



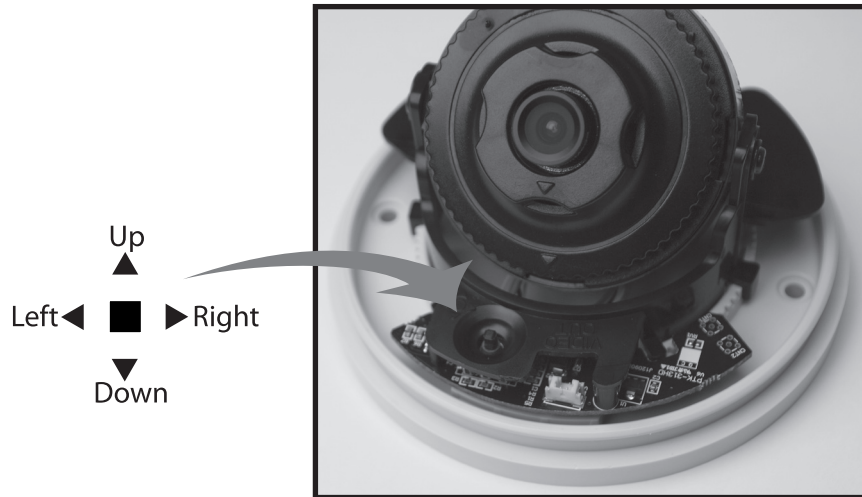
FEATURES:

- 1/2.9" Sony[®] CMOS (IMX222)
- 2.1MegaPixel with Full 1080p/720p HD-SDI (SMPTE292M) / EX-SDI Output
- 3.7mm Fixed Iris lens Included
- Mechanical IR Cut Filter (True Day/Night)
- 16:9 Video format
- Advanced OSD Functions: Motion Detection, Sharpness, Gamma, Mirror, Flip, DSS, Freeze, D-Zoom, ACE, WDR, 3D-DNR, Defog, Privacy, HLM
- 100% Pure Digital Transmission of video data
- Up to 1000' HD Transmission Range (Depending on cable characteristics and integrity)
- 12VDC Operation
- Available in Ivory or Black

VITEK

SETTINGS

OSD controls are located inside the camera.



1. Depress the joystick to enter the setup menu

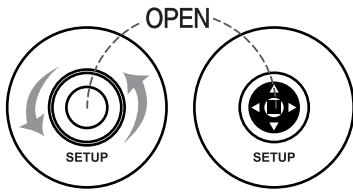
- The Setup menu is now displayed on the monitor

MENU

| SETUP MENU | | | | | | | |
|----------------------|------------------------|--------------------------|-------------------------|----------------------|------------|--------|-----|
| EXPOSURE | LENS | BRIGHTNESS | SHUTTER | SENS-UP | AGC | | |
| WHITE BAL | AWB | COLOR GAIN | | | | | |
| IMAGE | SHARPNESS DEFOG | GAMMA SHADING | MIRROR PRIVACY | FLIP | FREEZ | D-ZOOM | ACE |
| BACKLIGHT | OFF | WDR | BLC | HLC | | | |
| DAY&NIGHT | AUTO | COLOR | B/W | EXTERN | | | |
| DNR | OFF | HIGH | MIDDLE | LOW | | | |
| MOTION | OFF | SET | | | | | |
| SERIAL | CAM ID | ID DISPLAY | BAUDRATE | | | | |
| SYSTEM | DEFECT DET LANGUAGE | IMAGE SCALE CAM TITLE | COLOR SPACE FCM MODE | VIDEO FACTORY SET | FRAME RATE | | |
| EXIT | | | | | | | |

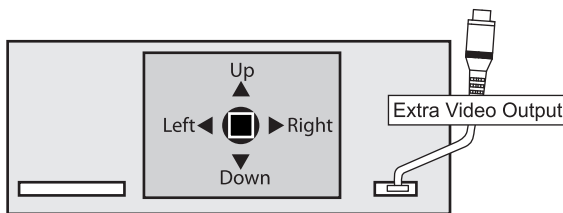
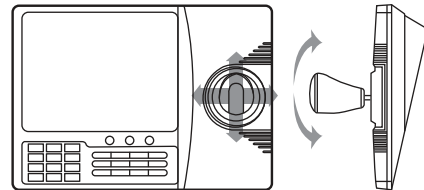
Above specifications may be changed without any notice.

OSD SETTINGS



Outside type (bullet)

To Setup, turn the cover counter-clockwise.

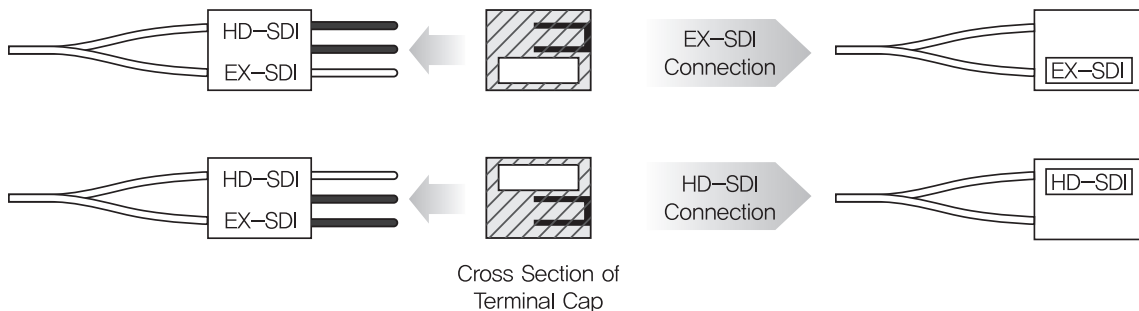


Inside type (dome)

