

ENFORCER®

3X Series Vandal Rollerball Camera On-Screen Display Manual



NTSC Model #	PAL Model #	Lens	Resolution	# of IR LEDs	Housing
EV-2726-N3GQ	EV-2726-P3GQ	3.6mm	700 TV lines	24	Gray
EV-2726-N3WQ	EV-2726-P3WQ	3.6mm	700 TV lines	24	White
EV-2726-NVGQ	EV-2726-PVGQ	4~9mm	700 TV lines	36	Gray
EV-2726-NVWQ	EV-2726-PVWQ	4~9mm	700 TV lines	36	White

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Programmable Features:

• **Exposure**

Manually adjust the shutter speed, automatic gain control (AGC), and digital slow shutter (DSS)

• **White Balance**

Adjust the color temperature and image color of the picture

• **Day / Night Mode**

Adjust the level that the camera switches between color and B/W when the ambient light changes

• **Picture Adjustment**

Adjust the camera's brightness, contrast, sharpness, hue, and gain

• **Digital Noise Reduction (DNR)**

Adjust for less interference on the screen in an area with low illumination

• **Wide Dynamic Range (WDR)**

Provide clear images even under back light circumstances where illumination intensity can vary excessively

• **High Light Compensation (HLC)**

Define target areas and remove spotlights to make certain objects visible

• **Back Light Compensation (BLC)**

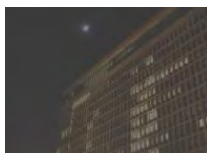
Adjust the exposure to properly display the subject in front of a bright light source

• **Privacy**

Block out or emphasize a certain portion of the image

• **Motion Detection**

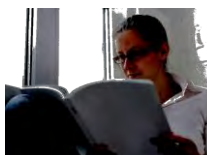
Detect if there is motion in the scene



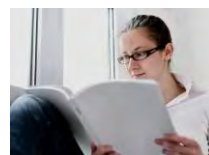
DNR OFF



DNR ON



WDR OFF



WDR ON



HLC OFF



HLC ON



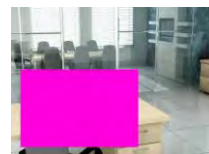
BLC OFF



BLC ON



Privacy OFF

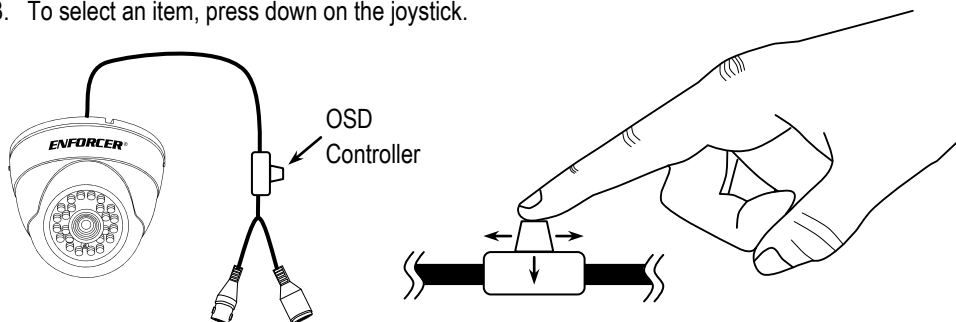


Privacy ON

Note: All screen images in this manual are simulated.

How to Use the OSD Controller:

1. Press down on the joystick to open the on-screen display (OSD) menu.
2. Use the joystick to navigate the OSD menu.
3. To select an item, press down on the joystick.



Main Setup Menu:

Menu items can be selected by using the OSD controller.

1. Press down on the joystick.
The Main Setup Menu will be displayed on the monitor.
2. Move to and highlight the required function by moving the joystick up and down.
3. Select the required function by pressing down on the joystick
4. Change the menu setting by moving the joystick left and right.
5. After choosing the settings, move the cursor to SAVE ALL and press down on the joystick
6. After saving the settings, move the cursor to EXIT and press down on the joystick.

