



# **TURBO HD DOT PIR Series 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 the models below:

Model
DS-2CE71D0T-PIRL
DS-2CE71D0T-PIRLP

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.

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## 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



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](http://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](http://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.

	
<b>Warnings</b> Follow these safeguards to prevent serious injury or death.	<b>Cautions</b> 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 sensor modules with fingers.
- Do not place the camera in extremely hot, cold (the operating temperature shall be -40°C to 60°C), dusty or damp locations, and do not expose it to high electromagnetic radiation.
- If cleaning is necessary, use 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 when any laser equipment is in using, make sure that the surface of sensor will not be 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-water-proof device.

- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.

**Mark Description**

Table 0-1 Mark Description

Mark	Description
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# 1 Introduction

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## 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
- Alarm linkage with DVR

## 1.2 Overview

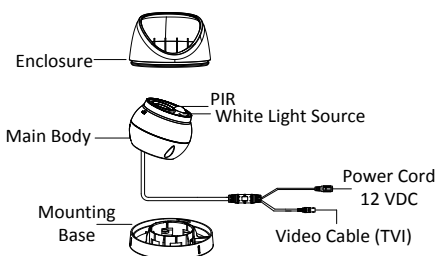


Figure 1-1 Camera Overview

# 2 Installation

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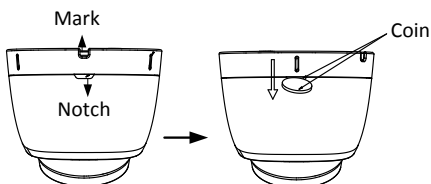
### ***Before you start:***

- 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 mount.
- 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, contact your dealer or the nearest service center. Do NOT disassemble the camera for repair or maintenance by yourself.

## 2.1 Ceiling/Wall Mounting without Junction Box

### ***Steps:***

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



2. Paste the drill template (supplied) to the place 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.

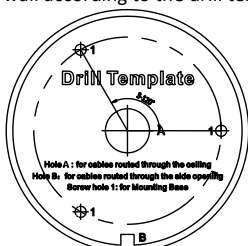


Figure 2-1 Drill Template

**Note:**

Drill the cable hole, when adopting the ceiling outlet to route the cable

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

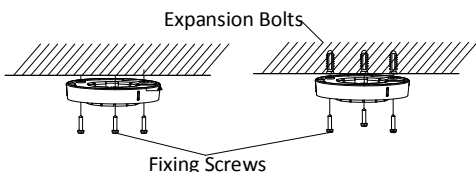


Figure 2-2 Attach the Mounting Base to the Ceiling

**Note:**

- The supplied screw package contains self-tapping screws, and expansion bolts.
  - For cement wall/ceiling, expansion bolts are required to install the camera. For wooden wall/ceiling, 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 secure the camera on the mounting base.

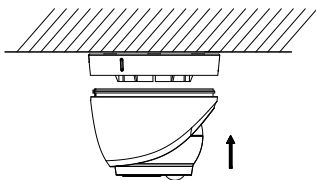


Figure 2-3 Secure the Camera with Mounting Base

7. Connect the corresponding cables, such as power cord, and video cable.
8. Power on the camera to check whether the image on the monitor is gotten from the optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

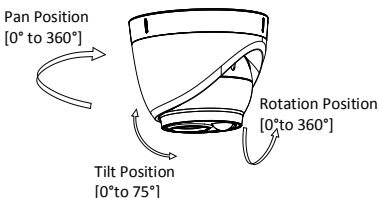


Figure 2-4 3-axis Adjustment

- 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.

### **Steps:**

1. Paste the drill template (supplied) to the place 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.

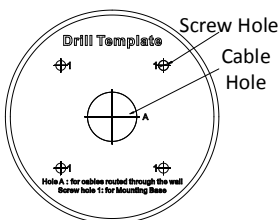


Figure 2-5 The Drill Template

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

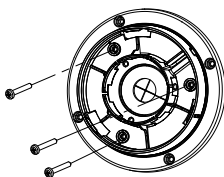


Figure 2-6 Install Turret Camera's Mounting Base

5. Install the inclined ceiling mount's body on the ceiling/wall with four PA4 × 25 screws, as shown in Figure 2-8.

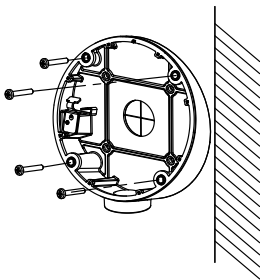


Figure 2-7 Install the Inclined Ceiling Mount's Body

6. Combine the inclined ceiling mount's cover with its body with supplied screws.
7. Repeat steps 5 to 8 of the 2.1 *Ceiling/Wall Mounting without Junction Box* to complete the installation.

