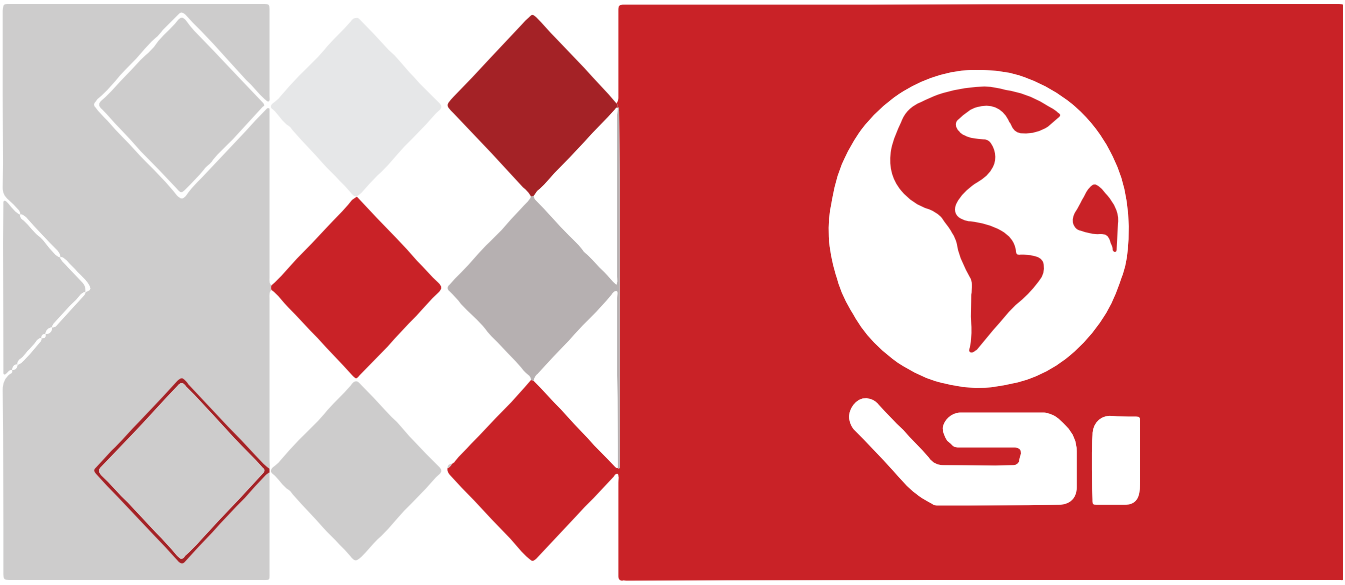
HIKVISION



TurboHD

DS-2CCx2D9T-xxxx
HD 1080p Ultra Low-Light PoC Camera

User Manual

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

This manual applies to the following HD 1080p Ultra Low-Light PoC cameras:

- DS-2CC12D9T-A
- DS-2CC12D9T
- DS-2CC12D9T-AIT3ZE
- DS-2CC52D9T-IT3E
- DS-2CC12D9T-E
- DS-2CC12D9T-IT5E
- DS-2CC52D9T-AVPIT3ZE
- DS-2CC12D9T-IT3E
- DS-2CC52D9T-AITZE

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About this Manual

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company Website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

Manual Illustrations and Features

Graphics (screen shots, product pictures, etc.) in this document are for illustrative purposes only. Your actual product may differ in appearance. Your product might not support all features discussed in this document.

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REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. HIKVISION SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, HIKVISION WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. HIKVISION SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED FOR ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATTER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

FCC Conditions

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

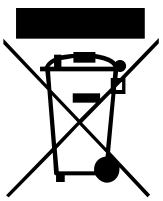
conditions:

- 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 EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, 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

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Hikvision North America Privacy Policy

Last Updated: December 2018

Hikvision USA Inc. and Hikvision Canada Inc. and its affiliates (collectively "HIKVISION") provide the following services for use in conjunction with various HIKVISION Internet-connected products ("Products"): a HIKVISION user Website and user accounts that may be accessed at

us.hikvision.com,

ca.hikvision.com,

https://distributors-us.hikvision.com/,

https://distributors-us.hikvision.com/guestLogin.htm,

https://ezviz-rma.hikvision.com/,

https://order-na.hikvision.com,

and all associated sites connected with us.hikvision.com (the "Website"); and any services available on the Website, Web Apps, and Mobile Apps ("Available Services"). The term "HIKVISION Services" means the Website and Available Services.

This Privacy Policy explains how HIKVISION handles the collection, storage, and disclosure of information, including personal information, regarding our HIKVISION Services. It also applies to any information we collect from the operation and use of Products we sell while connected to the HIKVISION Services (the "Products), and any other HIKVISION Service that links to this Privacy Policy.

We may modify this Privacy Policy at any time, provided certain provisions of this Privacy Policy prove to be incomplete or outdated and further provided that these changes are reasonable for you, taking into account your interests. If we make material changes to this Privacy Policy, we will notify you by the e-mail address specified in your account or by means of notice on our Websites.

You can determine when this Privacy Policy was last revised by referring to the date it was "Last Updated" above.

What Information We Collect

In order to provide HIKVISION services to you, we will ask you to provide personal information that is necessary to provide those services to you. If you do not provide your personal information, we may not be able to provide you with our products or services.

"Personal information" shall have the same meaning as "personal data" and shall include any information relating to an identified or identifiable natural person ("data subject"); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural, or social identity. Examples of personal information include your name, telephone number, e-mail address, and physical address.

Personal information also includes information that alone cannot directly identify you, but with other information we have access to can identify you such as product serial numbers, log data that automatically records information about your visit such as your browser type, domains, page views, the URL of the page that referred you, the URL of the page you next visit, your IP address, and page navigation, unique device ID collected from Products and

your mobile devices, data from cookies, pixel tags, and Web beacons, video content files that do not contain personal visual identity information, the country and time zone of the connected Product, geo-location, mobile phone carrier identification, and device software platform and firmware information.

How We Collect and Use Your Information

Here are some examples of the personal information we may collect and how we may use it:

- When you create your account to use HIKVISION Services ("Account"), we will collect information including your name, phone number, and e-mail and physical address. In addition, when you install and activate Products, we will collect certain basic information via our HIKVISION Services such as your product name, the product's verification code, and serial number, which are unique to the Product connected to the HIKVISION Services and associated with your Account.
- When you respond to our e-mails, contact our customer service, or use other customer support tools, we collect your information to provide you with support, verify your identity with your Account profile information, and confirm your Product.

We may also use the information we collect for the following purpose:

- send you reminders, technical notices, updates, alerts, support and administrative messages, service bulletins, and requested information; and
- pursuant to our legitimate business interests:
- operate, maintain, improve, and develop our HIKVISION Services and Products;
- personalize your experience with our HIKVISION Services and Products;
- increase the safety of our HIKVISION Services and Products – for example, for user authentication, security protection, fraud detection, filing, and backups;
- perform analytics and conduct customer research;
- communicate and provide to existing customers additional information that may be of interest to you about our products and services;
- manage our everyday business needs such as auditing, administration of our HIKVISION Services, forum management, fulfillment, analytics, fraud prevention, and enforcement of our corporate reporting obligations and Terms of Service;
- enhance other information we have about you to help us better understand you and determine your interests; and
- in the context of a corporate transaction (e.g., corporate restructuring, sale or assignment of assets, merger) and to protect our rights or property, to enforce our Terms of Service and legal notices and for the establishment, exercise, and defense of legal claims;

with your express consent to

- send you electronic communications in order to inform you about new products and services, unless you choose to unsubscribe;

- use certain non-essential cookies to better understand user behavior, in order to optimize user experience, perfect function design, and offers for products and services from us or to provide better services;
- meet a legal obligation, a court order or other binding decision(s); and accomplish a purpose unrelated to those described in this Privacy Policy by first notifying you and, where required, offering you a choice as to whether or not we may use your Personal Information in this different manner.

Cookies and Other Technologies

We also use cookies, Web beacons, pixel tags, and other technologies to keep records, store your preferences, improve our advertising, and collect information such as log data and device data. This allows us to better understand how you use our HIKVISION Services and Products, diagnose and troubleshoot any problems you have, and otherwise administer and improve our HIKVISION Services and Products. For more information about cookies, please refer to our **Use of Cookies** (https://order-na.hikvision.com/helpCenter/useOfCookies).

How We Share Your Information

HIKVISION may disclose personal information to cloud service provider, network service provider, and other service providers on the basis of non-disclosure agreements.

The following are the limited situations where we may share personal information:

- We share your personal information with HIKVISION affiliates, who are required to use that information in accordance with the purposes described in this Privacy Policy.
- We use service providers, vendors, technicians, and other third-parties to help us process, store, and protect some of your data and otherwise help us administer our Products and HIKVISION Services effectively, provide a better user experience, process your purchases, and increase the quality of our Products and HIKVISION Services. These third-parties are forbidden from using your personal information for non-HIKVISION purposes and are required to protect your information in accordance with this Privacy Policy and applicable laws.
- We may provide information to third-parties if we believe in good faith that we are required by mandatory law to do so. For example, to comply with legal orders and government requests; response to a subpoena, or similar legal process, including to law enforcement agencies, regulators, and courts; to protect the interests of our customers and users of the HIKVISION Service; to respond to claims that any content posted or displayed using the HIKVISION Service violates the rights of third parties; in an emergency protect the health and safety of users of the HIKVISION Service or the general public; or to enforce compliance with our Terms of Service.
- If HIKVISION and/or all or part of our assets are ever sold or transferred, your personal information may be among the items sold or transferred. Under such circumstance, we will notify you by the e-mail address specified in your account or by means of notice on us.hikvision.com and associated Websites of (i) the identity and contact information of the purchaser or transferee, (ii) your right to revoke your consent to the provision of personal information, and (iii) the means by which you may revoke such consent.

- We share information to protect our own legitimate business interests when we believe in good faith that we are required or permitted by law to do so. For example, we may share your personal information as needed to support auditing, compliance, and corporate governance functions; to combat fraud or criminal activity; to protect our rights or those of our affiliates and users; or as part of legal proceedings affecting HIKVISION.

We may also disclose non-personal information (for example, aggregated or anonymized data) publicly or with third-parties, provided those data have been rendered anonymous in such a way that the data subject is no longer identifiable. For example, we may share non-personal information:

- for the same reasons we might share Personal information;
- to better understand how our customers interact with our HIKVISION Services and Products, in order to optimize your experience, improve our products, or provide better services;
- for our own research and data analytics; or
- to our vendors for their own analysis and research.

Securing Your Personal Information

HIKVISION has implemented commercially reasonable administrative, technical, and physical security controls that are designed to safeguard personal information. We also conduct periodic reviews and assessments of the effectiveness of our security controls.

Notwithstanding the above, no method of transmission over the Internet, or method of electronic storage, is 100% secure. Therefore, HIKVISION cannot guarantee that your personal information is under absolute security with the existing security technology. If you have any questions about the security of our HIKVISION Services, you can contact us at the contact information below in **Contact Us**.

Accessing, Correcting, and Retention of Your Personal Information

HIKVISION generally stores your personal information on HIKVISION's servers, which is established upon Amazon Servers, until you delete or edit it, or for as long as you remain a HIKVISION customer in order to provide you with the most relevant offers.

Keeping your personal information current helps ensure that we provide you with the most relevant offers. You can access, update, or delete your personal information via your Account profile. We are ready to assist you in managing your subscriptions, deactivating your account, and removing your active profile and data. Your personal information might not be immediately deleted, as we are required to retain records relating to previous purchases through our HIKVISION Services for financial reporting and compliance reasons pursuant to applicable laws. In addition, because of the way we maintain certain services, after you delete certain information, we may temporarily retain backup copies of such information before it is permanently deleted.

We will retain your personal information for the period necessary to fulfill the purpose outlined in this Privacy Policy unless a longer retention period is required or permitted by applicable law.

If you are located in the European Union, subject to limitations in applicable law, you have certain rights in respect to your personal information such as a right of access, rectification, restriction, opposition, and portability. In order to exercise your rights please contact us at the contact information below in **Contact Us**. You also have the right to withdraw your consent at all times, free of charge. You can do this by opting out from direct marketing and by rejecting the use of cookies through your browser settings. If you have concerns about how we handle your personal information, you have the right to lodge a complaint with the data protection authority in your country of residence.

Social Community Features and Social Networks

Social Community Features

Our HIKVISION Services may allow you to publicly post or share information, communicate with others, or otherwise make information accessible to others. Prior to doing so, please read our Terms of Service carefully. All the information you post, share, or communicate may be accessible to anyone with Internet access, and any personal information you include may be read, collected, and used by others.

Social Networks

You have the option to link social networks such as Facebook to your Account. You will be able to post HIKVISION activity to your social network. By proceeding through any of the above steps, you grant HIKVISION permission to access elements of your social network profile information that you have made available to be shared and to use it in accordance with the social network's terms of use and this Privacy Policy.

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We may permit others to link to the HIKVISION services or to post a link to their Website. We do not endorse these Websites and are not responsible for other Websites or their privacy practices. Please read their privacy policies before submitting information.

Your Choices

We think that you benefit from a more personalized experience when we know more about you and your preferences. However, you can limit the information you provide to HIKVISION as well as the communications you receive from HIKVISION through your Account preferences.

Commercial E-mails

You will receive commercial e-mails from us only if you have granted prior express consent or if sending those e-mails is otherwise permitted, in accordance with applicable laws.

You may choose not to receive commercial e-mails from us by following the instructions contained in any of the commercial e-mails we send or by logging into your Account and adjusting your e-mail preferences. Please note that even if you unsubscribe from commercial e-mail messages, we may still e-mail you non-commercial e-mails related to your Account on the HIKVISION Services.

Device Data

You may manage how your mobile device and mobile browser share certain device data with HIKVISION by adjusting the privacy and security settings on your mobile device. Please refer to instructions provided by your mobile service provider or the manufacturer of your device to learn how to adjust your settings.

Children's Privacy

HIKVISION does not intend that any portion of its HIKVISION Services will be accessed or used by children under the age of 18, or equivalent minimum age in the relevant jurisdiction and such use is prohibited. Our HIKVISION Services are designed and intended for adults. By using the HIKVISION Services, you represent that you are at least 18 years old, or above the equivalent minimum age in the relevant jurisdiction and understand that you must be at least 18 years old, or above the equivalent minimum age in the relevant jurisdiction in order to create an account and purchase the goods or services advertised through our HIKVISION Services. If we obtain actual knowledge that an account is associated with a registered user who is under the age of 18 years old, or equivalent minimum age in the relevant jurisdiction, we will promptly delete information associated with that account. If you are a parent or guardian of a child under the age of 18, or equivalent minimum age in the relevant jurisdiction and believe he or she has disclosed personal information to us please contact us at the contact information below in **Contact Us**. A parent or guardian of a child under the age of 18, or equivalent minimum age in the relevant jurisdiction may review and request deletion of such child's personal information as well as prohibit the use thereof.

Global Operations

We transfer and process your information globally both in our own facilities and with service providers, or partners, regardless of where you use our Services. The laws, regulations, and standards of the country in which your information is stored or processed may be different from those of your own country.

California Privacy Rights: Pursuant to Section 1798.83 of the California Civil Code, residents of California can obtain certain information about the types of personal information that companies with whom they have an established business relationship have shared with third parties for direct marketing purposes during the proceeding calendar year. In particular, the law provides that companies must inform consumers about the categories of personal information that have been shared with third parties, the names and addresses of those third parties, and examples of the types of services or products marketed by those third parties. To request a copy of the information disclosure provided by HIKVISION pursuant to Section 1798.83 of the California Civil Code, please contact us at the contact information below in **Contact Us**. Please allow 30 days for a response.

