HIKVISION

Turbo HD

DS-2CE56D7T-xITxZ Series
DS-2CE56F7T-xITxZ Series
Dome Cameras
User Manual

Table of Contents

1 Introduction

Thank you for purchasing our product. For questions or requests, please contact your dealer.

This manual applies to the models below:

Type	Model
Type I Camera	DS-2CE56D7T-AVPIT3Z
	DS-2CE56F7T-AVPIT3Z
	DS-2CE56D7T-VPIT3Z
	DS-2CE56F7T-VPIT3Z
Type II Camera	DS-2CE56D7T-AITZ
	DS-2CE56F7T-AITZ
	DS-2CE56D7T-ITZ
	DS-2CE56F7T-ITZ

This manual may contain incorrect information or printing errors, and the content is subject to change without notice. This manual will be updated periodically. We will readily improve or update the products or procedures described in the manual.

2 Notices

2.1 Privacy Notice

Surveillance laws vary by jurisdiction. Check all relevant laws in your jurisdiction before using this product for surveillance purpose to ensure that your use of this product conforms.

2.2 Regulatory Information

2.2.1 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, which the user will be required to correct the interference at their own expense.

2.2.2 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

2.2.3 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.

2002/96/EC (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.

2.2.4 Industry Canada ICES-003 Compliance

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

3 Product Features

This camera series adopts high performance sensor and advanced circuit board design technology. It features high resolution, low distortion, low noise, etc. It is suitable for surveillance and image process systems.

The main features are as follows:

- High performance, high resolution CMOS sensor for a high-quality image

- Low illumination, 0.01 lux @ (f/1.2, AGC on), 0 lux with IR

- IR cut filter with auto switch

- OSD menu with configurable parameters

- Auto white balance and internal synchronization

- SMART IR mode

- True WDR

- Advanced 3-axis design meets different installation requirements

4 Overview

📖 **NOTE:**
- Device cables may vary by model. The cables of each type are shown below. Please refer to your actual sample.

- You can debug the camera by connecting an auxiliary HD-TVI cable to the auxiliary video output.
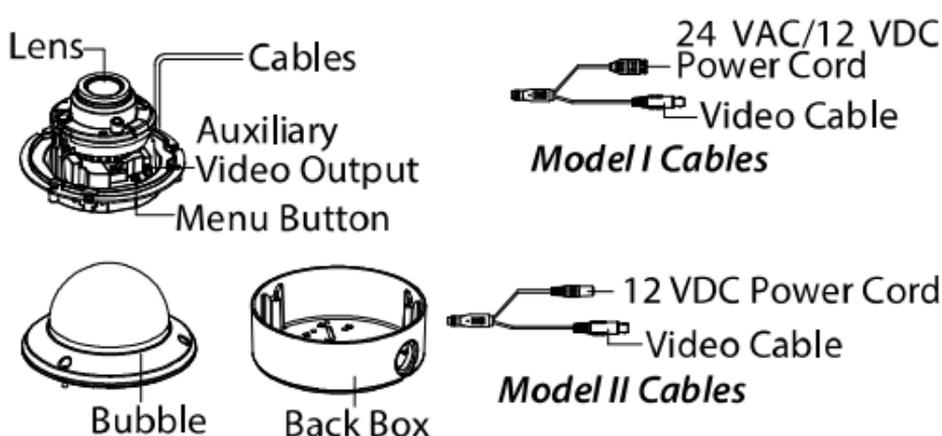
4.1 Type I Camera Overview