MAIN SETUP MENU	
LENS	MANUAL
EXPOSURE	AUTO ↩
WHITE BAL	PUSH
DAY/NIGHT	EXTON ↩
PICT ADJUST	↩
WDR	↩
HLC/BLC	↩
PRIVACY	↩
MOTION DET	ON ↩
CAMERA SETUP	↩
EXIT ↩	SAVE ALL

Menu Diagram

Note:

- A submenu is available where the menu displays ↩.

Menu Diagram :

SETUP MENU	SETTING	SETTING OPTIONS
1) LENS (see page 6)	MANUAL	Set for fixed lens camera
	DC	MODE: AUTO / OPEN / CLOSE SPEED: 0~255 Level Adjustable
2) EXPOSURE (see pages 6~7)	AUTO	High Luminance: MODE: SHUT + AUTO IRIS / AUTO IRIS / SHUT* BRIGHTNESS: 0~255 Level Adjustable Low Luminance: MODE: AGC / SLOW / AGC → SLOW / SLOW → AGC / AGC → SLOW → AGC / OFF BRIGHTNESS: x0.25, x0.50, x0.75, x1.00
	MANUAL	MODE: SHUT: SHUT: 1/63~1/10,000 sec AGC: 6~44.8 dB SLOW: SHUT: 2~256 FLD AGC: 6~44.8 dB WDR + SHUT: SHUT: 1/63~1/10,000 sec AGC: 6~44.8 DB
3) WHITE BAL (see pages 7~8)	PUSH	Disable white balance mode
	USER1	B-GAIN: 0~255 Level Adjustable R-GAIN: 0~255 Level Adjustable
	USER2	B-GAIN: 0~255 Level Adjustable R-GAIN: 0~255 Level Adjustable
	ANTI CR	Enable anti-color rolling
	MANUAL	LEVEL UP: Push enter to increase the gain level LEVEL DOWN: Push enter to decrease the gain level PRESET: Reset settings to default
	PUSH LOCK	Disable white balance mode by pressing enter
4) DAY/NIGHT (see pages 8~9)	ATW	SPEED: 0~255 Level Adjustable DELAY CNT: 0~255 Level Adjustable ATW FRAME: x0.5, x1.0, x1.5, x2.0 ENVIRONMENT: INDOOR / OUTDOOR
	EXTON	POLARITY: ACTIVE LOW / ACTIVE HIGH BURST: OFF / ON IR OPT: OFF / ON MODE: CENTER / AUTO LEVEL: 0~31 Level Adjustable WDR: OFF / ON
	AUTO	BURST: OFF / ON DELAY CNT: 0~255 Level Adjustable DAY → NIGHT: 0~255 Level Adjustable NIGHT → DAY: 0~255 Level Adjustable IR OPT: OFF / ON MODE: CENTER / AUTO LEVEL: 0~31 Level Adjustable WDR: OFF / ON IR LED: OFF / FIX / DAY/NIGHT LEVEL: 0~255 Level Adjustable DRV: Not compatible with WDR camera. POLARITY: ACTIVE LOW / ACTIVE HIGH
	COLOR	Display color image
	B/W	Display black and white image

*See page 6 for details

Continued on next page

Menu Diagram Continued:

SETUP MENU	SETTING	SETTING OPTIONS
5) PICT ADJUST (see page 10)	MIRROR	OFF / V-FLIP / H-FLIP / HV-FLIP
	CONTRAST	0~63 Level Adjustable
	SHARPNESS	0~15 Level Adjustable
	HUE	0~100 Level Adjustable
	R-GAIN	0~255 Level Adjustable
	B-GAIN	0~255 Level Adjustable
	DNR	LEVEL: OFF / LOW / MIDLOW / MID / MIDHIGH / HIGH
6) WDR (see page 11)	NORMAL	No adjustable feature
	LIGHT	CONTRAST: LOW / MIDLOW / MID / MIDHIGH / HIGH
	FULL	CONTRAST: LOW / MIDLOW / MID / MIDHIGH / HIGH
7) HLC/BLC (see page 12)	HLC	OFF / ON / AUTO
	CLIP LEVEL	0~255 Level Adjustable
	SCALE	0~15 Level Adjustable
	BLC	OFF / ON
8) PRIVACY (see page 13)	AREA SEL	Up to 15 selectable zones
	MODE	ON / OFF
	POSITION	Move the selected privacy zone
	COLOR	White / Black / Red / Green / Blue / Yellow / Cyan / Magenta
	TRANSP	0.00 / 0.50 / 0.75 / 1.00
	MOSAIC	ON / OFF
9) MOTION DET (see page 14)	OFF	Disable motion detection
	ON	DETECT SENSE: 0~127 Level Adjustable BLOCK DISP: OFF / ON DETECT AREA: Set the area on the screen where motion can be called attention to via blocks MONITOR AREA: Set the area on the screen where motion is highlighted via pink rectangle
10) CAMERA SETUP (see page 15)	CAMERA ID	OFF / ON
	E-ZOOM	MAG: 0~255 Level Adjustable PAN: 0~1023 Level Adjustable TILT: 0~511 Level Adjustable
	DIS	OFF / ON
	SYNC SETUP	Internal synchronization mode – Not adjustable
	LANGUAGE	English / Chinese
	CAMERA RESET	Resets all setting to default
11) EXIT	Exit menu and save settings	
12) SAVE ALL	Save changes without exiting the menu	

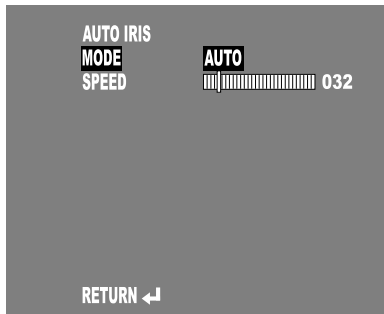
Lens:

This function is used to select the camera's lens operation.

1. Select LENS on the Main Setup Menu screen.
2. Select the desired lens operation by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

← **DC:** Select DC mode for DC Auto Iris lens.

- **Mode:** Select the mode. (AUTO, OPEN, or CLOSE)
- **SPEED:** Set the auto iris movement speed. Adjustable range: 0~255



➤ **MANUAL:** Select manual mode for manual or fixed lens.

Exposure:

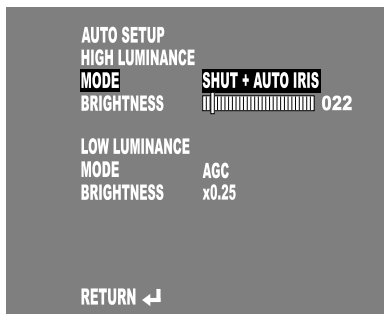
This function is used to manually adjust the shutter speed, AGC, and DSS.

1. Select EXPOSURE on the Main Setup Menu screen.
2. Select the desired exposure type by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

← **AUTO:** The camera is in automatic shutter mode.

A. HIGH LUMINANCE

- **MODE:** Select shutter mode.
 - SHUT: Length of time a camera's shutter is open.
 - AUTO IRIS: Adjust the iris to allow specific amount of exposure.
 - SHUT + AUTO IRIS: Combination of both SHUT and AUTO IRIS.



Note: If LENS is set to MANUAL, the MODE is fixed at SHUT. If the LENS is set to AUTO, available MODE options are AUTO IRIS and SHUT + AUTO IRIS.

- **BRIGHTNESS:** Set the auto-exposure image brightness. Adjustable range: 0~255

B. LOW LUMINANCE

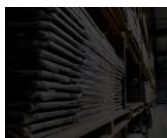
- **MODE:** Select low luminance mode. (AGC, SLOW, AGC → SLOW, SLOW → AGC, AGC → SLOW → AGC, or OFF)
Note: AGC refers to automatic gain control and SLOW refers to digital slow shutter.
- **BRIGHTNESS:** Select the automatic gain value. Adjustable range: x0.25, x0.50, x0.75, x1.00

Continued on next page

Exposure, continued

⏪ **MANUAL:** The camera is in fixed shutter mode.

- **MODE:** Select shutter mode.
(SHUT, SLOW, or WDR + SHUT)
- **SHUTTER:** Select shutter speed.
Adjustable range: 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, or 1/10000 sec
Adjustable range: 2~256 FLD (only available in SLOW mode)
- **AGC:** Set the automatic gain control value.
Adjustable range: 6, 12, 18, 24, 30, 36, 42, or 44.8 dB



SLOW OFF
No Digital Slow Shutter



SLOW ON
Digital Slow Shutter

White Balance:

This function is used to adjust the color temperature and image color of the picture.