Contact Us

Please contact us if you have any questions or comments about our privacy practices or this Privacy Policy. You can always reach us through the below contact information:

- A&E Program: aepartners.usa@hikvision.com
- Cybersecurity: security.usa@hikvision.com
- Dealer Partner Program: partners.usa@hikvision.com
- Marketing: marketing.usa@hikvision.com
- OEM/ODM: oem.usa@hikvision.com
- Sales: inside.usa@hikvision.com
- Technical Support: techsupport.usa@hikvision.com

- Canadian Technical Support: techsupport.ca@hikvision.com
- Need Help with This Product/Product Detail feature: inside.usa@hikvision.com
- A&E partner inquiries (user registration, new project support, etc.): aepartners.usa@hikvision.com
- HDP partner inquiries (user registration, new partner registration, etc.): partners.usa@hikvision.com
- US Hikcentral Trial Version Request: sales.usa@hikvision.com
- Canada Hikcentral Trial Version Request: sales.canada@hikvision.com
- Hikvision Robotics Division: robotics.USA@hikvision.com
- Hikvision OEM/ODM Division: OEMODM.usa@hikvision.com
- A&E partner registrations: sarkis.timourian@hikvision.com
- RMA: rma.usa@hikvision.com
- Customer Service: csr.usa@hikvision.com
- Careers: hr.usa@hikvision.com
- Hikvision B2B Portal: b2b.usa@hikvision.com

Please provide: (i) your name (or nickname), your country or region of residence, and your preferred method of contact; and (ii) the details of your request or comment along with any corresponding Website links.

Mandatory Electrical Requirements

Hikvision requires the following conditions and equipment for all of its electronic equipment:

- **Grounding**
  Ensure good conductivity for all ground paths; examine ground path contact surfaces for defects, dirt, corrosion, or non-conductive coatings that may impede conductivity. Repair or clean contact surfaces as necessary to assure good metal-to-metal contact. Ensure fasteners are properly installed and tightened.

- **Electrical Wiring**
  Ensure your outlets are properly wired. They can be checked with an electrical outlet tester.

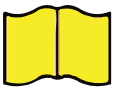
- **Surge Suppressor (Required)**
  Hikvision is not responsible for any damage to equipment caused by power spikes in the electrical power grid. Use of a surge suppressor meeting the following specifications is mandatory for all Hikvision electronic equipment:

  - **Specifications**
    - Listed by Underwriter's Laboratories, meeting the UL 1449 Voltage Protection Rating (VPR)
    - Minimum protection of 1,000 joules or higher
    - Clamping voltage of 400 V or less
    - Response time of 1 nanosecond or less
  - **Usage**
    - Surge suppressors must not be daisy chained with power strips or other surge suppressors

- **Maintenance**
  - › Replace after a serious electrical event (e.g., lighting blew out a transformer down the street)
  - › Replace yearly in storm-prone areas
  - › Replace every two years as routine maintenance

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 **NOTE:**	Provides additional information to emphasize or supplement important points of the main text
WARNING!	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results
DANGER!	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury

Safety Instructions

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100–240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to

technical specifications for detailed information.

- Do not connect several devices to one power adapter as adapter overload may cause overheating or a fire hazard.
- Make sure that the plug is firmly connected into the power socket.
- If smoke, odor, or noise rise from the device, turn off the power at once, unplug the power cable, and then contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with a UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

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, replace the lens cap to protect the sensor from dirt.

Do not aim the camera at the sun or extra bright places. Blooming or smearing may occur otherwise (which is not a malfunction), and affect the endurance of sensor at the same time.

The sensor may be burned out by a laser beam, so if any laser equipment is in use, make sure that the sensor surface will not be exposed to the laser beam.

Do not place the camera in extremely hot, cold, dusty, or damp locations, and do not expose it to high electromagnetic radiation.

To avoid heat accumulation, good ventilation is required for the operating environment.

Keep liquid away from the camera while in use.

Pack the camera in its original packing or equivalent while in transit.

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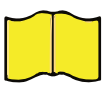
1. Introduction

1.1. Product Features

The camera is applicable for both indoor and outdoor conditions, and the application scenarios include road, warehouse, underground parking lot, bar, etc..

The main features are as follows:

- High performance CMOS sensor
- 1080p resolution
- Ultra low-light: 0.003 Lux @ (f/1.2, AGC On), 0 Lux with IR
- OSD menu, white balance, auto gain, backlight compensation, electronic shutter, etc.
- 2D and 3D DNR
- IR cut filter
- Semi-auto focus
- PoC
- Remote parameters configuration and upgrade
- External alarm in/out



NOTE: Some type II camera modes are applicable for indoor only.

1.2. Overview of Type I Camera

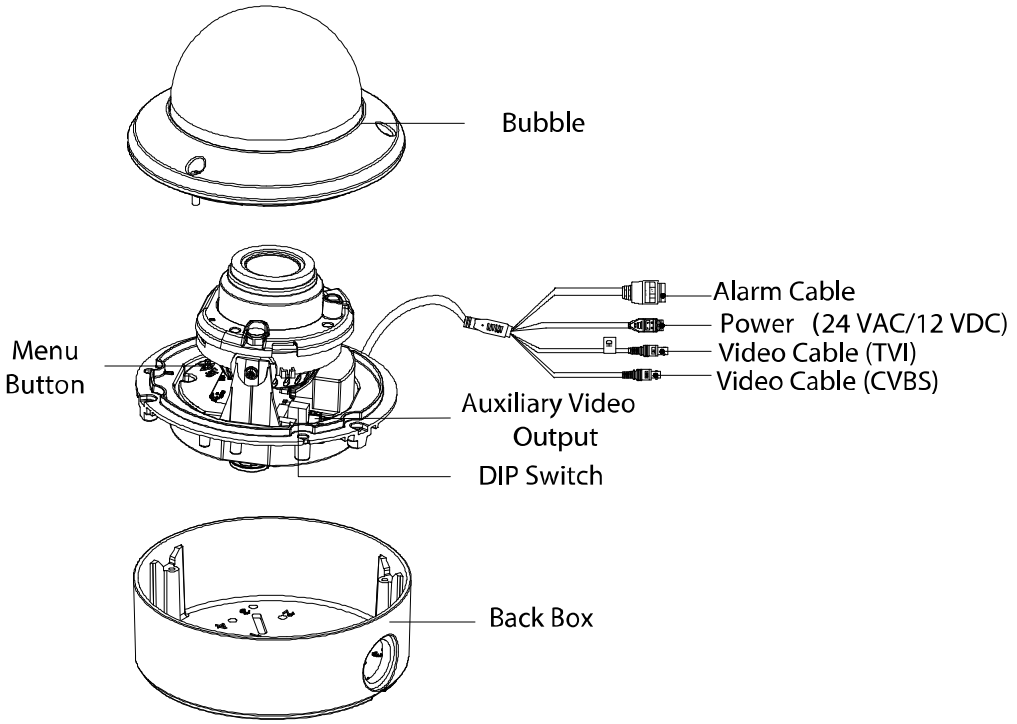


Figure 1, Type I Camera

1.3. Overview of Type II Camera

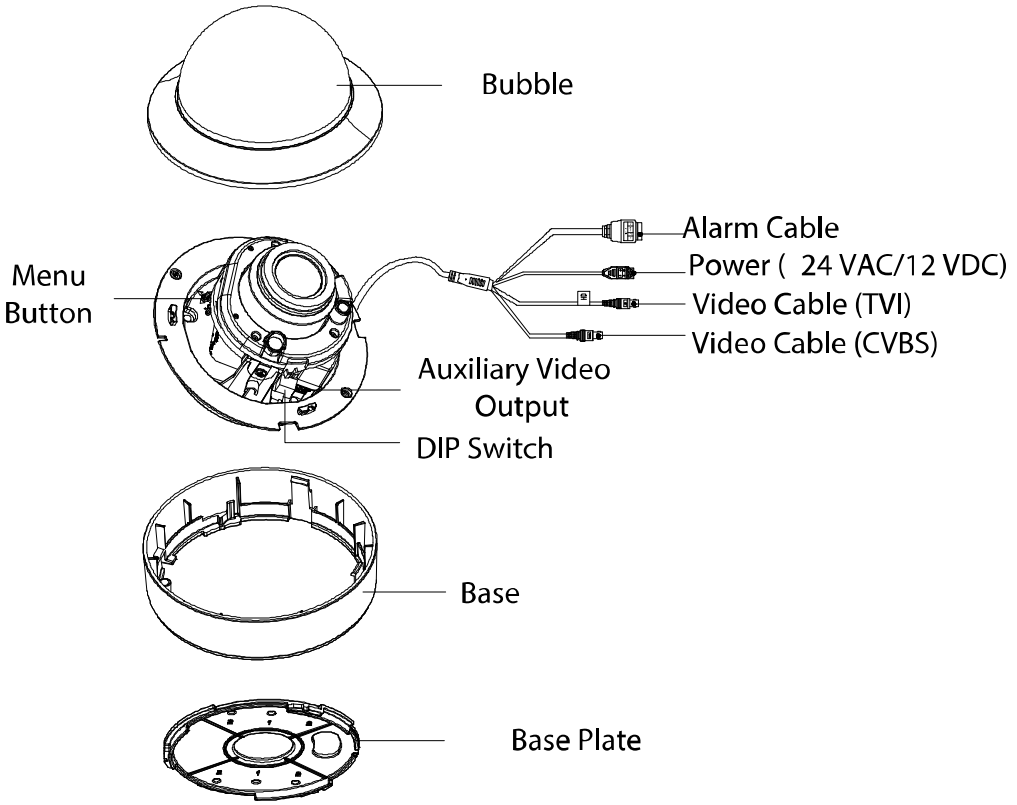


Figure 2, Type II Camera

1.4. Overview of Type III Camera

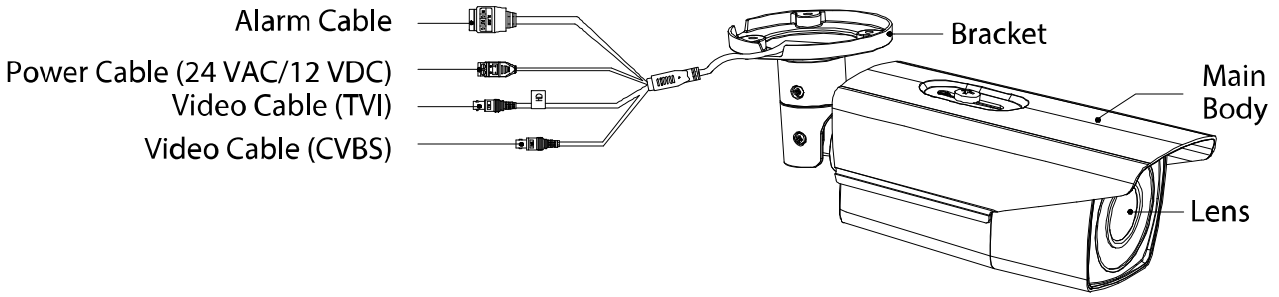


Figure 3, Type III Camera

1.5. Overview of Type IV Camera

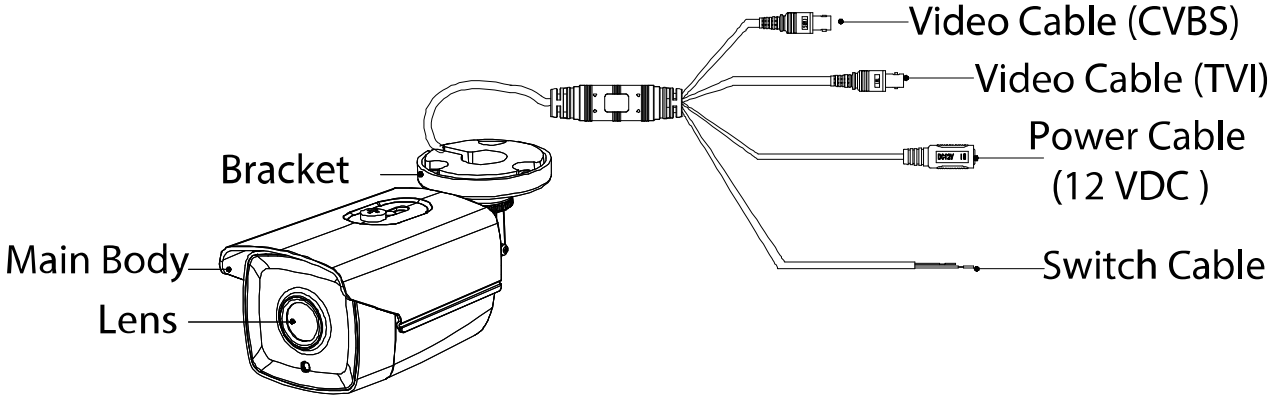


Figure 4, Type IV Camera

1.6. Overview of Type V Camera

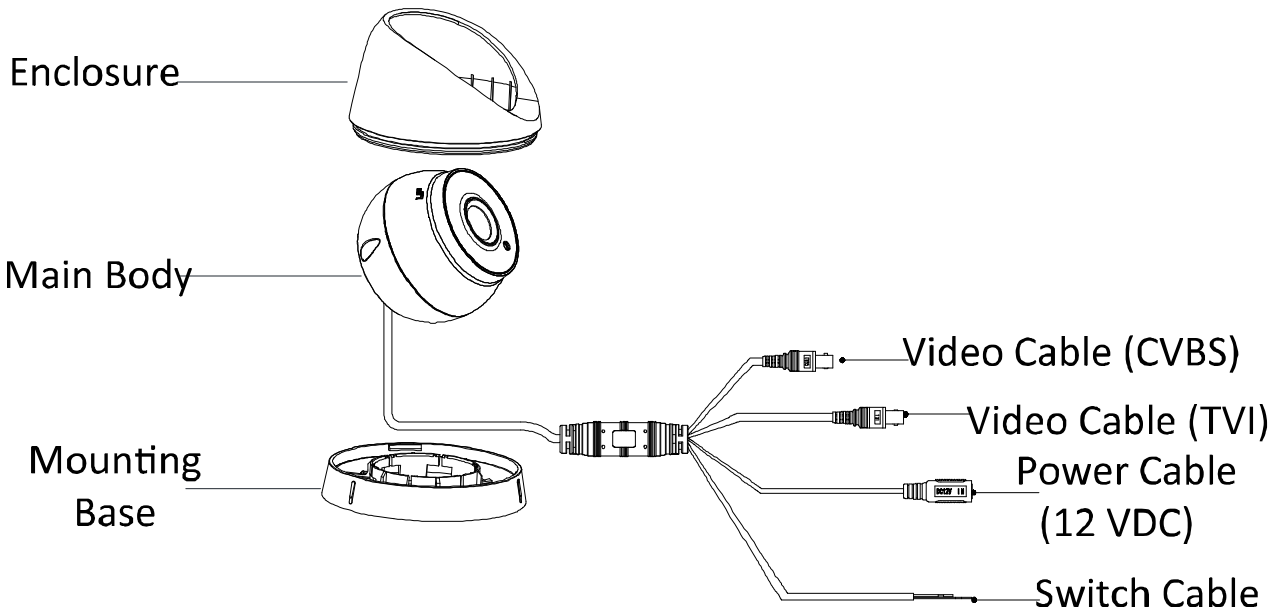


Figure 5, Type V Camera

2. Installation

2.1. Before You Start

Make sure that the device in the package is in good condition and all the assembly parts are included.