Figure 1, Overview of Type I Camera

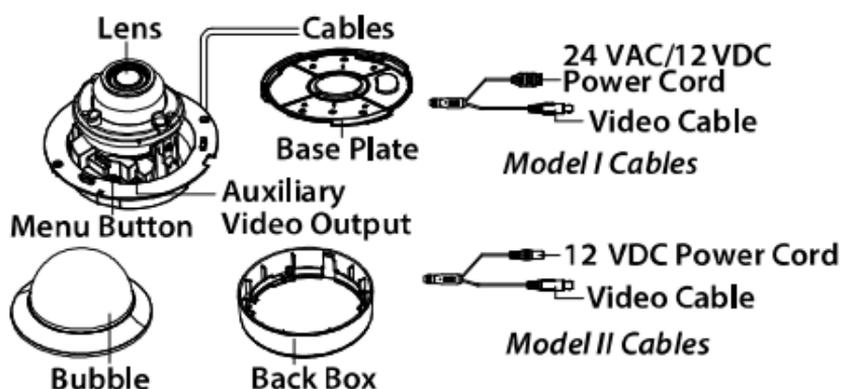### 4.2 Type II Camera Overview

Figure 2, Overview of Type II Camera

5 Installation

5.1 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 powered off during the installation.

- Check the product specification for the installation environment.

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

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

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

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

5.2   Ceiling Mounting

1. Attach the drill template (supplied) to the location you want to fix the camera.

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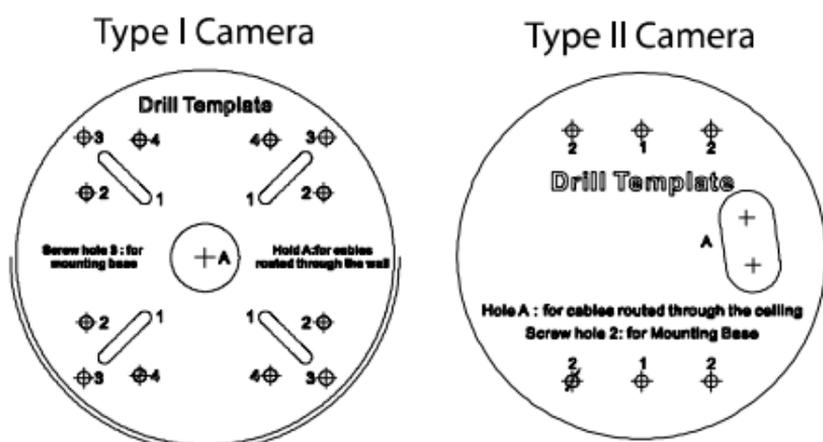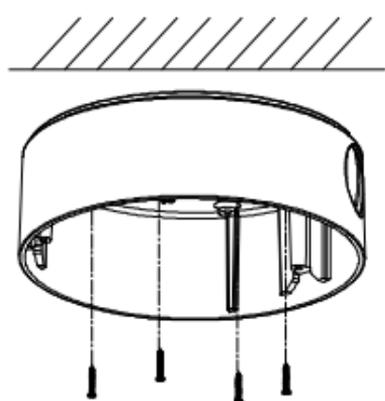

Figure 3, Drill Templates

3. Loosen the three screws on the edge of the bubble with the supplied screwdriver to remove the bubble.

4. Attach the Type I camera back box/Type II camera base plate to the ceiling and secure with supplied self-tapping screws.
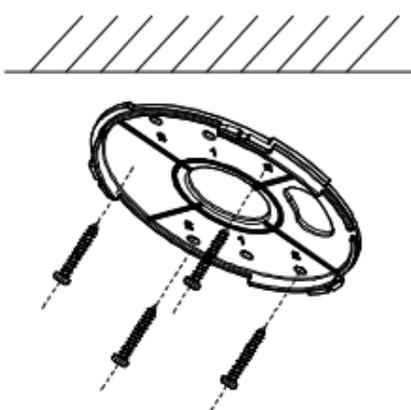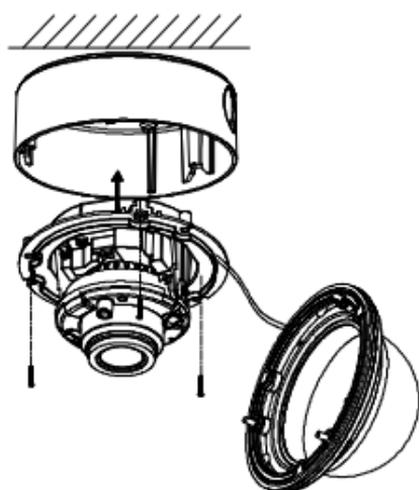