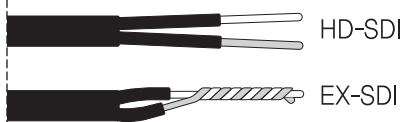
- Call OSD MENU : 1. Call #95
2. Open button
- Zoom in : Tele button or Joystick
- Zoom out : Wide button or Joystick

How to connect by using the Ex-sdi and hd-sdi cable

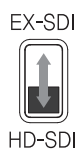
cable type 01



cable type 02



switch type



RS-485

Using a RS-485 communication, it will be able to control the OSD menu at the System Controller or DVR.

(1) The case which it controls from the PC

Using a RS-485 converter, It connects to RS-485 control cable outside camera and serial cable

EX) SERIAL PORT OF THE PC(COM1) → SERIAL CABLE → RS-485 CONVERTER → RS-485 CONTROL CABLE

(2) The case which it controls from the DVR or System Controller It connects the RS-485 control cable in the connection terminal of 485 control boards which are connected with the DVR or System Controller.

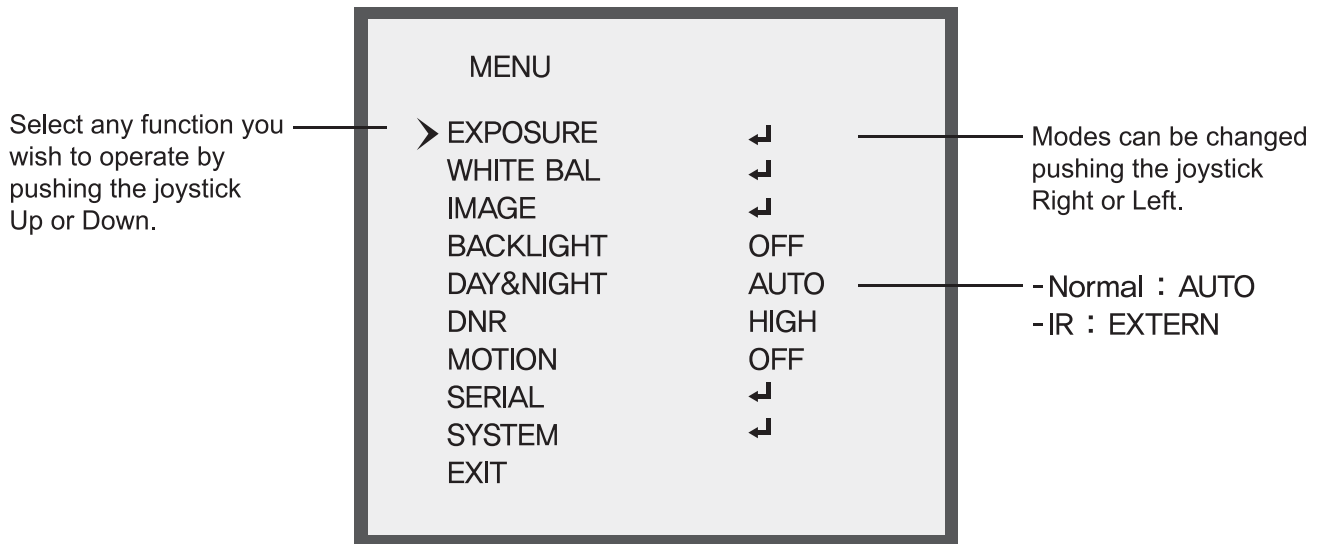
| 485 Control Board Connection Port | RS-485 Control Port |
|-----------------------------------|---------------------|
| (+) CONNECTION TERMINAL (R+) | 485+ |
| (-) CONNECTION TERMINAL (R-) | 485- |

► RS-485 Communication establishment initial value

| Item | Camera ID | BAUD RATE | UART MODE | RET PKT |
|---------------|-----------|-----------|-----------|---------------|
| Initial value | 0 | 9600 | 8-NONE-1 | Not supported |

- When you construct external control systems for a camera control, please use to the PROTOCOL or PELCO-D PROTOCOL.
- When you connecting to RS-485 control cable, please peel off the outer skin inside the RS-485 control cable.

MENU



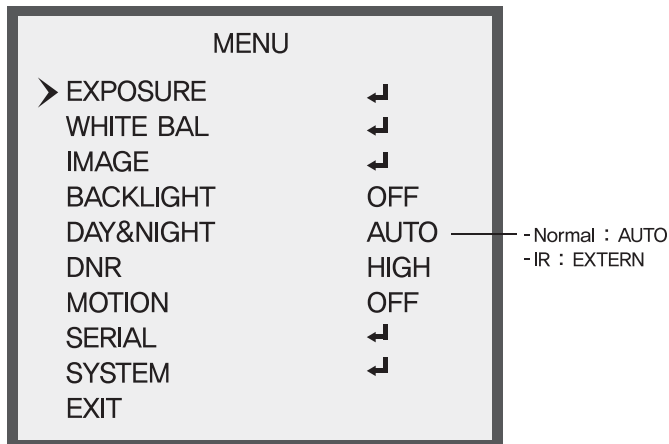
1. Please press the SET button
 - Settings can now be made. The SET menu is displayed on the monitor.
 - To run the OSD menu, please press and hold the SET button for three seconds.
2. Please select any function you wish to activate by pushing the button Up or Down
 - The cursor position will appear green on your screen.
You can push the button Up or Down to change function you wish to change.
3. Please press the button Right or Left if you wish to change mode.
 - When the button is pressed Right or Left, available values and mode are displayed in order. Please keep press the button until you get the mode you wish.
4. Please select "EXIT" and then press the button to finish the setting.

