HIKVISION

720P SDI Camera

User Manual

UD.6L0201D1327A01

www.hikvision.com

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

This manual applies to the model as follows:

Type	Model
Dome Camera	DS-2CC52C1S-VPIR
Type I Turret Camera	DS-2CC52C2S-IRM
Type II Turret Camera	DS-2CC52C2S-IT3P
Type I Bullet Camera	DS-2CC12C2S-IR
Type II Bullet Camera	DS-2CC12C2S-IT5
Type III Bullet Camera	DS-2CC12C2S-IT3

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

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.

0100001031213

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 users will be required to correct the interference at their own expense.

FCC Conditions

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

1. This device may not cause harmful interference.

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

EU Conformity Statement

CE 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.

municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent

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 user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

 **Warnings**

- 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 AC 24V or DC 12V 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 over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- When the product is mounted on wall or ceiling, the device shall be firmly fixed.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.
- 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.)

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 senor modules with fingers. If cleaning is necessary, use clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, please 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 when any laser equipment is in using, make sure that the surface of sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot, cold (the operating temperature shall be(-10℃~+60℃), dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for operating environment.
- Keep the camera away from liquid while in use.
- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.
- 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.

Table of Contents

1 Introduction

1.1 Product Features

This series of camera adopts high-sensitive sensor and advanced circuit board design technology. It features high resolution, low distortion, and low noise features, etc., which make it extremely suitable for surveillance system and image process system.

The main features of 720P SDI cameras are as follows:

- 1.3 Mega pixel high-performance CMOS sensor;
- Clear and detailed image of up to 720P resolution;
- Low illumination: 0.01Lux @ (F1.2,AGC ON), 0 Lux with IR;
- IR cut filter with auto switch;
- Auto white balance, auto gain control, backlight compensation, and auto electronic shutter control for different surveillance environment;
- Advanced Engineering Design, High Reliability;
- Ingress Protection: IP66.

1.2 Overview

1.2.1 Overview of Dome Camera

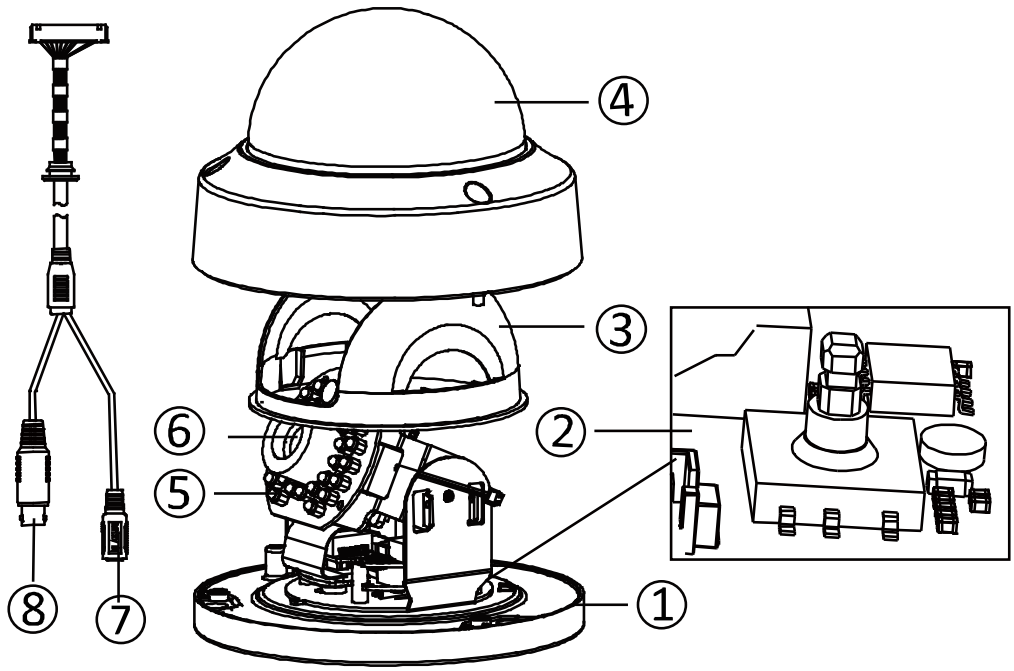

Figure 1-1 Overview of SDI Dome Camera

Table 1-1 Description of Dome Camera

No.	Description	No.	Description
1	Mounting Base	5	IR LED
2	Menu Button	6	Lens
3	Black Liner	7	Power Cable
4	Bubble	8	Video Output

1.2.2 Overview of Turret Camera

Overview of Type I Turret Camera

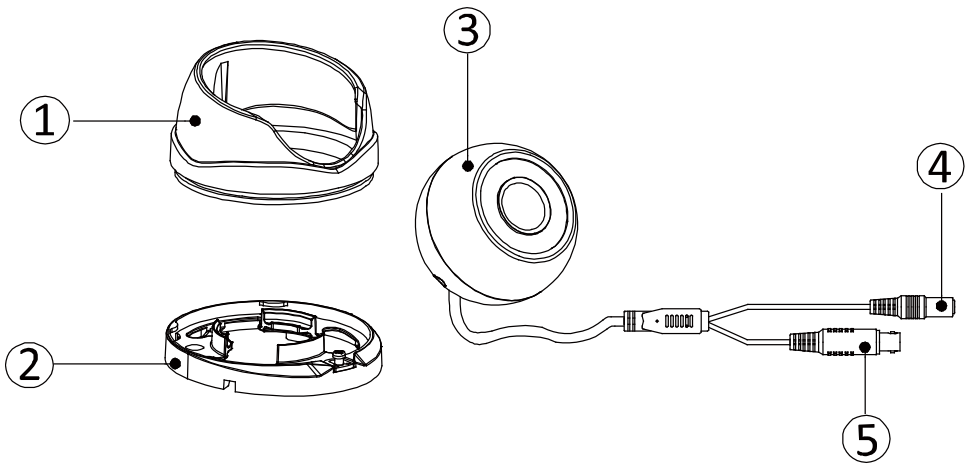

Figure 1-2 Overview of Type I Turret Camera

Table 1-2 Description of Type I Turret Camera

No.	Description	No.	Description
1	Enclosure	4	Power Cable
2	Mounting Base	5	Video Output Cable
3	Dome Drive		

