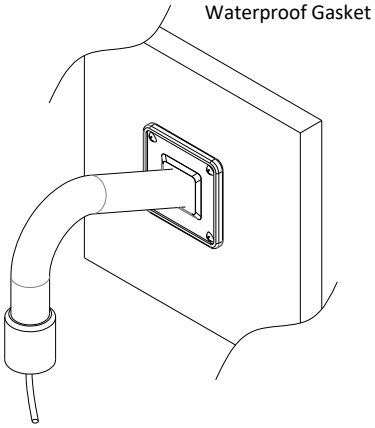


Drill the four holes on the installation surface based on the screw holes on the wall mount bracket, and insert the plastic anchors into the holes. Then, insert the tapping screws through the screw holes on the wall mount bracket into the anchor blocks to tighten the bracket into the wall



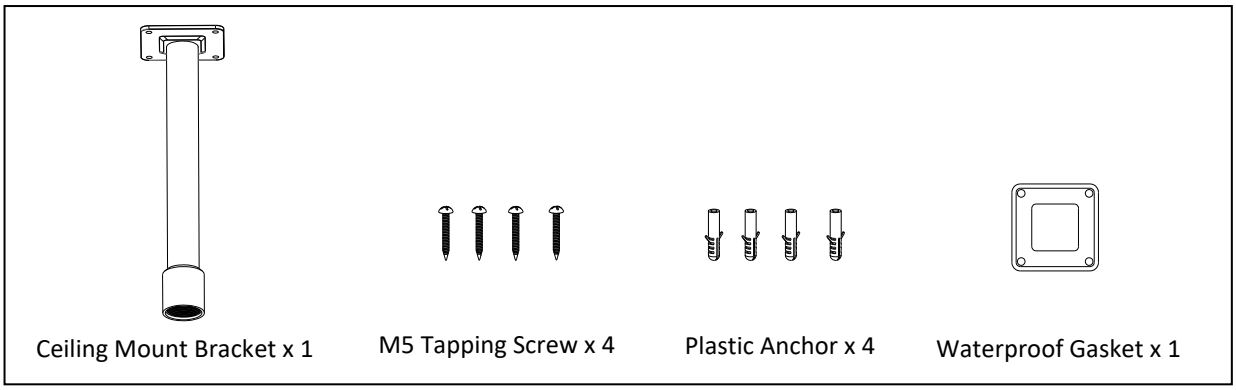
Attach an Additional Bracket

Attach an additional bracket at the bottom of VX-2AD-WM by referencing to the bracket's installation section, Pendant Mount Cap - VX-2AD-PMC.



3.7.2 CEILING MOUNT- VX-2AD-CM

Contents

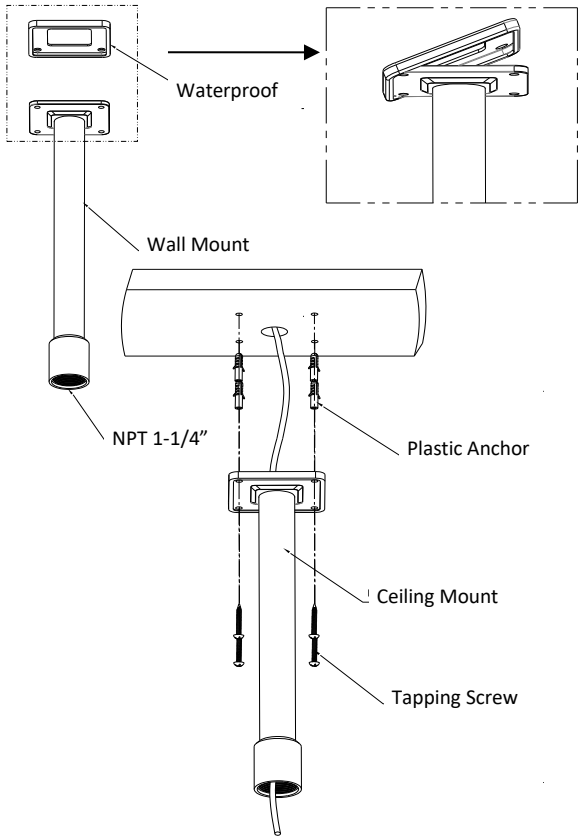


Installation

Steps:

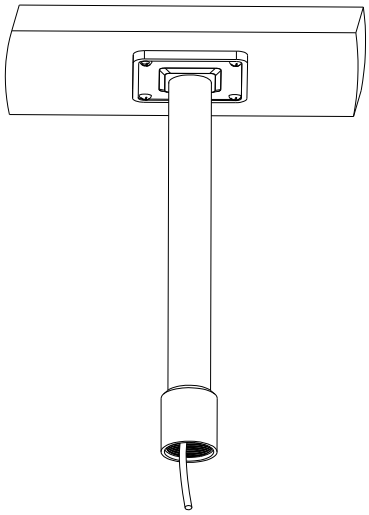
1). Cover the ceiling mount bracket with the waterproof gasket like the squared image on the left.

2). Drill the four holes on the installation surface based on the screw holes on the ceiling mount bracket, and insert the plastic anchors into the holes. Then, insert the tapping screws through the screw holes on the ceiling mount bracket into the anchor blocks to tighten the bracket into the ceiling.



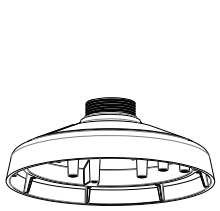
Attach an Additional Bracket

3). Attach an additional pendant bracket at the bottom of VX-2AD-CM by referencing to the bracket's installation section, Pendant Mount Cap - VX-2AD-PMC.



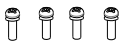
3.7.3 PENDANT MOUNT CAP - VX-2AD-PMCB

Contents



VX-2AD-PMCB

(M4 x 22 bolt & O-Ring & Waterproof Bracket) x 2

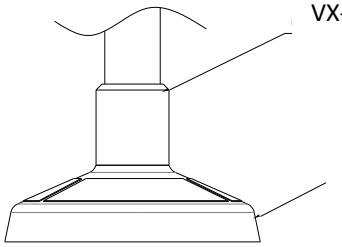


(M4 x 12 bolt & O-Ring) x 4

Installation

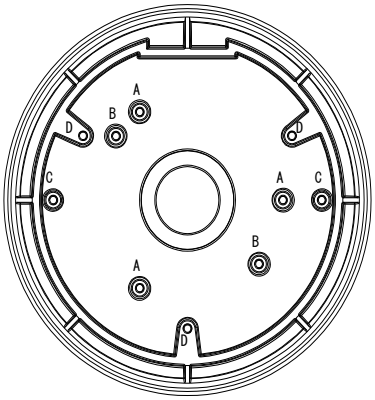
Steps:

1). Install your camera at the bottom of VX-2AD-PMCB with the corresponding bolts by reference to the screw hole below.



Screw Holes Guide for Camera

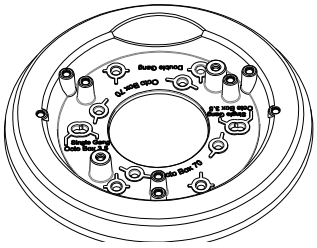
The image below shows the bottom of VX-2AD-CM with the screw holes specific to the VX-2AD3B-IWD camera model (labelled as **B**). Refer to the screw hole information below to attach the VX-2AD3B-IWD camera to the VX-2AD-CM mount.



B: VX-2AD3B-IWD

3.7.4 GANG BOX MOUNT – VX-2AD-GB

Contents



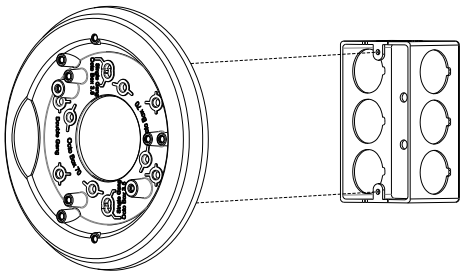
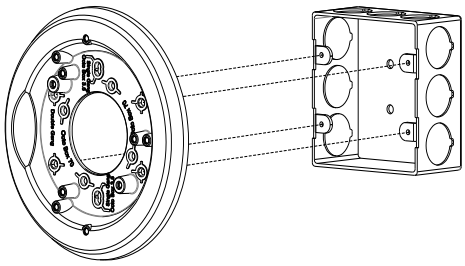
VX-2AD-GB

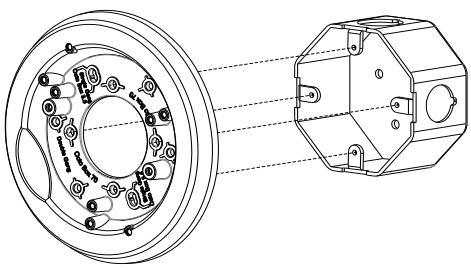
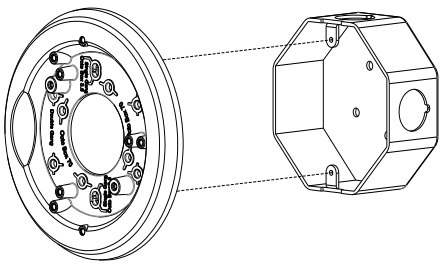
(M4 x 22 bolt & O-Ring & Waterproof Bracket) x 2

M4 x 20 bolt x 4

Installation

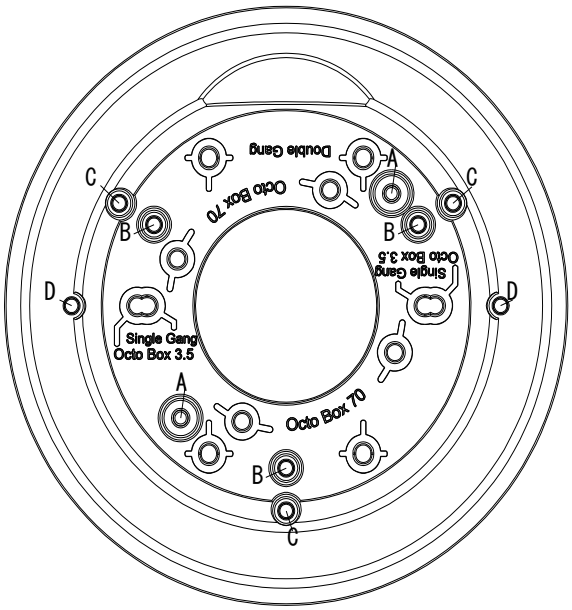
The images below show how to attach VX-2AD-GB to gang boxes of four different types.
Refer to the screw hole information to attach VX-2AD-GB to your gang box.

Single Gang Box	Double Gang Box
	
< VX-2AD-GB attached to a single gang box >	< VX-2AD-GB attached to a double gang box >

Octo Gang Box 1	Octo Gang Box 2
	
< VX-2AD-GB attached to a 70mm octo gang	< VX-2AD-GB attached to a 3.5”octo gang box >

Screw Holes Guide for Camera

The image below shows the bottom of VX-2AD-GB with the screw holes specific to the VX-2AD3B-IWD camera model (labelled as **A**). Refer to the screw hole information below to attach the VX-2AD3B-IWD camera to the VX-2AD-GB mount.



A: VX-2AD3B-IWD

4 VX-2A-IMD-X - 2 MP Interior Mini Dome Camera

The VX-2A-IMD-X is a fully functional indoor IP camera with advanced analytics capabilities. These cameras can be connected to a DVR or act as a standalone recording device.

The interior mini dome offers high-definition video at full 1920 x 1080 resolution for indoor video surveillance applications which require superior clarity and detail. Its many features include; dual-streaming of either H.264 or MJPEG compression; Micro SD card slot for local recording; and an unobtrusive dome design.

The embedded analytics use algorithms that automatically self-adjust, allowing the user to concentrate on the detection rules. This greatly simplifies the analytic process, requiring only a few mouse clicks to configure a detection rule. These advanced analytics allow for object classification, direction, people counting, dwell times, and occupancy counts.

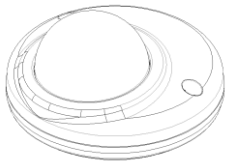
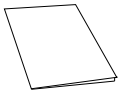
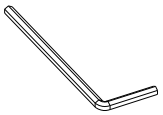
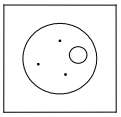
When enabled, the embedded VIGIL Server software from 3xLOGIC allows the camera to be run as a stand-alone device recording video to the onboard memory card. This makes the camera compatible with the 3xLOGIC software suite including VIGIL Client, VIGIL VCM, VIGIL Mobile and VIGIL Cloud applications. Simple plug and play installation allows for access using a standard web browser, VIGIL Client, or your mobile device or tablet using our easy to use QR code quick setup.