SETUP

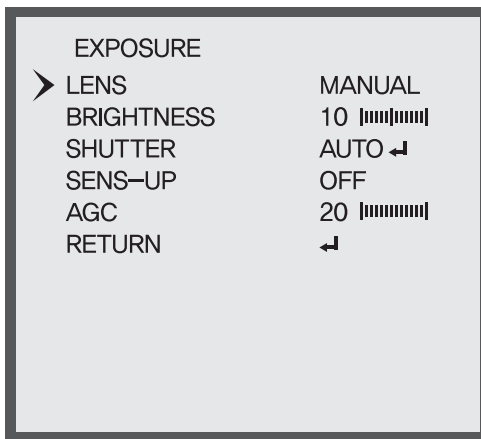
- EXPOSURE, WHITE BAL, IMAGE, BACKLIGHT, DAY&NIGHT, DNR, MOTION SERIAL, SYSTEM, EXIT control can be selected.
- When the MAIN MENU is on the screen, please position the cursor to SETUP by using the button. And then press the button.

EXPOSURE

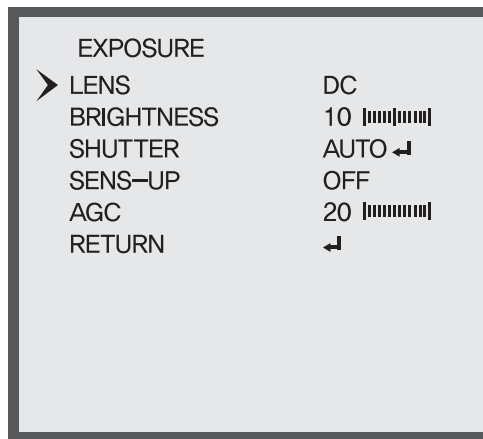
- When the SETUP menu screen is displayed, select EXPOSURE by using the Up and Down buttons so that arrow indicates EXPOSURE.
- Select a desired mode using the Right and Left buttons.



FIX / MV



V/F

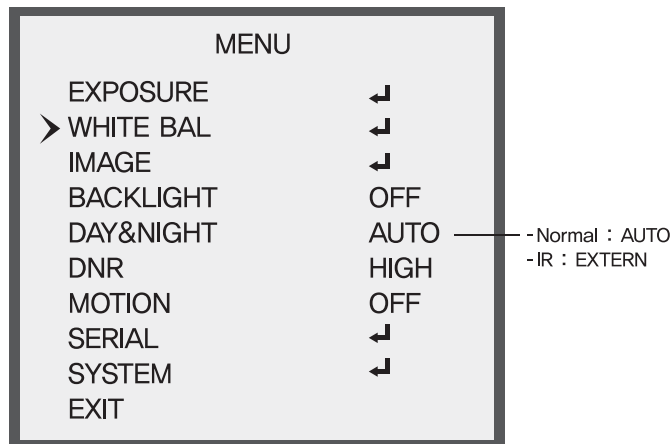


- LENS : When using BUILT - IN LENS, the type of the lens is able to fix, (DC / MANUAL)
- BRIGHTNESS : Left Key (Level DECREMENT), Right Key (Level INCREMENT)
- SHUTTER
 - AUTO : MODE (DEBLUR / NORMAL)
 - FLICKER : Select this when you experience picture flicker, which can happen when there is a clash with the frequency of the installed lighting.
 - MANUAL : SPEED (1/30, 1/60, 1/120, 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000)

- SENS_UP : OFF / X2 / X4 / X8 / X16 / X32
 - Sens-up is realized in the most low illumination quality and it provides the image without a noise at the low illumination quality.
 - When it is night or dark, the camera automatically detects the light level and maintains a clear picture if this mode is activated.
 - When “SENS_UP” is on, shutter cannot be adjusted.
- AGC (Auto Gain Control) : The higher the gain level, the brighter the screen - but the higher the noise.

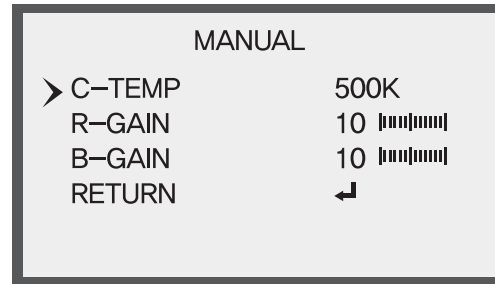
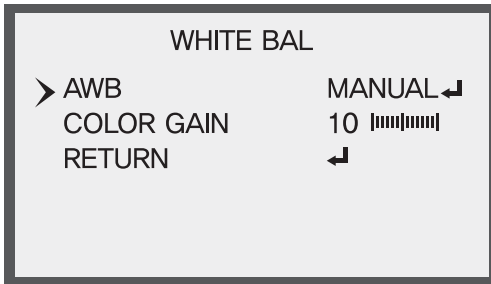
WHITE BAL

- Use the White Balance function to adjust the screen color.
- When the SETUP menu screen is displayed, select ‘White Bal.’ by using the Up and Down buttons so that the arrow indicates ‘White Bal.’ .
- Select a desired mode using the Right and Left buttons.