Figure 4, Attach the Back Box/Base Plate

5. Route the cables through the cable hole.

6. Align the cameras with the back box/base plate, and tighten the set screws to secure the camera with the back box/base plate.
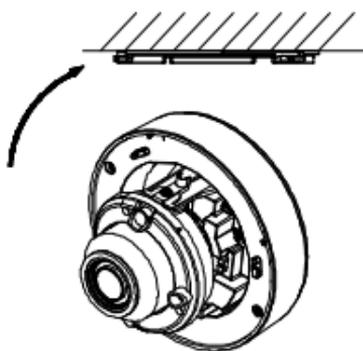

Figure 5, Affix the Camera to the Ceiling

7. Connect the video cable to the monitor, and connect the power cable to the power supply.

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

   1) View the camera image with the monitor.

   2) Rotate the panning table to adjust the pan direction.

   3) Loosen the tilting lock screw.

   4) Rotate the tilting table to adjust the tilt direction.

   5) Tighten the tilting lock screw.

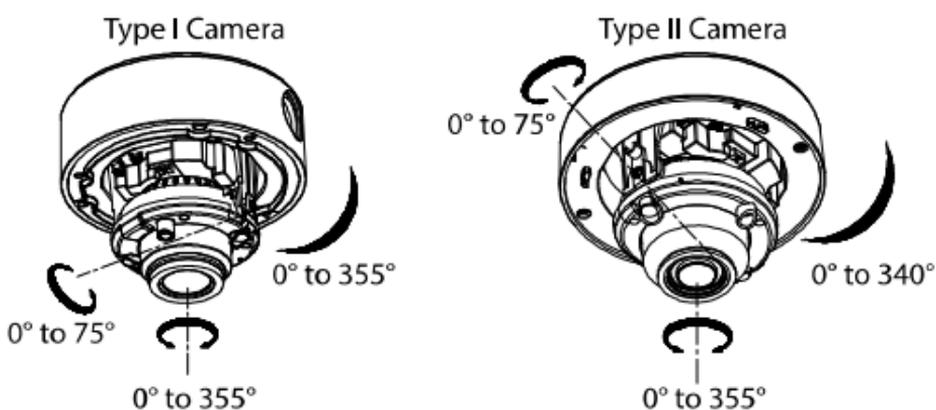   6) Rotate the camera to adjust the lens to the surveillance angle.

Figure 6, 3-Axis Adjustment

9. Tighten the screws to secure the bubble to the back box/base plate.

NOTE:
Gently remove the protection film, which protects the bubble during installation, from the bubble after the installation is complete.

5.3   In-Ceiling Mounting

NOTE:
You must purchase an in-ceiling mount separately if you use in-ceiling mounting.

5.3.1   In-Ceiling Mounting without Gang Box

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

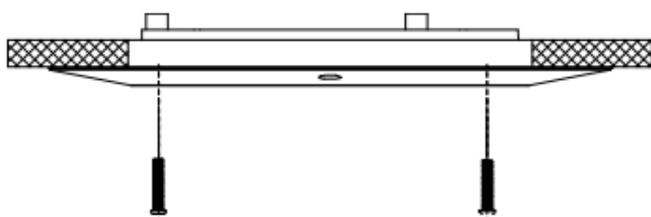2. Secure the in-ceiling mount with two screws as shown below.

Figure 7, Install the Mount

3. Route the cables through the in-ceiling mount hole and connect the corresponding cables.

4. Affix the camera to the in-ceiling mount with the supplied screws.

Figure 8, Fix the Camera to the Mount

5. Repeat steps 6 to 8 of the ceiling mounting section to complete the installation.

5.3.2 In-Ceiling Mounting with Gang Box
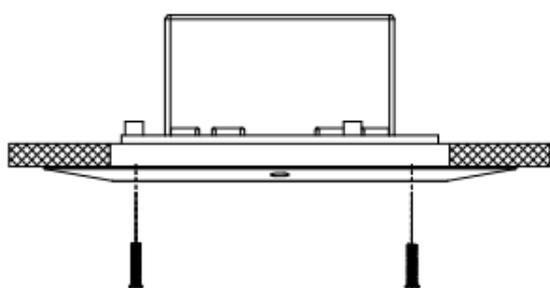
Figure 9, Install the Mount

1. Repeat steps 1 to 3 of In-Ceiling Mounting Without Gang Box and secure the in-ceiling mount (supplied) to the gang box with two screws.

