

# **CVIOD-EL2MPIR50 User's Manual**

**Version 1.1.0**

# Table of Contents

|       |                                                        |    |
|-------|--------------------------------------------------------|----|
| 1     | General Introduction.....                              | 1  |
| 1.1   | Overview .....                                         | 1  |
| 1.2   | Features .....                                         | 1  |
| 1.3   | Functions .....                                        | 1  |
| 1.4   | Specifications .....                                   | 1  |
| 2     | Framework .....                                        | 4  |
| 2.1   | Dimensions .....                                       | 4  |
| 2.1.1 | <b>CVIOD-EL2MPIR50</b> .....                           | 4  |
| 3     | Installation .....                                     | 6  |
| 3.1   | Dome Camera Installation Introduction.....             | 6  |
| 3.2   | Fixed Camera Installation.....                         | 6  |
| 4     | Menu .....                                             | 8  |
| 4.1   | Menu List .....                                        | 8  |
| 4.2   | Note .....                                             | 10 |
|       | Appendix Toxic or Hazardous Materials or Elements..... | 11 |

## **Welcome**

Thank you for purchasing our HDCVI camera!

This user's manual is designed to be a reference tool for your system.

Please read the following safeguard and warnings carefully before you use this series product!

Please keep this user's manual well for future reference!

# Important Safeguards and Warnings

## 1 . Electrical safety

All installation and operation here should conform to your local electrical safety codes.

The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated 12V DC in the IEC60950-1.

We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

## 2 . Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

## 3 . Installation

Do not apply power to the camera before completing installation.

Please install the proper power cut-off device during the installation connection.

Always follow the instruction guide the manufacturer recommended.

If this product is installed in the ceiling, please make sure the installation position can sustain the min 50N.

## 4 . Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.

We are not liable for any problems caused by unauthorized modifications or attempted repair.

## 5 . Environment

This series HDCVI camera should be installed in a cool, dry place away from direct sunlight or strong light, inflammable, explosive substances and etc.

The working temperature ranges from -30°C to +60°C. Please keep it away from the electromagnetic radiation object and environment.

Please make sure the CMOS component is out of the radiation of the laser beam device. Otherwise it may result in CMOS optical component damage.

Please keep the sound ventilation.

Do not allow the water and other liquid falling into the camera.

## 6. Accessories

Be sure to use all the accessories recommended by manufacturer.

Before installation, please open the package and check all the components are included.

Contact your local retailer ASAP if something is broken in your package.

## 7. Daily Maintenance

Please shut down the device and then unplug the power cable before you begin daily maintenance work.

Use the dry soft cloth to clean the device. If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.

Please put the dustproof cap to protect the CMOS component when you do not use the camera.

# 1 General Introduction

## 1.1 Overview

This series megapixel HD camera conforms to the HDCVI standard. It supports video signal high-speed long distance transmission without any delay. It can be controlled by the DVR conforming to the HDCVI.

## 1.2 Features

- High-performance CMOS image sensor, megapixel definition.
- HD video, coaxial cable to transmit the control signal.
- Support 75-3 coaxial cable transmission without any loss. Transmission distance is over 300m.
- Support HD and standard definition switch.
- Support 1080P@25, 1080P@30, 720P@25, 720P@30, 720P@50, 720P@60.
- High speed, long distance real-time transmission.
- Support OSD (on-screen display), suitable for user self-defined setup.
- Support privacy mask, image digital zoom.
- Support DC12V power supplying.
- Support 3D noise reduction(denoise),excellent performance in low illumination environment.
- IP66 compliance.
- Support ICR switch to realize surveillance both in the daytime and at night.
- Support intelligent IR function.

## 1.3 Functions

### HDCVI Specification

HDCVI (High Definition Composite Video Interface) is an over-coaxial –cable HD video transmission standard. The technology renders two HD video formats by progressive scanning.

### OSD

User-friendly on-screen display for you to select the different functions.

### ICR

The IR cut removal is to filter the IR light in the daytime and then auto switch to the general filter at night. This function allows the camera to output the high sensitivity and clear video.

### Smart IR technology

The sensor controls the IR light on/off via the combination work of the hardware and software, which realizes the automatically IR light compensation according to the environment illumination.