1. Select WHITE BAL on the Main Setup Menu screen.
2. Select the desired white balance mode by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

➤ **PUSH:** In the push mode, the white balance setting will be disabled.

⏪ **USER 1/2 WB:** Independently set the white balance setting for USER 1 or USER 2.

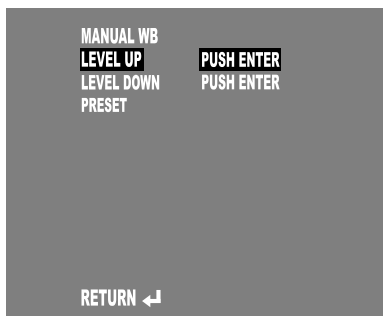
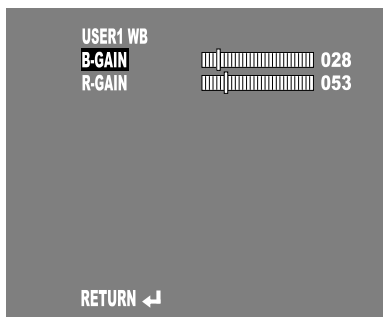
- **B-GAIN:** Set the blue gain.
Adjustable range: 0~255
- **R-GAIN:** Set the red gain.
Adjustable range: 0~255

➤ **ANTI CR:** Select this mode when color rolling or flickering caused by the unmatched frequency of electric lights occurs.

⏪ **MANUAL:** Set the white balance manually.

- **LEVEL UP:** Press down on the joystick to increase the gain level.
- **LEVEL DOWN:** Press down on the joystick to decrease the gain level.
- **PRESET:** Reset the white balance to default preset value.

➤ **PUSH LOCK:** In the push lock mode, the white balance setting will be disabled when the joystick is pressed down.

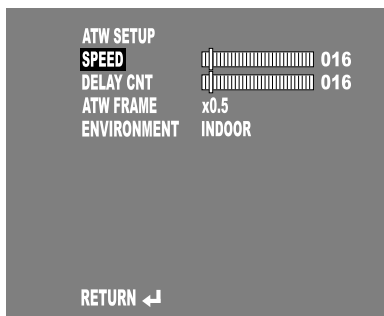


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White Balance, continued

← **ATW (Automatic Tracking White Balance):** When the image color temperature changes, it will automatically adjust the white balance color temperature range from 1,800°K~10,500°K.
(Ex. A fluorescent lamp or outdoors)

- **SPEED:** Set the ATW speed. Adjustable range: 0~255
- **DELAY CNT:** Set the ATW delay time. Adjustable range: 0~255 sec
- **ATW FRAME:** Set the ATW zone ratio. Adjustable range: x0.5, x1.0, x1.5, x2.0
- **ENVIRONMENT:** Set the ATW environment. (INDOOR or OUTDOOR)



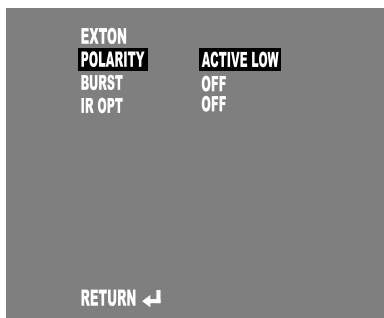
Day / Night Mode:

This function will switch to color or black and white mode automatically, depending on the current illumination conditions.

1. Select DAY/NIGHT on the Main Setup Menu screen.
2. Select the desired DAY/NIGHT setting by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

← **EXTON:** The camera image will switch to color in normal conditions and B/W when ambient light is low.