2. Route the cables through the hole in the center of the in-ceiling mount.

3. Align the camera with the gang box, and tighten the screws to secure the camera to the gang box.

Figure 10, Secure the Camera

4. Repeat steps 6 to 8 of the Ceiling Mounting section to complete the installation.

5.4 Mounting Type I Camera with Inclined Base

1. Install the inclined base to the ceiling with supplied screws, as shown below.
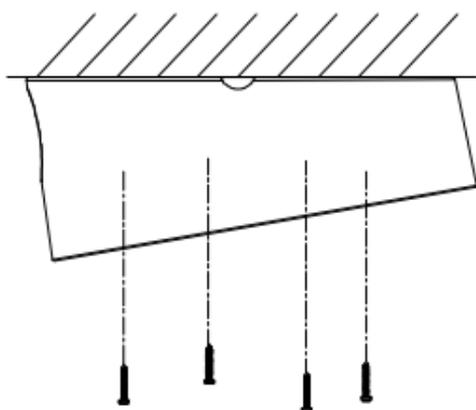
Figure 11, Fix the Inclined Base

2. Route the cables through the in-ceiling mount hole and connect the corresponding cables.

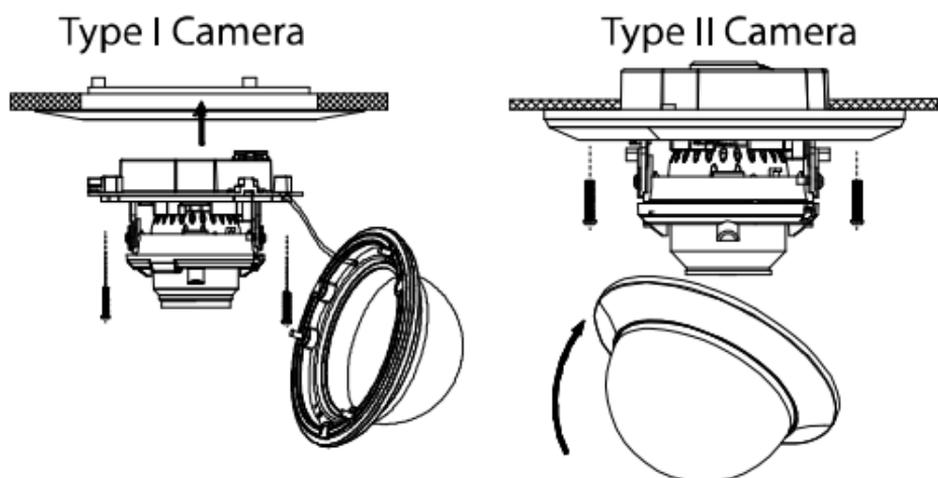3. Affix the camera to the in-ceiling mount with the supplied screws.
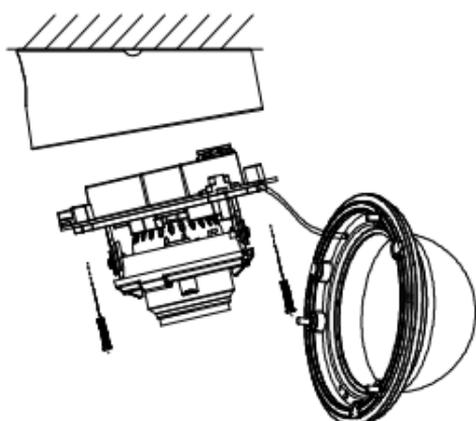
Figure 12, Fix the Camera to the Base