4.1 VX-2A-IMD-X Specifications - Quick Summary

Component	Feature Description
Camera	■ 1/2.7” 1080p CMOS Image Sensor ■ Digital Day/Night ■ WDR ■ Vandal Proof (IK09)
Video	■ H.264 Baseline, Main, High profile (MPEG-4 Part 10/AVC), MJPEG (Motion JPEG) ■ Max 30fps in 1080p ■ Text Overlay
Network	■ 10/100 Base-T Ethernet
Integration	■ ONVIF compliant (Profile S)
General	■ Micro SD/SDHC Card Slot x1 ■ Power over Ethernet (PoE)
Video Contents Analysis (VCA)	■ VCA Presence Standard

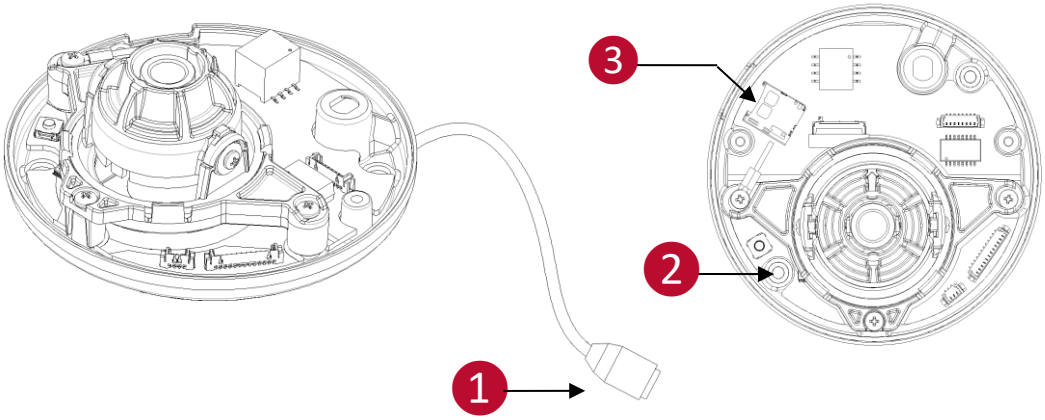
4.2 Package Contents

Please unpack the package carefully and handle the equipment with care.
The package contains:

Camera	Screws(M4x20) and anchor blocks
	
Quick Installation Guide	**Torx Wrench(T-10)**
	
White Plug	**Installation Template**
	

NOTE: The contents above are subject to change without prior notice.

4.3 Part Names



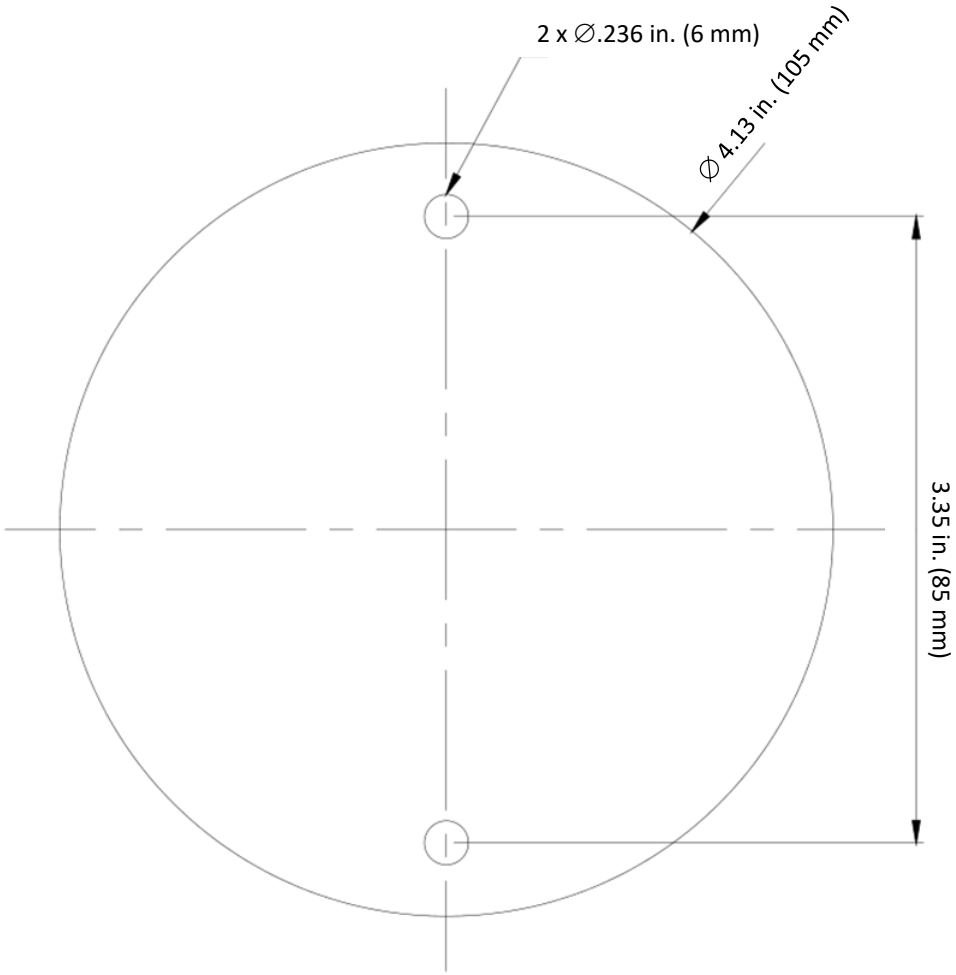
* Models herein and their appearance are subject to change without any prior notice.

1). **LAN connector:** RJ45 LAN connector for 10/100 Base-T Ethernet (PoE supported).
Reset button: Use the button to restart the device or to reset it to Factory Default. Refer to the **3xLOGIC VISIX All-in-One Camera User Manual** for more details on restarting/resetting to factory default.
microSD/SDHC card slot: Supports up to 32GB. Recommend Class 4 and higher for HD recordings.

4.4 Installation

4.4.1 INSTALLING THE CAMERA – INSTALLING WITHOUT BRACKET

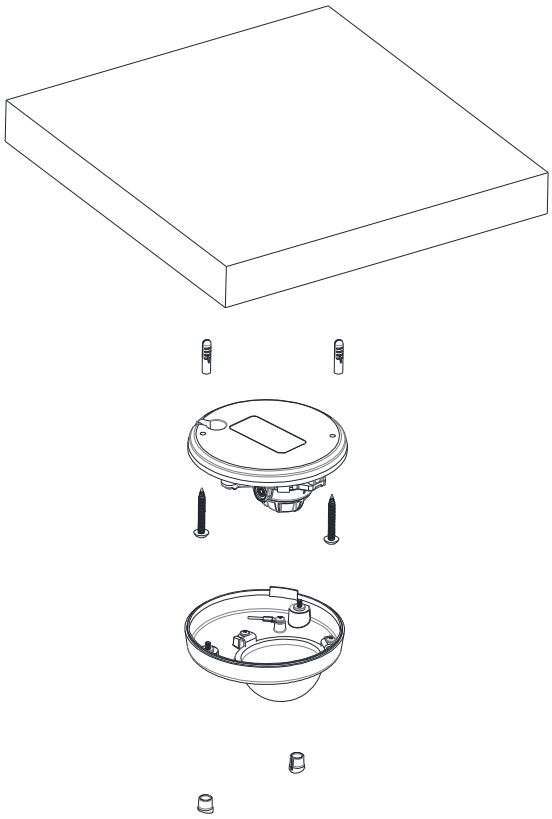
Installation Template



CAUTION: Installation template's image size scale in this installation guide is not 1:1. The correct-size template design paper can be found inside the package separately.

Steps:

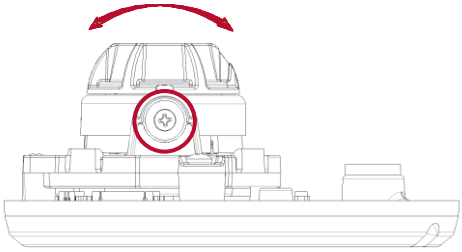
1). Place the installation template included in the package on the desired installation surface.
2). Drill two holes in the correct positions based on the paper mounting template, insert the plastic anchors into the holes, and tighten them into the holes.
3). Loosen the two bolts on the dome cover with the provided torx wrench (T-10) to open the dome cover.
4). Connect necessary cables including a LAN cable and a power cable to the camera.
5). Place the camera body to match the alignment holes with the provided plastic anchors, and hold the camera against the surface where the camera will be mounted.
6). Tighten the plastic anchors with the provided screws (M4x20).
7). Once you can see the video on the camera, adjust the angle of the camera. Refer to Adjusting Angle of the Camera for more details.
8). Place the dome cover on the camera's main body to close the dome cover. Dome cover has two alignment holes that match the camera body's alignment holes.
9). Once properly placed, tighten the bolts with the provided torx wrench (T-10).
10). As the last step, insert the white plugs into the screw holes on the dome to keep the dome cover neatly.



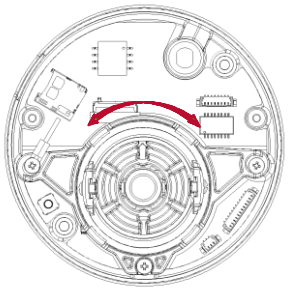
CAUTION: To prevent products from damage, place the camera on stable and non-vibrating surfaces If the stability is in doubt, consult safety personnel for reinforcements, and then proceed with the installation.

4.4.2 ADJUSTING ANGLE OF THE CAMERA

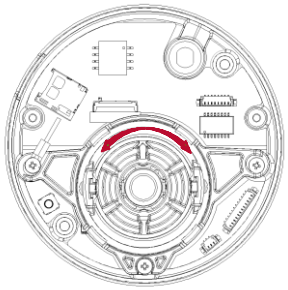
Adjust the angle of the camera by manually moving the corresponding parts following the directions below.



A. To tilt, tilt the lens by vertically adjusting the camera gimbal.

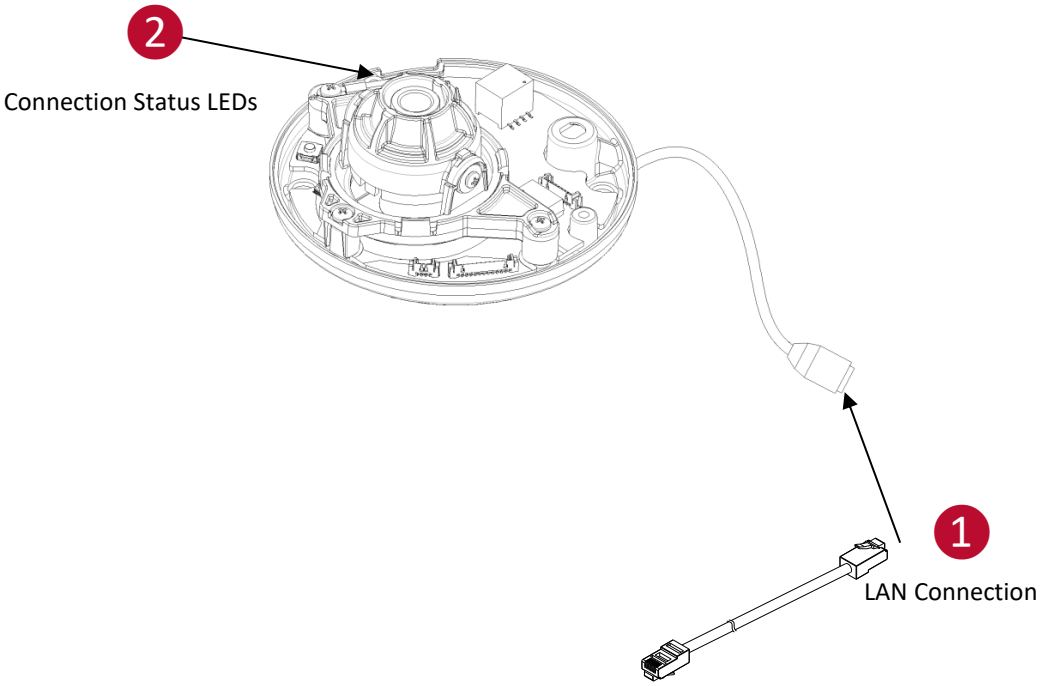


B. To pan, rotate the lower body of the camera gimbal.



C. Rotate the lens with upper lens shell

4.5 Connections



1). **LAN Connection:** This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Use the Ethernet cable (RJ45. to connect the device to a hub or a router in the network. Refer to **Section 7:** Power over Ethernet Specfications for further detail.

Connection Status Indicators: Two LEDs are located near the SD card slot, and you can check the connecting status by observing the LED on the right side.

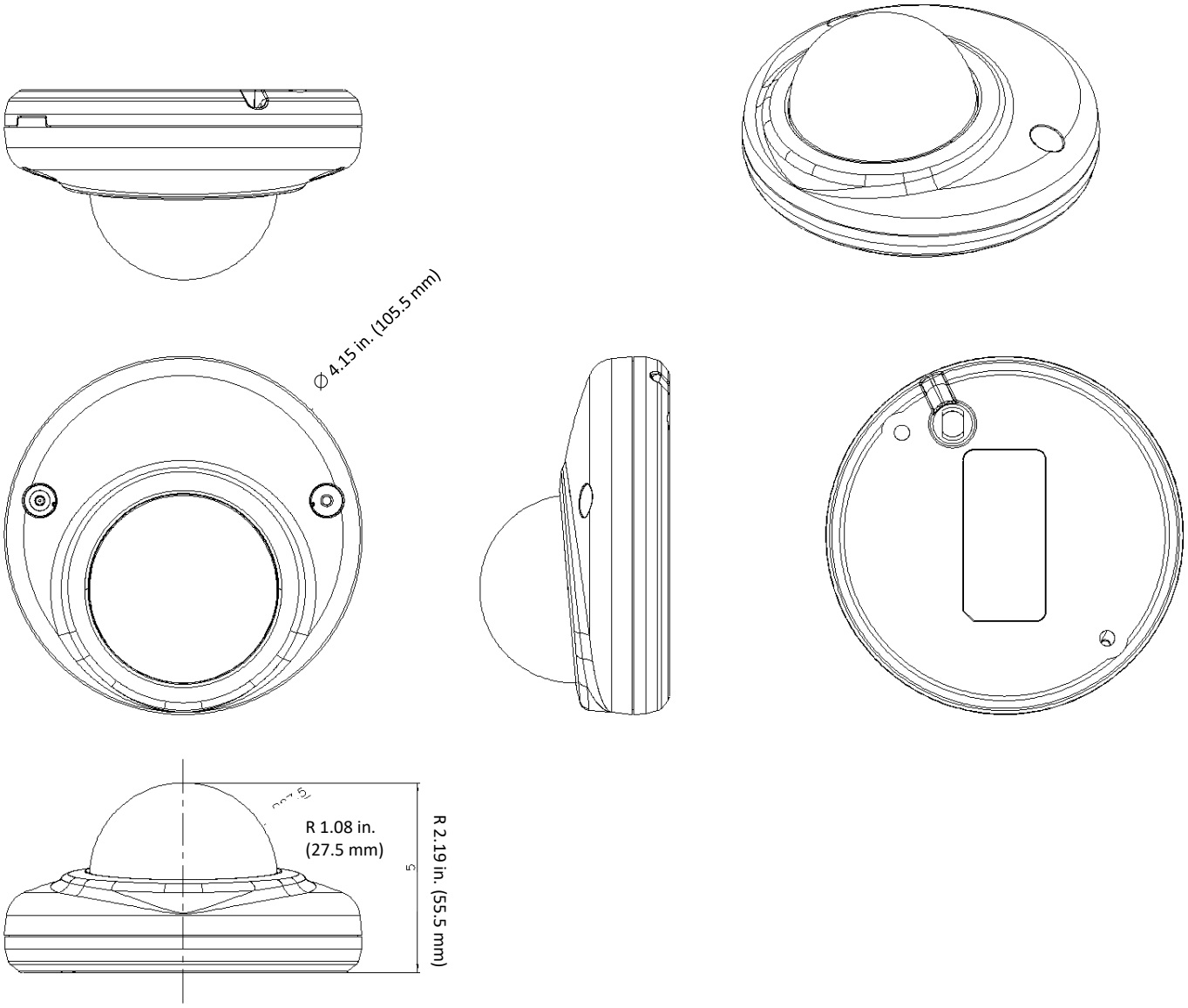
- Solid red – The device is in the process of booting.
- Blinking green – Booting is completed

