



EN

# User Manual

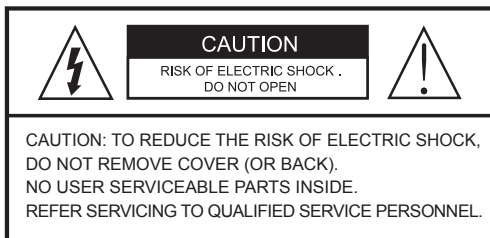
**1/2.8" HD-TVI Camera,  
Day&Night, 1920x1080, WDR,  
3x AF Zoom, Indoor, 12/24V**

**TVC-2080Z03**



# Safety Precaution

- To prevent fire or shock hazard, do not expose the unit to rain or moisture.
- To prevent electric shocks and risk of fire hazards, do NOT use other than specific power source.



The symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the unit.

## • Warning :

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.

## • Caution :

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Mains power quality should be that of a typical commercial environment. If the user of the model requires continued operation during power mains interruptions, it is recommended that the model be powered from an uninterruptible power supply (UPS) or a battery.

# Safety Precaution

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## **NOTICE**

- The image used in this instruction manual are processed to help comprehension and may differ from actual video of the camera.
- Avoid installing areas where has shock or vibration which results in the problems.
- Pay attention to safety when laying the connection cable and observe that the cable is not subjected to heavy loads, kinks or damage and no moisture can get in.
- Never open the device such as boards or lens.  
The warranty becomes void if repairs are undertaken by unauthorized persons.
- Maintenance and repair have to be carried out only by authorized service centers.
- Use only a mild detergent to clean the housing.
- The camera should never be operated beyond the technical specifications.  
This can lead to destruction.
- The camera should never be operated in water.

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Specifications

# Features

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## Key Features

- Full HD, 2Mega Pixel HD-TVI CAMERA, 1920x1080(30p/25p)
- TVI Video Transmission Distance over Coax.; 500M (RG59, 75Ω)
- Automatically removable IR Cut filter by Dual filter switcher
- Built-in f=3~9mm, F1.2~F2.1 Day & Night zoom lens  
(Optical 3x Auto focus zoom / Digital 32x zoom)
- Focusing Status Indicator on Screen
  - ★(Blue) Focusing in process
  - ☆(White) Focusing Completed
- True WDR(Wide Dynamic Range)
- Improved Noise figure with the enhanced 3D-NR
- Pointing Zoom which enables the flexible zooming at any area.
- Smart Motion Zoom in combining with Pointing Zoom.
- Preset Zoom
- Home Position setting
- Motion Detection, Privacy Mask, Defog, Sens-up(x32), BLC/HLC, H/V/HV Flip, LSC(Lens Shade Compensation), Motion Deblur, Pixel Defect Compensation, Lens Refresh, Lens Initializing Set
- ID / TITLE / ZOOM RATIO DISPLAY
- Enhanced Sensitivity by DSS technology
- Top performance at low light sensitivity (Sens-up On)
- OSD menu & Video sub-out for easy installation & maintenance.
- Circuit protection against faulty connection in power polarity
- Isolated power supply against ground loop problem
- Remote control via RS-485 (Pelco-D/P)
- UTC Control through HD-TVI DVR
- Anti-scratch Hard-coated Window
- AC24/DC12V Dual power

# Features

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## General Description

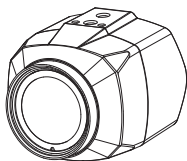
This camera realizes the natural and crisp image as you see the scene in front of you by adopting Auto Focus Full HD(1920x1080p) camera module.

Highly detailed pictures can be achieved and color reproducibility deserves attention.

- With ICR mechanism,
  - Enhances its sensitivity about 10x at night time
  - Can accept the infrared light
- With 24VAC/12VDC dual power design,
  - Offers the flexibility of installation
  - Ensures the reliability

## Composition

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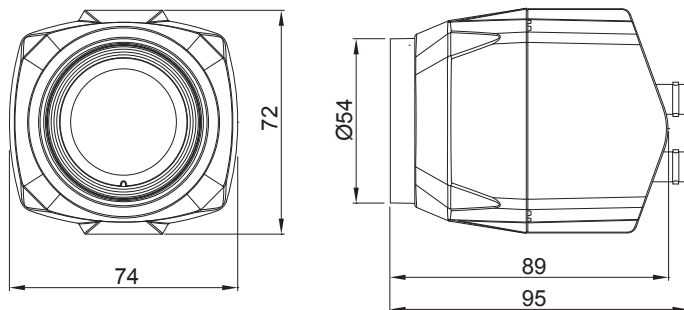
Zoom Box Camera



