TurboHD
Turret Camera
DS-2CE71D0T-PIRL
User Manual

Thank you for purchasing our product. If there are any questions, or requests, please contact the dealer.

This manual may contain 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.

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:

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 2014/35/EU, the 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.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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 device, you must be in strict compliance with the electrical safety regulations of the nation and region.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 12 VDC according to the IEC60950-1 standard. Refer to technical specifications for detailed information.
- Do not connect multiple devices to one power adapter to avoid over-heating or a fire hazard caused by overload.
- Make sure that the plug is firmly connected to the power socket.
- Make sure that the device is firmly fixed if wall mounting or ceiling mounting is adopted.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cord, and then contact the service center.
- Never attempt to disassemble the camera by unprofessional personal.

 **Cautions**

- Do not drop the camera or subject it to physical shock.
- Do not touch senor modules with fingers.
- Do not place the camera in extremely hot, cold (the

operating temperature shall be -40° to 60° C), dusty or damp locations, and do not expose it to high electromagnetic radiation.

- If cleaning is necessary, use a clean cloth with a bit of ethanol, and wipe it gently.
- Do not aim the camera at the sun or extra bright places.
- The sensor may be burned out by a laser beam, so if any laser equipment is in use, make sure that the surface of the sensor is not exposed to the laser beam.
- Do not expose the device to high electromagnetic radiation or extremely hot, cold, dusty, or damp environment.
- To avoid heat accumulation, good ventilation is required for the operating environment.
- Keep the camera away from liquid while in use for non-waterproof device.
- While in delivery, the camera shall be packed in its original packing or packing of the same texture.

Mark Description

Mark	Description
⎓	DC Voltage

1 Introduction

1.1 Product Features

The main features are as follows:

- High performance CMOS sensor
- IR cut filter with auto switch
- OSD menu with configurable parameters
- Auto white balance
- Internal synchronization
- SMART IR mode
- Visible alarm
- PIR detection
- 3-axis adjustment

1.2 Overview

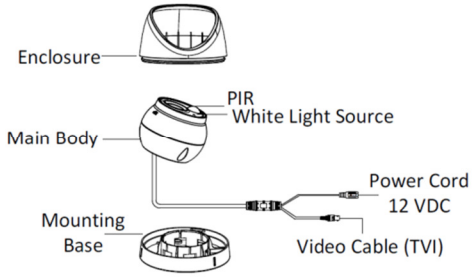


Figure 1, Camera Overview

2 Installation

Before you start:

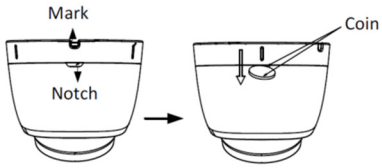
- Make sure that the device in the package is in good condition and all the assembly parts are included.
- Make sure that all the related equipment is powered off during the installation.
- Check the specification of the products for the installation environment.
- Check that the power supply matches your required

output to avoid damage.

- Make sure the wall is strong enough to withstand three times the weight of the camera, and the mount.
- If the wall is concrete, insert expansion screws before installing the camera. If the wall is wood, use self-tapping screw 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.

2.1 Ceiling/Wall Mounting without Junction Box

1. Disassemble the camera.
   1). Rotate the camera to align the notch to one of the marks.
   2). Pry the mounting base with a flat object (e.g., a coin) to remove it from the camera body.



2. Paste the drill template (supplied) to where you want to install the camera.
3. Drill the screw holes and the cable hole (optional) in the ceiling/wall according to the drill template.

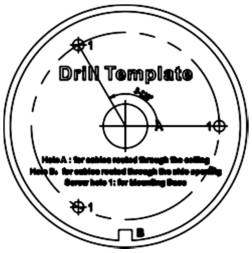


Figure 2, Drill Template

Note:
Drill the cable hole if using the ceiling outlet to route the cable.