4.6 Full Camera Specifications

Camera Module	
CMOS	
Image Sensor	1/2.7” 1080p CMOS
Effective Pixels	1920x1080
Scanning system	Progressive scanning
Electrical	
Resolution	1920 x 1080
Min. Illumination	Color: 1.0Lux B/W : 0.001 Lux (DSS ON)
AGC Control	Auto
Lens	2.0mm, F2.0
Day & Night	Digital Day & Night
Wide Dynamic Range	Digital WDR
Video	
Compression Format	H.264 Baseline, Main, High profile (MPEG-4 Part 10/ AVC), MJPEG (Motion JPEG)
Number of Streams	Dual Stream, Configurable streams in H.264, MJPEG H.264: Controllable frame rate, bandwidth(VBR/CBR) MJPEG: Controllable frame rate, JPEG quality
Resolution	1920x1080, 1280x720, 1120x630, 960x540, 800x450, 640x360, 480x270, 320x180
Compression FPS	30fps@1080p
Motion Detection	Built-in
Burnt-in Text (Digital)	Video stream overlay text
Audio	
Input/output	-
Compression Format	-
Function	
Digital Input/Output	-
RS-485	-
Network	10/100 Base-T
Power over Ethernet (PoE)	Supported
Protocol	QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, FTP, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1

Function	
SD Slot	1 x microSD memory card slot (SD/SDHC up to 32 GB supported) ※ Card not included (Class 4 and higher recommended for HD recordings)
Electrical Characteristics	
Power Source	PoE IEEE802.3af (Class 2)
Power Consumption	2.4W @ PoE
Video Output	-
Audio Input	-
Audio Output	-
D/I	-
D/O	-
Environment Condition	
Operating Temperature	Operating Range PoE : 0 ˚C ~ 40 ˚C (32˚F ~ 104˚F)
Operating Humidity	Up to 85% RH
Mechanical Condition	
Material	Aluminum Die-Casting (Vandal Resistance)
Color	Ivory
Dimension	Housing: 105.5 (Ø) x 55.5(H) mm Dome : 27.5(Ø) mm
Weight (Approx.)	270g (0.6lb)

4.7 Camera Dimensions



4.8 Compatible Accessory Installation (Mounts)

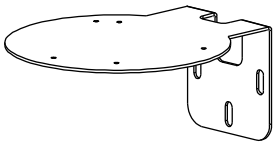
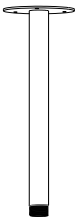
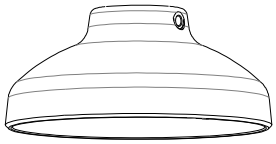
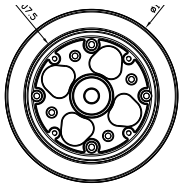
The compatible accessories to mount this camera model are as follows.

Model Names & Combinations

- VX-2AIMD-CM
- VX-2AIMD-WM
- VX-2AIMD-CM + VX-2AIMD-PMC
- VX-2AIMD-GB

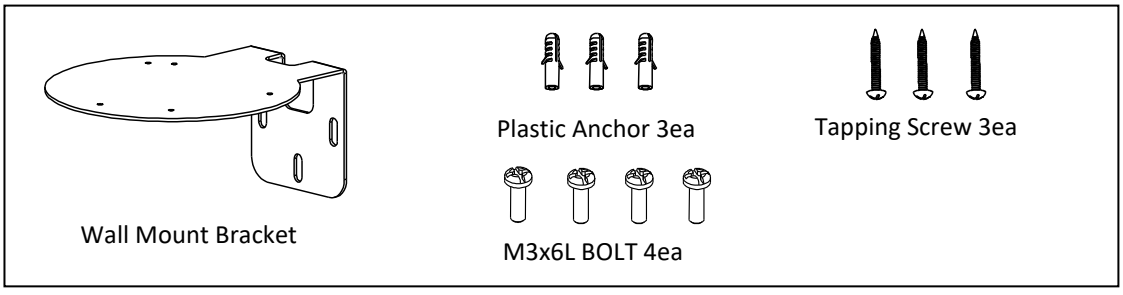
The installation instructions for each bracket are contained within the proceeding sections of this manual.

Model Image

VX-2AIMD-CM	VX-2AIMD-CM
	
VX-2AIMD-PMC	**VX-2AIDM-GB**
	

4.8.1 WALL MOUNT - VX-2AIMD-WM

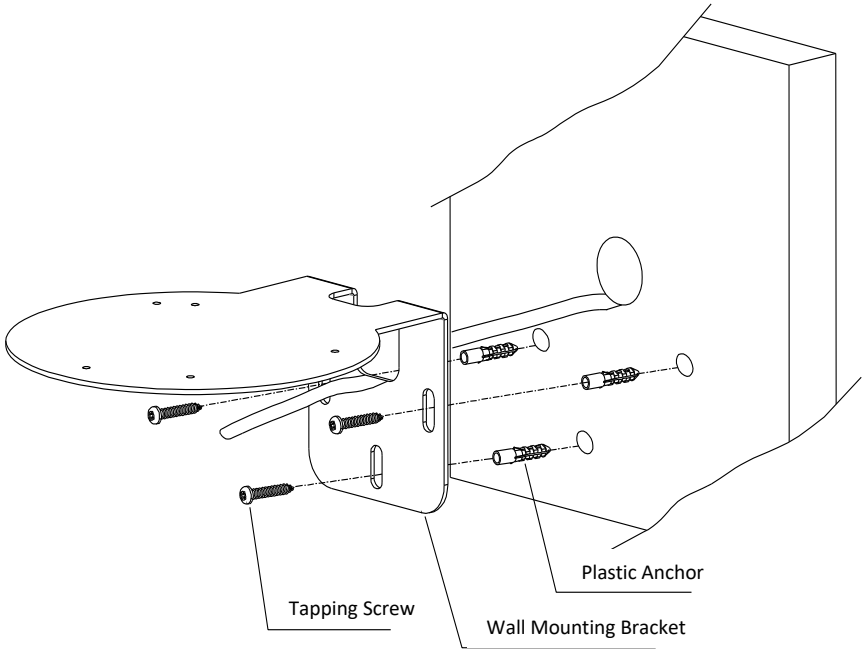
Contents



Installation

Steps:

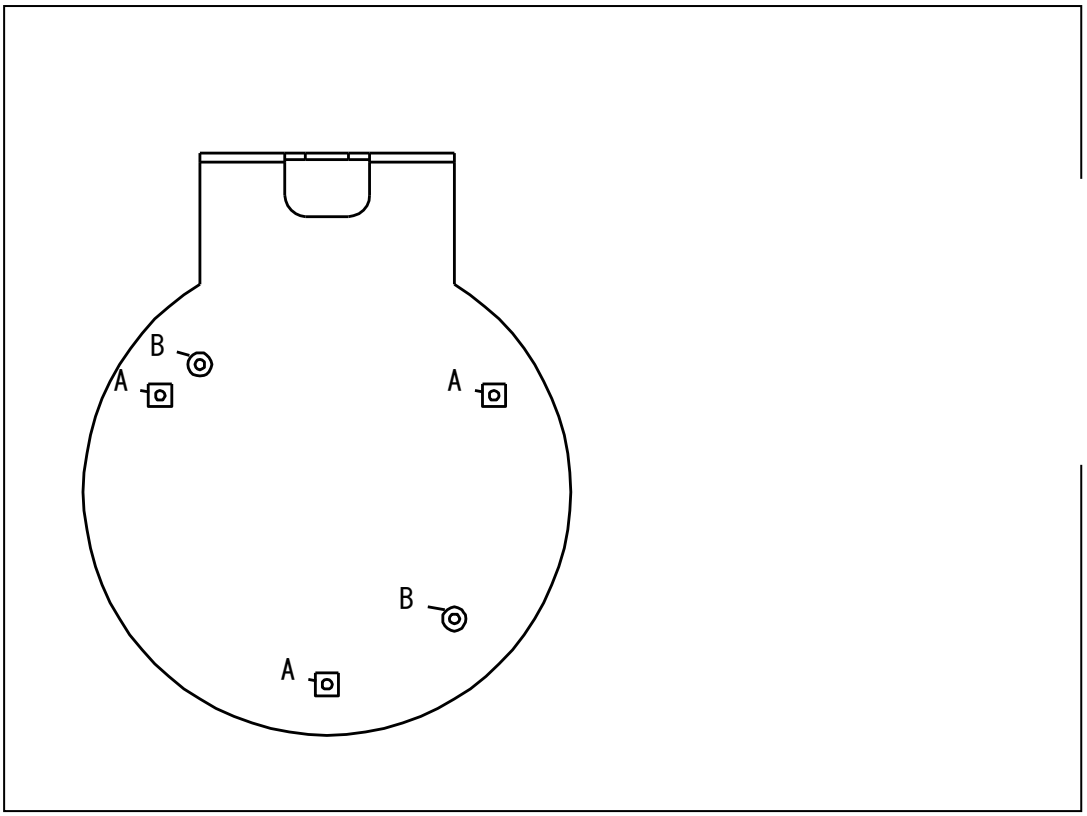
1). Drill three small holes for plastic anchor and one hole for cabling work on the ceiling based on the holes of the bracket. Refer to Location of the Holes for M3x6L Bolts on the next page to identify the holes information.
2). Insert the plastic anchors (3ea) to the drilled three holes.
3). Fix the bracket on the wall by tightening the tapping screws (3ea) into the plastic anchors.
4). Detach the dome cover from the camera by loosening the bolts with the hex wrench included in the camera package.
5). Fix the camera at the bottom of the bracket with the M3x6L bolts. Ensure that the necessary cables are properly connected to the camera.
6). For the last parts of the installation, refer to the steps 7 to 10 in Section 4.4: Installing the Camera - Installation without Bracket of this manual.



4.8.2 LOCATION OF THE HOLES FOR M3X6L BOLTS

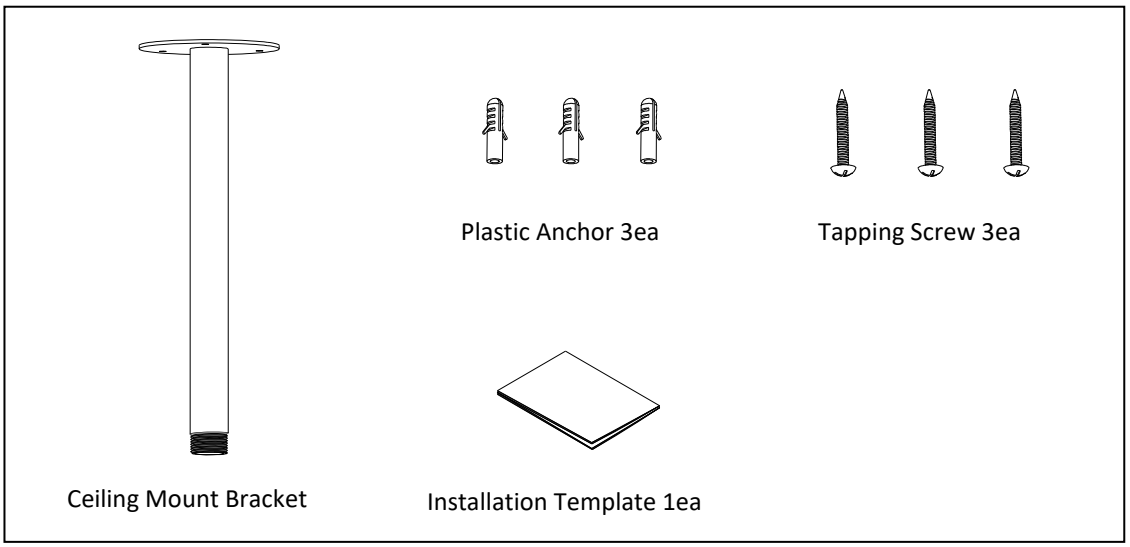
The image below shows which spots the camera should be attached to on the wall mount bracket (VX-2AIMD-CM).

1). Identify the location of the holes with the alphabet letter, B, on the bracket, and insert the M3x6L bolts in the holes to attach the camera.