– AWB

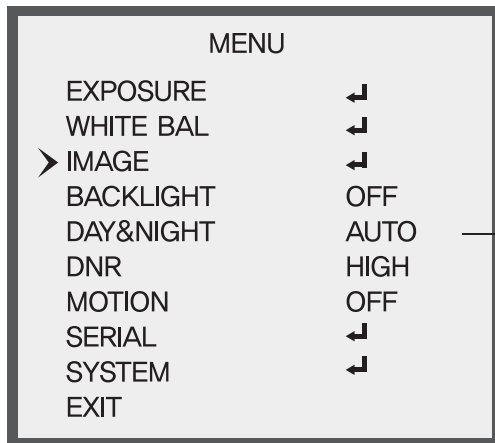
- AUTO : Default - This function continuously adjusts the white balance automatically to adapt to changes in lighting conditions.
- AUTOext : It is a mode to do a halogen and the special lighting to White detection,
- PRESET : This function adjusts the white balance regardless of the subject conditions.



- MANUAL
 - KELVIN : LOW / MIDDLE / HIGH
 - R-GAIN : Left Key (Level DECREMENT), Right Key (Level INCREMENT)
 - B-GAIN : Left Key (Level DECREMENT), Right Key (Level INCREMENT)
- COLOR GAIN : Control 0 to 20 by right and left button.

IMAGE

- SHARPNESS, GAMMA, MIRROR, FLIP, FREEZ, D-ZOOM, ACE, DEFOG, SHADING, PRIVACY, REYURN control can be selected.



- Normal : AUTO
- IR : EXTERN



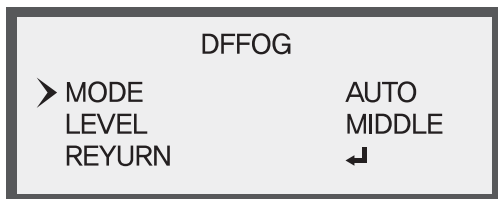
- SHARPNESS : Control 0 to 10 by right and left button.
- GAMMA : Adjust Gamma value. (0.45 / 0.50 / 0.55 / 0.60 / 0.65 / 0.70 / 0.75)
- MIRROR / FLIP : You can select function by using LEFT or RIGHT button.



- FREEZE : The video can be stopped.
- D-ZOOM : You can use a digital zoom of 1.0x ~ 16.0x

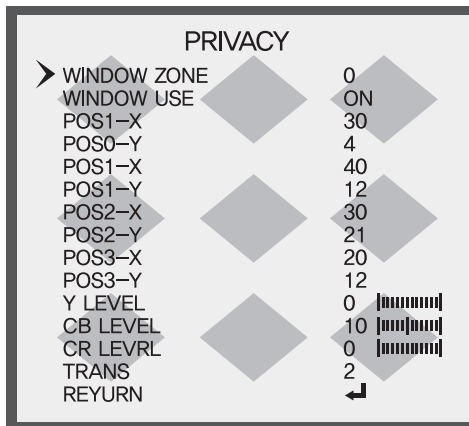
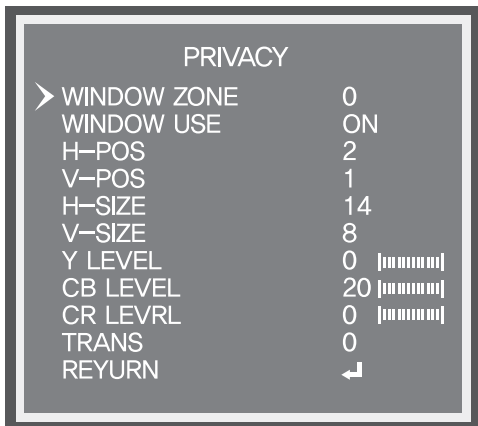
- ACE (Adaptive Color & Contrast Enhancement) : OFF, LOW, MIDDLE, HIGH

ACE black performs an image Enhancement processing to enhance visibility of an image by changing the brightness values to the level that people can recognize the change. This processing technique is equivalent to the dynamic range reduction technique. Which converts the HDR (High Dynamic Range) into the restricted LDR (Low Dynamic Range)



- DEFOG : MODE (you can select AUTO / MANUAL)
LEVEL (you can select LOW / MIDDLE / HIGH)

- SHADING : When using wide angle lens, you can compensate darkness of corner on the screen.



- PRIVACY : This modes conceals the areas you do not wish to appear on the screen.