## 1.4 Specifications

Please refer to the following sheet for specification.

| Model<br>Parameter            |               | 2 Megapixel HDCVI Camera                                                                                     |                                              |                                            |
|-------------------------------|---------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------|
|                               |               | CVIOD-EL2MPIR50                                                                                              |                                              |                                            |
| Video Processor               |               | 1/3" 2 Megapixel CMOS                                                                                        |                                              |                                            |
| Video Format                  |               | PAL/NTSC                                                                                                     |                                              |                                            |
| Effective Pixel               |               | 1920 (H) *1080 (V)                                                                                           |                                              |                                            |
| Min Illumination              |               | 0.05Lux@ (F1.2, AGC ON) , 0 Lux with IR                                                                      |                                              |                                            |
| Electronic Shutter            |               | Support slow shutter. 1/3s~1/100,000s                                                                        |                                              |                                            |
| Video Standard                |               | HDCVI/CVBS compliance                                                                                        |                                              |                                            |
| Video Frame Rate              |               | 1920×1080@25fps; 1920×1080@30fps; 1280×720@25 fps; 1280×720@30 fps; 1280×720@50 fps; 1280×720@60 fps         |                                              |                                            |
| Lens Port                     |               | M12                                                                                                          |                                              |                                            |
| Lens Type                     |               | 2.8/3.6/6/8mm optional                                                                                       | 2.8/3.6/6/8mm optional                       | 3.6/6/8/12/16mm optional                   |
| Day/Night Switch              |               | ICR mechanical auto switch                                                                                   |                                              |                                            |
| Video Output                  |               | 1-channel HDCVI high definition video output/ CVBS standard definition video output (Can switch.)            |                                              |                                            |
| Denoise (Noise Reduction)     |               | Support 2D/3D denoise.                                                                                       |                                              |                                            |
| OSD Menu Control              |               | Support                                                                                                      |                                              |                                            |
| OSD                           | EXPOSURE      | Exposure Mode/Exposure Level/Exposure Speed/Anti Flicker/BLC/Return                                          |                                              |                                            |
|                               | WHITE BALANCE | Auto/Manual/Day/Night/Return&Exit                                                                            |                                              |                                            |
|                               | DAY/NIGHT     | Auto/B&W/Color/ Return&Exit                                                                                  |                                              |                                            |
|                               | FUNCTION      | 2DNR/3DNR/D-zoom/Lens/ Return&Exit                                                                           |                                              |                                            |
|                               | ADVANCED      | Cam Title/Mirror&Flip/Motion Detect/Privacy Mask/Language/COM Setup/System Info/ Return&Exit                 |                                              |                                            |
|                               | IMAGE         | Sharpness/Brightness/Contrastness/Saturation/Sharp Suppress/ Chroma Suppress/Gamma/Video Format/ Return&Exit |                                              |                                            |
|                               | RESET         | /                                                                                                            |                                              |                                            |
|                               | EXIT          | /                                                                                                            |                                              |                                            |
| Max IR Distance               |               | 20m                                                                                                          | 30 m                                         | 50 m                                       |
| Transmission Distance         |               | Over 300m via 75-3 coaxial cable.                                                                            |                                              |                                            |
| Protection Level              |               | IP66                                                                                                         |                                              |                                            |
| Working Temperature /Humidity |               | -30℃~+60℃ . Humidity is less than 95%(no condensation)                                                       |                                              |                                            |
| Power                         |               | DC 12V±10%                                                                                                   |                                              |                                            |
| Power Consumption             |               | 3.5W MAX<br>(Input: 12V $\Rightarrow$ 0.29A)                                                                 | 6.5W MAX<br>(Input: 12V $\Rightarrow$ 0.54A) | 8W MAX<br>(Input: 12V $\Rightarrow$ 0.67A) |
| Dimension(mm)                 |               | Φ 113.6×85.8                                                                                                 | 200.2×89.1×80.4                              | 200.2×89.1×80.4                            |

|                          |                                |            |      |
|--------------------------|--------------------------------|------------|------|
| <b>Weight</b>            | 300g                           | 450g       | 450g |
| <b>Installation Mode</b> | Wall mount<br>In-ceiling mount | Wall mount |      |

## 2 Framework

### 2.1 Dimensions

#### 2.1.1 CVID-EL2MPIR50

Please refer to the following figures for the dimension information. The unit is mm. See Figure 2-1.