- **POLARITY:** Set the POLARITY mode. (ACTIVE LOW or ACTIVE HIGH)
When POLARITY mode is ACTIVE LOW, the camera will display color images in the DAY mode and B/W images in the NIGHT mode. When POLARITY mode is ACTIVE HIGH, the camera will display B/W images in the DAY mode and the image colors will be suppressed in the NIGHT mode.
- **BURST:** Enable noise color synchronization. (ON or OFF)
- **IR OPT:** Adjust the IR LED optimization settings. (OFF or ON)
 - **MODE:** Set the IR compensation area. (CENTER or AUTO)
 - **LEVEL:** Adjust the IR LED intensity level. Adjustable range: 0~31
 - **WDR:** Enable wide dynamic range mode. (OFF or ON)



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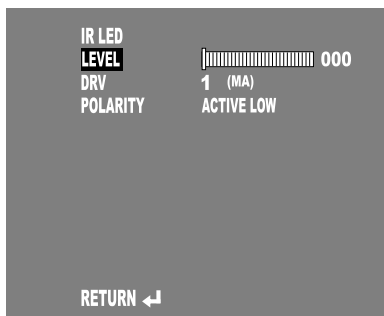
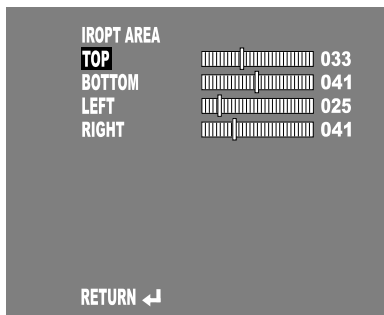
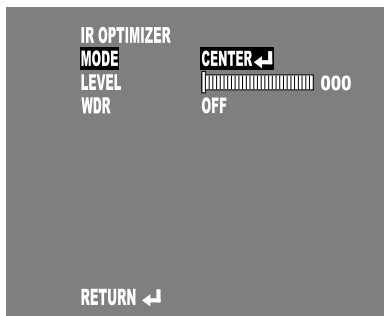
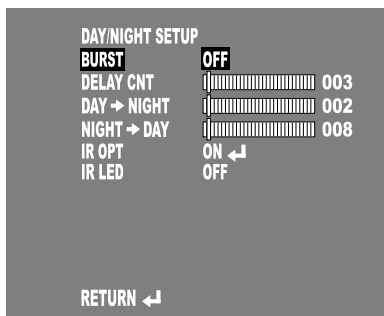
Day/Night Mode, continued

⏪ **AUTO:** The camera image will switch to color in normal conditions and the image colors will be suppressed when ambient light is low.

- **BURST:** Enable noise color synchronization. (ON or OFF)
- **DELAY CNT:** Set the COLOR/B&W interchange delay time. Adjustable range: 0~255 sec
- **DAY → NIGHT:** Define light level to trigger B/W mode. Adjustable range: 0~255
- **NIGHT → DAY:** Define light level to trigger COLOR mode. Adjustable range: 0~255
- **IR OPT:** Adjust the IR LED optimization settings. (OFF or ON)
 - **MODE:** Set the IR compensation area. (CENTER or AUTO)
 - **LEVEL:** Adjust the IR LED intensity level. Adjustable range: 0~31
 - **WDR:** Enable wide dynamic range mode. (OFF or ON)
- **IR LED:** Adjust the IR LED settings. (OFF, FIX, or DAY/NIGHT)
 - **LEVEL:** Adjust the IR LED intensity level. Adjustable range: 0~255
 - **DRV:** This function is not compatible with 3X Vandal Rollerball Cameras.
 - **POLARITY:** Set the polarity level of the IR LED settings. (ACTIVE LOW or ACTIVE HIGH)

➤ **COLOR:** The camera image will always display in color.

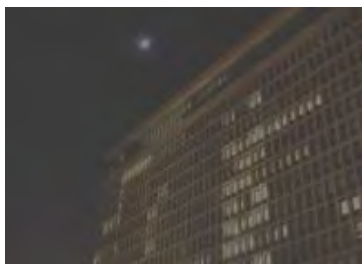
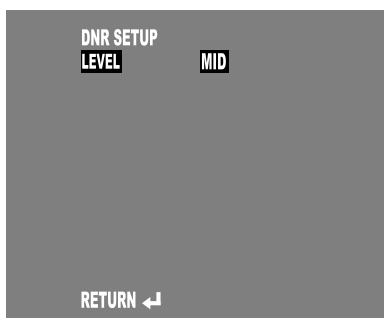
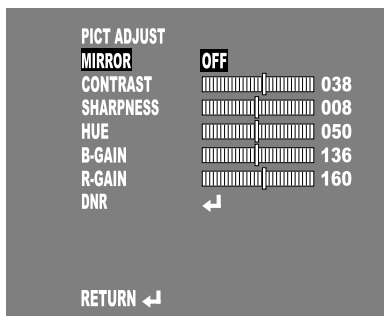
➤ **B/W:** The camera image will always display in B/W.



