



VZ-TVI-D3020 HD 3MP EXIR Turret Camera

User Manual

User Manual

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

This manual applies to VZ-TVI-D3020 Turret Camera.

This manual may contain several technically incorrect places or printing errors. The content is subject to change without notice, and 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.

Regulatory Information

FCC Information

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

FCC Conditions

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

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



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under EMC Directive 2014/30/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.



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.
- 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. 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.
- 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 contact the service center.
- If the product does not work properly, 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 sensor 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, 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, 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.

1 Introduction

1.1 Product Features

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

The main features are as follows:

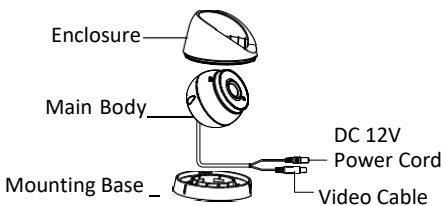
- High performance CMOS sensor
- Low illumination, 0.01 Lux @ (F1.2, AGC ON), 0 Lux with IR
- IR cut filter
- 3-axis adjustment
- OSD menu
- Auto white balance
- Internal synchronization
- SMART IR mode



This manual applies to two types of turret cameras.

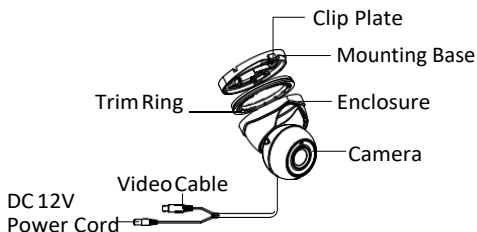
The overviews of each type are shown in the figures below. For detail, refer to the actual sample.

1.1.1 Overview of Type I Camera



Overview of Type I Camera

1.1.2 Overview of Type II Camera



Overview of Type II Camera

2 Installation

Before you start:

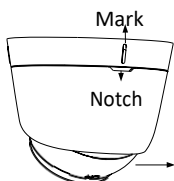
- Make sure that the device in the package is in good condition and all the assembly parts are included.
- Make sure that all the related equipment is power-off during the installation.
- Check the specification of the products for the installation environment.
- Check whether the power supply is matched with your required output to avoid damage.
- Make sure the wall is strong enough to withstand three times the weight of the camera and the bracket.
- If the wall is cement, insert expansion screws before installing the camera. If the wall is wooden, 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.

2.1 Installation of Type I Camera

2.1.1 Ceiling Mounting

Steps:

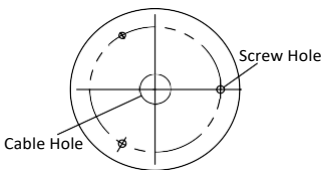
1. Disassemble the turret camera by rotating the camera to align the notch to one of the marks, as shown in 0.



Disassemble the Camera

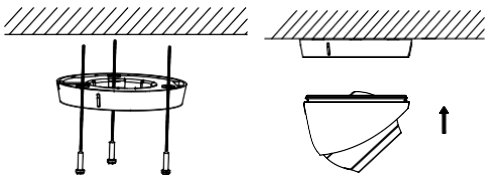
2. Pry the mounting base to remove the mounting base with the camera body with a flat object, e.g., a coin.
3. Attach the drill template (supplied) to the place where you want to fix the camera, and then drill the

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



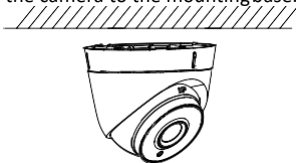
Drill Template

4. Fix the mounting base to the ceiling with the screws.



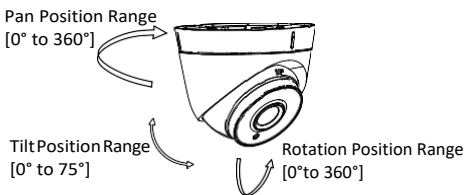
Fix the Mounting Base and Camera

5. Route the cables through the cable hole and connect the video cables and power cord.
6. Secure the camera to the mounting base.