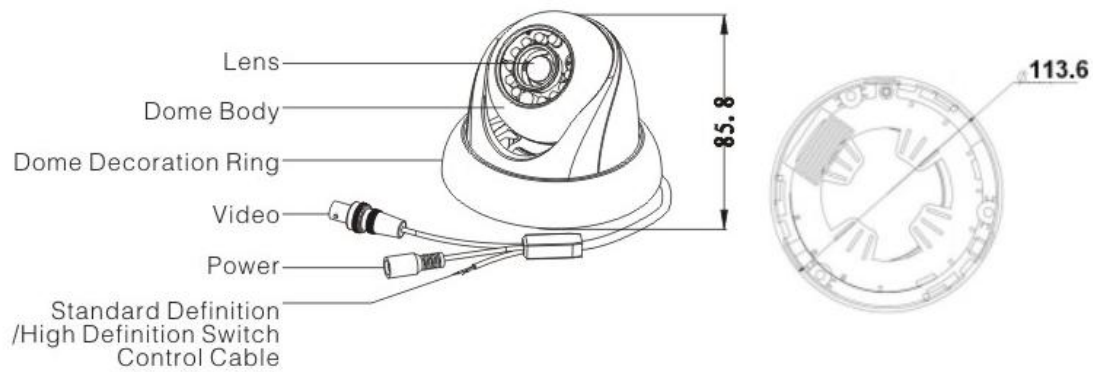


Figure 2-1

#### 2.1.2

Please refer to the following figures for the dimension information. The unit is mm. See Figure 2-2.

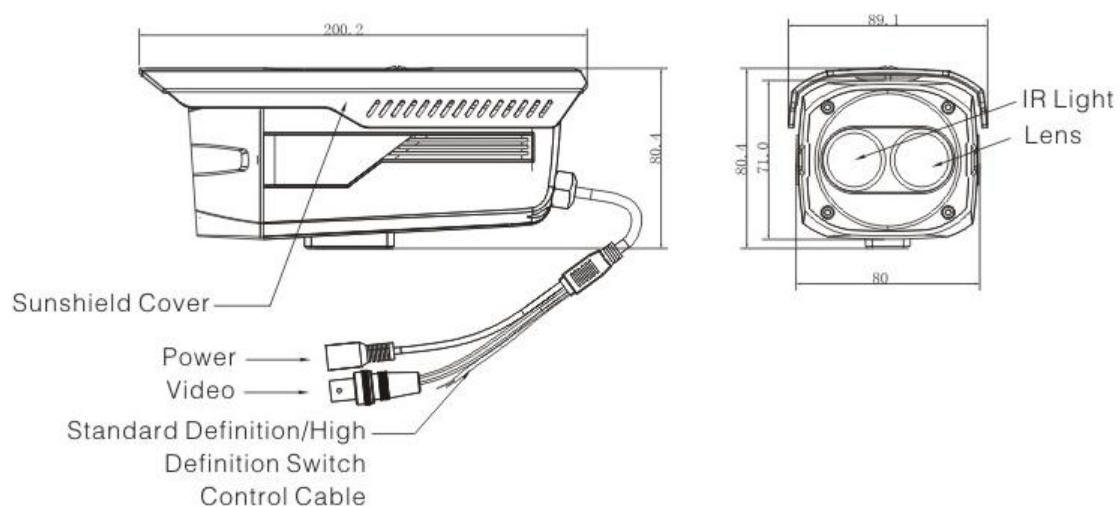


Figure 2-2

#### 2.1.3

Please refer to the following figures for the dimension information. The unit is mm. See Figure 2-3.