Operating Instruction

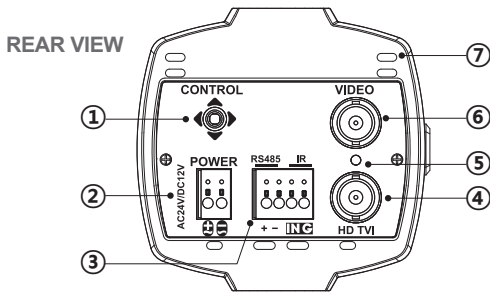
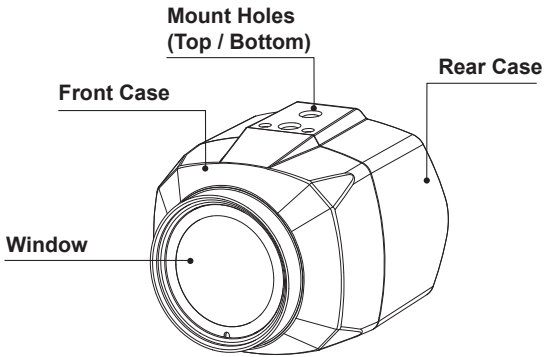
# Dimensions

(unit : mm)





# Part Names



- |   |                               |
|---|-------------------------------|
| ① OSD Control Joy stick                 | ④ HD-TVI output connector     |
| ② Power input terminal<br>(AC24V/DC12V) | ⑤ Power LED                   |
| ③ RS-485 / IR Connector                 | ⑥ Video output connector(BNC) |
|   | ⑦ Air Holes                   |

**! CAUTION**

- Extreme care should be taken NOT to scratch the window in front of lens.
- Care should be taken the cable is NOT to be damaged, kinked or exposed in the hazardous area.
- Do not expose the camera directly to a strong light source such as the sun or spot light.

# Installation Instructions

## Installation and commissioning Instructions

- Make sure the power is removed before the installation.
- Follow the order for applying power.  
First connect the low voltage (DC12V or AC24V), then plug the AC adapter to AC outlets to avoid an improper reset from power jitter and a damage from the surge voltage when no load.
- Mount the camera to the wall or ceiling with a corresponding mounting bracket through the camera mount holes (1/4" thread insert) on its top or bottom.

## Power Supply Connection

Camera can work with either 24VAC or 12VDC, dual voltage power.  
Primary and secondary grounds are completely isolated to avoid the possible ground-loop problems.

## Using OSD Controller

Setup menu can be accessed and controlled by OSD control joy stick on the rear of the camera unit.

Five commands are available with the joy stick.

The design of rear panel could be different according to the camera models.



### Description of the joystick operation

- 1) SET Key (●) : Access to the menu or enter the setting.  
To enter the main menu, press the Set Key down for about 1.5sec
- 2) UP/DOWN Key (▲/▼) : Choose the desired sub-menu and to move the cursor up or down.
- 3) LEFT/RIGHT Key (◀/▶) : Set up the value of the selected menu.  
Used to adjust the desired menu selection and to move the cursor left or right.
- 4) '☞' denotes the long press down straightly for about 2 seconds



### Description of the ZOOM&FOCUS\* adjustment

(\* ) Works only when OSD Menu is inactive.

Set to Pointing Zoom ON for D-Zoom control.

- |                 |                   |
|-----------------|-------------------|
| 1) ▲ : Zoom In  | 3) ◀ : Focus Near |
| 2) ▼ : Zoom Out | 4) ▶ : Focus Far  |

# Operating Instructions

## OSD menu Startup

Press 'MENU' (OSD menu SET key) down long to access the setup menu mode. Lens Initializing is strongly recommended at the first stage of setup menu control. ZOOM/FOCUS > LENS INIT > Press the joystick 'DOWN' straight down for about 2 seconds.

MENU V3.xx	
1. ZOOM/FOCUS	↵
2. EXPOSURE	↵
3. SCENE ENHANCE	NORMAL
4. 3D-NR	MID
5. DAY/NIGHT	EXT ↵
6. PICT ADJUST	↵
7. SPECIAL	↵
8. SYSTEM	↵
9. EXIT	SAVE&EXIT ↵