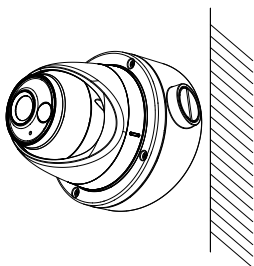


Figure 2-8 Install the Camera to the Inclined Ceiling Mount

## 2.3 Ceiling/Wall Mounting with Junction Box

### **Before you start:**

You need to purchase a junction box separately.

### **Steps:**

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.

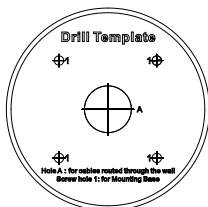


Figure 2-9 Drill Template of the Junction Box

### **Note:**

Drill the cable hole, when adopting 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 junction box's cover.
4. Install the mounting base on junction box's cover by supplied screws.



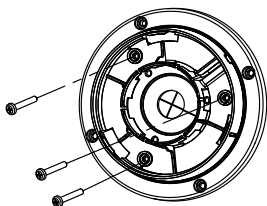


Figure 2-10 Install Turret Camera's Mounting Base

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

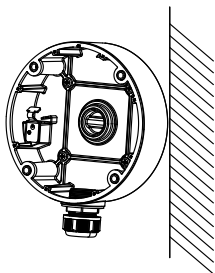


Figure 2-11 Install the Junction Box' Camera Body on Ceiling/Wall

6. Combine the junction box's cover with the junction box's body.
7. Repeat steps 5 to 8 of *2.1 Ceiling/Wall Mounting without Junction Box* to install the camera to the junction box.

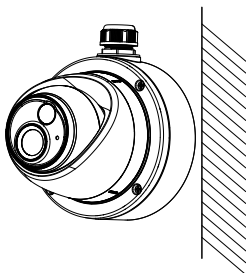


Figure 2-12 Install the Camera to the Junction Box

## 2.4 Wall Mounting

### ***Before you start:***

You need to purchase a wall mount separately.

### ***Steps:***

1. Drill four screw holes in the wall according to the holes of 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.

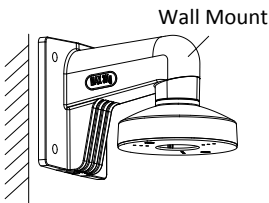


Figure 2-13 Install the Bracket

4. Install the mounting base of the turret camera to the wall mount, and secure them with supplied screws.

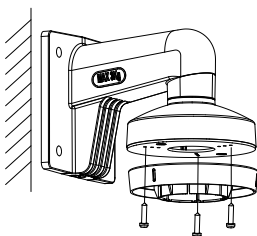


Figure 2-14 Install the Mounting Base to the Bracket

5. Route the cables through the mount.
6. Repeat steps 6 to 8 of *2.1 Ceiling/Wall Mounting without Junction Box* to complete the installation.

## 3 Menu Description

Please follow the steps below to call the menu.

**Note:**


The menu description part is only for your reference. It might have some differences due to the specific model that you have.

**Steps:**

1. Connect the camera with the TVI DVR, and the monitor, shown as the figure 3-1.



Figure 3-1 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  button, or call the preset No. 95.

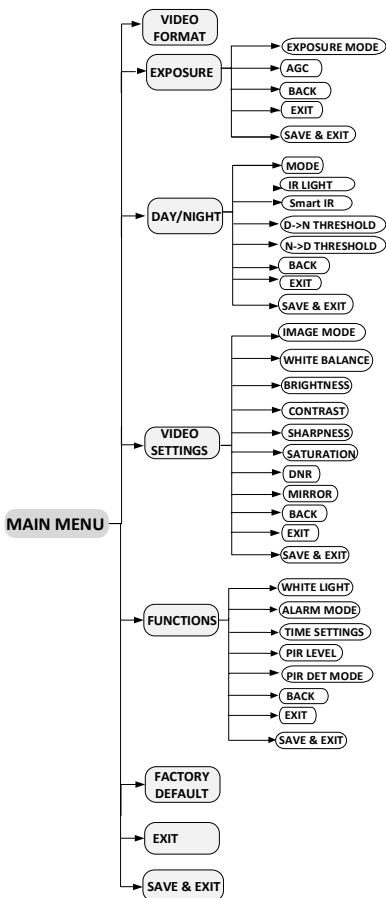


Figure 3-2 Main Menu Overview

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 2MP@25fps , or 2MP@30fps.

### 3.2 EXPOSURE

#### EXPOSURE MODE

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

##### ● GLOBAL

GLOBAL refers to the normal exposure mode which adjusts lighting distribution, variations, and non-standard processing.

##### ● BLC (Backlight Compensation)

BLC (Backlight Compensation) compensates light to the object in the front to make it clear, but this may cause the

over-exposure of the background where the light is strong.