Overview of Type II Turret Camera

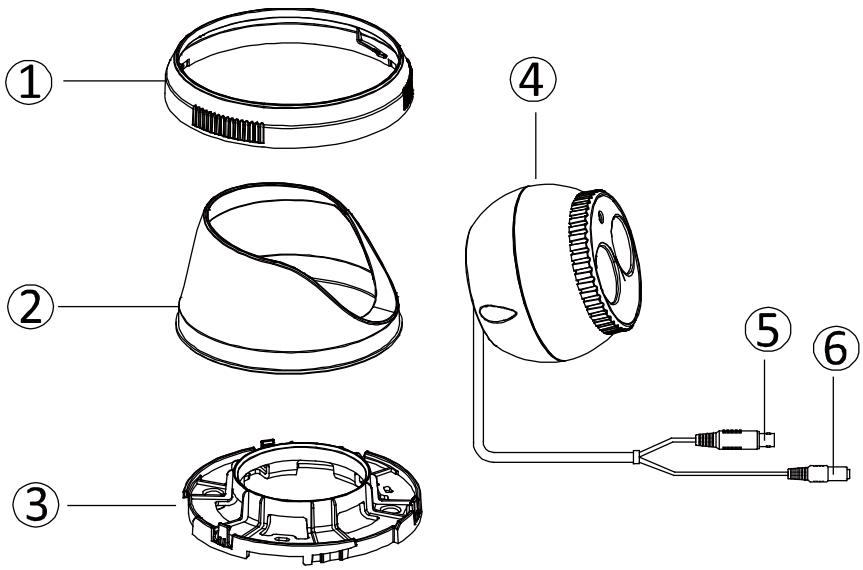

Figure 1-3 Overview of Type II Turret Camera

Table 1-3 Description of Type II Turret Camera

No.	Description	No.	Description
1	Trim Ring	4	Dome Drive
2	Enclosure	5	Video Output Cable
3	Mounting Base	6	Power Cable

1.2.3 Overview of Bullet Camera

Overview of Type I Bullet Camera

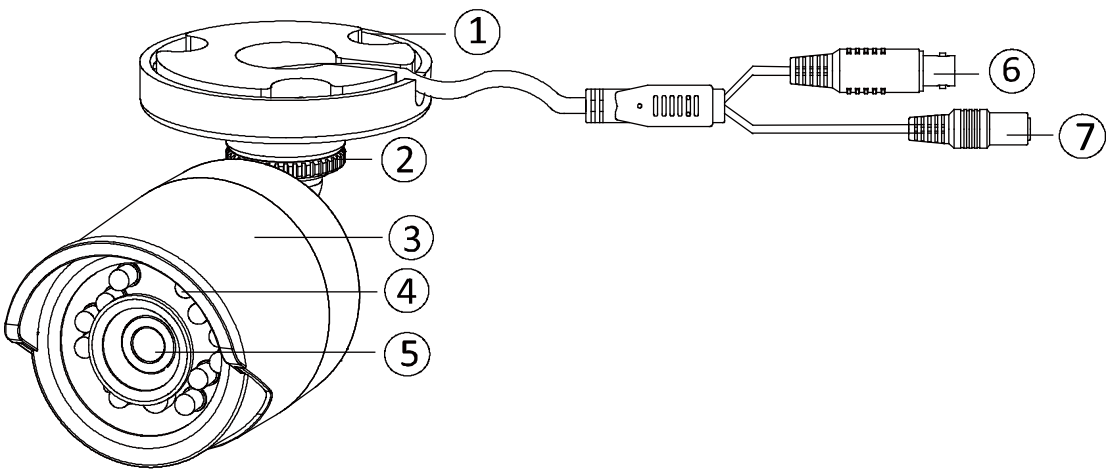

Figure 1-4 Overview of Type I Bullet Camera

Table 1-4 Description

No.	Description	No.	Description
1	Mounting Base	5	Lens
2	Adjustable Nut	6	Video Output Cable
3	Sun Shield	7	Power Cable
4	IR LED		

Overview of Type II Bullet Camera

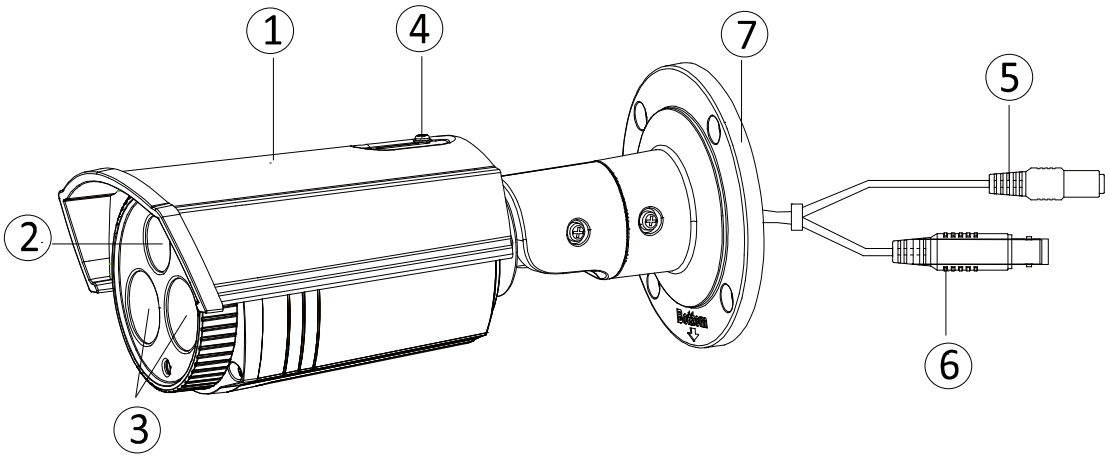

Figure 1-5 Overview of Type II Bullet Camera

Table 1-5 Description

No.	Description	No.	Description
1	Sun Shield	5	Power Cable
2	Lens	6	Video Output Cable
3	IR LED	7	Mounting Base
4	Adjustable Screw		

Overview of Type III Bullet Camera

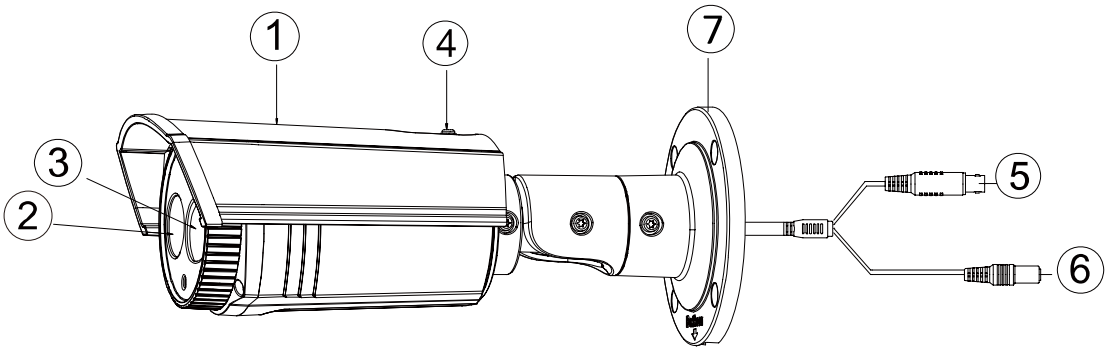

Figure 1-6 Overview of Type III Bullet Camera

Table 1-6 Description

No.	Description	No.	Description
1	Sun Shield	5	Power Cable
2	Lens	6	Video Output Cable
3	IR LED	7	Mounting Base
4	Adjustable Screw		

2 Installation

Before you start:

- Please 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 power-off during the installation.
- Check the specification of the products for the installation environment.
- Check whether the power supply is matched with your AC outlet to avoid damage.
- Please make sure the wall is strong enough to withstand three times the weight of the camera and the mounting.
- If the wall is the cement wall, you need to insert expansion screws before you install the camera. If the wall is the wooden wall, you can use self-tapping screw to secure the camera.
- If the product does not function properly, please contact your dealer or the nearest service center. Do not disassemble the camera for repair or maintenance by yourself.

