

## TurboHD DS-2CE11D0T-PIRL Bullet Camera User Manual

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

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.

## 1 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 used.
- 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 have the camera disassembled by non-professional personnel.



### 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° 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 if any laser equipment is in use, make sure that the sensor surface is not exposed to the laser beam.
- Do not expose 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

## 2 Introduction

### 2.1 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

### 2.2 Camera Overview

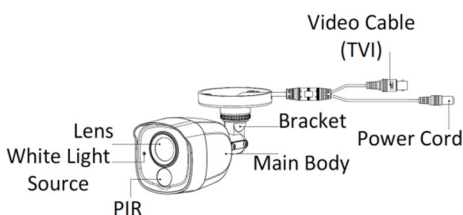


Figure 1, Camera Overview

# 3 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 whether the power supply matches your power 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 bolts before installing the camera. If the wall is wood, use self-tapping screws 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.

## 3.1 Camera Installation

### 3.1.1 Ceiling/Wall Mounting without Junction Box

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

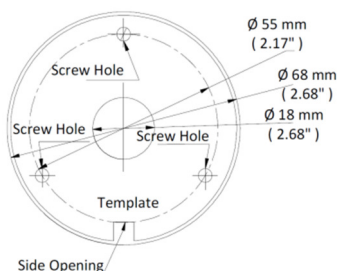


Figure 2, Drill Template

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

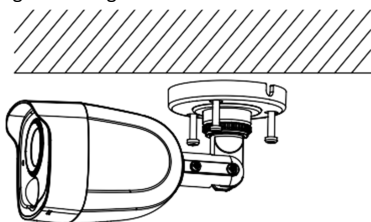


Figure 3, Fix the Camera to the Ceiling

3. Attach the bracket to the ceiling/wall, and secure the camera with supplied screws.

**Note:** The supplied screw package contains self-tapping screws and expansion bolts. For cement wall/ceiling, expansion bolts are required to fix the camera. For wood wall/ceiling, self-tapping screws are required.

Route the cables through the cable hole or side opening.

4. Connect the corresponding power cord and video cable.
5. 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.

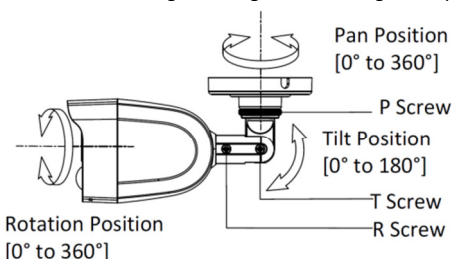


Figure 4, 3-Axis Adjustment

- 1). Loosen the P screw to adjust the pan position [0° to 360°]. Tighten the screw after completing the adjustment.

- 2). Loosen the T screw to adjust the tilt position [0° to 180°]. Tighten the screw after completing the adjustment.
- 3). Loosen the R screw and rotate the camera [0° to 360°]. Tighten the screw after completing the adjustment.

### 3.1.2 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 in the ceiling/wall according to the drill template holes.

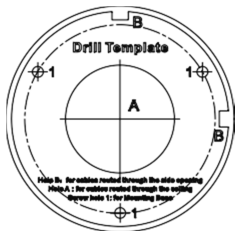


Figure 5, Junction Box Drill Template

3. Take apart the junction box, and align the bullet camera screw holes with those on the junction box cover.
4. Fix the camera on the junction box cover with supplied screws.

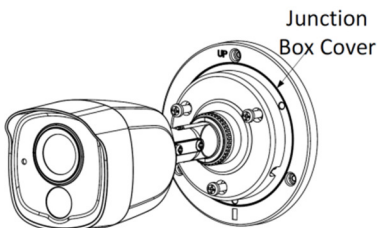


Figure 6, Fix Camera to the Junction Box Cover

5. Attach the junction box body to the ceiling/wall by aligning the screw holes of the junction box.
6. Secure the junction box's body with supplied screws on the ceiling/wall.

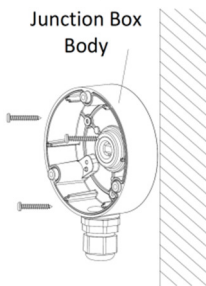


Figure 7, Fix Junction Box to Wall/Ceiling

7. Route the cables through the bottom cable hole or the side cable hole of the junction box.

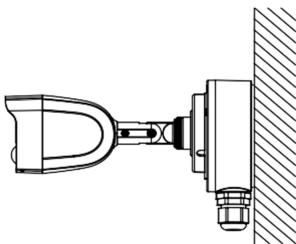



Figure 8, Re-affix Junction Box Cover to its Body

8. Combine the junction box cover with its body.
9. Repeat steps 5 and 6 of *Ceiling/Wall Mounting without Junction Box* to complete the installation.