4.8.3 CEILING MOUNT - VX-2AD-CM

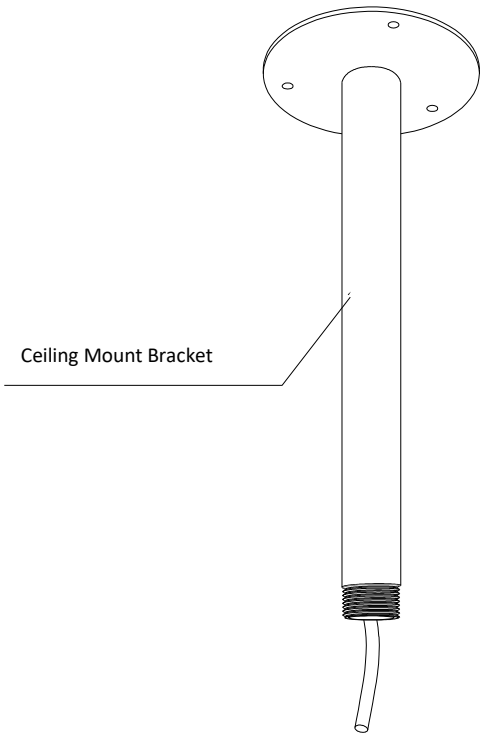
Contents



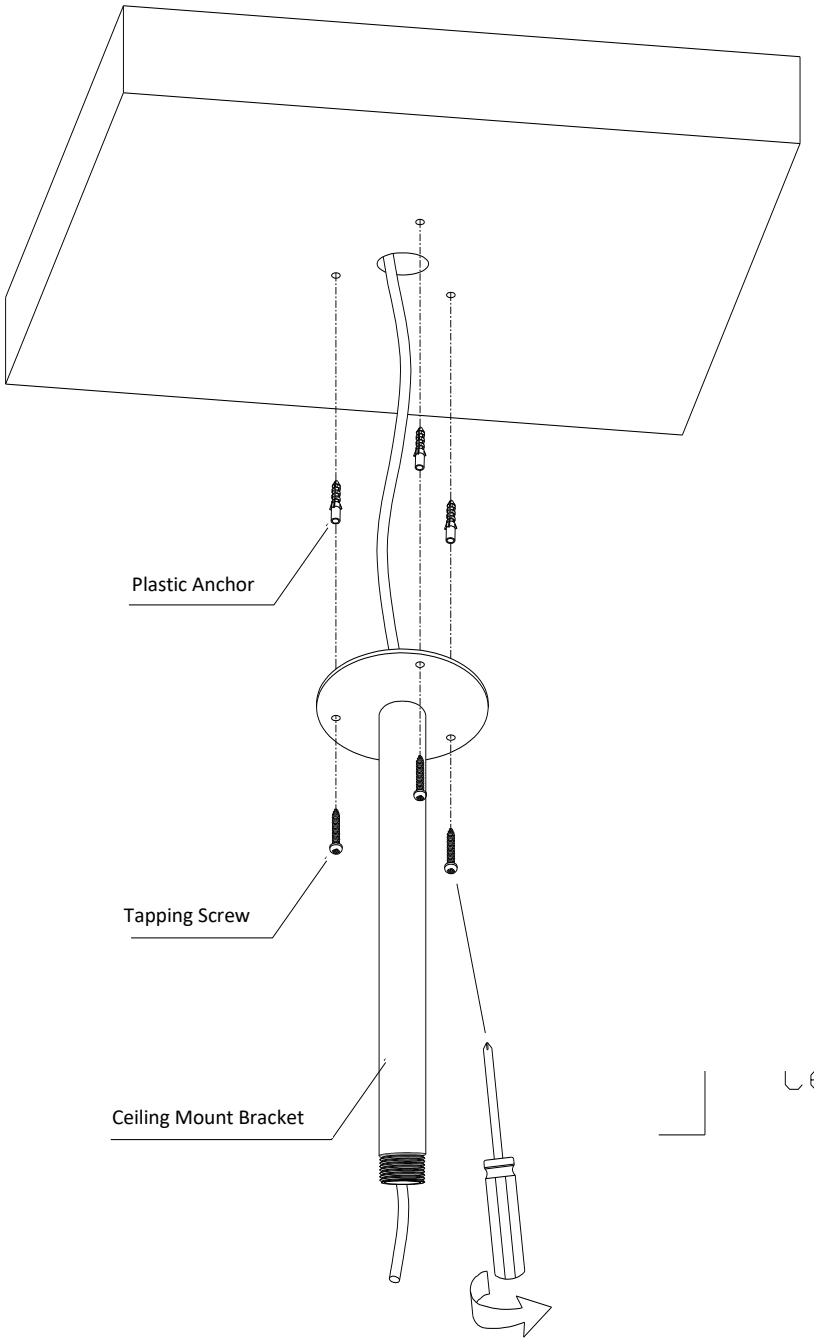
Installation

Steps:

1). Drill three holes for the plastic anchors based on the installation template as well as the hole for the cable dropped from the ceiling. Then, route the LAN cable through the bracket's pipe.

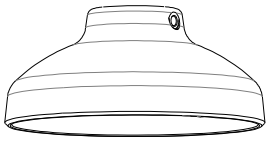


2). Insert the three anchor blocks into the holes on the ceiling.
3). Fix the bracket to the ceiling by inserting the tapping screws into the anchor blocks and tightening them for the firm attachment.
4). This ceiling mount bracket normally requires a pendant mount cap to attach the camera. Refer to the installation method in Pendant Mount Cap on the next page.



4.8.4 PENDANT MOUNT CAP - VX-2AD-PMC

Contents



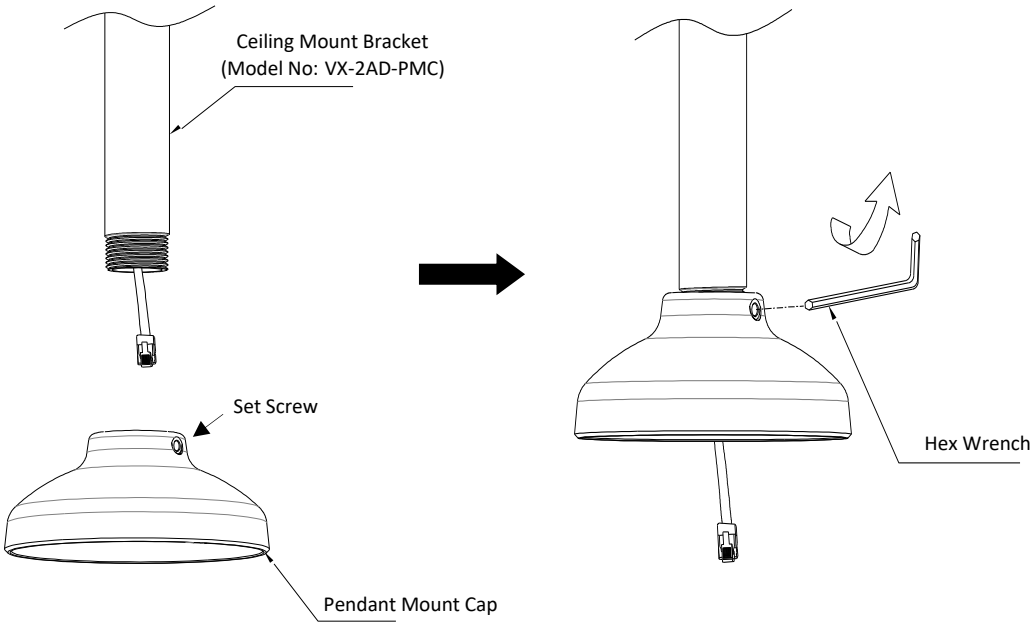
Pendant Mount Cap

M5x6L Hex Socket Set Screw 1EA
(pre-installed)

M4x8L Hex Wrench Bolt 2EA

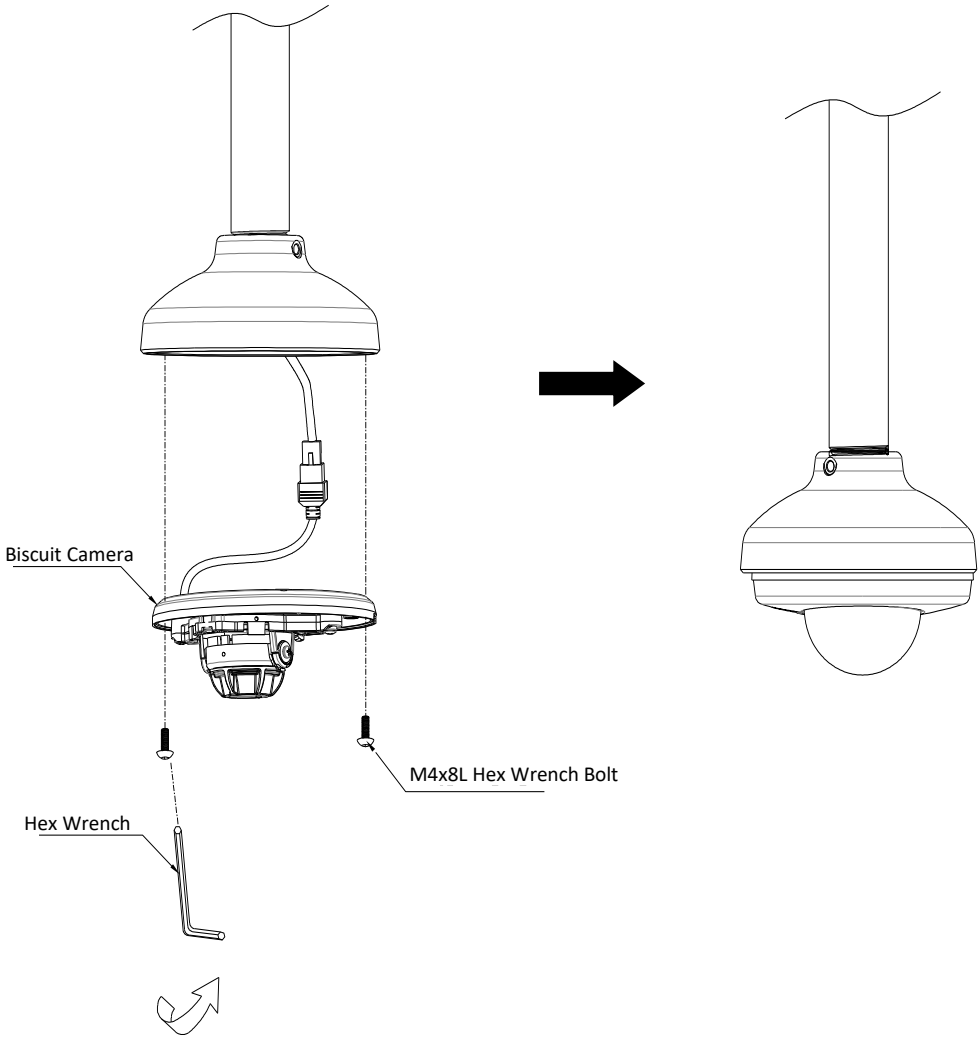
2.5mm Hex Wrench 1EA

Installation



Steps:

1). Rotate the pendant mount cap counterclockwise on the thread at the bottom of the ceiling mount bracket, and tighten the set screw (installed on the pendant mount cap) with the hex wrench included in the bracket package for the firm attachment of the pendant mount cap.



5). Connect your LAN (or PoE) cable from the ceiling pipe to the LAN connector on the camera, and insert the camera into the pendant mount cap. Then, fix the camera to the pendant mount cap by inserting the bolts (M4x8L) to the alignment holes on the pendant mount cap and tightening them with the hex wrench included in the camera package.

6). For the last part of the installation, refer to steps 7 to 10 in Section 4.4: Installing the Camera – Installation without Bracket in this manual.

5 VX-VT-20, VX-VT-36, VX-VT-58 – VERA 20°, 36°, 58° Thermal Bullet Camera

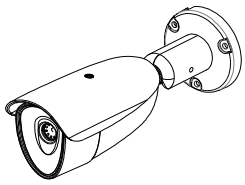
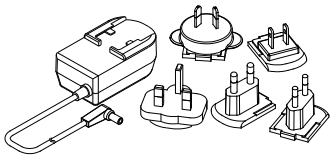
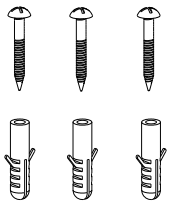
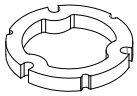
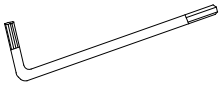
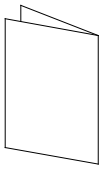
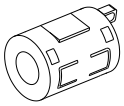
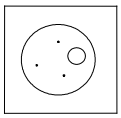
The VERA indoor/outdoor thermal bullet gives you the advantage to see where you couldn't before. When using high-contrast thermal imaging the results are a dramatic reduction in false alarms. Our thermal camera stands out from the pack with verification and detection in an all-in-one device. Easy setup and integration using our QR code makes this a perfect camera for any application.
The exterior thermal camera is not affected by changes in lighting, low contrast scenes or inclement weather. There is no illumination required.
The VERA Thermal line includes three models with a 20, 36 or 58 degree field of vision. The VERA camera's embedded analytics use algorithms that automatically self-adjust, allowing the user to concentrate on the detection rules. This greatly simplifies the analytic process, requiring only a few mouse clicks to configure a detection rule. These advanced analytics, coupled with thermal technology allow for object classification, direction, people counting, dwell times, video alarm verification, retail traffic flow, queue management and occupancy counts.
When enabled, the embedded VIGIL Server software from 3xLOGIC allows the camera to be run as a stand-alone device recording video to the onboard memory card. This makes the camera compatible with the 3xLOGIC software suite including VIGIL Client, VIGIL VCM, VIGIL Mobile and VIGIL Cloud applications. Simple plug-and-play installation allows for access using a standard web browser, VIGIL Client, or your mobile device or tablet using our easy to use QR code quick setup.