For the camera that supports 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.

- Make sure that there is no reflective surface too close to the camera lens. The IR light from the camera may reflect back into the lens causing reflection.
- 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.

2.1 Installation of the Dome Camera

Steps:

1. Drill the screw holes on the ceiling according to the drill template.

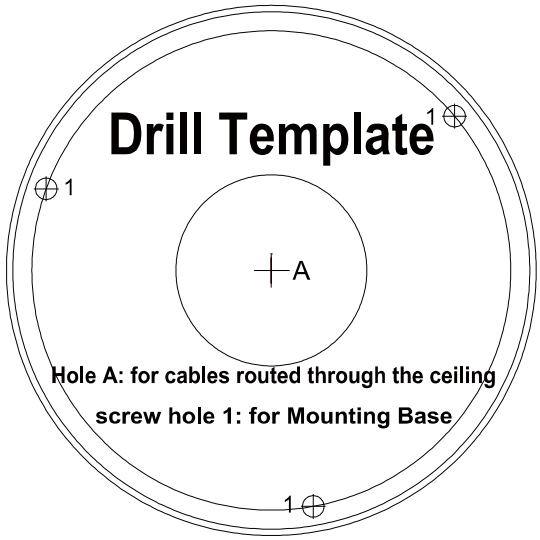

Figure 2-1 Drill Template of Dome Camera

2. Loosen the set screws with a hex key (supplied) to remove the bubble.

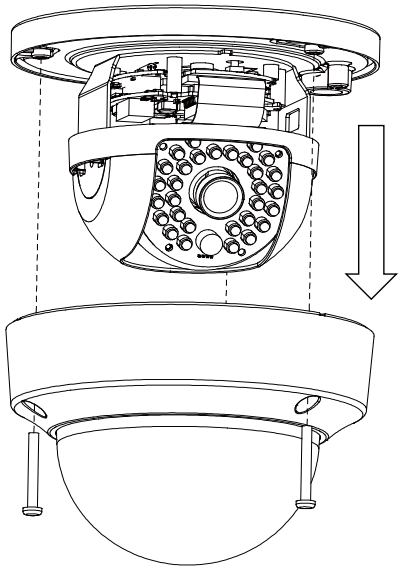

Figure 2-2 Remove the Bubble

3. Fix the mounting base on the ceiling with screws.

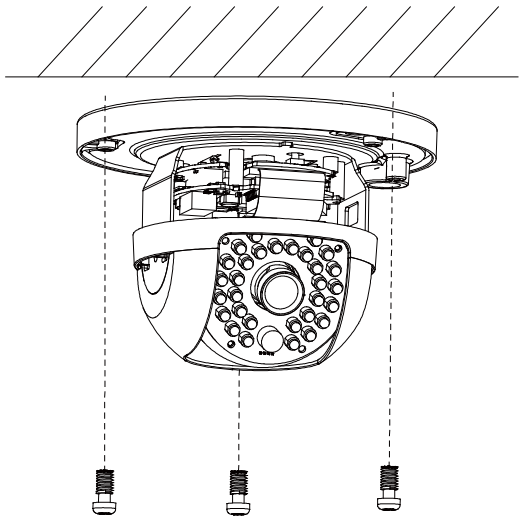

Figure 2-3 Fix the Mounting Base

4. Adjust the Lens to the required surveillance angle.
   1). Adjust the pan direction [0°~180°].
   2). Adjust the tilt direction [0°~75°].
   3). Rotate the camera [0~360°] to adjust the lens
   4). Tighten the tilt lock screw to complete the installation.

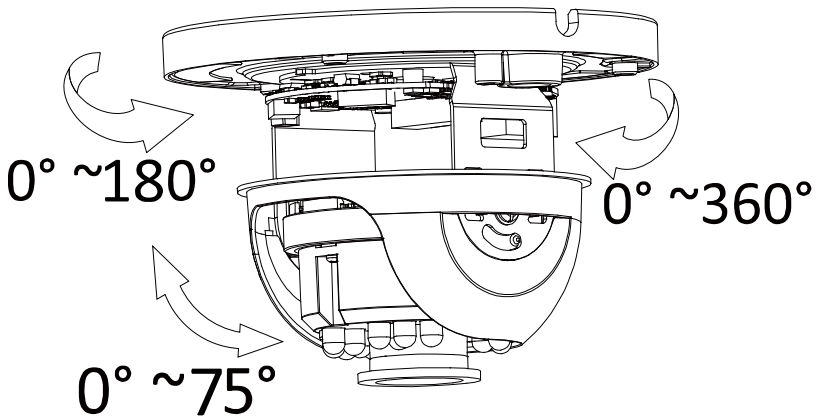

Figure 2-4 Angle Adjustment

As the lens has already been factory adjusted to the best imaging effect, you just need to adjust the panning position and tilting position to get the desired surveillance angle.

5. Reinstall the bubble and tighten the screws to complete the installation.

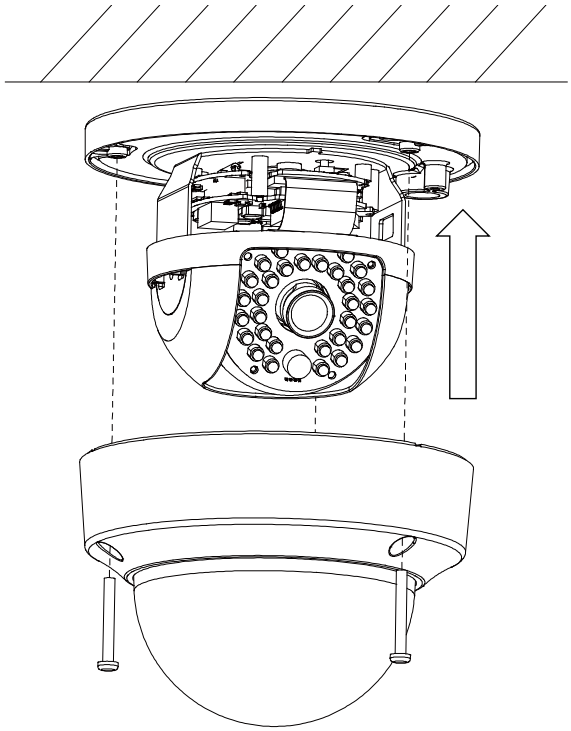

Figure 2-5 Bubble Reinstallation

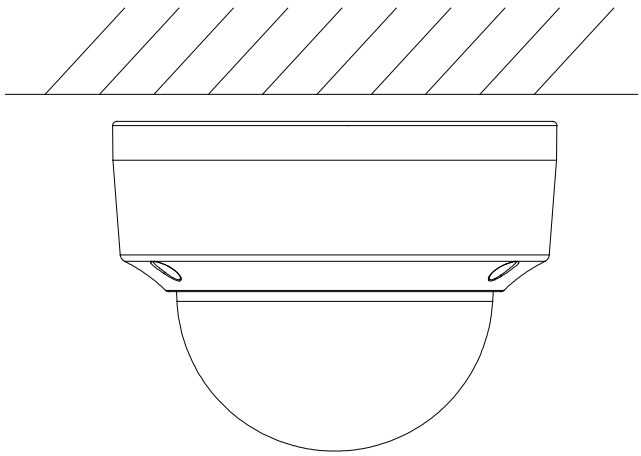

Figure 2-6 Complete the Installation

Remove the protection film softly before using the camera In case of the scrape on the bubble during the project.