- WINDOW ZONE : Select the region to apply Privacy (0~15)
- WINDOW USE : you can select (ON/OFF)
- SQUARE : H-POS, V-POS, H-SIZE, V-SIZE

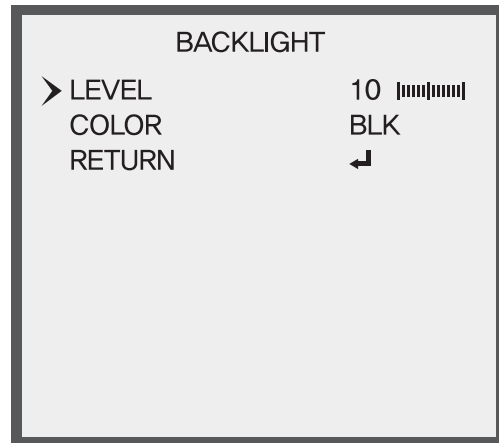
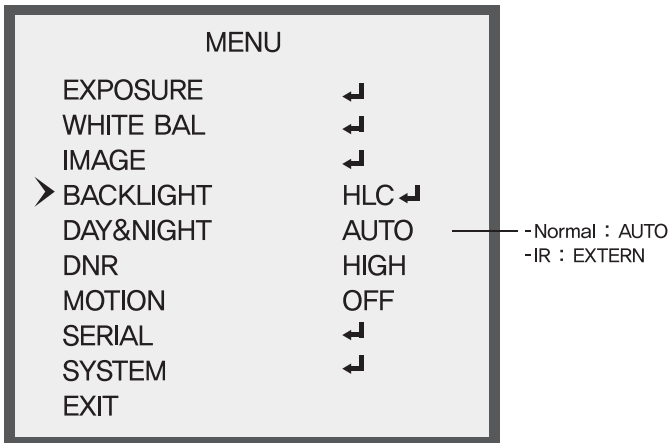
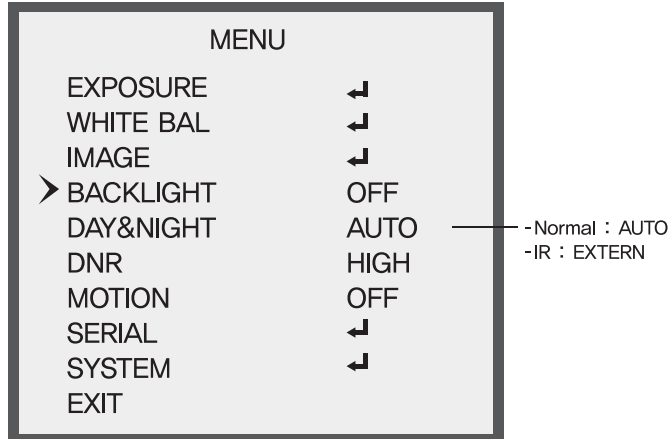
You can move the position of the range that you selected in the WINDOW ZONE to Left, Right, Up, Down.

- POLYGON : POS1-X, POS0-Y, POS1-X, POS1-Y, POS2-X, POS2-Y, POS3-X, POS3-Y

You can move the position of the range that you selected in the WINDOW ZONE to Left, Right, Up, Down.

- Y LEVEL : Control 0 to 20 right and left button.
- CB LEVEL, CR LEVEL : The color gain controls CB, CR level.
- TRANS : Adjust TRANS value. (0, 1, 2, 3)

BLACKLIGHT



• HLC (High Light Compensation)

Function is being prevented against headlights of vehicle effectively, it is the most suitable function to see license plates at night.

- LEVEL: You can set the level point of HLC

| MENU | |
|-------------|-------|
| EXPOSURE | ↵ |
| WHITE BAL | ↵ |
| IMAGE | ↵ |
| ➤ BACKLIGHT | BLC ↵ |
| DAY&NIGHT | AUTO |
| DNR | HIGH |
| MOTION | OFF |
| SERIAL | ↵ |
| SYSTEM | ↵ |
| EXIT | |

- Normal : AUTO
- IR : EXTERN

| BACKLIGHT | |
|-----------|---|
| ➤ H-POS | 5 |
| V-POS | 6 |
| H-SIZE | 8 |
| V-SIZE | 5 |
| RETURN | ↵ |

• BLC (Backlight Light Compensation)

When there is a strong backlight behind the object, clear images of the background as well as the object can still be obtained by using the BLC function.

- BLC OSD : The area to apply the BLC function is shown in BOX shape.
- H-POS : You can move the range to apply BLC to Left and Right
- V-POS : You can move the range to apply BLC to Up and Down
- H-SIZE : You can increase and decrease the size of the range to apply BLC horizontally.
- V-SIZE : You can increase and decrease the size of the range to apply BLC vertically.

| MENU | |
|-------------|-------|
| EXPOSURE | ↵ |
| WHITE BAL | ↵ |
| IMAGE | ↵ |
| ➤ BACKLIGHT | WDR ↵ |
| DAY&NIGHT | AUTO |
| DNR | HIGH |
| MOTION | OFF |
| SERIAL | ↵ |
| SYSTEM | ↵ |
| EXIT | |

- Normal : AUTO
- IR : EXTERN

| BACKLIGHT | |
|-----------|--------|
| ➤ WEIGHT | MIDDLE |
| RETURN | ↵ |

• WDR (Wide Dynamic Range) : OFF / LOW / MIDDLE / HIGH

By using the WDR function, you can distinguish object in the dark.