5.1 VX-VT-20, VX-VT-36, VX-VT-58 Specifications – Quick Summary

Component	Feature Description
Camera	■ 17 µm vanadium oxide microbolometer technology ■ 206x156 array size / various resolutions via scale-up ■ 20, 36 or 50 degree field-of-view (depending on model)
Streaming	■ Dual streaming supported ■ Burnt-in text (OSD) supported ■ Unicast/Multicast supported
Video	■ H.264 and MJPEG(Motion JPEG) ■ Max 9fps in all resolutions ■ Text Overlay ■ Video Motion Detection Supported
Audio	■ Two-way audio streaming ■ Audio compression: G.711 µLaw
Sensor/Alarm	■ 1 Digital Input / 2 Digital Outputs
Network	■ RTSP/HTTP Protocols supported ■ 10/100 Base-T Ethernet
Integration	■ ONVIF compliant (Profile S)
General	■ Micro SD/SDHC Card Embedded ■ Power over Ethernet (PoE)
Video Contents Analysis (VCA)	■ VCA Presence Standard

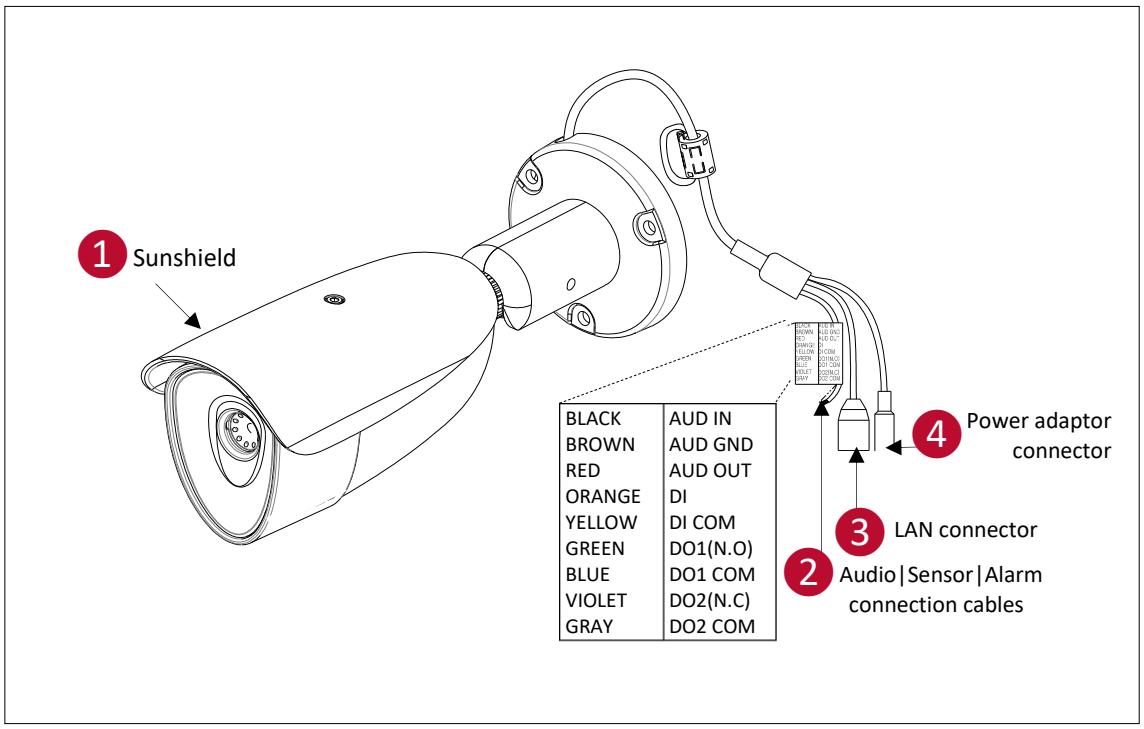
5.2 Package Contents

Please unpack the package carefully and handle the equipment with care. The package contains:

Camera	DC Power Adaptor & Universal Plugs
	
Screws (M4x30) & Plastic Anchors	**Wall Cushion**
	
Torx Wrench (T20 M4x23)	**Quick Start Guide**
	
Ferrite Core	**Installation Template**
	

NOTE: The contents above are subject to change without prior notice.

5.3 Part Names

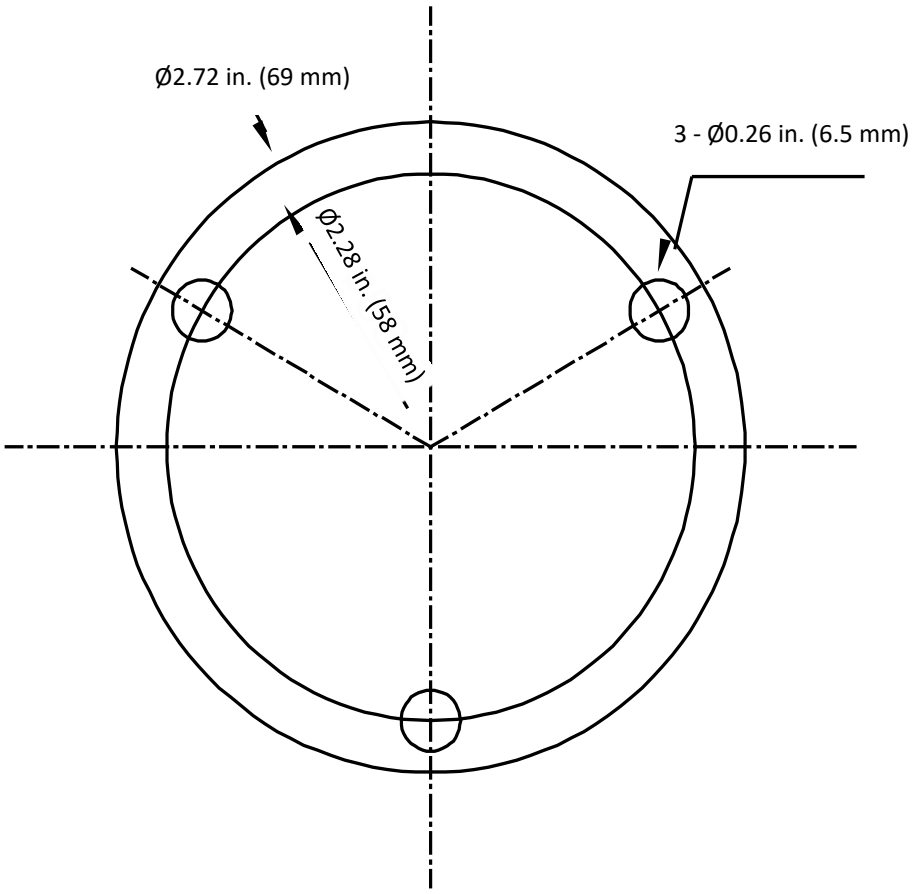


1). **Sunshield:** It prevents direct sunlight.
2). **Audio|Sensor|Alarm connection cables:** Cables to connect audio input(microphone), audio output(speaker), digital input(sensor), and digital output(alarm). Refer to **Section 5.5:** Connections for more information.
3). **LAN connector:** RJ45 LAN connector for 10/100 Base-T Ethernet (PoE supported).
4). **Power adaptor connector:** Connect the provided DC12V adaptor for power supply.

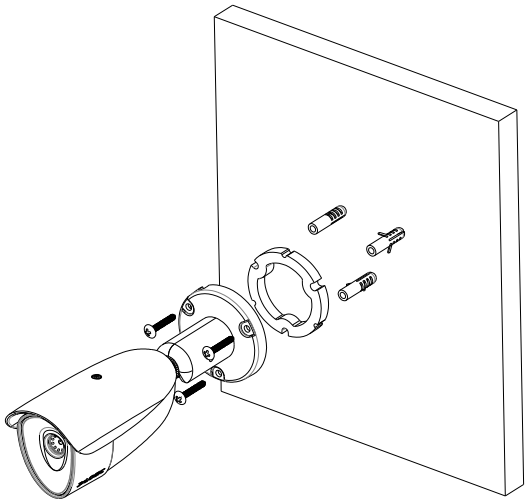
5.4 Installation

5.4.1 INSTALLING THE CAMERA – INSTALLATION WITHOUT BRACKET

Installation Template



CAUTION: Installation template's image size scale in this installation guide is not 1:1. The correct-size template paper can be found inside the package separately.



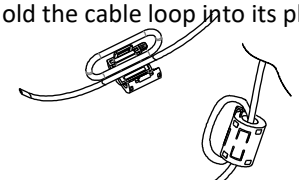
Steps:

1). Drill three holes on the installation surface based on the provided installation template.
2). Insert the plastic anchors into the holes.
3). Install the provided ferrite core on the cable by referring to the NOTE: below.
4). Attach the provided wall cushion to the bottom of the camera's pan/tilt bracket.
5). Fix the camera to the installation surface.
   a. Align the screw holes of the camera's pan/tilt bracket and the plastic anchors.
   b. Insert the provided screws(M4X35) into the plastic anchors through the screw holes of the camera's pan/tilt bracket.
   c. Tighten the screws firmly into the plastic anchors.
6). Connect all the necessary cables by referring to Section 5.5: Connections for more information.
7). Adjust the angle by referring to Adjust Angle of the Camera.

NOTE: Installing the ferrite core to a LAN cable is highly recommended to reduce high frequency noise level. Please follow the instructions below:

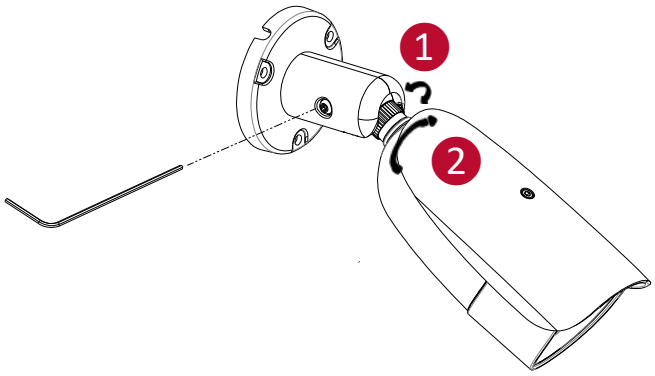
Steps:

1). Open the ferrite core by lifting the clip.
2). Make one loop with the cable through the ferrite core.
3). Close the ferrite core to hold the cable loop into its place.



CAUTION: Sealing gaps is recommended as gaps may appear after the camera installation. Gaps may cause problems such as moisture, water leakage and etc., which negatively affect the operation of the camera if gaps remain unsealed.
CAUTION: To prevent products from damage, place the camera on a stable and non-vibrating surface. If the stability is in doubt, consult safety personnel for reinforcements, and then proceed with the installation.

5.4.2 ADJUSTING ANGLE OF THE CAMERA

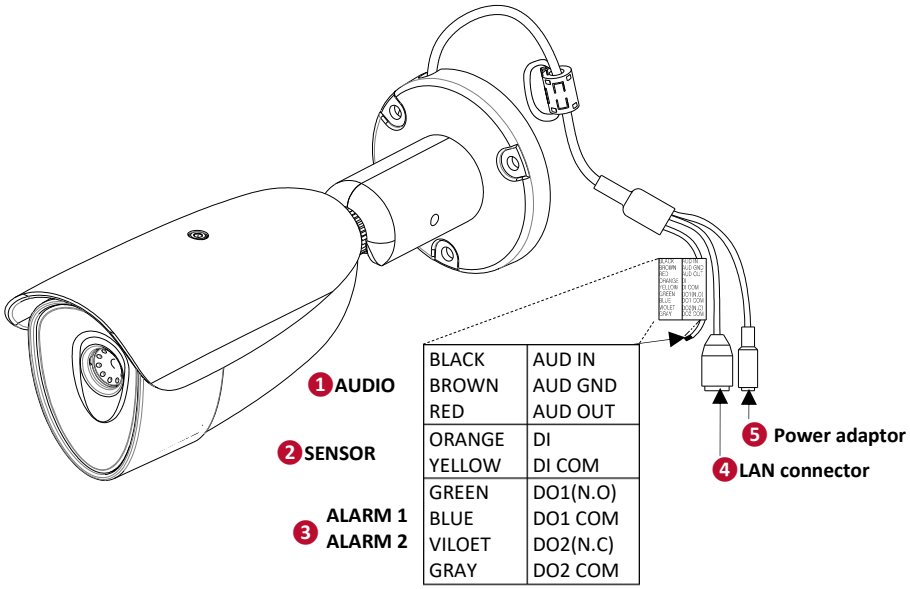


Steps:

1). Loosen the set screw located on the right side of the camera's bracket by using the provided Torx (T20 M4x23) wrench. Once the set screw is loosened, you can move the tilting joint and the panning joint of the camera respectively.

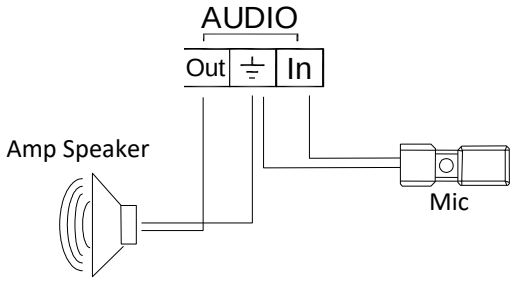
2). Adjust the angle by moving the tilting joint and the panning joint.

5.5 Connections



1). **Audio connection:** The camera provides a mono audio input and output. Due to low audio output power, an amplified speaker is recommended for enhanced sound (Refrain from connecting a headphone or an earphone directly to the camera).