Picture Adjustment:

This function is used to set the camera's picture setting and DNR settings.

1. Select PICT ADJUST on the Main Setup Menu screen.
2. Select the desired picture setting by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.
 - MIRROR: Flip the original image horizontally, vertically, or horizontally and vertically. (OFF, V-FLIP, H-FLIP, or HV-FLIP)
 - CONTRAST: Set picture contrast. Adjustable range: 0-63
 - SHARPNESS: Set picture sharpness. Adjustable range: 0-15
 - HUE: Set picture hue. Adjustable range: 0-100
 - R-GAIN: Set the red gain. Adjustable range: 0-255
 - B-GAIN: Set the blue gain. Adjustable range: 0-255
 - DNR: Set the digital noise reduction level. (OFF, LOW, MIDLOW, MID, MIDHIGH, or HIGH)



DNR OFF



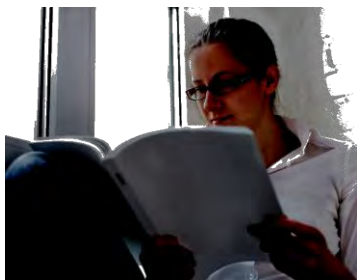
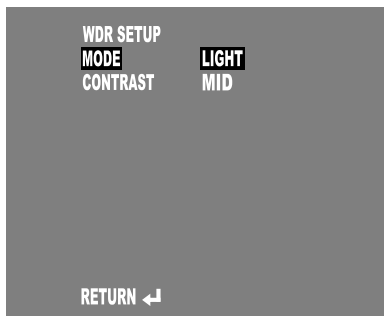
DNR MID

Wide Dynamic Range (WDR):

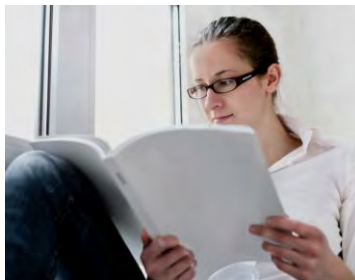
This function is used to provide clear images even under intense back light conditions.

1. Select WDR on the Main Setup Menu screen.
2. Select the desired WDR setting by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

- **MODE:** Set the WDR mode (NORMAL [OFF], LIGHT [DWDR], or FULL [True WDR]).
- **CONTRAST:** Set the contrast level (LOW, MIDLOW, MID, MIDHIGH, or HIGH).
Note: CONTRAST cannot be adjusted in NORMAL mode.



WDR OFF



WDR FULL

High Light / Back Light Compensation (HLC/BLC):

This function is used to control the light level to overcome strong back light conditions.

1. Select HLC/BLC on the Main Setup Menu screen.
 2. Select the desired HLC/BLC mode by moving the joystick to the right or left.
 3. Select RETURN to return to the Main Setup Menu screen.
- **High Light Compensation (HLC):** Select this mode to improve the clarity of the picture by blocking a strong backlight. (OFF, ON, or AUTO)

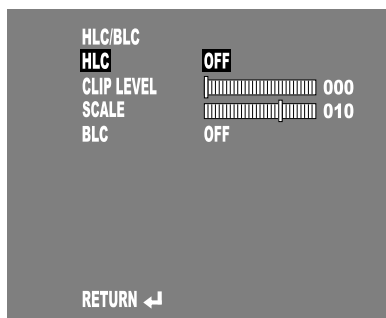


HLC OFF



HLC ON

- **CLIP LEVEL:** Suppress the sensitivity of HLC.
Adjustable range: 0~255
- **SCALE:** Adjust the image for varying highlight conditions.
Adjustable range: 0~15