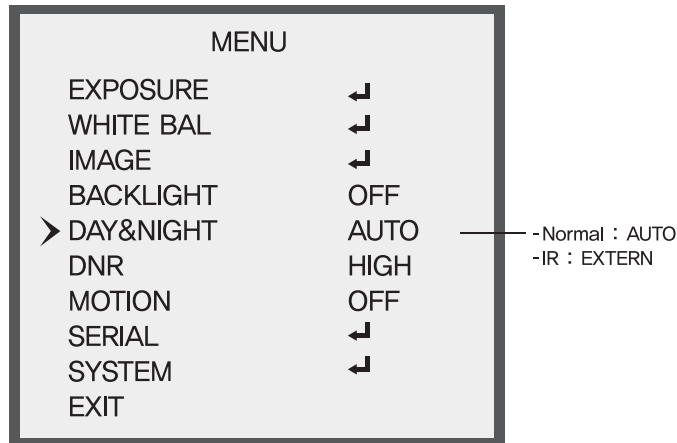


WDR (ON)



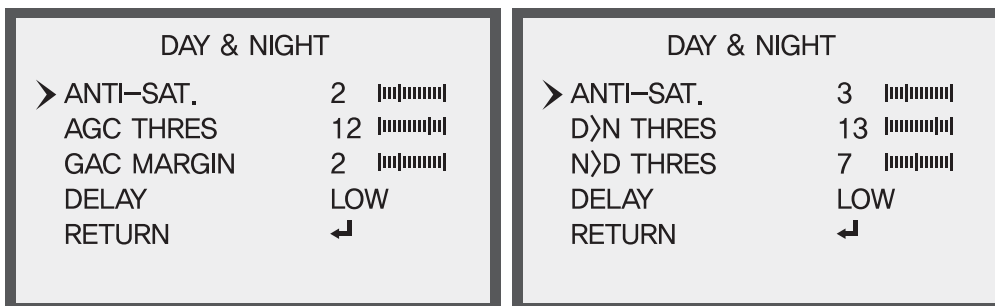
WDR (OFF)

DAY & NIGHT



AUTO

EXTERN

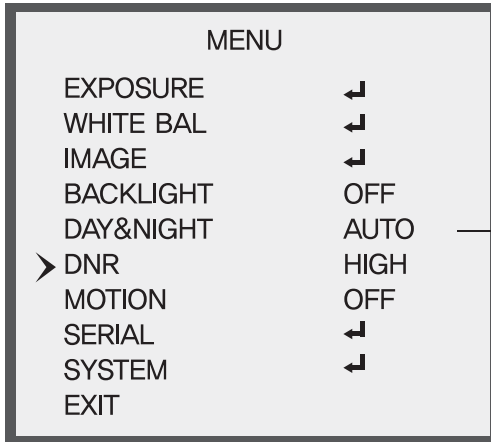


- AUTO : The camera will automatically show color image in high lux and black / white image in low lux.
 - AGC THRES : It controls gain level for changing Day > Night mode.
 - AGC MARGIN : It controls gain level for changing Night > Day mode.
 - DELAY : D&N change on continual time condition set Day > Night or Night > Day. (HIGH, MIDDLE, LOW)
- COLOR : This picture is always displayed in color.
- B&W : The picture is always displayed in black and white. You can turn on or off the burst signal on B/W mode.
- EXTERN : Select this when the color is controlled by CDS sensor.
 - ANTI-SAT. : As Smart IR function, the smaller ANTI-SAT setting value, the weaker Smart IR function.
 - D>N THRES : It controls gain level for changing Day > Night mode. (0~255)
 - N>D THRES : It controls gain level for changing Night > Day mode. (0~255)
 - DELAY : D&N change on continual time condition set Day > Night or Night > Day. (HIGH, MIDDLE, LOW)

DNR

- DNR (Digital Noise Reduction)

Improve S/N ratio and more clean the low illumination quality and can be monitoring at night clearly without the image drag and noise phenomenon.

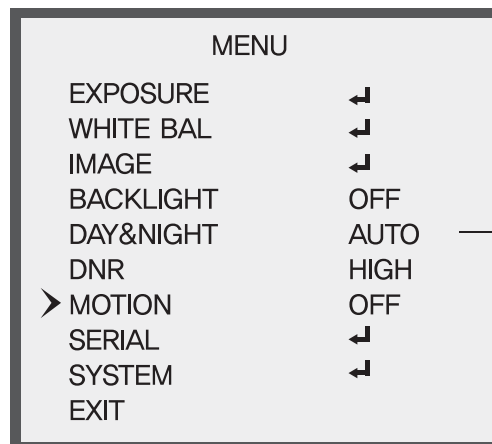


- Normal : AUTO
- IR : EXTERN

- OFF : DNR function does not operate.
- LOW / MIDDLE / HIGH : You can select 'LOW', 'MIDDLE' or 'HIGH' menu as DNR condition.

MOTION

Function of MOTION can designate the range of the user to detect the movement on the screen and adjust the size of the area. So, you can monitor the movement of an object on the given region more efficiently



- Normal : AUTO
- IR : EXTERN

- OFF : MOTION mode is cancelled.
- SET : Any motion in the selected areas is observed.

| MOTION | |
|-------------|-----------|
| ➤ AREA | ↵ |
| SENSITIVITY | 5 [] |
| TEXT ALARM | OFF |
| RETYRN | ↵ |

| AREA | |
|---------------|----|
| ➤ WINDOW ZONE | 0 |
| WINDOW USE | ON |
| DET H-POS | 0 |
| DET V-POS | 0 |
| DET H-SIZE | 60 |
| DET V-SIZE | 34 |
| RETUEN | ↵ |

- AREA
 - WINDOW ZONE : Select the region to apply MOTION
 - WINDOW USE : you can select (ON/OFF)
 - DET H-POS : You can move the range to apply WINDOW ZONE to Left and Right
 - DET V-POS : You can move the range to apply WINDOW ZONE to Up and Down
 - DET H-SIZE : You can increase and decrease the size of the range to apply WINDOW ZONE horizontally.
 - EEV-SIZE : You can increase and decrease the size of the range to apply WINDOW ZONE vertically.
- SENSITIVITY : Set the sensitivity of the moving detection.