## Direct Control menu



MAIN	DEFAULT	DESCRIPTION
ZOOM/FOCUS	-	Sets FOCUS MODE, D-ZOOM, HOME POSITION, LENS REFRESH and LENS INIT
EXPOSURE	-	Sets EXPOSURE MODE, BRIGHTNESS, SENS-UP, AGC and MOTION DEBLUR.
SCENE ENHANCE	NORMAL	<p>SCENE ENHANCE provides the several ways to enhance the video in the various environments with the settings in NORMAL, WDR, D-WDR, BLC and HLC.</p> <p><b>NORMAL</b> – Optimized for the normal indoor and outdoor in the good lighting condition.</p> <p><b>WDR</b> – Improves the visibility for the high bright area and the dark area by the double captures of image with LONG and SHORT exposures. With WDR ON, the frame rate becomes half by the double captures. WDR level can be selected from LOW, MID and HIGH. Care should be taken to select this mode because video may lose its quality in some environments by the over compensation.</p> <p>※ CVBS video signal: Connecting 2nd video to CVBS port disables WDR function temporary. It should be considered when installer adjusts the video with installation monitor via CVBS video signal.</p> <p><b>D-WDR</b> – Improves the visibility by compensating the video gain for the dark area. Noise can increase in the dark area accordingly.</p>

# Operating Instructions

SCENE ENHANCE	NORMAL	<p><b>BLC</b> – Improves the visibility for the dark object by the bright back light. Outside area of BLC window can over saturate. BLC has a target window for compensation and its size and position can be set by H-POS, V-POS, H-SIZE and V-SIZE.</p> <p><b>HLC</b> – Cuts out the highlight area with black mask and excludes it from compensation. Lower HLC LEVEL cut out video from the lower level.</p>
3D-NR	MID	Sets OFF, LOW, MID and HIGH.
DAY/NIGHT	EXT for IR LED  AUTO for No IR LED	<p>Sets DAY / NIGHT to EXT, AUTO, COLOR and B/W. SMART IR can be set to reduce the saturation by the strong IR illumination in the night in any menu of EXT, AUTO and B/W(NIGHT) Setting SMART IR in any menu is identically applied to other menu. Zero(0) turns off SMART IR and High setting avoids the saturation strongly but the corners will be darker accordingly. IR LED Control(AUTO/OFF) is available with IR LED model only. If IR LED is set to OFF, IR LED will be turned OFF but DAY or NIGHT is still determined by the built-in light photo sensor.</p> <p><b>EXT</b> - DAY or NIGHT is determined by the built-in light photo sensor. Camera with IR LED must be set to EXT.</p> <p><b>AUTO</b> - Used when DAY or NIGHT is determined by light level through the lens and DAY from/to NIGHT is switched automatically by the scene brightness. D&lt;-&gt;N THRESHOLD, D&lt;-&gt;N GAP, D&lt;-&gt;N DELAY and SMART IR can be set in the menu. When EXPOSURE&gt;AGC is less than 12, DAY/NIGHT AUTO is disabled and forcibly switches to ___(DAY) to avoid the malfunction. EXT, B/W(NIGHT) and COLOR(DAY) is independent on AGC level. When EXTERNAL IR LED is used with NON IR LED model, please set to IR LED MODE ON.</p> <p><b>B/W(NIGHT)</b> - Forcibly removes IR cut filter and switches to B/W regardless of light level. <b>COLOR(DAY)</b> - Forcibly DAY/NIGHT is disabled and outputs color video.</p>
PICT ADJUST		Sets WHITE BAL, SHARPNESS, COLOR GAIN, GAMMA
SPECIAL		Sets MIRROR/FLIP, PRIVACY, MOTION, PIXEL DEFECT, TITLE SET, DISPLAY, DEFOG, POINTING ZOOM, PRESET ZOOM
SYSTEM		Sets TV SYSTEM, RESOLUTION, COMM.SETUP, UTC CONTROL, LANGUAGE and FACTORY DEFAULT
EXIT		<p>SAVE &amp; EXIT – Exits the menu after saving the parameters. EXIT – Exits the menu without saving the menu.</p>

# Operating Instructions

## 1. ZOOM/FOCUS

ZOOM / FOCUS	
▶ FOCUS MODE	ZOOM PUSH
D-ZOOM	OFF
HOME POSITION	OFF
LENS REFRESH	OFF
LENS INIT.	ON 
RETURN	RET 

### 1-1. FOCUS MODE (default: ZOOM PUSH)


- : ZOOM PUSH, AUTO and MANUAL modes are available for focusing.
- ZOOM PUSH: Focusing is activated only when zoom in/out is working.
- AUTO: Focusing is always working.
- MANUAL: Focusing can only be adjusted by ▲, ▼ of OSD control joystick or the remote control via RS-485.

### 1-2. D-ZOOM (default: OFF)

- : D-ZOOM(Digital zoom) is available up to 32x. D-ZOOM starts working when the optical zoom reaches its maximum tele-position. Zoom ratio is displayed on the right bottom corner of the monitor if SPECIAL>DISPLAY>ZOOM RATIO is set to ON.

### 1-3. HOME POSITION (default: OFF)

- : Camera can be configured to return to pre-defined Zoom position automatically after certain period since ZOOM IN/OUT control is accomplished. Home Position is recovered even after camera is re-initializing or Power ON/OFF.