## 4 Menu Description

### Purpose:

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

### Steps:

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

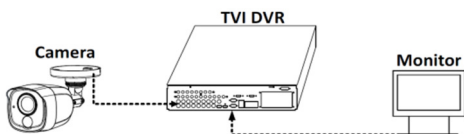



Figure 9, Connection

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.
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.

### VIDEO FORMAT

You can set the video format to 2 MP @ 25 fps or 2 MP @ 30 fps.

### LANGUAGE

Supports English and Chinese.

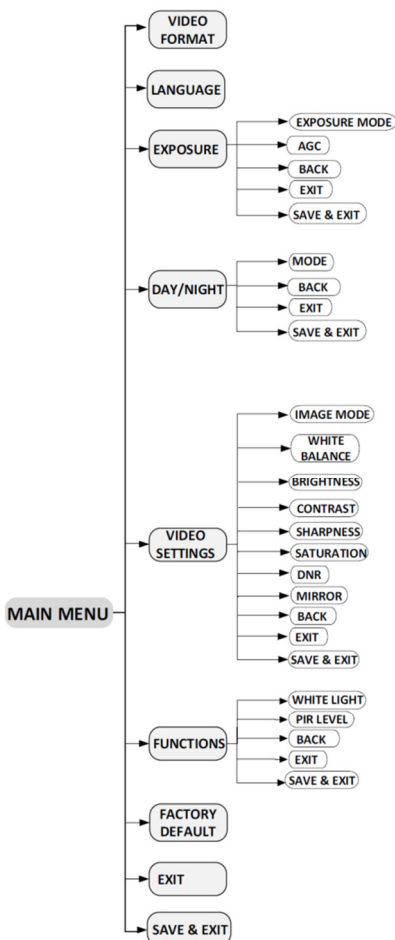


Figure 10, Main Menu Overview

## 4.1 EXPOSURE

### EXPOSURE MODE

You can set the **EXPOSURE MODE** as **GLOBAL**, **BLC**, 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 overexposure of the background where light is strong.

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

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)

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

**Note:**

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

### DAY/NIGHT

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

- **COLOR**

The image is in color in day mode all the time.

- **B/W**

The image is black and white all the time (it is better 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.

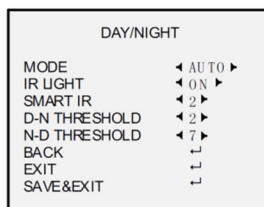


Figure 11, DAY/NIGHT

- **IR LIGHT**

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

- **SMART IR**

The **Smart IR** function 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 greater the value, the more obvious the effects.

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

Day to Night Threshold controls the sensitivity of switching the 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)**

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

## 4.2 VIDEO SETTINGS

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

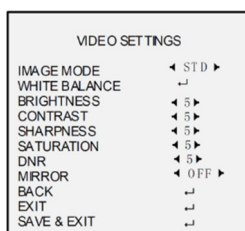


Figure 12, VIDEO SETTINGS

## IMAGE MODE

IMAGE MODE adjusts 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, adjusts the color temperature according to the environment. It can remove unrealistic color casts in the image. You can set **WB** mode to **AUTO** or **MANUAL**.

- **AUTO**

Under **AUTO** mode, white balance adjusts automatically according to the scene illumination color temperature.

- **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.

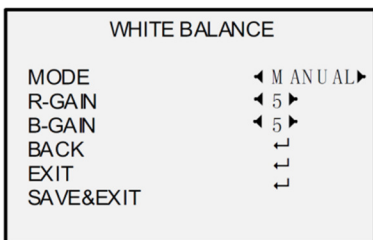


Figure 13, MWB MODE

## 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, the brighter the image.

## 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 the imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 9.

## SATURATION

Adjust this feature to change the color saturation. 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, to deliver a 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

## 4.3 FUNCTIONS

### WHITE LIGHT

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

In **WHITE LIGHT** mode, you can set mode to **ALARM** or **OFF**.

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

### TRIGGER MODE

- **DVR**

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

- **CAMERA**

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

### ALARM

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

FUNCTIONS	
WHITE LIGHT	◀ ALARM ▶
TRIGGER MODE	◀ CAMERA ▶
ALARM MODE	◀ SOLID ▶
TIME SETTING	◀ 15 S ▶
PIR LEVEL	◀ 3 ▶
BACK	⌋
EXIT	⌋
SAVE & EXIT	⌋

Figure 14, ALARM MODE

- **SOLID**

Set the **ALARM MODE** to **SOLID**. In this way, the white light source turns on when the PIR module receives the alarm signal.

In **TIME SETTING** 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 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 the **ALARM MODE** to **FLASHING**. In this way, the white light source flashes when the PIR module receives the alarm signal.

**TRIGGER MODE**

- **DVR**

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

- **CAMERA**

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

**OFF**

Select **OFF** to disable this function.

**PIR LEVEL**

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

**FACTORY DEFAULT**

Reset all the settings to the factory default.

**EXIT**

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

**SAVE & EXIT**

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