SERIAL

| MENU | |
|-----------|------|
| EXPOSURE | ↵ |
| WHITE BAL | ↵ |
| IMAGE | ↵ |
| BACKLIGHT | OFF |
| DAY&NIGHT | AUTO |
| DNR | HIGH |
| MOTION | OFF |
| ➤ SERIAL | ↵ |
| SYSTEM | ↵ |
| EXIT | |

—Normal : AUTO
—IR : EXTERN

| SERIAL | |
|------------|------|
| ➤ CAN ID | 0 |
| ID DISPLAY | OFF |
| BAUDRATE | 9600 |
| RETUEN | ↵ |

- CAM ID : You can select camera ID from 0 to 255 when using remote control.
- ID DISPLAY : You can select ID ON or OFF
- BAUDRATE : You can select 2400 / 4800 / 9600 / 57600 / 115200 bps. Support “pel-D protocol”

SYSTEM

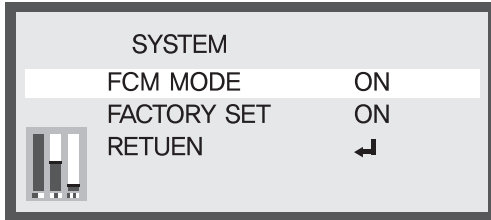
| MENU | | | SYSTEM | |
|-----------|------|----------------|--------------|----------|
| EXPOSURE | ↵ | | ➤ DEFFCT_DET | ON ↵ |
| WHITE BAL | ↵ | | IMAGE SCALE | USER ↵ |
| IMAGE | ↵ | | COLOR SPACE | HD-CbCr |
| BACKLIGHT | OFF | | VIDEO | NTSC |
| DAY&NIGHT | AUTO | -Normal : AUTO | FRAME RATE | 1080_30p |
| DNR | HIGH | -IR : EXTERN | LANGUAGE | ENG |
| MOTION | OFF | | CAM TITLE | OFF |
| SERIAL | ↵ | | FCM MODE | OFF |
| ➤ SYSTEM | ↵ | | FACTORY SET | ON |
| EXIT | | | RETIEN | ↵ |

- DEFECT DET : DEFECT DET mode id OFF. (OFF) / Close the lens to block the light. (ON)
Adjust lrft & right buttons and press “SET” button to automatically start the mode.
- IMAGE SCALE : You can select. (USER (OFFSET Levl (0~32) / FULL / COMP)
- COLOR SPACE : You can select. (HD-Cbr / SD-CbCr / YUV)
- VIDEO : You can select. (NTSC / PAL)
- FRAME EATE : 1080P, 720P, 720 CROP
- LANGUAGE : ENG, CHN, CHN(S), JPN, KOR

| CAM TITLE |
|---------------------|
| * |
| 00000000 |
| ----- |
| U , D – CHAR SELECT |
| L , R – POSITION |
| ENTER – RETURN |

- CAM TITLE : User writes TITLE / User sets TITLE ON/OFF.

- FCM MODE



- ▶ Left box : Focus of the area of the low illumination
- ▶ Middle box : Focus of the area of the intermediate illumination
- ▶ Right box : Focus of the area of the high illumination

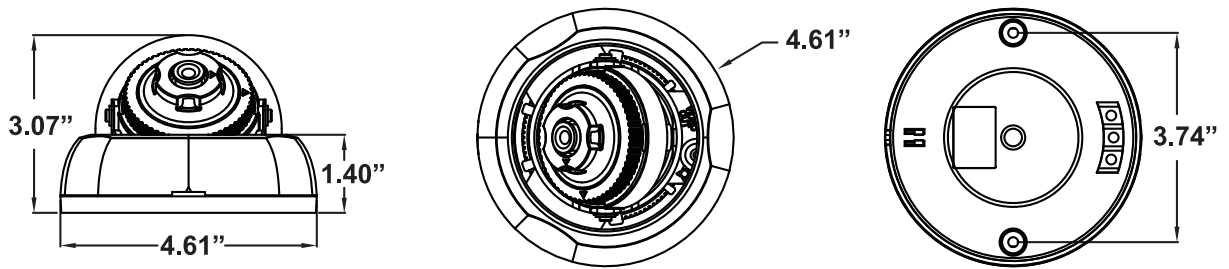
- If you move slowly lens, the green box will begin to appear
- When you turn the lens for the green box not to be visible, Focus is the right,
- It is possible only one box of three boxes is right,

- FACTORY SET : Factory initialize.

EXIT

- Saves all the setting menus and then exits.