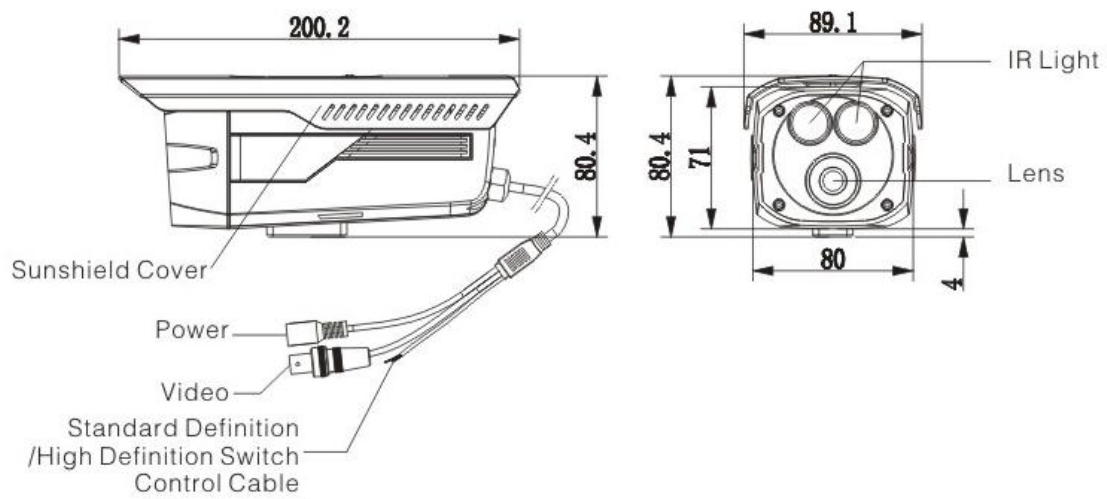


Figure 2-3

When the standard definition/high definition switch control cable is short circuit, system outputs standard definition video. Otherwise, when the circuit is open, system outputs the high definition video.

## 3 Installation

### Important

- Before the installation, please make sure the installation surface can sustain at least 3X weight of the bracket and the camera.

### 3.1 Dome Camera Installation Introduction

Please follow the steps listed below. See Figure 3-1.

#### Step 1

Turn clockwise to remove the decoration ring from the snap joints.

#### Step 2

Please take the installation position map in the accessories bag, and then paste it on the ceiling or the wall according to your monitor area requirements.

#### Step 3

Draw and then dig three plastic expansion bolts holes in the installation surface and then insert three expansion bolts in the holes. Secure these three bolts firmly. Please draw the cable out from the cable exit when you install the device.

#### Step4

Adjust the device installation pedestal to the proper position and then line up the three screw holes in the device pedestal to the three plastic expansion bolt holes in the installation position. Put the three self-tapping screws in the three plastic expansion bolts firmly. Loosen the M3X8 cross recessed pan head slot screw of the pedestal to unfasten the preforming. (Do not remove, loosen a little bit will be OK.). Adjust the lens to the proper monitor angle and then use the original preforming to turn the M3X8 cross recessed pan head slot screw back.

#### Step5

Line up the three spigots of the decoration ring to the jags from the bottom to the top and then turn clockwise until you hear a clear sound "KA". Now the installation is complete.

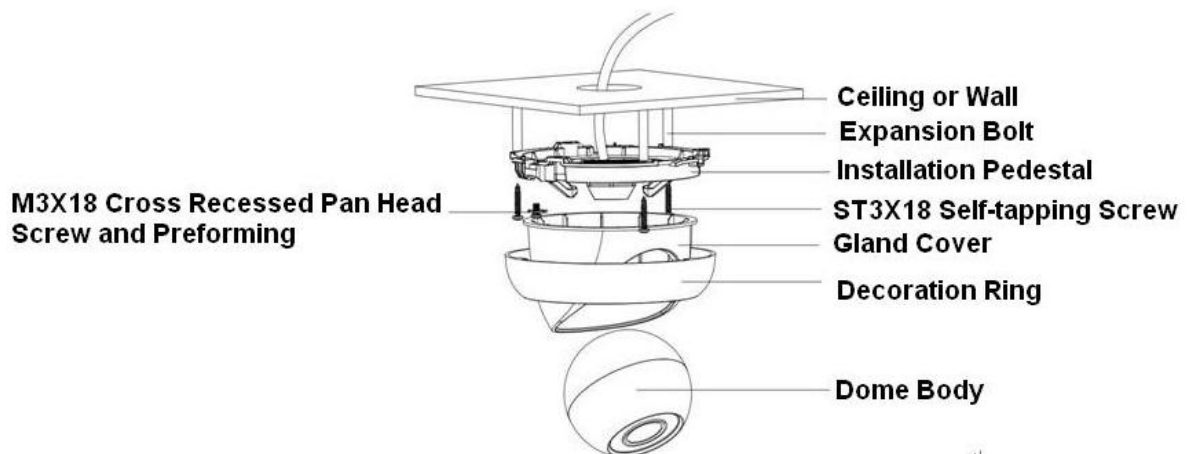


Figure 3-1

### 3.2 Fixed Camera Installation

This series product supports wall-mount. Please refer to the steps listed below for installation information. See Figure 3-2. The follow figure is for reference only.