4. Attach the mounting base to the ceiling/wall, and secure them with supplied screws.

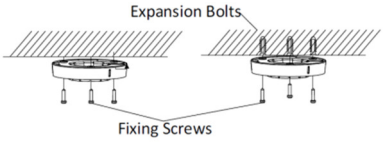


Figure 3, Attach Mounting Base to Ceiling

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

For concrete wall/ceiling, expansion bolts are required to fix the camera. For wood wall/ceiling, self-tapping screws are required.

5. Route the cables through the cable hole or side opening.
6. Align the camera with the mounting base, and secure the camera on the mounting base.

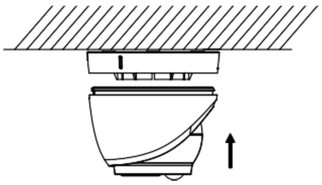


Figure 4, Secure Camera to Mounting Base

7. Connect the corresponding cables such as power cord 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.

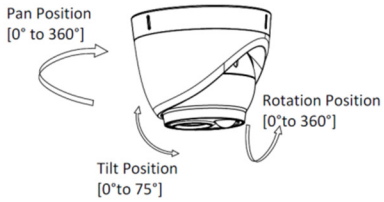


Figure 5, 3-Axis Adjustment

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°].

2.2 Mounting with Inclined Ceiling Mount

Before you start:

You need to purchase an inclined ceiling mount separately.

1. Paste the drill template (supplied) where you want to install the camera.
2. Drill screw holes and the cable hole on the ceiling/wall according to the supplied drill template.

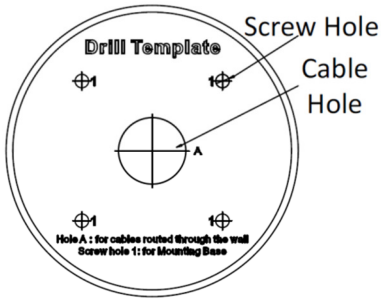


Figure 6, Drill Template

3. Disassemble the inclined ceiling mount with a screwdriver.
4. Install the turret camera's mounting base on the inclined ceiling mount's cover with three PM4 screws.

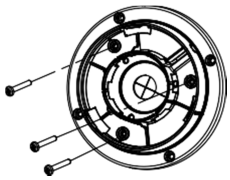


Figure 7, Install Turret Camera's Mounting Base

5. Install the inclined ceiling mount's body on the ceiling/wall with four PA4 × 25 screws.

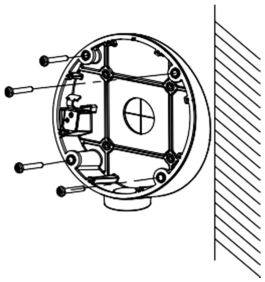


Figure 8, Fix the Inclined Ceiling Mount's Body

6. Combine the inclined ceiling mount's cover with its body with supplied screws.
7. Repeat steps 5 to 8 of *Ceiling/Wall Mounting without Junction Box* to complete the installation.

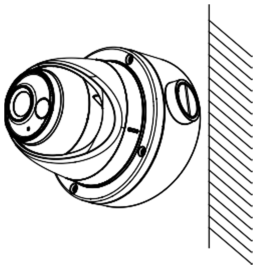


Figure 9, Fix Camera to the Inclined Ceiling Mount

2.3 Ceiling/Wall Mounting with Junction Box

Before you start:

You need to purchase a junction box separately.

1. Paste the drill template on the ceiling/wall.
2. Drill screw holes and the cable hole (optional) in the ceiling/wall according to the holes of the drill template.

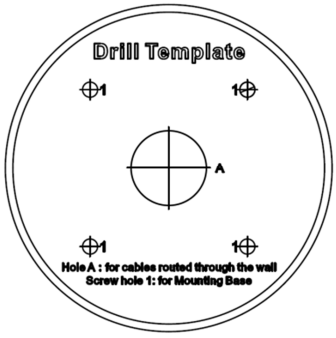


Figure 10, Junction Box Drill Template

Note:
Drill a cable hole if using the ceiling outlet to route the cable.