HOME POSITION	
▶ O-ZOOM RATIO	OX1.5
DURATION	5s
RETURN	RET 

- O-ZOOM RATIO: Sets the Optical ZOOM position as Home Position. (x1.0~x3.0)
- DURATION: When ZOOM IN/OUT control is accomplished, camera returns to pre-defined Zoom position after Duration time.  
If SMART MOTION / PRESET ZOOM are running, duration for Home position starts after finishing SMART MOTION / PRESET ZOOM.

# Operating Instructions

## 1-4. LENS REFRESH (default: OFF)

: LENS REFRESH can be set to 1~10day and performs the scheduled LENS Initialization automatically. Every initialization occurs when the time reaches the scheduled time after setup or power up. When LENS REFRESH initiates LENS Initialization, a notification 'LENS INITIALIZING...' appears on the top left corner on the monitor.

## 1-5. LENS INIT (default: ON )

: Lens initialization is necessary during the installation or the regular operation to align the position data with the mechanical positions whose lens elements may move and deviate from its calibrated position by the shock or vibration, for example, during the transportation.

LENS INIT starts the lens initialization when pressing the joystick lever straight down for about 2 sec.

LENS INIT checks the positions for zoom and focus at both of the end positions and saves them for the references.

Lens initialization is automatically executed at power up.



- It is strongly necessary to execute LENS INIT in cases below;
  - 1) At the final step for the installation.
  - 2) When focus becomes out of control by the shock or vibration.

## 2. EXPOSURE

EXPOSURE	
▶ MODE	AUTO
BRIGHTNESS	: : : : : : : : :
SENS-UP	OFF
AGC	: : : : : : : : :
MOTION DEBLUR	ON
RETURN	RET ↵

### 2-1. MODE (default: AUTO)

: Can set EXPOSURE MODE to AUTO, IRIS Priority, SHUT. Priority, MANUAL and Flickerless. SHUT. Priority, MANUAL and Flickerless modes disable SENS-UP and MOTION BLUR functions.

# Operating Instructions

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- **AUTO:** Optimizes the video level by controlling the iris and the shutter speed automatically.
- **IRIS Priority:** Selects to fix IRIS in a certain aperture and the video level is controlled by an automatic shutter control. Lower IRIS LEVEL will close more iris and increase the field of depth in the daytime but significantly decrease the low light performance. Too much low IRIS LEVEL will result in the foggy video by the diffusion from the lens iris.
- **SHUT. Priority:** Selects to fix SHUTTER speed in a certain speed and the video level is controlled by an automatic iris control.  
This mode is useful when the color rolling occurs under the fluorescent lighting. It is not recommendable at outdoor in the daytime.
- **MANUAL:** Iris level and Shutter speed can be set to fix.
- **Flickerless :** Reduces the flicker in video when US(60Hz)/EU(50Hz) mode is used in 50Hz/60Hz fluorescent lighting respectively.

## 2-2. BRIGHTNESS (default: 10)

: Adjusts the brightness of video(0~20).

## 2-3. SENS-UP (default: OFF)

: The brighter video can be obtained by increasing the exposure time in the night with SENS-UP. SENS-UP is the maximum integrations of frame by DSS (Digital Slow Shutter) in the low light.

- **AUTO:** SENS-UP is enabled or disabled automatically by the scene brightness. Higher SENS-UP can get the brighter video but the slower frame rates with motion blur and more white pixels. If set to AUTO, maximum integration limit for SENS-UP(Low Shutter) can be set to x2, x4, X8, x16, X32 in SENS-UP menu.
- **OFF:** Disables SENS-UP.

## 2-4. AGC (default: 12)

: AGC amplifies the video gain for brighter video but noise and white pixel accordingly. AGC level less than 10 disables AUTO in DAY/NIGHT.

## 2-5. MOTION DEBLUR (default: ON)

: ON enables MOTION DEBLUR to reduce the motion blur in a certain indoor environment. Noise or color rolling can increase.

## 3. SCENE ENHANCE

: Refer to 'DIRECT CONTROL MENU' table.

- **NORMAL** (default):  
Optimized for the normal indoor and outdoor in the normal lighting condition.

# Operating Instructions

MENU V3.xx	
1. ZOOM/FOCUS	↵
2. EXPOSURE	↵
▶ 3. SCENE ENHANCE	WDR ↵
4. 3D-NR	MID
5. DAY/NIGHT	EXT ↵
6. PICT ADJUST	↵
7. SPECIAL	↵
8. SYSTEM	↵
9. EXIT	SAVE&EXIT ↵

WDR	
▶ WDR LEVEL	MID
RETURN	RET ↵

- **WDR** : Can be selected from LOW, MID and HIGH
- **D-WDR** : Can be selected from LOW, MID and HIGH
- **BLC** : Can be set the BLC area by H-POS, V-POS, H-SIZE and V-SIZE.
- **HLC** : Can be set the level upto 20

## 4. 3D-NR (default: MID)

3D-NR is a very sophisticated and powerful time-based noise reduction technology by monitoring the noise for the several video frames and defining and eliminating them consecutively at low light.