### **Step 1**

Install the camera bracket. Please install the expansion bolt if you want to install in the cement wall (Please make sure the installation holes of the expansion bolts are the same with the bracket.) Then you can install the bracket. If you want to install in the wood surface, please skip the first step and then use the self-tapping screws to install the bracket directly.

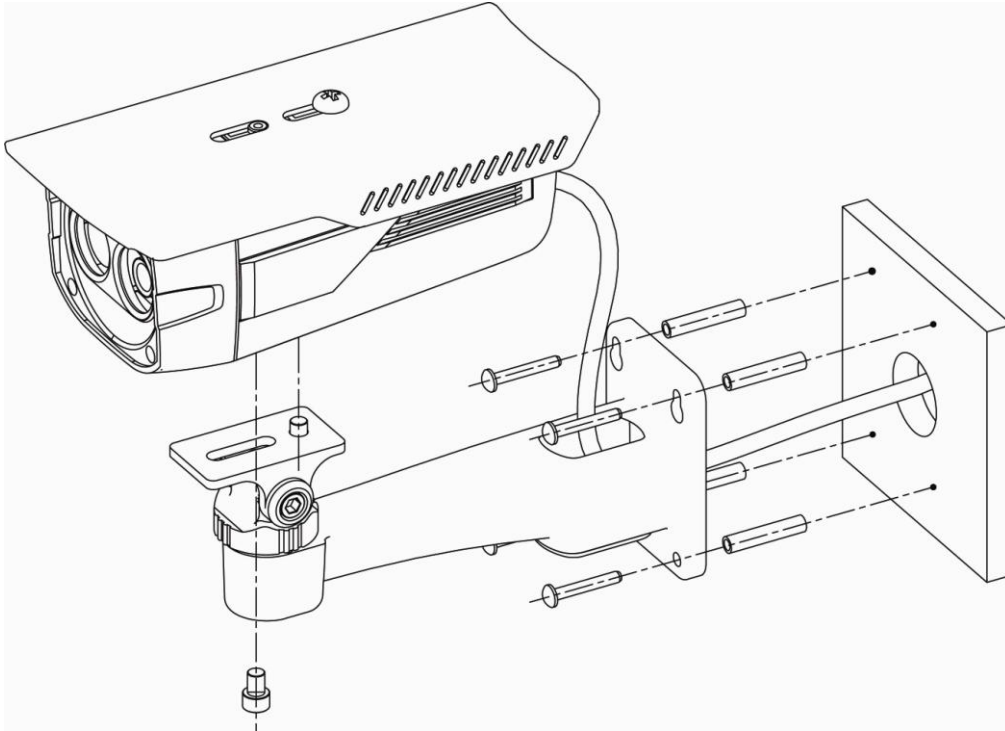


Figure 3-2

### **Step 2**

Install the camera. Use the screws to install the camera to the bracket via the installation pedestal of the bottom of the camera.

### **Step 3**

Adjust the camera to the proper monitor area and then secure the button of the bracket to fasten the camera.