3. Take apart the junction box, and align the screw holes of the turret camera's mounting base with those on the junction box's cover.

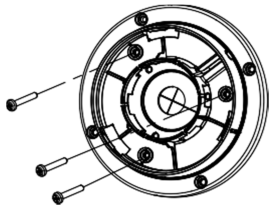


Figure 11, Install Turret Camera Mounting Base

4. Fix the mounting base on junction box's cover with supplied screws.

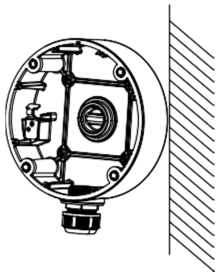


Figure 12, Install Junction Box on Ceiling/Wall

5. Secure the junction box's body with supplied screws on the ceiling/wall.
6. Combine the junction box's cover with the junction box's body.

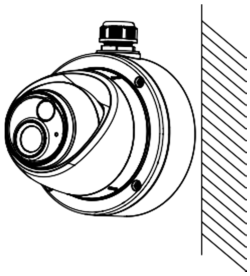


Figure 13, Fix the Camera to the Junction Box

7. Repeat steps 5 to 8 of *Ceiling/Wall Mounting without Junction Box* to install the camera to the junction box.

2.4 Wall Mounting

Before you start:

You need to purchase a wall mount separately.

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

Figure 14, Install the Bracket

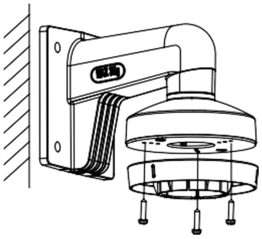


Figure 2-14 Install Mounting Base to Bracket

4. Install the mounting base of the turret camera to the wall mount, and secure them with supplied screws.
5. Route the cables through the mount.
6. Repeat steps 6 to 8 of *Ceiling/Wall Mounting without Junction Box* to complete the installation.

3 Menu Description

Purpose:

Call the menu by clicking the button on the PTZ Control interface or call preset no.95.

1. Connect the camera to the TVI DVR and the monitor.

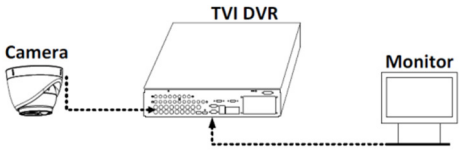


Figure 15, Connection

2. Power on the analog camera, TVI DVR, and the monitor to view the image on the monitor.
3. Click **PTZ Control** to enter the PTZ Control interface.
4. Call the camera menu by clicking the button or call preset no. 95.