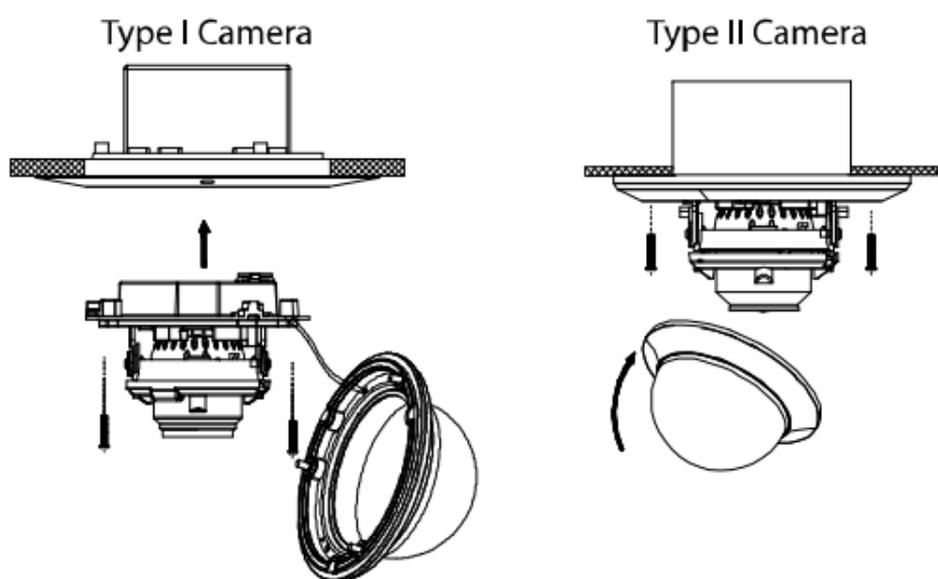4. Repeat steps 6 to 8 of the Ceiling Mounting section to complete the installation.

6 Menu Description
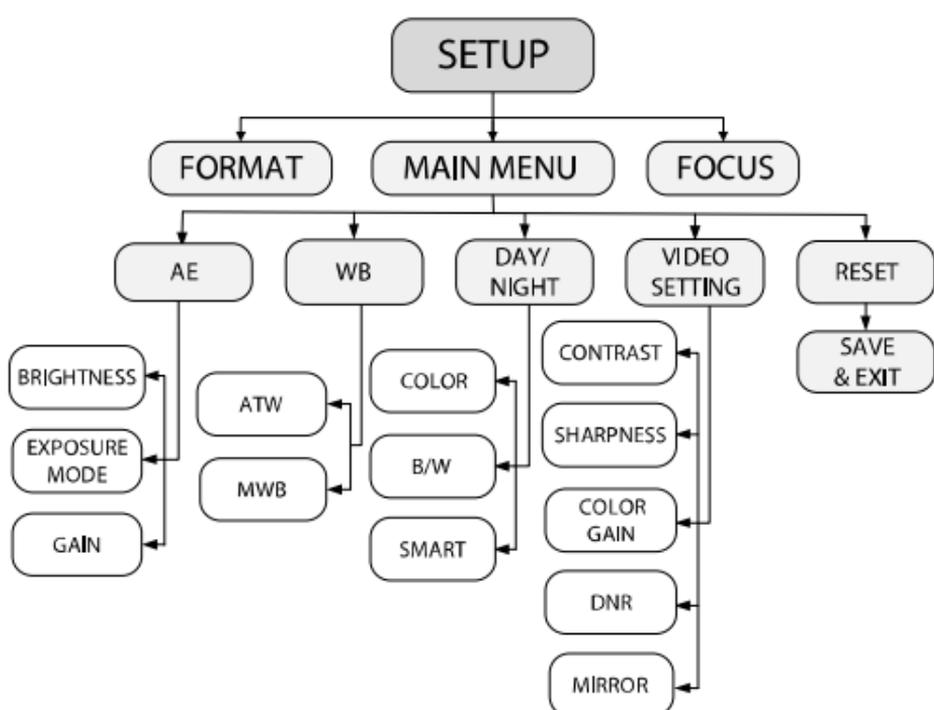
Figure 13, Main Menu Overview

📖 **NOTE:**
- With a camera controller (purchased separately) or calling DVR preset no. 95 you can select the menu and adjust the parameters.