Make sure that all the related equipment is powered off during the installation.

Check the specification of the product for the installation environment.

Check that the power supply matches your power output to avoid damage.

Make sure the wall is strong enough to withstand three times the weight of the camera and the mounting bracket.

If the wall is concrete, insert expansion screws before installing the camera. If the wall is wood, use self-tapping screws to secure the camera.

If the product does not function properly, contact your dealer or the nearest service center. Do not disassemble the camera for repair or maintenance yourself.

2.2. Type I and Type II Camera Installation

2.2.1. Ceiling Mounting

1. Attach the drill template to the ceiling.
2. Drill screw holes and cable hole (optional) on the ceiling according to the supplied drill template.

NOTE: Cable hole is required if using ceiling outlet to route the cables.

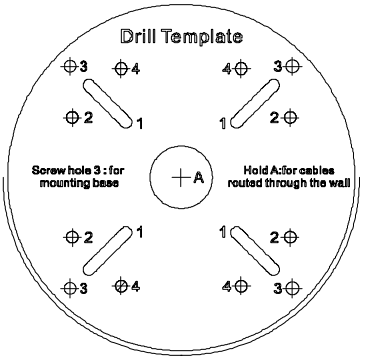


Figure 6, Type I Camera Drill Template

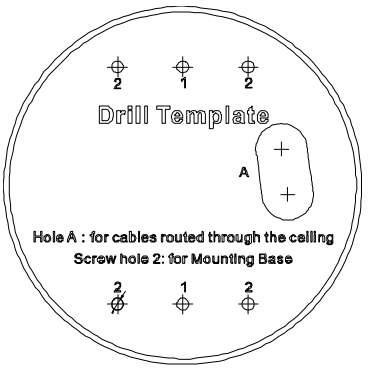
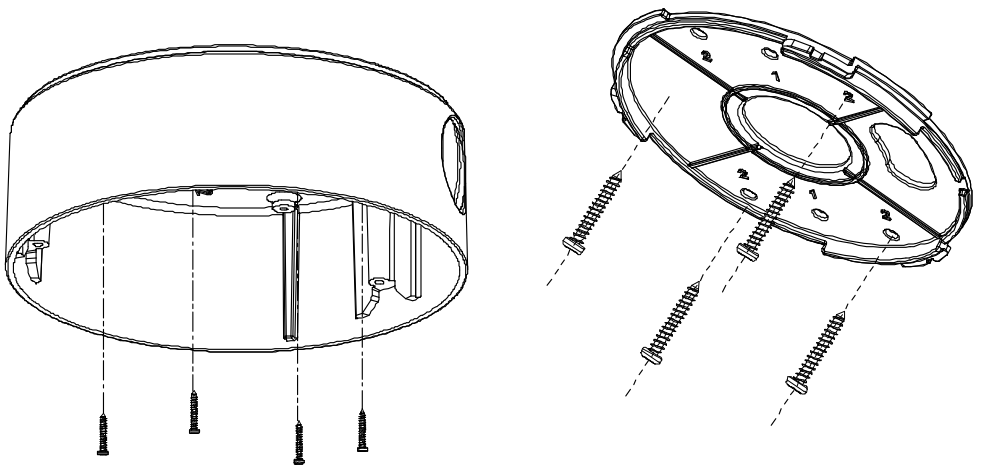


Figure 7, Type II Camera Drill Template

3. Loosen the screws on the dome camera bubble to remove the bubble and black liner.

4. Attach the of type I camera back box/type II camera base plate to the ceiling and secure with supplied screws.



Type I Camera Type II Camera

Figure 8, Attach the Back Box/Base Plate

NOTE: The supplied screw package contains both self-tapping screws and expansion bolts.

If the wall is concrete, expansion bolts are required to fix the camera. If the wall is wood, self-tapping screws are required.

5. Route the cables through the cable hole or the side opening.
6. Align the camera with the back box/base plate, and tighten the screws to secure the camera with the back box/base plate.

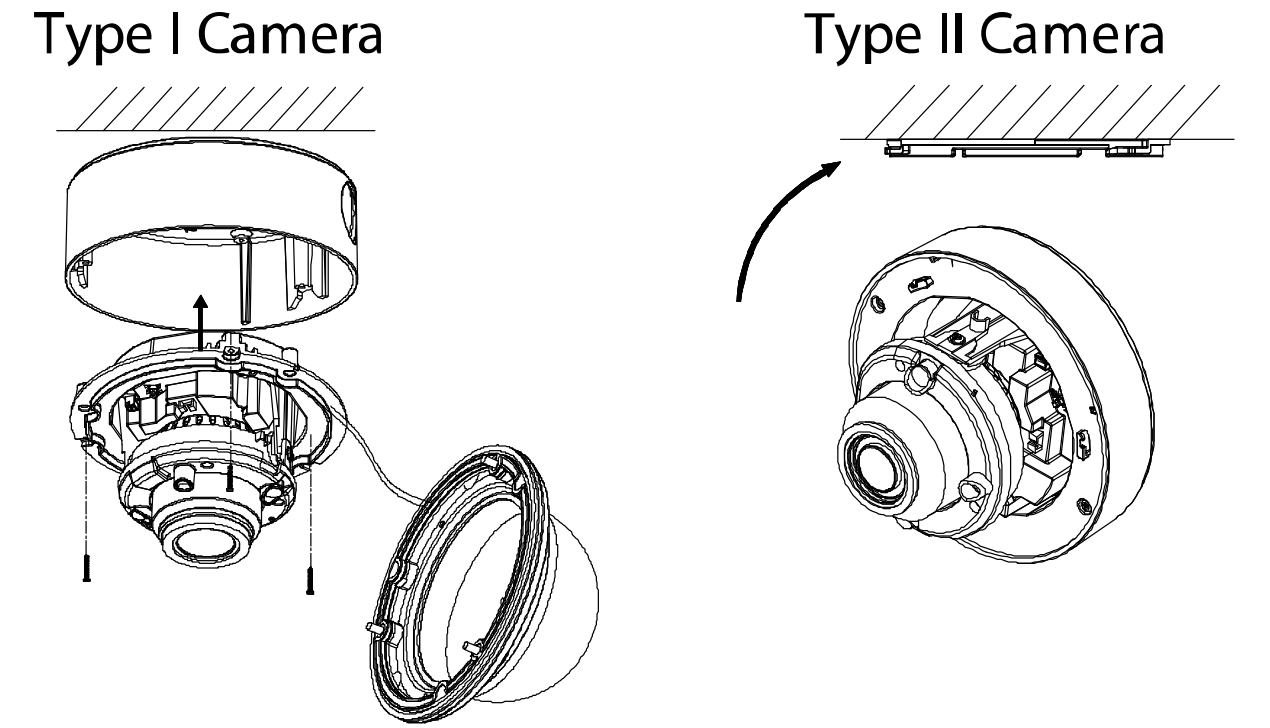


Figure 9, Affix the Camera to the Ceiling

7. Connect the corresponding cables such as power cable and video cable.

8. Power on the camera to check if the image on the monitor is at an optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

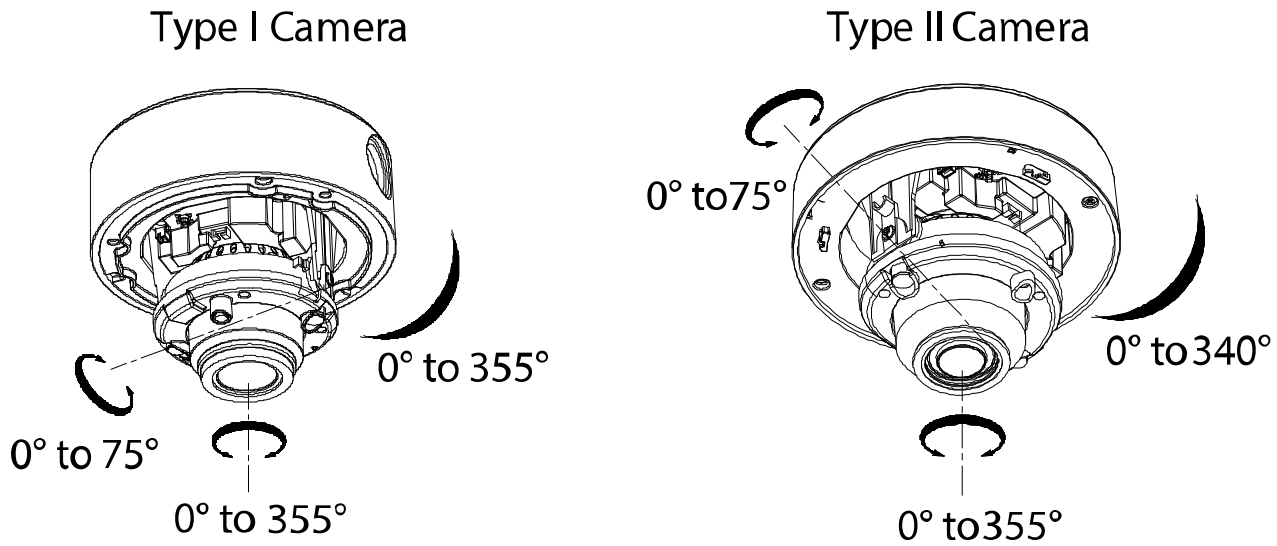


Figure 10, 3-Axis Adjustment

9. Fit the black liner on the camera and tighten the screws on the

bubble of the dome camera to finish the installation.

2.2.2. Wall Mounting

NOTE: You need to purchase a wall mounting bracket separately if you use wall mounting.

1. Drill four screw holes in the wall according to the bracket holes.
2. Attach the bracket to the wall by aligning the four bracket screw holes with expansion screws on the wall.
3. Secure the bracket with four hex nuts and washers.

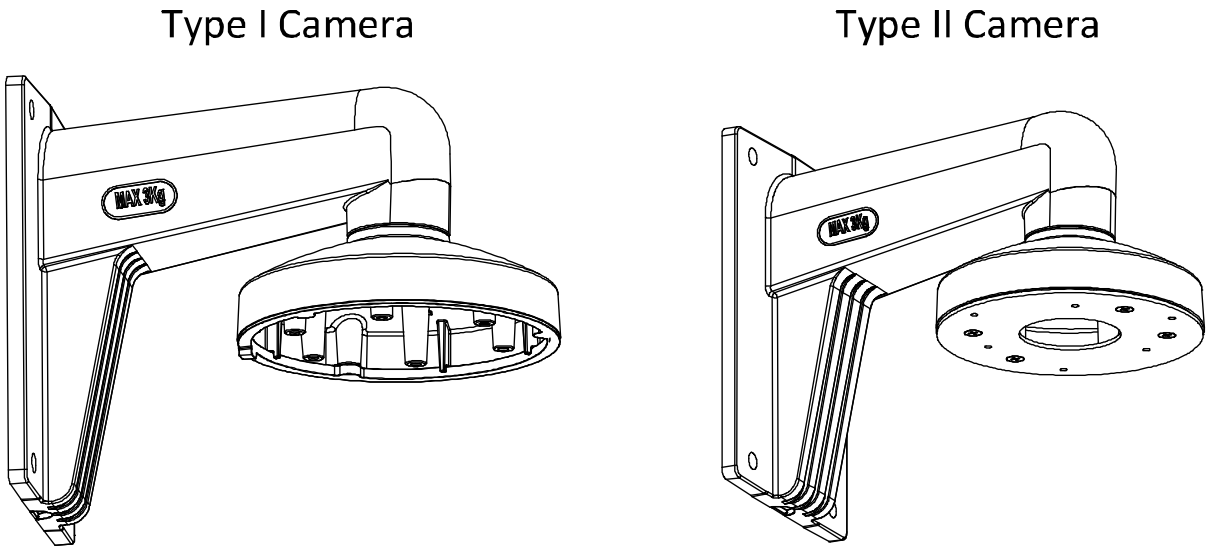


Figure 11, Install Wall Mounting Bracket

4. Refer to step 3 of *2.1.1 Ceiling Mounting* to remove dome camera's bubble and the black liner.
5. Attach the dome camera's back box/base plate to the wall mounting bracket and secure it with supplied screws.

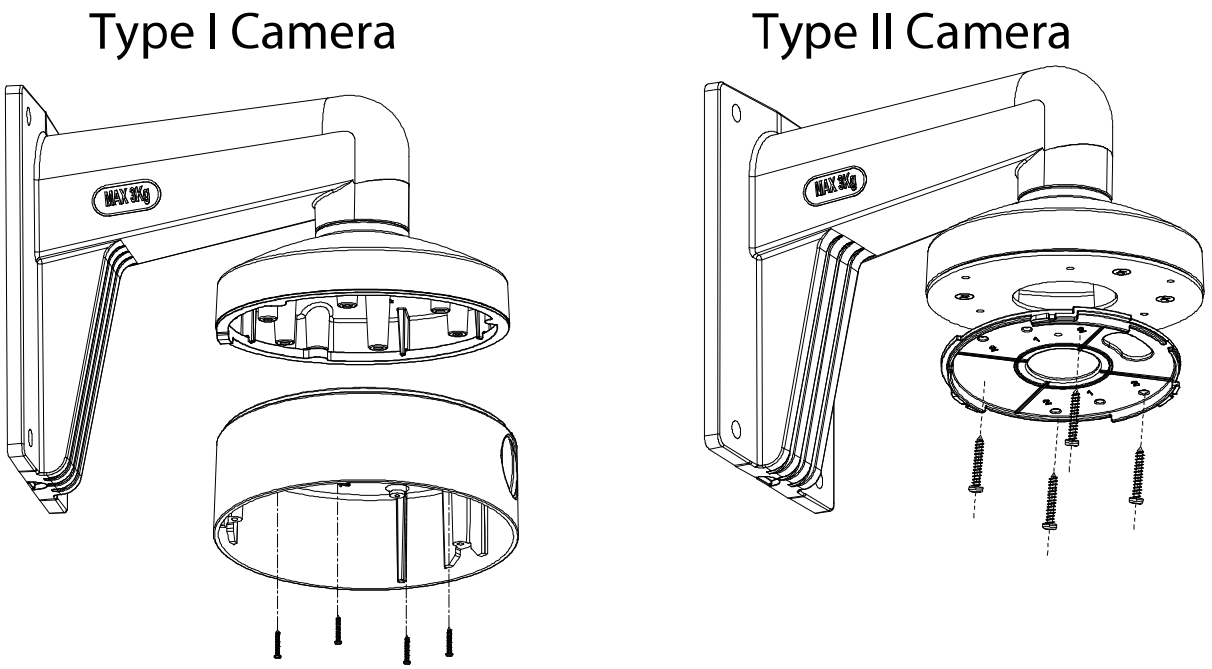


Figure 12, Attach Base Plate to Bracket

6. Route the cables through the bracket.
7. Repeat steps 6 to 9 of *2.1.1 Ceiling Mounting* to complete the installation.

2.2.3. In-Ceiling Mounting

NOTE: You need to purchase an in-ceiling mounting bracket separately if you use in-ceiling mounting.

1. Attach the drill template on the ceiling.
2. Drill the screw holes and cable holes (optional) in the ceiling according to the supplied drill template.

NOTE: Cable hole is required if routing cable through ceiling outlet.