Higher setting reduces noise much more but results in losing the sharpness and the tail effect or the motion blur for the fast moving target at low light.

## 5. DAY / NIGHT

: Refer to 'DIRECT CONTROL MENU' table.

Default setting are EXT for IR-LED types and AUTO for None IR LED types.

EXT	
▶ SMART IR	[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]: 0
IR LED CONTROL	AUTO
RETURN	RET ↵

D/N AUTO	
▶ D<->N THRESHOLD	[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]: 10
D<->N GAP	[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]: 10
D<->N DELAY	10s
SMART IR	[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]:[:]: 0
RETURN	RET ↵





# Operating Instructions

## 6. PICT ADJUST

PICTURE	
▶ <b>WHITE BAL</b>	<b>ATW</b>
SHARPNESS	:..... :.....  10
COLOR GAIN	:..... :.....  10
GAMMA	0.50
RETURN	RET ↵

### 6-1. WHITE BAL (default: ATW)

: ATW, ATWext, ONE PUSH and MANUAL are available for the white balance modes.

- ATW: White balance is continuously working along with the color temperature changes in the range of 2,000K~8,500K.
- ATWext: White balance is continuously working along with the color temperature changes in the range of 1,800K~11,000K.
- ONE PUSH : White balance works only during  is pressed.
- MANUAL: White balance is fixed to the settings by R\_GAIN and B-GAIN. This mode can be used only when the color temperature does not vary.

**6-2. SHARPNESS** (default: 10) : Adjusts the sharpness of video.

**6-3. COLOR GAIN** (default: 10) : Adjusts the color level of video.

**6-4. GAMMA** (default: 0.5) : Adjusts the gamma of video.

## 7. SPECIAL

SPECIAL	
▶ <b>MIRROR/FLIP</b>	<b>OFF</b>
PRIVACY	↵
MOTION	OFF
PIXEL DEFECT	OFF
TITLE SET	↵
DISPLAY	↵
DEFOG	OFF
POINTING ZOOM	OFF
PRESET ZOOM	OFF
RETURN	RET ↵

# Operating Instructions

## 7-1. MIRROR/FLIP (default: OFF)

: Reverses the video left and right and/or up and down by MIRROR/FLIP.

- OFF : Normal display without mirroring or flipping
- Hor. : Video is reversed left and right
- Ver. : Video is reversed upside down
- HV : Video is reversed left and right and upside down

When the video is reversed by Ver. or HV, then the joystick directions are reversed accordingly.

This feature is very useful when a camera is installed in upside down.

## 7-2. PRIVACY

: 10 Privacy zones which can be enabled individually by ZONE DISP are available to mask the video.

- PRIVACY ALL: ON enables all Privacy Zones you set.
- ZONE NUM : Set a number to select a privacy zone from 1~10.
- ZONE DISP : ON enables to display relevant privacy zone
- H-POS, V-POS, H-SIZE and V-SIZE : Adjust the size and position of zone.
- COLOR : Select the color used for masking the zone from eight colors.
- TRANSPARENCY : Defines the transparency for the mask zone.

## 7-3. MOTION (default: OFF)

: MOTION can detect the changes in the motion window and displays the results in blocks and/or a text message.

- SENSITIVITY : Adjusts the detection sensitivity for motion.  
High value increases the sensitivity to detect the small motion easily. Too low sensitivity will cause the erratic detection by the tree leaves or the light level changes.
- H-POS, V-POS, H-SIZE and V-SIZE -  
Adjust the size and position of the detection window.
- BLOCK DISP : ON enables to display the blocks for the detected area.
- MOTION OSD : ON enables to display a text message, MOVING !!!
- SMART MOTION ZOOM : ON enables to Automatic Zoom IN/OUT when motion is detected and also enables MOTION OSD to ON.  
Area to be zoomed in by SMART MOTION ZOOM can be set at SPECIAL> MOTION> SMART MOTION ZOOM. Adjusting ◀, ▶ (Joystick) for ZOOM TARGET varies the viewing angle to be zoomed when the motion occurs.  
Set the video left and right and/or up and down by MIRROR/FLIP.  
(See page No.23 "SMART MOTION ZOOM")  
※ SMART MOTION ZOOM doesn't work at low light condition and BW.
- STAY ZOOMING : Sets the duration time for zooming by Motion.