- Move the cursor up/down to select the menu item.

- Move the cursor left/right to adjust the value of the selected item.

- Press the **OK** key to confirm a selection.

6.1 Format

Move the cursor to **FORMAT**, and press the menu button to enter the FORMAT sub menu. Set the camera format and confirm.

6.2 Focus

Move the cursor to **FOCUS**, and press the menu button to enter the FOCUS sub menu. Move the cursor to adjust the camera lens by using FOCUS+, FOCUS-, ZOOM+, and ZOOM-.

6.3 Main Menu

6.3.1 AE (Auto Exposure)

AE describes the brightness-related parameters. You can adjust the image brightness by using **Brightness**, **Exposure Mode**, and **Gain** in different light conditions.
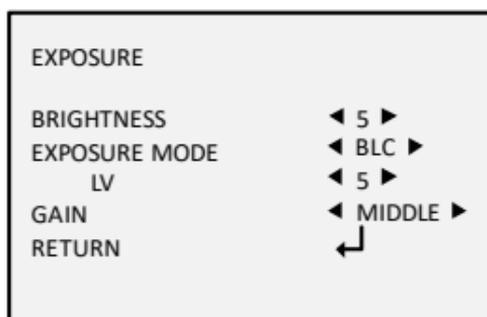
```
EXPOSURE

BRIGHTNESS          ◄ 5 ►
EXPOSURE MODE       ◄ BLC ►
     LV             ◄ 5 ►
GAIN                ◄ MIDDLE ►
RETURN              ↵
```

Figure 14, AE

6.3.2 Brightness

Brightness refers to the brightness of the image. Set the value from 1 to 10 to darken or brighten the image. The higher the value, the brighter the image.

6.3.3 Exposure Mode

You can set **AE** mode as **Global**, **BLC**, and **WDR**.

- **Global:** Normal exposure mode, which is for adjusting situations including unusual lighting distribution, variations, non-standard processing, or other underexposure conditions to get an optimum image.

- **BLC (Backlight Compensation):** Compensates light to the object in the front to make it clear, but causes overexposure of the background where the light is strong. Can be adjusted from 0 to 8.

- **WDR (Wide Dynamic Range):** Helps the camera provide clear images even under backlight circumstances. WDR balances the brightness level of the whole image and provides clear images with details.

6.3.4 Gain

Gain optimizes the clarity of image in poor light scenes. The **Gain** level can be set to **High**, **Middle**, or **Low**. Select **Off** to disable the **Gain** function.

> 📖 **NOTE:**
> The noise will be amplified when **Gain** is on.

6.3.5 WB (White Balance)

White balance is the white rendition function of the camera to adjust the color temperature according to the environment. It can remove unrealistic color casts in the image. You can set WB mode as **ATW** or **MWB**.

- **ATW:** White balance is adjusted automatically according to the color temperature of the scene illumination.

- **MWB:** You can set the R GAIN/B GAIN value from 0 to 255 to adjust the shades of red/blue color of the image.
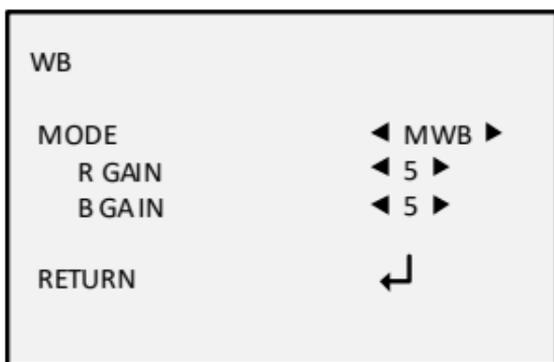
```
WB

MODE          ◄ MWB ►
  R GAIN        ◄ 5 ►
  B GAIN        ◄ 5 ►

RETURN          ↵
```

Figure 15, MWB Mode

6.3.6 Day/Night

Color, **B/W**, and **Smart** are selectable for **Day/Night** switches.