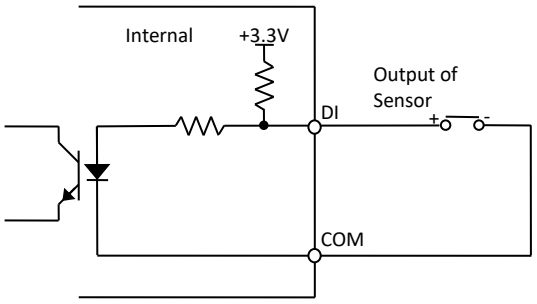
- **Microphone In:** Max 2Vp-p, 20KΩ (90dB)
- **Headphone Out:** 60mW, 16Ω (95dB)



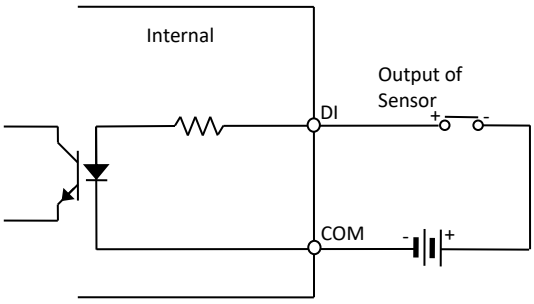
2). **Sensor (DI) connection**: Sensor (DI) can be connected to either a voltage type sensor or a relay type sensor as the following figures. Settings can be done through the camera's webpage.

- **Input voltage range:** 0VDC minimum to 5VDC maximum, Max 50mA

CAUTION: Do not exceed the maximum input voltage or relay rate.



Relay Type

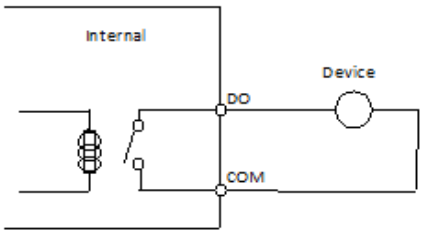


Voltage Type

3). **Alarm (DO1 | DO2) connection: Only the relay type is supported.**

- **Digital Output 1**
- **Relay Rating:** Max 30VDC 1A
- Normally Open (N.O) at power off
- **Digital Output 2**
- **Relay Rating:** Max 30VDC 1A
- Normally Closed (N.C) at power off

CAUTION: Do not exceed the maximum relay rating.



Relay Type

4). **LAN connection:** This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Use the Ethernet cable (RJ45) to connect the device to a hub or a router in the network. Refer to **Section 7:** Power over Ethernet Specifications for more information.

5). **Power Connection:** The camera can be powered by either 12VDC or PoE. If the camera is powered via PoE, you do not need to connect the power adaptor. For more information about PoE, refer to **Section 7:** Power over Ethernet Specifications for more information.

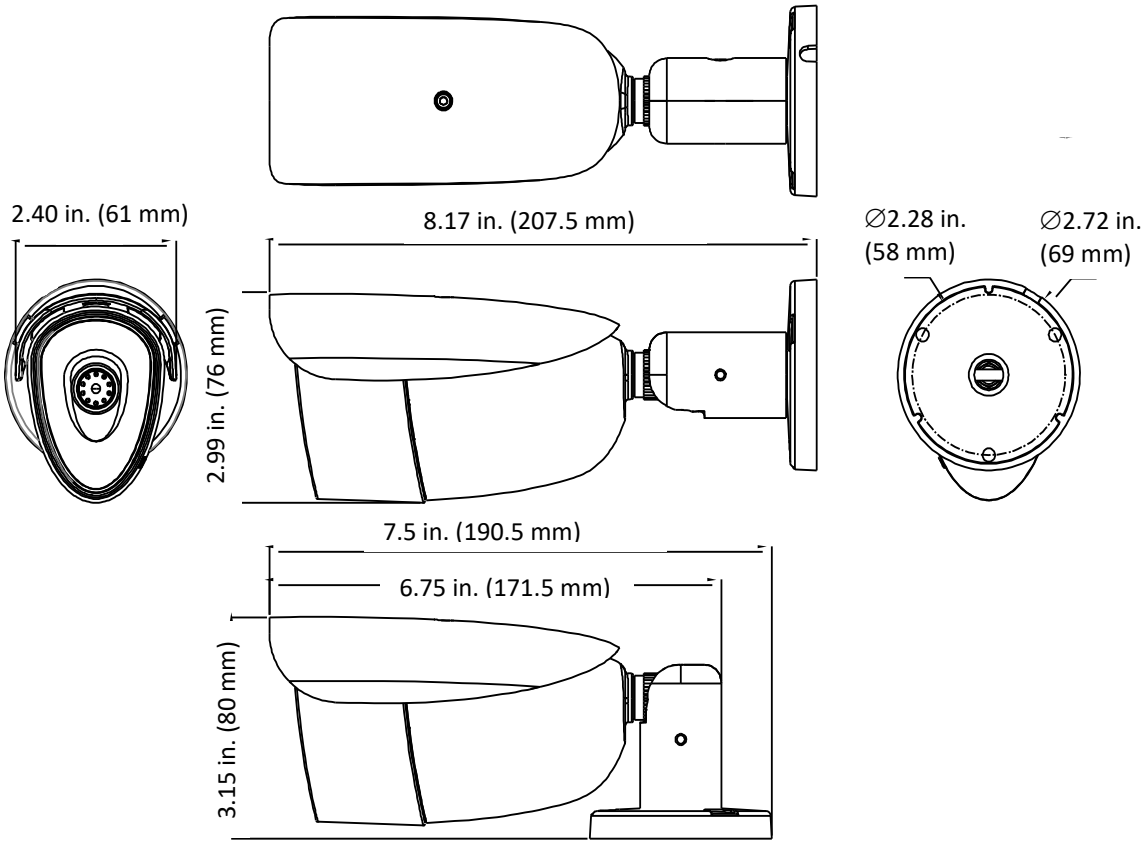
NOTES:

- Temperature criterion for the heater operation: 0˚C (32˚F)
- Lowest temperature to guarantee the heater operation during the device operation: -40˚C (-40˚F)
- Lowest temperature to boot up the device when the device is powered on:
- 0˚C (32˚F)

5.6 Full Camera Specifications

Camera Module	
Array Size	206x156
Detection Type	Uncooled vanadium oxide microbolometer
Sensor pixel size	12um
Spectral Response	7.8 ~ 14
Lens	4mm, F1.2 (FOV:36°), 6.8mm F1.2(FOV:20°), N/A FOV:58°),
Sensitivity	Less than 100mK
Video	
Compression Format	H.264 and MJPEG Selectable per Stream
Number of Streams	Dual Stream, Configurable
Resolution	
4:3 Mode	QVGA(320x240), VGA(640x480), NTSC(720x480), PAL(720x576), SVGA(800x600)
16:9 Mode	320x180, 480x270, 640x360, 800x450, 960x540, 1120x630, 1280x720
Frame Rate	Max. 9FPS in all resolutions
Motion Detection	Built-in
Burnt-in Text (Digital)	Time stamp and text caption overlay
Analogue Output	-
Audio	
Input/output	1/1 channel
Compression Format	G.711
Function	
Digital Input/output	1/2 channel
RS-485	-
Network	10/100 Base-T
Power over Ethernet (PoE)	Supported
Protocol	QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1, SRTP, RTMP
Storage	1 x microSDHC card embedded

5.7 Camera Dimensions



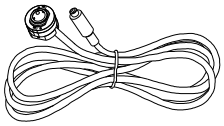
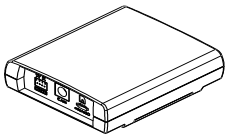
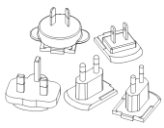
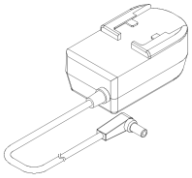
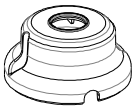
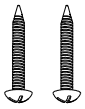
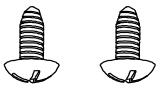
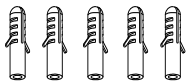
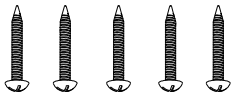
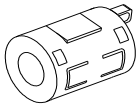
6 VX-2V28-PIN – IP Pinhole Camera

6.1 VX-2V28-PIN Specifications — Quick Summary

Component	Feature Description
Camera	■ 1/3” 1080p CMOS Image Sensor ■ Digital Day/Night ■ WDR
Video	■ H.264 Baseline, Main, High profile (MPEG-4 Part 10/AVC), MJPEG (Motion JPEG) ■ Max 30fps in 1080p ■ Text Overlay
Network	■ 10/100 Base-T Ethernet
Integration	■ Software Development Kit (SDK) available ■ ONVIF Compliant (Profile S & Profile G) **NOTE:** ONVIF Profile G is supported from FW V1.8.0 or higher.
General	■ Micro SD/SDHC Card Embedded ■ Power over Ethernet (PoE)
Video Contents Analysis (VCA)	■ VCA Presence Standard

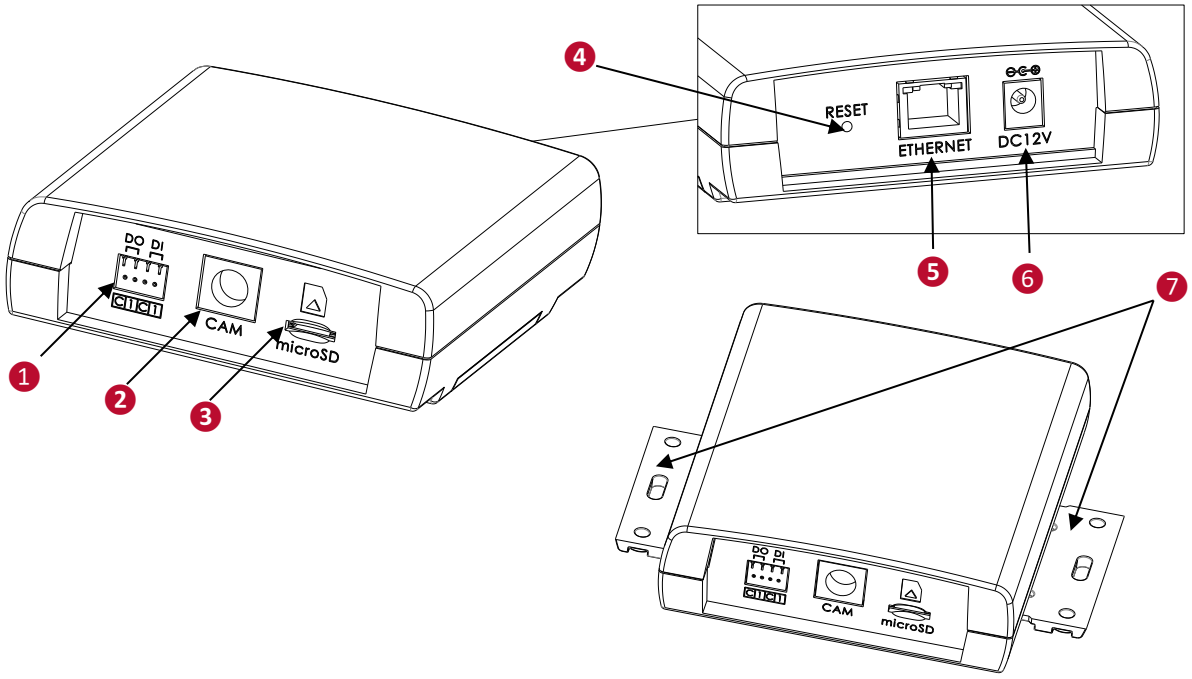
6.2 Package Contents

Please unpack the package carefully and handle the equipment with care. The package contains:

Camera Unit	Main Unit	Universal Plugs	Power Adaptor (DC12V)
			
Double-Sided Tape for Pinhole Cover	**Pinhole Cover**	**Rotate Ring**	**Surface Mount Bracket**
			
Pan/Tilt Bracket	**Tapping Screw (TP1 M3x20) x 2EA**	**Screw (TP2 M3x6(Ni)) x 2EA**	**Anchor Block (M4x25) x 5EA)**
			
Tapping Screw TS1 (M4x25) x 5EA	**Cable Clamp x 3EA**	**Ferrite Core**	**Tapping Screw (TP1 M4x20) x 3EA**
			
4 Pin Terminal Block			

6.3 Part Names

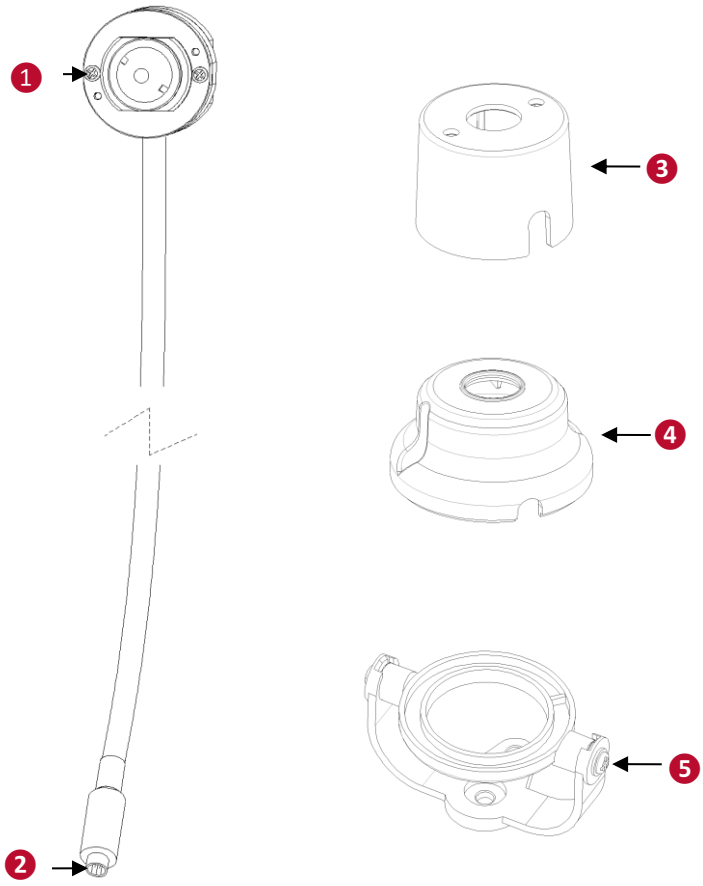
6.3.1 MAIN UNIT:



* Model herein and its appearance are subject to change without any prior notice.