- **Back Light Compensation (BLC):** Select this mode to correct the exposure of the subjects that are in front of a strong backlight. (OFF or ON)



BLC OFF

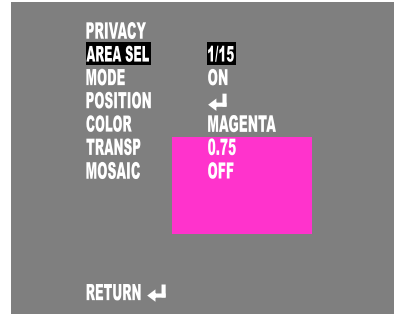


BLC ON

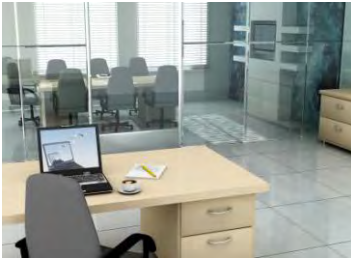
Privacy:

This function is used to distort or block out a certain portion of the image for privacy reasons.

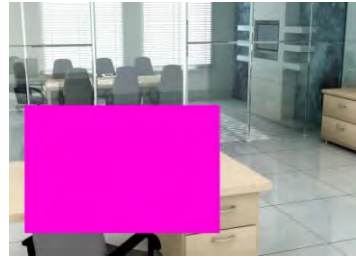
1. Select PRIVACY on the Main Setup Menu screen.
2. Select the desired privacy masking by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.



- AREA SEL: Up to 15 privacy zones.
- MODE: Enable the selected privacy zone. (ON or OFF)
- POSITION: Move the selected privacy zone.
- COLOR: Select the zone color. (White, black, red, green, blue, yellow, cyan or magenta)
- TRANSP: Select the degree of transparency. Adjustable range: 0.00 (completely transparent), 0.50, 0.75, 1.00 (completely opaque)
- MOSAIC: Set mosaic setting. (ON or OFF)
When the MOSAIC is ON, it will distort the selected area.
Note: Mosaic cannot be used if TRANSP is set to 1.00.



Privacy OFF



Privacy ON



Privacy with Mosaic



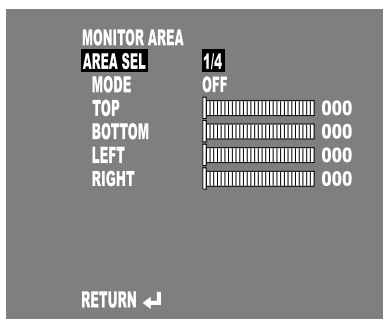
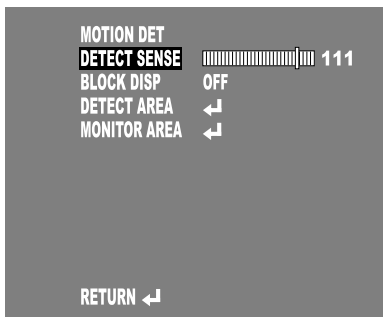
Privacy with 0.5 Transparency
and Mosaic

Motion Detection:

This function is used to detect moving objects on-screen.

1. Select MOTION DET on the Main Setup Menu screen.
2. Select the desired motion detection mode by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu screen.

- **DETECT SENSE:** Set detection sensitivity. Adjustable range: 0~127
- **BLOCK DISP:** Mosaic blocks will appear where movement is present. (ON or OFF)
- **DETECT AREA:** Set detection area. If BLOCK DISP is turned ON, press ENTER to set which part of the screen to display mosaic blocks that will show motion was detected. To exit DETECT AREA, hold down the joystick for 3 seconds.
- **MONITOR AREA:** Set the size and detection area of a pink rectangle that will flash whenever motion is detected.
 - **AREA SEL:** Up to 4 detection zones.
 - **MODE:** Enable the selected detection zone. (OFF or ON)
 - **TOP:** Set the vertical start position. Adjustable range: 0~15
 - **BOTTOM:** Set the vertical end position. Adjustable range: 0~15
 - **LEFT:** Set the horizontal start position. Adjustable range: 0~23
 - **RIGHT:** Set the horizontal end position. Adjustable range: 0~23