- **HLC (Highlight Compensation)**

HLC stands for highlight compensation. The camera detects the strong spots (the over-exposure portion of image), then reduce the brightness of the strong spots to improve the overall images.

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

The digital 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.

**AGC (Auto Gain Control)**

It optimizes the clarity of the image in poor light conditions. The **AGC** level can be set as **HIGH**, **MEDIUM**, or **LOW**.

**Note:**

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

### 3.3 DAY/NIGHT

**COLOR**, **B&W** (Black White), and **AUTO** 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 it is better to turn the IR LIGHT on in poor light conditions.

- **IR LIGHT**

You can turn on/off the IR LIGHT 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.

**AUTO**

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

DAY/NIGHT	
MODE	◀ AUTO ▶
IR LIGHT	◀ ON ▶
SMART IR	◀ 2 ▶
D-N THRESHOLD	◀ 2 ▶
N-D THRESHOLD	◀ 7 ▶
BACK	↶
EXIT	↶
SAVE&EXIT	↶

Figure 3-3 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)**

Day to Night Threshold is used to control the sensitivity of switching the day mode to the night mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

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

Night to Day Threshold is used to control the sensitivity of switching the night mode to the day mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

### 3.4 VIDEO SETTINGS

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

VIDEO SETTINGS	
IMAGE MODE	◀ STD ▶
WHITE BALANCE	↵
BRIGHTNESS	◀ 5 ▶
CONTRAST	◀ 5 ▶
SHARPNESS	◀ 5 ▶
SATURATION	◀ 5 ▶
DNR	◀ 5 ▶
MIRROR	◀ OFF ▶
BACK	↵
EXIT	↵
SAVE & EXIT	↵

Figure 3-4 VIDEO SETTINGS

#### IMAGE MODE

**IMAGE MODE** is used to adjust the image saturation, and you can set it as **STD** (Standard), or **HIGH-SAT** (High Saturation).

#### WHITE BALANCE

White balance, the white rendition function of the camera, is to adjust 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

Under **AUTO** mode, white balance is being adjusted 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.

WHITE BALANCE	
MODE	◀ M A N U A L ▶
R-GAIN	◀ 5 ▶
B-GAIN	◀ 5 ▶
BACK	↵
EXIT	↵
SAVE&EXIT	↵

Figure 3-5 MWB MODE

#### BRIGHTNESS

Brightness refers to the brightness of the image. You can set the brightness value from 1 to 9 to darken or brighten the image. The greater the value is, the brighter the image is.

#### CONTRAST

This feature enhances the difference in color and light between parts of an image. You can set the **CONTRAST** value from 1 to 9.

## SHARPNESS

Sharpness determines the amount of detail an imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 9.

## SATURATION

Adjust this feature to change the saturation of the color. The value ranges from 1 to 9.

## DNR (Digital Noise Reduction)

The **DNR** function can decrease the noise effect, especially when capturing moving images in poor light conditions, and delivering more accurate and sharper image. You can set the **DNR** 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° vertically.

**HV**: The image flips 180° both horizontally and vertically.

## 3.5 FUNCTIONS

### WHITE LIGHT

In the **WHITE LIGHT** mode, you can set the mode as **AUTO** or **OFF**.

### ALARM MODE

In the **ALARM MODE**, you can select the **ALARM MODE** as **SOLID**, or **FLASHING**.

FUNCTIONS	
WHITE LIGHT	◀ OFF ▶
ALARM MODE	◀ FLASHING ▶
TIME SETTINGS	◀ 10 S ▶
PIR LEVEL	◀ 3 ▶
PIR DET MODE	◀ OUTDOOR ▶
BACK	◀ ↵ ▶
EXIT	◀ ↵ ▶
SAVE & EXIT	◀ ↵ ▶

Figure 3-6 FUNCTIONS

### ● SOLID

Select the **ALARM MODE** as **SOLID**. In this way, the white light source turns on, when the PIR module received the alarm signal.

### ● FLASHING

Select the **ALARM MODE** as **FLASHING**. In this way, the white light source flashes when the PIR module received the alarm signal.

### Note:

When the **WHITE LIGHT** is selected as **AUTO**, you can only select the **ALARM MODE** as **FLASHING**.

### TIME SETTINGS

In the **TIME SETTINGS** you can set the time as 5 s, 10 s, 15 s, 30 s, or 60 s, which means that the solid mode stays for the set time when the camera received one alarm signal.

### Note:

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

### PIR LEVEL

Adjust the sensitivity of the PIR module, and the higher the value is, the more sensitive the PIR module is.

## **PIR DET MODE**

**OUTDOOR** and **INDOOR** are selectable for **PIR DET MODE** switch.

### **3.6 FACTORY DEFAULT**

Reset all the settings to the factory default.

### **3.7 EXIT**

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

### **3.8 SAVE & EXIT**

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