1). **Terminal Connector:** Connector for cable connection for digital input / output. Refer to **Section 6.5:** Cable Connection for more details.
2). **Camera Connector:** Connector for camera unit
3). **microSD/SDHC card slot:** The camera supports up to 32GB. Class 4 and higher SD card is recommended for HD recordings.
4). **Reset button:** This button will restart or reset to factory default settings.
5). **LAN Connector:** RJ45 LAN connector for 10/100 Base-T Ethernet (PoE supported)
6). **Power Adaptor Connector:** DC 12V power supply connection
7). **Slide Plate:** Built-in mounting bracket for main unit

6.3.2 CAMERA UNIT WITH CONJOINED ACCESSORIES



* Model herein and its appearance are subject to change without any prior notice.

1). **Camera**
2). **Camera DIN connector:** Connector to be inserted to the camera connector in the main unit
3). **Pinhole Cover**: Bracket to be installed behind a wall or ceiling to hold the camera inside
4). **Surface Mount Bracket:** Bracket to be installed on a wall or ceiling to hold the camera inside
5). **Pan/Tilt Bracket:** Bracket to be installed on a wall or ceiling for the camera's angle adjustment. It shall be combined with the rotate ring and the surface mount bracket for the complete installation.

6.4 Installation

6.4.1 CAMERA UNIT INSTALLATION

There are three different ways to install the camera unit:

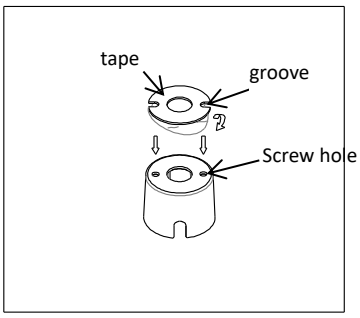
- Inconspicuously behind the wall or ceiling by using the pinhole cover
- Mounted and fixed on the wall or ceiling by using the surface mount bracket
- Mounted and fixed on the wall or ceiling by using the pan/tilt bracket to enable the camera's angle adjustment

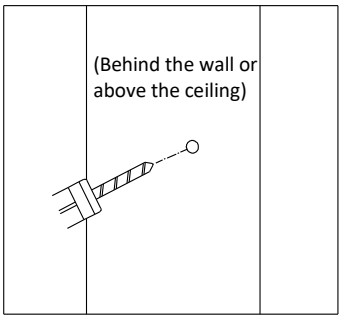
6.4.2 INCONSPICUOUS INSTALLATION

Steps:

1). Drill a hole (diameter: 3mm) on a desired spot where the camera lens will be located.

2). Peel off one side of the double-sided tape, and attach it to the flat surface of the pinhole cover by aligning the grooves on the tape with the screw holes on the pinhole cover.

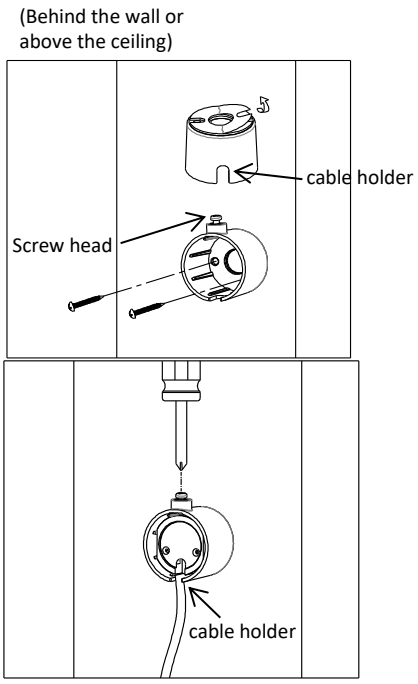




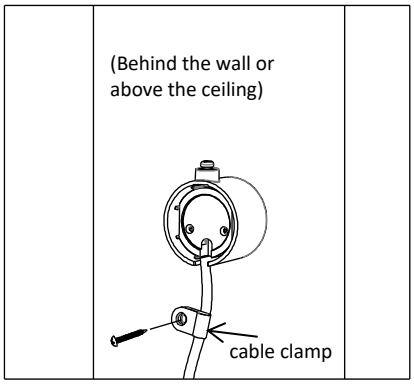
3). Peel off the other side of the tape, and stick the taped surface to the installation surface after aligning the hole on the pinhole cover with the drilled hole on the installation surface and facing the top screw hole upward.

4). Fasten the pinhole cover by using the tapping screws (M3x20) appropriate for the material of the installation surface.

5). Place the camera inside the pinhole cover by routing the camera's cable through the cable holder on the pinhole cover, and tighten the top screw head to fix the camera.



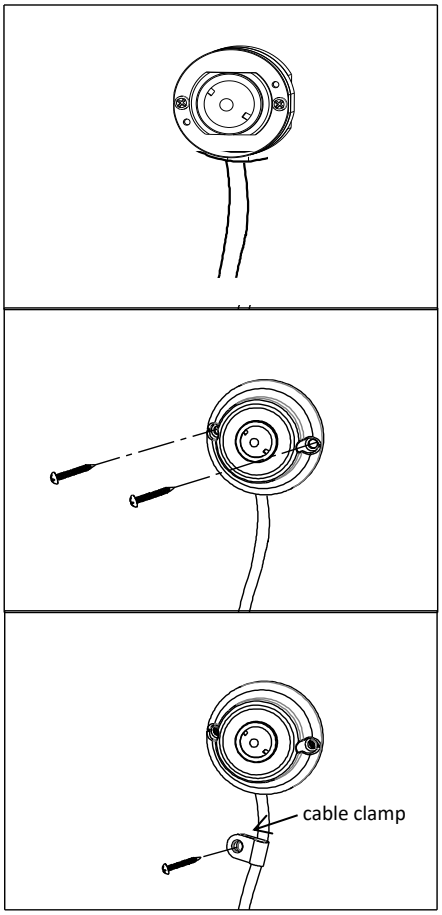
6). Use the cable clamp optionally if you want to fix the camera's cable to a desired spot with a tapping screw (M4x20).



6.4.4 SURFACE INSTALLATION FOR FIXED ANGLE

Steps:

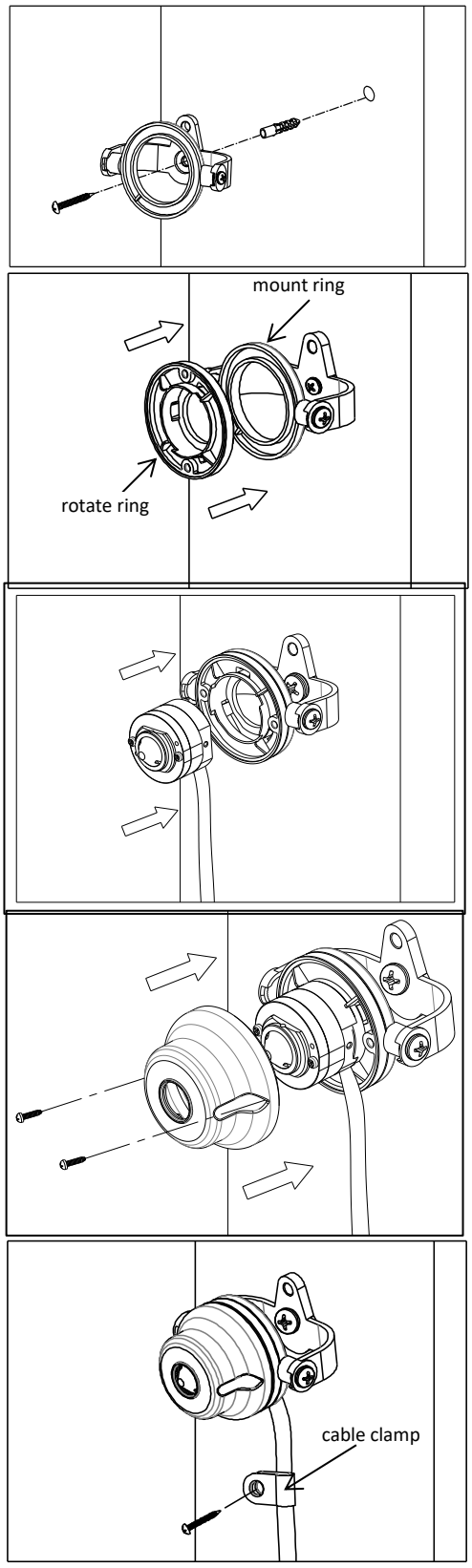
1). Place the camera on a desired installation surface.
2). Cover the camera with the surface mount bracket by routing the camera's cable into the cable holder on the bracket. Then, fasten the bracket using the tapping screws (M3x20) and anchor blocks appropriate for the material of the installation surface.
3). Use the cable clamp optionally if you want to fix the camera's cable to a desired spot with a tapping screw (M4x20).



6.4.5 SURFACE INSTALLATION FOR PAN/TILIT ADJUSTMENT

Steps:

1). Drill a hole on a desired installation surface, and insert an anchor block into the hole.
2). Fix the pan/tilt bracket by inserting the tapping screw (M4x25) to be passed through the screw hole on the bracket and tightening it into the anchor block.
3). Insert the rotate ring into the bracket by pressing it into the bracket's mount ring
4). Place the camera unit on the pan/tilt bracket.
5). Place the surface mount bracket on top of the camera, fix the bracket by inserting the tapping screws (M3x6) into the screw holes on the bracket by aligning the screw holes with the holes on the rotate ring on the pan/tilt bracket, and tighten the screws
6). Use the cable clamp optionally if you want to fix the camera's cable to a desired spot with a tapping screw (M4x20).

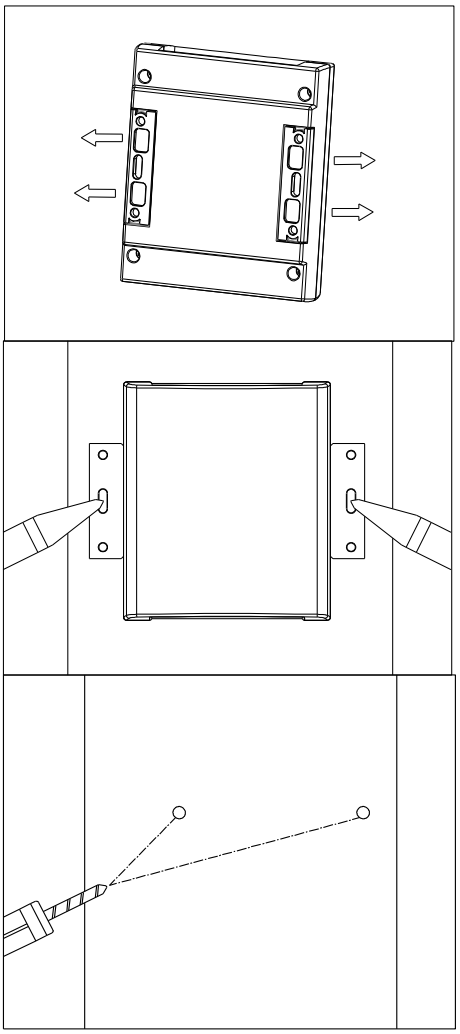


6.4.6 MAIN UNIT INSTALLATION

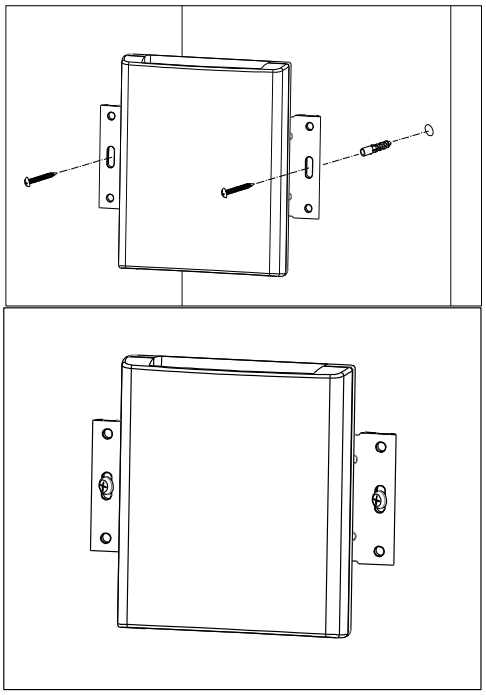
The main unit can be mounted on the installation surface by the built-in slide plates.

Steps:

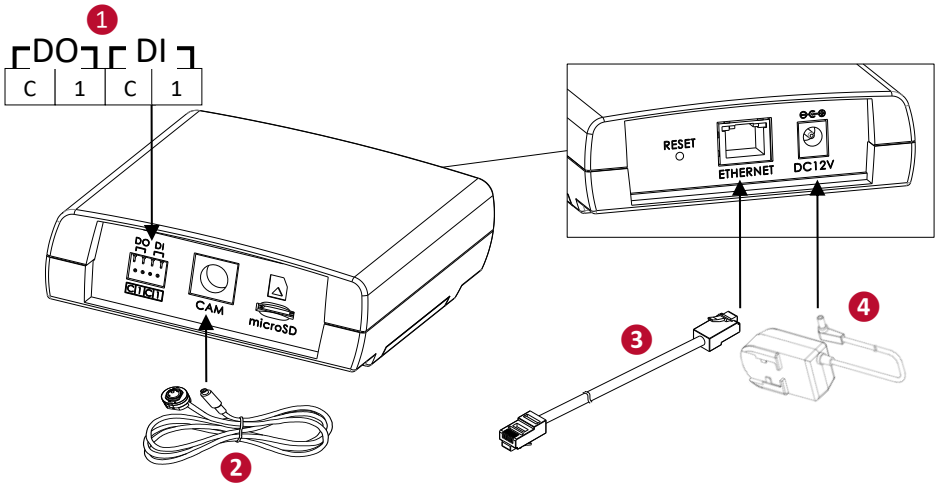
1). Pull out both slide plates at the bottom of the main unit.
2). Place the main unit on the installation surface by facing the bottom of the main unit toward the installation surface, and mark the drilling spots based on the alignment holes on the slide plates.
3). Drill the marked spots with a screw driver.