Motion Detection OFF



Motion Detection ON

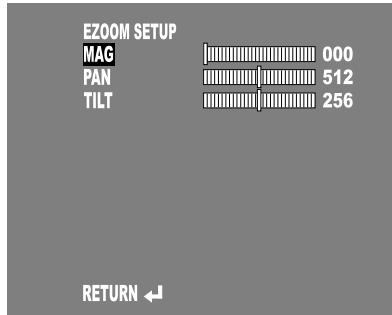
Camera Setup:

This function is used to adjust the camera ID, zoom and language settings.

1. Select CAMERA SETUP on the Main Setup Menu screen.
2. Select the desired camera setup function by moving the joystick to the right or left.
3. Select RETURN to return to the Main Setup Menu.



- CAMERA ID: Set the camera ID and its position on the screen. (OFF or ON)
 - ←→↑↓ : Adjust the cursor position.
 - CLR: Forward delete the selected character.
 - POS: Set the location of the camera ID.
- EZOOM: Adjust the magnification, pan, and tilt of the screen. NOTE: The pan and tilt functions do not physically move the lens, but instead adjust the position of the magnified image.
 - MAG: Magnify the image.
Adjustable range: 0~255
 - PAN: Move the image left or right.
Adjustable range: 0~1023
 - TILT: Move the image up or down.
Adjustable range: 0~511
- DIS: Enable digital image stabilization mode for installations in environments with slight vibrations. (OFF or ON)
Note: If DIS is ON, EZOOM will be disabled.
- SYNC SETUP: Internal synchronization mode. Not adjustable for WDR cameras.
- LANGUAGE: Select the OSD display language.
- CAMERA RESET: Reset the camera settings to the factory default.



Save All:

Select to save current settings without exiting the Main Setup Menu.

Exit:

Select to save current settings and exit the Main Setup Menu.

Troubleshooting:

The screen is blank.

- Check that the camera is powered up.
 - Check that the power supply's polarity is correct.
 - Check that the monitor is powered up.
 - Check that the video cable connecting the camera to the monitor is connected properly.
-

The screen image is dim.

- Clean the lens using a soft, clean cloth.
 - Check that the light source is adequate.
-

Strong backlight is overpowering the image

- Change the WDR setting (see page 11)
-

Image has too much digital noise

- Change DNR setting (see page 10)
-

The screen image is distorted.

- Change the position of the camera.
-

Motion detection is not activated

- Activate MOTION DET at the Main Setup Menu
 - Properly define the motion detection area
-

IR LEDs do not turn on.

- Check that the correct power supply is in use.
-

IMPORTANT

Users and installers of this product are responsible for ensuring this product complies with all national, state, and local laws and statutes related to monitoring and recording audio and video signals. SECO-LARM will not be held responsible for the use of this product in violation of any current laws or statutes.

WARNING

Stop using the camera if you see a malfunction such as smoke or unusual heat, as it could cause fire or electric shock. Do not open the case of this device, as there are no field serviceable components inside.

FCC COMPLIANCE STATEMENT

Information to the user: This equipment has been tested and found to comply with the limits for a class B 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 or her own expense.

WARRANTY: This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for a period of one (1) year from the date of sale to the original consumer customer. SECO-LARM's obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to SECO-LARM.

This Warranty is void if damage is caused by or attributed to acts of God, physical or electrical misuse or abuse, neglect, repair or alteration, improper or abnormal usage, or faulty installation, or if for any other reason SECO-LARM determines that such equipment is not operating properly as a result of causes other than defects in material and workmanship.

The sole obligation of SECO-LARM, and the purchaser's exclusive remedy, shall be limited to replacement or repair only, at SECO-LARM's option. In no event shall SECO-LARM be liable for any special, collateral, incidental, or consequential personal or property damages of any kind to the purchaser or anyone else.

NOTICE

The information and specifications printed in this manual are current at the time of publication. However, the SECO-LARM policy is one of continual development and improvement. For this reason, SECO-LARM reserves the right to change specifications without notice. SECO-LARM is also not responsible for misprints or typographical errors.

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