3. Screw bolts through the mounting bracket by aligning with the two bolt holes. Fit the toggles onto the bolts.
4. Push the two toggles through the two screw holes in the ceiling. Rotate the bolt until the toggle fastens tightly to the ceiling.

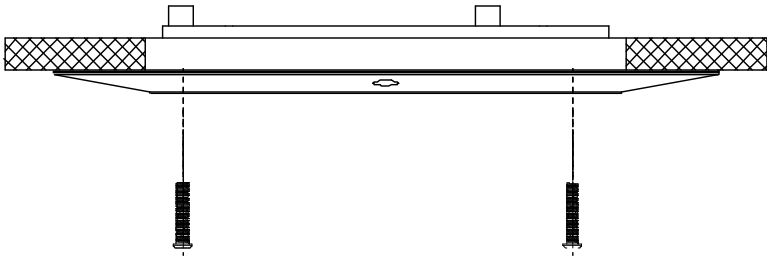


Figure 13, In-Ceiling Mounting Bracket

5. Route the cables through the cable hole.

6. Attach the type I camera back box/type II camera base plate to the in-ceiling mounting bracket with the supplied screws.

NOTE: The supplied screw package contains both self-tapping screws and expansion bolts.

If the wall is concrete, expansion bolts are required to fix the camera. If the wall is wood, self-tapping screws are required.

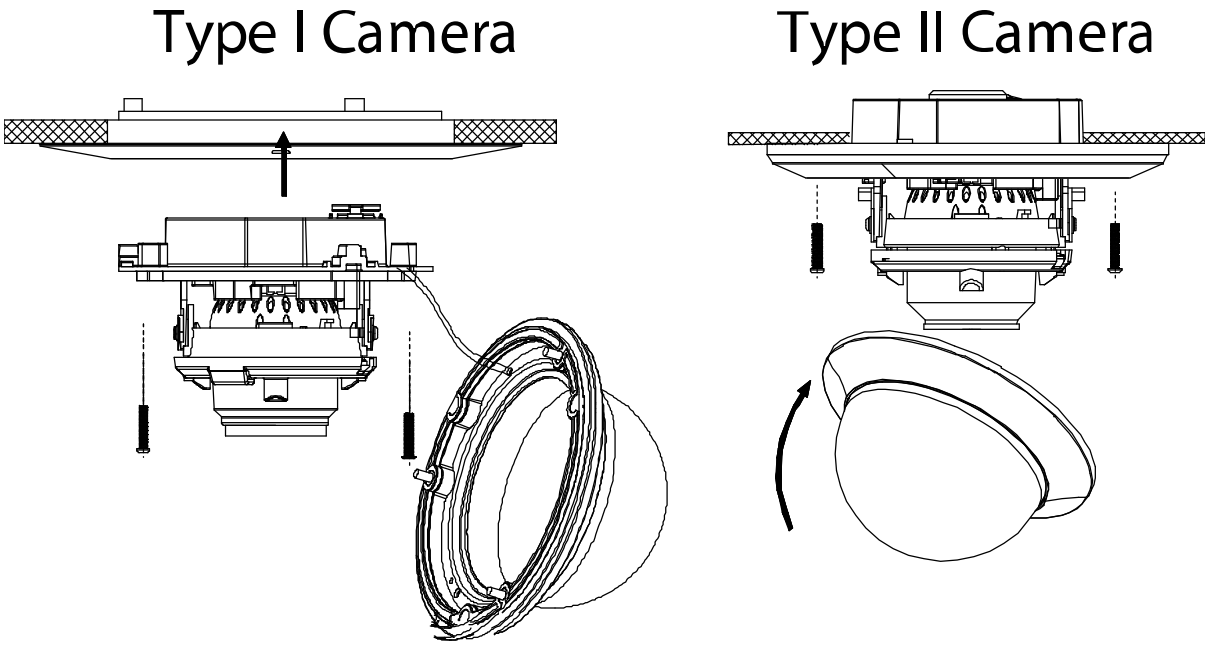


Figure 14, Affix Camera to Mount

7. Repeat steps 6 to 9 of *2.1.1 Ceiling Mounting* section to complete the installation.

2.2.4. In-Ceiling Mounting with Junction Box

NOTE: You need to purchase an in-ceiling mounting bracket separately if you use in-ceiling mounting with the junction box.

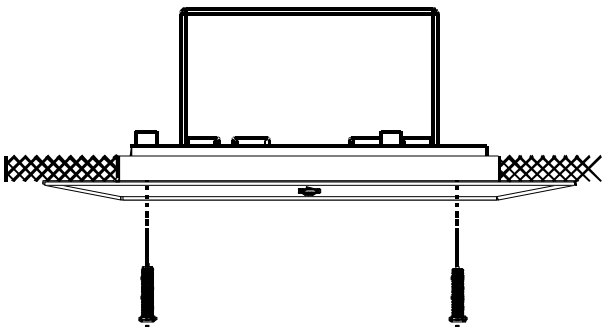


Figure 15, Install the Bracket

1. Repeat steps 2 to 4 of the *2.1.3 In-Ceiling Mounting* section to secure the in-ceiling mounting bracket (supplied) to the junction box.
2. Connect the corresponding cables such as power cable and video cable.
3. Align the camera with the junction box, and tighten the screws to secure the camera to the junction box.

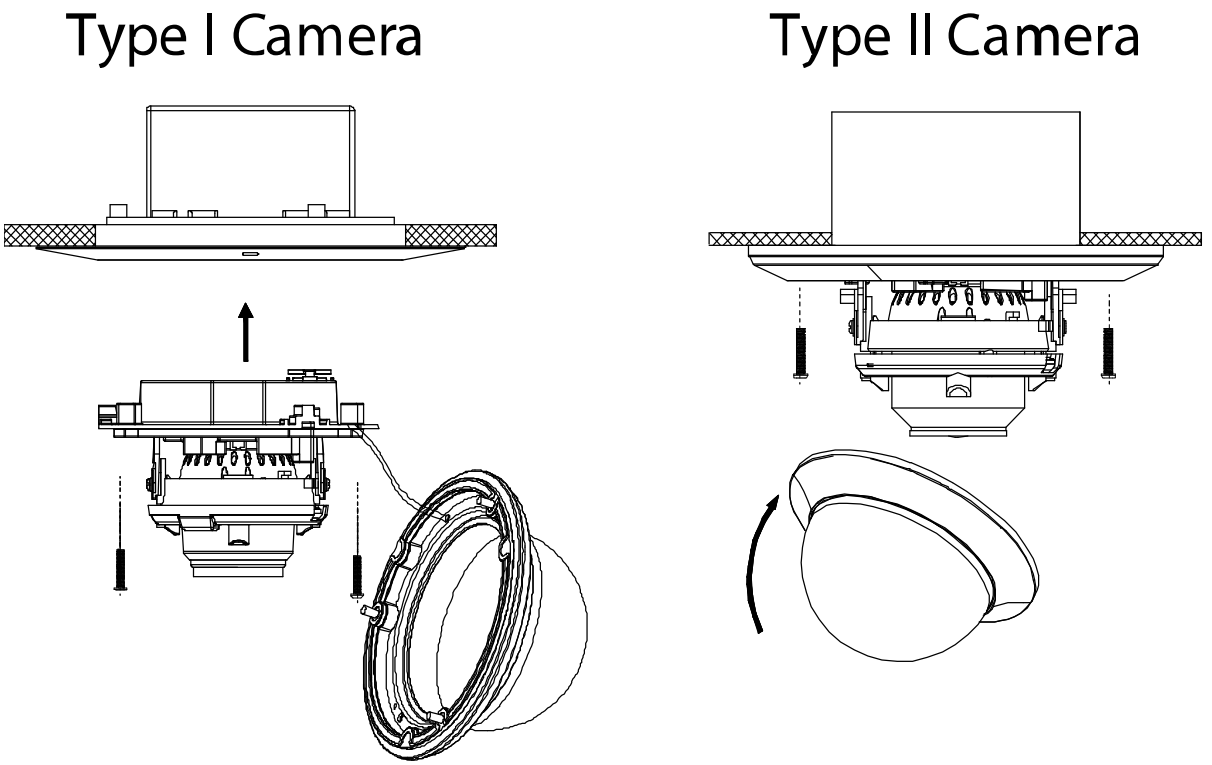


Figure 16, Affix Camera to Junction Box

4. Repeat steps 6 to 9 of the *2.1.1 Ceiling Mounting* section to complete the installation.

2.2.5. Mounting with Inclined Base of Type I Camera

NOTE: You need to purchase an inclined base separately if mounting with an inclined base.

1. Drill four screw holes in the ceiling according to the inclined base holes.

2. Install the inclined base to the ceiling with supplied screws, as shown below.

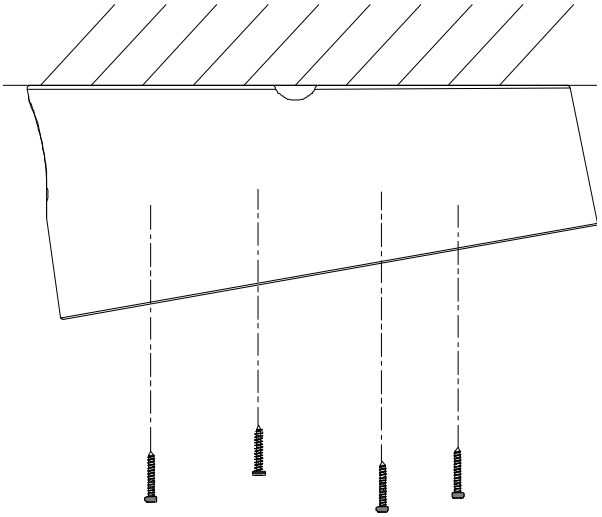


Figure 17, Affix Inclined Base

3. Route the cables through the inclined base hole.

4. Attach the type I camera back box/type II camera base plate to the inclined base with the supplied screws.

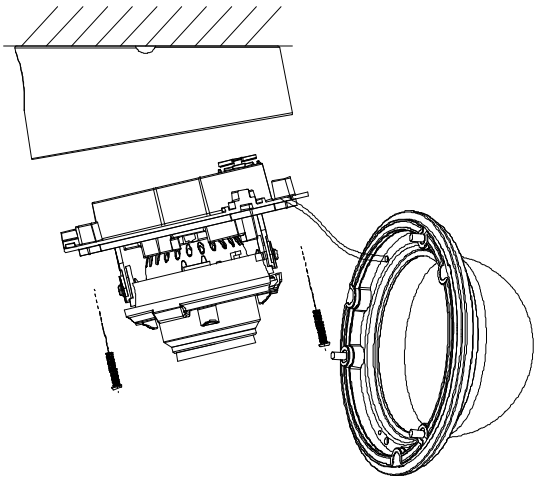


Figure 18, Affix Camera to Base

5. Repeat steps 6 to 9 of the *2.1.1 Ceiling Mounting* section to complete the installation.

2.3. Type III and Type IV Camera Installation

2.3.1. Ceiling Mounting

NOTE: Both wall mounting and ceiling mounting are suitable for the bullet camera. Ceiling mounting will be used as an

example in this section. Use the ceiling mounting steps as a reference for wall mounting.

1. Attach the drill template to the ceiling.
2. Drill the screw holes and cable hole (optional) on the ceiling according to the supplied drill template.

NOTE: Cable hole is required if using ceiling outlet to route the cable.

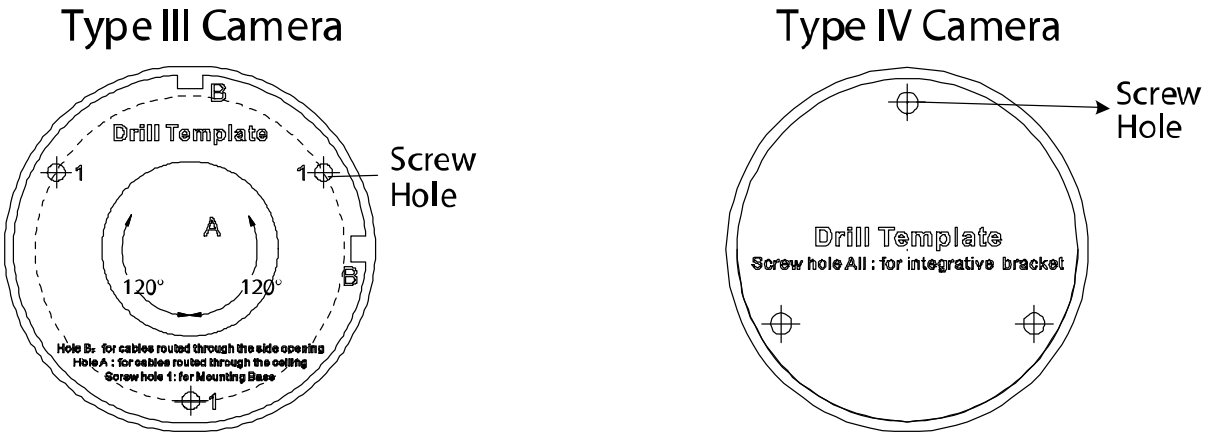


Figure 19, Drill Templates

3. Route the cables through the cable hole.
4. Affix the camera to the ceiling with supplied screws.

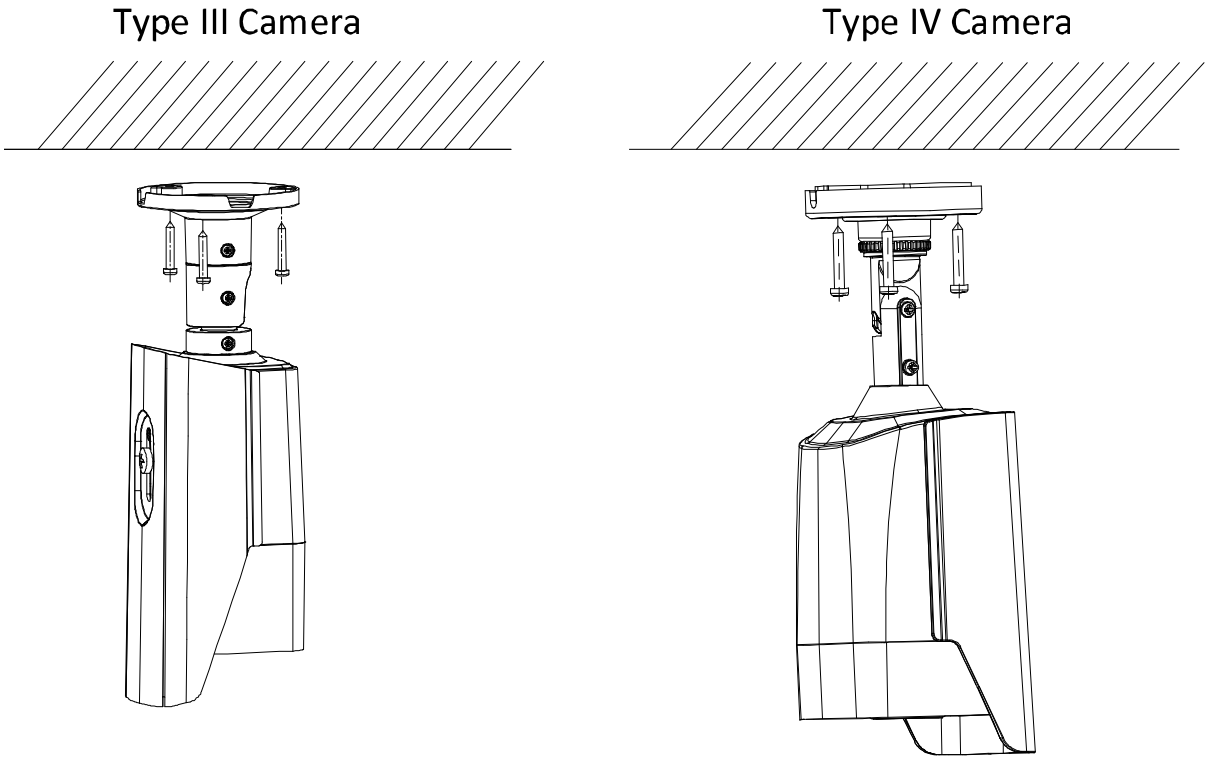


Figure 20, Affix Camera to Ceiling

5. Connect the corresponding cables such as power cable and video cable.

NOTE: The supplied screw package contains both self-tapping screws and expansion bolts.