4). Insert the anchor blocks to the drilled holes, and tighten them into the installation surface.
5). Place the main unit in the same way as in Step 2 and insert the tapping screws to be passed through the alignment holes on the main unit.
6). Tighten the screws into the anchor blocks to fix the main unit to the installation surface.



6.5 Cable Connection



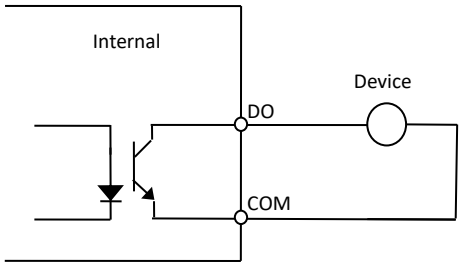
6.5.1 DI/DO TERMINAL CONNECTOR

1). Connect external input/output devices (e.g. alarm device) optionally if they are necessary. Refer to the reference below for the appropriate connection.

- **DO (Alarm):** It is used for connecting an external device such as relays and LEDs.

Refer to the table below for electrical wiring information:

DO	Function	Specifications
C	**Ground**	
1	**Output**	**0 to 24 VDC** **Max load: 50mA**



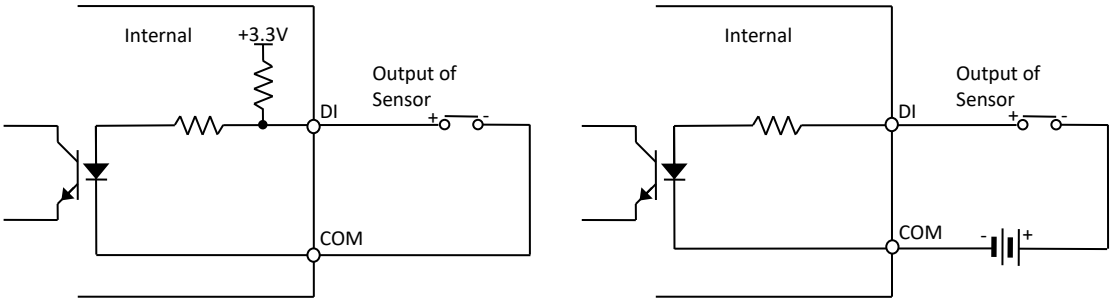
Relay Type

Then, the connected device can be activated via its webpage.

- **DI Sensor:** It is used for connecting a device such as a PIR and a door/window sensor.

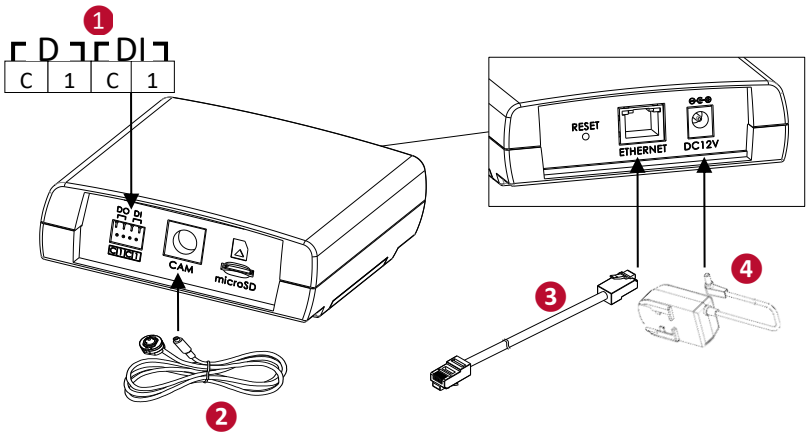
Refer to the table below for electrical wiring information:

DO	Function	Specifications
C	**Ground**	
1	**Input**	**0 to 5 VDC** **Max load: 50mA**



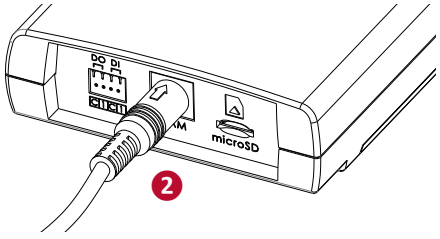
Relay Type Voltage Type

Then, the connected device can be activated via its webpage.



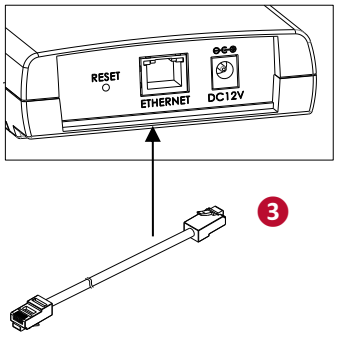
6.5.2 CAMERA CONNECTOR

2). Connect the camera unit to the main unit by inserting the camera's DIN connector to the camera's connector on the main unit by placing the arrow mark to be shown upward like the image below.



NOTE: Please make sure that the camera unit needs to be connected to the main unit prior to the power connection. Otherwise, the camera may fail to show image.

6.5.3 LAN CONNECTOR



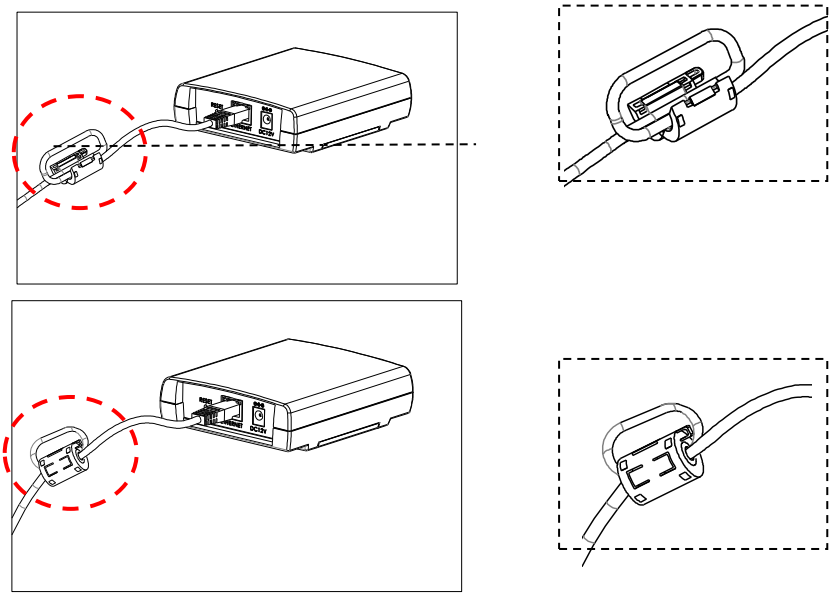
3). Connect the main unit to the network using an Ethernet cable (RJ45). Then, install the ferrite core on the Ethernet cable. Refer to the explanations below for the ferrite core installation.
NOTE: In case you intend to turn on the device by using the LAN cable, a PoE switch should be available in your network. For more information about PoE, refer to **Section 7:** Power over Ethernet Specifications for more information.

NOTE: Installing the provided ferrite core is highly recommended to reduce high frequency electrical noise level. Here below are the instructions to install the ferrite core on the Ethernet cable.

Steps:

1). Open the ferrite core by lifting the clip.
2). Make one loop with the cable through the ferrite core. (See the enlarged image above.)

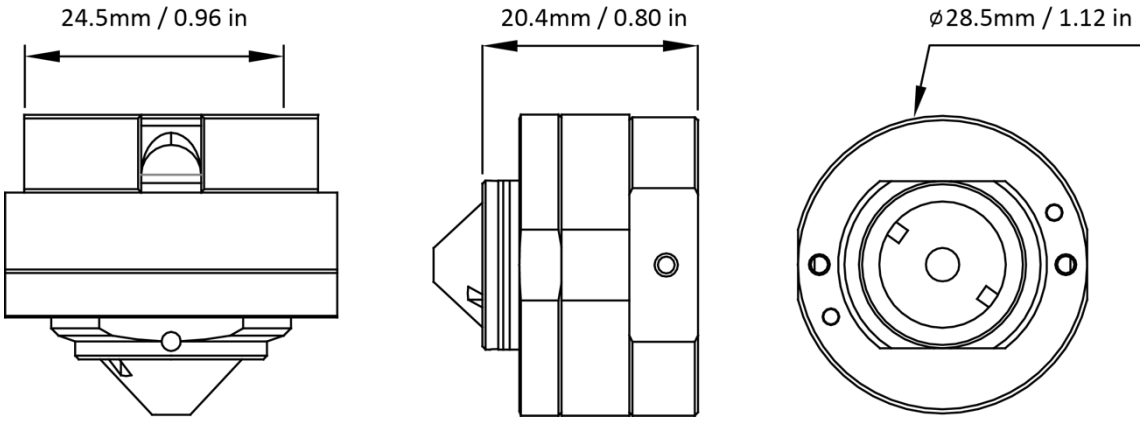
Close the ferrite core to hold the cable loop in the ferrite core's chamber.



6.5.4 POWER CONNECTOR

4). Connect a DC12V power adaptor to the power connector on the main unit. If the camera is powered on via PoE, a power adaptor is not necessary to be connected to the main unit.
NOTE: Please make sure that the camera unit needs to be connected to the main unit prior to the power connection. Otherwise, the camera may fail to show image.

6.6 Camera Dimensions



6.7 Full Camera Specifications

Camera Module	
CMOS	
Image Sensor	1/3” 1080p CMOS
Effective Pixels	1920x1080
Scanning system	Progressive scanning
Electrical	
Resolution	1920 x 1080
Min. Illumination	Color: 1.4 Lux / B/W : 0.01 Lux (DSS ON)
AGC Control	Auto
Lens	2.8mm, F2.4
Day & Night	Digital Day & Night
Wide Dynamic Range	Digital WDR
Video	
Compression Format	H.264 Baseline, Main, High profile (MPEG-4 Part 10/ AVC), MJPEG (Motion JPEG)
Number of Streams	Dual Stream, Configurable streams in H.264, MJPEG H.264: Controllable frame rate, bandwidth(VBR/CBR) MJPEG: Controllable frame rate, JPEG quality
Resolution	1920x1080, 1280x720, 1120x630, 960x540, 800x450, 640x360, 480x270, 320x180
Compression FPS	30fps@1080p
Motion Detection	Built-in
Burnt-in Text (Digital)	Video stream overlay text
Audio	
Input/output	-
Compression Format	-
Function	
Digital Input/Output	1/1 channel

Function	
RS-485	-
Network	10/100 Base-T
Power over Ethernet (PoE)	Supported
Protocol	QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, FTP, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1, SRTP, RTMP
SD Slot	1 x microSD memory card slot (SD/SDHC up to 32 GB supported) ※ Card not included (Class 4 and higher recommended for HD recordings)
Electrical Characteristics	
Power Source	DC 12V (Class 2, LPS) / PoE IEEE802.3af (Class 0)
Power Consumption	6W @ DC12V
Video Output	-
Audio Input	-
Audio Output	-
D/I	Max 50mA@5VDC, TTL level 1.5V threshold
D/O	Max 50mA@24VDC On-state resistance:50 Ω (max continuous)
Environment Condition	
Operating Temperature	Operating Range [DC12V] [PoE]: -10 ˚C ~ 50 ˚C (14˚F ~ 122˚F)
Operating Humidity	Up to 85% RH
Mechanical Condition	
Material	Polycarbonate
Color	Main Unit: White Camera Unit: Black
Dimension	28.1(Ø) x 25 mm
Weight (Approx.)	Main Unit: 225g (0.50lbs) Camera Unit: 250g (0.55lbs)

7 Power over Ethernet Specifications

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard.

IEEE 802.3af allows for two power options for Category 5 cables.

The IEEE **802.3af-2003** standard allows up to 15.4 W of power the device. However, 12.95W is the available power, as some power gets lost in the cable. The updated IEEE **802.3at-2009 (PoE+)** standard allows up to 25.5 W (Max 34.2 W) of power the device.

PoE has advantages over conventional power in such places where AC powers cannot be reached or is expensive to wire.

7.1 Power Comparison

Property	802.3af	802.3at
Available Power	12.95 W	25.50 W
Max. Power by PSE	15.40 W	34.20 W
Max. Current	350 mA	600 mA
Supported Cable	Category 3 or higher	Category 5 or higher

NOTE: For proper activation of PoE, the Category 5 cable must be shorter than 100m and conform the PoE standard.
NOTE: When it is connected with non PSE, the power adaptor should be connected.
NOTE: Connecting both PSE and power adaptor does not do any harm to the product. Disconnecting PSE or power adaptor from device does not reboot the device as long as either one is connected to the device.

8 Revision History

Man #	Date (mm/dd/yyyy)	Comments
11-2015-1	11/19/2015	Styled
01-2016-22	01/22/2016	Finalized first draft
11-2017-10	11/10/2017	Revised for VIGIL v10 -Added VX-VT-58, VX-2A-B-RIWD
06-2018-20	06/20/2018	Added VX-2A-B-RIWDZ
07-2018-31	07/31/2018	Added VX-2AD3B-IWD