# Operating Instructions



## NOTICE

: SMART MOTION ZOOM does not work at low sensitivity and B/W mode.



## CAUTION

: Set the direction of video by MIRROR/FLIP before SMART MOTION ZOOM setting. Otherwise ZOOM TARGET could be different from your intention.

### 7-4. PIXEL DEFECT (default: OFF)

- : Detects and compensates the white pixels which become defective.  
Once CALIBRATE is selected, the pixel calibration is initiated with lens closed and can't cancel.
- THRESHOLD : Defines the level of detection and low value detects more pixels. Be sure to set the value so that the pixels are uniformly blinking over the entire screen. Too low value will get the bad results because too many pixels are detected as the bad pixels and the maximum number of pixels for compensation will be filled by the upper area.
- EXECUTE '↵' : Long pressing will execute the pixel calibration for the detected pixels. Menu will exit automatically after compensation.

### 7-5. TITLE SET

- : Camera title(name) can be set and edited up to 15 alpha numeric and symbolic characters from ASCII codes(ENGLISH only). ▲, ▼, ◀, ▶ moves the cursor to next input.  
choose a character and '↵' selects it. The selected characters are added and displayed on the top left Corner and the cursor moves right automatically for next input.
- SP - Space is inserted when pressed '●'
- BS – Cursor moves back when pressed '●'
- CLR – Clears all the characters on input line when pressed '●'.
- POS – To be able to set the title position by ▲, ▼, ◀, ▶ and ●.

### 7-6. DISPLAY

- : Enables or disables to display the OSD.
- ID : ON enables to display the camera ID defined by SYSTEM>COMM. SETUP>CAM ID.
- TITLE : ON enables to display the camera title(name) set by SPECIAL>TITLE SET.

# Operating Instructions

- **ZOOM RATIO** : ON enables to display the zoom ratio on the bottom right corner. OZx.x appears during the optical zoom and DZx.x will display by multiplying the optical zoom ratio and the actual digital zoom ratio.
- **FOCUS INDICATE** : ☀ mark on the bottom right corner indicates the focusing status in blue during focusing and white after finishing.

DISPLAY		ID:001
ID	ON	
TITLE	ON	
ZOOM RATIO	ON	
▶ FOCUS INDICATE	ON	
RETUTN	RET↓	
	OZ X1.0	☀

## 7-7. DEFOG (default: OFF)

- **MODE** : Select DEFOG modes.
  - > **AUTO** : Enhance the foggy video automatically according to status of scene.
  - > **MANUAL** : Sets to enhance the foggy video manually regardless of status of scene.
- **LEVEL** : LOW, MID, HIGH. Video quality can be less in normal environments.

## 7-8. POINTING ZOOM

ON enables to set off-centered location to be the center of zoom H-POINTER, V-POINTER- Able to set the location of zoom center D-Zoom is available to ~ 32x.  
(See page No.24 "POINTING ZOOM")

### CAUTION

: Set the direction of video by MIRROR/FLIP before POINTING ZOOM setting. Otherwise location of zoom center could be different from your intention.

## 7-9. PRESET ZOOM

Able to zoom in for the preset area by PTZ controller.

- **ZONE NUM** : Set a number to select a preset zoom from 1~ 4.
- **ZONE VIEW** : ON enables a relevant preset zone.
- **H-POS** and **V-POS** : Adjust the size and position of preset zone.

# Operating Instructions

PRESET ZOOM	
▶ ZONE NUM	1
ZONE VIEW	ON ↵
H-POS	5
V-POS	5
O-ZOOM RATIO	OX2.0
D-ZOOM RATIO	DZ X2.0
STAYING ZOOMING	5sec
RETURN	RET ↵

**By Remote Controller only.**

- **O-ZOOM RATIO:**  
Set the Optical Zoom Ratio from OX 1.1~OX3.0(OX2.4)
- **D-ZOOM RATIO:**  
Set the Digital Zoom Ratio from DZ X1.1~X5.0
- **STAYING ZOOMING :**  
Sets the duration time for preset zoom area.

## 8. SYSTEM

SYSTEM	
TV SYSTEM	EU(PAL)
RESOLUTION	1080P
COMM. SETUP	↵
UTC CONTROL	AUTO
▶ LANGUAGE	ENG ↵
FACTORY DEFAULT	NO
RETUTN	RET ↵

- 8-1. TV SYSTEM** (default: US or EU)  
: Selects HDTV standards for US(60HZ) or EU(50HZ).  
By this selection, 2nd analog video output switches to NTSC or PAL accordingly.