If the wall is concrete, expansion bolts are required to affix the camera. If the wall is wood, self-tapping screws are required.

6. Rotate the cover counterclockwise to separate it from the camera to view the auxiliary video output, menu button, and DIP switch shown in figure below.

7. Use the DIP switch to turn on or off the WDR. CVBS video output is not available when the WDR is turned on.

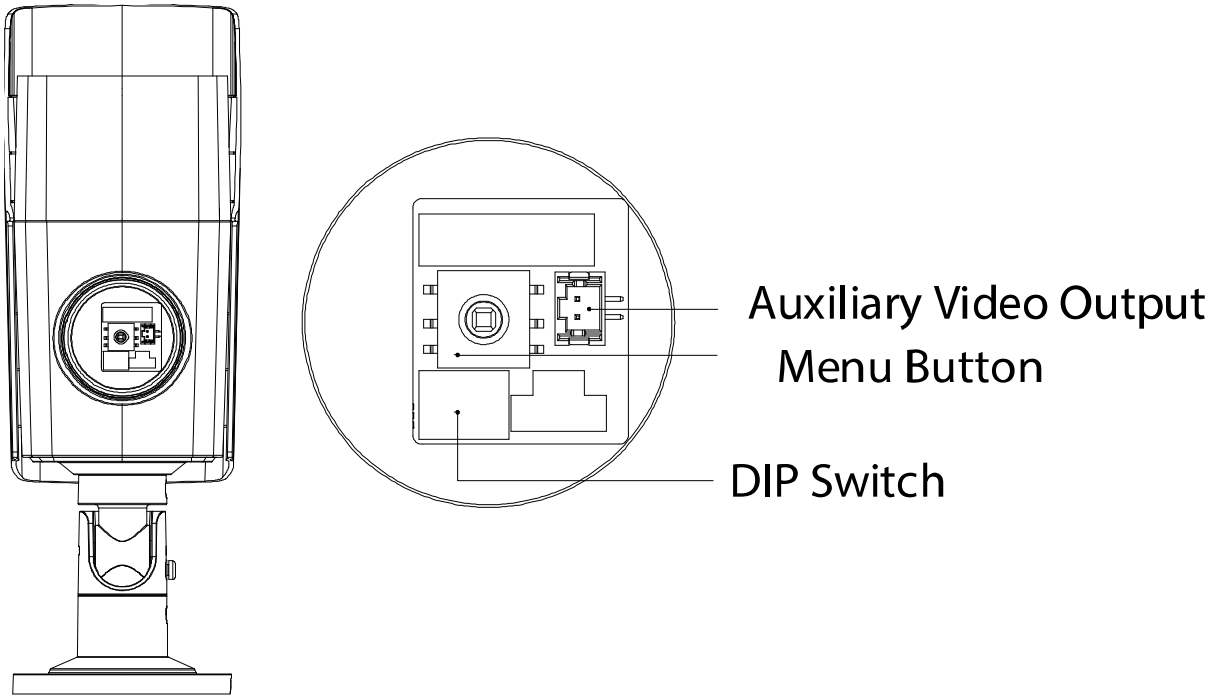


Figure 21, Internal Interface and Button

8. Power on the camera to check if the image on the monitor is at an optimum angle. If not, adjust the surveillance angle.

    1) Loosen the no.1 adjusting screw to adjust the pan position [0° to 360°].

    2) Tighten the no. 1 adjusting screw.

    3) Loosen the no. 2 adjusting screw to adjust the tilting position [0° to 90°].

    4) Tighten the no. 2 adjusting screw.

    5) Loosen the no. 3 adjusting screw to adjust the rotation position [0° to 360°].

    6) Tighten the no. 3 adjusting screw.

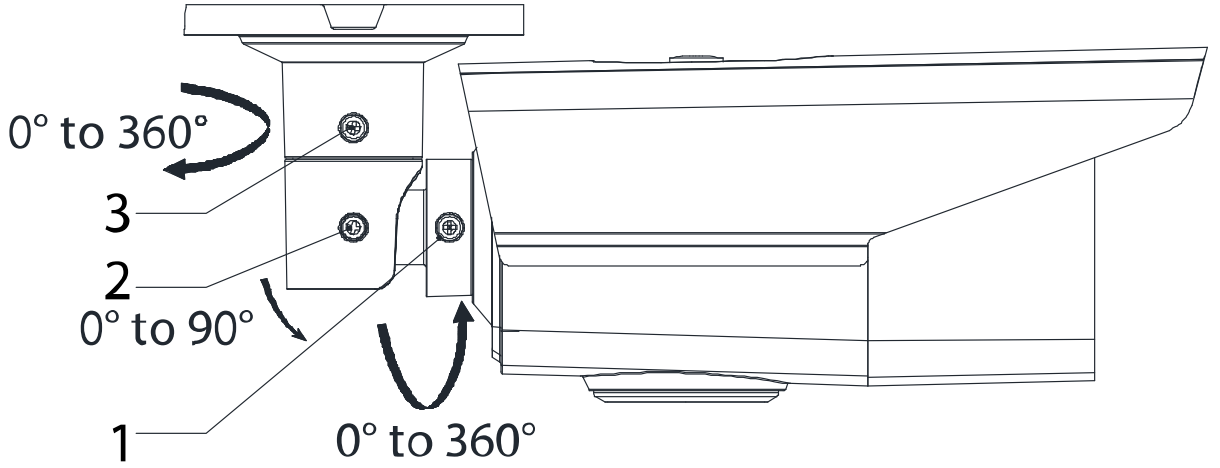


Figure 22, 3-Axis Adjustment

2.3.2. Mounting with Junction Box

NOTE: You need to purchase a junction box separately if mounting with a junction box.

1. Attach the drill template to the wall/ceiling.
2. Drill screw holes and cable hole in the wall/ceiling according to the drill template holes.
3. Attach the junction box to the wall/ceiling by aligning the junction box screw holes.
4. Secure the junction box with the PA4 × 25 screws on the wall/ceiling.

Type III Camera

Type IV Camera

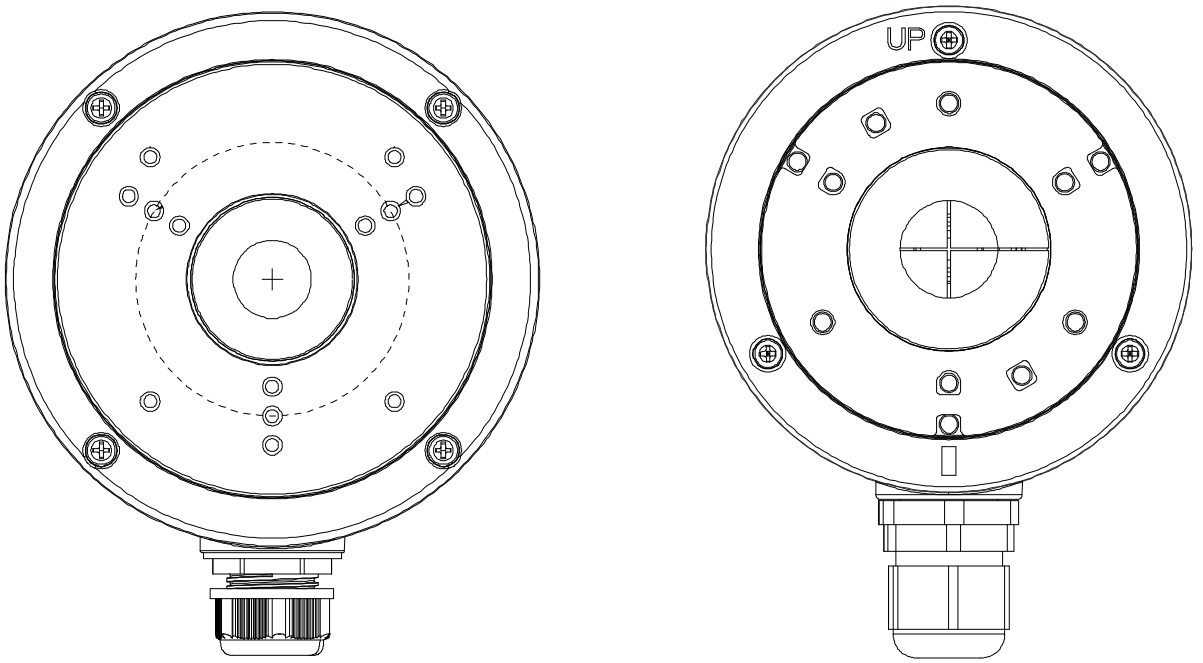


Figure 23, Install Junction Box

5. Route the cables through the cable hole.
6. Secure the camera with M4 × 10 screws on the junction box.

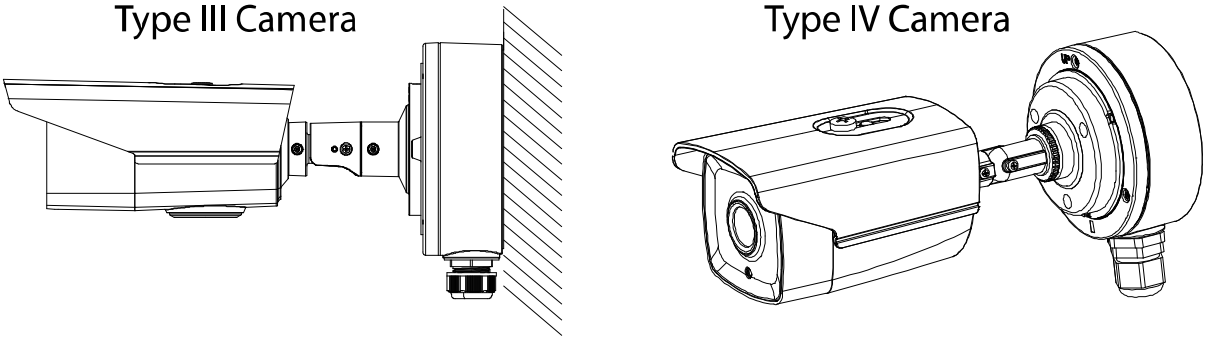


Figure 24, Wall/Ceiling Mounting with Junction Box

7. Repeat steps 5 to 6 of 2.2.1 Ceiling Mounting to install the camera to complete the installation.

2.4. Type V Camera Installation

2.4.1. Ceiling Mounting

1. Disassemble the turret camera by rotating the camera to align the notch to one of the marks, as shown below.

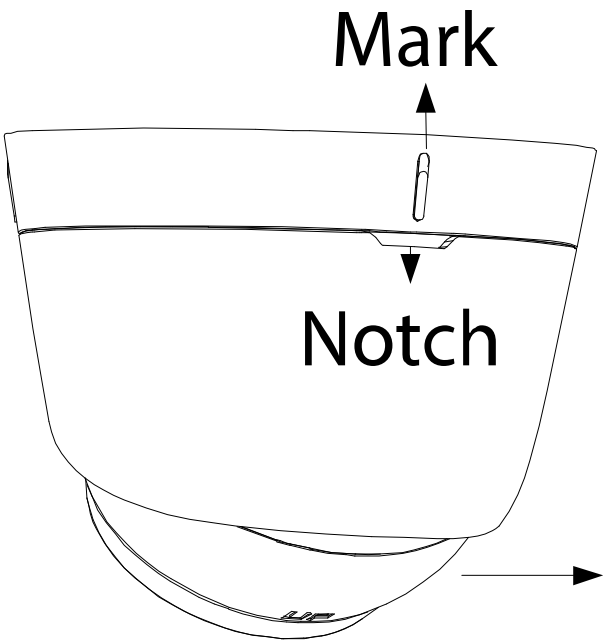


Figure 25, Disassemble the Camera

2. Remove the mounting base from the camera body with a flat object, e.g., a coin.

3. Attach the drill template (supplied) where you want to install the camera, and then drill the screw holes and the cable hole (optional) on the ceiling according to the drill template.

NOTE: Cable hole is required if using ceiling outlet to route the cable.

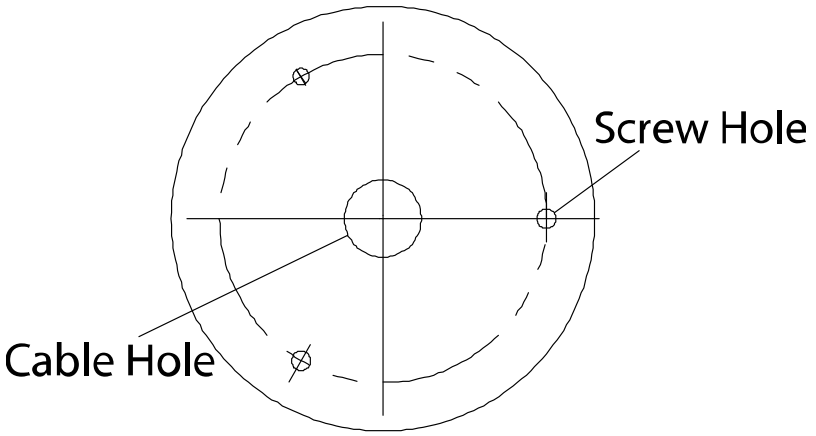


Figure 26, Drill Template

4. Attach the mounting base to the ceiling and secure with supplied screws.

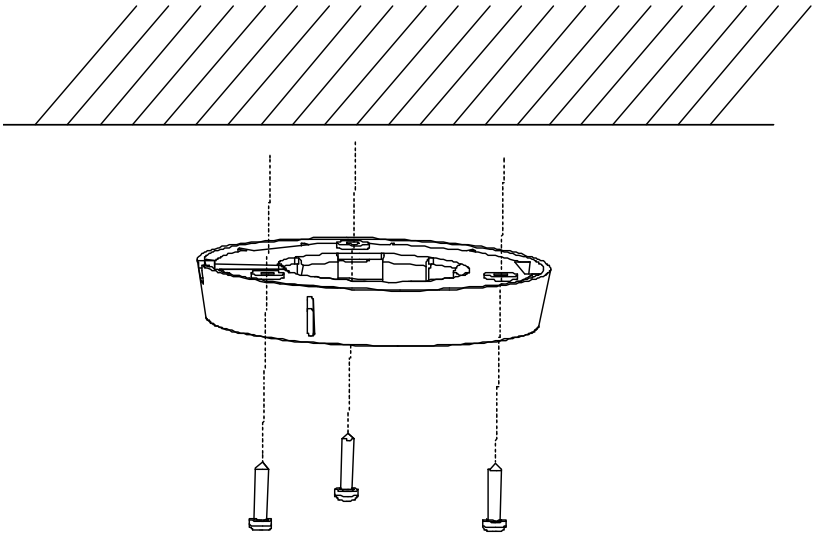


Figure 27, Attach Mounting Base to Ceiling

NOTE: The supplied screw package contains both self-tapping screws and expansion bolts.