## 4 Menu

### 4.1 Menu List

| The 1 <sup>st</sup> |                      | The 2 <sup>nd</sup> |                    | The 3 <sup>rd</sup> |                                                                                                                                                                                                                                                                             |
|---------------------|----------------------|---------------------|--------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exposure            | ←                    | Exposure Mode       | Auto               |                     |                                                                                                                                                                                                                                                                             |
|                     |                      |                     | Low Noise ←        | Gain Max            | 0~100                                                                                                                                                                                                                                                                       |
|                     |                      |                     |                    | Gain Min            | 0~100                                                                                                                                                                                                                                                                       |
|                     |                      |                     |                    | Return&Exit         | <b>For the 2<sup>nd</sup> and the 3<sup>rd</sup> menu, when you click Exit button to exit, system saves current setup by default.</b>                                                                                                                                       |
|                     |                      |                     | Low Motion Blur ←  | Shutter Max         | <ul style="list-style-type: none"> <li>PAL: 0ms~40ms</li> <li>NTSC: 0ms~33ms</li> </ul>                                                                                                                                                                                     |
|                     |                      |                     |                    | Shutter Min         | <ul style="list-style-type: none"> <li>PAL: 0ms~40ms</li> <li>NTSC: 0ms~33ms</li> </ul>                                                                                                                                                                                     |
|                     |                      |                     |                    | Return&Exit         |                                                                                                                                                                                                                                                                             |
|                     |                      |                     | Manual ←           | Shutter             | 1/100000, 1/10000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/120, 1/100, 1/60, 1/50, 1/30, 1/25, 1/15, 1/12, 1/10, 1/8, 1/6, 1/5, 1/4, 1/3<br>Customized ←                                                                                                                    |
|                     |                      |                     |                    | Gain Max            | 0~100                                                                                                                                                                                                                                                                       |
|                     |                      |                     |                    | Gain Min            | 0~100                                                                                                                                                                                                                                                                       |
|                     |                      |                     |                    | Return&Exit         |                                                                                                                                                                                                                                                                             |
|                     |                      | Exp Level           | 0~14               |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Exp Speed           | 0~7                |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Anti-flicker        | Outoodr/50H Z/60HZ |                     | <ul style="list-style-type: none"> <li>50HZ: 1/50, 1/100, 1/25, 1/10, 1/5, 1/4.</li> <li>60HZ: 1/60, 1/120, 1/30, 1/4, 1/12, 1/6.</li> </ul> <b>The 50HZ and 60HZ mode have different manual exposure mode and there is no low motion blur and low noise exposure mode.</b> |
|                     |                      | BLC                 | ←                  | BLC                 | OFF/ON                                                                                                                                                                                                                                                                      |
|                     |                      |                     |                    | WDR                 | 0~100                                                                                                                                                                                                                                                                       |
|                     |                      |                     |                    | HLC                 | 0~100<br><b>The HLC is valid when auto exposure and outdoor anti-flicker mode are both valid.</b>                                                                                                                                                                           |
|                     |                      |                     |                    | Return&Exit         |                                                                                                                                                                                                                                                                             |
| White Balance       | Auto<br>Manual<br>←  |                     |                    |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Blue                | 1~100              |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Red                 | 1~100              |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Return&Exit         |                    |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Day<br>Night        |                    |                     |                                                                                                                                                                                                                                                                             |
| Day/Night           | Auto<br>B/W<br>Color |                     |                    |                     |                                                                                                                                                                                                                                                                             |
|                     |                      |                     |                    |                     |                                                                                                                                                                                                                                                                             |
|                     |                      |                     |                    |                     |                                                                                                                                                                                                                                                                             |
| Function            | ←                    | 2DNR                | 0~100              |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | 3DNR                | 0~100              |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | D-Zoom              | 1~10               |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Lens                | Manual/DC          |                     |                                                                                                                                                                                                                                                                             |
|                     |                      | Return&Exit         |                    |                     |                                                                                                                                                                                                                                                                             |
| Advanced            | ←                    | CAM                 |                    |                     |                                                                                                                                                                                                                                                                             |

| The 1 <sup>st</sup> |  | The 2 <sup>nd</sup> |                                                                            | The 3 <sup>rd</sup> |                                                                                                          |
|---------------------|--|---------------------|----------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------|
|                     |  | Title               |                                                                            |                     |                                                                                                          |
|                     |  | Mirror/Flip         | Mirror                                                                     | OFF/ON              |                                                                                                          |
|                     |  |                     | Flip                                                                       | OFF/ON              |                                                                                                          |
|                     |  |                     | Return&Exit                                                                |                     |                                                                                                          |
|                     |  | Motion Detect       | OFF                                                                        |                     |                                                                                                          |
|                     |  |                     | ON                                                                         | Area Sel            | 0~3<br>There are four motion detect zones ranging from 0 to 3. You need to set parameters for each zone. |
|                     |  |                     |                                                                            | Area State          | OFF/ON                                                                                                   |
|                     |  |                     |                                                                            | Sensitivity         | 0~100                                                                                                    |
|                     |  |                     |                                                                            | Threshold           | 0~100                                                                                                    |
|                     |  |                     |                                                                            | Area Setup          | Position                                                                                                 |
|                     |  |                     |                                                                            |                     | Size<br>Use direction buttons to set position and zone size.                                             |
|                     |  |                     |                                                                            | Default             |                                                                                                          |
|                     |  |                     |                                                                            | Return&Exit         |                                                                                                          |
|                     |  | Privacy Mask        | OFF                                                                        |                     |                                                                                                          |
|                     |  |                     | ON                                                                         | Area Sel            | 0~7<br>There are eight privacy mask zones ranging from 0 to 7. You need to set parameters for each zone. |
|                     |  |                     |                                                                            | Area state          | OFF/ON                                                                                                   |
|                     |  |                     |                                                                            | Area setup          | Position                                                                                                 |
|                     |  |                     |                                                                            |                     | Size<br>Use direction buttons to set position and zone size.                                             |
|                     |  |                     |                                                                            | Default             |                                                                                                          |
|                     |  |                     |                                                                            | Return&Exit         |                                                                                                          |
|                     |  | Language            | EN                                                                         |                     |                                                                                                          |
|                     |  | COM Setup           |                                                                            | Address             | 1~254                                                                                                    |
|                     |  |                     |                                                                            | Apply               |                                                                                                          |
|                     |  |                     |                                                                            | Return&Exit         |                                                                                                          |
|                     |  | System Info         |                                                                            | Version             | XXXXXXXXXX                                                                                               |
|                     |  |                     |                                                                            | Return&Exit         |                                                                                                          |
| Image               |  | Sharpness           | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Brightness          | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Contrastness        | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Saturation          | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Sharp Suppress      | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Chroma suppress     | 0~100                                                                      |                     |                                                                                                          |
|                     |  | Gamma               | 0~5                                                                        |                     |                                                                                                          |
|                     |  | Video Format        | 1080P@25<br>↓/1080P@30<br>↓/720P@25<br>↓/720P@30<br>↓/720P@50<br>↓/720P@60 | OK/CANCEL           |                                                                                                          |
|                     |  | Return&Exit         |                                                                            |                     |                                                                                                          |
|                     |  |                     |                                                                            |                     |                                                                                                          |
| Reset               |  |                     |                                                                            |                     |                                                                                                          |
| Exit                |  |                     |                                                                            |                     |                                                                                                          |