2.2 Installation of Turret Camera

2.2.1 Type I Turret Camera Installation

Steps:

1. Drill the screws holes on the ceiling according to the supplied drill template.

Figure 2-7 Drill Template of Type I Turret Camera

2. Route the cables through cable hole of the mounting base.
3. Fix the mounting base to the ceiling with the supplied screws.
4. Connect the corresponding power cable and video cable.
5. Fix the camera to the mounting base.

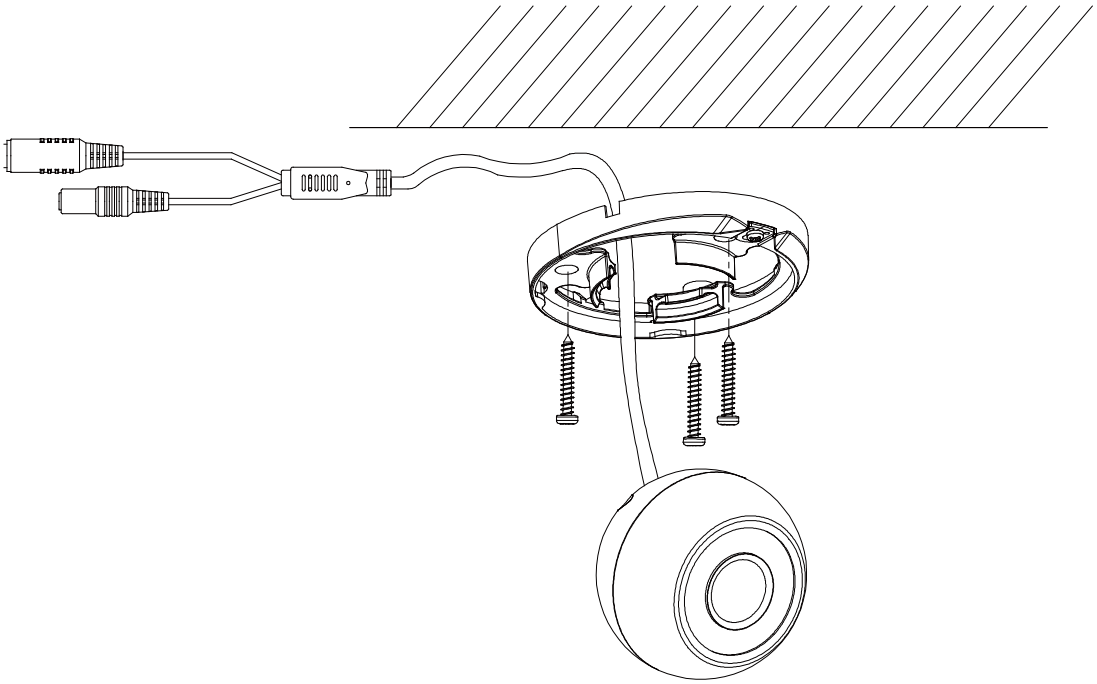

Figure 2-8 Secure the Camera

6. Fix the enclosure to camera.

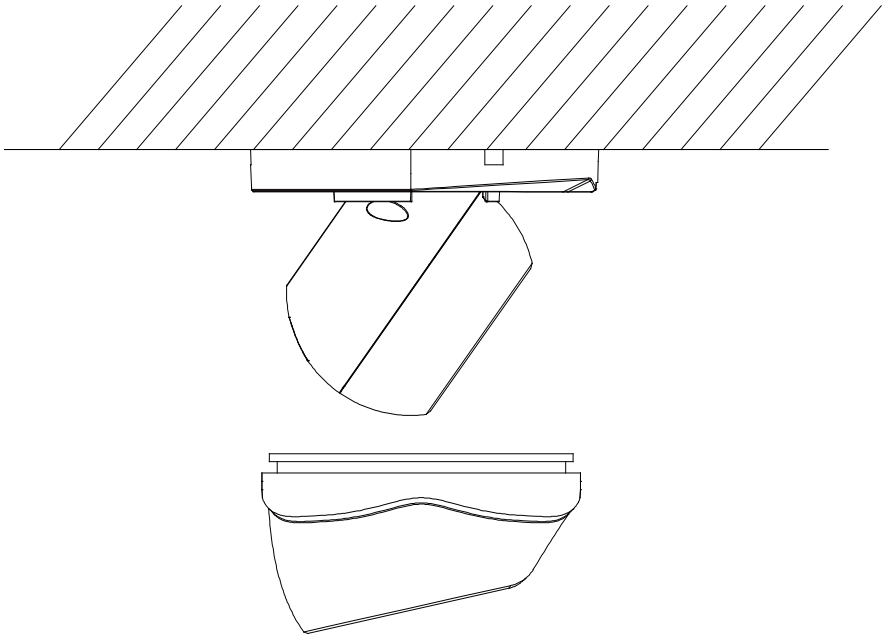

Figure 2-9 Install the Camera and the Enclosure

7. Adjust the camera according to the figure below to get an optimum angle.

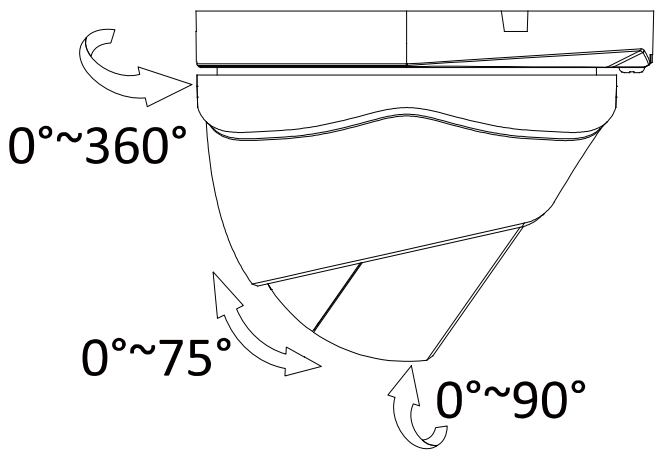

Figure 2-10 Lens Adjustment

2.2.2 Type II Turret Camera Installation

1. Drill the screw holes and the cable hole according to the drill template.

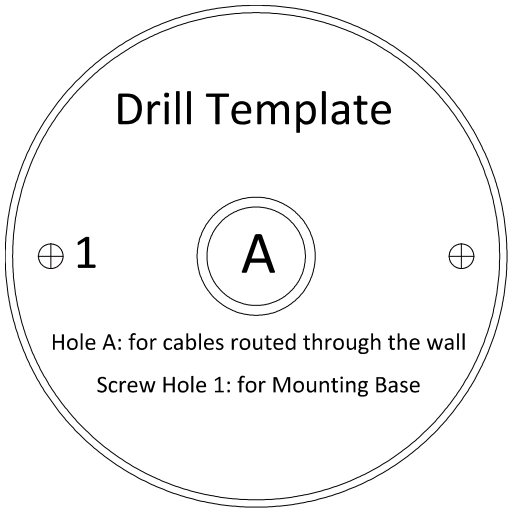

Figure 2-11 Drill Template of Type II Turret Camera

2. Fix the mounting base to the ceiling with the supplied screws.