If the wall is concrete, expansion bolts are required to affix the camera. If the wall is wood, self-tapping screws are required.

5. Route the cables through the cable hole or the side opening.

6. Align the camera with the mounting base, and tighten the screws to secure the camera to the mounting base.

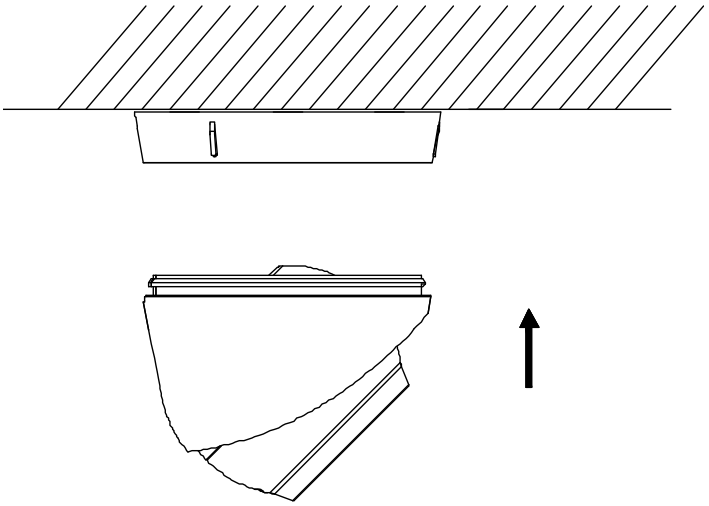


Figure 28, Secure Camera with Mounting Base

7. Power on the camera to check that the image on the monitor is at an optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

   1). Hold the camera body and rotate the enclosure to adjust the pan position [0° to 360°].

   2). Move the camera body up and down to adjust the tilt position [0° to 75°].

   3). Rotate the camera body to adjust the rotation position [0° to 360°].

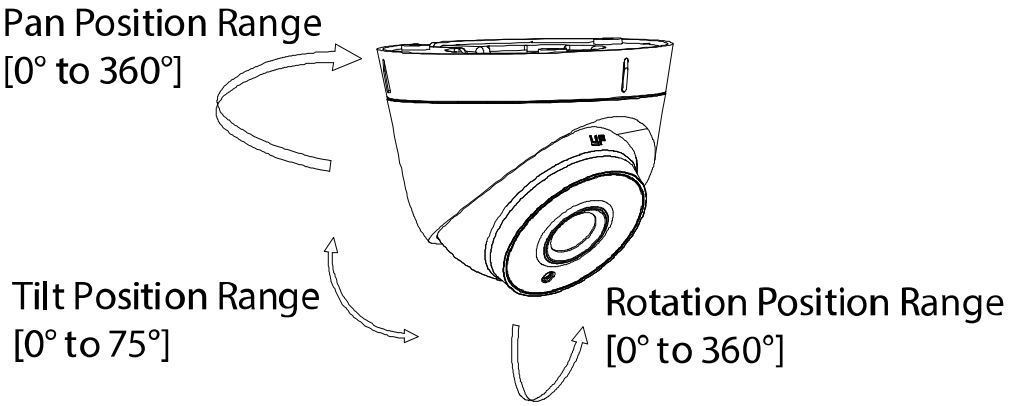


Figure 29, 3-Axis Adjustment

2.4.2. Ceiling Mounting with Junction Box

NOTE: You need to purchase a junction box separately if you use ceiling mounting with a junction box.

1. Disassemble the junction box from the junction box cover.
2. Attach the drill template (supplied) to where you want to fix the junction box, and drill the holes in the ceiling according to the template.

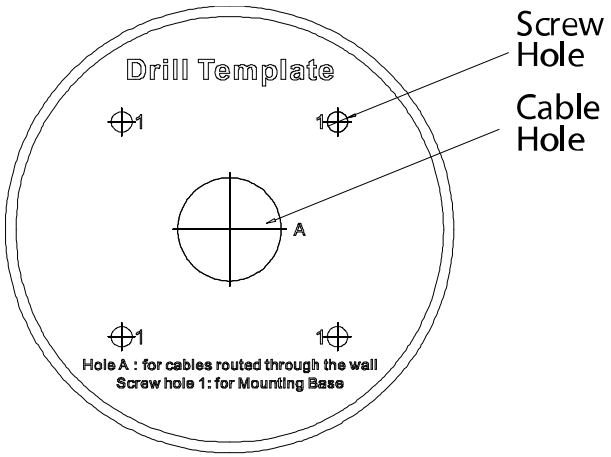


Figure 30, Drill Template

3. Affix the junction box body with the supplied screws to the ceiling according to the template.
4. Attach the junction box cover to the junction box body.

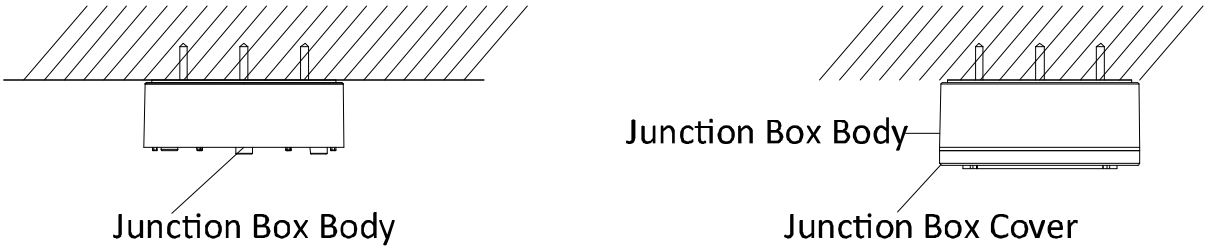


Figure 31, Affix Junction Box

5. Attach the mounting base to the junction box, and secure them with supplied screws.
6. Repeat steps 5 to 7 of *2.3.1 Ceiling Mounting* to install the

camera to the junction box.

2.4.3. Wall Mounting

NOTE: You need to purchase a wall mounting bracket separately if you use wall mounting.

1. Drill four screw holes in the wall according to the bracket holes.
2. Attach the bracket to the wall by aligning the bracket's four screw holes with expansion screws on the wall.
3. Secure the bracket with four hex nuts and washers.

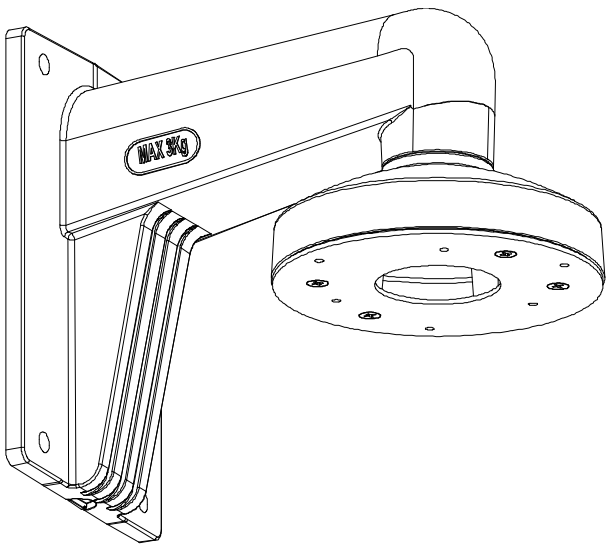


Figure 32, Install Wall Mounting Bracket

4. Refer to step 2 of the *2.3.1 Ceiling Mounting* section to remove the turret camera's mounting base.
5. Install the mounting base of the turret camera to the wall mounting bracket, and secure it with supplied screws.

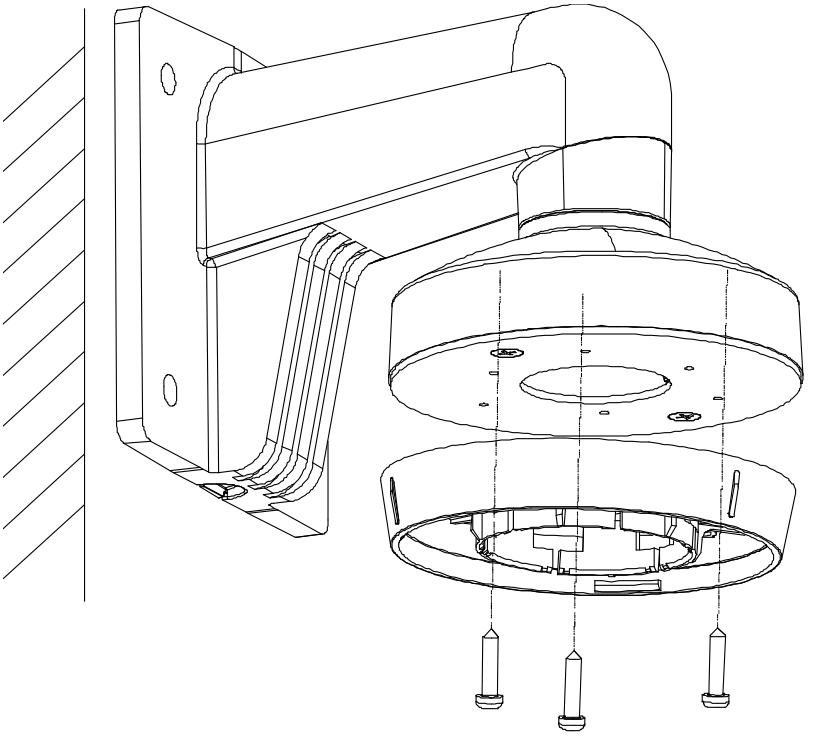


Figure 33, Attach Mounting Base to Bracket

6. Repeat steps 5 to 7 of the *2.3.1 Ceiling Mounting* section to complete the installation.

2.4.4. Mounting with Inclined Base

NOTE: You need to purchase an inclined base separately if you mount with an inclined base.

1. Attach the drill template to the ceiling.

2. Drill screw holes and the cable hole on the ceiling according to the supplied drill template.

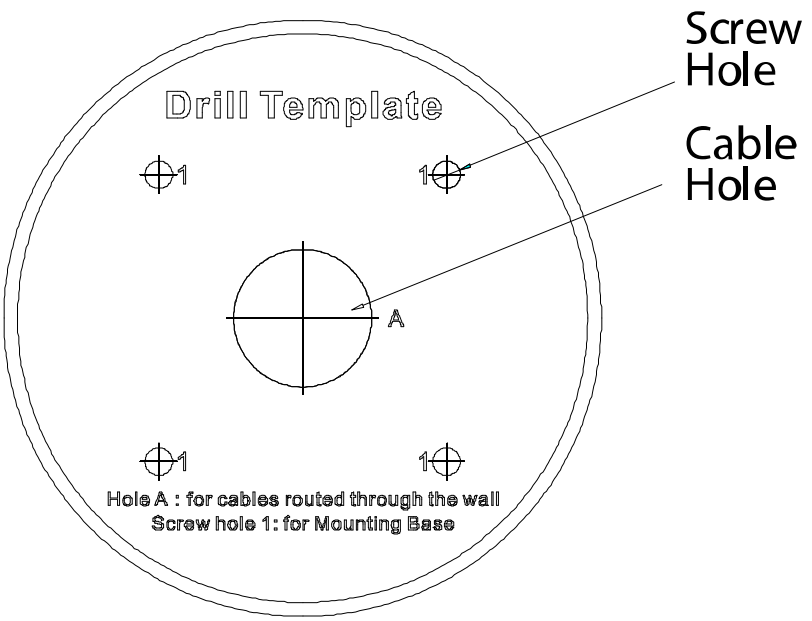


Figure 34, Drill Template

3. Disassemble the inclined base with the screwdriver.

4. Install the turret camera's mounting base to the inclined base cover with three PM4 screws.

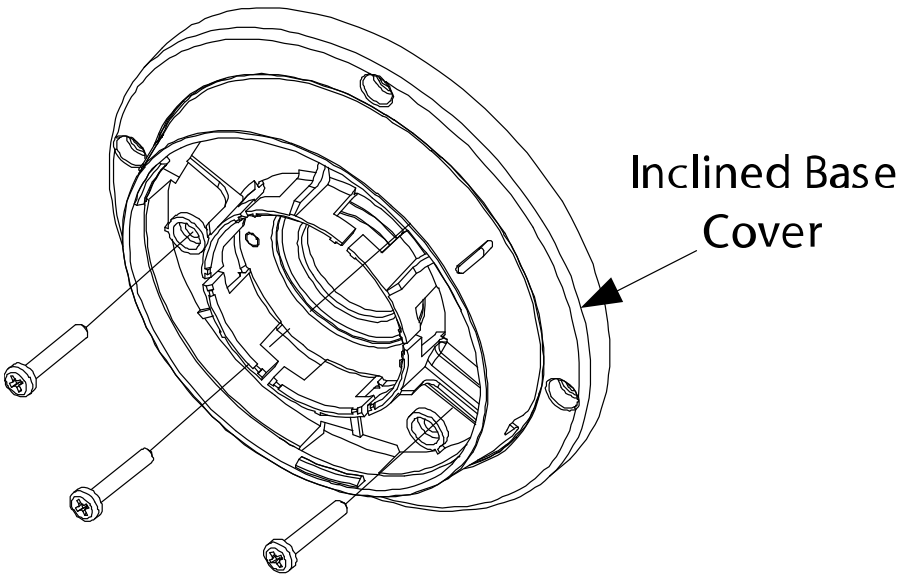


Figure 35, Install Turret Camera Mounting Base

5. Install the inclined base body to the ceiling with four PA4×25 screws, as shown below.

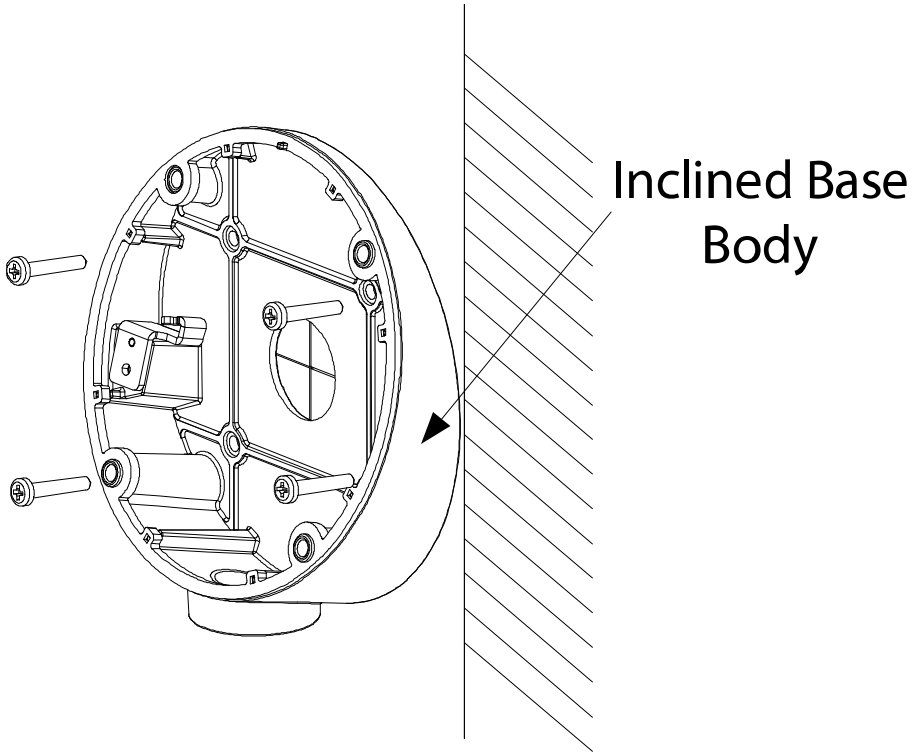


Figure 36, Affix Inclined Base Body

6. Attach the inclined base cover to its body with supplied screws.
7. Repeat steps 5 to 7 of the *2.3.1 Ceiling Mounting* section to complete the installation.