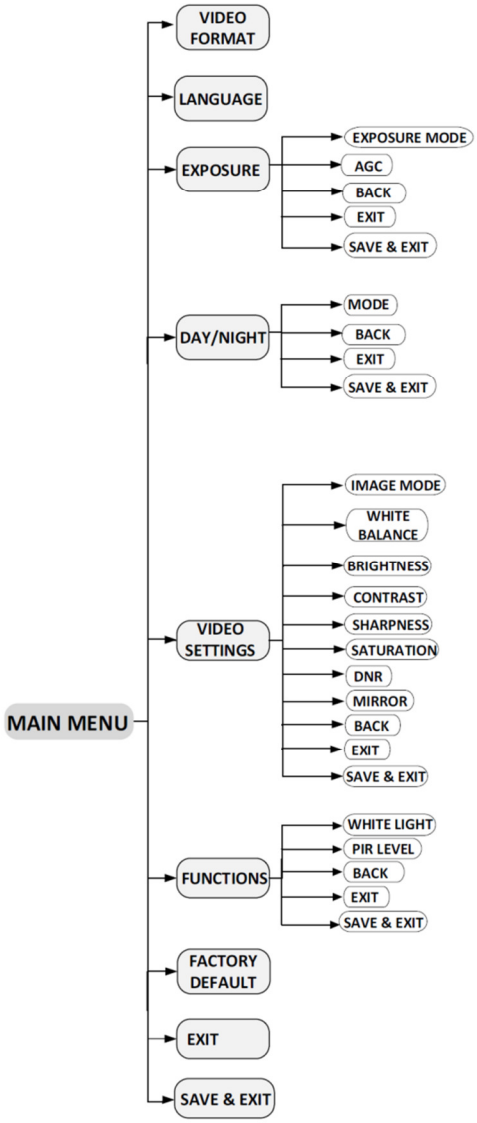


Figure 16, Main Menu Overview

5. Click the direction arrow to control the camera.
   1). Click **up/down** direction button to select the item.
   2). Click **Iris +** to confirm the selection.
   3). Click **left/right** direction button to adjust the value of the selected item.

3.1 VIDEO FORMAT

You can select the video format as 2 MP @ 25 fps or 2 MP @ 30 fps.

3.2 LANGUAGE

Supports English and Chinese.

3.3 EXPOSURE

EXPOSURE MODE

You can set the **EXPOSURE MODE** as **GLOBAL**, **BLC**, or **DWDR**.

- **GLOBAL**

  Normal exposure mode, which adjusts lighting distribution, variations, and non-standard processing.

- **BLC (Backlight Compensation)**

  Compensates light to the object in the front to make it clear, but may cause overexposure of the background where the light is strong.

- **DWDR (Digital Wide Dynamic Range)**

  Helps provide clear images even under backlight circumstances. WDR balances the brightness level of the whole image and provides clear images with details.

AGC (Auto Gain Control)

Optimizes image clarity in poor light conditions. The level can be set as **HIGH**, **MEDIUM**, or **LOW**. Select **OFF** to disable the **AGC** function.

Note:
The noise will be amplified when the **AGC** is on.

3.4 DAY/NIGHT

COLOR, **B&W** (Black White), and **AUTO** are selectable for DAY/NIGHT switches.

Note:
Under **LIGHTING** mode, the image is in color all the time, and there is no **DAY**/**NIGHT** settings in the menu.

- **COLOR**

  The image is colored in day mode all the time.

- **B/W**

  The image is black and white all the time, and it is best to turn the IR LIGHT on in poor light conditions.

- **AUTO**

  You can turn on/off the **IR LIGHT** and set the **SMART IR** value in this menu.

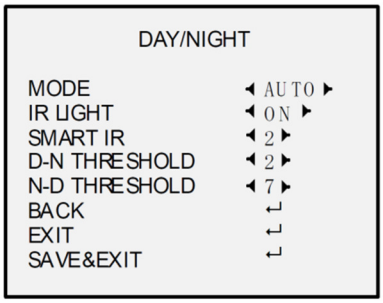


Figure 17, DAY/NIGHT

- **IR LIGHT**

  You can turn on/off the infrared to meet the requirements of different circumstances.

- **SMART IR**

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

- **D-N THRESHOLD (Day to Night Threshold))**

  Controls the sensitivity of switching day mode to night mode. You can set the value from 1 to 9. The larger the value, the more sensitive the camera.

- **N-D THRESHOLD (Night to Day Threshold)**

  Controls the sensitivity of switching night mode to day mode. You can set the value from 1 to 9. The larger the value, the more sensitive the camera.

3.5 VIDEO SETTINGS

Move the cursor to **VIDEO SETTINGS** and click **Iris+** to enter the submenu. **CONTRAST**, **SHARPNESS**, **COLOR GAIN**, **3 DNR**, and **MIRROR** are adjustable.

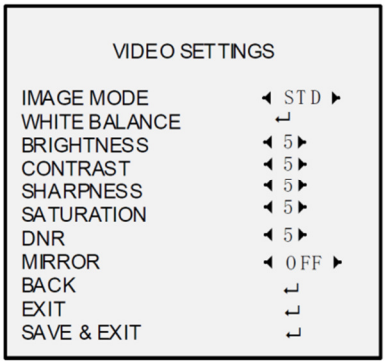


Figure 18, VIDEO SETTINGS

- **IMAGE MODE**

  Adjusts the image saturation. You can set it as **STD** (Standard) or **HIGH**-**SAT** (High Saturation).