### 8-2. RESOLUTION (default: 1080P)

- : Three resolutions, 1080P/720P(SCALED)/720P(CROPPED) are available. 1080P outputs 1920x1080 video at the frame rate of 30P/25P.
- 720P(SCALED): Image is scaled down from 1080P and outputs 1280x720 video without loss of field of view at the frame rate of 30P/25P.
- 720P(CROPPED): Image is cropped at the center area from the image sensor and outputs 1280x720 at image refresh rate 30P/25P.  
Cropped image has narrowed field of view.

### 8-3. COMM. SET UP

- : COMM. SETUP defines the CAM ID, BAUD RATE and PROTOCOL.  
Data length, stop bit and parity are fixed to 8bit, 1stop bit and no parity bit.

# Operating Instructions

- CAM ID – Assigns the camera ID from 1~254 for the comm. address.
- BAUD RATE – Selects the baud rate from 2400~115200.
- PROTOCOL – Selects the comm. Protocol from PELCO-D/P or VISCA.

*( Refer to 'TIP' for zoom function with PTZ Controller. Available with RS-485 model only.)*

## 8-4. UTC CONTROL (default: AUTO)


: Camera can be adjusted through DVR using Up-the-Coax(UTC) communication with PELCO-C or HIKVISION2 protocols.  
Select one of AUTO, PELCO-C, HIKVISION2 or OFF

- AUTO : Camera can detect PELCO-C or HIKVISION2 protocols supported by DVR automatically.
- PELCO-C : Camera can detect PELCO-C protocol only.
- HIKVISION2 – Camera can detect HIKVISION2 protocol only.


### [Note]

AUTO supports only to PELCO-C or HIKVISION2 protocols of verified DVRs. If the communication does not work with AUTO well, switch to PELCO-C or HIKVISION2.

## 8-5. LANGUAGE (default: ENG)

: 8 languages are available for ENGLISH, JAPANESE, GERMAN, FRENCH, ITALIAN, SPANISH, POLISH and TURKISH.  
When changing LANGUAGE, select language and press  to load.

## 8-6. FACTORY DEFAULT (default: NO)

: RECALL  roads and saves the factory defaults.

## 9. EXIT

**9-1. SAVE&EXIT** : Save all the setting and exit the main menu

**9-2. EXIT** : Exit the main menu without save.

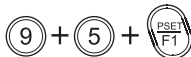
# Operating Instructions

## TIP

### Setting for Zoom Function with PTZ Controller ( Available with RS-485 model only.)

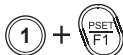
- Enter the MENU :

Press buttons 9+5+PSET (PRESET)



- Set the Preset Zoom :

Press buttons 1(or ~4)+PSET (PRESET)



- Move the cursor in the MENU :

Moves UP/DOWN/LEFT/RIGHT Joy stick



- Focus NEAR : Press button NEAR

- Focus FAR : Press button FAR



- Select or Choose value in the MENU : Press button OPEN



- Exit the Preset Zoom mode :

Press buttons 3+4+PSET (PRESET)



# Operating Instructions

## Detail Function Description

### SMART MOTION ZOOM

SMART MOTION ZOOM enlarges the certain area defined by a yellow window to the full sized image when the motion is detected in the black window.

SMART MOTION ZOOM window can be re-sized by adjusting D-ZOOM RATIO and moved by H-POINTER and V-POINTER.

UNLIKE the conventional zoom which can zoom in/out the center area of image only, by the flexible zoom location and area, SMART MOTION ZOOM differentiates its usefulness from others.

That is, a conventional camera installed on the corner of ceiling can zoom the center of the floor in a room and result in losing the image of door on the side wall. However, SMART MOTION ZOOM can be set to see the door side and zoom in that area without missing the IMPORTANT security point.

SMART MOTION ZOOM	
H-POINTER	10
V-POINTER	10
O-ZOOM RATIO	OX2.0
D-ZOOM RATIO	DX1.5
MOTION CHK COUNT	2
RETURN	RET ↵

- H-POINTER (10) - Moves MOTION ZOOM area(Yellow window) horizontally
- V-POINTER (10) - Moves MOTION ZOOM area(Yellow window) vertically
- O-ZOOM RATIO (OX2.0) - Sets the area size to be Optical zoomed when the motion occurs in the black window
- D-ZOOM RATIO (DX1.5) - Sets the area size to be Digital zoomed when the motion occurs in the black window
- MOTION CHK COUNT (2) - SMART MOTION ZOOM is activated after the motions in MOTION CHK COUNT are detected in a certain period.

For example, '1' immediately initiates SMART MOTION ZOOM by the motion detected once. High count number enables SMART MOTION ZOOM with sureness but with delay and less sensitivity.



# Operating Instructions

## POINTING ZOOM


This camera has a very useful and powerful feature, POINTING ZOOM, which can zoom in/out any area.