Fix the Camera to the Ceiling

7. Adjust the camera according to 0 to get an optimum angle.
 - 1). Hold the camera body and rotate the enclosure to adjust the pan angle [0° to 360°].
 - 2). Move the camera body up and down to adjust the tilt angle [0° to 75°].
 - 3). Rotate the camera body to adjust the Loosen No.3 adjusting azimuth angle [0° to 360°].



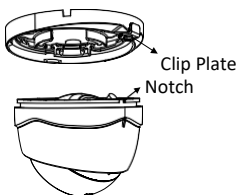
3-axis Adjustment

2.2 Installation of Type II Camera

2.2.1 Ceiling Mounting without Junction box

Steps:

1. Disassemble the turret camera by rotating the camera to align the notch to the clip plate, as shown in 0.



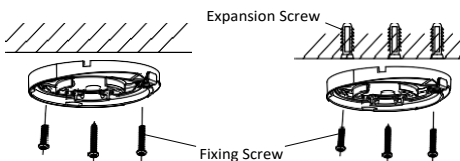
Disassemble the Camera

2. Pry the mounting base to remove the mounting base with the camera body.
3. Attach the drill template (supplied) to the place where you want to fix the camera, and then drill the screw holes and the cable hole in the ceiling according to the drill template.



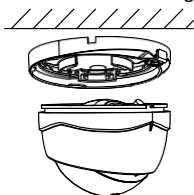
Drill Template

4. Route the cables through the cable hole.
5. Secure the mounting base to the ceiling with the supplied screws. (You can drill the expansion screws first or drill the fixing screws directly)



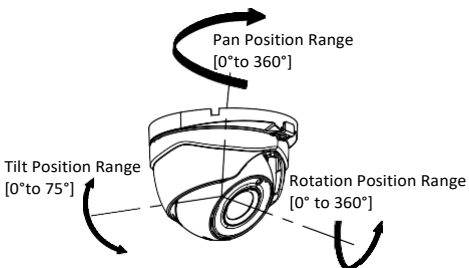
Fix the Mounting Base to the Ceiling

6. Route the cables. Connect the power cord and network cable.
7. Secure the camera to the mounting base.



Secure the Camera

8. Adjust the camera according to 0 to get an optimum angle.
 - 1). Hold the camera body and rotate the enclosure to adjust the pan angle [0° to 360°].
 - 2). Move the camera body up and down to adjust the tilt angle [0° to 75°].
 - 3). Rotate the camera body to adjust the Loosen No.3 adjusting azimuth angle [0° to 360°].



3-axis Adjustment

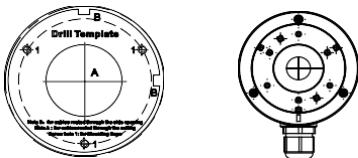
2.2.2 Ceiling Mounting with Junction Box



You need to purchase a junction box separately if you adopt ceiling mounting with junction box.

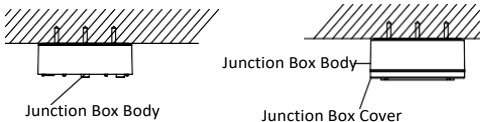
Steps:

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



Disassemble the Junction Box

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



Fix the Junction Box

5. Repeat step 1-8 of **2.2.1** to install the camera to the junction box.

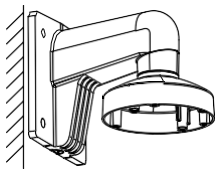
2.2.3 Wall Mounting with Pendent Cap



You need to purchase a pendent cap separately if you adopt wall mounting with pendent cap.

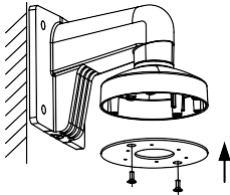
Steps:

1. Fix the pendent cap bracket on the wall, as shown in 0.



Install the Pendent Cap

- Fix the adapter to the pendent cap with two screws. (Optional)




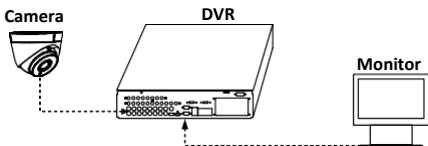
Install the Adapter to the Pendent Cap

- Repeat step 1-8 of **2.2.1** to install the camera to the pendent cap.