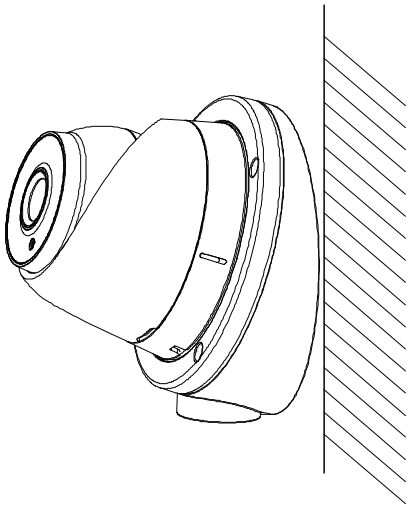


Figure 37, Affix Camera to Inclined Base

3. Menu Operation

Two methods are available to call the menu. This section takes method b) as an example to start the menu operation.

A. Call the menu and adjust the camera parameters with a coaxial camera controller (purchase separately).

B. Call the menu with a supported DVR/TVI DVR by clicking the button on the PTZ interface or by calling preset no. 95.

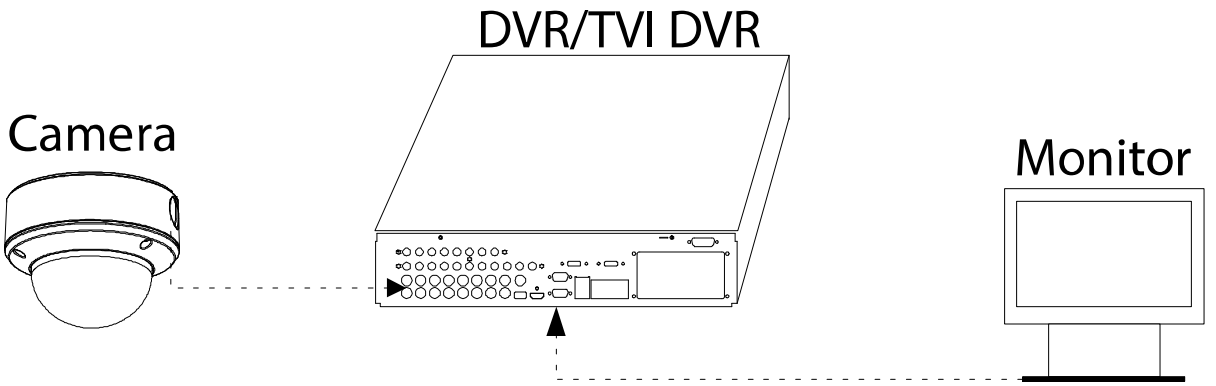


Figure 38, Connection

1. After the connection is done, power on the analog camera, DVR/TVI DVR, and the monitor to view the image on the monitor.

2. Click **PTZ Control** to enter the PTZ Control Interface.

3. Call the camera menu by clicking button or calling preset no. 95.

4. Click **Up/Down** direction button to select the item, click **Iris+** to confirm the selection, and click **Left/Right** direction button to adjust the value of the selected item.

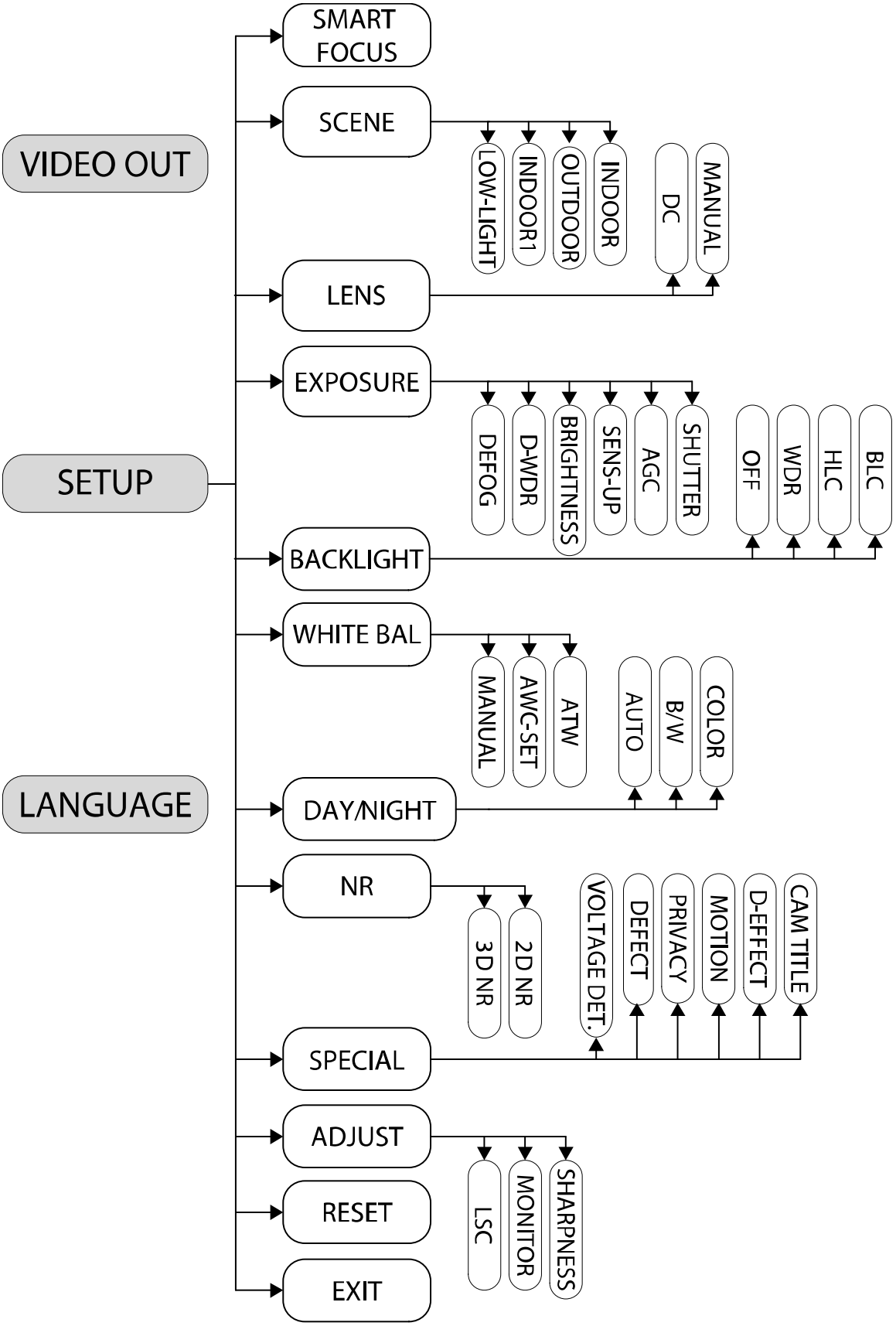


Figure 39, Menu Tree

NOTE: Camera type IV and type V do not support **SMART FOCUS**.

3.1. VIDEO OUT

- **PAL**: (Phase Alternating Lines) is a color encoding system for analog television used in broadcast television systems in most countries.
- **NTSC**: (National Television System Committee) is the analog television system that is used in most of North America, parts of South America, Myanmar, South Korea, etc.

3.2. LANGUAGE

Supports multiple languages (e.g., English, Japanese, Chinese, etc.)

3.3. SETUP

3.3.1. SMART FOCUS

You can adjust the focus by clicking **ZOOM+** or **ZOOM-**.

NOTE: You must adjust the focus when the image is unfocused.

Type IV and Type V cameras do not support **SMART FOCUS**.

3.3.2. SCENE

You can select **INDOOR**, **OUTDOOR**, **INDOOR 1**, and **LOW LIGHT** as the working environment.

- **INDOOR**: Applicable to indoor environments where color temperature changes are relatively slight.
- **OUTDOOR**: Applicable to outdoor environments where color temperature changes are relatively obvious.
- **INDOOR1**: Applicable to indoor environments with strong light. Under this circumstance, WDR is ON by default.

- **LOW LIGHT**: Applicable to environments with low light. Under this circumstance, slow shutter is ON by default to receive more light.

3.3.3. LENS

The camera is equipped with a manual lens or a DC (auto iris) lens. Indoor mode and outdoor mode are available for the DC lens. Click IRIS SCAN to initialize the lens.

3.3.4. EXPOSURE

Exposure describes the brightness-related parameters. You can adjust the image brightness through the **SHUTTER**, **AGC**, **SENS-UP**, **BRIGHTNESS**, and **D-WDR** in different light conditions.

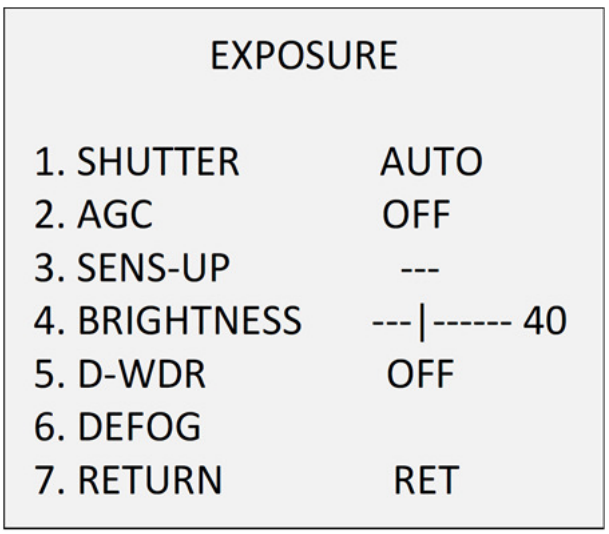


Figure 40, Exposure

- **SHUTTER**: Shutter denotes the speed of the shutter.
- **PAL**: AUTO, 1/25s, 1/50s, FLK, 1/200s, 1/400s, 1/1k s, 1/2k s, 1/5k s, 1/10k s, and 1/50k s are selectable.
- **NTSC**: AUTO, 1/30s, 1/60s, FLK, 1/240s, 1/480s, 1/1k s, 1/2k s, 1/5k s, 1/10k s, and 1/50k s are selectable.

NOTE: You are not allowed to set the slow shutter when AGC is OFF or while using the PoC function.

If you select shutter as **AUTO** or **1/25**, **SENS-UP** is adjustable (**OFF**/**AUTO**), and **SENS-UP** is disabled if any other shutter speed is selected.

- **AGC**: A form of amplification where the camera will automatically boost the image output signal to optimize the image clarity in poor light conditions. You can set the AGC value from 0 to 15. AGC is disabled if the value is set to 0.

NOTE: The noise will be amplified if AGC is on.

- **SENS-UP**: Increases the exposure of a signal frame, which makes the camera more sensitive to light so it can produce images even in low lux conditions. You can set the SENS-UP as **OFF** or **AUTO**, according to the light condition.

  - **OFF**: SENS-UP function is disabled.

  - **AUTO**: SENS-UP function will automically adjust itself to x2, x4, x6, x8, x10, x15, x20, x25, or x30 according to the light condition.

- **BRIGHTNESS**: Brightness of the image. You can set the brightness value from 1 to 100 to darken or brighten the image. The higher the value, the brighter the image.

- **D-WDR (Digital Wide Dynamic Range):** Helps the camera provide clear images even under backlight circumstances. When there are both very bright and very dark areas simultaneously in the field of view, D-WDR balances the brightness level of the whole image and provides clear images with details.

  Set the D-WDR to ON to improve the image quality in backlight environments.

  Set the D-WDR to OFF to disable the function.

- **DEFOG**: Used in special environments such as foggy or rainy

weather or in high illumination, in which the dynamic range is lower than that in an ordinary environment, and the image always appears hazy. Enabling **Defog** can enhance subtle details so that the image appears clearer.

Set **Defog** to ON to enable the function. Position, size, and the defog gradation are configurable.

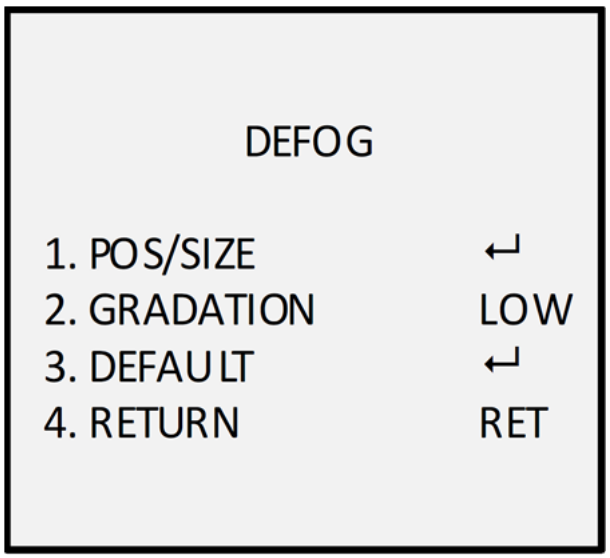


Figure 41, Defog

3.3.5. BACKLIGHT

Backlight is applicable for backlighting or a high luminance environment. You can set **Backlight** to **BLC**, **HSBLC**, or **WDR**.

- **BLC (Backlight Light Compensation)**: If there's a strong backlight, the object in front of the backlight will appear silhouetted or dark. Based on the background, BLC enhances the brightness of the whole image, which makes it possible to see the area in strong backlighting clearly, but the backlight area will be overexposed.
  - **GAIN**: The BLC gain can be set as **High**, **Middle**, or **Low**. The higher the gain, the clearer the image.
  - **AREA**: Click the **Up/Down/Left/Right** button to define the BLC position and size. Select **RET** to go back to the **BLC** menu or re-

define the **BLC** area.

- **DEFAULT**: Restore the **BLC** settings to the default.

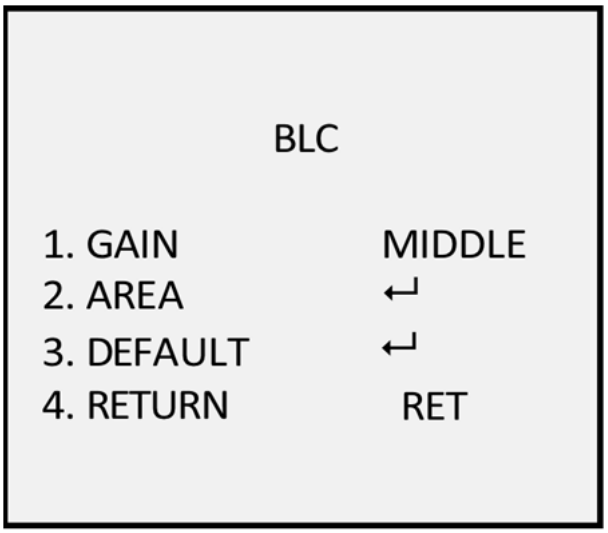


Figure 42, BLC

- **HLC (High Light Compensation)**: Masks strong light sources that usually flare across a scene. HLC makes it possible to see the image details that would normally be hidden.