UNLIKE the conventional zoom which can zoom in/out the center area of image only, by the flexible zoom location and area, POINTING ZOOM differentiates its usefulness from others. That is, a conventional camera installed on the corner of ceiling can zoom the center of the floor in a room and result in losing the image of door on the side wall.

However, POINTING ZOOM can be set to see the door side and zoom in that area without missing the IMPORTANT security point.

POINTING ZOOM can be activated by the joystick operations of ▲ for zoom in and ▼ for zoom out or via web viewer, while SMART MOTION ZOOM is activated by the result of motion detection in the defined area.

If Zoom ratio becomes out of optical zoom ratio, it automatically turns to Digital Zoom.

Set D-Zoom Pointer	
POINTING ZOOM	OFF
H-POINTER	10
V-POINTER	10
RETURN	 RET ←

- POINTING ZOOM (OFF) - ON enables to set off-centered location to be the center of zoom
- H-POINTER (10) - Sets the horizontal location of area to be zoomed by POINTING ZOOM.
- V-POINTER (10) - Sets the vertical location of area to be zoomed by POINTING ZOOM

# Operating Instructions

## \* EXAMPLE OF SMART MOTION & POINTING ZOOM



Just center of picture can be zoomed in.



We never miss off-centered area.

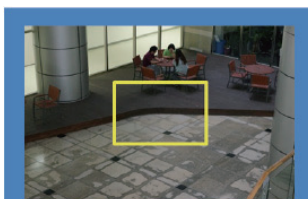


Hey!! what's going on???



We're always with you.

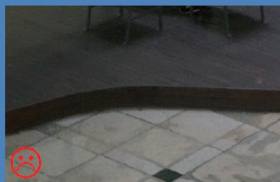
[ At the ATM nearby ENTERANCE ]



Just center of picture can be zoomed in.



Beyond zoom targeting limitation



Do you really want to check the floor?



Only available with high-end Technology.

[ At the LOBBY ]

# Specifications

ITEM	TVC-2080Z03
<b>Imaging Sensor</b>	1/2.8" Sony Exmor progressive scan CMOS Sensor
<b>Effective Pixels</b>	1920(H) x 1080(V) x 25p
<b>Scan Frequency</b>	25Hz(V), 18.75Khz(H)/ Progressive
<b>Video Format</b>	16:9, 1080p/25
<b>TV System</b>	EU (PAL)
<b>Synchronization</b>	Internal
<b>Video Resolution</b>	1920x1080 (30p/25p)
<b>Min.Illumination</b>	0.005 Lux @ (AGC 12, DSS x2)
<b>S/N Ratio</b>	More than 50dB with AGC Off
<b>Lens</b>	f=3~9mm F1.2~F2.1, D/N Auto focus Zoom lens(Optical 3x, Digital 32x)
<b>IR Input</b>	Low active TTL input from External IR illuminator to avoid the undesirable ICR switch
<b>DAY / NIGHT</b>	True Day&Night by ICR
<b>Focus</b>	Auto / Zoom Push / Manual
<b>Min.Focus Distance</b>	0.5m~
<b>White Balance</b>	ATW / ATWext / One Push / Manual
<b>WDR</b>	True WDR by dual scan images in two frames at 15fps/12.5fps
<b>DNR</b>	3DNR
<b>FLIP</b>	Off, H, V, H/V
<b>Special Features</b>	Intelligent Focusing Indicator on Screen, SMART MOTION ZOOM, POINTING ZOOM, PRESET ZOOM, HOME POSITION
<b>Functions</b>	NORMAL, WDR, D-WDR, 3DNR, SMART IR, Motion Detection, BLC/HLC, Privacy Mask, Digital Zoom, Sens-up(x32), Defog, Motion Deblur, Title Set, Pixel Defect Compensation, Lens Shade Compensation, Lens Refresh set
<b>Remote Control</b>	RS-485(Pelco-D/P), UTC by HD-TVI DVR(Pelco-C, Hikvision)
<b>OSD Languages</b>	English, German, French, Italian, Spanish, Polish, Japanese, Turkish
<b>Video Out</b>	VBS 1Vp-p ± 10%, 75Ω
<b>Operating Temp.</b>	-10°C ~ +50°C (Humidity: 20%RH ~ 80%RH)
<b>Operating Power</b>	AC24V~7VA/DC12V=310mA, 4W Circuit protection against faulty connection in power polarity Isolated power supply against ground loop problem.
<b>Housing</b>	Aluminum Cast, Anti-scratch Hard-coated Window
<b>Dimensions</b>	74mm(W) x 72mm(H) x 95mm(L) / About 300g

(\*) Design and specifications are subject to change for product improvements without prior notice.



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