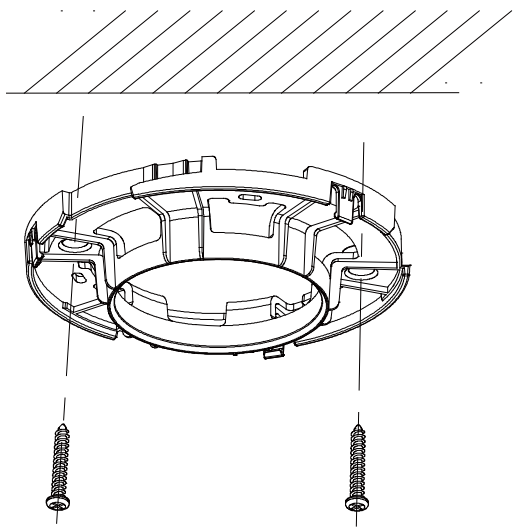

Figure 2-12 Fix the Mounting Base

3. Route the cables to the cable hole and connect the corresponding power cable and video cable.
4. Fix the camera to the mounting base.
5. Fix the enclosure to camera.

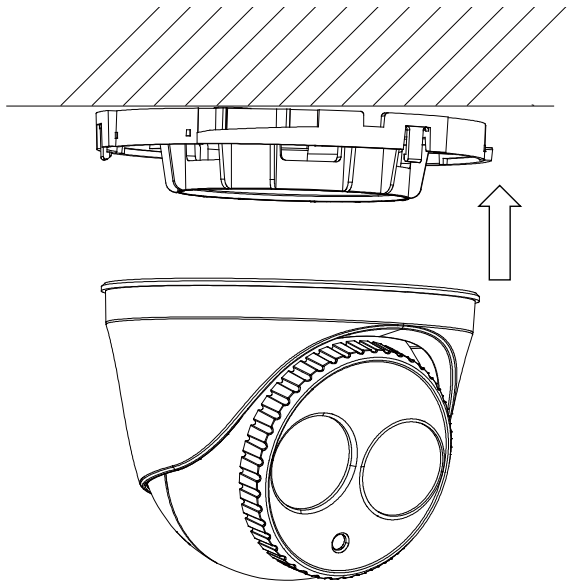

Figure 2-13 Fix the Camera

6. Attach the trim ring to the camera and rotate it clockwise to secure the camera.

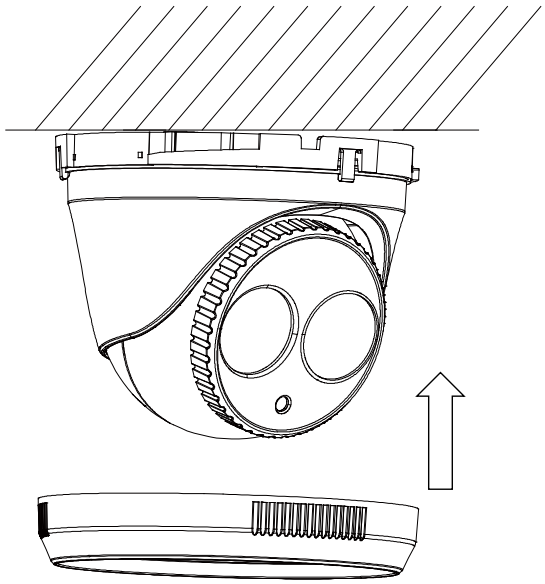

Figure 2-14 Attach the Trim Ring

7. Adjust the surveillance angle according to the figure below.

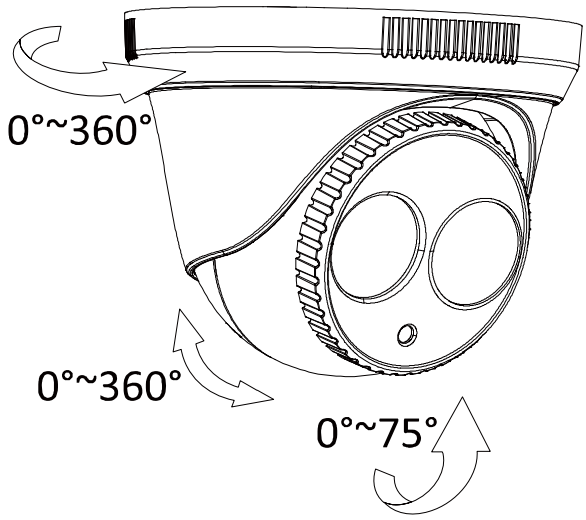

Figure 2-15 Lens Adjustment

8. Rotate the trim ring to get it fixed with the camera to complete the installation.

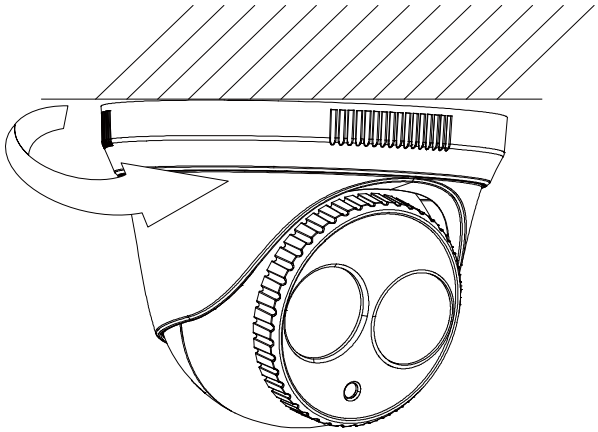

Figure 2-16 Complete the Installation

2.3 Installation of Bullet Camera

1.1.2 Type I Bullet Camera Installation

Both wall mounting and ceiling mounting are suitable for type I HD-SDI IR bullet camera. Ceiling mounting will be taken as an example in this section. You can take steps of ceiling mounting as a reference if wall mounting is adopted.