- **WHITE BALANCE**

  The white rendition function of the camera, adjusts the color temperature according to the environment. It can remove unrealistic color casts in the image. You can set **WB** mode as **AUTO** or **MANUAL**.

  - **AUTO**

    White balance adjusts automatically according to the color temperature of the scene illumination.

  - **MANUAL**

    You can set the **R-GAIN**/**B-GAIN** value from 1 to 255 to adjust the shades of red/blue color of the image.

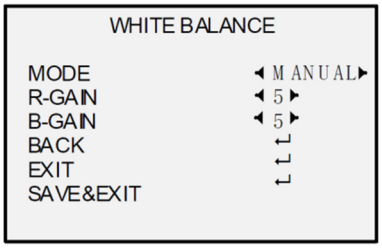


Figure 19, MWB MODE

- **BRIGHTNESS**

  Brightness of the image. Set from 1 to 9 to darken or brighten the image. The greater the value, the brighter the image.

- **CONTRAST**

  Enhances the difference in color and light between parts of an image. Set the value from 1 to 9.

- **SHARPNESS**

  The amount of detail reproduced. Set value from 1 to 9.

- **SATURATION**

  Adjust to change the color saturation, from 1 to 9.

- **DNR (Digital Noise Reduction)**

  The **DNR** function can decrease noise, especially when capturing moving images in poor light conditions, to deliver more accurate and sharper images. You can set the value from 1 to 9.

- **MIRROR**

  OFF, **H**, **V**, and **HV** are selectable for mirror.

  OFF: The mirror function is disabled

  H: The image flips 180° horizontally

  V: The image flips 180° verticall

  HV: The image flips 180° both horizontally and vertically

3.6 FUNCTIONS

WHITE LIGHT

The embedded white light source can work as a visible alarm.

You can set **WHITE LIGHT** mode to **ALARM** or **OFF**.

When you set **WHITE LIGHT** to **ALARM**, you can set the parameters in the **TRIGGER MODE** and the **ALARM MODE** to meet your needs.

- **TRIGGER MODE**
  - **DVR**

    Set **TRIGGER MODE** to **DVR**. In this way, the alarm signal is sent from the DVR, and the camera works as the alarm detector. Also, the alarm type supported only by the DVR can also trigger the visible alarm in the camera.

  - **CAMERA**

    Set **TRIGGER MODE** to **CAMERA**, the embedded PIR module sends the alarm signal to the visible alarm in the camera when the PIR module detects the alarm source.

- **ALARM**

  You can set the **ALARM MODE** as **SOLID** or **FLASHING**.

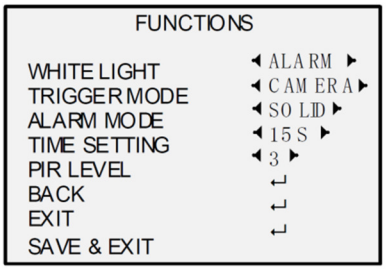


Figure 20, ALARM MODE

  - **SOLID**

    In this mode, the white light source turns on when the PIR module receives an alarm signal.

    Set **TIME SETTING** as 5 s, 10 s, 15 s, 30 s, or 60 s, to have the solid mode stay on for the set time when the camera receives one alarm signal.

Note:
The solid mode will stay for another set time when a second alarm signal is received, and the rest can be done in the same way.

- **FLASHING**

  Set **ALARM MODE** to **FLASHING** to have the white light source flash when the PIR module receives an alarm signal.

- **OFF**

  Select **OFF** to disable this function.

PIR LEVEL

Adjust the PIR module sensitivity. The greater the value, the more sensitive the PIR module.

3.7 FACTORY DEFAULT

Reset all settings to the factory defaults.

3.8 EXIT

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

3.9 SAVE & EXIT

Move the cursor to **SAVE & EXIT** and click **Iris+** to save the settings and exit the menu.