  - **GAIN**: The HLC gain can be set to **High**, **Middle**, or **Low**. The higher the gain, the clearer the image.

  - **AREA**: Click the **Up/Down/Left/Right** button to define the HLC position and size. Select **RET** to return to the HLC menu or re-define the BLC area.

  - **DEFAULT**: Restore the HLC settings to the default.

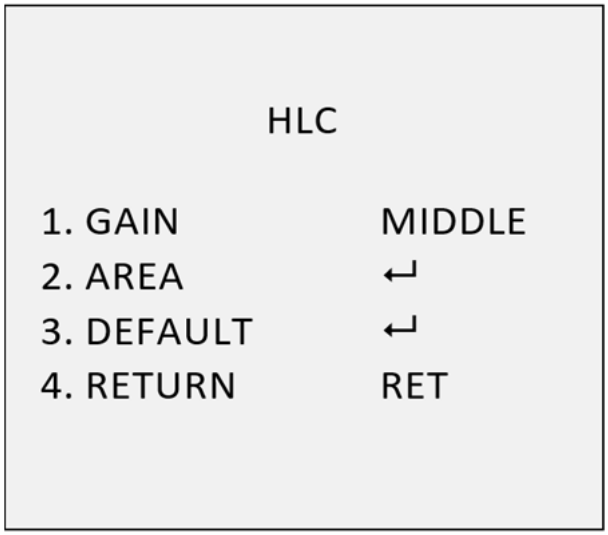


Figure 43, HLC

- **WDR** (Wide Dynamic Range): Balances the brightness level of the whole image, and provide the clear image with details.
  - **GAIN**: Set the gain of WDR as high, middle, or low. The higher the gain, the clearer the image.
  - **WDR BRIGHT**: You can set the value from 0 to 60. The higher the value, the brighter the image is.
  - **WDR OFFSET**: You can set the value from 0 to 60.The higher the value, the vaguer the image is.

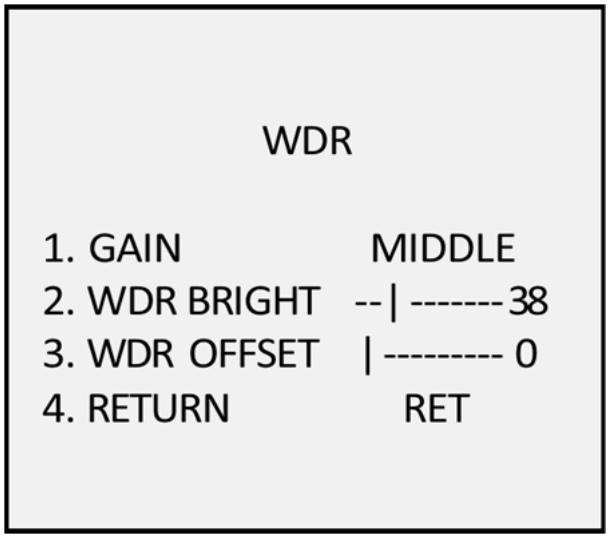


Figure 44, WDR

3.3.6. WHITE BALANCE

White balance is the camera's white rendition function to adjust the color temperature according to the environment. It can remove unrealistic color casts in the image. **MANUAL**, **ATW (Auto-Tracking White Balance)**, and **AWC→SET** are selectable.

- **Manual**: Adjusts the white balance by customizing the BLUE and RED value, which range from 1 to 100.
- **ATW**: White balance is continuously adjusted in real time according to the color temperature of the scene illumination.
- **AWC→SET**: Similar to ATW, the white balance is continuously adjusted in real time according the scene. However, if the scene changes, you must go to **AWC→SET** to get another proper white balance for the new scene.

3.3.7. DAY/NIGHT

Color, **B/W**, and **AUTO** are selectable for the **DAY/NIGHT** switch.

- **COLOR**: Image is in color in day mode all the time.
- **B/W**: Image is black and white all the time, and the IR LED turns on in low-light conditions.
- **AUTO**: The image switches between color and B/W automatically according to the light condition. You can select to turn on or off the IR LED according to the illumination.

3.3.8. SPECIAL

In the **SPECIAL** sub-menu, you can set the camera title, the digital effect of the image, the motion detection, privacy mask, and camera's dead pixel correction.

- **CAMERA TITLE**: Edit the camera title in this section.

- **D-EFFECT**: **OFF**, **MIRROR**, **V-FLIP**, and **ROTATE** are selectable for the mirror.
- **OFF**: The mirror function is disabled.
- **MIRROR**: The image flips 180 degrees horizontally.
- **V-FLIP**: The image flips 180 degrees vertically.
- **ROTATE**: The image flips 180 degrees both horizontally and vertically.

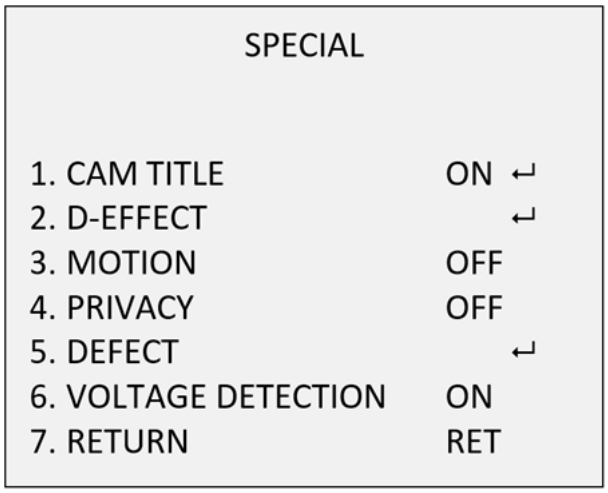


Figure 45, Special

- **MOTION**: In the user-defined motion detection surveillance area, a moving object can be detected, and an alarm will be triggered.

  1. Select a motion area.
  2. Set the **DISPLAY** status to **ON** or **OFF**.
  3. Click the **Up/Down/Left/Right** button to define the position and size of the area.
  4. Set the **SENSITIVITY** from 0 to 100.
  5. Set the **MOTION VIEW** to **ON** or **OFF**.

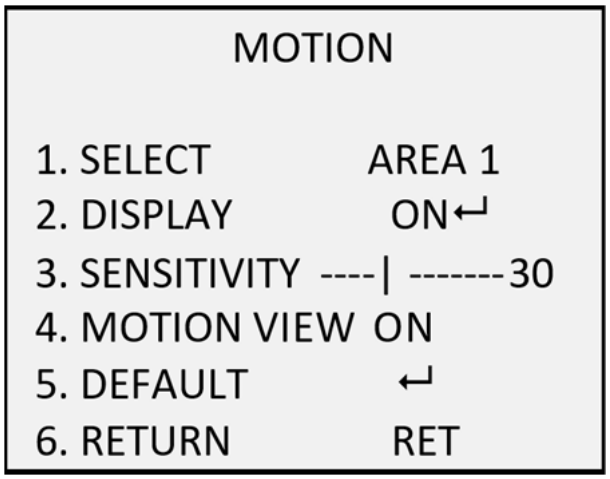


Figure 46, Motion

- **PRIVACY**: The privacy mask allows you to cover certain areas that you don't want to be viewed or recorded. Up to eight privacy areas are configurable.

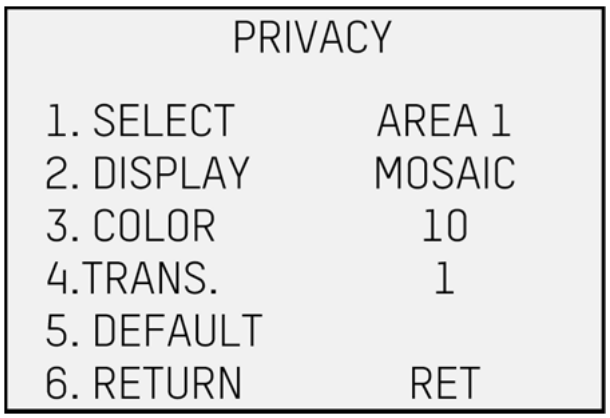


Figure 47, Privacy

1. Select a PRIVACY area.
2. Set the DISPLAY status as **INV**, **MOSAIC**, **COLOR**, or **OFF**.
3. Click **Up/Down/Left/Down** button to define the position and size of the area.

- **VOLTAGE DETECTION**: Detects if the voltage is over or under normal.
  - When the input voltage is 30 percent lower than the calibrated voltage, **UNDERVOLTAGE** flashes on the screen.

- When the input voltage is 30 percent higher than the calibrated voltage, **OVERVOLTAGE** flashes on the screen.

NOTE: Camera type IV and type V do not support **VOLTAGE DETECTION**.

- **DEFECT**: Defective pixels in digital camera CCD or CMOS image sensors fail to sense light levels correctly. This series of camera supports defective pixel correction. Move the cursor to **DEFECT** and click **Iris+** to enter the defective pixel correction interface.

  LIVE DPC and **STATIC DPC** are adjustable in this section.

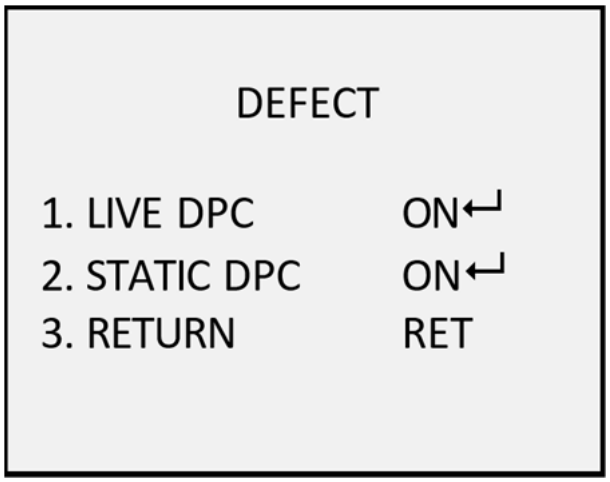


Figure 48, Defect

- **LIVE DPC:** Detects and corrects dynamic or real-time defective pixels occurring during use. **ON**, **OFF**, and **AUTO** are selectable. The correction level from 0 to 255 is configurable if **LIVE DPC** is set **ON**, set to **OFF** to disable live defective pixel correction, and set to **AUTO** to detect and repair defective pixels automatically.

- **STATIC DPC:** Detects and corrects static or fixed defective pixels occurring during use. **ON** and **OFF** are selectable.

- Set the **STATIC DPC** to **ON** and click **Iris+** to enter the **STATIC DPC** edit interface. Move the cursor to **START** and click **Iris+** to start correcting the defective pixels. Click **Iris+** when you see the message **CLOSE THE IRIS THEN PRESS SETKEY** on the screen.

3.3.9. ADJUST

In the **Adjust** sub-menu, you can configure settings including sharpness, image quality on monitor, and LSC (lens shading compensation). Move the cursor to **ADJUST** and click **Iris+** to enter the adjust configuration interface.

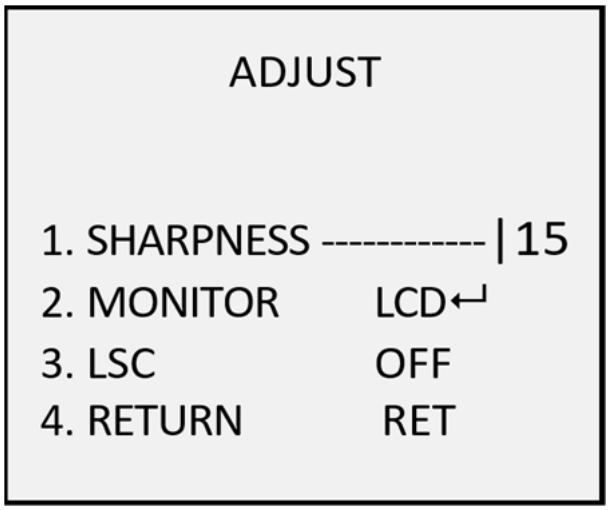


Figure 49, Adjust

- **SHARPNESS**: Determines the amount of detail an imaging system can reproduce. You can adjust the sharpness from 0 to 15. The higher the value, the clearer and sharper the image.
- **MONITOR: Monitor CRT** and **Monitor LCD** are selectable.
  - **Monitor CRT**: The cathode ray tube is a fluorescent screen used to view images. You can define the black level from -30 to 30, the blue gain from 0 to 100, and the red gain from 0 to 100.
  - **Monitor LCD**: If liquid crystal display (LCD) is selected. You can define the gamma, blue gain from 0 to 100, and red gain from 0 to 100.

NOTE: Gamma is the name of a nonlinear operation used to code and decode luminance or tristimulus values in video or still image systems.

- **LSC (Lens Shading Correction):** Corrects the phenomenon that the image is darkened or blurred on the periphery.

  Set to **ON**, move **the** cursor to **SCAN**, and click **Iris+** to correct the lens shading. Set to **OFF** to disable **LSC**.

3.3.10. RESET

Reset all the settings to the factory default.

3.3.11. EXIT

Move the cursor to **EXIT** and click **Iris+** to exit the menu.

4. Using the Video Interference Filter

Some dual-voltage Hikvision cameras are susceptible to video signal interference due to AC current spikes. These spikes are not drastic enough to affect functionality, but can create interference in the output video signal in the form of moving horizontal lines. Some DC powered cameras are also affected by current entering the camera. The current can pick up a high frequency oscillating signal from the surroundings and carry it into the camera, causing interference.

To remedy this, Hikvision began including the following items with select cameras since June 2019:

- **Select Dual-Voltage Cameras:** 24 VAC to 12 VDC power converter/filter
- **Select DC-Only Cameras:** High frequency power filter (does not convert power, which is unneeded by DC-only cameras)

Cameras that may require these filters are listed at the end of this section.

4.1. Power Filter Use

If your video signal displays power line interference (horizontal lines moving across the screen), install the included power filter to eliminate or minimize the interference.

Place the power filter between the camera and the leads/ connectors coming out of the power supply.

Figure 50, Dual-Voltage Camera Converter/Filter

Figure 51, DC Camera Filter

- **Dual-Voltage Camera Converter/Filter:** Flying leads are marked "IN" and "OUT" with yellow flags. Connect filter's "IN" (Power IN) leads to the 24 VAC power supply and "OUT" leads to the camera. Connect the AC power supply leads to the AC converter/filter's "IN" leads with wirenuts or compression "beanie" connectors, and the "OUT" leads to the camera's Phoenix (screw) terminals.

Figure 52, Dual Voltage Converter/Filter Installed

- **DC Camera Filter:** Has a female barrel connector on the input side and a male barrel connector on the output side; no additional pigtails or other connectors are necessary. The DC power supply has a male pigtail to connect to the camera. Place the filter between the power supply and the camera.

Figure 53, DC Filter Installed

4.2. Affected Cameras

The following cameras require a (converter)/filter (the model number ending is not specified for all cameras).

- DS-2CC12D9T-A
- DS-2CC12D9T-AIT3ZE
- DS-2CC12D9T-E
- DS-2CC52D9T-AVPIT3ZE
- DS-2CC52D9T-AITZE
- DS-2CC12D9T
- DS-2CC52D9T-IT3E
- DS-2CC12D9T-IT5E
- DS-2CC12D9T-IT3E

NOTE: Cameras manufactured prior to June 2019 did not ship with a (converter)/filter. Hikvision will ship filter(s) to you free of charge, if needed. Send e-mail to Hikvision Customer Service at cust.usa@hikvision.com, provide the camera model number, serial number, place of purchase, and shipping address.

First Choice for Security Professionals