Steps:

1. Drill the screw holes in the ceiling according to the drill template.

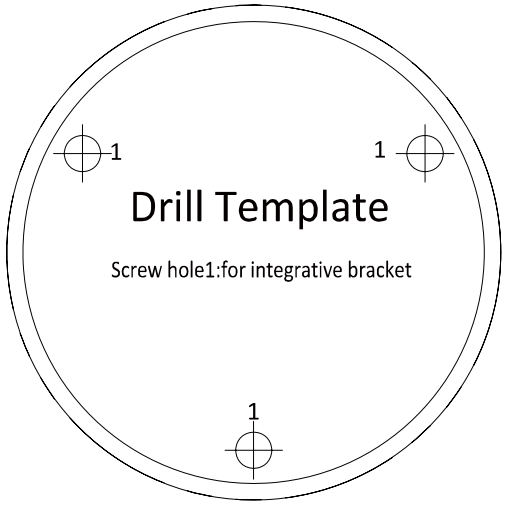

Figure 2-17 Drill Template

2. Route the corresponding cables.
3. Secure the camera to the ceiling with the supplied PA4 Screws.

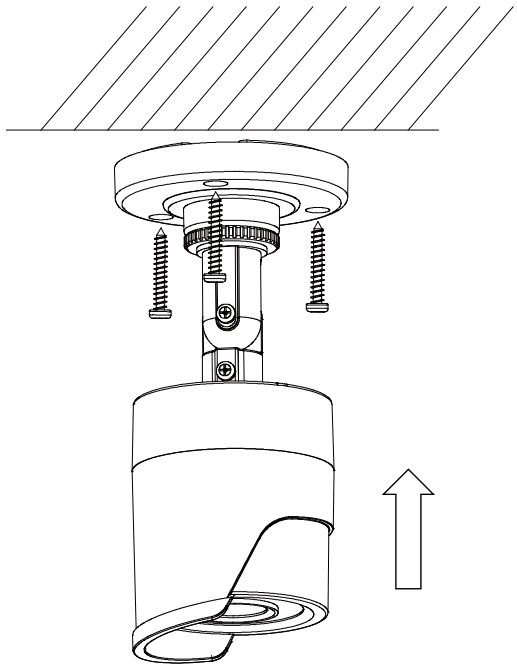

Figure 2-18 Secure the Camera to the Ceiling

4. Connect the corresponding power/ Video Output cables.
5. Adjust the Lens.
   1). Loosen the adjustable nut.
   2). Adjust the pan direction [0°~360°].
   3). Adjust the tilt direction [0°~90°].
   4). Rotate the camera [0~360°] to adjust the lens to the surveillance angle.
   5). Tighten the adjustable nut to complete the installation.

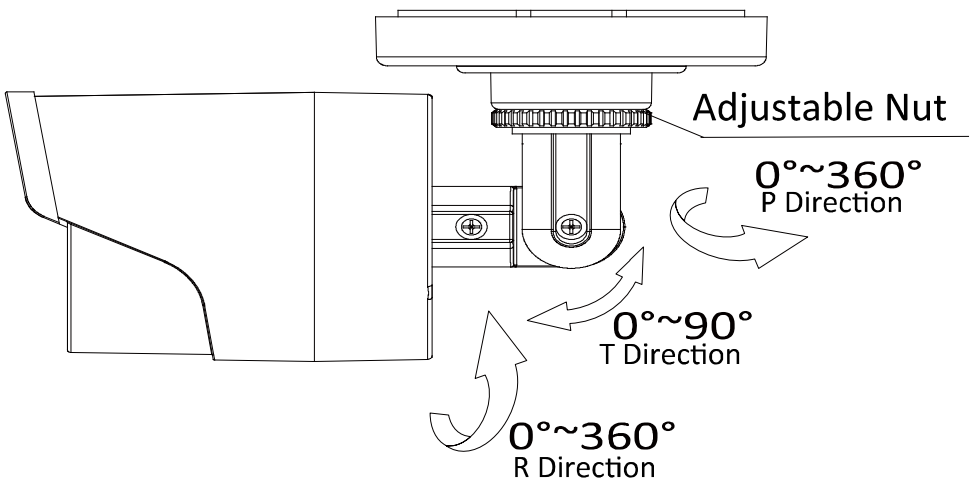

Figure 2-19 3-axis Adjustment

1.1.3 Type II Bullet Camera Installation

- As type II and type III bullet Cameras are in the same structure, their installation steps are the same.
- Both wall mounting and ceiling mounting are suitable for type II and type III bullet camera. Wall mounting will be taken

as an example in this section. And you can take steps of wall mounting as a reference if ceiling mounting is adopted.

Steps:

1. Drill the screw holes on the wall according to the drill template.

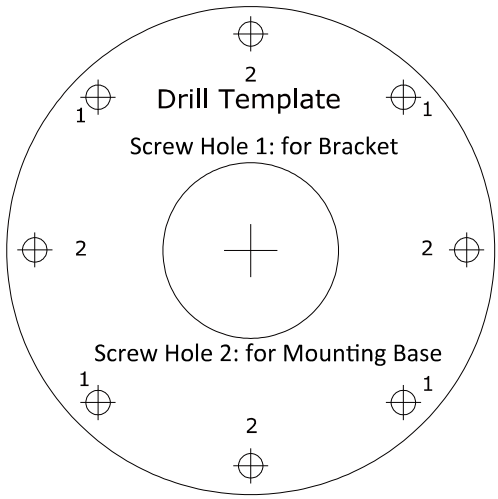

Figure 2-20 Drill Template

2. Route the corresponding cables.
3. Fix the camera to the wall with supplied screws.

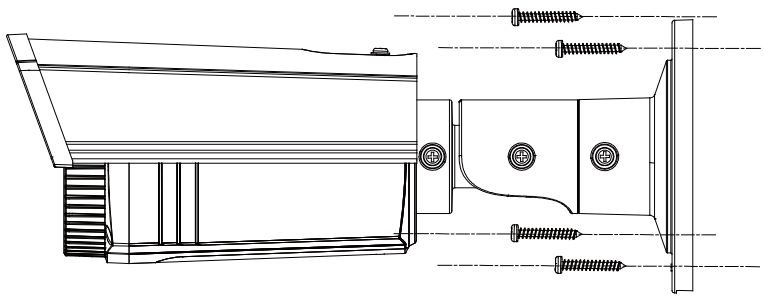

Figure 2-21 Secure the Camera to the Wall

4. Connect the corresponding power/ Video Output cables.

5. Adjust the Lens.

   1). Loosen screw 1 to adjust the pan direction [0°~360°]. Tighten the screw after completing the adjustment.

   2). Loosen screw 2 to adjust the tilt direction [0°~100°]. Tighten the screw after completing the adjustment.

   3). Loosen screw 3 and rotate the camera [0°~360°] to adjust the lens to the surveillance angle. Tighten the screw after completing the adjustment.