## 4.2 Note

| Parameter    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brightness   | <p>It is to adjust monitor window bright. The value ranges from 0 to 100. The default value is 50.</p> <p>The larger the number is, the bright the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly. You can use this function when the whole video is too dark or too bright. Please note the video may become hazy if the value is too high. The recommended value ranges from 40 to 60.</p>                                                 |
| Contrast     | <p>It is to adjust monitor window contrast. The value ranges from 0 to 100. The default value is 50.</p> <p>The larger the number is, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure .The recommended value ranges from 40 to 60.</p>                                 |
| Saturation   | <p>It is to adjust monitor window saturation. The value ranges from 0 to 100. The default value is 50.</p> <p>The larger the number, the strong the color is. This value has no effect on the general brightness of the whole video. The video color may become too strong if the value is too high. For the grey part of the video, the distortion may occur if the white balance is not accurate. Please note the video may not be attractive if the value is too low. The recommended value ranges from 40 to 60.</p> |
| Sharpness    | <p>The value here is to adjust the edge of the video. The value ranges from 0 to 100. The larger the value is, the clear the edge is and vice versa. Please note there is noise if the value here is too high. The default value is 50 and the recommended value ranges from 40 to 60.</p>                                                                                                                                                                                                                               |
| 3DNR         | <p>It is to reduce video noise. The larger the number is, the lower the noise is. The details of the video may disappear if the value here is too large.</p>                                                                                                                                                                                                                                                                                                                                                             |
| Anti-flicker | <ul style="list-style-type: none"><li>● Outdoor: In this mode, you can switch exposure mode to get the effect under the corresponding exposure mode.</li><li>● 50Hz: When the current is 50Hz, system can auto adjust the exposure according to the environment brightness in case there is any strip.</li><li>● 60Hz: When the current is 60Hz, system can auto adjust the exposure according to the environment brightness in case there is any strip.</li></ul>                                                       |

## Appendix Toxic or Hazardous Materials or Elements

| Component Name               | Toxic or Hazardous Materials or Elements |    |    |       |     |      |
|------------------------------|------------------------------------------|----|----|-------|-----|------|
|                              | Pb                                       | Hg | Cd | Cr VI | PBB | PBDE |
| Circuit Board Component      | ○                                        | ○  | ○  | ○     | ○   | ○    |
| Device Construction Material | ○                                        | ○  | ○  | ○     | ○   | ○    |
| Wire and Cable               | ○                                        | ○  | ○  | ○     | ○   | ○    |
| Packing Components           | ○                                        | ○  | ○  | ○     | ○   | ○    |
| Accessories                  | ○                                        | ○  | ○  | ○     | ○   | ○    |

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes.

### Note

- This manual is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- All trademarks and registered trademarks mentioned are the properties of their respective owners.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website or contact your local service engineer for more information.