- **Color:** In Day Mode, the image is always in color.

- **B/W:** The image is always in black and white, and the IR LED turns on in low-light conditions.

- **Smart:** You can select to turn on/off the Infrared and set the value of **Smart IR** in this menu.
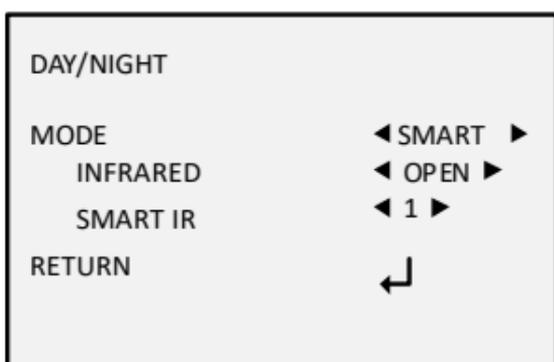
```
DAY/NIGHT

MODE          ◄ SMART ►
  INFRARED      ◄ OPEN ►
  SMART IR      ◄ 1 ►
RETURN          ↵
```

Figure 16, Day/Night

- **Infrared:** You can select to turn on/off the IR LED to response to the requirements of different circumstances.

- **Smart IR:** Adjusts the light to its most suitable intensity and prevents the image from overexposure. The SMART IR value can be adjusted from 0 to 3. The higher the value, the more obvious the effects (it is disabled when the value is 0).

6.3.7 Video Setting

Move the cursor to **Video Setting** and press the confirm button to enter the submenu. **Contrast**, **Sharpness**, **Color Gain**, **DNR**, and **Mirror** are adjustable.
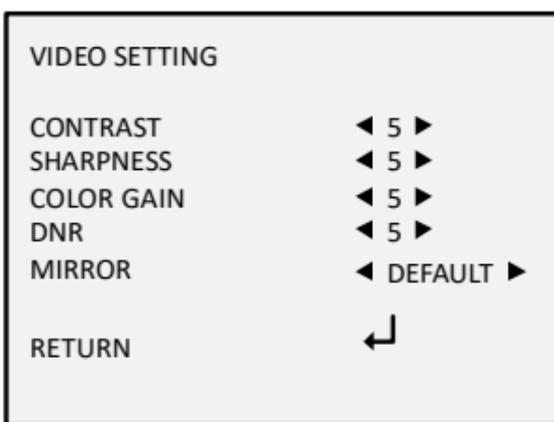
```
VIDEO SETTING

CONTRAST         ◀ 5 ▶
SHARPNESS        ◀ 5 ▶
COLOR GAIN       ◀ 5 ▶
DNR              ◀ 5 ▶
MIRROR           ◀ DEFAULT ▶

RETURN              ↵
```

Figure 17, Video Setting

- **Contrast:** Enhances the difference in color and light between parts of an image. You can set the value from 1 to 10.

- **Sharpness:** Determines the amount of detail an imaging system can reproduce. You can set the value from 1 to 10.

- **Color Gain:** Adjust to change the color saturation. The value ranges from 1 to 10.

- **DNR (Digital Noise Reduction):** The DNR function can decrease the noise effect, especially when capturing moving images in low light conditions to deliver more accurate and sharp image quality.

  You can set the **DNR** value from 1 to 10.

- **Mirror: Default**, **H**, **V**, and **HV** are selectable for mirror.

  - **Default**: The mirror function is disabled.

  - **H**: The image will be flipped 180 degrees horizontally.

  - **V**: The image will be flipped 180 degrees vertically.

  - **HV**: The image will be flipped 180 degrees both horizontally and vertically.

6.3.8 Reset

Resets all the settings to the default.

6.3.9 Save & Exit

Move the cursor to **Save & Exit** and press **OK** to save the setting and exit the menu.

7 IR Reflection Prevention

For cameras that support IR, you must 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 a 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 the camera body so that the foam ring and the dome cover are attached seamlessly.