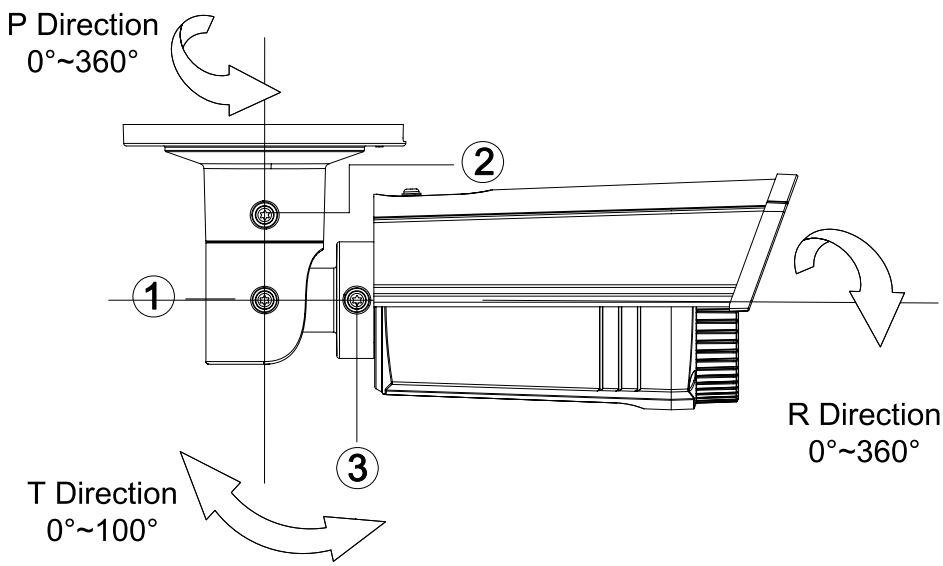

Figure 2-22 3-axis Adjustment

3 Menu Description

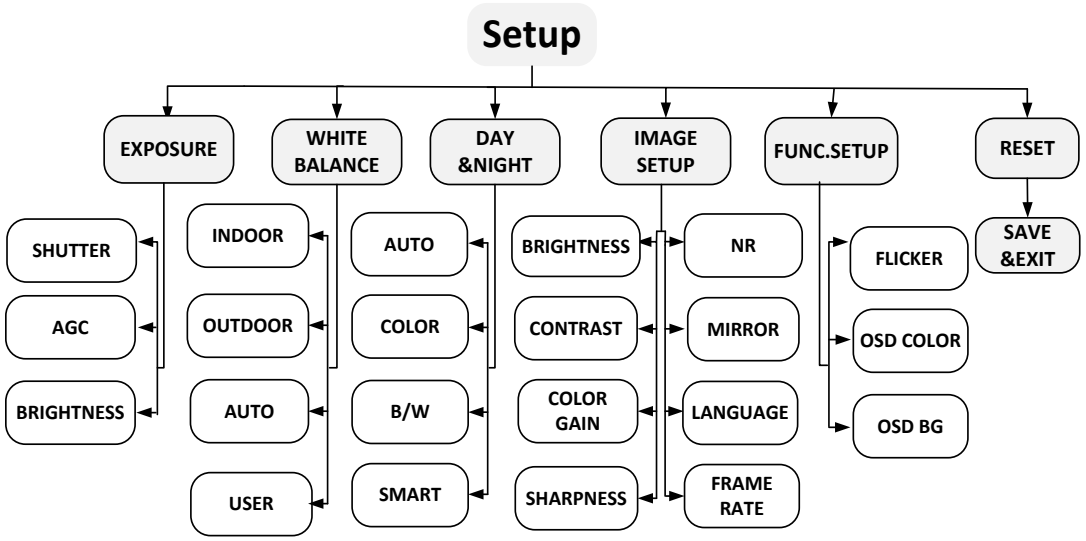

Figure 3-1 Main Menu Overview

NOTE

- Only DS-2CC52C1S-VPIR supports OSD Menu operation.
- This type of camera adopts a joystick to select the menu and confirm a selection.
- Move the joystick up/down to select the menu item.
- Move the joystick left/right to adjust the value of the selected item.
- Press the joystick to confirm a selection. The Menu button mentioned in the chapter below refers to the joystick.

3.1 EXPOSURE

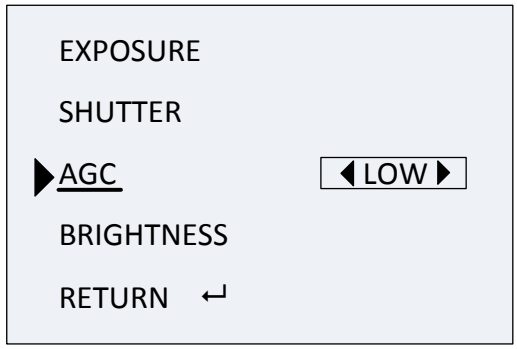

Figure 3-2 Exposure

The EXPOSURE menu describes the brightness-related parameters. You can adjust the image brightness by the **SHUTTER**, **AGC**, and **BRIGHTNESS** in different light conditions.

3.1.1 SHUTTER

SHUTTER denotes the speed of the shutter.

AUTO, 1/100, 1/120, 1/250, 1/500, 1/1k, 1/2k, 1/4k, 1/10k, and 1/100k are selectable.

3.1.2 AGC

AGC is a form of amplification where the camera will automatically boost the image received in much lower light conditions than standard in order to optimize the brightness of image in poor light scene. You can set the AGC level as **HIGH**, **MIDDLE**, **LOW**, and **OFF**.

NOTE

The noise will be amplified if the AGC is on.

3.1.3 BRIGHTNESS

BRIGHTNESS refers to the brightness of the image. You can adjust the brightness with moving the joystick left and right to darken or brighten the image. A value bar is designed to show the changes of the value. The higher the value is, the brighter the image is.

3.2 White Balance (WB)

White balance is the white rendition function of the camera to adjust the color temperature according to the environment. It can remove the unrealistic color casts of the image.

INDOOR, **OUTDOOR**, **AUTO**, and **USER** are selectable for WB mode.

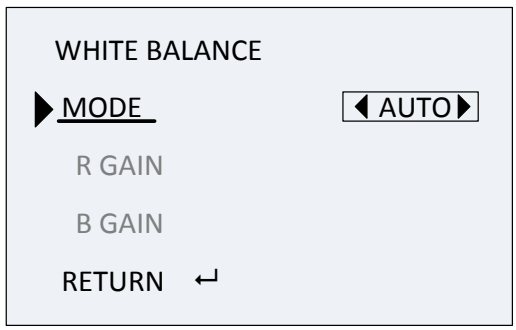

Figure 3-3 White Balance

3.2.1 INDOOR

INDOOR mode is applicable to the indoor environment whose color temperature change is relatively slight.

3.2.2 OUTDOOR

OUTDOOR mode is applicable to the outdoor environment whose color temperature is relatively obvious.