3 Menu Description


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

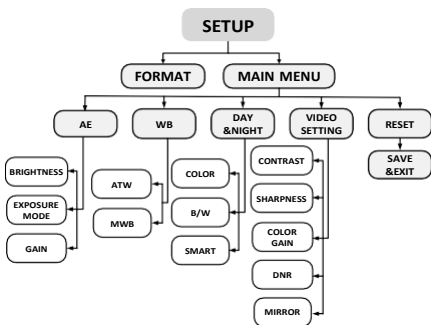
- Call the menu and adjust the camera parameters with a camera controller (purchase separately).
- Call the menu with supported TVI DVR by clicking  button on the PTZ interface, or by calling preset No. 95.



Connection

Steps:

- After the connection is done, power on the analog camera, DVR, and the monitor to view the image on the monitor.
- Click PTZ Control to enter the PTZ Control Interface.
- Call the camera menu by clicking  button, or call preset No. 95.
- 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.



Main Menu Overview

3.1 Format

Move the cursor to **FORMAT**, and press the menu button to enter the FORMAT sub menu. You can set the format of camera and confirm.

3.2 Main Menu

3.2.2 AE (Auto Exposure)

AE describes the brightness-related parameters. You can adjust the image brightness by the **BRIGHTNESS**, **EXPOSURE MODE**, and **GAIN** in different light conditions.

EXPOSURE	
BRIGHTNESS	◀ 5 ▶
EXPOSURE MODE	◀ BLC ▶
LV	◀ 5 ▶
GAIN	◀ MIDDLE ▶
RETURN	↵

AE

BRIGHTNESS

Brightness refers to the brightness of the image. You can set the brightness value from 1 to 10 to darken or brighten the image. The higher the value is, the brighter the image is.

EXPOSURE MODE

You can set AE mode as **GLOBAL** and **BLC**.

- **GLOBAL**

GLOBAL refers to the normal exposure mode which is for adjusting the situations including unusual lighting distribution, variations, non-standard processing, or other conditions of under exposure to get an optimum image.

- **BLC (Backlight Compensation)**

BLC (Backlight Compensation) compensate light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

When BLC is selected as the exposure mode, the BLC level can be adjusted from 0 to 8.

GAIN

It optimizes the clarity of image in poor light scene. The **GAIN** level can be set to **HIGH**, **MIDDLE**, and **LOW**. Select **OFF** to disable the **GAIN** function.



The noise will be amplified if the **GAIN** is on.

3.2.3 WB (White Balance)

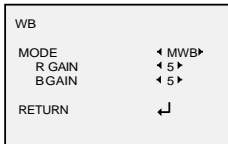
White balance is the white rendition function of the camera to adjust the color temperature according to the environment. It can remove the unrealistic color casts in the image. You can set WB mode as **ATW**, and **MWB**.

ATW

In **ATW** mode, white balance is being 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.



MWB Mode

3.2.4 DAY-NIGHT

Color, **B/W**, and **SMART** are selectable for DAY and NIGHT switches.

COLOR

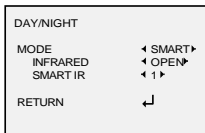
The image is colored in day mode all the time.

B/W

The image is black and white all the time, and the IR LED turns on in the 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

- **INFRARED**

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

- **SMART IR**

The **Smart IR** function is used to adjust the light to its most suitable intensity, and to prevent the image from over exposure. The **SMART IR** value can be adjusted from 0 to 3. The higher the value is, the more obvious effects are, and it is disabled when the value is 0.

3.2.5 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	↵

Video Setting

CONTRAST

This feature enhances the difference in color and light between parts of an image. You can set the **CONTRAST** value from 1 to 10.

SHARPNESS

Sharpness determines the amount of detail an imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 10.

COLOR GAIN

Adjust this feature to change the saturation of the color. 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 and delivering 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 flips 180 degree horizontally.

V: The image flips 180 degree vertically.

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

3.2.6 RESET

Reset all the settings to the default.

3.2.7 SAVE &EXIT

Move the cursor to **SAVE &EXIT** and press **OK** to save the setting and exit the menu.