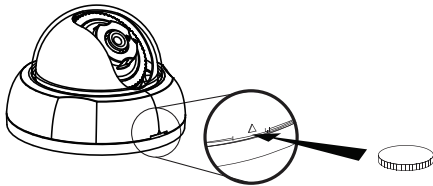
DIMENSIONS



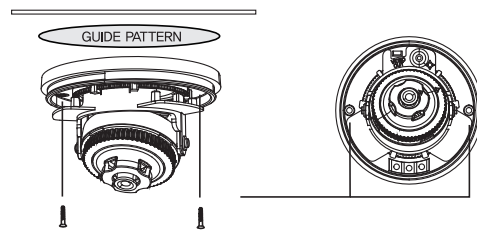
INSTALLATION

1. Opening

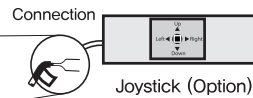
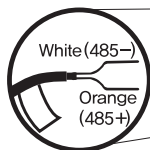
Use the coin to open the cover.



2. Place the camera in the desired location and install using the screws supplied.



3. Connecting Cables



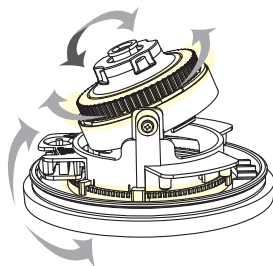
VIDEO (Option)



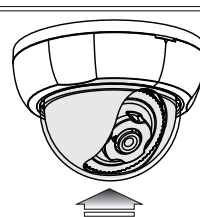
HDMI



4. Pan / Tilt (3Axis) Controls



5. Closing the cover



Detailed Specifications

| | |
|----------------------------------|---|
| Sensor | 1/2.9" Sony® Progressive Scan CMOS (IMX222) |
| Resolution | 2.1 MegaPixel (1080p / 720p) |
| S/N | More than 52 dB (AGC Off) |
| Video Output | Selectable: 1x HD-SDI (BNC) / EX-SDI (BNC) and 1x SD CVBS (BNC) |
| Lens | 3.7mm Fixed |
| Digital Zoom | 0 ~ x16 |
| Minimum Illumination | 1 Lux at F1.2 / 0.1 Lux (B/W) |
| Day/Night | Mechanical IR Cut Filter (True Day/Night) |
| Electronic shutter speed | Auto / Manual (1/30sec ~ 1/60,000sec) |
| White Balance | AUTO / AUTO EXT / PRESET / MANUAL |
| Brightness | Adjustable (0 ~ 20 Steps) |
| DSS (Sens-Up) | OFF / X2 ~ X32 |
| DNR | 3D-DNR |
| WDR | YES |
| Privacy Zones | YES (16 Zones / 8 Polygons) |
| Motion Detection | YES |
| ACE (Adaptive Color Enhancement) | YES |
| Advanced OSD Functions | Motion Detection, Sharpness, Gamma, Mirror, Flip, Freeze, D-Zoom, ACE, WDR, Defog, Privacy, HLM |
| Communication | RS-485 (Pelco® D) |
| HD Transmission Range | Over 1000' (Depending on cable characteristics and integrity) |
| Operating Conditions | 14°-122°F (-10°-50°C) < 80% RH |
| Input Voltage | 12VDC |
| Power Consumption (12VDC) | 200mA |
| Dimensions | 4.6" x 3.07" (Dia. x H) |



OTHER PRODUCTS FROM VITEK

On Cue EX-SDI Video Recorders



VT-HDOCE Series

On Cue Series 4, 8, and 16 Channel Real Time 1080p EX-SDI Digital Video Recorders

- 4, 8 OR 16 CH EX-SDI / Analog Inputs (hybrid) with Full 1080p Camera Support
- Now Supporting Cable distance of up to 1000' using RG59!*
- Hybrid Operation over COAX for HD-SDI, 960H, and D1 Cameras
- Simple plug and play, point-to-point connection from camera to DVR
- Real Time Recording on all channels at 1080p (VT-HDOC4E: 120fps), (VT-HDOC8E: 240fps), (VT-HDOC16E: 480fps)
- HDMI, VGA, and Spot BNC Outputs
- Up to 5 Internal SATA2/SATA3 HDD Slots supporting up to 20TB (5 x 4TB HDD) using Advanced HDD Format
- External SATA Port (eSATA) Supporting up to 5x External via eSATA
- Pentaplex Operation (Playback, Recording, Backup, Network)
- Alarm In/Out
- Per channel Image Adjustment
- 4 Channel Audio In
- 32 x 24 Motion Detection Grid
- Multi channel Spot output
- Panorama (Thumbnail) Search
- Remote Viewing via CMS Software, Internet Explorer, and Mobile Phones (iOS/Android), Mac OSX App
- Linear digital zoom for live and playback
- Up to 7 Simultaneous Network/Remote Connections
- 256 Camera Remote Viewing via CMS Software
- RS485 Communication port

LIMITED LIABILITY WARRANTY

VITEK products carry a three (3) year limited warranty. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is nontransferable and extends only to the original buyer or end user customer of a VITEK Authorized Reseller.

The product must have been used only for its intended purpose, and not been subjected to damage by misuse, willful or accidental damage, caused by excessive voltage or lightning.

The product must not have been tampered with in any way or the guarantee will be considered null and void.

This guarantee does not affect your statutory rights.

Contact your local VITEK Reseller should servicing become necessary.

VITEK makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a VITEK Authorized Reseller.



28492 CONSTELLATION ROAD VALENCIA, CA 91355
WWW.VITEKCCTV.COM