3.2.3 AUTO

AUTO mode refers to the white balance is being adjusted automatically in real-time according to the color temperature of the scene illumination.

3.2.4 USER

If USER mode is selected, you can adjust the **R GAIN**/**B GAIN** with the value bar to set the shades of red/blue color of the image.

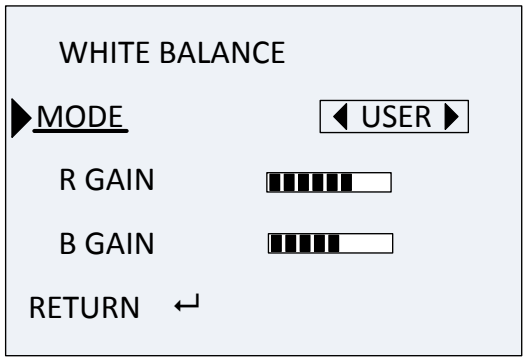

Figure 3-4 User

3.3 Day & Night

AUTO, **COLOR**, **B/W**, and **SMART** are selectable for DAY &NIGHT switches.

- **D>N LEVEL**: the D>N LEVEL refers to the degree of light intensity decrease. The day mode switches to the night mode when the light condition reaches to the level you set.
- **N>D LEVEL**: the N>D LEVEL refers to the degree of light intensity increase. The night mode switches to the day mode when the light condition reaches to the level you set.

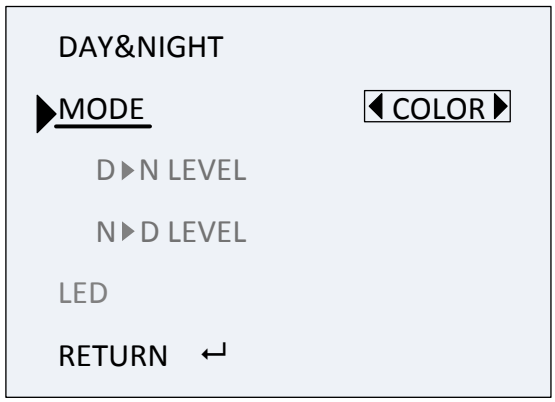

Figure 3-5 Day & Night

3.3.1 AUTO

The image switches from color to B/W or from B/W to color automatically according to the light condition. And you can select to turn on or turn off the IR LED according to different illumination.

3.3.2 COLOR

The image is colored in day mode all the time.

3.3.3 B/W

The image is black and white all the time, and the IR LED turns on in the low-light conditions.

3.3.4 SMART

You can adjust the D>N LEVEL and N>D LEVEL by moving the joystick left and right. You can also select to turn on/turn off the IR LED by selecting the LED as **ON**/**OFF** to satisfy the requirements of different circumstances.

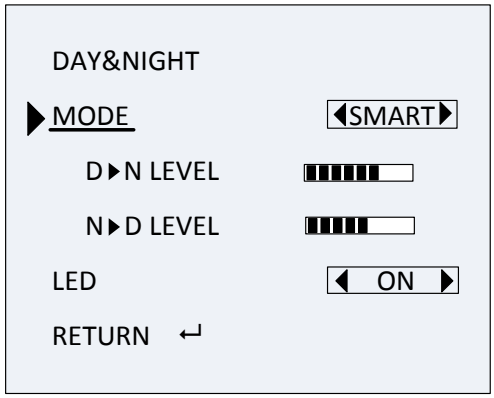

Figure 3-6 Smart Mode of Day & Night

3.4 IMAGE SETUP

Move the cursor to VIDEO SETTING. Press the menu button to enter the VIDEO SETTING menu. **BRIGHTNESS**, **CONTRAST**, **COLOR GAIN**, **SHARPNESS, NR**, **MIRROR**, **LANGUAGE** and **FRAME RATE** are adjustable.

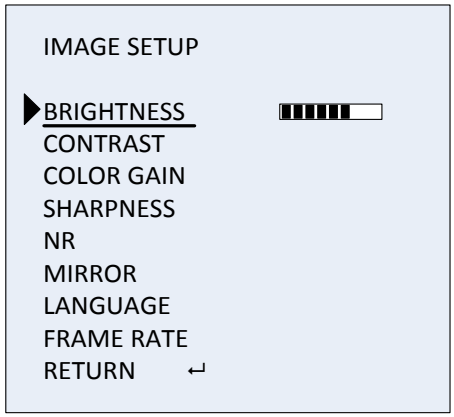

Figure 3-7 Video Setup

3.4.1 BRIGHTNESS

BRIGHTNESS refers to the brightness of the image. You can adjust the brightness with moving the joystick left and right to darken or brighten the image. The higher the value is, the brighter the image is.

3.4.2 CONTRAST

This feature enhances the difference in color and light between parts of an image. You can adjust the CONTRAST value by moving the joystick left and right.

3.4.3 COLOR GAIN

Adjust this feature to change the saturation of the color. You can adjust the color gain by moving the joystick left and right

3.4.4 SHARPNESS

SHARPNESS determines the amount of detail that an imaging system can reproduce. You can adjust the image SHARPNESS by moving the joystick left and right.

3.4.5 NR

The NR function is used to reduce the noise in the video signal.

You can set the NR level as **High**, **Middle**, and **LOW**. Select **OFF** to disable the NR function.

3.4.6 MIRROR

NONE, **H**, **V**, and **HV** are selectable for mirror.

NONE: The mirror function is disabled.

H: The image flips 180 degree horizontally.

V: The image flips 180 degree vertically.

HV: The image flips 180 degrees both horizontally and vertically.

3.4.7 LANGUAGE

Chinese and English are selectable for this series of camera.

3.4.8 FRAME RATE

You can set the FRAME RATE as **25 FPS** and **30 FPS** in this function.

3.5 FUNC.SETUP

In the FUNC.SETUP menu, you can set the **FLICKER** frequency, **OSD COLOR**, and **OSD BG** for your camera.

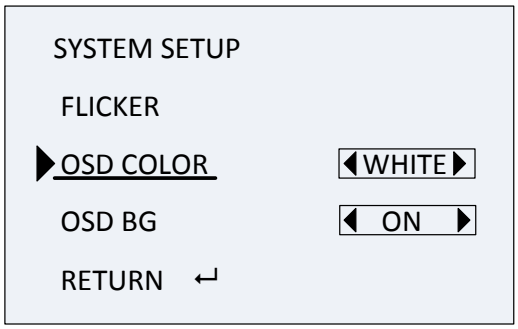

Figure 3-8 System Setup

- **FLICKER**

50HZ and **60HZ** are selectable for the FLICKER frequency.

- **OSD COLOR**

You can select white, red, yellow or green as the OSD color.

- **OSD BG**

You can set the OSD BG as **ON** or **OFF** to enable/disable the OSD background color.

3.6 RESET

Reset all the settings to the default.

3.7 SAVE & EXIT

Move the cursor to SAVE & EXIT and press **YES** to exit the menu.

First Choice for Security Professionals